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Federal Aviation Administration's
Acquisition of the Advanced Automation System

Statement of
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Before the Subcommittee on
Transportation
Committee on Appropriations
U.S. Senate



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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to comment on the Federal Aviation Administration's (FAA) plans to modernize its air traffic control system. As the Committee requested, I will testify on the adequacy of information supporting FAA's fiscal year (FY) 1988 request for funds to 1) award the Advanced Automation System (AAS) acquisition contract and 2) continue the New York Terminal Radar Approach Control (NY TRACON) expansion program.

In December 1985, the conference report of the Appropriations Committees directed FAA to provide the Congress with complete results of an independent benefit/cost analysis, technical risk assessment, and cost estimate before requesting acquisition phase funds. FAA plans to complete these analyses in December 1987. This year the agency is asking the Congress to appropriate initial funds for the AAS acquisition contract. However, an FAA schedule analysis indicates that its plan to award the AAS contract in June 1988 (FY 1988) is optimistic, and an October 1988 (FY 1989) award is more likely. The results of the benefit/cost analysis and technical risk assessment should assist the Congress to make a more informed decision about this \$4.6 billion expenditure.

I will now summarize the AAS program and discuss the adequacy of the information supporting FAA's FY 1988 request for funds to award the AAS acquisition contract. Then I will briefly discuss the NY TRACON program.

and Senate Appropriations Committees have indicated that such a commitment should be supported by sufficient information and analyses to ensure that the investment is sound and that AAS is ready to proceed to the acquisition phase. However, FAA has yet to complete several analyses, some requested by the Committees. These include:

1. Plans and reports about the acquisition strategy, which should describe how FAA will mitigate risks, test AAS, and develop advanced functions. Your Committee requested these by May 1, 1987. FAA now estimates they will be completed by the end of May.
2. The final benefit/cost analysis, which is needed to validate requirements, analyze all feasible alternatives, and certify that the most cost-effective alternative has been chosen. It is not scheduled for completion until December 1987.
3. The request for proposals, the terminal-area facility study, and the final technical risk assessment, which will also become available this year. FAA plans to complete the first two in August 1987 and the third in December 1987.

- reduce risks by demonstrating specific technologies, including the local communications network, software compilers, time-critical software functions, and fault detection and recovery mechanisms;
- conduct full operational tests on the controller workstation and test it with critical AAS hardware and software before authorizing its production; and
- review the need to simulate AERA's advanced automation functions.

We note that FAA's recent preliminary technical risk assessment confirms that developing the advanced automation functions involves significant risks, and that the feasibility of these functions has not been established through prototype testing and evaluation. FAA plans to report to the Committees about how it will comply with these directions by May 30, 1987.

Economic justification information

In last year's testimony we also raised questions about whether the system, as currently defined, is an economically sound investment. We found that benefits might not exceed costs and questioned the significance of the small increments of passenger time savings that were used, in large part, to justify the

expected AAS benefits depends on successfully implementing these advanced functions.

The Appropriations Committees' Conference report required FAA to clearly identify its objectives and to analyze all feasible ways to achieve each objective. The Appropriations Committees recently reminded FAA that it should (1) provide the completed benefit/cost analysis justifying the overall investment, (2) validate AAS requirements, and (3) certify that other more cost-effective alternatives cannot satisfy requirements before requesting acquisition funds. Although the AAS program office has reviewed some AAS requirements, the benefit/cost study did not validate AAS requirements.

Further, in the preliminary benefit/cost analysis, only alternatives based on the currently defined AAS incorporate the advanced automation functions. These functions provide the bulk of AAS' expected benefits. The study points out that the alternatives FAA considered are only examples, or benchmarks, among a range of possibilities.

The final phase of the benefit/cost study will refine FAA's benefit estimates, including the benefits expected from AERA's advanced automation functions. This phase offers the opportunity to explore other, and perhaps more cost-effective, alternatives to perform these functions. A final benefit/cost report, now

at the beginning of fiscal year 1989, giving the Congress time to evaluate additional information in the spring of 1988 when it considers the 1989 budget request.

I will now discuss the NY TRACON program.

NEW YORK TERMINAL RADAR APPROACH CONTROL PROGRAM

At your request, we did a limited check on the status of FAA's program to expand computer capacity at the NY TRACON facility. We reviewed program documents and discussed program status with cognizant FAA officials.

Terminal area air traffic control requirements in the busy New York City area are met by the NY TRACON. According to FAA, the system is operating at the maximum hardware design limit. FAA justified an expansion program on the basis that a critical need existed to provide additional computer capacity to meet the air traffic demands projected for this summer. On March 14, 1986, FAA awarded a contract to acquire hardware and software to gain the additional computer capacity. Implementation is scheduled in two stages. In the first stage, new controller workstations to provide display processing capability were scheduled to be operational in June 1987. In the second stage, additional computer capacity to perform aircraft tracking and other functions was to be operational

in the sizable contract overrun and deployment delays. FAA's documents indicate that the new controller displays will not become fully operational until October 1988, and the program will not be completed until December 1989. FAA officials told us they are attempting to accelerate deployment of some components to provide enough additional computer capacity to handle predicted summer 1988 traffic. Overall, total program costs are now expected to be about three times higher than originally estimated to the Congress. If no further delays are encountered, the program will be completed about 5 to 7 years before it is scheduled to be replaced by the AAS.

SUMMARY

To summarize, FAA is requesting funds to begin buying the AAS, but important studies are not yet complete and will not be finished before the Congress completes its consideration of FAA's FY 1988 appropriation request. Although FAA has been requesting additional funds each year for the NY TRACON, the budget justification does not fully explain the causes for the schedule delays and cost increases. We believe, and have previously testified, that agency management and the Congress must have reliable information to make informed decisions on spending priorities regarding initiating, continuing, and modifying programs.