



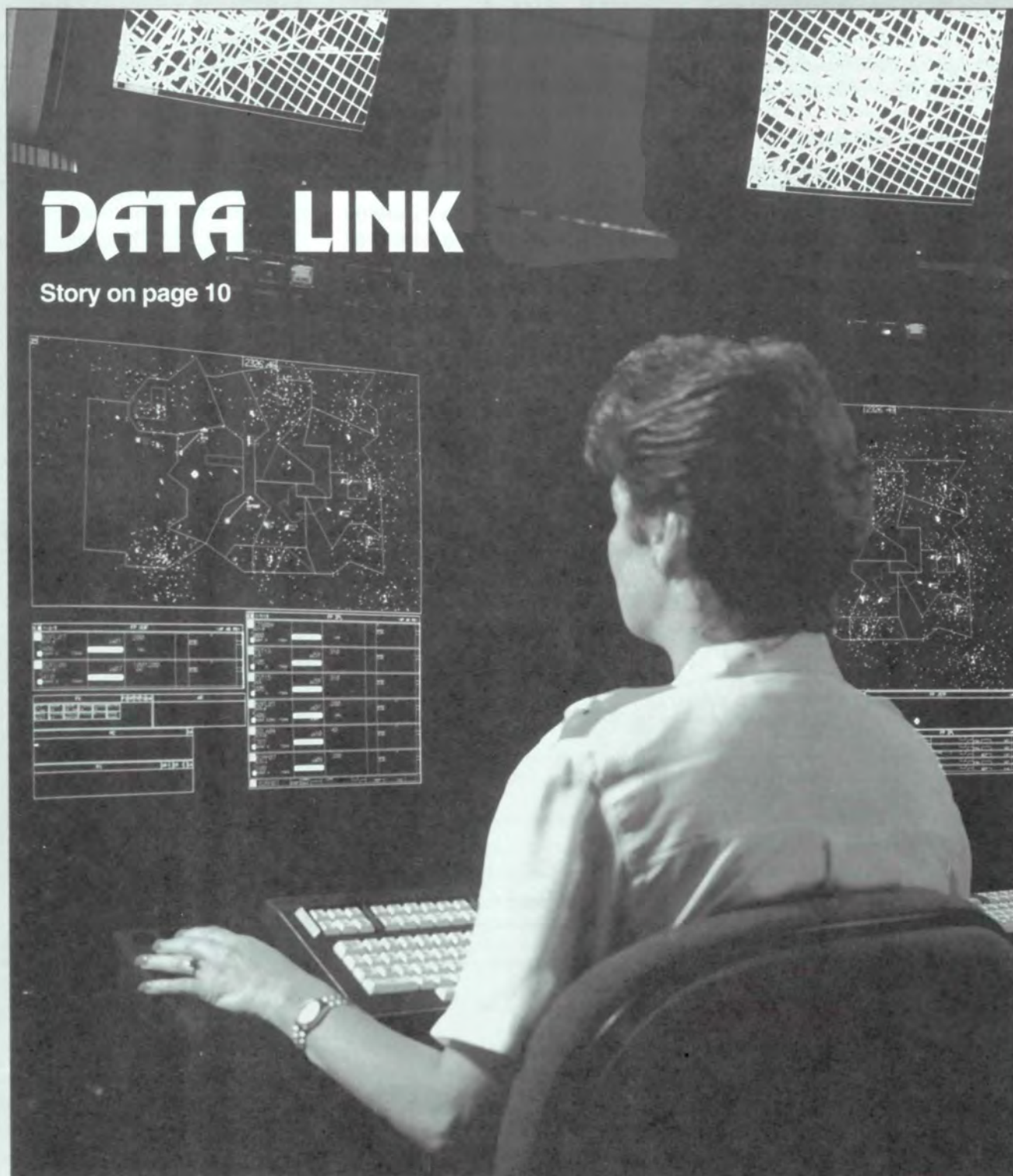
U.S. Department
of Transportation
**Federal Aviation
Administration**

FAA World

October 1993

DATA LINK

Story on page 10



F or Y our I nformation . . .

The agency's directive on the **FAA Emergency Operations Plan** (FAA 1900.1E) was recently released. The order implements the overall FAA emergency operations program providing for the FAA's survival and endurance, the protection of personnel and key facilities, and the continuity of the National Airspace System (NAS) and other essential agency functions. For information on obtaining copies of the order, which was issued by the Emergency Operations Staff, ADA-20, call (202) 267-3523.

Many thanks go to **Jan Monroe** in Central Region's Airports Division Planning Section for the aerial photographs of the Midwest floods used in last month's *FAA World*.

"Flying Saves Lives" is the theme of the **1994 International Aviation Art Contest** for children ages five to 16. Entries must be postmarked by December 8 and received by December 13, 1993.

Sponsored by the Federal Aviation Administration, National Aeronautic Association, and National Association of State Aviation Officials in cooperation with Fédération Aéronautique Internationale, the contest features state, national, and international awards for winning artwork.

For additional information, contact:
Chase C. Stockon, director
Center for Aviation Research and Education
Metro Plaza One—Suite 505A
8401 Colesville Road
Silver Spring, Maryland 20910
(301) 495-2848

October is National Disability Employment Awareness Month. Related events—including presentations, workshops, panels, and videos—will be held throughout the agency. Check your local calendar of events for dates and times of activities.

continued on page 15

Contents

Managing Change Administrator points to FAA's success	3	Data Link Communications Preparing for the future	10
Accident Warning System ASAP in development	4	Report on Employee Assistance Program A look at responses	14
Learn More about TWO Denver conference addresses workplace environment	5	Cooperative Agreements United States, Australia pool expertise	15
National Research Council Associateship Program 'How to's' for research awards	6	Computer-Based Instruction for Airports Course available in FY '94	20
Top Flight Standards Office Springfield facility tapped for honors	8	Departments FYI	2
Representative Appointed to Newly Independent States Dennis Cooper posted in Moscow	9	Survey Scene	6
		Photo Credits	9
		Off Duty . . .	16
		People	17



U.S. Department
of Transportation
**Federal Aviation
Administration**

FAA World

October 1993 Vol. 23, No. 10

FAA WORLD, the official FAA employee publication, is prepared by the Employee Communications Branch (APA-340) of the Public and Employee Communications Division, FAA Office of Public Affairs, 800 Independence Avenue SW, Washington, DC 20591.

Secretary of Transportation
Federico F. Peña

FAA Administrator
David R. Hinson

Assistant Administrator—
Public Affairs
Bob Buckhorn, acting

Manager—Public & Employee
Communications Division
Paul Steucke, Sr.

