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FAA WORK FORCES

Important Decisions Affecting Staff Use and Management

Statement of Allen Li,
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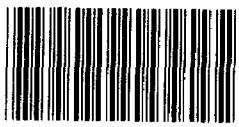

GAO/T-RCED-93-59

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify on the status of the Federal Aviation Administration's (FAA) major work forces. Fifty percent, or about $4.6 billion of FAA's fiscal year 1994 budget request of $9.2 billion, would fund FAA's operations. The operations account funds the salaries, benefits, and training of FAA's major work forces--air traffic controllers, safety inspectors, security staff, maintenance technicians, and aircraft certification staff. These work forces account for about 31,000 of FAA's 52,000 employees (see app. I). Given the current budget climate, FAA does not anticipate any significant staffing increases over the next few years. As a result, FAA will have to make important decisions concerning the effective use of its resources and follow through on initiatives begun in recent years to enhance safety and efficiency.

Our testimony is based on reports we previously issued and on information that FAA provided concerning the status of certain programs and such budget initiatives as terminating the Pay Demonstration Program. In summary, we found the following:

-- FAA spent much of the 1980s ensuring that it had a sufficient number of air traffic controllers and safety and security inspectors to fulfill its responsibilities. Today, FAA's primary challenge is not one of overcoming staffing shortages, but rather one of redistributing its work force and fulfilling prior commitments. These actions will allow FAA to allocate its controller work force among key facilities and target its inspector and security work forces toward those areas that need the most attention. FAA is reassessing its controller and security staffing standards and is developing a system to better target inspection resources toward areas that need the most attention. The agency also plans to ensure that its security work force focuses on areas that pose the greatest threat.

-- We have concerns about the validity of FAA's staffing standards for maintenance technicians because the agency has consistently maintained a high level of air traffic control system availability with a work force well below the standards. FAA has used contractors and overtime to help bridge the gap between its estimated maintenance staffing needs (12,700) and availability (8,900). With an increase in the number of new air traffic control systems planned over the next few years, FAA is evaluating various options to best utilize the maintenance work force.

-- Three years ago we testified on the importance of FAA's $409 million Flight Plan for Training to the agency's critical work forces. We are currently reevaluating FAA's

efforts under this program. However, our preliminary work for this Subcommittee on the aircraft certification work force, which is responsible for ensuring that new aircraft designs and systems meet safety standards, has shown that FAA's training efforts have fallen short. For example, in the last 3 years, only 1 of 12 FAA engineers responsible for approving aircraft software had attended software-related training courses.

I will now discuss these issues in greater detail.

STRATEGY NEEDED TO OVERCOME AIR TRAFFIC CONTROL STAFFING IMBALANCES

As of April 1993, the overall size of the air traffic controller work force was less than 1 percent short of the 17,900 prescribed by FAA's staffing standards. However, this paints an incomplete picture. Overall, staffing levels at air traffic control centers are staffed at 6.6 percent higher than the standards, while staffing levels at terminals are 5.2 percent lower than the standards. Furthermore, similar imbalances occur (1) between terminal and center facilities, (2) among terminals, and (3) among centers. For example, FAA's current standards indicated that 210 terminals were understaffed by about 1,000 controllers and 167 terminals were overstaffed by about 800 controllers. The Congress and FAA have been aware of these staffing imbalances since 1991.

To ensure that individual air traffic facilities are properly staffed, the House Appropriations Committee requested FAA to analyze staffing at each facility and to report back by December 31, 1991, on each facilities' staffing needs and the actions needed to correct the disparities. When FAA performed its analysis using May 1992 data, it identified problems with its staffing standards. According to air traffic control officials, the standards do not adequately consider variances unique to each facility, such as training needs and attrition rates. Therefore, FAA has deferred submitting its report to the Congress until it develops solutions to these imbalances.

For some time, FAA has recognized that it must consistently and accurately measure staffing needs before implementing a solution for the imbalances. Once staffing needs are accurately determined, FAA has several options for correcting the imbalances. These options include (1) assigning newly graduated and hired controllers to understaffed facilities, (2) reassigning controllers from overstaffed to understaffed facilities, (3) allowing overstaffed facilities to continue operating with current staffing levels but not hiring replacements for those that leave through normal attrition, and (4) contracting out towers and reassigning the freed-up controllers to understaffed facilities. FAA estimates that if it contracted out the operations of low-activity towers at

a rate of 10 per year, it could save between $93 and $101 million and reduce staff by about 900 through the year 2012 without negatively affecting safety. The Subcommittee on Transportation, House Committee on Appropriations, has proposed funds for FAA to contract out about 25 low-activity towers in fiscal year 1994.

