1. AVIATION SAFETY

Given the continued growth in demand for air travel and the limited capacity of the National Airspace System, the Federal Aviation Administration (FAA) must be more aggressive in evaluating known risks and identifying and evaluating unknown risks that may cause future accidents. The aviation industry expects continued growth in air traffic as a result of increased demand and the emergence of new technologies may result in closer spacing between aircraft due to more precise, satellite-based tracking and navigation capabilities.

We see the key issues in this area as:

- Reducing the number of runway incursions and operational errors; two aviation safety indicators of serious safety risks. Record levels of runway incursions (400) and operational errors (1,154) are occurring amid increasing runway and airspace congestion. Runway incursions are incidents on the runway that create a potential collision hazard. Operational errors are errors made when an air traffic controller allows the distance between two aircraft to fall below FAA's minimum separation standards. These incidents occur mostly in midair.

- Replacing air traffic control supervisors with non-supervisory controllers without jeopardizing safety,

- Providing timely and effective oversight of air carriers' aircraft maintenance, and

- Completing pending rulemakings on new safety practices and flight crew rest requirements.

Progress in the Last Year: Improvements have been made in the following areas.

- The Federal Aviation Administrator made reducing runway incursions a top priority. A new Director for the Runway Safety Program was given central oversight authority for all runway safety work being performed within FAA. FAA also conducted a human factors symposium and held regional runway safety workshops, which culminated in a Runway Safety National Summit in June 2000. Based on recommendations made at these events, FAA developed a list of 10 initiatives most likely to reduce runway incursions in the near term such as, enhanced air traffic controller training and improved pilot evaluation and testing.

- The Department issued Code Share Safety Program Guidelines that provide for safety assessments by U.S. air carriers of their international code share
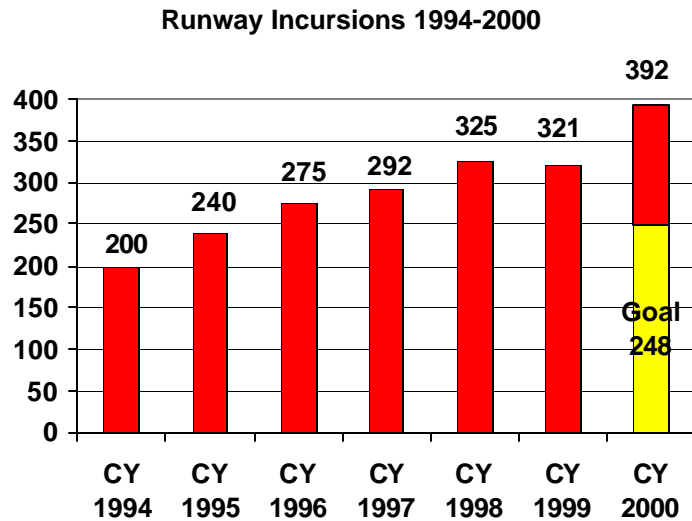
partners. FAA developed procedures to review U.S. air carriers' code share programs and U.S. carriers have begun conducting safety assessments of their code share partners. These changes should positively impact the safety of U.S. passengers traveling on international code share flights.

- FAA has positively responded to concerns about its oversight of air carriers' aircraft maintenance programs that were generated by the January 2000 Alaska Airlines crash. In July 2000, FAA began conducting special assessments of the major aircraft safety programs for nine of the largest commercial air carriers to determine if carriers have procedures in place to provide safety oversight of their aircraft operations. FAA also plans to use the results of these reviews to determine if changes are needed in its oversight procedures for carriers' aircraft maintenance programs.

- To address safety issues associated with aging aircraft, FAA issued over 40 airworthiness directives on electrical wiring and 18 on fuel systems for large commercial aircraft. FAA and industry also conducted inspections of in-service aircraft that are 20 years old or more to assess the condition of the U.S. transport fleet with respect to wiring and to identify other areas of concern.

- FAA continued to pursue the issue of suspected unapproved parts (SUPs). Since fiscal year (FY) 1997, FAA, aided by the OIG, conducted SUP training for over 1,500 aviation safety inspectors. Additional classes are planned for FY 2001. In FY 2000, FAA initiated 262 SUP investigation cases and OIG obtained 9 indictments related to the sale and use of SUPs.

