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Staffing, Training, and Funding Issues for
FAA's Major Work Forces

Statement of
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Before the
Subcommittee on Aviation
House Committee on Public Works and Transportation



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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify on major work force issues affecting FAA operations. Several times over the past few years GAO has reported that FAA needs to improve its hiring and training of three work forces critical for air traffic safety--air traffic controllers, aviation safety inspectors, and maintenance technicians. Our testimony today will reiterate some of our concerns and discuss a range of needed management improvements. In summary:

- Although FAA has made progress increasing its work forces, particularly its air traffic controllers, staffing needs are still not being met. Staffing shortages for this year will be about 1,900 experienced controllers, 500 inspectors, and 1,500 maintenance technicians--assuming FAA completes its hiring plans for this year.
- Work forces are not being adequately trained. FAA has developed a 6-year \$406 million master plan, called "Flight Plan for Training," to modernize its training programs for all its work forces. However, more than half of the 47 projects in this plan are behind schedule, some by as much as a year, and management attention is needed to get the plan on track.
- FAA will need a predictable flow of funds to ensure a sufficient and adequately trained work force. Similar to NAS modernization, significant increases in operations funding will be required to meet the Agency's staffing and training goals.

I will now address the impediments that FAA faces in developing an adequately trained and sufficient work force.

KEY WORK FORCE STAFFING
NEEDS ARE NOT BEING MET

Although FAA has made progress, particularly in rebuilding the controller work force, it is far from reaching its goals. FAA has not been able to achieve overall hiring goals for controllers, inspectors, and field maintenance technicians. Even if FAA receives adequate funding for hiring and a sufficient supply of qualified recruits, it will take several years to fully develop the performance skills of these work forces.

Congressional FPL and Work Force
Goals Are Not Likely To Be Met

As you know, FAA has sought waivers from congressionally mandated goals for full-performance-level controllers (FPLs) for each of the past 3 years. In January 1990, FAA projected that it would not meet the current mandatory level of 12,725 FPLs for this fiscal year--falling short by 1,945. As we will discuss later, training developmental controllers is lengthy and costly. In addition, the FAA Academy wash-out rate is about 40 percent for controller candidates; following graduation, FAA loses another 15 percent for those assigned to terminals and 35 percent for those assigned to air route traffic control centers. These factors, in our view, are major reasons why FAA has been having difficulty meeting its FPL staffing goals. Also, FAA believes that inadequate funds have hurt its efforts to correct imbalances that exist between lower and higher level facilities. Because of insufficient funding the agency has deferred (for as long as 18 to 24 months, according to FAA) moving controllers who have been successful in lower-level facilities to higher-level, more complex facilities. Consequently, FAA has been unable to capitalize on the experience and expertise to improve staffing and performance at these facilities.

Furthermore, although the overall controller work force, including FPLs, is expected to increase, FAA projects that it will not be able to meet its year-end mandate of 17,495. FAA does not believe it needs to meet this mandate because the growth that was forecast for aviation was lower than expected. FAA's stated reason raises a question as to the total number of controllers needed and where they should be located. Moreover, FAA is still updating its standards for determining the number of controllers needed, and could not tell us when its work would be completed.

To FAA's credit, it has corrected one problem that we previously reported: it has reduced its lengthy process for hiring controllers which had taken up to 11.5 months--to about 45 days. In addition, FAA safety statistics on near midair collisions, operational errors, and pilot errors declined each year since 1987.

As we reported in April 1989, controllers and supervisors cited staffing shortages and inadequate training, among several aspects of today's air traffic control system, that hindered their ability to maintain the safety of the air traffic system.¹ Furthermore, in a subsequent report, we ranked the best and worst facilities, based on the controllers' responses to the six major issues covered in our survey, namely work load, staffing, overtime, training, morale, and safety.² In response to the latter report, FAA directed its facility managers to develop corrective action plans. FAA headquarters recently received these plans from its regions, and we intend to review FAA's actions.