Manager—Employee
Communications Branch
Diane Spitaliere

Editor
Pat Tomasetti
(202) 267-3448

Art Director
Michael A. Malden

Articles and photos for *FAA WORLD* can be submitted directly to APA-340 or to regional FAA public affairs officers:
John Clabes—Aeronautical Center
Joette Storm—Alaskan Region
Sandra Campbell—Central Region
Bob Fulton—Eastern Region
Morton Edelstein—Great Lakes Region
Tony Willett—New England Region
Tim Pile—Northwest Mountain Region
Kathleen Bergen—Southern Region
Henry Christiansen—Southwest Region
Holly Baker—Technical Center
Elly Brekke—Western-Pacific Region

Hinson Pledges To Heed History in Managing Change

'Our First Job Is Safety'

At a brief, late-August ceremony, David Hinson, FAA's newly sworn-in Administrator, outlined some of the forces that are precipitating change in civil aviation. These converging forces include:

- The President's airline commission recommendations.
- The Vice President's initiative on reinventing government.
- The air traffic modernization program.
- Acceleration in the application of new technologies to all facets of aviation.
- The will and wishes of Congress.
- Globalization of civil aviation.

Even though these are "exciting times that hold much promise," Hinson reminded FAAers to "remember the foundation upon which our success has been built. We must always remember that our first job is safety," he said.

"The reputation of the FAA for

world leadership in civil aviation rests, in part, upon the outstanding and continuous improvement in flying safety achieved since World War II," Hinson said. "Working with the many disciplines that make up our airline industry, the FAA has established a solid foundation of technical expertise that will ensure success."

Statistics bear out FAA's success story. Since the National Transportation Safety Board began publishing figures, the highest accident rate for U.S. carriers was in 1961.

"If U.S. air carriers had experienced the same accident rate in 1992 that they did in 1961, we would have had 245 accidents last year—an accident two out of every three days," said Hinson. Yet in 1992 there were 19

accidents, and of those, only one involved passenger fatalities.

It is the excellent safety environment of today "we need to remember as we begin to address the forces of change," Hinson stated. Although "we can and should manage change," Hinson said, "it would be unwise to ignore history." *



Secretary of Transportation Federico Peña with David and Ursula Hinson at public swearing in ceremony held at the National Air and Space Museum.

Meet FAA's 13th Administrator

Before joining the FAA, Hinson was executive vice president for marketing and business development for Douglas Aircraft Company since January 1992, with responsibility for leading the marketing development and sales of McDonnell Douglas commercial jet transports. A native of Oklahoma, he is married and has three children.

Hinson served as a naval aviator on active duty and in the

reserves for 10 years. He later worked as a Northwest Airlines pilot on domestic and international routes for three years.

In 1961, at the age of 28, he became one of the youngest flight instructors for United Airlines. He then was a captain and director of flight training for West Coast Airlines in Seattle, eventually becoming director of flight standards and engineering for West Coast's successor, Air West. In 1973 Hinson founded Hinson-Mennella, Inc., a closely held partnership, to pursue business acquisitions. Among others, the organization acquired Flightcraft, Inc., the Beech aircraft distributor in the Pacific Northwest.

Hinson was an original investor and one of four founders of Midway Airlines. Prior to assuming his position at Douglas Aircraft, he was chairman and chief executive officer of Midway. The airline ceased operations in November 1991.

Hinson holds a bachelor's degree from the University of Washington. He is a member of advisory boards of the graduate schools of business at the University of Chicago and the University of Washington, and a trustee of the Naval Aviation Museum Foundation. *

ASAP Data

Rotorcraft Directorate's Accident Warning System in Development

By Mary Ann Phillips

It's always good news to know that information—especially that related to things like potential aviation safety hazards—can be attained quickly. ASAP. Such speed and accuracy depend on automation, a norm for almost every facet of the aviation industry.

The Service Difficulty Reporting System, operated by Southwest Region's Regulatory Support Division, AFS-600, in the Rotorcraft Directorate, is no exception. And directorate employees are working to take its reporting capability a step further.

Using the system's database, as well as related databases on accidents, incidents, and airworthiness directives, the directorate has designed a system called Aviation Safety Accident Prevention (ASAP) that is being set up to serve as a warning system to aircraft owners and operators. The system aims to give aviation alerts similar to the way the National Weather Service warns the public about potential weather hazards. Via a computer network, the ASAP can make aircraft owners and operators aware of potential hazards to aviation safety. By creat-

ing a way to predict potential aircraft accidents, owners and operators can defuse the hazard with preventative action.

"It used to be impossible to predict the weather, but now it's commonplace," says John Williams, manager of the directorate's Technical and Administrative Support Staff. "Still, weather forecasters use soft data to predict their changes, and we have hard data on which to base our predictions," he adds.

Williams' group has spearheaded the ASAP automation program, and Ben Beets, service difficulty coordinator, is developing the system based on the reports themselves and other information databases. Currently ASAP contains service difficulty reports from January 1, 1985, to the present.

Not only will the data provide information on service difficulties, but it will also alert the user if a part was previously involved in an accident or incident or was the subject of an airworthiness directive. Also, if the part is "life-limited," its retirement date will be displayed.

Using manufacturers'

names, models, and component part numbers, the system gives industry and owners trend information, such as the number of service difficulties a particular model or component has experienced within the past three to 24 months.

Most agree that ASAP, which is still in the "bug-detecting" stage, is a useful tool in locating, analyzing, and resolving service difficulties, even though its 46,152 service difficulty reports account for only about one-thirtieth of those experienced. "I think we're already seeing a willingness to cooperate among the government, manufacturers, owners, and operators," says James Erickson, manager, Rotorcraft Directorate.

To create a system that reflects all possible glitches completely and accurately, however, the FAA is striving to get beyond the human tendency of not documenting difficulties. "When reports aren't filed, it's like the problem never happened," says Williams. *

Mary Ann Phillips is a technical publications writer/editor in the Rotorcraft Directorate's Regulation Group, Fort Worth, Texas.

FAA World

An Environment for the 21st Century



On the TWO executive board are, standing from left, Linda Mark, Renee Putsche, Cathy Hedglen, Bernadine Molen, Le Anne Robbins, Candy Dobkins-Close, Eulalia Trahan, and Stacey Hamilton; and, seated from left, Vicky Wilson, Donna Betz, Patti Mattison, Clarissa Holland, Inez Thomas, Helen Ernst, Sylvia Meyer, and Regena Wood. Not shown is Mamie Mallory.

Networking was one of the themes of the Technical Women's Organization (TWO) annual conference, and Associate Administrator for Airway Facilities Arnold Aquilano helped in providing the right kind of environment to have it happen.

