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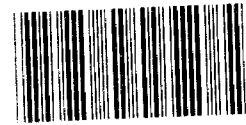
STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON INVESTMENT, JOBS, AND PRICES
OF THE CONGRESSIONAL
JOINT ECONOMIC COMMITTEE

ON



130473

AVIATION SAFETY

Mr. Chairman and Members of the Subcommittee:

We appreciate this opportunity to appear before you today to discuss the current condition of aviation safety in the United States. In response to several congressional requests, we have, over the past 3 years, addressed many aspects of this issue, including the status of the Federal Aviation Administration's

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(FAA's) air traffic controller and airline inspector work forces; FAA's \$16 billion plan to modernize, automate, and consolidate the nation's airways--the National Airspace System (NAS) plan; FAA's response to the changes deregulation brought to the airline industry; and the unused balance in the aviation trust fund.¹ We have reported our findings and recommendations to date to the Congress and have been working with FAA to correct identified problems.

SYSTEM SAFETY

We reported in March that the growth in air traffic is straining the controller work force at many major facilities, especially "en route centers" which control flights between airports.² Controllers believe that they are overworked and that the situation could eventually impair their ability to maintain the proper margin of safety. FAA data on staffing, overtime use, and air traffic activity support the controllers' contention that their work load has grown to a level where they are being stretched too thin.

Our consultant, the Flight Safety Foundation, compared the conditions we found with the results of a study it did for FAA in 1981, concluding that conditions within the controller work force have changed since their study and that the present system does not provide the same level of safety as before the August 1981 strike and subsequent firing of 11,000 controllers.

¹See attached list of GAO reports and testimonies.

²Aviation Safety: Serious Problems Concerning the Air Traffic Control Work Force (GAO/RCED-86-121, March 6, 1986).

Similarly, in May testimony before the House Subcommittee on Aviation, we reported that FAA cannot at present say with assurance that airlines are complying with federal safety regulations. Recent FAA studies--as well as those conducted by the Office of the Secretary of Transportation, the Department's Office of Inspector General, and by us--show that FAA's airline inspection and follow-up activities are often insufficient to identify major safety problems or to ensure that problems are corrected once they are detected. For example, FAA's 1985 Safety Activity Functional Evaluation--Project SAFE--found that FAA surveillance of airlines was often ineffective and that broad changes in FAA's inspection program were needed to improve aviation safety. Moreover, several recent National Transportation Safety Board (NTSB) investigations criticized FAA's inspection program and concluded that ineffective FAA inspections contribute to aircraft accidents.

FAA HAS NOT FULFILLED ITS
SAFETY ROLE, BUT HAS BEGUN TO
TAKE CORRECTIVE ACTION

FAA's role in aviation safety is defined in the Federal Aviation Act of 1958, as amended, which charges the Secretary of Transportation with regulating air commerce in such a manner as to best promote its development and safety. The act makes the safety of air travel the joint responsibility of the airlines and FAA. Individual airlines are responsible for the safe operation and maintenance of their aircraft. FAA carries out its safety responsibility by issuing regulations that set minimum acceptable standards of safety, monitoring airline compliance, and taking

enforcement action when noncompliance is found. It is against this legislative backdrop that the adequacy of FAA's efforts to meet its safety role should be measured.

FAA has acknowledged that it has not adequately fulfilled its safety role and has, in the past few years, begun to respond. Recognizing problems inherent in its inspection program, FAA is increasing the size of its inspector work force, has issued staffing standards and national guidelines that set forth minimum numbers of inspections, and has affirmed that inspections--not certification of potential new airlines--are the inspectors' number one priority. FAA has also instituted a National Inspection Plan using large, specially assembled teams to inspect targeted airlines.

FAA is, however, not well prepared to absorb an increase in its inspector work force; in fact it will be years before all the needed internal management controls, inspector training, regulations and guidance, and supervisory and managerial oversight are in place because examination of these issues and available options will not themselves be completed for several more years. Meanwhile, FAA needs an effective plan for dealing with its shorter term problem of ensuring airline compliance with safety regulations while it puts its long-term strategy into place.