- On April 5, 2000, the Aircraft Safety Act of 2000 was signed into law. This new law will stiffen the penalties for people and corporations that engage in the manufacture, sale, and use of unapproved parts. Specifically, it authorizes the Attorney General to seek civil remedies to stop offenders from re-entering the business and to direct the destruction of stockpiles and inventories of unapproved parts so they do not find their way into legitimate commerce. The Act gives law enforcement a potent weapon in the fight to protect the safety of the traveling public. The Department of Transportation, Department of Justice, National Aeronautics and Space Administration, and the Federal Bureau of Investigation all supported this legislation to stiffen the penalties for those that traffic in unapproved parts.
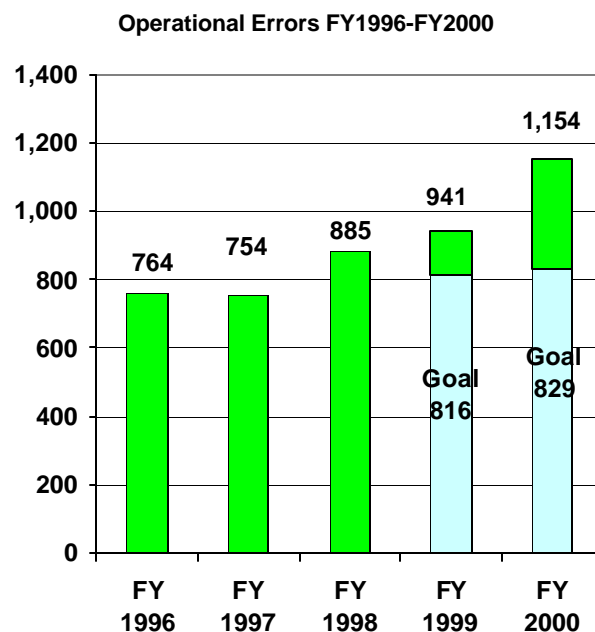
__Most Significant Open Recommendations and Issues__: While FAA has made progress in addressing factors that affect aviation safety, the agency needs to address several important safety issues, including the following major elements.

- Safety Indicators. Record levels of runway incursions (400) and operational errors (1,154) are occurring amid increasing runway and airspace congestion.

Runway Incursions. Despite significant management focus in the past year, FAA has not been able to reduce the number of runway incursions. As shown on the chart, runway incursions have grown from 200 in 1994 to 321 in 1999, a 60 percent increase. In the first 11 months of the year 2000, there were 392 runway incursions. By the end of 2000, the number of runway incursions will likely surpass 400, significantly more than FAA's goal of no more than 248 incursions for the year. Now FAA must follow through on initiatives started in 2000 at the national and local levels to reverse the upward trend of runway incursions. Also, FAA must identify and evaluate emerging technologies that can be advanced quickly for use by pilots and air traffic controllers at high-risk airports.

Runway Incursions 1994-2000

Operational Errors. FAA has been ineffective in reducing operational errors, which have increased by 51 percent from 764 to 1,154 from FY 1996 to FY 2000 as shown on the chart. Further, FAA did not meet its goals established in DOT's Performance Plan for reducing operational errors to .496 and .486 per 100,000 operations in FY 1999 and FY 2000, respectively.

Operational Errors FY1996-FY2000

While operational errors can pose a serious safety risk, the true safety risk remains unknown because FAA does not determine the severity of every incident.

Facilities with the most reported operational errors over the past 5 fiscal years have shown little progress in reducing operational errors. During FY 2000, 70 percent of all operational errors occurred at just 25 facilities. Moreover, 22 of the 25 facilities with the most operational errors in FY 2000 showed no progress over FY 1996 levels. FAA must approach reducing operational errors with a sense of urgency and provide strong national oversight to ensure that efforts made to reduce operational errors are effective in reversing the upward trend.

- Safety Workforce.

  Replacing Non-Union Air Traffic Control Supervisors. FAA plans to reduce the number of air traffic control supervisors and replace them with non-supervisory air traffic controllers acting as controllers-in-charge (CICs). As we reported in November 1998, before FAA can begin a reduction in supervisors, it must provide increased training to these non-supervisory air traffic controllers on their new roles and responsibilities for ensuring safe air traffic operations. FAA is currently training CICs on their new roles and responsibilities. However, in our ongoing efforts to ensure that FAA develops an expanded CIC Program that addresses our recommendations, we identified a February 2000 memorandum from the Director of Air Traffic Services that essentially allows all air traffic controllers to become CICs without going through the required CIC selection process to ensure that only the most qualified controllers are selected. This action is contrary to FAA's established requirements and to assurances that the CIC Program would not become an entitlement. In October 2000, we requested that FAA take action to correct this problem.
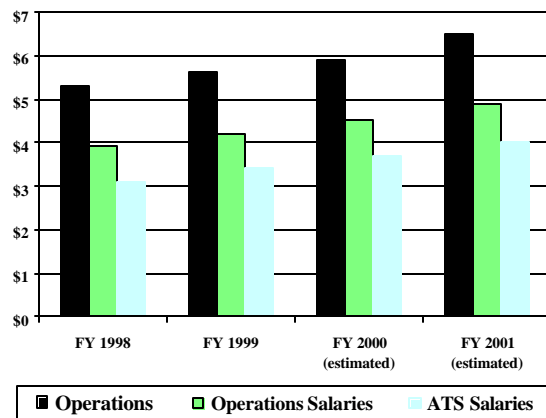
  Air Traffic Pay and Staffing. FAA also faces other workforce issues that could impact the safe and efficient operations of the air traffic control system.