We believe one of the most significant issues on the horizon, which could have a major impact on the controller work force,

¹Aviation Safety: Serious Problems Continue to Trouble the Air Traffic Control Work Force (GAO/RCED-89-112, Apr. 21, 1989).

²Aviation Safety: Facility Ranking of Controller Survey Responses (GAO/RCED-90-39, Nov. 21, 1989).

involves plans to consolidate 188 terminal radar approach facilities into at least 23 area control facilities. The Subcommittee may recall the problems experienced by FAA in consolidating its Flight Service Stations, which was a considerably more modest proposal. We are pleased that the FAA Administrator plans to revisit this issue. Facility consolidation and integration of technology not only involves funding considerations but also has the potential of affecting controller work force size, training requirements, and morale. Consequently, FAA needs to thoroughly consider these matters in its decision-making process.

FAA Will Not Meet Its
Inspector Staffing Goal

Even with new hires this year and next, FAA expects to fall 255 short of the 3,055 inspectors it needs to do the job, according to current staffing standards. FAA started fiscal year 1990 with 2,311 inspectors and estimates that it will end fiscal years 1990 and 1991 with 2,575 and 2,800 inspectors, respectively.

Moreover, the current shortage of inspectors is compounded by the regional imbalance of inspectors with particular specialties--too many in some regions and too few in others. According to Flight Standards officials, the "push" to hire 300 inspectors in fiscal year 1989--most of whom were hired during the last quarter--forced FAA to meet the overall staffing goal and to ignore regional requirements for inspectors with specialties in operations or maintenance.

And, the staffing shortage may worsen for two reasons. First, FAA may not hire all of the 300 inspectors it intends to bring on board this year because of a training backlog. Second, the staffing standard FAA uses to determine the size of FAA's inspector work force needs updating to take into account major new inspection requirements, such as "hands on" inspections for aging

aircraft and surveillance of foreign aircraft repair stations. FAA plans to develop new inspector staffing models by 1992 and believes that the new standard will show a need for more inspectors.

In addition, an emerging issue could affect the size and role of the inspector work force. FAA is developing a concept, called "self-audit," to better utilize the airlines' quality assurance programs to ensure that safety regulations governing pilots and maintenance are followed. This concept is based on the premise that air carriers are primarily responsible for ensuring that their operations are safe and in compliance with FAA regulations. It is too early to say how the self audit concept will evolve and what the specifics will entail. We intend to closely follow the development of self audits.

FAA Will Not Meet Its Technician Staffing Goal

At the start of fiscal year 1990, FAA had 8,687 technicians to maintain FAA's network of communications, radar, navigational, and computer equipment. However, according to its staffing standards, FAA needs 10,266 technicians to perform the work load, resulting in a shortage of 1,579. By the end of this year, FAA hopes to reduce this shortage to 1,466 technicians. FAA does not, however, include in its staffing standard certain maintenance now performed by contract on specific systems.

Over the last 2 years, the size of FAA's technician staff has remained relatively constant. It had expected to need fewer technicians because the new systems will require less maintenance. However, because of implementation delays, FAA is left with a technician shortage. This problem is even more difficult to solve because many in the maintenance work force are approaching retirement. Thirty-eight percent of the work force--nearly 3,700 technicians and engineers--are 51 years or older. FAA expects to

lose 575 technicians this year, 650 in fiscal year 1991, and 1,650 in fiscal years 1992 to 1995.

According to FAA's assessment, the attrition already experienced has forced field organizations to take unusual measures to ensure that safety is not compromised. Overtime use is rapidly increasing from \$3.3 million in fiscal year 1986 to an estimated \$5.2 million in fiscal year 1989. Staff engineers and technical support personnel are being assigned routine maintenance duties, technicians from lower-activity locations are being temporarily detailed to assist at high-activity locations, and watch coverage is being reduced at low-criticality facilities.

As we previously reported, hiring and training technicians is a matter requiring attention.³ FAA has not hired the technicians it needs. It now seems to have little choice, at least in the short run, but to contract out for certain field maintenance services. FAA proposed, in 1986, a pilot project to compare the quality and cost of contractor maintained facilities with its own maintenance efforts. FAA testified in support of the project during the budget hearings for fiscal years 1987, 1988, and 1989. Congress did not fund the project, in part, because it believed system maintenance was a federal responsibility. However, Congress permitted FAA to "augment" the existing field maintenance work force by contractual means if such contracting is determined to be "essential for the safe operation of the air traffic control system."