Our review to date suggests several actions that FAA needs to take to address its short-term problems. These include

--revising its nationwide minimum standards for the type and frequency of airline inspections to help inspectors target airlines displaying characteristics that indicate possible

safety deficiencies. Such indicators include a relatively large amount of contract maintenance and/or training, inadequate internal management controls, and management experience and philosophy incompatible with sound safety practices;

--better identifying who is inspecting which airlines and how frequently, so it can better allocate its existing

inspector work force and the personnel it plans to add;

--ensuring that inspectors have the training and experience necessary to carry out their assigned duties; and

--sequencing its actions to upgrade its inspection program so that improvements are in place when they can do the most good. For example, it would seem prudent for FAA to know what entry-level knowledge and skills are appropriate for aviation safety inspectors and to implement an effective screening program to identify applicants with maximum potential for successful performance as inspectors before it hires hundreds of new inspector candidates.

At hearings before the House Subcommittee on Aviation in May and again before the Senate Subcommittee on Aviation last week, FAA agreed to revise its guidance to inspectors to provide them with criteria based on airline characteristics that affect safety compliance so that inspectors have a more consistent basis for determining the minimum necessary number and mix of inspections.

FAA has now also acknowledged that some changes are needed in its air traffic control functions, and has agreed to increase its

controller work force by about 1,000 people by the end of fiscal year 1987. FAA will, however, need more than 4 years at its present rate of gain to increase its complement of qualified controllers and even longer to provide new equipment and other measures to reduce controller work load. We recommended, therefore, that FAA restrict air traffic at facilities where controllers are overworked until it meets its staffing goals. Our March report included several other recommendations of actions FAA should take to reduce work load pressures on controllers and to improve the quality of its reporting to the Congress on its controller staffing progress and the overtime being worked by controllers.

In its response this month to our report, the Department of Transportation generally agreed that FAA needs to increase staffing and reduce overtime, particularly at the centers. Using the facility-specific information developed during our survey, the Department has also agreed to take additional action where it believes it is warranted and to review the agency's traffic management programs with an eye toward expediting, as much as possible, planned system enhancements.

Having provided the Department with the facility-specific information developed during our survey, we look to FAA to take further action commensurate with our findings. This would include evaluating the effectiveness of its traffic management system at centers where controllers and supervisors identified inadequate flow control procedures as a reason for their being required to deal with more traffic than they thought they could safely handle.

FAA HAS NOT RESPONDED EFFECTIVELY TO
CHANGES BROUGHT ABOUT BY DEREGULATION

Our work has also demonstrated FAA's difficulty in balancing its dual responsibilities for promoting commercial aviation and, at the same time, ensuring aviation safety--roles that may well entail at least some measure of conflict.

FAA did not respond effectively to the changes deregulation brought to the airline industry. The Airline Deregulation Act of 1978 gave domestic airlines, after 40 years of regulation, the freedom to decide where they would fly and what fares they would charge. Our review of airline operations before and after deregulation, through 1984, showed that most passengers benefitted as the industry became more competitive.³ Fare increases were lower, on average, than what might have been expected under continued regulation; the numbers of flights and available seats increased; airlines have been more responsive to consumer preferences through a wide range of price and service options; and operating efficiency has increased.

While the 1978 act removed government control over fare costs and schedules, FAA remained responsible for assuring that airlines comply with federal safety regulations. FAA did not recognize that a fiercely competitive, deregulated environment highlights aircraft maintenance and other safety-related activities as controllable expenses that directly affect an airline's financial health--a situation requiring greater oversight vigilance. Until recently, FAA took few steps to monitor and address the impact

³Deregulation: Increased Competition Is Making Airlines More Efficient and Responsive to Customers (GAO/RCED-86-26, Nov. 6, 1985).

deregulation had on its inspection work load or staffing requirements. Between 1978 and 1983, when the number of airlines and aircraft grew substantially, FAA's inspector work force was cut by one-third, from over 2,000 to 1,332.

Similarly, while air traffic has now reached record levels and is expected to continue to grow, the size of the controller work force remains about 2,000 people below what it was at the time of the 1981 strike. Although improved automation and air traffic control methods can help improve the level of air safety, the first major labor-saving features of FAA's planned automated air traffic control system--the NAS plan--will not be operational until the mid-1990's, at the earliest, thereby delaying by up to 8 years FAA's planned productivity gains.