  In 1998, FAA signed a 5-year collective bargaining agreement with the National Air Traffic Controllers Association (NATCA) that included a new pay system for controllers outside the Federal General Schedule. Unlike the labor unrest seen throughout the aviation industry last year, the agreement has created labor support and stability between FAA and its largest workforce. However, the associated costs are significant. FAA estimates that the agreement will require nearly $1 billion in additional

funding over the 5-year life of the agreement. Through FY 2000, FAA has incurred over $240 million in additional operating costs as a result of the new system. However, the negotiated productivity changes intended to offset some of those additional costs are not yet in place system-wide ; FY 2001 and 2002 will determine to what extent they are implemented and quantified.

As shown on the chart, the controller pay raise has contributed to the continued increases in operating costs, which have risen from $5.3 billion in FY 1998 to $6.5 billion in FY 2001.   For example, in FY 2001, air traffic services salaries are 60 percent of FAA's total operating costs and 82 percent of total operations salaries.

FAA's Total Operations, Operations Salaries, and Air Traffic Salaries
($ in billions)

Legend: ■ Operations □ Operations Salaries ■ ATS Salaries

FAA has also implemented a new pay system for Air Traffic managers, supervisors, and specialists, that is limited to those personnel at Air Traffic facilities. This pay system does not apply to Air Traffic managers, supervisors, and specialists at headquarters or regional offices. FAA needs to address concerns that this pay system may be resulting in reduced incentives for supervisors to aspire to higher management positions in headquarters and regional offices.

According to NATCA, approximately 50 percent of the controller workforce is expected to retire in the next 10 years. FAA currently plans to expand its controller workforce by an additional 600 controllers by the end of FY 2002 (in accordance with the controller staffing ceiling included in the current labor agreement with NATCA). However, FAA will have to increase its efforts in recruitment and training of air traffic controllers to develop a pipeline to backfill for retirements while still adhering to the agreement's staffing ceiling. FAA and NATCA should weigh potential staffing and cost benefits of contracting out low level non-radar towers, limited consolidation of air traffic control facilities, and operating oceanic air traffic control more like a business financed through user fees.

- Safety Oversight.

    Implementing the Air Transportation Oversight System. FAA should move more quickly to strengthen and complete implementation of its new inspection process (ATOS) for air carriers and improve the accuracy of safety databases. FAA initiated ATOS at 10 major air carriers in October 1998, but has not fully implemented the program at any of these carriers. ATOS goes beyond inspecting airplanes for regulatory compliance to evaluating the underlying controls established for basic airline systems, such as personnel training and flight operations. To benefit from ATOS, FAA must evaluate and correct many issues, such as obtaining management and workforce "buy-in" to the ATOS concept, training inspectors on how to monitor an air carrier's operations under ATOS, training inspectors how to audit vendors that provide contract maintenance and repair service, and developing consistent, accurate data. These obstacles must be overcome for FAA to achieve the safety benefits envisioned by the ATOS concept, which is to use data to monitor industry trends and better target inspection resources.

    Oversight of Air Carrier Maintenance and Aircraft Manufacturing. FAA needs to strengthen its oversight systems for aircraft maintenance and aircraft manufacturing operations. As a result of special safety assessments initiated during FY 2000, FAA identified significant deficiencies in aircraft maintenance programs at Alaska Airlines and at least two other major air carriers. FAA also identified quality control weaknesses within Boeing's aircraft manufacturing operations. The findings in these audits underscore the need for FAA to improve its oversight of air carriers' aircraft maintenance and aircraft manufacturing processes, including the manufacture of aircraft parts. FAA has recognized that improvements must be made and is taking steps to determine why its routine surveillance did not identify and correct deficiencies found during these special assessments.

    Responding to Identified Aircraft Safety Issues.   We identified two examples of delays by FAA in responding to aircraft safety issues brought to its attention.

    In May 1999, the Department of Defense developed information about defective aviation cable placed in aircraft to adjust flight controls such as the rudder. After the Department of Defense determined from testing that the cable did not meet strength specifications, it notified other Federal agencies, including FAA, of the nonconforming cable. However, FAA

delayed action for a year before informing air carriers of the nonconforming cable. The fact that FAA did not respond timely to this potential safety issue suggests a systemic weakness in FAA's procedures for evaluating and acting on safety issues.