Both the Airway Facilities management team and the TWO group met at the same facility in Denver, during the same time period. This enabled AF's managers to participate in portions of the conference, and TWO members could enjoy informal discussions with Airway Facilities Headquarters and regional managers during the week.

The TWO, which has grown from its early roots in Airway Facilities, now encompasses technical women throughout the FAA. Approximately 150 attended the conference, including many managers from all over the FAA organization. Participants left with a clearer vision of TWO, a reaffirmation that they are not alone out there, and a commitment to continue to support technical women. *



TWO—The Technical Women's Organization—awarded Associate Administrator for Airway Facilities Arnold Aquilano for his support of the group.

New officers for the group are:

Bernadine Molen,
president
Northwest Mountain Region
Le Anne Robbins,
vice president
Southern Region
Cathy Hedglen,
secretary
Southwest Region
Clarissa Holland,
treasurer
Eastern Region
Renee Putsche,
newsletter editor
Northwest Mountain Region

FAAers who want to learn more about TWO can contact their regional representative.

Aeronautical Center
Regena Wood (405) 954-5203
Alaskan Region
Patti Mattison (907) 789-0231
Central Region
Linda Mark (515) 285-0822
Eastern Region
Vicky Wilson (412) 461-8825
Great Lakes Region
Candy Dobkins-Close
(317) 247-2283
New England Region
Donna Betz (413) 634-5428
Northwest Mountain Region
Sylvia Meyer (303) 342-1410
Southern Region
Helen Ernst (404) 763-7851
Southwest Region
Eulalia Trahan (713) 230-5450
Technical Center
Stacey Hamilton (609) 485-5858
Washington Headquarters
Mamie Mallory (202) 267-7890
Western-Pacific Region
Inez Thomas (602) 344-0963



By Geoff McIntyre

Getting Solutions through Science, Technology

FAA Signs Up for National Research Council Associateship Program

New talent is extremely important to organizations involved in applying scientific and technological solutions to problems. For instance, there's always a need for up-to-the-minute perspectives to aid the FAA in balancing regulatory and operational decisions related to air safety against increased economic costs. The future also demands innovative solutions: What goals should the FAA set for its research and development programs? How can the FAA assure a steady stream of talented scientific and engineering personnel?

One source of this type of talent is the National Research Council Associateship Program.

To 'investigate' science

In 1863 Congress chartered the National Academy of Sciences and directed its 50 charter members to, "when ever called upon by any department of the Government, investigate, examine, experiment, and report upon any subject of science and art."

U.S. entry into World War I required the academy, which had grown to 150 members, to create the National Research Council (NRC). The council was charged with aiding the federal government on the full range of science and engineering expertise during the emergency.

By the end of the war, more than 150 committees of experts were advising

the government on matters ranging from antisubmarine defense to aerial photography. President Woodrow Wilson valued the council to such an extent that he issued an executive order in 1918 to make it a permanent organization.

Associateship program

From 1919 to 1955, the NRC competitively awarded postdoctoral-level science and engineering fellowships. The NRC Research Associateship Program dates from 1954 when the council began to administer fellowships on behalf of some 38 federal research laboratories. The labs, which offer superb facilities and top people as coworkers, provide vital funds to support the associ-

ates. Also, the national laboratories often recruit the associates for permanent positions.

Since the program's beginning, over 7,000 scientists have:

- introduced fresh ideas to federal laboratories.
- enhanced the relationship between federal laboratories and the research community.
- obtained unique research experiences.
- acquainted themselves with research opportunities for the future.
- enjoyed mutual intellectual stimulation with research advisors.

FAA joins up

In December 1992, FAA initiated the establishment of an NRC Research Associateship Program for Aviation. Based on the agency's statutory mission to conduct research for the benefit of a safe and efficient National Airspace System, the cooperative program provides a way for associates to increase their real world, operational capability in the field, while assuring that sponsoring research laboratories gain in knowledge.

The initial focus of FAA's program is the Operations Research Service in the Office of the Associate Administrator for System Engineering and Development, where associates are targeted to arrive by early next year. There they will work with the National Simulation Capability (NSC) developed by the service. With its expanding capability and use to describe the future National Airspace Systems (NAS), the NSC can address large-scale, real-time, human-in-the-loop situations. It makes integration of models and simulations possible, aids simulation studies that identify critical systems integration issues, and clarifies requirements for, and impact on, the human element within the aviation system of the future.

Site visits

Throughout the spring and summer of 1993, staff from the NRC's Office of Scientific and Engineering Personnel toured FAA research facilities, including visits to National Airport Tower/TRACON, the Human Factors Laboratory at the FAA Technical Center, the National Simulation Capability Labo-

ratory, and the Operations Research Service at Headquarters. In combination with initial staff visits, a formal NRC Site Visit Team, with members carefully chosen and approved as representative of the council, assessed the facilities' capabilities. The team of distinguished scientists needed positive answers to these questions:

- Will a carefully selected new postdoctoral or senior scholar have a stimulating and productive research experience at the laboratory?
- Will a nominated advisor and the research opportunity there attract high-quality postdoctoral researchers, nurture their progress, and offer them scientific stimulation?
- Is it likely that new postdoctoral or senior investigators will enhance the scientific or technological climate of the laboratory?

To date, the visiting team has forwarded their review and recommendation. Following the go-ahead by the NRC Governing Board, a formal contract proposal will be submitted to meet the scope of FAA's projects.

It's working

In a look at participation at other agencies, the National Oceanic and Atmospheric Administration (NOAA) has recently attracted several Russian meteorologists through the associateship program. The National Air and Space Administration (NASA) has also been a solid participant, and several of its employees are program graduates. The Federal Highway Administration joined in 1991.

Interest in the cost-effective program is currently high. Places such as the Volpe National Transportation Systems Center in Boston have recently requested information on its merits. With the hiring limitations now in place, what better way to attract the needed scientific and engineering personnel to the exciting future possibilities within the FAA? *

Dr. McIntyre is associate program manager, Airport Surface Program. He also manages the Associateship Program at FAA.

This article is based on information in *The NRC: A Unique Institution and The Scientist* of November 25, 1991.

'How To's' for Research Awards

The majority of the National Research Council's associateships go to scientists who have held doctorates for fewer than five years. Their projects are usually funded for two to three years, with an annual stipend of \$35,000 to \$45,000.

Established scientists who have held doctorates for more than five years compete for senior research associateships, with an annual stipend of \$56,000 to \$67,000. Senior research associates can submit shorter-term proposals, for projects that are three months to one year in duration and can be completed during a sabbatical year.

Available opportunities are published in the NRC's booklet, *Research Opportunities*. The publication is obtainable from that organization, universities and colleges, and ARD-50.