RISKS RAMAIN FOR MANY
NAS PLAN PROGRAMS

In terms of dollars spent, FAA's NAS plan is the largest single civil procurement program since the lunar landing effort in the 1960s; it will cost over \$16 billion by the year 2000. FAA believes that the plan represents a practical way to achieve a significantly safer and more efficient system. One of the plan's goals is to reduce the risks of mid-air and surface traffic collisions, landing and weather-related accidents, and collisions on the ground.

We have worked with the House Appropriations Subcommittee on Transportation over the past few years to monitor many aspects of FAA's NAS plan activities. Our reviews to date have addressed a number of NAS plan programs for which FAA has not adequately

identified the technical, operational, and economic risks associated with their implementation. Further, for many of these programs, FAA's acquisition strategy does not include a plan to minimize risks by adequately demonstrating a system's performance in an operational environment before committing it to production.

Because of the problems noted in our reviews of specific NAS plan programs, we also reviewed how well FAA and the Department of Transportation are managing FAA's major systems acquisitions. Our findings are encouraging for the future, but disappointing for NAS programs already committed to production, which have experienced cost increases and schedule delays.

We would expect a major system acquisition program with significant technical, operational, and economic risks to require strict adherence to the phasing and competition principles fundamental to Office of Management and Budget (OMB) Circular A-109.⁴ This directive established a process of decisionmaking at four critical points in a system's acquisition, including requiring an agency to demonstrate that a technology will actually work in an operational environment before it commits to production.

A 1984 FAA report on its acquisition process noted little regard for the procurement policy set forth in OMB Circular A-109. Further, a 1984 study of several major systems acquisitions conducted by an FAA consultant found that failure to

⁴Published in 1976, this government-wide, OMB directive is intended to eliminate problems previously associated with the procurement of major systems. The directive attempts to avoid the premature commitment of a system to full-scale development and production by requiring periodic reviews of project cost, schedule, and performance.

adequately test operational systems in the field prior to full procurement is a major cause of FAA's subsequent performance problems.

In the past year, both the Department of Transportation and FAA have made progress in incorporating the requirements and principles of OMB Circular A-109 into the NAS plan acquisition process. However, six of the 11 major NAS plan systems, are already in the final production phase of the acquisition process and two other systems are currently scheduled to go to production. None of eight have benefitted from the recent improvements in FAA's acquisition process and all have experienced cost increases, schedule delays, or both.

There is, however, hope that other major systems will benefit from these recent improvements. The three remaining major NAS plan systems have still not reached the final production phase. Still other systems are scheduled to become major systems in the near future. And a few systems that are already in the final production phase may have to return to the development and testing phase because of problems encountered in production. Accordingly, we believe that all these systems should be subjected to FAA's revised acquisition process.

THE APPROPRIATE LEVEL OF FEDERAL
FUNDING IS STILL UNKNOWN

FAA does not have current, accurate work standards for all its safety functions and therefore cannot give a very good estimate of how much money it needs to provide the "best" level of air traffic control and surveillance over airline compliance with safety regulations. Current funding levels involve guesswork

about how many people are needed, and, as we pointed out earlier, FAA's increases and decreases in staffing have not been consistent with changes in air traffic. In addition, the NAS plan is behind its original schedule and still involves many unknowns and possible changes. There is pressure, however, to spend more because of the current size of the unused balance in the airport and airway trust fund--the funding source for the NAS plan and a percentage of FAA's operations and maintenance costs.

We reported in May⁵ that the current unused balance in the trust fund is \$3.2 billion. This balance could increase to \$12.4 billion by the end of fiscal year 1990 if (1) the trust fund and aviation taxes are reauthorized without change and (2) revenues and expenditures materialize as projected. The requirements of the Balanced Budget and Emergency Deficit Control Act of 1985 may result in further increases in the size of the unused balance. Unless reauthorized by the Congress, however, the trust fund expires at the end of 1987.

