ATS

Air Traffic Services
Performance Plan FY 2001-2003

December 2000

PREFACE

I am pleased to present the *Air Traffic Services (ATS) Performance Plan for Fiscal Years 2001-2003*. Each year, ATS executives and staff assess the organization's performance and actions taken to improve aviation services during the previous 12 months, and evaluate the current and future challenges facing its customers. The Performance Plan is the result of these analyses and reflects our understanding of the communities' air traffic service needs, and explains how we are planning to address those needs over the next 3 years.

This year's plan has been written to link explicitly ATS performance goals with the Federal Aviation Administration (FAA) mission goals of safety, security, and system efficiency. This plan affirms our commitment to meet the changing needs of our aviation customers by building collaborative relationships (Free Flight, Runway Safety Program and Spring/Summer 2000 Plan) to ensure our ATS performance measures and initiatives reflect their priorities.

My sincere thanks to those who have contributed to the production of the plan, and to those who will make it a reality.

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 for Air Traffic Services

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Executive Summary

Air Traffic Services Performance Plan

The Federal Aviation Administration's (FAA) Office of Air Traffic Services (ATS) is the largest of the FAA's six lines of business, with nearly 80 percent of its employees. The ATS mission is to ensure the safe and efficient operation, maintenance, and use of the current air transportation system, and to meet tomorrow's challenges to increase system safety, capacity, and productivity. The purpose of the ATS Performance Plan (Plan) is to link ATS performance goals to the FAA mission goals of safety, security, and system efficiency, by establishing performance targets, presenting performance trends, and describing strategies and initiatives. The Plan also provides an overview of the ATS organization and the challenges in maintaining and modernizing the National Airspace System (NAS). The Plan meets the requirements of the Government Performance and Results Act of 1993.

ATS Structure and Services

ATS provides two categories of services: Operational Services and National Resources services. Operational Services include separation assurance, traffic management, aviation information, navigation and landing, and search and rescue. National Resources services include airspace management, spectrum management, environmental concerns, and aviation assistance.

Performance Goals and Measures

ATS performance goals support the FAA mission goals of increasing safety, security, and system efficiency. ATS also has one internal performance goal that does not directly support the FAA mission goals, but which helps to ensure that ATS employees work in an environment that is safe, fair, and rewarding. ATS assesses how well it meets its performance goals by comparing measurable results to performance targets. The table below lists ATS goals and performance measures and FY 2001 performance targets. A more detailed presentation of the goals and targets for FY 2001-2003 is in the *ATS Performance Management* section of the Plan.

FAA MISSION GOAL – INCREASE SYSTEM SAFETY

FAA and ATS Goals	Performance Measures and FY 2001 Targets	
ATS Goal Reduce Operational Errors	**Measure:**	Operational Errors (OE) per 1,000,000 activities
	Target:	Maintain a rate of 6.0 or fewer OEs per 1,000,000 activities
ATS Goal Reduce Runway Incursions	**Measure:**	Runway Incursions per 1,000,000 operations
	Target:	Reduce the rate of runway incursions by 3% to .381 (approximately 261 incursions) and develop runway incursion metrics that focus on the level of risk
ATS Goal Improve Quality and Availability of Weather Information	**Measure:**	Effectiveness of windshear/microburst detection systems
	Target:	Increase the effectiveness of the NAS windshear detection system to 0.40 or greater

FAA MISSION GOAL – INCREASE SYSTEM SAFETY *continued*

FAA and ATS Goals	Performance Measures and FY 2001 Targets	
ATS Goal Ensure Environmental Compliance at FAA Facilities	**Measure:**	Environmental compliance as measured by a review of five-year Environmental Compliance Plans (ECP)
	Target:	Develop and implement a process to measure performance based on five-year ECPs and conduct a pilot ECP follow-up review in the Southern Region

FAA MISSION GOAL – INCREASE SYSTEM SECURITY

FAA and ATS Goals	Performance Measures and FY 2001 Targets	
ATS Goal Increase the Security of ATS Facilities	**Measure:**	Physical security accreditation
	Target:	Implement security upgrades at 75 additional staffed facilities
ATS Goal Increase the Security of ATS Information Systems	**Measure:**	Compliance of information systems to security standards
	Target:	Demonstrate acceptable level of risk through certification and authorization of six additional new and/or replacement NAS systems

FAA MISSION GOAL – INCREASE SYSTEM EFFICIENCY

FAA and ATS Goals	Performance Measures and FY 2001 Targets	
ATS Goal Reduce Delay	**Measure:**	Delays per 100,000 activities
	Target:	Maintain a delay rate of 171 or fewer delays per 100,000 activities
ATS Goal Increase Capacity Through Customer Collaboration	**Measure:**	Airport utilization rate
	Target:	Achieve an airport utilization rate of 81.7 percent at the 21 ASPM airports
ATS Goal Increase System Flexibility	**Measure:**	North American Route Program (NRP) routing alternatives within 200 miles of an airport
	Target:	Increase the number of transition points on Departure Procedures (DP) or Standard Terminal Arrival Routes (STAR) for the top 100 airports by 60, to 330
ATS Goal Increase System Predictability	**Measure:**	Performance measures for this goal are under development
ATS Goal Increase User Access	**Measure:**	The number of runways accessible using vertically-guided approaches
	Target:	Increase the number of runways accessible using vertically-guided approaches by ten percent over the FY99 baseline (108 additional approaches, to 1,192)
ATS Goal Sustain Operational Availability of NAS Capabilities	**Measure:**	The operational availability of facilities to deliver NAS capabilities
	Target:	Sustain the composite operational availability of reportable facilities at 99.12 percent

FAA MISSION GOAL – INCREASE SYSTEM EFFICIENCY *continued*

FAA and ATS Goals	Performance Measures and FY 2001 Targets	
ATS Goal Increase Productivity	**Measure:**	Air Traffic – air traffic activity per Air Traffic employee
		Airway Facilities – the number of facilities per Airway Facilities employee
	Target:	Air Traffic – Increase productivity by 0.25 percent from the baseline of 7,643 activities per Air Traffic employee to 7,662 activities per employee
		Airway Facilities – Increase productivity by 0.25 percent from the baseline of 1.706 facilities per Airway Facilities employee to 1.710 facilities per employee
ATS Goal Integrate and Improve the FAA Telecommunications Services Infrastructure (FTI)	**Measure:**	Achievement of key milestones
	Target:	Complete all evaluation activities and award the FTI contract
ATS Goal Restore NAS Infrastructure	**Measure:**	Number of upgraded facilities
	Target:	Upgrade 25 unstaffed facilities and replace 15 localizer equipment shelters
ATS Goal Enable Process Improvement Using the FAA-integrated Capability Maturity Model (FAA-iCMM)	**Measure:**	Achievement of specified iCMM maturity and capability levels
	Target:	Air Traffic System Requirements (ARS) will achieve an FAA-iCMM maturity level 2 rating. The Independent Operational Test and Evaluation organization (ATQ) will achieve an FAA-iCMM capability level 3 in two process areas. Operational Support (AOS) will achieve an FAA-iCMM maturity level 2 rating in selected process areas, and capability level 2 in selected process areas

ATS INTERNAL PERFORMANCE GOAL

ATS Goal	Performance Measures and FY 2001 Targets	
ATS Internal Performance Goal Create a Model Work Environment	**Measure:**	ATS does not currently have a performance measure for this goal

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Introduction

The Office of Air Traffic Services (ATS) annual performance plan responds to the requirements of the Government Performance and Results Act (GPRA) of 1993 and reflects the organization's support of the FAA's mission goals. The ATS Performance Plan (Plan) serves as a link between the FAA's long-term goals and the day-to-day work of the organization by:

➤ Providing a strategic overview and placing in context the environment in which ATS will operate;

➤ Linking ATS actions to the FAA mission goals and customers' needs;

➤ Setting goals for ATS with measurable results to allow comparison of actual performance with goals; and

➤ Providing a framework and basis for future ATS operational plans and programs.

ATS executives and managers are held accountable for the outcomes contained in the Plan through periodic reviews of performance and individual performance standards. Performance targets are also used as criteria for determining annual pay adjustments for many ATS employees.

This Plan begins with a section called *The ATS Organization*, which describes the mission, employees, services, and organizational structure of ATS. The Plan continues with a *Strategic Overview* which presents data on trends in the aviation industry and a discussion of broad challenges faced by ATS over the next few years. The purpose of this review is to assure alignment of the organization's mission, resources, and activities with the operating environment.

The *ATS Performance Management* section describes ATS performance goals, strategies, and initiatives that support the broader FAA mission goals, and two ATS internal performance goals. This section also helps focus the ATS managers on specific outcomes and tasks, translates goals into achievable actions, and serves as a basis for establishing priorities within the organization.

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ATS Organization

The FAA is responsible for providing a safe, secure, and efficient global aviation system that meets the needs of a wide range of customers and stakeholders. Within the FAA, six primary lines of business and a number of staff offices work together to ensure that the agency meets its responsibility and provides the safest, most efficient, and most responsive aviation system in the world. ATS is made up of Air Traffic (AAT), Airway Facilities (AAF), Air Traffic System Requirements (ARS), System Capacity (ASC), Independent Operational Test and Evaluation (ATQ), and the Runway Safety Program office (Figure 1). The NAS Configuration Management Evaluation Staff (ACM) reports to both the Associate Administrator for Air Traffic Services (ATS) and the Associate Administrator for Research and Acquisitions (ARA).
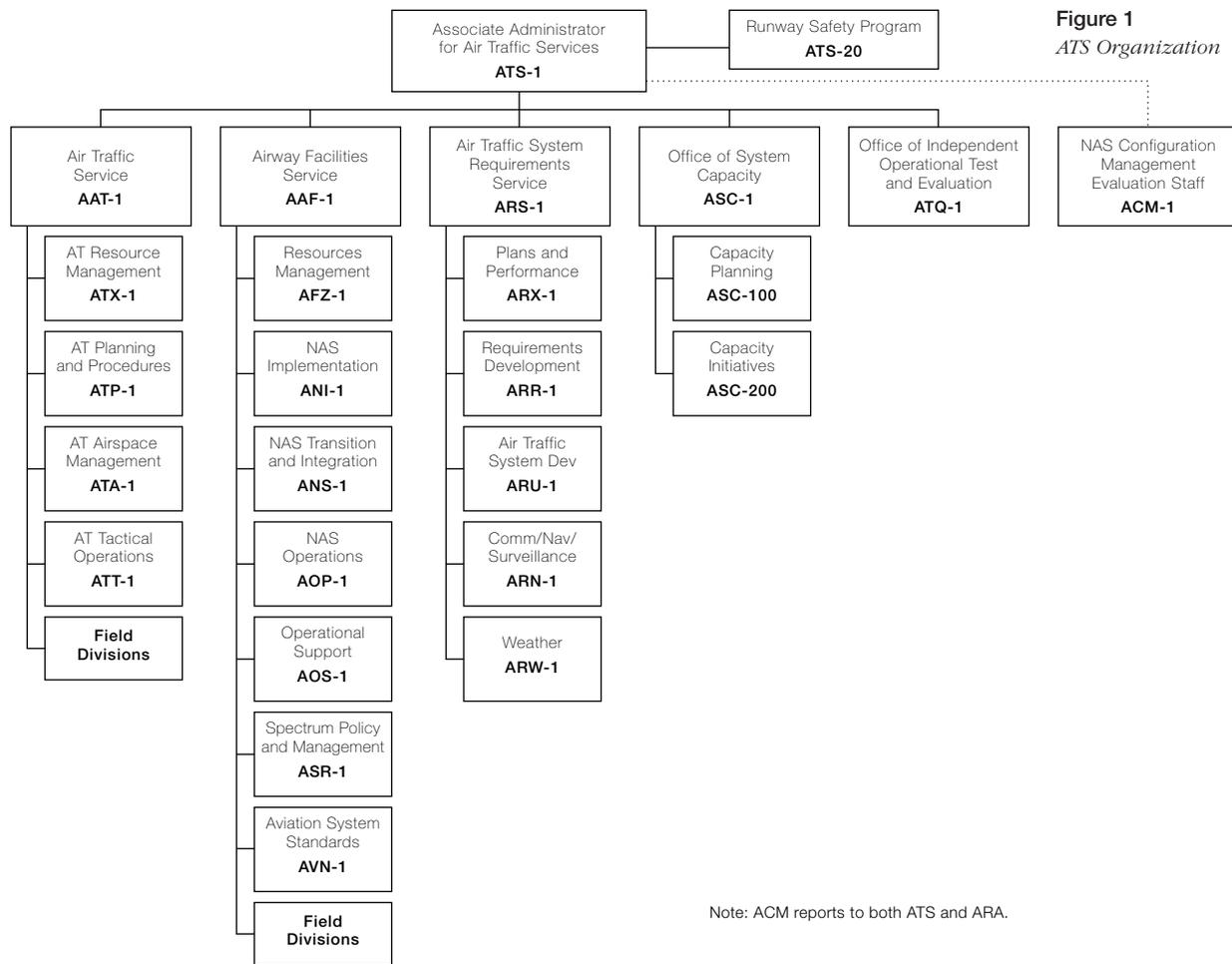
Figure 1
ATS Organization

Note: ACM reports to both ATS and ARA.

The mission of the ATS organization is to ensure the safe, efficient operation, maintenance, and use of the air transportation system today, maximize utility of the airspace resources, and meet tomorrow's challenges to increase system safety, capacity, and productivity. The men and women of ATS work as air traffic controllers, engineers, systems specialists, pilots, flight inspection personnel, procedure development specialists, business managers, accountants, administrators, managers, secretaries, and support. ATS employees:

➤ control over 200,000 aircraft takeoffs and landings per day;

➤ provide 24 hours of air traffic control daily;

➤ manage the NAS infrastructure by operating and maintaining 32,500 facilities and systems;

➤ maintain 8,200 terminal instrument flight procedures and 9,000 airway segments;

➤ annually conduct over 11,000 flight inspections, nationally and internationally, to preserve the safety, quality, and reliability of the airspace system;

➤ assign and protect more than 40,000 aeronautical radio frequencies used in air traffic control;

➤ direct the modernization of the NAS infrastructure; and

➤ improve system operations and capacity while reducing environmental impacts.

The United States is recognized as the world's leader in aviation safety—largely through the professionalism and expertise of ATS employees. ATS employees work in many locations and types of facilities.

Air Route Traffic Control Centers (ARTCC)

There are 21 ARTCCs that control en route traffic for the United States and parts of the Atlantic and Pacific Oceans. A typical ARTCC has responsibility for more than 100,000 square miles of airspace that generally extends over a number of states. ATS workers not only control the air traffic, but also make sure the complex equipment is maintained and in working order.

Flight Service Stations (FSS)

Over 61 automated flight service stations (AFSS) and 14 FSSs provide assistance to more than 600,000 licensed pilots who fly civilian aircraft in the United States, its territories, and holdings. General aviation pilots, as well as military flyers, use FSSs and AFSSs to obtain information about terrain, preflight and inflight weather information, suggested routes, altitudes, indications of turbulence, icing, and any other information important to the safety of their flight.

Airport Traffic Control Towers (ATCT)

At the 352 airports where ATCTs are located, ATS and contract employees direct the landing and takeoff of airplanes, control the ground traffic, and maintain the ATCT equipment.

Terminal Radar Approach Control (TRACON)

More than 185 TRACONs, two Radar Approach Control (RAPCON) facilities, and three Combined Center/Radar Approach Control (CERAP) facilities provide separation services to arriving and departing flights.

TRACONs use radar and air/ground communications to provide approach control services to aircraft arriving, departing or transiting the airspace controlled by the facility. TRACONs typically control airspace below 15,000-feet altitude within a 30-mile radius of an airport, exclusive of ATCT airspace. A RAPCON is an air traffic control facility located at a U.S. Air Force Base. A CERAP is a combined ARTCC and TRACON.

Air Traffic Control System Command Center (ATCSCC)

The ATCSCC in Herndon, Virginia monitors traffic flows nationally, regionally, and for specific airports. Through a process referred to as collaborative decision making, the ATCSCC works with ARTCCs, TRACONs, ATCTs, and airline operating centers (AOC) to minimize congestion and delays due to adverse weather and other causes for approximately 50,000 aircraft operations per day.

National Operations Control Center (NOCC)

The NOCC, co-located with the ATCSCC in Herndon, Virginia, manages the NAS infrastructure from a national perspective. The NOCC coordinates and allocates NAS resources to provide services that ensure safe and efficient operations in response to customers' needs and performance expectations.

ATS Focus

ATS strives to provide high-quality, cost-effective services to meet the needs of its customers, the users of the air transportation system and employees, on a continuing basis. There are two broad classes of ATS services:

➤ **Operational Services** include separation assurance, traffic management, aviation information, navigation and landing, and search and rescue. These services are the most visible to the end user and comprise the largest investment of ATS human and equipment resources.