FAA officials are aware of these options and recognize the short- and long-term limitations of implementing them. For example, in the short term, FAA cannot relocate controllers from overstaffed to understaffed facilities because FAA does not believe that it has sufficient permanent change-of-station funds to pay for the moves. In the long term, projected traffic forecasts (see app. II) and FAA's decision (announced in April 1993) to consolidate some air traffic control facilities can have staffing implications. According to FAA officials, they decided to consolidate terminal facilities, thereby having a structure that comprises 22 centers, 9 consolidated terminals, and about 170 unconsolidated terminals. Limited consolidations will create new staffing standards and require the movement of controllers to the consolidated facilities. To date, FAA has not provided the Congress with the information needed to assess the budgetary and work force implications of consolidation.

FAA'S EFFORTS TO USE ITS INSPECTOR WORK FORCE MORE EFFECTIVELY

FAA's fiscal year 1994 budget request maintains the agency's current number of safety inspectors at about 2,500. These inspectors oversee 7,300 scheduled commercial aircraft, 10,500 nonscheduled commercial aircraft, 192,000 general aviation aircraft, 4,700 repair stations, 650 pilot training schools, and 190 maintenance schools. Given these varied responsibilities, FAA must identify opportunities to target its resources toward those areas needing the most attention and to follow through on safety initiatives begun over the last several years.

In our previous reports on FAA's oversight of domestic and foreign carriers and aging aircraft, we explained the difficulties that FAA faces in providing sufficient inspection coverage.[1] We recommended that FAA develop clear guidance for inspectors and define which of their many high-priority areas should take precedence. During our review of aging aircraft issues, for example, inspectors told us that they had other high-priority activities and lacked guidance for determining how many aging

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[1]Aircraft Maintenance: FAA Needs to Follow Through on Plans to Ensure the Safety of Aging Aircraft (GAO/RCED-93-91, Feb. 26, 1993); Aviation Safety: Increased Oversight of Foreign Carriers Needed (GAO/RCED-93-42, Nov. 20, 1992); and Aviation Safety: Problems Persist in FAA's Inspection Program (GAO/RCED-92-14, Nov. 20, 1991).

aircraft to inspect. FAA concurred and plans to issue guidance requiring inspectors to include the purpose of the inspection and aircraft age in its data base.

We also recommended that FAA develop criteria for targeting inspections to high-risk conditions. Such criteria will help FAA determine how it could best use its limited inspector resources. FAA agrees, and thus it has been developing the Safety Performance Analysis Subsystem (SPAS). SPAS is a computer-based system that analyzes information in various FAA data bases to, among other things, identify potential problem areas for inspection emphasis. FAA plans to spend about $10 million to develop the prototype of this system through fiscal year 1995.[2]

For SPAS to succeed, FAA must (1) ensure that SPAS is not too complex and that inspectors are trained on the system, (2) define the telecommunications network needed for the inspectors to enter and retrieve data from the system, and (3) ensure that input data used by SPAS is complete and accurate. For example, the Program Tracking and Reporting Subsystem (PTRS) is a key data base that FAA plans to use in SPAS. We previously reported that PTRS contained inaccurate data.[3] Also, FAA does not currently plan to include the results of foreign air carrier inspections in SPAS, primarily because it does not collect such information as financial data to develop the same safety indices for assessing risk that it collects for domestic air carriers. Despite these limitations, we believe that SPAS could be an important management tool for targeting limited resources.

ISSUES AFFECTING FAA'S SECURITY WORK FORCE

FAA's security work force safeguards passengers, crew, aircraft, and airports from the threat of violence from hijacking, sabotage, and other criminal acts. This work force has more than tripled from 236 in 1985 to 852 in 1993. Several factors have contributed to this growth, including the tragic bombing of Pan Am 103 in December 1988 that resulted in legislation requiring additional security measures. Even with this increase, the security work force is about 480 less than the 1,300 recommended by FAA's staffing standards and about 200 less than the 1,030 authorized by the Congress. FAA is updating the standards and expects to complete this effort by August 1993. Nevertheless, FAA plans to maintain its security staff at its current level of about 850 through fiscal year 1995.

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[2]FAA will require a yet undetermined amount of additional funds to purchase telecommunications hardware and software and provide training.