NRC panelists review and evaluate applications, and competition for the awards is keen. For example, in 1991 some 1,350 applications were received, including many from foreign scientists. From 350 to 400 grants were awarded, translating to about a 26 to 30 percent acceptance rate. FAA plans to open its program to international researchers in '94.

Survey Scene

Survey Feedback Action

By Dorothea S. Hall and Abbas Rizvi

Jack McGrath is one of FAA's ardent practitioners of organizational development and teambuilding. Here's how he is using those tools to improve communications and the quality of work life for employees in our organization: In response to a Survey Feedback Action, McGrath, manager of the Aircraft Certification Service's Aircraft Engineering Division, began a series of meetings with the division's managers and secretaries.

The first result was agreement on a set of ground rules that could be observed during the meetings and in the workplace. Following that there was a gathering and tabulation of ideas about improving the quality of the work and the environment.

One product of the six, day-long meetings conducted over a period of three months was the action plan produced. This plan addresses issues that range from performance



Jack McGrath

appraisal methods for the division's secretaries to the quality of correspondence and how to prioritize work. The team even planned ways to see that the action plan was followed through.

Also related to the survey feedback, McGrath formed an employees' ad hoc committee to make a preliminary assessment of the services performed by the division and to recommend actions for improvement. The committee's report, "An Investment in Quality," proposed a set of recommendations, which the division's management team readily accepted.

Whether communications or the quality of work life has improved as a result of these two exercises is not yet clear. What is obvious, though, is that a sincere effort is going on to get improved results in those areas.

The points worth highlighting here are the effort taken, the process that was so carefully delineated, the involvement of employees, and the seriousness of commitment. And in those terms, the experience of people in the Aircraft Engineering Division can already be called a success story. *

Dorothea Hall is a program assistant, and Abbas Rizvi is manager of the Navigation and Communications Branch, AIR-130.



Staff and visitors at Springfield, Illinois, FSDO.

Springfield FSDO Named Tops in Nation

By Lynn Jensen

In a tribute to its quality management and customer service, the Springfield, Illinois, Flight Standards District Office (FSDO) has been recognized as FSDO of the Year for 1992 by the Flight Standards Service.

The award was presented to FSDO manager Charlie Nolan and his staff by Tom Accardi, Flight Standards Service director, and Dave Hanley, manager of the Great Lakes Region Flight Standards Division. Bill Withycombe, Great Lakes Region Deputy Regional Administrator, also took part in the awards ceremony.

The office staff has long exhibited a standard for high-quality work and customer orientation, according to Nolan. He has been the office manager since 1990 and observed the work of the FSDO for several years prior to that from his regional office staff position.

As good as the quality had been historically, Nolan said, he and the staff worked hard together to improve.

The next step was to describe all that good work in a package to be submitted for consideration as regional FSDO of the year, the first step toward the national recognition.

According to Nolan, that first step of describing their own good work was the most difficult for his group. "They are not people who like to blow their own horns," he said.

Several criteria are used to evaluate the accomplishments of a FSDO staff, and the Springfield group led in them all. For example, they had a high level of participation in inspections conducted as part of the National Aviation Safety Inspection Program. Also, inspectors participated with distinction in national inspector handbook development and international certification activity.

The award cites several examples of innovation or improvements in service to the public or other government agencies. In early 1992, Nolan responded to a request from the Illi-

nois Attorney General by preparing a joint program with the Civil Aviation Security Division to acquaint state officials with FAA's enforcement activities. The program was presented to state and local law enforcement officials enrolled in the Attorney General's Investigator Training Seminar.

The Accident Prevention Program is a good opportunity for any FSDO to maximize its public contact. During 1992, Springfield employees conducted 49 accident prevention meetings. Of those, 46 were conducted jointly with the Illinois Division of Aeronautics.

The annual "Pilot Proficiency Wings Weekend" at Mattoon, Illinois, has become a signature event for the program. Using the resources of corporate and organization cosponsors, along with the services of 74 volunteer flight instructors, more than 500 hours of free flight instruction was provided to 178 participating pilots. When the weekend was over, 133 pilots were awarded Pilot Proficiency Wings and certificates. Other participants had completed part of the requirements for some phase of the program.

The highlight of the event was the presentation of Phase III Pilot Proficiency Award Wings to former astronaut James Lovell, who flew his Beech Baron in to participate.

It is impossible not to leave out many individual and group accomplishments when trying to capture such a significant recognition. The FSDO staff produces high-quality and timely enforcement reports and leads in work program accomplishment and automation activities.

Nolan said the group has taken their national recognition all in their usual stride, and they profited from visits with FAA officials at the awards ceremony. A party that included their families was a nice way to cap a very successful year at the Springfield FSDO. *

Lynn Jensen manages the Technical Evaluation Branch, Flight Standards Division, Great Lakes Regional Office.

First FAA Representative Appointed to Newly Independent States

By Rich Hunter

Dennis Cooper, an FAAer with 19 years experience in dealing with the former Soviet Union and Russia, will become the first Senior FAA Representative to the Russian Federation and the other 11 Newly Independent States (NIS) of the former Soviet Union. He will be posted at the U.S. Embassy in Moscow in mid-October.

Since 1976, Cooper has had a lead role in negotiating and implementing FAA's cooperative activities with foreign governments, particularly the former Soviet Union and Russia. These cooperative activities have included all-weather landing systems,



Dennis Cooper visits with interpreter Anna Gopin; Pat Poe, director of FAA's Europe, Africa, and Middle East Office; and Nancy Angelo, Office of International Aviation. The FAA exhibited at MOSAERO, an airshow in Moscow held last month.

secondary surveillance radar, collision avoidance systems, air traffic control and satellite navigation system development, and the expansion of commercial overflight air routes in the Russian Far East.

Prior to this appointment, Cooper managed the International Research Program Office at Headquarters. In addition, he served as the special assistant to the Associate Administra-

tor for System Engineering and Development and the International Program Officer for the Executive Director for System Operations.

Before joining the FAA in 1974, Cooper served four years in the U.S. Air Force as a communications specialist.

FAA is engaged in several major programs with the Russian Federation and other Newly Independent States. These include efforts toward:

- A U.S./Russian bilateral airworthiness agreement.
- New, more efficient North American/Asia-Pacific air routes through Russian Far East airspace.
- Modernization of air traffic control systems in Russia and other NIS countries.
- Use of civil signals from U.S. and Russian navigation satellites to imple-

ment the worldwide Global Navigation Satellite System (GNSS) endorsed by the International Civil Aviation Organization.

New airlines from Russia, Ukraine, and other Newly Independent States also plan to serve U.S. cities. *

Author Rich Hunter, a summer intern, worked in the FAA's Office of International Aviation.