- *Separation Assurance*—Ensure that aircraft maintain a safe distance from other aircraft, terrain, obstructions, and airspace not designated for routine travel. Air traffic controllers employ rules and procedures that define separation standards for each aircraft operating environment. The primary function of separation services is safety. Air traffic controllers rely on ATS system specialists to maintain the myriad of communication, radar, and computer systems required to provide separation assurance services.

- *Traffic Management*—Coordinate the large number of aircraft using the air traffic management (ATM) system and the routes that they fly, and ensure the safe and efficient movement of aircraft under varying weather and traffic constraints. Air traffic management activities include: use of ground stop and ground delay programs, formulating national flow management plans in coordination with Airline Operations Centers (AOC), and balancing the air traffic flow within an ARTCC's airspace.

- *Aviation Information*—Gather, process, and disseminate aeronautical information such as weather data, aeronautical charts, and notices to airmen in support of the safe and efficient operation of aircraft.

- *Navigation and Landing*—Establish, operate, and maintain a majority of the terrestrial navigation aids used by aircraft to determine their position en route and to/from the runway.

- *Search and Rescue*—Provide search and rescue information and direction to Rescue Coordination Centers after determining that an aircraft may be overdue, lost, or downed.

➤ **National Resources** services include airspace management, spectrum management, and aviation assistance. These services and resources are largely transparent to the aviation system user, but are nonetheless critical to safe and efficient flight. As custodian, ATS' role is to protect, justify, and plan for the efficient and environmentally sound use of these finite resources.

- *Airspace Management*—Manage and modify the airspace structure and associated procedures and standards to ensure safe and efficient operations and address environmental concerns such as noise abatement.

- *Spectrum Management*—Allocate radio frequencies required to support communications, navigation, and surveillance (CNS) systems in the NAS among competing aeronautical needs, while striving to conserve and protect the available radio spectrum.

- *Aviation Assistance*—Provide a wide range of assistance to domestic and international agencies and private entities, including airspace and airport planning, training, flight inspection of aviation equipment, publishing of aviation documents and charts, and law enforcement information. ATS works with international organizations to develop international procedural and technical standards to ensure efficient and safe worldwide flight.

In addition to the services described above, many enabling activities provided by ATS contribute to the delivery of a service or services. These enabling activities may or may not be visible to external customers; however, all of these activities need to function efficiently and smoothly for effective service delivery to the end customer. For example, provision of operational services requires the following enabling activities:

➤ Performing studies and building models to evaluate potential system changes;

➤ Defining current and future requirements for improving service delivery;

➤ Performing independent operational test and evaluation (IOT&E) to field systems and equipment that are operationally ready prior to the in-service management phase; and

➤ Installing, operating, maintaining, certifying, and flight inspecting equipment within the NAS.

Strategic Overview

Aviation Industry Growth

Over the past decade, there has been an unprecedented growth in aviation and a sustained increase in the demand for air traffic control (ATC) services. The FAA manages the most reliable, complex, and busiest aviation system in the world. The 24-hour a day, seven-day a week operation manages approximately 200,000 takeoffs and landings per day with over 600 million commercial airline passengers per year. By 2010, U.S. airlines are expected to carry one billion passengers per year.

As the increase in demand for services continues, greater pressures will be placed on aviation resources. Maintaining this system in a safe, secure, and efficient manner, while providing for the anticipated growth, is the FAA's top priority. The need for leadership and partnership in a global aviation environment has never been greater than it is today, as the world continues to look toward the FAA for guidance and support.

ATS's Leadership Role

ATS is taking a bold, yet deliberate approach to accomplishing its mission in this time of tremendous NAS growth and modernization pressures.

The ATS mission is to:

➤ Ensure the safe, efficient operation, maintenance, and use of the air transportation system;

➤ Maximize utility of the airspace resources; and

➤ Meet tomorrow's challenges to increase system safety, capacity, and productivity.

Each of the three elements of the ATS mission is challenging in and of itself. For example, maintaining the existing NAS infrastructure is difficult and expensive due to the large number and types of systems and facilities, many of which have reached or exceeded their expected useful service life. The NAS comprises nearly 200 different types of facilities/systems, for a total of more than 32,000 facilities and systems. The average age of buildings in the NAS is nearly 30 years. Keeping all of these systems and facilities in top working order is one of ATS's top priorities.

Carrying out all three elements of the ATS mission simultaneously is extremely difficult, requiring extraordinary amounts of human and financial resources, and the coordination of all individuals who work or operate in the NAS. The continuing growth in air traffic and the resultant increase in flight delays puts growing pressure on the FAA to quickly modernize the equipment and systems in the NAS. Changing or replacing operational systems that passengers and airlines depend on for their lives and livelihoods, while continuing to operate those systems, frequently results in temporary system slow-downs in portions of the NAS. Recent proposals to operate ATS as a performance-based organization have further

focused the challenges and opportunities for ATS to successfully transition the current operating environment to a more modernized system capable of safely handling projected increasing levels of air traffic.

Due to the complexity of the U.S. and global aviation environment with its many players, ATS believes the most effective way to meet the challenges of operating within the current system while modernizing the NAS is to create a methodical and sustained collaborative environment.

The Collaborative Environment

As the primary provider of aviation services to a diverse community of customers, ATS must listen to the needs of all NAS users, balance those needs, and then collaboratively act to meet them. ATS is committed to actively involving NAS users in the daily operation of the NAS, and in the development of new systems from design to installation. Frequent and ongoing discussions with users are key elements of several current large-scale ATS initiatives. ATS is using the recommendations and findings of these shared efforts to modify procedures and technologies to better meet user needs. This type of collaboration will assist ATS in successfully carrying out its mission and achieving the performance targets set out in the Performance Plan.

Operating within the Current System

The Runway Safety Program and the Spring/Summer 2000 Plan are two examples of agency efforts with significant ATS involvement that rely on collaboration with system users to improve safety and efficiency within the current system.

The Runway Safety Program has drawn together representatives from airlines, airports, the general aviation community, pilots, and air traffic controllers to develop additional ways to reduce runway incursions. A national meeting to share the results of collaborative regional workshops and review new human factors and technology developments was held in July 2000. The success of new runway safety initiatives will depend upon continued commitment of all involved parties to a collaborative working relationship.

Weather-related delays account for nearly 70 percent of all air traffic delays. The goal of the Spring/Summer 2000 Plan is to reduce weather-related delays through improved collaborative decisionmaking and effective use of computers to improve communication between the FAA and system users. As part of the Spring/Summer 2000 Plan, the FAA and airline experts have created a number of tools, including a set of preplanned alternate routes and a system to produce more frequent and accurate weather forecasts, to reduce the impact of weather, actual and expected, on aviation. Coupled with new access to military East Coast offshore special use airspace, increased use of low-altitude airspace, and frequent telephone conferences between the FAA and airlines, the Spring/Summer 2000 Plan is the beginning of a renewed emphasis on collaborative decisionmaking that promises to improve system efficiency in all weather conditions.

Continued Modernization of the System

There are three essential goals of NAS modernization:

➤ Improve our Nation's excellent safety performance;

➤ Maintain the integrity and reliability of the system; and

➤ Increase flight efficiency and flexibility for those who use the airports and airspace.

The FAA's ambitious modernization plan is outlined in the NAS Architecture Version 4.0.

To accomplish its modernization goals and implement the systems in the NAS Architecture, the FAA has evolved in its approach to developing and implementing new technologies. Instead of taking a "big bang" approach to modernization, it is moving incrementally, building upon each step taken, reducing the potential for cost overruns and schedule delays. In addition, the FAA has established a strong partnership with the aviation industry and labor unions. As a result, the FAA has focused it resources on areas important to the industry and has taken steps to coordinate with the appropriate labor groups.

The FAA's "evolutionary, not revolutionary" approach to NAS modernization is evident in its incremental progress towards Free Flight. Under Free Flight Phase 1, several new systems that provide controllers and pilots with information to allow more efficient traffic flow were deployed at a limited number of sites. ATS worked closely with its labor partners and industry to implement the systems and measure the results. In Free Flight Phase 2, the FAA will continue the evolutionary progress towards full Free Flight by enhancing the capabilities of successful technologies and expanding their implementation to additional sites. This building block approach will allow emerging technologies to be modified to improve their effectiveness, prior to full-scale implementation.

ATS also plays a large role in the achievement of other important technologies, such as the Airport Surface Detection Equipment (ASDE)-3 and the Airport Movement Area Safety System (AMASS). ASDE-3 is an airport radar installed at 34 airports that shows the locations of aircraft on the ground, which helps tower controllers avoid runway incursions. AMASS will sound an alarm to warn controllers of a potential accident after an incursion has occurred. Initial operation of AMASS began in 1999 and will be fully operational at 34 airports by the end of 2002.

To assist in maintaining the integrity and reliability of the system, additional features of NAS modernization include advanced weather information systems such as the Integrated Terminal Weather System (ITWS) and the Weather and Radar Processor (WARP). ITWS is an automated weather prediction system, which provides better information on near-term weather hazards in the airspace within 60 nautical miles of an airport. WARP is an en route system that provides an array of significant weather information on advanced controller displays.

Performance Planning into the Future

Increasingly, ATS relies on performance planning and measurement to monitor organizational and individual success in contributing to a safe, secure, and efficient aviation system. For example, ATS managers meet monthly to analyze recent performance trends and the status of key initiatives. Also, performance measures are now used as criteria for determining annual pay adjustments for many ATS employees.

ATS will strive to improve its performance planning process by continuing to pursue goals and initiatives that take into account the contribution of all ATS organizations. In addition, ATS will continue to work with the FAA Office of Research and Acquisition (ARA) to ensure that the two organizations are in agreement regarding projected schedule and outcomes for new technologies, in accordance with the integrated product development system (IPDS) framework.

Recent developments indicate that the importance of thoughtful, meaningful performance planning and measurement will continue to increase. For example, in response to recent proposals for the transition of ATS to a performance-based organization, ATS is beginning to develop systemwide and facility specific performance measures that take advantage of data from the new ATS cost accounting system. These efficiency and productivity measures will eventually assist ATS managers at the national and field level to better assess and influence their role in improving performance. In addition, the increasing prevalence of joint FAA/industry initiatives such as Free Flight Phases 1 and 2, the Runway Safety Program, and the Spring/Summer 2000 Plan highlight the importance of building upon these collaborative relationships to ensure that ATS performance measures and initiatives reflect their priorities.

In these ways, ATS will ensure that its performance planning efforts continue to result in a safer, more secure, and efficient aviation system.

ATS Performance Management

This section of the Plan presents information on ATS performance goals in support of FAA mission goals. The FAA's mission goals are:

➤ By 2007, reduce the U.S. aviation fatal accident rate by 80 percent from 1996 levels;

➤ Prevent security incidents in the aviation system; and

➤ Provide an aerospace transportation system that meets the needs of users and is efficient in the application of FAA and aerospace resources.

ATS plays a leading role in achieving the FAA's safety and efficiency mission goals, and a smaller role in improving security. This section also presents one ATS internal performance goals. The internal performance goal does not directly support the FAA mission goals, but helps to ensure that ATS employees work in an environment that is safe, fair, and rewarding.

Strategic approaches for accomplishing each ATS goal are presented in this section of the Plan, as well as specific activities and initiatives. Performance measures and annual targets for FY 2001, FY 2002, and FY 2003 have been established for the majority of the ATS goals. Some measures, such as runway incursion rates, correlate directly to the goal and the supporting strategies and initiatives. Others, such as the number of vertically-guided approaches as a measure of access, reflect only one dimension of a broad goal. All the associated initiatives will contribute to achieving the goal, but only a few will help achieve the performance target. ATS is working to develop better data sources and outcome measures to allow improved tracking of the effectiveness of ATS strategies and initiatives targeted at improving ATS performance. FY 2001 and FY 2002 performance targets were established in the FY 2000–2002 ATS Performance Plan, but some have been modified in this round of annual performance planning. The Appendix of this Plan summarizes revisions to the FY 2001 and FY 2002 performance targets.

FAA Mission Goal: Increase System Safety

By 2007, reduce the U.S. aviation fatal accident rate by 80 percent from 1996 levels.

ATS' primary responsibility is the day-to-day safe operation of the air traffic management system. ATS will not permit safety to be compromised as it strives to improve system efficiency. ATS is supporting the FAA Office of Regulation and Certification (AVR) in several strategic projects designed to improve safety, such as a comprehensive review of commercial aviation accidents related to controlled flight into terrain. ATS is also taking the lead on several initiatives to increase safety by reducing occurrences of violations of separation standards. ATS has safety goals related to reducing operational errors and runway incursions, and improving the accuracy and availability of weather information.

ATS Safety Goal: Reduce Operational Errors

ATS applies separation standards that define minimum safe distances between multiple aircraft, aircraft and other physical structures, and aircraft and airspace. When an aircraft is allowed to violate these separation standards, an operational error occurs.

Strategies

An important approach for reducing operational errors is providing a common understanding of procedures and policies among controllers and users. Controller and pilot training, enhanced by an aggressive effort to identify causal factors of operational errors, will continue to be the focus of ATS safety strategies. Technological improvements such as deployment of modern displays, new decision support tools, and improved communication systems will support better determination of aircraft location and reduce miscommunication between pilots and controllers.

Activities and Initiatives for FY 2001–2003

➤ Address and reduce repeat incidents by individuals through meaningful individual skill enhancement/remedial training.

➤ Increase identification of causal factors and provide refresher training on procedures for avoiding common types of operational errors.

➤ Implement a requirement for facilities to provide corrective action to significant problems identified by facility evaluations within 5 days.

➤ Conduct special assessments of selected facilities that have increases in the operational error rate and develop new strategies for reducing errors.

➤ Perform independent special studies of the causal factors of operational errors and implement recommendations of changes down to the facility level.

➤ Conduct Quality Assurance Reviews (QAR) to identify and correct controller performance deficiencies prior to occurrence of an operational error or deviation. QARs provide the means to identify, investigate, and resolve performance deficiencies through corrective training.

➤ Implement annual controller skill checks to identify deficiencies and areas where special training is needed.

➤ Investigate use of the prototype conflict probe, User Request Evaluation Tool (URET), to provide controllers with advance notification of potential conflicts and reduce operational errors by FY 2002.

➤ Investigate use of the initial deployment of Controller Pilot Data Link Communications (CPDLC) in FY 2002 for improved communication between pilot and controller to reduce operational errors involving miscommunication.

➤ Determine the feasibility of implementing a process to license air traffic control specialists through a certification process.

➤ Determine the feasibility of implementing a process to establish risk categories within operational errors.

Measuring Performance

To accurately reflect the operating environment we are in today, ATS is beginning to measure the number of operational errors per 1 million facility activities. In addition to changing the scale of comparison for activities, it is also important to examine the current state of the air traffic control system. Without jeopardizing safety as our main goal, it is necessary to reevaluate how operational errors are determined, reported and addressed. Some examples of these are: improved technology, better ways to report and administer data, and increased analysis tools; all of which help increase the vigilance on the part of controllers and managers to make operational errors known. Based on these new procedures and policies for reporting operational errors, ATS has established the following targets for this performance goal:

➤ In FY 2001, maintain an operational error (OE) rate of 6.0 or fewer operational errors per 1,000,000 activities. (Please note: ATS will continue to calculate OE rates per 100,000 activities for one year.)

➤ In FY 2002, reduce the operational error rate by 2.5% to 5.9 or fewer operational errors per 1,000,000 activities.

➤ In FY 2003, reduce the operational error rate by 2.5% to 5.7 or fewer operational errors per 1,000,000 activities.