[3]Aviation Safety: Problems Persist in FAA's Inspection Program (GAO/RCED-92-14, Nov. 20, 1991).

On the basis of our discussions with FAA and industry officials, we have identified several challenges facing the security work force. First, FAA's security work force needs additional training and experience to effectively oversee air carrier and airport operations and to determine how individual airport and air carrier procedures and technologies contribute to security as a whole. Although many FAA security staff have law enforcement backgrounds, they were not familiar with airline or airport operations before joining FAA. FAA officials told us that they are testing new training initiatives that include having security staff work with airlines for a period of time. According to the Associate Administrator for Civil Aviation Security, the security work force needs 1 to 2 years of additional experience and training to be fully effective. The Associate Administrator also noted that FAA is placing greater emphasis on helping airlines solve problems.

Second, FAA may find it difficult to continue staffing security liaison officer positions outside of the United States. These individuals are important because they frequently assist U.S. carriers by negotiating with foreign aviation authorities to satisfy the security requirements of FAA and the host country. Currently, FAA has staffed all 17 of the security liaison positions on 2- to 3- year assignments. FAA officials expressed concern about finding replacements that have the required skills (language and in-depth knowledge of aviation). In addition, overseas travel and related stress may hinder FAA's ability to fill these positions.

Third, FAA must ensure that security information is effectively and consistently communicated from headquarters to field offices and ultimately to airlines and airports. Such information is important because FAA regional offices are largely responsible for ensuring compliance and advising the industry on how to meet new procedures and policies at individual airports. For example, FAA headquarters did not consistently articulate to regional offices the manner in which airports should implement regulations that identify those areas requiring enhanced security measures and the methods for allowing access to them. As a result, airports received conflicting information from FAA and implemented the regulations differently, thereby causing some to incur unnecessary costs. To address this problem, FAA is developing a data base that contains regulations and implementing guidance that regional staff can quickly access.

If FAA must reduce its security work force below 850 staff members, the agency plans to reduce its headquarters staff but not its regional inspectors. As of March 1993, the regional staff comprised about 75 percent of the security work force. FAA plans to continually identify and evaluate civil aviation threats and redirect its resources to those threats. The Associate Administrator for Civil Aviation Security cautioned that a

reduction below 850 could limit FAA's ability to effectively oversee airport and air carrier security, address current and future threats, and carry out other such responsibilities as hazardous material inspections and drug interdiction assistance.

FAA DOES NOT HAVE RELIABLE ESTIMATES ON MAINTENANCE TECHNICIAN STAFFING NEEDS

At an April 1992 hearing before the Subcommittee on Transportation, House Committee on Appropriations, the then-Acting FAA Administrator stated that the staffing standards for maintenance technicians were suspect and had not been closely evaluated. According to the staffing standards, FAA needs about 12,700 maintenance technicians in fiscal year 1994. In its fiscal year 1994 budget, however, FAA is requesting an end-of-year staffing level of 8,923 technicians for 1994, or 237 less than the level requested for fiscal year 1993 and 30 percent less than the staffing standards recommend to maintain the air traffic control system.

We share FAA's concern about the reliability of the staffing standards because FAA has consistently maintained a high level of system availability with a work force that is smaller than the one prescribed by the standards and less experienced. As of February 1993, FAA had about 8,950 technicians to service equipment at almost 29,000 facilities. Furthermore, the average experience level of technicians has declined from almost 21 years in 1988 to about 18 years in 1993. To help bridge the gap between estimated staffing needs and availability, FAA has relied more on contractors to maintain new equipment and on increased overtime usage. FAA now contracts for the maintenance of 17 systems compared to 6 in 1987. In fiscal year 1994, FAA is proposing to increase contract maintenance to 27 systems at a cost of about $52 million. Also, FAA increased its use of overtime to almost 239,000 hours in fiscal year 1992, a 30-percent increase from fiscal year 1986.

FAA's efforts to compensate for staff and experience shortages, coupled with equipment redundancy, have kept overall system availability at about 99.8 percent. However, indications are that FAA's ability to maintain availability at this level could deteriorate. For example, the mean time to restore equipment increased to over 14 hours in 1992, a 45-percent increase since 1988, because of (1) less experienced technicians and (2) older equipment to maintain. In addition, FAA generally hires technicians at the end of the year. According to FAA officials, this practice impacts on scheduling the training that technicians need to become fully qualified, which usually takes 3 to 5 years. In a no-growth environment, the experience and system performance levels could decline further if the 2,100 technicians eligible to retire by 1995 leave the work force.

