STATEMENT OF THE HONORABLE JAMES B. BUSEY, ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION, ON THE NATIONAL AIRSPACE SYSTEM PLAN MODERNIZATION. FEBRUARY 27, 1990.

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear before you today to discuss the many accomplishments of the National Airspace System Plan (NAS Plan), the continuing modernization of our air traffic control, communications, and navigational systems, as well as our future plans for the capital investment necessary to maintain our aviation infrastructure. Accompanying me today are Joseph Del Balzo, Executive Director for System Development, and Marty Pozesky, Associate Administrator for NAS Development.

As you know, the NAS Plan, which was formulated in 1981, is a multi-billion dollar capital investment program ($15.8 billion total cost) to literally take the air traffic control system from the antiquated vacuum tube to the leading edge of computer technology. It has been a massive, technically difficult undertaking, which has pushed academia, industry, and government to develop the best in technology. It was one of the FAA's greatest challenges of the 1980s and I believe the FAA met that challenge. We have reaffirmed our cost estimates. Most of the known schedule uncertainties are behind us and the important technical concerns have been resolved.

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Today, over 4800 individual equipment components have been delivered to our air traffic control facilities. Virtually all of the NAS Plan's original projects are under contract. Over 50 percent of the systems are being implemented and 30 percent have been completed.

Many NAS Plan projects are operational. As you know, the first ASR 9 terminal radars have been commissioned and over 26 have been delivered. This advanced radar is enhancing safety and capacity by helping controllers "see" aircraft better during the critical approach and departure phases. The ASR 9, which was commisioned in May 1988, joins the HOST computer system. The HOST, which comes from a family of new computer hardware, uses existing air traffic control software, and is the first of an entirely new generation of air traffic control computers. Since its introduction in our en-route centers, the HOST, with its enhanced capacity, has significantly improved system reliability and reduced maintenance problems.

Other NAS Plan accomplishments include completing Stage 1 of the New York TRACON; completing National Airspace Data Interchange Network (NADIN IA); completing flight service station automation at 39 Model I facilities; and awarding contracts for the Advanced

Automation System (AAS), Central Weather Processor (CWP), NADIN II, and LORAN C. We have received initial deliveries of the Airport Surface Detection Equipment (ASDE-3).

There have been major NAS Plan accomplishments relating to weather, which I will not detail at length, since weather will be the focus of your next hearing. However for the record, I would like to point out that we have installed 101 low level wind shear alert systems and completed the hardware and software design for the terminal Doppler weather radar (TDWR), which will be deployed in 1993. In addition, 35 of 160 commercial automated weather observation systems (AWOS) have been delivered to date. They will provide weather information at airports without weather observers. We expect to complete this program by early 1991.

We have, however, encountered some schedule delays in some of our major programs. The Initial Sector Suite System segment of the AAS has experienced delays, primarily as a result of the nonavailability of adequate Ada software compilers and programming support, commercial hardware, and changing software requirements. A joint FAA/IBM Task Force has been established under the contract to assess all known and potential issues and recommend solutions. We are in the process of modifying the contract to minimize the

impact of schedule delays and reduce future risk. We are currently projecting a delay at our first key site, the Seattle En-Route Center, of approximately 18 months. We do not anticipate costs associated with the delay to increase total F&E funding.

Delivery of the voice switching and control system (VSCS) to the first operational site has also been delayed 14 months. The VSCS prototype phase was envisioned as an adaptation of predominantly off-the-shelf hardware, with some software adaptation. We have found that considerable new hardware and software development was required to meet our system specifications. Also, additional time was required to complete critical factory and controller testing, prior to a production contract award.

Another major program, the Microwave Landing System (MLS), is now being revalidated. As a result of our own review and work done by GAO, our MLS program office is conducting 9 demonstration projects to quantify MLS program benefits. These projects will be completed by December 1991. We are maintaining close contact with the aviation industry on MLS implementation, and the aviation community has played an active role in designing the 9 demonstration projects. We also plan to issue a Request For Proposal for a prototype of CAT II/III MLS later this year.