Figure 2 illustrates trends in operational error rates and performance targets.
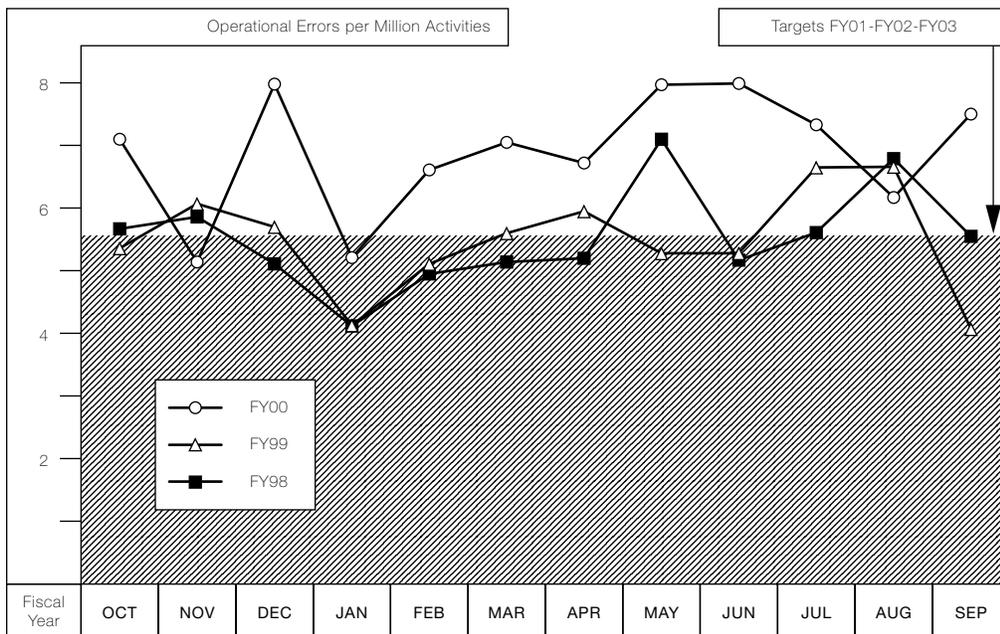

Figure 2
Operational Errors per Million Activities

ATS Safety Goal: Reduce Runway Incursions

Runway incursions create dangerous situations that can lead to serious accidents. A runway incursion is any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in a loss of separation with an aircraft taking off, intending to take off, landing, or intending to land. Reducing the number of runway incursions will lessen the probability of surface accidents involving property damage and injuries or fatalities.

Strategies to Reduce Runway Incursions

The Runway Safety Program is a systemwide program to reduce incidents and accidents directly attributable to runway incursions and improve airport surface operations. The FAA has identified ten near-term initiatives for reducing runway incursions, most of which will be completed by the end of CY 2000. Recently appointed Runway Safety Program Managers will support Regional Administrators and the Runway Safety Program Director. Additionally, nearly one thousand recommendations from the Runway Incursion Joint Safety Analysis Team (JSAT), National Transportation Safety Board (NTSB), regional runway safety workshops, the runway safety human factors symposium, and the existing 1998 Airport Surface Operations Safety Implementation Plan were compiled to develop a Blueprint for Runway Safety. The Blueprint includes goals for achieving a safer runway environment facilitated by improved training, enhanced surface infrastructure, refined procedures, and better technology.

Activities and Initiatives for FY 2001-2003

➤ Develop education, training, and awareness for controllers, pilots, and vehicle operators; procedures for pilots and controllers; and improvements to surface markings.

➤ Continue the airport surface safety campaign, promoting pilot and airport operator involvement in surface incident awareness through the use of workshops and seminars.

➤ Continue evaluation of new and emerging runway safety technology under a Broad Agency Announcement.

➤ Redesign the Runway Incursion Action Team (RIAT) process and develop improved methods for conducting and disseminating RIAT trend and problem/solution information.

➤ Complete the Runway Incursion Joint Safety Implementation Team (JSIT) conferences, sponsor the first International Summit on Runway Safety, and conduct a second round of regional runway safety workshops.

➤ Increase the visibility of runway hold line markings to improve the flight crew and vehicle operator recognition.

➤ Develop and publish national standard operating procedures for airport surface operations, which will address cockpit tasks including situational awareness, intra-cockpit verbal coordination, pilot/air traffic control communications, and safe airport surface operations.

➣ Review current phraseology to determine the advisability of reducing unnecessary or redundant verbiage wherever possible, and evaluate current phraseology in pilot/controller communications.

Measuring Performance

Previously, the measure used for evaluating the effectiveness of the Runway Safety Program was the annual number of runway incursions. The FAA is changing its runway incursion measure to an annual rate per 100,000 operations to account for the frequency of runway incursions in relation to the increasing number of operations. Conversion of the FY 2000 runway incursion goal to a rate yields .393 runway incursions per 100,000 operations.

Although prevention of all runway incursions is important, analysis indicates some incursions are more hazardous than others. Additional measures focusing on the severity of various types of runway incursions are needed. The FAA will establish risk categories/metrics to provide a better indication of the effectiveness of the Runway Safety Program. These measures will help ATS identify those incidents which pose the greatest hazard and develop intervention strategies to minimize risk. ATS has established the following targets for this performance goal:

➣ By the end of FY 2001, reduce the runway incursion rate to .381 (approximately 243 incursions), based on FY 1997 operations, 3 percent below the FY 2000 goal of .393 incursions per 100,000 operations, and develop metrics that will focus on the level of risk to the public associated with the various types of runway incursions.

➣ By the end of FY 2002, reduce the runway incursion rate to .370 (approximately 236 incursions), based on FY 1997 operations, 3 percent below the FY 2001 goal, and implement runway incursion metrics involving the level of risk.

➣ By the end of FY 2003, reduce the number of runway incursions to .359 (approximately 228 incursions), based on FY 1997 operations, 3 percent below the FY 2002 goal, and refine risk-related metrics.

Figure 3 illustrates the baseline runway incursion rate and performance targets.
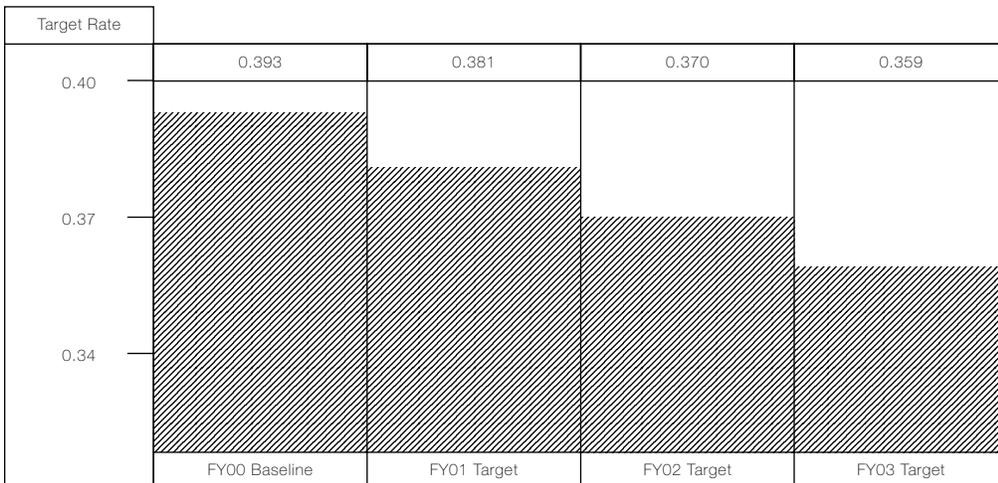

Figure 3
Reduction in the Number of Runway Incursions

ATS Safety Goal: Improve Quality and Availability
of Weather Information

Weather has a continual impact on safety of aircraft in flight in the NAS. Weather and poor decisionmaking related to prevailing weather are factors in approximately 23 percent of all aviation accidents, costing the country an estimated $3 billion annually for accident damage and injuries, delays, and unexpected operating costs. Aviation accident rates can be reduced through improved operational weather-avoidance decisions made by pilots, dispatchers, and controllers.

ATS is striving to improve the accuracy, display, and timeliness of weather information, and the ability of controllers and pilots to use that information to improve aviation safety in the NAS. In order to improve decisionmaking and reduce the number of weather-related accidents, aviation weather capabilities in the NAS must undergo major changes to convert today's weather sensors to systems in which all NAS providers and users receive the same weather information simultaneously.

Strategies to Improve Weather Information

The FAA is pursuing an aggressive schedule of developing and implementing a variety of technologies for improving the accuracy, timeliness, and usefulness of weather information, in combination with extensive training for pilots and ATS personnel on the use of new weather systems.

Activities and Initiatives for FY 2001-2003

➤ Enhance hazardous weather information, microburst and windshear prediction capabilities by deploying the Integrated Terminal Weather System (ITWS) at 39 TRACONs and 46 ATCTs, and the Weather and Radar Processor (WARP) at 20 ARTCCs, the FAA Technical Center, and the ATCSCC.

➤ Begin the implementation of the Medium Intensity Airport Weather System (MIAWS) at non-ITWS airports

➤ Implement Flight Information Service (FIS) capabilities between ground facilities and the pilot by providing FAA-approved weather products and aeronautical information to the cockpit via authorized commercial datalink providers

➤ Upgrade Terminal Doppler Weather Radar (TDWR) with improved gust-front algorithms.

➤ Upgrade Airport Surveillance Radar (ASR)-9 with new weather system processor to provide windshear and microburst detection capability.

➤ Research and development activities in the area of in-flight icing are maturing and will result in improvements in detection and forecasting of in-flight icing.

➤ Complete Turbulence JSAT and Runway Incursion JSIT to improve the understanding of the causes of turbulence-related accidents and incidents and develop mitigation strategies.

Measuring Performance

Direct measurements of reductions in aviation accident rates and increases in aviation operating efficiencies attributable to improvements in weather information are not practical because of the multitude of variables and the resultant prohibitive cost of analysis.

Improved weather decision support for safe aviation operations is based on improved quality of the weather information and improved access to that information. Direct measurements of the quality and accessibility of weather information in the NAS are objectives of the FAA weather programs.

The FAA is implementing new windshear/microburst systems such as TDWR, ASR-9-based Wind Shear Processor (WSP), and Low Level Windshear Alert System (LLWAS) III as a replacement for the old LLWASs in the NAS. It is anticipated that the replacement of LLWAS with these new systems will improve the quality of windshear information and alerts available in the NAS by increasing the Probability of Detection (POD) and at the same time reducing the False Alarm Rate (FAR). These two parameters are combined into a single system effectiveness index. Each type of windshear detection system in the NAS has a unique system effectiveness index derived from a combination of factors including the associated POD and FAR. Furthermore, each system's effectiveness index is calibrated to account for their performance in different types of climate. As the mix of implemented windshear systems changes with the replacement of the old systems with new ones, the overall quality of the information will improve through higher PODs and lower FARs.

An overall NAS windshear detection system-effectiveness index is computed as the average effectiveness of all deployed systems in the NAS. As the FAA replaces old systems (i.e., LLWAS II) with more modern systems or new sites receive windshear detection systems, the overall NAS system effectiveness index increases. Using FY 1997 as a baseline year, the effectiveness index has risen each year. ATS has established the following targets for this performance goal:

➤ By the end of FY 2001, increase the overall system effectiveness of the NAS windshear detection system from 0.281 baseline established in FY 1997 to 0.40.

➤ By the end of FY 2002, increase the overall system effectiveness of the NAS windshear detection system from 0.281 baseline established in FY 1997 to 0.50.

➤ By the end of FY 2003, increase the overall system effectiveness of the NAS windshear detection system from 0.281 baseline established in FY 1997 to 0.55.

Figure 4 illustrates trends in windshear/microburst detection systems effectiveness and performance targets.

	Average for All Airports			Projected Average		
	0.281	0.316	0.333	0.360	0.400	0.500	0.550
	FY97 Baseline	FY98	FY99	FY00	FY01 Target	FY02 Target	FY03 Target
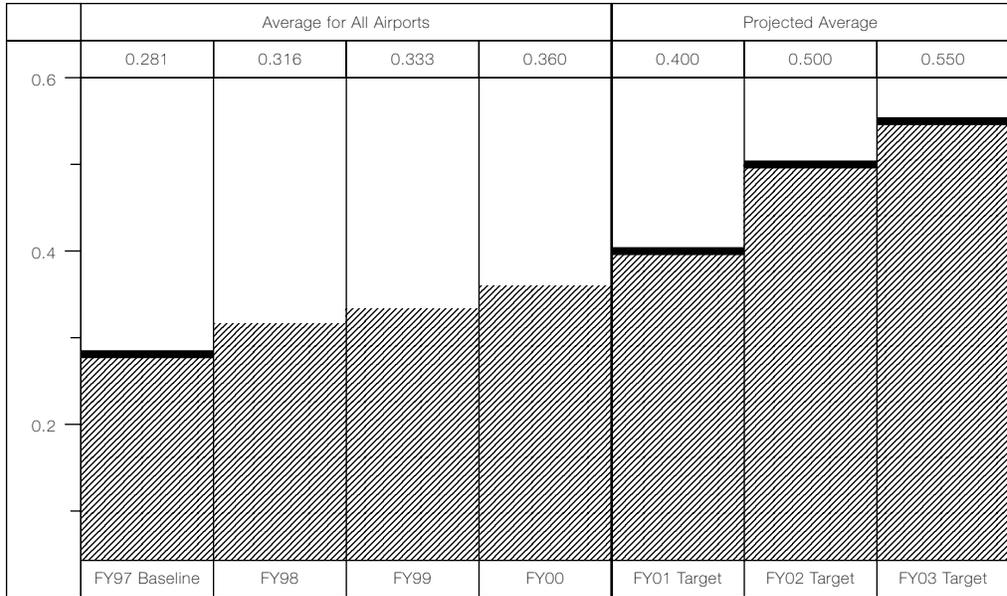
Measures of improved availability of weather information can be based on enumeration of access points and products or data flowing through those access points. The implementation of the FIS data link broadcast systems in the NAS will improve the availability of the weather information in the cockpit enhancing the pilot decisionmaking. The availability of the weather information in the cockpit can be directly measured and expressed by the number of pilots that subscribe to the commercial FIS data link broadcast services enabled by the FAA in the NAS.

Currently, this data is not available as the FIS vendors are beginning the rollout of their cockpit FIS services. However, it is anticipated that in FY 2001 and beyond, the number of subscriptions to these services will increase as users acquire cockpit FIS services through subscription purchases.

ATS **ATS Safety Goal:** Ensure Environmental Compliance at FAA Facilities

The FAA's Environmental Program encompasses three major elements: (1) Fuel Storage Tank Replacement and Monitoring, (2) Hazardous Materials Management/ Environmental Cleanup, and (3) NAS Facilities OSHA and Environmental Standards Compliance. Although the FAA's environmental program does not directly contribute to the FAA mission goal of reducing the fatal accident rate, it does contribute to the health and safety of everyone who works at FAA sites and facilities.

Fuel storage tank (FST) systems must be sustained in support of operational and environmental compliance requirements. This includes both underground and aboveground storage tanks. Owners and operators of FST systems are subject to Environmental Protection Agency (EPA) regulations, which range from tank installation standards to site closure requirements. The FAA's Hazardous Materials Management/Environmental Cleanup Program identifies, investigates, remediates, and controls contamination due to hazardous

material spills and hazardous waste disposal operations in order to comply with Federal, state, and local mandates. It also includes restoration activities within FAA owned and operated facilities, sites contaminated by the migration of hazardous waste from FAA facilities, and non-government owned sites contaminated by FAA-generated hazardous waste. The FAA must also comply with Federal, state, and local mandates that require a comprehensive agency-wide occupational safety and health (OSH), environmental compliance, and energy conservation program including negotiated agreements with other Federal, state, and local organizations, and labor unions. This program will ensure FAA compliance with all regulatory and negotiated requirements, and will promote a safe, healthy, and environmentally sound work place. These mandates require the FAA to have a compliance program that systematically addresses known and potential hazards to employees, reduces the occurrence of illness and injury in the workplace, and decreases agency liability. To achieve this, the compliance program must include hazard identification and remediation, employee training, facility and equipment modifications, personal protective and safety equipment, and correction of fire/life safety deficiencies in airport traffic control towers.

Strategies for Ensuring Environmental Compliance

1. Fuel Storage Tank Program. The FAA must sustain approximately 3,000 FST systems in its operational inventory to support continued operation of mission-critical activities and compliance requirements. The FAA has initiated a lifecycle replacement of the FST systems throughout the agency. The FSTs, both double walled and others, and their support systems, have varying life cycles depending on the specific hardware. These systems require replacement and upgrade, starting with the FST systems first replaced in the mid-1980s. Leaking FST systems will be abated/remediated immediately so as to prevent/negate/minimize any adverse impact to personal and/or environmental safety, restore availability of the systems to NAS operations, and preclude any fines and penalties (up to $25,000/day for non-compliance).

2. Hazardous Materials Management/Environmental Cleanup. To comply with Federal, state, and local mandates, the FAA must continue site investigations, hazardous materials management (including hazardous waste minimization, handling and disposal), drilling of monitoring wells, remediation of ground water contamination, physical removal of contaminated soils, and implementation of required air pollution controls. FAA has initiated agency-wide efforts to identify undiscovered waste sites resulting from FAA operations, and will continue these efforts into the future. For those contaminated sites presently identified, FAA is performing remediation as aggressively as funding allows.

3. NAS Facilities OSHA and Environmental Standards Compliance. The FAA will implement program efforts for occupational safety and health, environmental compliance, fire/life safety, and energy conservation/efficiency. Primary activities include assessment, evaluation, development, and implementation of control measures. By performing these activities, FAA will safeguard employees, the environment, and NAS operations.