The trust fund's unused balance represents a reserve that can be made available by the Congress as appropriate to cover unforeseen circumstances and other contingencies. However, the experience of the fund over its 15-year history demonstrates that balances lower than the current level (\$3.2 billion) have always been adequate. If the Congress decides the current and projected unused balance levels are too high, it could consider a range of options during the reauthorization deliberations. These options

⁵Aviation Funding: Options Available for Reducing the Aviation Trust Fund Balance (GAO/RCED-86-124BR, May 21, 1986).

and the competing policy considerations or issues associated with each are discussed in our May report. All of these options would require a change to existing law.

Though the options available are numerous, they generally fall into one of two broad categories: reducing fund revenues or increasing fund expenditures. Increasing fund expenditures for the NAS plan does not, however, appear appropriate at this time. Even though fiscal year appropriations for the plan have lagged behind the amounts authorized in the Airport Improvement Act of 1982 (Title V of Public Law 97-248), FAA's end of fiscal year unobligated balance⁶ has steadily increased to about \$1.3 billion and none of the NAS plan's major acquisitions have experienced a shortage of funding. FAA simply has not been able to accomplish as much as it originally planned.

Further, we believe that any spending increases should be justified from the standpoint of feasibility, benefits, and costs. Because FAA has neither adequately identified the risks associated with a number of NAS plan programs nor demonstrated their performance in an operational environment, we have recommended that the Congress assure that the systems work before they buy them.

Conversely, although the exact number is not known, there is a clear need for additional air traffic controllers and commercial aviation safety inspectors. The Congress has responded to FAA's need by appropriating the monies to meet FAA's fiscal year 1986

⁶The unobligated balance is comprised of monies appropriated for a specific purpose, but not yet contracted for by FAA.

controller and inspector staffing requests and has expressed a willingness to support further increases in these work forces if justified. But, FAA does not at present have all the information it needs to establish clearly how many people it should have, and FAA's requests for funding must also be consistent with the Department of Transportation's overall requirements.

The bottom line seems to be that no one can say exactly how much money FAA needs to do its job. What can be said is that FAA has received funding for maintaining aviation safety when such proposals have been adequately justified.

This concludes my testimony, Mr. Chairman. I will be happy to answer any questions you or other Subcommittee Members may have at this time.

LISTING OF RECENT GAO REPORTS AND
TESTIMONIES RELATING TO AVIATION

Reports
(5/18/83 to Present)

AVIATION SAFETY:

Federal Aviation Administration's Role in
Developing Mid-Air Collision Avoidance Back-Up
Systems (GAO/RCED-86-105FS, April 22, 1986).

FAA's Surveillance of Two Contract Military
Carriers (GAO/RCED-86-128FS, March 13, 1986).

Serious Problems Concerning the Air Traffic
Control Work Force (GAO/RCED-86-121, March 6,
1986).

FAA Could Improve Overall Aviation Safety
and Reduce Costs Associated With Airport
Instrument Landing Systems (GAO/RCED-85-24,
April 3, 1985).

Legislation Needed to Clarify Future of
Consumer Protection and Federal
Preemption After the Civil Aeronautics Board
Sunsets (RCED-84-154, June 13, 1984).

Safety Standards on Small Passenger
Aircraft--With Nine or Fewer Seats--Are
Significantly Less Stringent Than on Larger
Aircraft (GAO/RCED-84-2, Jan. 4, 1984).

AIRLINE INSPECTIONS:

Comparison of Airlines With and Without
Military Contracts, (GAO/RCED-86-185BR,
June 20, 1986).

Compilation and Analysis of the Federal
Aviation Administration's Inspection of a
Sample of Commercial Air Carriers
(GAO/RCED-85-157, Aug. 2, 1985).

Evaluation of the Federal Aviation
Administration's Enforcement Program
(B-215648, July 25, 1984).

AIR TRAFFIC CONTROL:

FAA's Advanced Automation System
Acquisition Is Risky (GAO/IMTEC-86-24,
July 7, 1986).

Status of FAA's Host Computer Program and Related Software Enhancements (GAO/IMTEC-86-25BR, July 3, 1986).

