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Issues Related to DOT's Fiscal Year 1991 Budget Request

Statement of
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Before the
Subcommittee on Transportation and
Related Agencies
Committee on Appropriations
United States Senate

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify on selected aspects of the Department of Transportation's (DOT) fiscal year 1991 budget request. Specifically, we will address issues related to the Federal Aviation Administration (FAA), the Interstate highway program, and Amtrak. In each of the past 3 years, we have reported and testified to the Subcommittee on FAA's efforts to modernize the air traffic control (ATC) system and maintain system safety through its three key work forces--controllers, inspectors, and maintenance technicians. As requested by the Subcommittee, the bulk of our testimony today will focus on these two topics, which together account for 80 percent of FAA's $8.3 billion budget request. We know the Subcommittee also faces important budget decisions on the Interstate component of the highway program and on federal assistance to Amtrak. Consequently, we will provide a brief overview of what our work suggests in these areas as well.

In summary, we found that:

-- Developing and installing new ATC systems continue to take longer than FAA expected. Most major systems have experienced another round of delays. Such delays have required the addition of interim projects to upgrade existing systems. Our work to date on the largest of these projects--the Interim Support Plan--suggests that FAA did not properly plan and assess its needs before seeking funding from the Congress.

-- FAA has not yet identified the additional human resources necessary to implement ATC modernization projects at field locations. Insufficient staff at field locations to install, test, and be trained on the new equipment will cause further delays in realizing modernization benefits.

-- FAA will not meet this year's staffing goals for controllers, inspectors, and maintenance technicians. It expects shortages of about 1,900 experienced controllers, 500 inspectors, and 1,500 maintenance technicians. In addition, FAA's training initiatives are falling behind schedule. FAA may have to curtail its planned hiring because of limited training capacity, further compounding shortages.

-- Over 40 percent of the pavement on Interstate highways is in fair or poor condition. In addition, about one-half of future Interstate preservation dollars is estimated to be used for lane widening, which is much more than anticipated when it became an eligible activity in 1981. Given burgeoning demands for rehabilitation and reconstruction funds, federal priorities for use of these funds must be examined.

-- Income generated from Amtrak's revenue enhancement activities cannot be reasonably expected, at this point in time, to cover the railroad's operating losses and capital needs.

MODERNIZING AND REBUILDING THE AIR TRAFFIC CONTROL SYSTEM

The major problems that confronted FAA in the eighties are common knowledge. Aging ATC equipment became stressed to the limit by the unforeseen rise in air travel after airline deregulation. Furthermore, in the aftermath of the controller strike, over 11,000 controllers were abruptly fired. FAA's response to the equipment problem was the National Airspace System (NAS) Plan, an ambitious $12 billion, 10-year program. Introduced in 1981, the NAS Plan was envisioned to update and replace obsolete computer, radar, and communication equipment. Modernization was projected to improve safety, reduce airspace congestion, and increase controller productivity. Equally ambitious was the agency's plan to rebuild and train its controller work force. As we begin a new decade,

progress is being made. New ATC equipment is being built and more controllers are being hired. However, many of the problems we have reported and testified on in the past are still with us today.

ATC Modernization Problems Persist

Since 1981, the NAS Plan has undergone several changes. Project delays and the changing nature of air travel, such as airline implementation of the hub and spoke concept, have caused FAA to reconsider what projects will be needed, how much modernization will cost, and when needed projects will be completed. Past delays, ranging from 1 to 4 years, have necessitated the addition of short-term projects needed to keep up with work load demands until longer term solutions can be installed.

At the request of this Subcommittee, we are reviewing one of the largest of these short-term projects, the Interim Support Plan. The Interim Support Plan is a conglomeration of projects directed primarily at resolving maintenance and capacity problems at terminal radar approach control facilities until longer term activities are completed. Our work to date suggests that FAA did not properly plan and assess the Interim Support Plan before it sought funds for the project. The program was included in the budget before the agency's normal review process was complete. Additionally, FAA did not resolve concerns raised by its Systems

Engineering and Integration Contractor. For example, the contractor found that 7 of the 10 individual projects were not cost-beneficial. The likelihood of additional short-term initiatives suggests the need for FAA to properly review new projects before funding is requested.

Short-term projects, coupled with others needed to correct original design deficiencies or to meet new requirements, have caused an increase in the estimated cost of ATC modernization. The estimated total cost could reach $27 billion by the year 2000. Furthermore, FAA now acknowledges that modernization will need continuous funding, and not end in 1991 as its preliminary cost-benefit analysis for the NAS Plan indicated.