To cope with the shortage of technicians--especially until new hires are ready to assume the workload--FAA has basically developed a three-pronged plan. FAA proposes to (1) hire a total of about 2,350 technicians for fiscal years 1991 to 1993, (2) contract to

³FAA Staffing: Recruitment, Hiring, and Initial Training of Safety-Related Personnel (GAO/RCED-88-189, Sept. 2, 1988).

augment its own staff, at a total estimated cost of \$170 million from fiscal years 1991 to 1995, and (3) contract maintenance services for specific systems, at a total estimated cost of about \$320 million from fiscal years 1991 to 1995. It is uncertain how FAA will proceed beyond 1995. We recently began a review to examine how FAA determines future technician requirements.

Program To Attract and Retain
Staff At Certain Facilities

Faced with the staffing problems just described, FAA is attempting to alleviate the situation. To make hard-to-staff facilities more attractive, the Department of Transportation and FAA implemented a pay demonstration project, which became effective June 18, 1989. Under the project, FAA pays a retention allowance (up to 20 percent of an employee's base pay) to employees working in safety-related positions at selected facilities. Currently, the project covers 2,209 employees, supervisors, and managers at 22 facilities in four areas--Los Angeles, Oakland, Chicago, and New York. Seventy-three percent of the covered employees are air traffic controllers; 7 percent are aviation safety inspectors; and 20 percent are airway facilities maintenance technicians. FAA has paid about \$10 million in retention allowances since the program's implementation.

WORK FORCES ARE NOT
BEING ADEQUATELY TRAINED

In addition to staffing shortages, serious shortfalls exist in the training FAA provides its air traffic controllers, aviation safety inspectors, and maintenance technicians. Such problems are not new. To address them, FAA started a 6-year plan to streamline work force hiring, update training curricula, and modernize training delivery systems. But this plan is slipping--30 of 47

projects are already behind schedule, ranging from a few months to about a year.

Air Traffic Controllers

As we reported in March 1989, FPLs were receiving only limited amounts of the training they needed to maintain and upgrade their knowledge and skills.⁴ According to the National Transportation Safety Board, deficiencies in controller training contributed to loss of life in midair collisions in Independence, Missouri, on January 20, 1987, and Orlando, Florida, on May 1, 1987. In the Safety Board's judgement, improved radar training for controllers would have prevented these accidents. We also reported that on-the-job training provided to developmental controllers at field facilities was not standardized and that FAA had not evaluated training that contractors provided at air route traffic control centers.

If controller field training is to be effective and responsive to the agency's needs, FAA must ensure that controllers receive needed training and that this training is consistent and uniform. We made several recommendations to improve field training. For FPLs, we recommended last year that refresher training be enhanced, possibly by increasing the use of videotape and of computer-based instruction. Our field training work validated some of the training concerns expressed by controllers in our 1988 survey. FAA generally agreed with our controller field training recommendations and is now implementing them.

⁴FAA Training: Continued Improvements Needed in FAA's Controller Field Training Program (GAO/RCED-89-83, Mar. 29, 1989).

Aviation Safety Inspectors

In September 1988, we reported that FAA had a backlog of initial training for aviation safety inspectors and predicted that backlogs would continue because the FAA Academy could train only a limited number of inspectors each year.⁵ We later reported that safety inspectors at the journeyman-level were also not receiving the training needed to effectively perform their jobs.⁶ For example, airworthiness inspectors (those who perform airline maintenance checks) received less than half of the training that FAA said they needed during 1988. FAA attributed its inability to provide recurrent training to a shortage of instructors who could develop the technical courses needed to upgrade inspectors' skills. In January 1990 the FAA Administrator announced major steps to upgrade the instructor staff at the Academy. He said the changes will result in additional instructor training and grade increases. According to FAA, top instructors had been reluctant to go to the Academy because of pay and rank downgrades.