Photo Credits

Honored by the FAA at a ceremony in Mexico City was Clark Crook-Castan, transportation/communication officer, American Embassy. The award recognized Crook-Castan for his efforts during a time the FAA was involved in very delicate negotiations with its counterparts in Mexico on crucial issues related to communications between air traffic facilities on both sides of the border—specifically, the use of a flight data input/output device between Merida Air Control Center and Houston Air Route Traffic Control Center and the use of satellite communication for all point-to-point en route traffic control functions.

Pictured are Clark and Rafaela Crook-Castan; Ambassador John Negroponte; Jack Sasser, Southwest Region Deputy Regional Administrator; and Hugh Hartley, the region's international affairs officer. *



Data Link Communications:

Key to Future Air Traffic Services

By Hugh McLaurin and Mary Minnix

An exciting new communications process is being introduced into the air traffic control system. Called Data Link, it will allow a broad range of communication services, leading to increased efficiency and capacity, improved air safety, reduced costs, and enhanced hu-

man and equipment productivity in the near future. A nonvoice, digital data communications capability, Data Link will allow a vast, interlocking system of computers, satellites, sensors, and communications software to integrate ground automation systems with aircraft computers. Here's the story.

Yet air traffic control's current radio-based voice communications are operationally limiting and approaching capacity in many cases. With increasing traffic and automation, current methods will never support the highly advanced air traffic control system necessary for the future.

Described by the International Civil Aviation Organization (ICAO) Future Air Navigation Systems (FANS) Committee, tomorrow's air traffic management (ATM) system will be built upon a structure of advanced communications, navigation, and surveillance—CNS functions—that support flight planning, aircraft operations, and ATC services on a global basis. Realization of this "FANS CNS/ATM concept" depends on the capability for controllers, aircraft, and flight planners to exchange complex information rapidly in all flight domains.

Challenges to the control process

Currently, voice communications rely primarily on ground-based, very high frequency (VHF) radio in domestic airspace and long-range, high frequency (HF) radio for aircraft not reachable by line-of-sight transmission, such as those in oceanic airspace. Both technologies present challenges to the control process.

In domestic airspace, communications problems result mostly from the limited number of radio frequencies available for VHF air traffic control transmissions. Combined with increasing air traffic, these limitations have individual controllers handling more than 25 aircraft simultaneously. To respond quickly to air traffic control directives, each aircraft crew must listen to the constant, fast-paced exchange of information among all parties. Since only one person at a time can use a designated channel, the situation is very similar to many people vying to use the same telephone line at once.

Naturally, problems associated with direct voice communications increase in proportion to the higher levels of air traffic. During peak periods, the need for constant, speedy transmission of control information can lead to error through misinterpretation, resulting in potential safety hazards. Estimates are that between 30 and 50 percent of all operational errors are caused either directly or indirectly by miscommunications. Additionally, communications-related delays and reduced efficiency in the current system hike costs in time and fuel.

Even more severe are communications problems associated with HF radio for oceanic air traffic control. An unreliable communications link, HF radio transmissions between a pilot and ground radio operator are subject to severe fading and interference. HF messages must be relayed from the radio operator to the oceanic controller, which is an additional source of delays, information errors, and misunderstandings. As air traffic increases, the HF voice link becomes more congested, heightening the probability of significant delays or lost messages.

Because HF radio communications are prob-

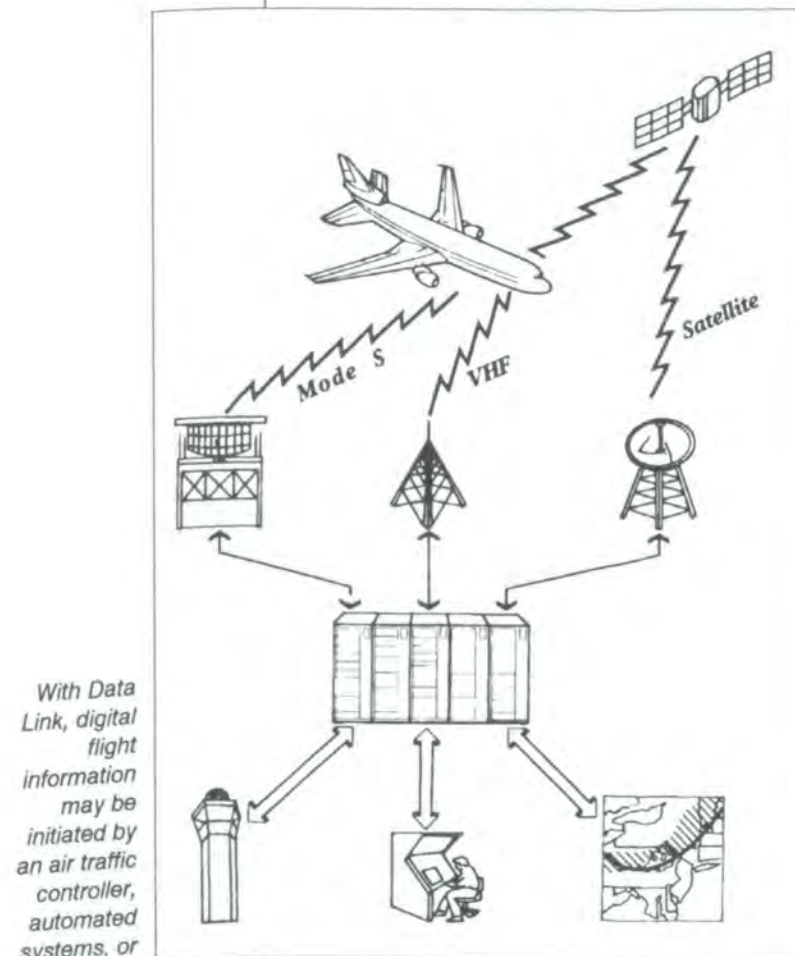
lematic, air traffic control rules for oceanic airspace must be restrictive. For instance, very large separation standards between aircraft are required as compensation for the uncertainty of reaching the aircraft via HF radio. Yet aviation forecasts predict increasing air traffic in U.S.-controlled oceanic airspace over the next several years. Without improved communications for oceanic air traffic control, how can future needs be met?

Possible with Data Link

Simply upgrading the current voice-based communications equipment and procedures cannot solve the problems of today's aviation system, much less support the air traffic management system of the future. The current voice radio-only system must be supplemented and in many instances replaced by text-based communications and associated automation tools.

In the mid-1980s after several years of work, research and development programs related to Data Link began to be incorporated into the FAA's National Airspace System Plan. Since then, the FAA and the aviation industry have been heavily involved in developing hardware, software, and interface standards and

'Simply upgrading the current voice-based communications equipment and procedures cannot solve the problems of today's aviation system, much less support the air traffic management system of the future.'