Activities and Initiatives for FY 2001-2003

1. Fuel Storage Tank Replacement and Monitoring

➤ Continue the life-cycle replacement/sustainment of approximately 3,000 FST systems based on a 10 to 15 year life cycle.

➤ Continue remediation efforts following FST system replacements. Consistent with the EPA compliance deadline of December 1988, all FST systems were replaced/upgraded. Contaminated sites must be remediated and properly closed.

➤ Continue efforts concerning the estimated 800 underground storage tanks (UST) associated with the decommissioned Civil Aeronautics Administration (CAA – the predecessor to FAA) beacon sites. This element will include interaction with regulators, site reconnaissance, UST removals, site characteristics, and site remediations.

2. Hazardous Materials Management/Environmental Cleanup

➤ Continue site investigation and characterization activities including site assessments to gather existing data and evaluate contaminant releases, remedial investigations to support the development and evaluation of effective remedial alternatives, and feasibility studies to ensure that remedial action options can be presented to management and technical staff for appropriate remedy selection.

➤ Initiate remedial cleanup and site closure actions, including remedial design development of the actual engineering plan, remedial actions for the physical implementation of the selected remedy, and operation, maintenance, and monitoring activities conducted to sustain and measure remedial systems.

➤ Develop and submit remediation documentation to pertinent regulators, such as the record of decision that documents the final remedy selection, monitoring reports that document information for remedial systems operation, and closure documents that indicate the measures taken to complete site remedial actions.

3. NAS Facilities OSHA and Environmental Standards Compliance

➤ Initiate follow-up reviews of the five-year Environmental Compliance Plans for the regions, the Mike Monroney Aeronautical Center, and the William J. Hughes Technical Center.

➤ Continue agency-wide activities in the asbestos control program effort, including asbestos surveys, corrective actions, air monitoring, and implementation of national operations and maintenance and facility asbestos abatement contingency plans.

➤ Continue agency-wide implementation of the fall protection program effort, including developing procedures for climbing communication towers and navigational aids that require maintenance, performing structural analyses, designing corrective systems, purchasing climbing equipment/harnesses, and installing climbing devices.

➤ Implement a lockout/tagout program effort to protect FAA employees from injury or death due to electrical hazards (hazardous electrical energy is present in all FAA facilities, and several injuries have resulted to employees working on energized systems).

➤ Implement an employee radiation protection program which will include providing an FAA radiation protection officer as required by FAA order.

➤ Continue agency-wide implementation of the polychlorinated biphenyl (PCB) program, which includes tracking equipment identified to contain PCBs, testing equipment for the presence of PCBs and properly disposing of PCB materials.

➤ Continue implementation of energy efficiency/conservation program efforts to reduce waste, increase efficiency of operations, update design specifications, and implement renewable energy sources, all of which will decrease operations costs.

➤ Continue fire/life safety upgrades at ATCTs to meet compliance with OSHA regulations, and continue associated employee training

Measuring Performance

Due to the wide range of environmental compliance activities in the nine regions as well as the Mike Monroney Aeronautical Center and the William J. Hughes Technical Center, ATS has established the following targets based on environmental compliance plans and reviews:

➤ By the end of FY 2001, develop and implement a process for measuring the performance of each of the nine regions, the Mike Monroney Aeronautical Center, and the William J. Hughes Technical Center based on their five-year Environmental Compliance Plans (ECP) and conduct a test pilot ECP follow-up review in the Southern Region (9% cumulative completion).

➤ By the end of FY 2002, perform two ECP follow-up reviews using the review process developed in FY 2001 (27% cumulative completion).

➤ By the end of FY 2003, perform three ECP follow-up reviews using the review process developed in FY 2001 (55% cumulative completion).

FAA Mission Goal: Increase System Security
Prevent security incidents in the aviation system.

The recent increase in criminal and violent acts on U.S. properties has heightened our awareness of the vulnerability of the FAA, our personnel, facilities, assets, and the services we provide. In addition to working to address security issues today, FAA is committed to meeting the security challenges of the future by putting into place the measures that will continue to ensure the safety of the NAS and the flying public.

ATS is in partnership with both Civil Aviation Security (ACS) and the Civil Aviation Services/Chief Information Office (AIO) to ensure FAA personnel, facilities, and information dependent services are secure against both accidental or deliberate physical and operational threats.

ATS **ATS Security Goal:** Increase the Security of ATS Information Systems

ATS measures the security of information systems against agency standards. Continued operation is authorized when compliance to standards has been demonstrated.

Strategies for Increasing the Security of ATS Information Systems

ATS is identifying the needed structure for a complete risk management program for security of operational NAS information systems. Once risk assessments have been conducted, cost-effective mitigation will be implemented to reduce identified security risks. The system will then be certified to have an acceptable level of risk, and authorized for use.

Activities and Initiatives for FY 2001–2003

➤ Develop requirements for technical training relating to security of the operational NAS.

➤ Formalize the authorization process for new and replacement NAS operational information systems.

➤ Complete required annual security awareness training for all ATS personnel.

➤ Complete Risk Assessments and Information System Security Plans for four telecommunications programs annually through FY 2002.

➤ Complete Certification and Authorization process for four telecommunications programs annually through FY 2002.

➤ Complete 25 operational NAS system risk assessments per year beginning in FY 2001.

➤ Provide leadership and guidance to the Information Resource Management (IRM) Community in the area of Information Security for NAS Support Information Systems.

Measuring Performance

ATS has established the following targets for this performance goal:

➤ By the end of FY 2001, achieve operational authorization of 6 additional new and/or replacement NAS systems.

➤ By the end of FY 2002, achieve operational authorization of 28 additional new and/or replacement NAS systems.

➤ By the end of FY 2003, achieve operational authorization of 15 additional new and/or replacement NAS systems.

Figure 5 illustrates targeted trends in operational authorizations of NAS systems for FY 2000–2003.

Figure 5
Cumulative Operational Authorizations of NAS Systems

ATS Security Goal: Increase the Security of ATS Facilities

The security of ATS facilities is measured against established standards identified in FAA Order 1600.69, Facility Security Management Program. Physical security accreditation of facilities is granted when appropriate safeguards have been properly implemented and residual risk is acceptable.

Strategies for Increasing the Security of ATS Facilities

The FAA has established the Facility Security Risk Management (FSRM) Program within the NAS Transition and Integration Service (ANS) to correct deficiencies identified by physical security assessments and internal inspections. The FSRM Program will procure the required security systems and implement other risk reduction measures to enhance security at ATS staffed facilities.

Activities and Initiatives for FY 2001–2003

➤ Complete annual physical security awareness training for all ATS personnel.

➤ Procure security systems.

➤ Continue engineering design on security level III and IV facilities.[1]

➤ Implement security upgrades at selected ATS facilities.

Measuring Performance

ATS has established the following targets for this performance goal:

➤ By the end of FY 2001, implement security upgrades at 75 additional staffed facilities.

➤ By the end of FY 2002, implement security upgrades at 200 additional staffed facilities.

➤ By the end of FY 2003, implement security upgrades at 200 additional staffed facilities.

Figure 6 illustrates additional and cumulative facility security upgrades.

Figure 6
Additional Security Upgrades at Staffed Facilities

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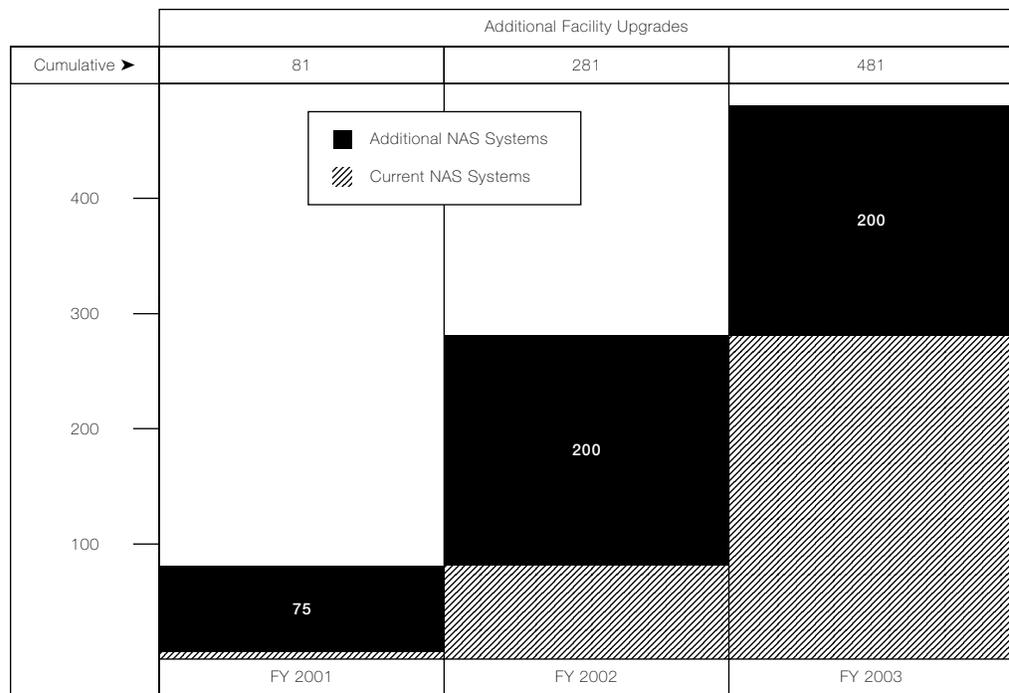
1 Security levels are based on the number of employees, the size of the facility, and the criticality to the NAS. Level III facilities (such as large TRACONs) have from 151 to 450 employees and 80,000 to 150,000 square feet of space. Level IV facilities (such as Atlanta and Salt Lake City ARTCCs) have more than 450 employees and more than 150,000 square feet of space.

FAA Mission Goal: Increase System Efficiency

Provide an aerospace transportation system that meets the needs of users and is efficient in the application of FAA and aerospace resources.

ATS plays a large role in maintaining the ability of the aviation system to efficiently govern the increasing level of air traffic. ATS is using its human and technological resources to address several categories of system efficiency: delay, access, flexibility, predictability, system availability, productivity, and NAS infrastructure.

It may not always be possible to improve all aspects of system efficiency simultaneously. Optimizing operational performance means that there may be times when it will be necessary to balance one aspect of system efficiency against another. Resource availability further constrains the pace of performance improvements. More importantly, there are tradeoffs between gains in system safety by reducing accident/incident risks and improvements in system efficiency. Moreover, the appropriate balance may change as ATS gains experience with these performance measures and, most importantly, when the needs of the user community change.

The delay goal is a two-part goal. ATS will continue to measure total delays and begin a specific measurement of air traffic control (ATC) system efficiency. The additional goal will address ATC performance in meeting the collaboratively determined capacity of the ATC system. We believe this change is necessary, because the current delay measure no longer provides a sufficient level of detail to effectively capture the causality of delay. The second measure also responds to a recent Office of Inspector General (OIG) recommendation to adopt alternative methods of measuring delay.

The following sections describe ATS performance goals and associated strategies and initiatives targeted at improving system efficiency.

ATS System Efficiency Goal: Reduce Delays

One measure of air traffic system efficiency is delay. Delay in the aviation system occurs when an activity does not occur within the planned, expected, or scheduled time. Missed flight connections directly affect passengers through missed meetings and events, and loss of personal time. Delays, however, are not always avoidable. Adverse weather can cause a runway or entire airport to close, making it impossible for aircraft to take off or land at the scheduled time. ATS tracks delays in five categories: equipment, volume, weather, runway, and other. Recognizing that any delay is a disruption in the expected level of service, ATS is committed to reducing all types of delays.

Strategies for Reducing Delays

Service improvements during the FY 2001-2003 timeframe will focus on new runways, critical infrastructure replacement programs, and improvements in the aviation weather system. Beyond FY 2002, refined implementation of Airway Facilities' NAS Service Management System, implementation of new risk management and risk mitigation

processes, and investments in the NAS Infrastructure Management System (NIMS) will increase operational availability of the NAS infrastructure, reducing equipment-related delays. Continuing to involve users in key decisions regarding national ground delay programs will reduce the impact of weather on flight schedules. While delays associated with weather are more difficult to influence, ATS is continuing to support collaborative decision making and the implementation of automated weather detection and forecasting tools to mitigate the negative impacts of these delays.

The ability to manage and reduce volume and equipment-related delays through specific actions is much more predictable than the reduction of weather-related delays. The reduction of weather-related delays is less predictable or attainable due to yearly climatic variability. In addition, most of the weather prediction and avoidance initiatives are designed primarily to produce safety benefits and underlying efficiencies, and may not necessarily reduce the number of weather-related delays.

The ATS FY 2001-2003 delay target is to maintain a delay rate of 171 or fewer delays per 100,000 activities. Although ATS will continue to monitor the number of delays, it is changing its focus to monitoring and enhancing system capacity and utilization through customer collaboration. This new focus and the associated performance measure under development are described below.

ATS System Efficiency Goal: Maximize Capacity through Customer Collaboration

As part of its collaborative efforts to reduce delays, the FAA has created a special data system, Aviation System Performance Metrics (ASPM), to provide metrics comparing actual versus scheduled performance by the phase of a flight. The development of ASPM was coordinated with major air carriers and the Air Transport Association. Currently nine major carriers and one foreign carrier participate in the provision of data through the Aeronautical Radio, Inc. (ARINC) for 21 congested airports. ASPM integrates flight records from the FAA's Enhanced Traffic Management System (ETMS), ground and flight movement data (Out, Off, On, and In, or OOOI data) supplied by participating carriers for specific airports through ARINC, and flight schedule data from the Official Airline Guide (OAG). About 45 percent of all departures and 65 percent of all delays (measured in minutes) occur to or from these airports.

Delays have significant financial, scheduling, and service consequences for airlines and result in understandable frustration for their passengers. The issue of delays is very complex. There are many conditions that cause delays; bad weather, inoperable runways, airport capacity limitations, aircraft equipment problems, maintenance and crew problems, airline scheduling, air traffic equipment outages, and air traffic procedures. In the past we have tied ourselves to quantifying delays based on a cause (weather, volume, etc.). Delays will never be eliminated. However, it is the FAA's belief that delays can be minimized by strategies that would increase the level of system utilization available to the aviation community.

Strategies for Maximizing Capacity

The FAA has initiated several collaborative efforts with the aviation industry in response to the air traffic delays experienced during the 1999 severe weather season. To determine how it could best meet the needs of its customers and assist airlines in minimizing delays, the FAA and its NAS customers agreed to work collaboratively to identify and implement operational improvements to enhance system performance. Resulting from this collaborative agreement, the Deputy Administrator of the FAA, in conjunction with system users, conducted weekly meetings to discuss the technology and tools that may be available to support the information sharing and planning activities needed to enhance the capacity of the NAS. The meetings resulted in a clear understanding that the system users require more predictability, flexibility, and access to the NAS to remain successful.

The Spring/Summer 2000 Plan for reducing aviation delays was developed in light of the increases in delays, and the need to establish a collaborative planning process between the FAA and users of the NAS. This collaborative plan was designed by industry, labor, and Government to better manage air traffic during severe weather. It maximizes the use of available air space, improves communications between the FAA and aviation system users, and expands the use of new technology to help reduce delays.

As part of its Spring/Summer 2000 Plan, the FAA created the Strategic Planning Team (SPT) to mitigate the impact of severe weather on FAA facilities and system users. The SPT is a dedicated section of specialists who strategically plan traffic management initiatives in collaboration with system users to enhance system capacity. The SPT will use the Collaborative Convective Forecast Product (CCFP) to predict convective (severe weather) activity in the NAS. The CCFP was developed to provide a single convective forecast for NAS users to coordinate a systemwide approach to severe weather events.

While the Spring/Summer 2000 Plan represents a new approach to air traffic management, it is not an approach to eliminate delays, as total elimination of delays is not possible. Our approach provides a basis to better manage delays through continuous communication and collaboration. This approach increases the predictability the airlines need to manage their operations.

One area over which the FAA has no control is the weather. However, resources and efforts are being spent to analyze how we can better improve the quality and availability of weather information to enable airlines and air traffic personnel to make decisions to alleviate flight delays in a timely and accurate manner. This measure is further detailed under the Improve Quality and Availability of Weather Information goal in this Plan.

A second factor that complicates air traffic control, and another over which the FAA has no control, is the relationship between airline scheduling and airport capacity. Airport capacities are variable and will be defined as "practical capacity." Practical capacity is the capacity of an airport when variables are accounted for, such as such as aircraft performance, the mix of aircraft types, pilot proficiency, weather, and runway closures. The highest practical airport capacity is determined by the maximum number of operations (takeoffs and landings) that can occur within a given time period using standard air traffic management practices.