We also questioned the validity of some of the recurrent flight training that FAA was providing to operations inspectors. FAA provided some operations inspectors with expensive flight training while there was no apparent need to do so. For example, in one region, some inspectors performed few, if any, flight check duties but still received the semi-annual flight training. FAA has an opportunity to save scarce dollars by re-directing its effort to provide recurrent flight training only to those who need it to perform their jobs.

⁵FAA Staffing: Recruitment, Hiring, and Initial Training of Safety-Related Personnel (GAO/RCED-88-189, Sept. 2, 1988).

⁶Aviation Training: FAA Aviation Safety Inspectors Are Not Receiving Needed Training (GAO/RCED-89-168, Sept. 14, 1989).

Maintenance Technicians

Providing needed training to FAA maintenance technicians is also a problem facing FAA that will probably worsen as training demands increase. FAA officials have expressed concern about their ability to handle training during FAA's system modernization efforts. According to FAA, enrollments of maintenance technicians at the FAA Academy increased from 4,185 in fiscal year 1987 to 7,257 in fiscal year 1989 and will grow to about 7,600 in fiscal year 1991. However, while training demands are increasing, Academy in-house instructor levels are not increasing, and funding for contract instructors is decreasing. These resource limitations affect the training of both new hire and on-board technicians.

The demand for training new hires will outstrip the Academy's capacity in fiscal years 1991 and 1992. FAA plans to hire about 910 new technicians next year and about 810 in 1992, but the Academy can accommodate only 640 new hires per year. FAA is planning to meet the excess demand by using computer-based instruction. However, the specific type of computer-based instruction that FAA wants to use has been found ineffective. Consequently, some new hires may not receive adequate training.

Furthermore, the existing maintenance work force is not now receiving all the training it needs. Such training is critical because it allows less experienced maintenance technicians to qualify for positions being vacated by more experienced technicians who are retiring. Unmet needs for on-board technicians will carry over to fiscal year 1991, thus compounding the strain on training resources. Delays in training would lengthen the 3- to 5-year period it takes to reach the full performance level.

FAA Training Initiatives

Our previous reviews found deficiencies in FAA's recruitment, hiring, and training of its safety-related work forces, including problems in the delivery and oversight of field training for controllers. Similarly, FAA recognized in 1988 that it needed a comprehensive, long-term plan to deal with widespread problems, such as poor training system design, outmoded and inadequate training delivery systems, and a fragmented training organization. Such a plan needed to apply not only to the controller work force but also to other work forces. Accordingly, FAA established an Office of Training and Higher Education and developed an agency-wide 6-year, \$406 million Flight Plan for Training encompassing 47 projects within eight major areas. These changes are planned through 1994.

Progress in implementing this plan has been slow--30 of the 47 projects are already behind schedule, some by as much as a year. Insufficient funding, due to competing priorities within FAA, and poor planning are major reasons for the slippages. Through fiscal year 1990, FAA plans to spend \$48 million, or about 54 percent, of the \$89 million needed to keep the plan on track. Such slippages are affecting FAA's ability to meet certain staffing goals, such as FPL levels for controllers. For example, delays in making increased use of simulation for controller training necessitate the continued use of lengthy and costly on-the-job training for controllers.

In addition to funding difficulties, certain aspects of FAA's planning were probably unrealistic and the projects themselves were not prioritized. For example, we were told that the planned \$169 million project to establish several regional radar training centers may be cancelled. In addition, the lack of priorities for projects and the interrelated nature of some projects are having a ripple effect causing schedule delays. For example, FAA cannot

begin to improve its curricula for training maintenance technicians and for on-the-job training until it completes a study of the technicians' job tasks, because changes will be based on the results of that study--which is already a year behind schedule. In our view, this program is off track because FAA tried to do too much with too few dollars and without setting its priorities. Setting priorities would help FAA better target its limited funding to the most deserving projects.