With Data Link, digital flight information may be initiated by an air traffic controller, automated systems, or the pilot. As data is transmitted, computers select the optimum method of transmission to and from the aircraft. Based on predetermined priorities, the computer may choose from Mode S, satellite, VHF, or other proposed Data Link transmission systems.

man and equipment productivity in the near future. A nonvoice, digital data communications capability, Data Link will allow a vast, interlocking system of computers, satellites, sensors, and communications software to integrate ground automation systems with aircraft computers. Here's the story.

Advanced communications vital

Everyone agrees that communications between pilots and controllers are fundamental to air traffic control. In an increasingly com-

Trials and Demonstrations

A variety of trials and preoperational demonstrations of the Data Link System have already begun.

The Aeronautical Telecommunication Network Project, which provided the early design, development, and testing of the network, has been underway since 1989. The project has been a voluntary, cooperative venture among aviation organizations, including airlines, communications service providers, avionics manufacturers, the FAA, and the MITRE Corporation/Center for Advanced Aviation System Development. The first ATN Project flight takes place this year using an FAA Technical Center aircraft.

In addition, Pacific Engineering Trials (PET) have been underway in Pacific oceanic airspace. Currently, some 35 United Airlines Pacific fleet aircraft have been equipped for the trials with converted Aircraft Communications Addressing and Reporting System equipment that allows Data Link messages to be exchanged between the flightcrew and the HF radio operator via Inmarsat satellites. Over the next year, similar trials will begin in the North Atlantic oceanic airspace; other air traffic control authorities responsible for Pacific and North Atlantic airspace will begin participating in these operations. *



A Data Link Automatic Terminal Information Service message is displayed in USAir cockpit during the 1993 trials.

requirements for related ground and airborne automation systems. Organizations active in the development include RTCA, Inc. (formerly

the Radio Technical Commission for Aeronautics), Airlines Electronic Engineering Committee (AEEC), and ICAO. Initial aeronautical Data Link services have been introduced into the air traffic control system during the past few years, and development of additional services by the FAA is moving rapidly.

Widely recognized as advantageous, adding Data Link capability to support communications between pilots and controllers aids the pilot in recalling significant information and reduces the chance of human error in hearing and transcribing data. By allowing direct data exchange between automation systems, Data Link can also support advances in ground automation and avionics in high-precision route calculation and flight control operations.

Use of Data Link in air traffic control

When fully implemented, Data Link will allow communication with aircraft nearly anywhere in the world, through a variety of transmission systems such as VHF, satellite, Mode S secondary radar, and airborne and ground communications networks. In domestic airspace, its near-term uses will be primarily for provision of such air traffic control communications as clearances and for weather and other flight information services.

Within oceanic airspace, Data Link pilot-controller communications will be available in the near term, followed by a surveillance capability called automatic dependent surveillance (ADS). Using ADS, an aircraft automatically transmits position data derived from its onboard navigation system to ground air traffic control automation. ADS, in combination with highly accurate and reliable navigation data provided by the Global Navigation Satellite System (GNSS), will greatly enhance the ability of controllers to monitor aircraft positions in airspace not reachable by ground-based radar.

The basis of the communications infrastructure that allows Data Link to be provided "seamlessly," even while using a variety of transmission systems, is called the Aeronautical Telecommunication Network (ATN). Made up of a collection of existing and planned subnetworks—such as Mode S, VHF, and satellite—and connecting packet routers conforming to internationally agreed-upon protocol standards, the ATN allows air traffic control automation or avionics systems anywhere in the world to exchange information without the user or end system knowing which actual networks the data traverses.

Services for the near term

Initial Data Link services are currently available over the Aircraft Communications Addressing and Reporting System (ACARS), a VHF, character-based data communications system established by Aeronautical Radio, Inc., for airline operational and administrative communications. Predeparture clearance (PDC) messages are now provided via Data Link to ACARS-equipped aircraft at 30 airports, and a Data Link Automatic Terminal Information Service (ATIS) is in the making at the same airports.

In oceanic airspace, several aircraft use converted ACARS equipment that supports satellite communications to exchange Data Link messages with the HF radio operator. The FAA has approved the operational use of Data Link to transmit oceanic position reports, allowing them to be sent from the aircraft to the ground more quickly and clearly than by conventional methods.

Also, the next few months should bring approval for properly equipped aircraft to exchange some air traffic control messages, including clearances and requests, with the radio operator via satellite Data Link communications.

A look ahead

Data Link services will be implemented in stages, with each new service and capability building on the capabilities of previous stages. In the next two years, additional services will include pilot-controller communications and automatic dependent surveillance in the oceanic environment. Soon after, pilot-controller communications will be provided via Data Link in all air traffic domains, and some initial weather services and weather graphics capabilities will be accessible.

Once these services are available over the

Aeronautical Telecommunication Network, which will ensure the necessary reliability and integrity, significant improvements in air traffic operations can be made to help airspace users. This includes reduced separation standards in oceanic airspace and more flexible and direct routing in domestic airspace. The future Data Link system will support the exchange of complex information between ground and airborne automation systems, including detailed winds information and four-dimensional approach and departure paths. These future services will allow airspace users to take more efficient routes and will also eliminate much of the controller's burden of manually processing traffic separation information. In addition, advisories and hazardous weather information will be transmitted automatically via Data Link, reducing the weather distribution workload for controllers and providing more accurate information for airspace users in all phases of flight.

In later stages, Data Link will increase the interaction of pilots and airline dispatch officers in the planning and management of air traffic flow. Extensive information exchange, negotiation, and access capabilities should then allow the air traffic control system to accommodate airspace users' needs and preferences.

A change of infrastructure

Using the Aircraft Communications Addressing and Reporting System as the infrastructure for initial Data Link services has helped begin the transition to the high-performance platform needed for the technical and operational changes that will define future air traffic management. ACARS, however, has limitations that affect its ability to support the evolving Data Link System—its capacity and performance levels, for example. As the number and complexity of available Data Link services increase and the needs of the air traffic system change, ACARS will no longer be able to satisfy requirements.

To support advanced Data Link services, the expected operational changes, and the future globally "seamless" air traffic management environment, the Aeronautical Telecommunication Network must be in place. It can provide better meshing of systems, as well as heightened performance, reliability, and integrity.

Currently the FAA is involved in imple-

menting its part of ATN infrastructure, including work on the Mode S air/ground subnetwork and ATN routers. To quicken the pace, the agency and a consortium of private industry are working towards a cooperative agreement through a public/private investment model. Through such a consortium, the FAA could assist the airline industry with expediting ATN development.