In September 1999, an accredited independent laboratory we contracted with (Hill Air Force Base) found a 27 percent nonconformance rate for thread dimensions in the threaded fasteners we sampled from air carrier and repair station inventories. To investigate the reasons for these nonconformances, FAA simply sent the parts back to the manufacturers that produced them. The manufacturers found a 3 percent nonconformance rate. Rather than investigate the reasons for the wide disparity in test results, FAA initially accepted the manufacturers' results, concluding that no systemic problem existed with the manufacture of threaded fasteners. After we made repeated requests for FAA to support its position, it has now initiated a new evaluation, 1 year after we first discussed our sample results with FAA.

Aircraft Wiring. FAA must move beyond data collection on the safety of non-structural aircraft components, especially wiring, to implementation of methods to improve aircraft safety. Since the TWA Flight 800 and Swissair Flight 111 accidents, FAA has issued over 40 airworthiness directives on wiring for large commercial aircraft and embarked on several research efforts. Recent FAA/industry inspections of older aircraft show the need for additional actions, including improved maintenance practices, better training for maintenance personnel and FAA inspectors, and new technologies for detecting and preventing problems with aircraft wiring. To be proactive, FAA needs to develop an overall strategy to guide FAA and industry efforts and revamp how airlines and repair stations report problems with wiring.

- Rulemaking.

  Issuing Timely Regulations FAA should issue timely regulations to provide guidance to the aviation industry and to promote adoption of new safety practices. For example, since 1994 FAA has been working on developing new standards for flight crewmember duty period limitations, flight time limitations and rest requirements. In 1999, the National Transportation Safety Board (NTSB) recommended FAA develop new hours of duty and rest standards, and publish a rulemaking addressing pilot fatigue – issues left hanging since FAA published a proposed rule in 1995. FAA has still not issued a final rule, and no publication date has been established.

FAA should also move forward with other long-delayed rulemakings, such as repair station and repairman certifications, aging aircraft safety standards, and air tour industry standards. These rulemaking efforts started as far back as 1986, but no final rules have been issued. FAA should aggressively move forward with these important rulemakings.

Additionally, FAA has been working since 1993 on developing a flight operations quality assurance (FOQA) program to advance aviation safety by obtaining better safety data from air carriers. FOQA provides a decided advantage to other safety data available to FAA because FOQA would provide objective, quantitative data on what occurs during flights rather than what is subjectively reported by individuals. Aircraft equipped with state-of-the-art electronic "black-box" sensors can record hundreds of data parameters for safety analysis. Without a FOQA program, this safety data would not be available to FAA. FAA will use FOQA data to identify safety trends and accident precursors.

FAA issued a proposed rule on FOQA in July 2000, but it is unlikely that further progress in this area can be made by FAA alone. The Department of Justice, as well as the Office of Management and Budget, must weigh in to resolve complex issues concerning the waiving of enforcement actions when airlines voluntarily provide FOQA data.

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1. Aviation Safety

Dark Grey = Top Priority Task for 2001

Light Grey = Include in 2001 Top Management Challenges Efforts

White = Sufficiently Resolved to be Dropped from Management Challenges Efforts

	First Year Issue Raised in OIG Management Challenges Report	Was Significant Progress made in last year?
• Reduce runway incursions by developing new education and training programs for controllers, implementing improved procedures and airport markings and lighting, and implementing new technology based initiatives.	1998	N
• Reduce air traffic operational errors and deviations by focusing on improving regional oversight of problem facilities with recurring operational errors and deviations.	1999	N
• Comply with the new designation and selection guidelines for the expanded Controller-in-Charge Program to ensure that only the most qualified controllers are selected.	New Issue	New Issue
• Identify and correct the weaknesses in the new inspection process (ATOS) for air carriers.	1999	N
• Increase efforts in recruiting and training to prepare for retirements.	New Issue	New Issue
• Implement controller workforce productivity gains to offset increases in operating costs. program.		
• Identify and correct systemic issues within FAA that led to gaps in its oversight of air carriers' aircraft maintenance, aircraft manufacturers, and aviation parts manufacturers.	New Issue	New Issue
• Devise methods for reducing protracted delays in responding to safety issues brought to FAA's attention, including conducting a comprehensive investigation to reconcile the disparity in tests of fastener thread dimensional conformance found by a Fastener Quality Act accredited laboratory and tests performed by the manufacturers of the fasteners and a non-accredited consultant.	New Issue	New Issue

• Develop an overall strategy identifying efforts, and revamp how air carriers and repair stations report wiring problems.	New Issue	New Issue
• Move forward with other long-delayed rulemakings, such as flight time limitations and rest requirements, and air tour standards.	New Issue	New Issue
• Establish and implement procedures to ensure U.S. air carriers perform thorough and relevant safety assessments of their code share partners.	1999	Y
• Enact legislation stiffening penalties for people and corporations that traffic in suspected unapproved parts.	1998	Y