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There is one remaining policy issue to be decided concerning consolidation of our facilities, and that is future policy direction on Area Control Facilities (ACF). The original NAS Plan was based on 23 ACFs. We may need, for operational considerations, to change our direction, and I intend to respond to Congress' inquiry on this subject just as soon as we possibly can.

When you consider the magnitude of the NAS Plan and the ongoing transition of many of its projects to operational modes, without a disruption to the world's largest and most complex air traffic control system, I think you will agree that it is a technological achievement without equal. Attached to my prepared statement is an extensive listing of program accomplishments.

For our Fiscal Year 1991 facilities and equipment (F&E) appropriation, we are requesting $2.5 billion. This is a 45 percent increase over Fiscal Year 1990 to fund planned F&E procurements and installations. I am pleased the President's budget request so clearly reflects the importance of these capital improvements to aviation and the Nation's economy, with funding levels of $2.5, $3.0, $3.0, $2.5, and $2.5 billion for Fiscal Years 1991-1995. Our Fiscal Year 1991 funding request is necessary to support NAS Plan improvements in air traffic control

and airway facilities services. Major NAS Plan programs targeted for funding include the AAS, designed to upgrade air traffic control computer technology; VSCS, designed to modernize the system's outdated communications network; TDWR and Long Range Radar (LRR), designed to improve weather services and replace obsolete en-route radar.

Our Fiscal Year 1991 funding request will enable the agency to maintain the current National Airspace System infrastructure until the installation of new equipment is completed. Among the short-term requirements for funding are: the interim support plan (ISP), which will overhaul outdated air traffic control equipment; the consolidation and expansion of radar approach control facilities for all of southern California; relocation of terminal radar approach control for Chicago's O'Hare and surrounding airports; and the replacement of obsolete communications equipment. The budget request will also allow for radar and related equipment for new capacity-enhancing airport facilities at Dallas/Ft. Worth and Denver to improve traffic flow.

As we enter the decade of the 1990s, the NAS Plan of the 1980s is going to change -- it has to in order to keep pace with an ever

changing environment and the challenges of the 21st century. The NAS Plan was a planning tool to guide us in modernizing the air traffic system. It was never intended to be a static document. Some believed that once completed, the modernization effort would be concluded. That simply is not true. Capital investment in our airspace system is a continuous process. Since 1982, we have revised the NAS Plan to accommodate this reality.

For the decade of the 1990s, we are going to reformat our capital planning in a new and more exact way. We are going to develop a comprehensive capital investment plan which is easily understood and significantly different from the NAS Plan. This change is necessitated because the NAS Plan does not completely reflect the realities of capital investment. Our capital investment plan will be more comprehensive, less confusing, and more flexible, and will clearly distinguish between near-term and long-range planning. It will include projects described in the current NAS Plan, projects needed to maintain the existing infrastructure, and projects that will be required to meet changing future needs.

To be published later this year, the new plan will provide for a far more accurate description of our capital investment activities, and will clearly distinguish between near-term

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planning and longer range planning -- 5 to 15 years out -- where we must maintain our options and alternatives. For the near-term, we can provide good cost estimates and projections as well as make realistic commitments. However, beyond 5 years, planning must be more indefinite, and costs and schedules cannot be as clearly defined. Our new plan will deal more with choices and options rather than firm commitments for the long term.

The new plan contemplates include four main themes: one to cover the remaining programs in the original NAS Plan; the second part to cover planned growth -- programs beyond the NAS Plan -- projects like radar beacon replacement, terminal radars, and further expansion of our data-link capability; the third to focus on incorporating entirely new technology into our (F&E) base, including new projects to raise system capacity and to show new technology projects that evolve from research and development concepts into real software and hardware products in the NAS; and the fourth and final theme would be on infrastructure improvement and support. We must maintain en-route centers, towers, and other facilities to keep pace with projected air traffic demands. In addition, we must ensure that our facilities and equipment are maintained and supported by trained personnel.

To meet the challenges of the 21st Century, we need to design the future air traffic system and plan for the orderly transition to that system. We need to be prepared to take full advantage of far reaching changes in technology, materials, and processes.