By 1996, the ATN infrastructure should be well enough established to begin providing a number of new Data Link services over ATN-based networks. Other communications technologies will also be developed to improve on and add to current communications links in the ATN. For example, communications links may be developed for such special purposes as local, high-rate transmission of airport surface dependent surveillance information.

Spectacular potential

Data Link has the potential to become the vehicle for a dramatic advancement in air traffic safety and efficiency. Full use of enhanced communication, navigation, and surveillance capabilities, for which Data Link is the critical component, will give those who operate the aviation system a better handle on advanced automation in managing information and tasks. Also, when fully implemented, significant operating costs will be saved by the FAA and airspace users.

Clearly, the challenge is to ensure logical, coordinated development and implementation of the numerous elements of the system, so that these benefits can begin to be realized by the aviation community. ✱

Hugh McLaurin is the Data Link System manager, ASE-7, and can be contacted at (202) 287-8783. Mary Minnix is with the FAA's Center for Advanced Aviation System Development operated by the MITRE Corporation. She can be contacted at (703) 883-5384.

The authors acknowledge Evan Darby, ACD-320, for his contributions to the preparation of this article.

SL			
• USA382	TC	122.20	MLD
• AM545	TC	122.20	MLD
• UAL420	MT	110	WHL
• UAL278	AA	110	DEL

MT			
• A	CLIMB AND MAINTAIN FL230		
• B	X BUZZY @ 110 / SPEED 250 KTS		
• C	DESCEND AND MAINTAIN 100		
• D	CHECK FOR STUCK MIC		

FK			
1	2	3	4
5	6	7	8
9	10	11	12

MC			
1	2	3	4
5	6	7	8
9	10	11	12

Controller's perspective on the use of Data Link for air traffic control.

Whenever employees and family or household members use the Employee Assistance Program (EAP), they are given a card on which they can evaluate the services provided by Personal Performance Consultants, Inc., the agency's EAP contractor. These post-age-paid cards come di-

them with their questions and concerns.

Many of those who responded also wrote personal comments about their experiences. Here is a sample:

❑ **Oklahoma:** "I was very upset when I went to your counselor. She was very concerned and advised me how to resolve my problem. I took her advice. The results were wonderful. She is a real gem."

❑ **Missouri:** "The services provided by PPC were exceptional and the counselor was professional."

❑ **Pennsylvania:** "Excellent experience. Has changed my life in the most positive way."

❑ **New York:** "I was impressed by the questions I was asked and by the feedback I received. I didn't feel as though I was just talking out loud, but that someone was listening to me. After the session I felt as though I could actually overcome my fear, for the first time in years."

❑ **Illinois:** "Thanks for providing this service! The counselor has been a tremendous help in assisting me with a difficult problem. My only regret is not using the service earlier."

❑ **Massachusetts:** "I was very satisfied with the opportunity to discuss my issue with an EAP counselor. I would certainly recommend others seek out the EAP as a first step in discussing troubling personal problems."

❑ **Tennessee:** "The counselor was able to help me

resolve some problems and helped show me a different perspective. The EAP was very helpful in my time of need. Thanks FAA."

❑ **New Mexico:** "The suggestions given to me proved to be very beneficial. I am glad we have this service."

❑ **Texas:** "The counselor was very helpful and courteous. I feel he was able to help us a great deal in just the few visits I was allowed. My opinion of EAP has changed a great deal. This counselor was worth it for me and the FAA as its employee. Please keep this option available."

❑ **New Jersey:** "I am thankful for EAP's assistance. I found that my counseling was helpful and enjoyable as well."

❑ **California:** "My counselor as well as everyone at PPC was excellent in helping me and treating me like I was important."

If you have a personal problem you have been living with, call the EAP at 1-800-234-1EAP for a confidential appointment with a professional counselor.

Northwest Mountain Region's comparable internal EAP program can be reached by calling 206-227-2023.

Just this month, the Alaskan Region joined the national EAP contract.

*Remember, the EAP service is there for you. Prepaid by the FAA, it is available to all employees and their family or household members, as well as recent retirees. It can be accessed 24 hours a day, seven days a week. **

FAA World

Technology Times Two

United States-Australia Pen Cooperative Agreements

With the aging of the world's commercial fleet, the United States and Australia have teamed up to develop a new system of detecting structural cracks in aircraft. Over five years, the FAA is investing \$1.3 million in research begun by John Baird and Bob Clark at the Australian Defence Force Academy in Canberra. The aim is to come up with a practical holographic technique that can be used in the field.

The work, which will demonstrate the practical range of the new technology, will result in a product specification to be made available to a U.S.-Australian consortium for production.

The FAA and Australia's Civil Aviation Authority also agreed on a plan to pool collective expertise in the use of satellite-based navigation systems. An Australian team will be working with the FAA to validate the Global Navigation Satellite System (GNSS) as an aid when en route and near airport terminals using the Global Positioning System (GPS). It will also:

- validate GNSS as a nonprecision approach aid.
- determine the effects of ionospheric disturbances on the GPS signal in high latitudes.
- exchange information to permit the establishment of ground monitor-

ing systems.

- investigate the potential for local differential accuracy improvement of GPS navigation.

- determine if the improvements are sufficient for GPS to be used as a precision approach aid.

The Civil Aviation Authority sets and maintains safety standards for civil aviation in Australia and pro-

protects the environment from the effects of aircraft. It is responsible for the safety regulations and surveillance of the aviation industry and for providing regulatory services such as licensing industry personnel. The authority provides air traffic control and flight advisory services, aviation search and rescue, and fire-fighting services at the major airports of the country. *



From left, seated: Craig Beard, director, FAA's Asia and Pacific International Area Office; Brian O'Keeffe, research and development and ICAO general manager, CAA; and Doug Roser, CAA's chief executive officer. Standing, Colin Torkington, CAA airworthiness and operations manager; Professor John Baird; and Ian Mallett, GNSS Standards Project manager, CAA.

FYI

continued from page 2

The World League of Air Traffic Controllers identifies itself as a new organization founded to promote communication, harmony, and understanding among air traffic control professionals worldwide. League membership is open to all ATC professionals whether they are active or retired, labor or management, computer specialist or air traffic assistant, civilian or military, flight service or radar controller. The organization publishes a quarterly newsletter, *The Controller's World*, and spon-

sors various activities for ATC professionals and their families.

The address is:
World League of Air Traffic Controllers
Costamarina II, 2G
Carolina, Puerto Rico 00983
(809) 752-8683

Passenger air carriers and indirect air carriers—commonly called air freight forwarders—will be required to tighten cargo security early next year. Begin-

ning January 31, air carriers must have proof that freight forwarders follow FAA-approved security programs, or they must inspect all cargo sent to them by freight forwarders. To satisfy the requirement, air carriers may obtain a signed security certification annually or on a per shipment basis.