As we reported last week, project delays persist.[1] A comparison of current estimates with those from just 1 year ago shows that 8 of 12 major projects experienced an additional delay of 200 or more days. Vendors are still experiencing hardware and software development problems because systems cannot meet FAA's requirements. As we have reported in the past, such problems could have been minimized.[2] FAA awarded production contracts without the benefit of risk-mitigating information provided by techniques such as operational testing. This was the case for the Mode S

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[1]Air Traffic Control: Status of FAA's Effort to Modernize the System (GAO/RCED-90-146FS, Apr. 17, 1990).

[2]Air Traffic Control: Continued Improvements Needed in FAA's Management of the NAS Plan (GAO/RCED-89-7, Nov. 10, 1988).

communications and surveillance system. As my colleague, Ms. Hecker, will testify, 5 years after contract award, the Mode S vendor has yet to build one device capable of meeting FAA's requirements. The detrimental impact of project delays is clear: projected benefits to the travelling public and to FAA's work force have been postponed.

In past reports and testimonies, we have made recommendations to improve management of ATC modernization. In particular, we have recommended that FAA prioritize its modernization projects and ensure that operational testing be performed independent of system developers. This would provide additional assurance that the system procured can function in FAA's day-to-day ATC environment.

To FAA's credit, it has begun to address our concerns. Acknowledging that the NAS Plan no longer reflects its total ATC modernization needs, the agency recently announced it was developing a more comprehensive program entitled the Capital Investment Plan. This new effort will include the original NAS Plan and other projects needed for adding capacity, satisfying newly-identified requirements, and sustaining existing operations. We believe the new Capital Investment Plan provides FAA with the opportunity to address our recommendation concerning priorities, as well as to consider ways of developing a measurement strategy that can clearly show progress toward meeting established goals.

This is an important point. Since the new plan would differentiate between projects with the ability to sustain the existing system and those needed to raise capacity, the Congress would be in a better position to weigh trade-offs between short-term and long-term activities and investments. An additional encouraging step is the recent designation of an Executive Director for Acquisition and his role in ensuring that independent operational testing is performed in the future.

An emerging issue in modernization that bears attention is FAA's increasing use of support contractors. FAA recently awarded a contract to TRW Incorporated to assist with its automation effort. Some of the types of tasks TRW will perform, such as testing and evaluation, parallel tasks in the contract of Martin Marietta, FAA's Systems Engineering and Integration Contractor. Specifically, we are concerned about how additional players will affect Martin Marietta's overall role in integrating all modernization projects. FAA officials told us they are reviewing the use of support contractors. As part of this assessment, defining precise roles would help to avoid overlapping responsibilities and unnecessary costs. Furthermore, as we recently testified, developing in-house systems engineering expertise is an option that deserves serious consideration in light of the ongoing nature of modernization.[3]

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[3]Issues Related to FAA's Modernization of the Air Traffic Control System (GAO/T-RCED-90-32, Feb. 27, 1990).

Field Implementation Staff Needs Still Unknown

Field implementation is another major modernization issue that needs further attention. FAA still does not have a handle on the number of staff needed to install and test the new equipment and train controllers in its operation, nor has the agency provided regions with an accurate information system for planning such activities. FAA has not completed its assessment of human resource needs to bring modernization equipment on line. It has a draft study that estimates its needs at one group of facilities, Air Route Traffic Control Centers. While this study is still in draft form, it does suggest substantial shortfalls of air traffic controllers, engineers, and technicians--over 700 staff years in fiscal year 1991 and steadily increasing to over 1,900 staff years in fiscal year 1995. Until FAA estimates and takes action to meet its total field resource needs to implement ATC modernization systems, the credibility of existing project schedules is highly questionable.

Last year, we also reported on the inadequacy of FAA's information system, which caused regions to have difficulty being ready to receive new equipment because of inaccurate equipment delivery dates.[4] Although FAA is developing a new information

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[4]Air Traffic Control: FAA's Implementation of Modernization Projects in the Field (GAO/RCED-89-92, June 28, 1989).

system, the initiative is behind schedule and may not be complete for another 6 months.

The need for such accurate planning information cannot be overemphasized, as evidenced by a situation concerning installation of a new instrument landing system at the Charlotte Airport. Regional officials delayed contracting for site preparation for the new equipment because they believed the information system did not accurately portray the actual status of the vendor's equipment delivery plans. Indeed, although the vendor was 17 months behind schedule, the information system listed equipment delivery as occurring in January 1990. However, without telling the region, FAA purchased some equipment through other means and some equipment was delivered to the Charlotte airport in February 1990. Since the site was not prepared to receive the equipment, it has to be stored on-site. FAA plans to complete installation in late June 1990.