FINANCING FAA OPERATIONS

If FAA is to meet the challenge of ensuring a sufficient and adequately trained work force, it will need a predictable and sufficient flow of funds. The need for significant increases in operations funding is not dissimilar to that of the modernization effort. During the past 10 years, funding for FAA operations has grown substantially--increasing from \$2.4 billion in fiscal year 1981 to \$3.8 billion in fiscal year 1990. This year's operations request is for \$4.1 billion and is expected to grow to \$5.8 billion by fiscal year 1995.

The Administration is proposing that the Aviation Trust Fund be used to cover 85 percent of FAA's total budget in fiscal year 1991 and thereafter. FAA estimates that 85 percent of its expenditures are on behalf of private users and that 15 percent are on behalf of governmental and public interests. The Administration has also proposed increases in user fees, to include increasing the passenger ticket tax from 8 to 10 percent. The revenues from increased user fees would be used to cover a greater portion of FAA's operations budget. Unlike other parts of FAA's budget, operations expenses are not totally paid from the Trust Fund. Historically, only about 25 percent of FAA's operating expenses have been financed from the Trust Fund, but this figure would increase to 70 percent for fiscal year 1991 if the Administration's

proposal is adopted. (See attachment I for operational funding data).

FAA's projected Trust Fund expenditures for fiscal year 1991 will be about \$6 billion and will include greater coverage of operations. However, the Fund's beginning balance in fiscal year 1991 will be approximately \$14.5 billion and its uncommitted, or so-called "surplus," \$7.6 billion. Tax receipts projected to be received during fiscal year 1991 at current tax rates would supplement these balances by an additional \$4.2 billion. These projected balances appear more than adequate to cover Trust Fund expenditures without a tax increase at this time--whether or not the Trust Fund covers a greater portion of operations.

In concept, the Trust Fund would provide a more reliable and stable source of funding for operation expenses, and would eliminate the need for FAA to compete for funding with programs financed by the General Fund. It also would be consistent with the principle that users bear their share of the costs of operating the aviation system. We have testified to this effect on numerous occasions.

Unfortunately, the severity of the General Fund deficit and the use of various trust fund balances to mask that deficit have made the concept underlying trust funds quite different in reality. In fact, for the fiscal year just ended, the reported total deficit of \$152 billion represented the combination of a deficit of \$275 billion in the General Fund, offset by trust fund surpluses of \$123 billion. In the current budget environment, the reality is that any drawdown of the Aviation Trust Fund balance can only be accomplished by increasing the deficit or at the expense of other federal programs. As the Comptroller General recently testified on the social security payroll tax proposal, until the deficit problem is solved, the government's capacity to achieve vital policy goals and address the nation's unmet needs will be hamstrung. This is as

true for aviation as it is for the future of the Social Security Fund and other federal programs.

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To summarize, although FAA has made progress in trying to develop adequately trained work forces, we are concerned that the scope and cost of this undertaking is still not fully appreciated. To maintain a high level of air safety requires not only a commitment to fund increases in the controller, inspector, and field-maintenance work forces but also a concurrent commitment to adequately train these work forces to do their jobs. FAA's senior management needs to sustain its commitment to address emerging human resource issues, as well as initiatives started previously, particularly its Flight Plan for Training.

This concludes our statement. I will be pleased to address the Subcommittee's questions at this time.

FAA Operations Funding
(Dollars in Millions)

Fiscal Year	Trust Fund	General Treasury	Operations Total
1980	\$ 325	\$1,865	\$2,190
1981	525	1,837	2,362
1982	810	1,491	2,301
1983	1,277	1,320	2,597
1984	0	2,587	2,587
1985	1,110	1,589	2,699
1986	427	2,298	2,725
1987	621	2,338	2,959
1988	826	2,358	3,184
1989	471	2,974	3,445
1990	807	3,016	3,824 ^a
1991 ^b	2,846	1,242	4,088
1992 ^b	3,067	1,379	4,446
1993 ^b	3,435	1,443	4,878
1994 ^b	3,894	1,436	5,330
1995 ^b	4,296	1,507	5,803

Source: FAA

^aDoes not add due to rounding.

^bEstimates.