More accurate and reliable staffing standards for maintenance technicians would enable FAA and the Congress to make more informed decisions on allocating resources. Further, delays in FAA's Capital Investment Plan projects--the $33 billion air traffic control modernization program--and facility consolidations will affect the number of maintenance technicians needed and where they will be assigned. To better utilize maintenance technicians, FAA is currently taking actions to (1) screen applicants and streamline the training process, thus shortening the time needed to progress to the journeyman level; (2) reduce work load by identifying more efficient means to accomplish the required activities; and (3) reduce maintenance activities not related to safety.

FAA'S TRAINING EFFORT IS IMPORTANT TO ENSURING AVIATION SAFETY

With about 52,000 employees, FAA has one of the largest and most diverse training programs in the federal government. A well-trained FAA staff is essential for an efficient and safely functioning air traffic control system and for ensuring passenger safety. In 1989, FAA developed an agencywide, 6-year, $406 million Flight Plan for Training to help meet its recruiting, hiring, and training needs. In 1990, we testified before the Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, that inadequate funding had impeded FAA's implementation of the plan. Since then, FAA has revised the plan twice and now expects to complete 50 projects at a cost of about $280 million between fiscal years 1991 and 1995.

However, the recruiting, hiring, and training situation today is different than the one that existed when FAA implemented the Flight Plan for Training. For example, FAA has developed an improved method to screen controllers, although use of this method has been limited because the agency is not now hiring significant numbers of controllers. We are just beginning work to assess the status of FAA's Flight Plan for Training efforts.

We are also, at the request of this Subcommittee, examining the adequacy of FAA's training for its approximately 850 aircraft certification staff. This staff is responsible for certifying that new aircraft designs and systems meet safety standards; in doing so, it is faced with the task of keeping abreast of increasingly complex technology. However, FAA's staff training has not kept pace with technological advancements. We found, for example, that between fiscal years 1990 and 1992, only 1 of 12 FAA engineers responsible for approving aircraft software had attended a software-related training course.

Since 1980, FAA has known about--and tried to address--its certification staff's lack of training and experience in the latest technologies. But the agency's efforts have not been successful. As a result, FAA has not improved the technical competence of its staff in such areas as composite materials and software systems.

We found that most courses taken by certification staff deal with such nontechnical subjects as supervision and writing or with subjects that are outside the staff's certification responsibilities.

The lack of training in technical subjects is accompanied by the declining experience of the certification staff on the whole. Over half of the engineers with primary responsibility in the certification of the Boeing 777 have never participated in a major certification project. In response, FAA is developing a new training program for certification staff that specifically emphasizes critical technical areas, and the agency expects to implement new courses over the next several years. The program, however, does not require that staff receive a minimum level of annual training in their areas of responsibility.

DECISION TO CANCEL THE PAY DEMONSTRATION PROGRAM

As a budget cutting measure, FAA decided in March 1993 to cancel its 5-year Pay Demonstration Program effective mid-September 1993. The program was to have expired in June 1994. FAA initiated the program in June 1989 to enhance its ability to recruit and retain experienced, qualified personnel in certain hard-to-staff facilities. Under the program, employees are paid a quarterly retention allowance of up to 20 percent of their basic pay. As of December 1992, the program included 1,745 air traffic controllers, 143 inspectors, and 460 maintenance technicians. Since its inception, the work forces experienced a net increase of 219 staff at the 22 pay demonstration sites. As of mid-June 1993, FAA had paid out about $80 million under the program. However, since the agency is not projecting any significant work force growth in the near future, FAA determined that it could save about $20 million by terminating the program.

In making this determination, FAA considered four options. One option addressed the impact on morale by terminating the program early, one addressed the effects of letting the program expire at the end of the 5 years, and one addressed letting the program expire in June 1994 and gradually phasing out allowance payments. The other option considered extending the program either through legislation or through administrative policy. Further, FAA officials explained that affected employees knew before they entered the program that it could be terminated at any time. However, for those employees with less than 1 year in the program, FAA is planning to honor the pay differential for 1 full year. The Subcommittee on Transportation, House Committee on Appropriations, recently supported FAA's continuing the program until its original expiration date to avoid undue hardship on employees by terminating the program early.

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In summary, it is unlikely that the number of FAA staff will increase over the next few years. If the staff remains at current levels, today's challenges will take on added importance once the economy improves and the volume of air traffic increases. Our work has identified some problems that FAA could address now and better position itself to meet these challenges and the needs of the airline industry.