Work Force Staffing and Training Problems

Although FAA is making progress, controller and inspector staffing shortages persist. Last January, FAA estimated it would fall about 1,900 people short of its 1990 goal of 12,725 full performance controllers and that it would not meet its overall congressional controller mandate. FAA's 1991 inspector work force will be about 250 short of about 3,000 needed. Both of these estimates may be off target, however. The number of controllers

FAA actually needs cannot be determined because, after 3 years, staffing standards are still being updated. Additionally, the inspector shortage may be greater because FAA's staffing standards understate the number needed for major new inspection requirements.

FAA's maintenance technician shortage is severe and probably will get worse. At the beginning of fiscal year 1990, FAA was about 1,500 short of the 10,000 technicians it needed. Reaching this level will be difficult. First, as we had reported, much of the maintenance work force is within 5 years of retirement age, so the shortage is likely to worsen.[5] Second, even if FAA is able to hire the over 2,300 technicians it says are needed by 1994, some time will pass before they are fully experienced because 3 to 5 years are needed for new hires to reach full performance level.

As part of its plan to overcome staffing shortages, FAA began paying controllers, inspectors, and maintenance technicians an incentive allowance of up to 20 percent in June 1989 to attract people to hard-to-staff facilities in the Los Angeles, Oakland, Chicago, and New York areas. FAA has paid about $15 million in incentive allowances through March 1990. While the overall number of employees has slightly increased at participating facilities, results so far are mixed. For example, of the 9 participating ATC

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[5]FAA Staffing: Challenges in Managing Shortages in the Maintenance Work Force (GAO/RCED-87-137, Sept. 25, 1987).

facilities, only 4 have shown an increase in the number of experienced controllers.

We believe one of the most significant issues on the horizon, which could have a major impact on the controller work force, involves plans to consolidate 188 terminal radar approach facilities into at least 23 area control facilities. 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 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.

Complicating its staffing problems, FAA is falling short in its training efforts. For example, FAA may not hire all of the 300 inspectors it intends to bring on board this year because of its inability to train them. Part of the problem is that the FAA Academy in Oklahoma City does not have enough inspector instructors. The demand for training newly hired maintenance technicians will also outstrip the Academy's capacity in 1991 and 1992 when hiring plans call for about 900 new technicians. The Academy can accommodate only 640 new hires each year. Training air traffic controllers may also be a problem. Last year, in surveying the controllers, we found that they were concerned with

the quality of training provided to developmental controllers.[6] Training areas that controllers characterized as inadequate included using back-up systems, controlling traffic in bad weather, and knowing emergency procedures. In response to our findings, 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.

FAA has recognized its training deficiencies. To address them, FAA established an Office of Training and Higher Education and developed a comprehensive, $406 million, 6-year training plan. However, 30 of its 47 projects are already behind schedule. We believe the plan is off track because FAA is trying to do too much with the dollars allocated. This suggests the need to establish priorities, something the agency has not done.

I will now provide observations from our work in highways.

HIGHWAY AND BRIDGE NEEDS

As the Congress deliberates the reauthorization of federal-aid highway programs, it will face difficult decisions on how to best spend available federal dollars to meet enormous highway and bridge needs. In its 1989 biennial report to the Congress, DOT

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

estimated that between $25 billion and $39 billion would be needed each year to (1) maintain the entire federal-aid highway system--including Interstate, primary, and secondary roads--through the year 2005 and (2) meet backlogged and accruing bridge replacement and rehabilitation needs. The administration's fiscal year 1991 budget estimates that the federal government will invest $13.2 billion. We currently have underway a substantial amount of work that will provide the Congress with insights on highway funding mechanisms and program delivery options.

Today, we want to call to the Subcommittee's attention the need to better ensure that Interstate Resurfacing, Restoration, Rehabilitation, and Reconstruction (4R) funds will be used to preserve the over $100 billion federal investment in the Interstate system. Although the Interstate represents only 1 percent of all roads, it has assumed a vital role in the nation's transportation network, carrying slightly more than 20 percent of vehicle traffic. Therefore, preservation of the federal investment in the Interstate must be ensured.

Our concerns are that over 40 percent of the Interstate is in barely tolerable or worse condition, and some states are not meeting their maintenance responsibilities because of inadequate funding. Although not eligible for 4R funding, certain types of state maintenance activities can extend the life of pavement and reduce or defer federal 4R funding. Further, DOT projects that

about 50 percent of the annual federal Interstate preservation funding will be used for Interstate widening activities. This is a significant increase over the historical share of the 4R funding devoted to widening--only 1 percent in fiscal year 1981 and 13 percent in fiscal year 1989.

Currently, the federal government pays for Interstate preservation activities that extend pavement life, but does not pay for routine maintenance activities such as sealing pavement cracks and joints. These activities, which are states' responsibilities, can also extend the life of pavements by slowing deterioration. Maintenance has been shown to be cost-effective, and can defer capital-intensive types of preservation activities funded by the federal government.