A Measure of Capacity Utilization

ASPM data contain, among other things, actual and scheduled air carrier arrivals and departures by airport, and the actual acceptance and departure rates by airport. The acceptance and departure rates reflect the arrivals and departures that can occur based on standard air traffic management practices (e.g., that are adjusted for runway configuration and weather.) The demand by the aviation industry for arrivals at an airport, divided by the practical capacity of the airport to accept those arrivals, gives an arrival utilization rate for that airport. Similarly, departure demand, divided by the practical capacity of the airport to accommodate that demand, gives a departure utilization rate. Utilization metrics are derived from airport acceptance rates and airport departure rates provided by FAA facilities. The "demand" for this goal is then defined as the expected arrivals and departures according to the times indicated under the ETMS messages and modeled OAG data. Therefore arrival and departure demand is the number of aircraft presumed capable of landing and departing during specified periods based on modeled data. The airport departure and arrival utilization rates are combined and summed by quarter-hour intervals to provide an overall airport utilization rate.

The best employment of available ground resources (e.g. airport runways and taxiways, landing and take-off procedures, and air traffic personnel and equipment) will result in the highest available airport utilization rate. Preliminary data for the 21 ASPM airports for the period January-September 2000 are shown below in Figure 7.

Figure 7
Preliminary Data for the 21 ASPM Airports, January–September 2000
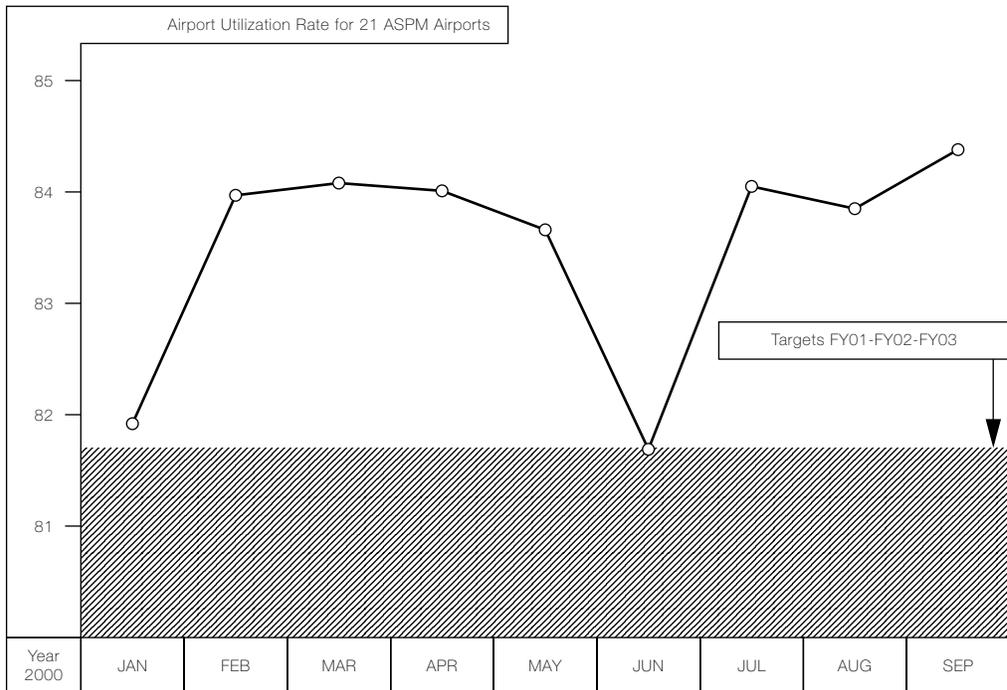
ASPM data have been available only since January 2000 and have not been fully validated. During this 9-month period the airport utilization rate has varied between a low of 81.7 in June to a high of 84.4 in September. Preliminary analysis indicates the airport utilization rate may be slightly overstated, probably by three to four percentage points. Nonetheless, we will establish an interim baseline for airport utilization at 81.7 percent for FY 2001-2003. We will re-address the level of the baseline for FY 2002 and succeeding years as more data become available.

Activities and Initiatives for FY 2001–2003

➤ Continue to collect ASPM data through the collaborative efforts of the FAA and users, and extend the base period for airport utilization to 18 months. Initial standards and procedures will be put in place to collect and validate ASPM data. The data will be evaluated and validated on an ongoing basis. The use of ASPM data to assess ATC performance is the second of four recommendations in the OIG report on flight delays and cancellations (Office of Inspector General, *Air Carrier Flight Delays and Cancellations*, July 25, 2000).

➤ Immediately begin to create a database that will record the number of aircraft in the NAS at consistent and specific times of the day. The goal of this effort is to provide a 'snapshot' of the number of aircraft using the NAS at a given day and time. This information will be evaluated to see what impact various meteorological conditions have on the airport capacity. In order to test the validity and usefulness of this information, the database will be populated and analyzed by the end of FY 2001.

➤ Establish a baseline that will show the correlation between the number of aircraft using the NAS compared to the number of Severe Weather Avoidance Plan (SWAP) days in a month. The baseline, along with the data collected from the above database, will provide additional information about the capacity of the system. This mandatory tracking procedure will be put in place in FY 2001.

➤ Expand the number of city pairs that use Low Altitude Arrival and Departure Routes (LAADR). LAADR provides increased access to under-utilized airspace during periods when airspace at higher altitudes is constrained. The number of city-pairs will increase as additional carriers sign Memorandums of Understanding to participate in selected routes. This effort is ongoing.

➤ Continue to monitor the effectiveness of the CCFP and identify methods to track and implement procedures on the number of collaborators involved in the CCFP sessions. This program will provide a single convective weather forecast to all NAS users and can be used for traffic management purposes, thereby increasing the likelihood of collaboration and improved use of the system. The Aviation Weather Directorate (ARW) is currently evaluating this product.

➤ Continue to enhance the ATCSCC web page.

Measuring Performance

Sustaining airport utilization at the same rate when demand is increasing means that that the predictability of the system does not deteriorate, and that the increased demand is met with no lower an acceptance rate than currently experienced. This is attained by maximizing available ground resources (e.g. airport runways and taxiways, landing and take-off procedures, and air traffic personnel and equipment) for arriving and departing aircraft. A baseline of a minimum airport utilization rate of 81.7 percent has been established, based on ASPM data for 21 selected airports through September 2000. ATS has established the following performance targets for this goal:

➤ For FY 2001, achieve a minimum airport utilization rate of 81.7 percent at the 21 ASPM airports.

➤ For FY 2002, achieve a minimum airport utilization rate of 81.7 percent at the 21 ASPM airports.

➤ For FY 2003, achieve a minimum airport utilization rate of 81.7 percent at the 21 ASPM airports.

ATS System Efficiency Goal: Increase System Flexibility

ATS is striving to build an air traffic management system in which system capabilities are applied dynamically, and where users have the flexibility to conduct both advance and real-time planning to adapt their operations to changing weather, traffic, and other conditions. Users desire the capability to optimize their operations based on their own objectives and constraints that vary flight-by-flight or user-by-user. Flexibility in flight planning offers users the potential for more efficient routing, scheduling, staffing and fueling.

Strategies to Increase Flexibility

For increased flexibility of flight operations in the NAS, ATS has implemented a number of initiatives designed to continue the evolvement toward the Free Flight concept of operation. Transition points on Departure Procedures (DP) and Standard Terminal Arrival Routes (STAR) with respect to the North American National Route Program (NRP) are the focus of traffic management initiatives designed to offer flexible, cost-effective routing options. Under NRP, flights previously were required to file and fly DP, STAR, or published Instrument Flight Rules (IFR) routes within 200-nautical miles (NM) of the departure and destination airports. This 200-NM restriction is, in essence, a restriction of an aircraft's ability to choose its own flight path. By eliminating this requirement, the FAA is providing more flexibility to the NAS users and moving towards the Free Flight concept.

Activities and Initiatives for FY 2001–2003

➤ To support the current goal on transition points, work will begin to collect data for a future flexibility metric on the total number of NRP routes requested versus the total number flown.

➤ Work with aviation users in the review and redesign of the national airspace.

➤ Continue to publish DPs and STARs as ingress and egress points to the NRP to reduce the 200-NM radius exclusion zones around origin and destination airports. The DPs and STARs allow increased flexibility while operating in the terminal area for NRP participants.

➤ Conduct IOT&E for the User Request Evaluation Tool (URET) in FY 2002.

➤ Implement URET at seven ARTCCs (Chicago, Atlanta, Indianapolis, Memphis, Washington, DC, Cleveland, and Kansas City) by FY 2002. URET is intended to improve en route flexibility through the reduction of procedural restrictions. For aircraft operating in the affected airspace, more optimal altitudes may be utilized and unnecessary maneuvers will be reduced.

➤ Implement Traffic Management Advisor (TMA) at six new locations (Atlanta, Denver, Los Angeles, Miami, Minneapolis, and San Francisco) by FY 2002. TMA will help ARTCCs feed optimum traffic volume into terminal airspace. This helps to optimize terminal arrival efficiency and maintain aircraft at higher, more fuel-efficient altitudes.

➤ Conduct IOT&E for the Passive Final Approach Spacing Tool (pFAST) in FY 2001. Implement pFAST at four new locations (Atlanta, Los Angeles, Minneapolis, and St. Louis) by December 2002. The pFAST capability helps controllers optimize runway assignment and sequencing at an airport improving airport throughput efficiency.

➤ Extend the application of Reduced Vertical Separation Minima (RVSM) within the Pacific by late-2000 and the Atlantic by FY 2002 to allow aircraft to fly more optimal altitude profiles and increase airspace capacity.

➤ Continue implementation and enhancement to the Collaborative Decision-Making (CDM) technologies at the ATCSCC and airline operations centers. Implement two additional CDM capabilities, Initial Collaborative Routing (ICR) and NAS Status Information (NASSI). NASSI will provide real-time NAS status to the FAA and NAS operators. These enhancements will increase the FAA's ability to coordinate with users regarding the scheduling and operation of flights subject to unforeseen constraints.

➤ Establish active computer network interface between the FAA's Special Use Airspace Management System (SAMS) and DOD's Military Airspace Management System (MAMS).

➤ Initiate gateway operations that allow users, external to the FAA, access to Special Use Airspace (SUA) information.

➤ Modify Central Altitude Reservation Function (CARF) software to utilize SAMS network and hardware. This will reengineer military reservation processing.

➤ Maximize the use of a ground delay program when operational requirements mandate a traffic management initiative. Use of ground delay programs will provide the users more flexibility for selecting and prioritizing affected flight operations.

➤ Collaborative Routing Coordination Tool (CRCT) was developed by MITRE/CAASD and is in operation at Kansas City Center and is scheduled to be in operation at Indianapolis ARTCC in the FY 2001 severe weather season.

➤ Install multi-sector data link center in the New York ARTCC, to allow datablock control of "logged on" aircraft to be transferred from sector to sector. This applies to aircraft that are equipped for controller pilot data link communications (CPDLC).

➤ Continue development of the Sector Management Tool to give traffic management units the ability to maintain sector integrity through the use of ground delays. This tool will be in prototype operation at the Cleveland and Washington ARTCCs. The Integrated Decision Support Tool brings critical NAS status and traffic management information together and merges it in a logical display tool for use by ATC providers and users. The tool will offer "what if" capability. Post operations analysis will help predict airspace congestion and down line impact including "gridlock" at large airports.

Measuring Performance

In preparation for Free Flight, the NAS system users are currently using the NRP to fly between selected city pairs using the routing of their choice to capitalize on the winds aloft and Global Positioning System (GPS) navigation. A restriction to NRP routes has been that they start/terminate 200-NM from the airport. The DP/STAR process is enhanced by increasing the number of transition points, thereby increasing the number of opportunities to allow aircraft to use NRP to their fullest advantage. The utilization of the transition points results in a relaxing of the 200-NM restriction in many cases. Since the winds aloft and/or use of GPS often dictate the route flown, multiple transition points offer more flexibility and allow the system user in many cases to relax the 200-NM routes. The goal is to offer as many transition points to DP/STAR procedures as possible to the major airports throughout the country.

The metric used to measure performance is the number of transition points to DP/STARs that are less than 200-NM from the corresponding airport with respect to the top 100 airports. A transition point may be counted multiple times if it applies to more than one such airport. The list of the top 100 airports is updated each year. A baseline using the number of transition points for FY 1999 was set to equal 270. This metric was baselined for FY 1999 using Advisory Circular 90-91D. This was accomplished by calculating the great circle distance between each transition point and the associated airports for airports in the top 100 list. This list of airports is the top 100 in terms of operations for FY 1998 and is published in the 1999 Aviation Capacity Enhancement (ACE) Plan. The list is updated and published each year. ATS has established the following performance targets for this goal:

➤ By the end of FY 2001, increase the number of transition points on DPs or STARs for the top 100 airports above the FY 1999 baseline of 270 transition points to 330 transition points.

➤ By the end of FY 2002, increase the number of transition points on DPs or STARs for the top 100 airports above the FY 1999 baseline of 270 transition points to 350 transition points.

➤ By the end of FY 2003, increase the number of transition points on DPs or STARs for the top 100 airports above the FY 1999 baseline of 270 transition points to 370 transition points.

Figure 8 illustrates the additional and cumulative number of transition points for FY 2001-2003.
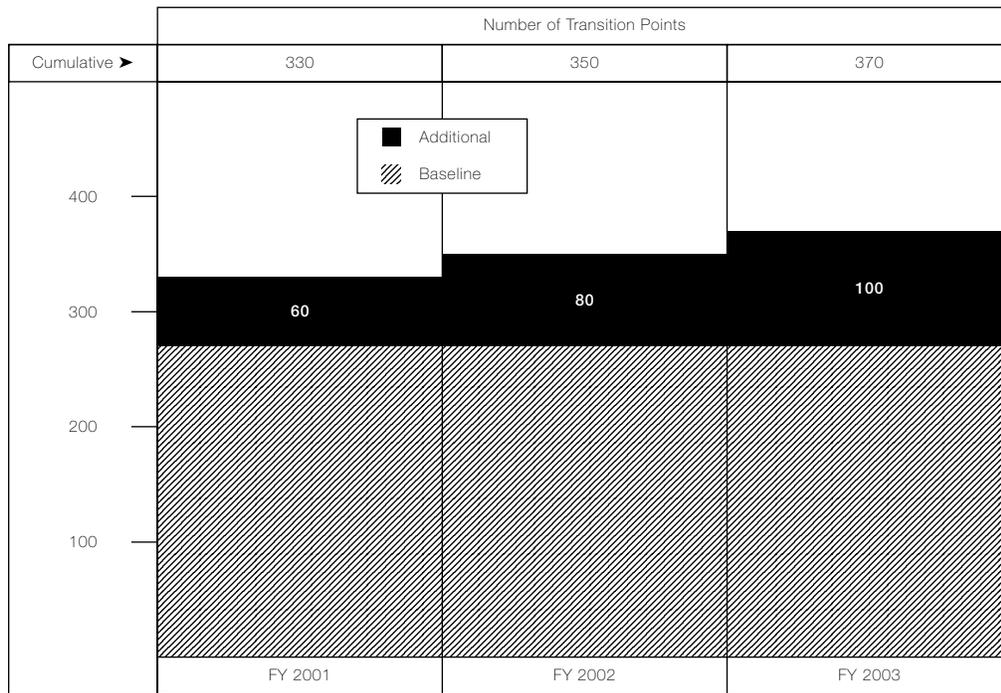
ATS System Efficiency Goal: Increase System Predictability

System predictability allows users to plan and manage their resources efficiently. The majority of system users rely on schedules that define when aircraft takeoff and when aircraft land. These schedules are central to the operations of most commercial flights, driving crew scheduling, ground service operations, and other operational components. Near-term decisions such as scheduling and planning flights, as well as longer term decisions such as fleet sizes, airframe types, and hubbing decisions, are all impacted by the day-to-day variation of NAS performance. Scheduled operations are very dependent on system predictability since relatively small deviations from scheduled operations can cause drastic impacts, especially when the ripple effects throughout the system are taken into account.

Strategies to Increase Predictability

Increasing information flow to system users is a key ingredient to improved system predictability. Collaborative planning between ATS and all NAS users is a strategy currently being pursued. As weather is a main contributor to the uncertainty in the ATM system, improvements in obtaining and disseminating weather products will supply consistent information to both pilots and controllers so they can realize the same degree of situational awareness.

Activities and Initiatives for FY 2001–2003

➤ Continue implementation of Collaborative Decision Making(CDM) as described under system flexibility. Rapid communication of information on air traffic and flight conditions will increase the user's predictability of NAS operations. Deployment of Free Flight Phase 2 CDM/Collaborative Routing Coordination Tool (CRCT) will begin in FY 2001 even though it is part of FFP2 (FY 2003-2005); the technologies will build off of FFP1 CDM with focus on the enhancements to collaborative routing via the prototype CRCT.