The outlines of that future system are becoming quite clear to us, and will be the basis for our development efforts. Because of research and development already done in the U.S. and abroad, and the work of the International Civil Aviation Organization Future Air Navigation Systems (ICAO-FANS) Committee, in which the FAA has played a leading role, the future system will be a truly international system, and one whose benefits may come sooner than many of us thought.

The transition to the "future system" must start with the system modernization efforts, since they are the foundation on which new systems must stand in our clearly evoulutionary aviation system. Many of these ideas do not have to wait for a cloudy "future" to arrive. These technologies, prudently applied, could create dramatic improvements in future air traffic control in a reasonable time. These techniques would not negate current modernization efforts, but could enhance them.

The "future system" will depend heavily on the basic support tools -- communication, navigation, and surveillance -- including:

- Expanded use of satellite communications, beginning with operations over oceans and less-developed land areas.

- Data link will become common place for many ATC messages. Open System Interconnection (OSI) will be the key to meaningful interoperable digital data link communications using satellite, terrestrial, commercial and Secondary Surveillance Radar (SSR) Mode S data links.

- Data link will be a valuable element in overcoming the ATC language problem and in permitting sensible information and data exchange between cockpit crew and controllers, as well as optimal use of ATC automation.

- With additional work, relatively simple avionics will be able to communicate with both satellites and terrestrial systems.

- The ICAO FANS-defined Global Navigation Satellite Service (GNSS), entirely self-monitored by use of extra GNSS satellites or geostationary satellites, will become a "sole-means" navigation system.

- Automatic Dependent Surveillance will be a major new element for the future. Initially based on inertial navigation or other sources, it will increasingly use satellite navigation data and will use both satellite and VHF, as well as perhaps HF in polar areas, as the communications medium.

- SSR Mode S will be the primary surveillance system for en-route airspace. Primary radar will only be used for terminal surveillance and new weather radars will be used for weather detection.

- Efforts are under way in the Federal Republic of Germany (COMPAS), France (MAESTRO), and the United States (TATCA) on terminal automation efforts. There are great similarities between the several approaches and a growing amount of cooperation among the developers.

- Such automation, and similar efforts in the en-route and transition environment, as well as efforts for airport surface automation for the busiest airports, will be integrated.

This a sketch of the future system as we now see it. It will take a great deal of work to bring it all to reality, but I believe there is broad support in the aviation community for these ideas, and for energetic effort to bring them along -- not in the far distant future, but soon.

Returning now to our more immediate needs, we must be prepared to fund the newly emerging capital investment programs. The largest and most visible of these, which we are able to identify today, are the consolidation of our facilities in the Los Angeles Basin; the facilities and equipment needed for the new Denver airport; and improvements at the Dallas-Fort Worth Airport. I am optimistic that we can meet the challenges of the future and fund these and other capital investment programs. Obviously it will cost more to do so. For example, major programs already underway include: Long Range Radar Program; Fuel Storage Tank Replacement and Monitoring; VSCS; and, of course, AAS, at $2.935.5 billion.

Of course, as we begin to plan for our future capital investment needs, we have an obligation to the public and the Congress to ensure that the capital improvements are accomplished in an efficient and effective manner. Since becoming Administrator, one of my major goals has been to achieve greater economy and efficiency in our procurement processes. We have implemented several initiatives to improve our overall procurement capability. For example, in December 1989, source selection authority was delegated by the Secretary to the FAA. This change has enhanced FAA's ability to procure necessary goods and services. We have also streamlined the formal FAA/DOT acquisition review process to eliminate unnecessary paperwork and duplication. To further speed up the acquisition cycle, we recently eliminated the requirement for a market survey after a determination that there is only one responsible source. This will save 60-90 days in the acquisition cycle.

In addition, I have been working with senior FAA staff to design a realignment of certain Washington headquarters functions. This realignment, which I announced last week, should serve to establish an independent capability to oversee the acquisition process; strengthen the program management functions; bring greater focus, discipline, and efficiency into the acquisition

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process; and enhance the agency's system design capabilities to include stronger relationships between research and development and F&E programs. Procurement improvements must remain a high priority within the FAA, and I intend to see that continued progress is made in this key area.

Mr. Chairman, this concludes my prepared statement. We will pleased to respond to your questions.