Our work indicates that states' progress in maintaining the Interstate has been mixed. Some states are not performing adequate Interstate maintenance because of insufficient funding. For example, in Louisiana, because of inadequate maintenance, the Federal Highway Administration suspended approvals of certain project agreements and authorizations. Responding to the threatened cutoff of funds, the state took steps to increase its funding of maintenance. In addition, while California has been able to meet its maintenance needs, its future ability to do so may be jeopardized by rising maintenance costs.

According to DOT's biennial report to the Congress, funding requirements for the 4R program significantly exceed the current funding level of $2.8 billion per year. DOT estimates that the Interstate preservation program will need federal and state funds totalling $4.7 billion to $6.1 billion annually through the year 2005. If the federal cost-share remains at 90 percent, the required annual federal investment will be between $4.2 billion and $5.5 billion per year.

In 1981, the scope of the Interstate 4R program was significantly broadened to allow funding for reconstruction, including lane widening. Although major lane widening was not initially expected to be a major component of the 4R program, states have increasingly used 4R funds to widen the Interstate in response to worsening congestion. If this trend continues, the 4R program will change from primarily a pavement preservation program to one that includes a large widening element. About 50 percent of DOT's estimate for the Interstate preservation program will be used for widening. The other half would go primarily to preserve existing pavement.

In light of the significant level of pavement deterioration and some states' inability to adequately fund maintenance, program modifications are needed to ensure that federal dollars are more effectively targeted to activities that extend and preserve the life of the Interstate system. Therefore, as the Congress

deliberates the future of federal-aid highway programs, it may wish to consider targeting funding to encourage states to address maintenance activities directed at preserving the Interstate. One option might include varying the federal cost share to emphasize the importance of preservation activities.[7]

Now let us turn to Amtrak.

REALITIES OF AMTRAK'S FINANCIAL NEEDS

The National Railroad Passenger Corporation--commonly known as Amtrak--will need continued federal support to sustain its present passenger train operations for the foreseeable future. This is so despite Amtrak's steadily decreasing need for federal subsidies. Today, federal subsidies cover about 28 percent of Amtrak's $2.2 billion in operating costs; 8 years ago the subsidy was 52 percent. Although the funding situation has improved, Amtrak still requires assistance.

The Administration's fiscal year 1991 budget request does not reflect this reality; it does not request any funding for Amtrak. As a result, Amtrak has submitted its annual budget request directly to the Congress. This request includes $495 million in subsidies to cover operating losses and $188 million for capital

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[7]Preserving the Interstate System (GAO/T-RCED-90-68, Apr. 24, 1990).

assistance in fiscal year 1991. Furthermore, Amtrak estimates that in the 5-year period from 1989 to 1993, it will need about $2.5 billion to cover its projected operating losses and $1.2 billion to replace aging equipment and improve track. Amtrak is considering federal, state, private, and internal sources to fulfill these needs.

Despite earlier predictions, Amtrak has not been able to generate enough revenues from its own operations to meet its needs. Amtrak officials had said earlier that beginning in 1985, income from the Revenue Enhancement Program would cover its capital needs. Revenues for this program are generated through activities such as track welding for commuter railroads and real estate projects. We recently reported that Amtrak earned a total of $140.9 million between 1984 and 1988 from its Revenue Enhancement Program.[8] This income--which is approximately $28 million per year--did not substantially contribute to reducing Amtrak's federal subsidy of $3 billion during that period, although it provided about 38 percent of its capital needs. The program is expected to generate about $165.2 million in income during the next 5 years. This will fall far short of covering Amtrak's operating losses and capital needs.

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[8]Amtrak: Limited Income From the Revenue Enhancement Program (GAO/RCED-90-76, Feb. 1, 1990).

The cost of meeting transportation needs is staggering and is certain to exceed the level of federal funding being programmed. The administration is cognizant of that fact and has proposed a major shift of the burden to pay for such needs to the states and localities, especially in the surface transportation and airport areas. However, in light of continuing budget constraints, there is an urgent need to ensure that federal transportation dollars are well spent. We believe establishing goals and priorities can help in that regard. This would allow better understanding of DOT's trade-offs of enhancing safety, preserving investments and expanding capacity before costly projects are undertaken. On several occasions, we have recommended this strategy for FAA's air traffic modernization program. In our opinion, other major investment decisions in transportation, such as how to balance pavement preservation with widening of Interstate highways, and how rail service should be improved, would benefit from setting goals and priorities.

Mr. Chairman, this concludes my prepared statement. I would be glad to answer any questions you or Subcommittee members may have at this time.