➤ Implement CTAS, TMA, and pFAST. TMA assists the ARTCC controller in delivering a predictable flow of arrivals, in terms of spacing and rate, into the TRACON airspace. Increased situational awareness, provided by pFAST, is expected to increase runway utilization. As a result, the variability between an airport's capacity and its actual arrival rate would be reduced by TMA and pFAST.

➤ Implement the Surface Movement Advisor (SMA) for increased surface movement efficiency. SMA benefits include more consistent taxi-out times, reduced gate delays, and more optimal utilization of ground and ramp resources.

➤ Implement WARP and ITWS to provide more timely and accurate weather information, enabling users and ATS to predict the effect of weather on operations with greater accuracy. Achieve ITWS Phase 1 capability at the ARTCCs and the ATCSCC by FY 2002.

Measuring Performance

Over the past few years, ATS has measured variability in ground movement times at the 25 busiest U.S. airports as an indicator of system predictability. This year, ATS has decided not to report on or establish a target for this metric, because the extent to which ATS controls the variability in ground movement times is not well-identified or agreed upon. Many factors, such as airline schedules and severe weather, are known to cause some of the variability in the system. Efforts to identify other key factors, and to pinpoint the extent to which ATS can mitigate these factors is still underway. ATS is considering the development of alternative predictability measures, while continuing to monitor the predictability of ground movement times.

ATS System Efficiency Goal: Increase User Access

Access to airports, airspace, and ATS services are basic needs of all airspace users. While there are many aspects of system accessibility that impact end users, ATS is focusing on increasing the availability of vertical descent guidance during low-visibility weather conditions. For aircraft to land in restricted visibility, the airport must have published procedures for a vertically-guided approach and the electronic guidance to insure the aircraft is able to follow the published approach. The FAA's navigation and landing systems are evolving from ground-based systems such as instrument landing systems (ILS) to a satellite-based Global Positioning System (GPS) augmented by the Wide Area Augmentation System (WAAS), and the Local Area Augmentation System (LAAS). GPS WAAS and LAAS will provide vertically-guided approaches to selected airports.

Strategies for Improving Access

As described above, the primary ATS strategy for increasing user access is increased availability of vertical descent guidance. In addition, ATS plans to improve the quality and quantity of information available for flight planning and execution by all NAS users through the modernization of aviation information services.

Activities and Initiatives for FY 2001–2003

➤ Support the development of a Lateral/Vertical Navigation Approach (LNAV/VNAV) solution for the WAAS.

➤ Coordinate internationally to change the worldwide frequency allocation to support LAAS implementation.

➤ Continue the LAAS type acceptance evaluation for completion in FY 2002.

➤ Improve processes and procedures for publishing instrument approaches by integrating functions, as a result of the organizational restructuring to combine the Aeronautical Charting and Cartography Division from the National Oceanic and Atmospheric Administration (NOAA) with the Aviation System Standards (AVN) program.

➤ Coordinate funding requests to support Distance Measuring Equipment (DME) and Precision Approach Path Indicator (PAPI) equipment acquisitions and installations at FAR Part 139 certificated airports in FY 2001.

➤ For the purpose of adding a higher level of safety, begin acquiring and installing additional DMEs and PAPIs at airports in FY 2002.

Measuring Performance

There are nearly 4,000 public use airports in the U.S. Currently, about 600 of these airports have an instrument landing system (ILS) for vertically-guided approaches during low-visibility conditions. Because many of these airports have more than one runway, the total number of runways with precision landing guidance (which includes altitude guidance) is approximately 1,080. Developing vertically-guided approaches requires accurate survey information for airport runway location and any obstacles near the flight path for approach. These surveys are done by the National Geodetic Survey.

The FAA is transitioning from ground-based landing aids such as ILSs, to an augmented GPS. Increasing low-visibility access depends on having both a published approach and increasing the number of aircraft equipped to make vertically-guided approaches. To maximize the benefits to aviation users, ATS will need to develop approaches for all qualifying airports that do not currently have electronic aids to support an instrument approach and aircraft not presently equipped will need to install a WAAS receiver. ATS has established the following performance targets for this goal:

➤ By the end of FY 2001, increase the number of runways accessible using vertically-guided approaches by 10 percent over the FY 1999 baseline (108 additional vertically-guided approaches to achieve a cumulative total of 1,192).

➤ By the end of FY 2002, increase the number of runways accessible using vertically-guided approaches to 25 percent over the FY 1999 baseline (162 additional vertically-guided approaches to achieve a cumulative total of 1,354).

➤ By the end of FY 2003, increase the number of runways accessible using vertically-guided approaches to 40 percent over the FY 1999 baseline (162 additional vertically-guided approaches to achieve a cumulative total of 1,516).

Figure 9 illustrates the FY 2001, FY 2002 and FY 2003 targets for increasing the number of runways that are accessible in using vertically-guided approaches.

Figure 9

Number of Runways Accessible Using Vertically-Guided Approaches
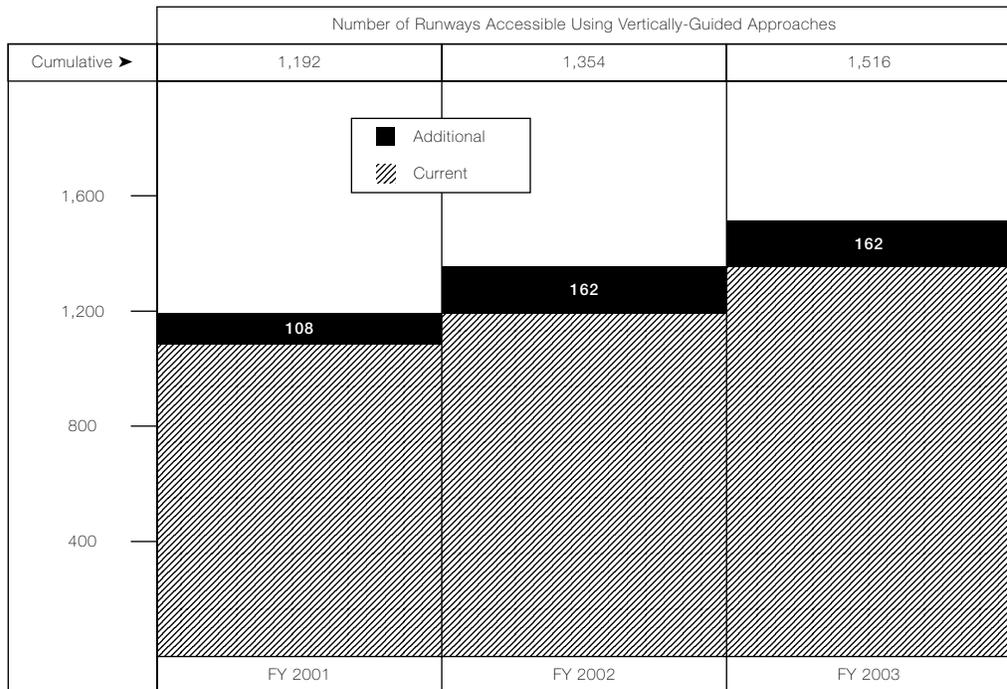
ATS System Efficiency Goal: Sustain Operational Availability of NAS Capabilities

The NAS is an inherently complex system with multiple levels of redundancy to assure availability of key services. NAS Infrastructure Services are delivered by underlying equipment and software that we keep operating, continuously, at near 100% availability. This high level of availability is required in order to prevent service disruptions that could lead to a need for the purposeful slowing of air traffic to preclude safety concerns. While only a small portion of air travel delays are caused directly by failures of portions of the operating equipment and software, these delays are annoying and often every expensive for the traveling public. While seeking to reduce the cost and impact on air travelers, it has become more and more difficult to achieve the next increment of availability as we get closer to 100%. With current availability at 99.427%, achievement of higher availability will require maintaining our current position and making small improvements in some areas.

Strategies to Sustain or Increase Operational Availability of NAS Capabilities

ATS will sustain or improve service performance by identifying causes for service failures, conducting supportability studies, and influencing operations and capital investment decisions. Beyond FY 2003, investments made during FY 2001, FY 2002, and FY 2003 in Airway Facilities' NIMS will enable ATS to increase operational availability.

Activities and Initiatives for FY 2001–2003

➤ Accomplish ongoing NAS monitoring and control, periodic maintenance, modification, redundancy investment, and restoration activities.

➤ Enhance capabilities to collect, analyze, and report status of the operating NAS infrastructure.

➤ Install equipment modifications as needed to improve reliability and operating costs.

➤ Accomplish periodic maintenance tasks as needed to verify quality and sustain designed reliability of NAS equipment, systems, and services.

➤ Maximize availability by coordinating flight check aircraft and crew presence in FAA regions for restoration activities.

➤ Initiate transition to FAA Telecommunications Infrastructure (FTI) by providing Service Delivery Point (SDP) telecommunications service for voice, data, and video for operational and mission-support traffic.

Measuring Performance

In order to gauge the capability of the NAS to deliver quality services, ATS will measure the availability of reportable facilities required to deliver automation, communication, navigation/ landing, surveillance, and weather capabilities. Costs will also be captured for these capabilities through the FAA Cost Accounting System (CAS).

ATS has established the following targets for this performance goal:

➤ Sustain the FY 1994-1998 5-year average composite operational availability of reportable facilities required to deliver automation, communication, navigation/ landing, surveillance, and weather capabilities (99.12 percent) through the end of FY 2001.

➤ Sustain the FY 1994-1998 5-year average composite operational availability of reportable facilities required to deliver automation, communication, navigation/ landing, surveillance, and weather capabilities (99.12 percent) through the end of FY 2002.

➤ Sustain the FY 1994-1998 5-year average composite operational availability of reportable facilities required to deliver automation, communication, navigation/landing surveillance, and weather capabilities (99.12 percent) through the end of FY 2003.

Figure 10 illustrates trends in operational availability of NAS capabilities and targets for FY 2001-FY 2003.

Figure 10: Operational Availability

| Fiscal Year | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |

Legend:
- Communications/99.8
- Weather/99.5
- Surveillance/99.0
- Automation/99.5
- Navigation and Landing/97.7
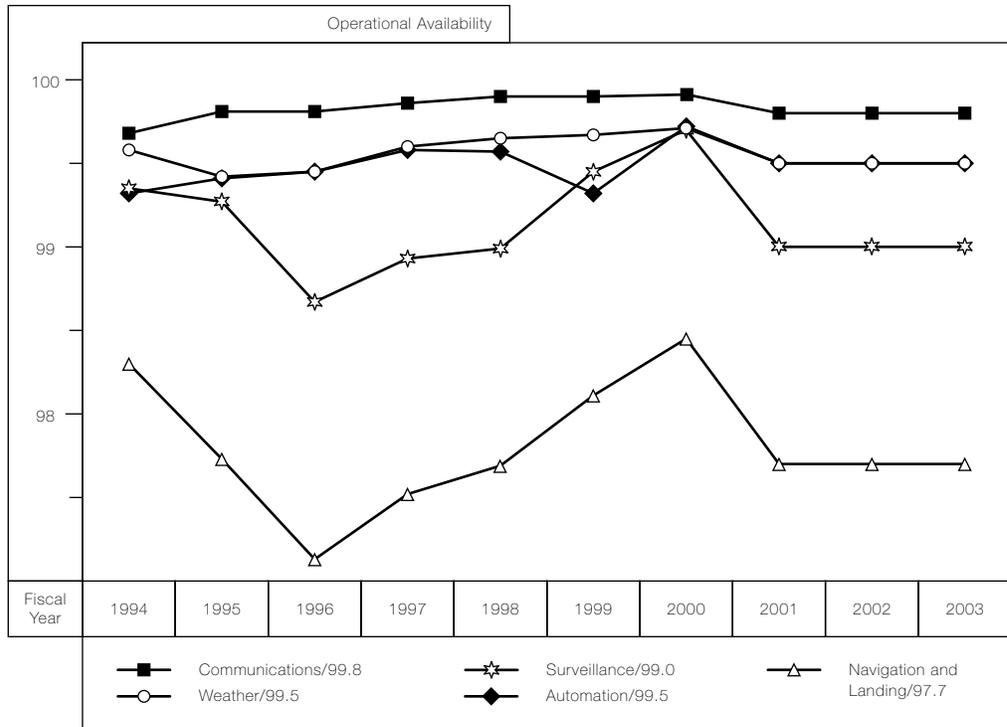
ATS System Efficiency Goal: Increase Productivity

ATS is one of the few Government organizations that provide direct service to the public. This service is providing traffic separation, information, and navigation assistance to the flying public. Productivity and good stewardship of the resources supporting ATS have never been more important than they are today. Initiation of a performance-based organization, and the transition to a fee-for-service environment will challenge ATS to be more aggressive in managing its resources while providing better services. In a performance-based organization or fee-for-service environment, the long-term goal of ATS will be to maximize benefits to the customer while also assuring a safe system.

Strategies to Increase Productivity

ATS plans to increase capabilities to manage information and system/automation resources. ATS organizations will become more streamlined, void of unrelated functions, to ensure focus on specific activities to achieve organizational outcomes. Employees will be empowered, using high productivity teams to the maximum extent possible.

The NIMS will evolve the ATS maintenance approach from an equipment-based system to proactive service management. Using a combination of commercial-off-the-shelf (COTS) resource management software and existing maintenance management applications, infrastructure management information will be entered, collected, stored and made available to Airway Facilities headquarters, regional and field organizations. The NOCC, Operation Control Centers (OCC), Service Operations Centers (SOC), work centers, field, regional and headquarters management offices will collaborate on and manage all infrastructure activities using the shared information.

Activities and Initiatives for FY 2001–2003

➤ Use high productivity teaming.

➤ Deploy major CNS/Automation capabilities; e.g., LAAS/WAAS, Standard Terminal Automation Replacement System (STARS), Data Link, etc.

➤ Implement standard operating procedures and improved web-based event management in OCCs.

➤ Provide high-priority remote maintenance monitoring training to systems specialists

➤ Improve quality of system asset databases and improve interfaces between legacy databases, peer databases, and OCC databases.

➤ In FY 2001, through the National Data Center (NDC) and the Regional Information System (REGIS), provide senior executives, managers and employees the mission critical information necessary for effective decisionmaking.

➤ Incorporate NDC information and interoperability standards with Chief Information Officer (CIO) standards by FY 2001. Incorporate full Intranet data query capability for customers of the NDC by FY 2001. Continue to incorporate legacy systems and expand the customer base for the NDC in FY 2001.

Measuring Performance

ATS will use two productivity measures, one for Air Traffic and one for Airway Facilities. The Air Traffic measure is air traffic activity divided by the Air Traffic workforce. Activity is defined as the sum of flight service activities, en route aircraft operations, airport operations, and instrument operations. Workforce is defined as all Air Traffic full-time employees. This information is readily available at the national and facility level. Productivity, as described in this metric, is a total of the human resources utilized to provide air traffic control services to the customer. The Air Traffic performance targets for this goal are:

➤ By the end of FY 2001, increase Air Traffic productivity by 0.25 percent from the FY 1999 baseline of 7,642 activities per Air Traffic employee, to 7,661 activities per controller.

➤ By the end of FY 2002, increase Air Traffic productivity by 0.50 percent from the FY 1999 baseline of 7,642 activities per Air Traffic employee, to 7,680 activities per controller.

➤ By the end of FY 2003, increase Air Traffic productivity by 0.75 percent from the FY 1999 baseline of 7,642 activities per Air Traffic employee, to 7,699 activities per controller.

New and more accurate Air Traffic productivity measures and data are being identified. These data include a complete review of how air traffic activity is defined and counted as well as a complete analysis of the costs of providing air traffic services. ATS is using a phased approach to develop new productivity goals. The first phase will include the collection and analysis of additional data for air traffic productivity, especially the data from the

FAA CAS. CAS will incorporate Facilities and Equipment (F&E), Research, Engineering, and Development (RE&D), operational, overhead, and depreciation costs. It is anticipated that this will increase the number of targets of opportunity for productivity improvement (e.g., direct, indirect, overhead costs, etc.) in FY 2001 and beyond. Figure 11 illustrates the Air Traffic productivity baseline and performance targets.