These problems include incorrect staffing standards, imbalances in staffing at facilities, lack of follow-through on prior safety commitments, lack of systems for targeting resources to areas that pose the greatest safety risks, and inadequate training of certification staff. FAA has several options to correct staffing disparities at air traffic control facilities, but to successfully follow through on any plan, FAA must first correct its staffing standards. FAA has taken positive steps toward developing a system for targeting inspector resources to high-risk areas, but the agency will have to resolve several significant technical problems before implementing the system.

In addition, FAA faces challenges in training its security staff and effectively communicating security information from headquarters to the field. Furthermore, the maintenance technician work force has been able to preserve the high level of air traffic control equipment availability with staffing shortages and a decline in experience levels, calling into question the adequacy of its staffing standards.

Finally, FAA is embarking on an initiative to upgrade its aircraft certification training program. We support FAA's initiative but believe that having specific annual requirements would help ensure that staff receive adequate training to effectively carry out their aircraft certification responsibilities.

Mr. Chairman, this concludes my statement. We will be happy to respond to any questions at this time.

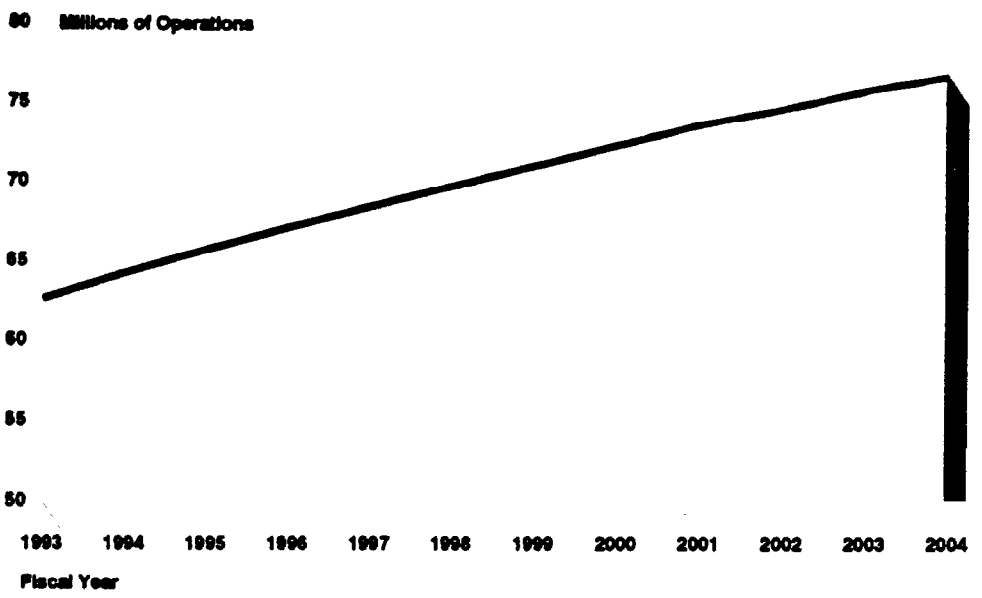
FULL-TIME EMPLOYMENT OF FAA'S WORK FORCES AT THE END OF FISCAL YEARS 1986-1994

End of fiscal year	Air traffic controllers	Field maintenance technicians	Aviation safety inspectors	Aircraft certification work force	Aviation security work force	Total
1986	14,803	8,306	1,813	684	379	25,985
1987	15,433	8,667	1,939	720	404	27,163
1988	16,436	8,646	2,093	733	478	28,386
1989	16,832	8,687	2,311	751	511	29,092
1990	17,226	8,904	2,577	806	627	30,140
1991	17,721	8,994	2,487	854	821	30,877
1992	17,982	8,995	2,582	837	852	31,248
1993[a]	17,871	9,160	2,583	862	852	31,328
1994[a]	17,871	8,923	2,583	848	852	31,077

[a]Estimated.

Source: Compiled by GAO from FAA data.

FORECASTS OF TOTAL AIRCRAFT OPERATIONS AT AIRPORTS WITH FAA'S TRAFFIC CONTROL SERVICE



Note: Aircraft operations are the airborne movement of aircraft in airport terminal areas as measured by aircraft arrivals and departures.

Source: FAA Aviation Forecasts: Fiscal Years 1993-2004, (FAA-APO-93-1, Feb. 1993).

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