Key Aspects of FAA's Plans to Acquire the Multibillion Dollar Advanced Automation System (GAO/IMTEC-85-11, June 17, 1985).

FAA's Host Computer: More Realistic Performance Tests Needed Before Production Begins (GAO/IMTEC-85-10, June 6, 1985).

Interim Observations on FAA's Plans for Major Systems Acquisitions (GAO/IMTEC-84-14, May 4, 1984).

AVIATION ACQUISITION:

Review of the Federal Aviation Administration's Management of Research, Engineering, and Development Funds (B-215676, Sept. 12, 1984).

Information on the Federal Aviation Administration's Regulation of the Aircraft Parts Manufacturing Industry (B-214803, April 16, 1984).

Review of Studies on Early Retirement of Flight Service Station Specialists (B-214320, March 27, 1984).

Federal Aviation Administration's Process of Selecting Locations for Automated Flight Service Stations (GAO/RCED-84-95, March 2, 1984).

AVIATION WEATHER:

FAA Should Buy Direct User Access Terminal Systems, Not Develop Them (GAO/RCED-86-173, June 6, 1986).

FAA System for Disseminating Severe Weather Warnings to Pilots (GAO/RCED-86-152BR, April 22, 1986).

Installation of Automated Weather Observing Systems by FAA at Commercial Airports Is Not Justified (GAO/RCED-85-78, July 29, 1985).

AVIATION FUNDING:

Options Available for Reducing the Aviation Trust Fund Balance (GAO/RCED-85-124BR, May 21, 1986).

Information on Airport and Airway Trust Fund Revenues and Outlays by States and Large Airports (GAO/RCED-85-153, Sept. 30, 1985).

Federal Aviation Administration's System for Prioritizing Airport Grants (GAO/RCED-84-124, April 13, 1984).

DEREGULATION:

Increased Competition Is Making Airlines More Efficient and Responsive to Consumers (GAO/RCED-86-26, Nov. 6, 1985).

Update of Certain Statistical Information Included in Report Entitled "The Changing Airline Industry" (RCED-84-83, May 4, 1984).

The Changing Airline Industry: A Status Report Through 1982 (GAO/RCED-83-179, July 6, 1983).

More Flexible Eligibility Criteria Could Enhance the Small Communities Essential Air Service Subsidy Program (GAO/RCED-83-97, May 18, 1983).

AIRLINE COMPETITION:

Impact of Computerized Reservation Systems (GAO/RCED-86-74, May 9, 1986).

Airline Takeoff and Landing Slots: Department of Transportation's Slot Allocation Rule (GAO/RCED-86-92, Jan. 31, 1986).

Testimonies

(10/01/85 to Present)

Aviation Safety, Subcommittee on Investment, Jobs, and Prices, Congressional Joint Economic Committee, July 21, 1986.

S. 2417 and the Status of FAA's Controller and Inspector Work Forces, Subcommittee on Aviation, Senate Committee on Commerce, Science, and Transportation, July 17, 1986.

Department of Defense Oversight of Airlines With Military Contracts, Subcommittee on Investigations, House Committee on Armed Services, June 26, 1986.

FAA Air Traffic Controller Staffing Issues, Subcommittee on Human Resources, House Committee on Post Office and Civil Service, June 12, 1986.

FAA's Airline Inspection Program, Subcommittee on Aviation, House Committee on Public Works and Transportation, May 14, 1986.

FAA Appropriation Issues, Subcommittee on Transportation, House Committee on Appropriations, April 16, 1986.

Conditions Within the Air Traffic Control Work Force, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, March 17, 1986.

Serious Problems Concerning the Air Traffic Control Work Force, Task Force on Air Transportation Safety, Senate Republican Conference, March 10, 1986.

Conditions Within the Air Traffic Control Work Force at Six FAA Facilities, Subcommittee on Aviation, House Committee on Public Works and Transportation, March 3, 1986.

FAA's Terminal Doppler Radar Efforts, Subcommittee on Aviation, House Committee on Public Works and Transportation, Oct. 2, 1985.

Three Safety Issues Relating to Aviation, Subcommittee on Aviation, Senate Committee on Commerce, Science, and Transportation, Oct 1, 1985.