Figure 11
Air Traffic Productivity
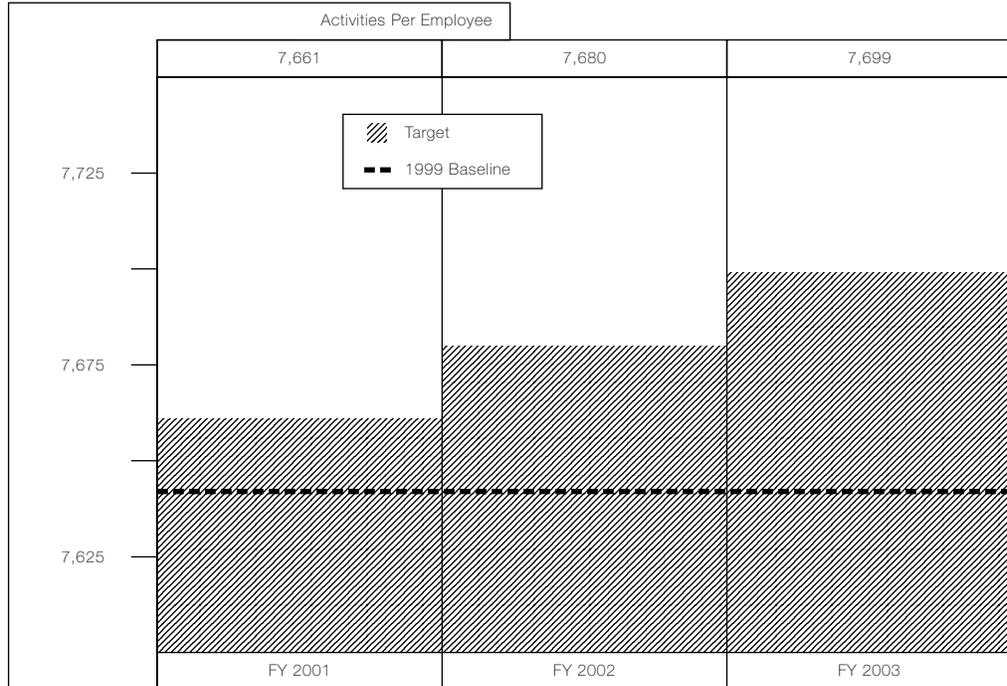
The Airway Facilities productivity measure is the number of facilities delivering NAS automation, communications, navigation/landing, surveillance, and weather capabilities divided by the Airway Facilities workforce. The number of facilities delivering NAS capabilities is defined as the sum of the reportable facilities included in the automation, communications, navigation/landing, surveillance, and weather capability categories. The Airway Facilities workforce is defined as all Airway Facilities full-time employees. This information is readily available at the national and field levels.

The Airway Facilities performance targets for this goal are:

➤ By the end of FY 2001, increase Airway Facilities productivity by 0.25 percent from the FY 1998 baseline of 1.706 facilities per person, to 1.710 facilities per person.

➤ By the end of FY 2002, increase Airway Facilities productivity by 0.50 percent from the FY 1998 baseline of 1.706 facilities per person, to 1.715 facilities per person.

➤ By the end of FY 2003, increase Airway Facilities productivity by 0.75 percent from the FY 1998 baseline of 1.706 facilities per person, to 1.719 facilities per person.

Figure 12 illustrates trends in Airway Facilities productivity and performance targets.
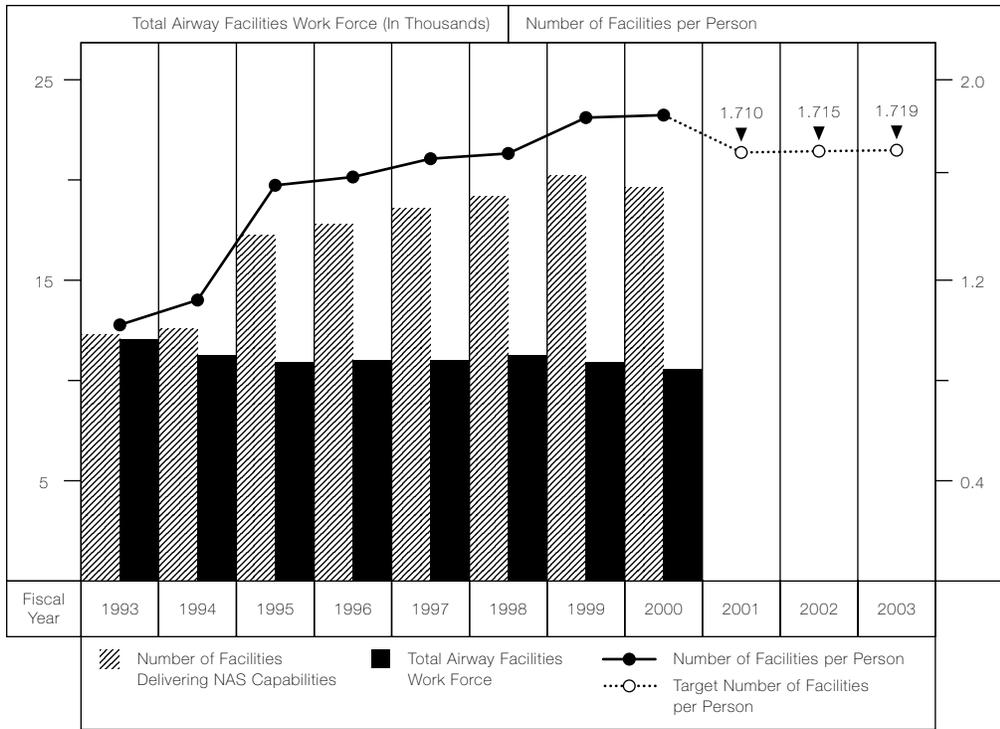
Figure 12
Airway Facilities Productivity

ATS System Efficiency Goal: Integrate and Improve the FAA Telecommunications Services Infrastructure (FTI)

Telecommunication systems and services support every element of the NAS and are necessary to provide ATS services, and to manage, monitor, maintain and control the NAS. These systems are made up of both FAA leased and owned assets which must be replaced between 2002 and 2005 due to lease expirations or end of service life. Projected future requirements and the cost of operating and supporting the system appears to be growing at a rate that may result in a communication infrastructure that is economically unsupportable. A variety of existing and promising technologies could potentially maximize our resources and reduce costs.

Strategies to Improve the Telecommunications Services Infrastructure

The FAA NAS Architecture and the FAA Telecommunications Strategic Plan call for the consolidation of current Telecommunications networks into a common network infrastructure. This common network infrastructure will integrate mission support and operational communications systems for the interfacility transmission of voice, data, and video signals. The FTI Program supports the implementation of the necessary programs and capabilities within the limits imposed by security considerations. The migration of existing services to FTI will be an incremental process, with the schedule and planned capabilities supporting all the programmatic interdependencies required to create this common telecommunications network infrastructure. Full migration of legacy networks under FTI will be completed by 2008. The FTI Program, however, will continue to support requirements for emerging NAS systems and technology enhancements.

Activities and Initiatives for FY 2001-2003

➤ In FY 2001, award the FTI contract and commence activities for network establishment. Activities include optimization of technical approach, network design, transition plan finalization, business practice formulation, service ordering, site surveys, and site preparation.

➤ In FY 2002, begin the phased transition of the proposed telecommunications architecture, resulting in the migration of existing services (Leased Interfacility NAS Communications System [LINCS], Administrative Data Telecommunications Network [ADTN], and Data Multiplexing Network [DMN]) onto the FTI network. Establish vendor provided integrated business tools, and Network Management and Operations.

➤ In FY 2003, continue migration of existing services onto the FTI network with established implementation teams resulting in the initial decline of telecommunications life cycle costs.

Measuring Performance

Project performance will be assessed to measure the cost avoidance attributed to the incremental elimination of multiple networks and the integration of operational and mission support traffic.

The contractor's technical performance will be measured based on parameters specified in the contract. Contractor penalties and Government credits apply for failure to meet specified technical requirements. In addition, appropriate earned value management concepts will be used to measure technical, cost and schedule progress on the contract. ATS has established the following performance targets for this goal:

➤ By the end of FY 2001, complete all evaluation activities and award the FTI contract.

➤ By the end of FY 2002, complete all In Service Review Checklist items and receive an In Service Decision.

➤ By the end of FY 2003, complete 100% of ADTN transition to the FTI.

ATS System Efficiency Goal: Restore NAS Infrastructure

Proper maintenance of the 5,000 unstaffed buildings and nearly 9,000 structural towers is crucial to NAS operations. Yet, a continuous shortfall in the operational funding required to maintain unstaffed facilities has significantly impacted the FAA's ability to meet new equipment operational and reliability requirements and jeopardizes the capital investment made by the agency. Most of the building structures and plant equipment (roofs, doors, floors, air conditioning, power systems, cables, boilers, sewer/water, etc.) have reached or exceeded their useful life. The agency must take immediate action to revitalize existing structures, technology and operational resources (RESTORE) before serious operational consequences materialize.

Strategies to Maintain and Improve the NAS Infrastructure

FAA will use both internal and external resources to address sustainment issues at unstaffed facilities. Contract specifications will be developed to ensure that resources are maximized. Occupational Safety and Health Administration (OSHA) standards will be referenced.

Activities and Initiatives for FY 2001–2003

➤ Initiate life-cycle based condition assessment process for a representative sample of each type of facility.

➤ Improve/rebuild access roads, on-site cabling, electrical power improvements, energy conservation, flooring, grounding and lighting protection, heating, ventilation, and air conditioning, painting, roofing, safety improvements, siding, antenna towers, etc.

➤ Award regional or national contracts for structural tower inspections and repairs.

➤ Coordinate surveillance facility upgrades with new equipment installations.

➤ Coordinate communication facility upgrades with new equipment installations.

Measuring Performance

In addition to initiating the life-cycle based condition assessment process, the following operationally funded upgrade activities (including building repairs, heating, ventilation and air conditioning, access roads, parking lots, fencing, drainage structures, and vegetation control) are established. Targets may be expanded once regional priorities are fully collaborated.

➤ By the end of FY 2001, 25 unstaffed facilities to be completely upgraded, and 15 localizer equipment shelters to be replaced.

➤ By the end of FY 2002, 33 unstaffed facilities to be completely upgraded.

➤ By the end of FY 2003, 99 unstaffed facilities to be completely upgraded.

ATS System Efficiency Goal: Enable Process Improvement Using the FAA-integrated Capability Maturity Model (FAA-iCMM)

ATS is participating in a joint ATS/ARA goal to institutionalize mature processes that enable high quality solutions to FAA and user needs, predictable cost and schedule, and increased productivity. The FAA developed an integrated Capability Maturity Model (FAA-iCMM) to capture best practices generally observed in government/industry and increase the efficiency and the effectiveness of FAA processes. The model describes the stages that processes progress through as they are defined, implemented, and improved. In partnership with AIO and ARA, ATS will support efforts to achieve FAA-iCMM capability and maturity level targets for selected teams/organizations/systems.[2]

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2   The term 'capability level' refers to process areas. There are five capability levels. At capability level 2, performance of the best practices in the process area is planned and tracked. Projects control the processes they use and can repeat earlier success. Practices may be performed differently in different parts of the organization. At capability level 3, best practices are planned and tracked and performed according to a well-defined process using approved, tailored versions of standard processes. The standard processes have evolved from best practice performed at capability level 2. The term 'maturity level' refers to related groups of process areas. The same levels are employed, with the same general descriptions, but they refer to a collection of process areas, rather than a single process area.

Strategies to Enable Process Improvement

ATS will improve operational processes in support of overall life-cycle management process improvement. In support of joint AIO/ARA/ATS efforts to improve the maturity of FAA acquisition and in-service processes, ATS will ensure cross-functional processes are fully matured. Candidate systems and process areas are inclusive of both acquisition and in-service systems and processes. ATS will ensure FAA efforts represent the entire life-cycle, balancing successful organizational results and outcomes for both the FAA operations and acquisition processes.

Activities and Initiatives for FY 2001-2003

➤ Establish ATS process improvement leadership group.

➤ Develop selection criteria for participant teams/organizations/systems.

➤ Participate in joint AIO/ARA/ATS efforts to achieve FAA-iCMM maturity level 2.

➤ Continue internal process improvements to achieve FAA-iCMM capability level 3 in selected process areas.

Measuring Performance

ATS has established the following targets for this performance goal:

➤ By the end of FY 2001, the Air Traffic System Requirements organization (ARS) will achieve FAA-iCMM maturity level 2 rating as a result of an FAA-iCMM full appraisal.

➤ By the end of FY 2001, the Independent Operational Test and Evaluation organization (ATQ) will achieve FAA-iCMM capability level 3 in two process areas.

➤ By the end of FY 2001, the Operational Support organization (AOS) will achieve FAA-iCMM maturity level 2 for Albuquerque ARTCC HOST Computer Program, Local Area Network/Wide Area Network (LAN/WAN), Automatic Call Director/Voice Recorder System (ACD/VRS), Automated Weather Observing System Data Acquisition System (ADAS); and capability level 2 for Mode-S, ASR-9, Air Route Surveillance Radar (ARSR)-4, and ASDE-3.

➤ By the end of FY 2002, ARS will achieve FAA-iCMM capability level 3 in three additional process areas.

➤ By the end of FY 2002, ATQ will achieve FAA-iCMM capability level 3 in three additional process areas (PA).

➤ By the end of FY 2002, AOS will achieve FAA-iCMM maturity level 2 for Mode-S, ASR-9, ARSR-4, Airport Surface Detection System (ASDE)-3, HOST Computer Program, and Common Automated Radar Terminal System (ARTS).

➤ By the end of FY 2003, ARS will obtain a maturity level 3 rating as a result of an FAA-iCMM full appraisal.

➤ By the end of FY 2003, ATQ will achieve maturity level 3 rating as a result of an FAA-iCMM full appraisal.

➤ By the end of FY 2003, AOS will achieve FAA-iCMM maturity level 2 for one AOS Organization, and capability level 3 in four process areas for 66% of the target programs.

ATS Internal Performance Goal

The following goal does not directly support the FAA mission goals, but helps to ensure that ATS employees work in an environment that is safe, fair, and rewarding.

ATS **ATS Internal Performance Goal:** Create a Model Work Environment

ATS works continually toward achieving the ATS vision—to maintain a productive, rewarding, fair, safe, and satisfying work environment. ATS employees will be able to focus on mission accomplishment if the workplace is free from discrimination, harassment, and occupational safety and health hazards; promotes and values diversity; and supports employee partnerships.

Moreover, a diverse workforce produces effective business teams and more creative and viable approaches to problem-solving. ATS must foster employee involvement and creative partnerships to realize a productive and customer-focused operating environment.

ATS is committed to providing its employees with ongoing, clear, and concise communications and information about issues that affect them, thereby, enabling employees to be effective participants in driving operational requirements.

Strategies to Create a Model Work Environment

Each ATS organization will ensure that their activities and initiatives are developed in accordance with the following objectives:

➤ Improve the leadership skills and competencies of employees.

➤ Ensure accountability for competent work and appropriate behavior. Identify and reward outstanding performance.

➤ Establish and use systems that are fair and performance-based. Eliminate non-merit barriers.

➤ Develop and implement plans to make facilities work accessible.

➤ Assess employees' level of satisfaction with their quality of work life. Continue to communicate with employees regarding their level of satisfaction.

Activities and Initiatives for FY 2001-2003

➤ Develop annual corporate model work environment activities and initiatives (ongoing).

➤ Implement model work environment database for use by designated principal in each ATS organization by FY 2002.

➤ Implement annual training program to support the development of model work environment action plans that include policy and guidance.

➤ Develop an infrastructure to determine critical success factors against which model work environment effectiveness will be measured by FY 2002.

➤ Ensure that all new facilities meet requirements for people with disabilities (ongoing).

➤ Ensure Environmental and Occupational Safety and Health (EOSH) compliance throughout ATS (ongoing).

Measuring Performance

ATS is currently collecting and analyzing data to determine metrics and performance targets for model work environment vision and goals.

Appendix

Changes to FY 2001 and FY 2002 Goals and Targets

Last year's ATS Performance Plan (FY 2000-2002) contained performance targets for FY 2001 and FY 2002. This year's ATS Performance Plan (FY 2001-2003) contains performance targets for FY 2001, FY 2002, and FY 2003. In this year's Plan, some of the goals and performance targets for FY 2001 and FY 2002 have been modified to improve their usefulness as evaluation tools, take advantage of new data sources, or other reasons.

This table documents modifications to the FY 2001 and FY 2002 goals and targets. The table presents FY 2001 and FY 2002 goals and targets from both the FY 2000–2002 ATS Performance Plan and the FY 2001-2003 ATS Performance Plan, and explains why the changes were made.

FY 2001 and FY 2002 Performance Targets

FAA Mission Goal: Increase System Safety

ATS SAFETY GOAL – REDUCE OPERATIONAL ERRORS

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ In FY 2001, maintain a monthly operational error rate below 0.60 per 100,000 activities for at least 10 months of the year.	➤ In FY 2001, maintain an operational error rate of 6.0 or fewer operational errors per 1,000,000 activities.	➤ The basis of the operational error targets has been changed from monthly to annual rates. Also, the denominator has been changed from 100,000 activities to 1 million activities.
➤ In FY 2002, maintain a monthly operational error rate below 0.60 per 100,000 activities for at least 11 months of the year.	➤ In FY 2002, reduce the operational error rate by 2.5% to 5.9 or fewer operational errors per 1,000,000 activities.	

ATS SAFETY GOAL – REDUCE RUNWAY INCURSIONS

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of CY2001, reduce the number of runway incursions to a level 3 percent below the CY2000 baseline of 248. The CY2001 target is at or below 241 runway incursions.	➤ By the end of FY 2001, reduce the runway incursion rate to .381 (approximately 243 incursions), 3 percent below the FY 2000 goal of .393 incursions per 100,000 operations.	➤ The period of measurement has been changed from calendar year to fiscal year. Also, the targets have been changed from numbers of runway incursions, to a runway incursion rate per 100,000 operations. The intent of the change is to show whether runway incursions are actually rising or declining relative to the increasing number of operations.
➤ By the end of CY2002, reduce the number of runway incursions to a level 3 percent below the CY2001 baseline of 241. The CY2002 target is at or below 234 runway incursions.	➤ By the end of FY 2002, reduce the runway incursion rate to .370 (approximately 236 incursions), 3 percent below the FY 2001 goal.	
		➤ ATS will develop metrics that focus on the level of risk to the public associated with the various types of runway incursions.

FY 2001 and FY 2002 Performance Targets

ATS SAFETY GOAL – IMPROVE QUALITY OF WEATHER INFORMATION

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➣ No performance targets were established for this goal in the FY 2000-2002 ATS Performance Plan.	➣ By the end of FY 2001, increase the overall system effectiveness of the NAS windshear detection system from 0.281 baseline established in FY 1997 to 0.40. ➣ By the end of FY 2002, increase the overall system effectiveness of the NAS windshear detection system from 0.281 baseline established in FY 1997 to 0.50.	➣ Targets were established for this goal in the FY 2001-2003 ATS Performance Plan.

ATS SAFETY GOAL – ENSURE ENVIRONMENTAL COMPLIANCE

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➣ This goal was not included in the FY 2000-2002 ATS Performance Plan.	➣ By the end of FY 2001, develop and implement a process for measuring the performance of each of the nine regions, the Mike Monroney Aeronautical Center, and the William J. Hughes Technical Center based on their five-year Environmental Compliance Plans (ECP) and conduct a test pilot ECP follow-up review in the Southern Region (9% cumulative completion). ➣ By the end of FY 2002, perform two ECP follow-up reviews using the process developed in FY 2001 (27 % cumulative completion).	➣ This goal and the FY 2001 and FY 2002 targets are new to the ATS Performance Plan.

FAA Mission Goal: Improve System Security

ATS SECURITY GOAL – IMPROVE SECURITY OF ATS PERSONNEL

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➣ There were no quantifiable performance targets for this goal in the FY 2000–2002 ATS Performance Plan.	➣ This goal was not included in the ATS FY 2001-2003 Performance Plan.	➣ The agency focal point for this goal is ACS.

ATS SECURITY GOAL – IMPROVE SECURITY OF ATS INFORMATION SYSTEMS

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➣ By the end of FY 2001, achieve operational authorization of 6 additional NAS systems. ➣ By the end of FY 2002, achieve operational authorization of 28 additional NAS systems.	➣ By the end of FY 2001, achieve operational authorization of 6 additional new and/or replacement NAS systems. ➣ By the end of FY 2002, achieve operational authorization of 28 additional new and/or replacement NAS systems.	➣ The target levels have not changed, but the wording has been modified to specify that the targets refer to new/and or replacement systems.

FY 2001 and FY 2002 Performance Targets

ATS SECURITY GOAL – IMPROVE SECURITY OF ATS FACILITIES

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of FY 2001, implement security upgrades at 8 additional staffed facilities. ➤ By the end of FY 2002, implement security upgrades at 15 additional staffed facilities.	➤ By the end of FY 2001, implement security upgrades at 75 additional staffed facilities. ➤ By the end of FY 2002, implement security upgrades at 200 additional staffed facilities.	➤ ATS revised their targets upward for FY 2001 and FY 2002 in recognition of the critical nature of facility security to the well-being of ATS employees and the flying public.

FAA Mission Goal: Improve System Efficiency

ATS SYSTEM EFFICIENCY GOAL – REDUCE DELAY

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of FY 2001, maintain the combined weather, volume, and equipment-related delay rate at the 1994-1998 baseline of 161 delays per 100,000 activities. ➤ By the end of FY 2002, maintain the combined weather, volume and equipment-related delay rate at the 1994-1998 baseline of 161 delays per 100,000 activities.	➤ Maintain a level of 171 delays per 100,000 activities in FY 2001–2003.	➤ ATS is developing alternative indicators of system performance.

ATS SYSTEM EFFICIENCY GOAL – MAXIMIZE CAPACITY THROUGH CUSTOMER COLLABORATION

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ This goal was not included in the FY 2000 – 2002 ATS Performance Plan	➤ For FY 2001, achieve a minimum airport utilization rate of 81.7 percent at the 21 ASPM airports. ➤ For FY 2002, achieve a minimum airport utilization rate of 81.7 percent at the 21 ASPM airports.	➤ The airport utilization rate is a measure of how efficiently airport infrastructure is utilized.

ATS SYSTEM EFFICIENCY GOAL – INCREASE USER ACCESS

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of FY 2001, increase the number of runways accessible in low-visibility conditions by 10 percent over the FY 1999 baseline. ➤ By the end of FY 2002, increase the number of runways accessible in low-visibility conditions by 15 percent over the FY 1999 baseline.	➤ By the end of FY 2001, increase the number of runways accessible using vertically-guided approaches by 10 percent over the FY 1999 baseline. ➤ By the end of FY 2002, increase the number of runways accessible using vertically-guided approaches to 25 percent over the FY 1999 baseline.	➤ The terminology has been made more specific by changing the terminology from low-visibility approaches to vertically-guided approaches.

FY 2001 and FY 2002 Performance Targets

ATS SYSTEM EFFICIENCY GOAL – INCREASE SYSTEM FLEXIBILITY

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of FY 2001, reduce the number of ATC preferred routes to a level 19 percent below a 1998 baseline of 1,976 routes. The FY 2001 target is at or below 1,601 ATC preferred routes.	➤ By the end of FY 2001, increase the number of transition points on DPs or STARs for the top 100 airports above the 1999 baseline of 270 transition points to 330 transition points.	➤ Because many remaining ATC preferred routes are close to the routes preferred by pilots, ATS is changing the focus of its flexibility goal. The new ATS flexibility metric focuses on how enhancements to the North American Route Program (NRP) improve pilot opportunities to choose their own routes, accelerating the transition to free flight.
➤ By the end of FY 2002, reduce the number of ATC preferred routes to a level 24 percent below a 1998 baseline of 1,976 routes. The FY 2002 target is at or below 1,502 ATC preferred routes.	➤ By the end of FY 2002, increase the number of transition points on DPs or STARs for the top 100 airports above the 1999 baseline of 270 transition points to 350 transition points.	

ATS SYSTEM EFFICIENCY GOAL – INCREASE SYSTEM PREDICTABILITY

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ ATS will continue to monitor monthly variability in ground movement times but has not set a target.	➤ No target has been set.	➤ No change for FY 2001-2003.

ATS SYSTEM EFFICIENCY GOAL – SUSTAIN OPERATIONAL AVAILABILITY OF NAS CAPABILITIES

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ The targets for FY 2001 and FY 2002 are to sustain the composite availability of reportable facilities at 99.12 percent	➤ The targets for FY 2001 and FY 2002 are to sustain the composite availability of reportable facilities at 99.12 percent.	➤ These targets have not been changed.

ATS SYSTEM EFFICIENCY GOAL – INCREASE PRODUCTIVITY

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ Both the Air Traffic and the Airway Facilities targets are to increase productivity by 0.25 percent from the FY 1998 baseline by the end of FY 2001, and by 0.50 percent by the end of FY 2002.	➤ Both the Air Traffic and the Airway Facilities targets are to increase productivity by 0.25 percent from the FY 1998 baseline by the end of FY 2001, and by 0.50 percent by the end of FY 2002.	➤ These targets have not been changed.

ATS SYSTEM EFFICIENCY GOAL – INTEGRATE AND IMPROVE THE FAA TELECOMMUNICATIONS INFRASTRUCTURE (FTI)

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ This goal was not included in the FY 2000–2002 ATS Performance Plan	➤ By the end of FY 2001, complete all evaluation activities and award the FTI contract.	➤ The goal and targets are new.
	➤ By the end of FY 2002, complete all In Service Review Checklist items and receive In Service Decision.	

FY 2001 and FY 2002 Performance Targets

ATS System Efficiency Goal – Restore NAS Infrastructure

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ No quantifiable performance targets for this goal.	➤ By the end of FY 2001, completely upgrade 25 unstaffed facilities; replace 15 localizer equipment shelters. ➤ By the end of FY 2002, completely upgrade 33 unstaffed facilities.	➤ The FY 2001–2003 ATS Performance Plan established targets for this goal.

ATS System Efficiency Goal – Enable Process Improvement Using the FAA-integrated Capability Maturity Model

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ By the end of FY 2001, selected teams/organizations/systems will achieve FAA-iCMM capability level 2 for specific process areas.	➤ By the end of FY 2001, ARS will achieve an FAA-iCMM maturity level 2 rating; ATQ will achieve an FAA-iCMM capability level 3 in two process areas; and AOS will achieve an FAA-iCMM maturity level 2 rating for Albuquerque ARTCC HOST computer program, LAN/WAN, ACD/VRS, and ADAS, and capability level 2 for Mode-S, ASR-9, ARSR-4, and ASDE-3.	➤ ATS has made the FY 2001 and FY 2002 targets for this goal more specific.
➤ By the end of FY 2002, selected teams/organizations/systems will achieve FAA-iCMM maturity level 2.	➤ By the end of FY 2002, ARS will achieve FAA-iCMM capability level 3 in three additional process areas; ATQ will achieve FAA-iCMM capability level in three additional process areas; and AOS will achieve FAA-iCMM maturity level 2 for Mode S, ASR-9, ARSR-4, ASDE-3, HOST computer program, and Common ARTS.	

ATS Internal Performance Goal

ATS System Internal Performance Goal – Create a Model Work Environment

FY 2000-2002 ATS Performance Plan	FY 2001-2003 ATS Performance Plan	Changes to the Goals and Targets
➤ No performance target established.	➤ No performance target established.	➤ No performance target established.

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Acronym List

AAF . . . . Airway Facilities Service, FAA

AAT . . . . Air Traffic Service, FAA

ACD/VRS . . . . Automatic Call Director/Voice Recorder System

ACE . . . . Aviation Capacity Enhancement

ADAS . . . . Automated Weather Observing System Data Acquisition System

ADTN . . . . Administrative Data Telecommunications Network

AFSS . . . . Automated Flight Service Station

AIO . . . . Office of Information Services, FAA

AMASS . . . . . Airport Movement Area Surveillance System

AOC . . . . Airline Operations Center

ARA . . . . Office of Research and Acquisition, FAA

ARINC . . . . . . Aeronautical Radio, Inc.

ARS . . . . Air Traffic Systems Requirements Service, FAA

ARSR . . . . Air Route Surveillance Radar

ARTCC . . . . . . Air Route Traffic Control Center

ARTS . . . . Automated Radar Terminal Systems

ARW . . . . Aviation Weather Directorate

ASC . . . . Office of System Capacity, FAA

ASDE . . . . Airport Surface Detection Equipment

ASPM . . . . Aviation System Performance Metrics

ASR . . . . Airport Surveillance Radar

ATC . . . . Air Traffic Control

ATCSCC . . . . . Air Traffic Control System Command Center

ATCT . . . . Airport Traffic Control Tower

ATM . . . . Air Traffic Management

ATQ . . . . Independent Operational Test and Evaluation, FAA

ATS . . . . Air Traffic Services, FAA

AVR . . . . Regulation and Certification, FAA

CAA . . . . Civil Aeronautics Administration

CARF . . . . Central Altitude Reservation Function

CAS . . . . Cost Accounting System

CCFP . . . . Collaborative Convective Forecast Product

CDM . . . . Collaborative Decision Making

CERAP . . . . . . Center Radar Approach Control

CNS . . . . Communication, Navigation, and Surveillance

COTS . . . . Commercial-off-the-shelf

CPDLC . . . . . . Controller Pilot Data Link Communications

CRCT . . . . Collaborative Routing Coordination Tool

CSIRC . . . . . . Computer Security Initial Response Capability

CY . . . . Calendar Year

DDMN . . . . . . Data Multiplexing Network

DOD . . . . Department of Defense

DP . . . . Departure Procedure

DME . . . . Distance Measuring Equipment

ECP . . . . Environmental Compliance Plan

ETMS . . . . Enhanced Traffic Management System

EOSH . . . . Environmental and Occupational Safety and Health

EPA . . . . U.S. Environmental Protection Agency

FAA . . . . Federal Aviation Administration

FAR . . . . False Alarm Rate

F&E . . . . Facilities and Equipment

FIS . . . . Flight Information Services

FSRM . . . . Facility Security Risk Management

FSS . . . . Flight Service Station

FST . . . . Fuel Storage Tank

FTI . . . . FAA Telecommunications Infrastructure

FY . . . . Fiscal Year

GNSS . . . . Global Navigation Satellite System

GPRA . . . . Government Performance and Results Act

GPS . . . . Global Positioning System

iCMM . . . . integrated Capability Maturity Model

ICR . . . . Initial Collaborative Routing

ILS . . . . Instrument Landing System

IOT&E . . . . . . Independent Operational Test and Evaluation, FAA

IPDS . . . . Integrated Product Development System

IRM . . . . Information Resource Management

ITWS . . . . Integrated Terminal Weather System

JSAT . . . . Joint Safety Analysis Team

JSIT . . . . Joint Safety Implementation Team

LAADR . . . . . . Low Altitude Arrival and Departure Routes

LAAS . . . . Local Area Augmentation System

LAN . . . . Local Area Network

LINCS . . . . . . Leased Interfacility NAS Communications System

LLWAS . . . . . . Low-Level Wind Shear Alert System

MAMS . . . . . . Military Airspace Management System

MIAWS . . . . . . Medium Intensity Airport Weather System

NAS . . . . National Airspace System

NASSI . . . . . . NAS Status Information

NDC . . . . National Data Center

NEXCOM . . . . Next Generation Air/Ground Communication

NIMS . . . . NAS Infrastructure Management System

NOCC . . . . . . National Operations Control Center

NRP . . . . North American Route Program

NTSB . . . . National Transportation Safety Board

OAG . . . . Official Airline Guide

OASIS . . . . . . Operational and Supportability Implementation System

OCC . . . . Operations Control Center

OIG . . . . Office of Inspector General

OOOI . . . . Out, Off, On, and In

OSH . . . . Occupational Safety and Health

OSHA . . . . Occupational Safety and Health Administration

OT&E . . . . Operational Test and Evaluation

PAPI . . . . Precision Approach Path Indicator

PCB . . . . Polychlorinated Biphenyl

pFAST . . . . . . passive Final Approach Spacing Tool

POD . . . . Probability of Detection

QAR . . . . Quality Assurance Reviews

RAPCON . . . . Radar Approach Control

RE&D . . . . Research, Engineering, and Development

REGIS . . . . . . Regional Information System

RESTORE . . . Revitalize Existing Structures, Technology, and Operational Resources

RIAT . . . . Runway Incursion Action Team

RVSM . . . . Reduced Vertical Separation Minima

SAMS . . . . SUA Management System

SDP . . . . Service Delivery Point

SMA . . . . Surface Movement Advisor

SOC . . . . Service Operations Centers

STAR . . . . Standard Terminal Arrival Route

STARS . . . . . . Standard Terminal Automation Replacement System

STP . . . . Strategic Planning Team

SUA . . . . Special Use Airspace

SWAP . . . . . . Severe Weather Avoidance Plan

TDWR . . . . . . Terminal Doppler Weather Radar

TMA . . . . Traffic Management Advisor

TRACON . . . . Terminal Radar Approach Control

URET . . . . User Request Evaluation Tool

UST . . . . Underground Storage Tank

VHF . . . . Very High Frequency

WAAS . . . . . . Wide Area Augmentation System

WAN . . . . Wide Area Network

WARP . . . . . . Weather and Radar Processor

WSP . . . . Wind Shear Processor