The agency has prepared a model program to help freight forwarders set up security procedures that meet the new standards.

Evaluating the assistance you received from the Employee Assistance Program will help the FAA and PPC provide the best possible service to you. The FAA and PPC want your anonymous opinions. Please complete, seal and mail.

- | | YES | NO |
|--|--------------------------|--------------------------|
| 1. I was given prompt attention | ☐ | ☐ |
| 2. The counselor was courteous and respectful | ☐ | ☐ |
| 3. I was satisfied that my concerns were treated in a confidential manner. | ☐ | ☐ |
| 4. I was helped with my questions or concerns | ☐ | ☐ |
| 5. Was a referral necessary? | ☐ | ☐ |
| 6. Did you follow-up on referral? | ☐ | ☐ |
| 7. Has the EAP counselor followed up with you? | ☐ | ☐ |

Comments: (Please Print)

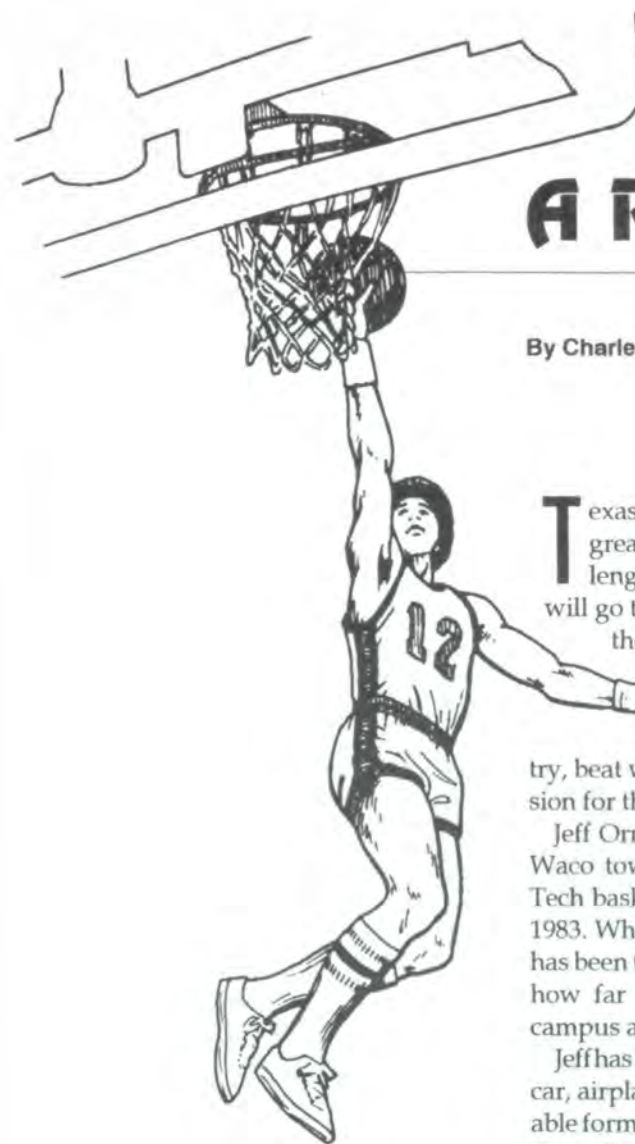
Making the Grade

Report Card on the Employee Assistance Program

rectly to the FAA National EAP Manager, and those who submit them remain anonymous in order to protect confidentiality.

During the past year, 364 cards have been sent in by users of the program, and the responses have been very positive. According to tabulations, 98 percent said they were given prompt attention and were satisfied that their concerns were treated in a confidential manner. Also 99 percent felt the EAP counselor was courteous and respectful, and 95 percent reported the counselor helped

Shown above is a sample evaluation card.



Off Duty ... and in Person A Real Fan

By Charles Jefferson

Texas has long been known for its great football enthusiasts and the lengths to which some of its fans will go to attend a game. But I think there's one basketball fan in Waco, Texas, that has the state, and maybe the country, beat when it comes to a passion for the game.

Jeff Orr is an air traffic controller at Waco tower and has followed Texas Tech basketball since he graduated in 1983. When I say "followed," I mean he has been there with the team no matter how far they play from their home campus at Lubbock.

Jeff has traveled by personal car, rental car, airplane, and every other conceivable form of transportation to get to see those Red Raiders. If the games are broadcast on TV, it is not unusual to catch a glimpse of Jeff right there behind the team bench.

Coaches and players are not surprised to see him no matter how far from home they play. A tournament in Alaska found Jeff on the front row. Trips to Colorado, Tennessee, Wyoming, Indiana, and Nebraska were even easier to attend. What are a few 1,000-mile trips when you're a real fan?

Jeff also takes advantage of the time not at the arena to tour local historical and recreational sites. When his wife, Karla, an elementary teacher, can get away, she travels with him.

The final coup came this past April when Jeff was able to attend the NCAA "Final Four" tournament in New Orleans, Louisiana. From there he traveled to Atlanta, Georgia, to catch the

Lady Red Raiders cinch the national title. Later he returned to New Orleans to see the North Carolina Tar Heels crowned as national champs.

From monthly itineraries like this, it's easy to understand why Jeff Orr can be called a "real fan." *

Charles Jefferson is an area supervisor, Waco tower, Waco, Texas.



Raiders' fan Jeff Orr

FAAers perform some challenging jobs, and they also share their exceptional talents after work hours are through. They may be community leaders, celebrated experts in a field, or just downright interesting people.

This column introduces a few of them.

Know someone who should be highlighted in print? News about notable FAAers can be sent to:

FAA World
Office of Public Affairs, APA-340
800 Independence Avenue, SW
Washington, DC 20591

People

Information in the "People" section is extracted from the Consolidated Personnel Management Information System.

Space permitting, actions of a change of position and/or facility are published.

The time lag before personnel actions appear is due to data compilation, format, and publication times.

Aeronautical Center

Raymond J. Adkins, manager, Exception Packing & Crating Branch, Storage & Transportation Management ... **Sharon K. Ashford**, supervisor, Technical Section, Aircraft Registration Branch, Civil Aviation Registry ... **Doyle W. Good**, Logistics Support & Storage Branch B, Storage & Transportation Management ... **Patricia A. Hair**, manager, Transportation Services Branch, Storage & Transportation Management ... **Phillip L. Handke**, manager, Logistics Support & Storage Branch A, Storage & Transportation Management ... **Patrick O. McKone**, unit supervisor, Flight Operations/Scheduling Section, Sacramento flight inspection office, from International Flight Inspection Office, Frankfurt, Germany ... **Alfred C. Raines**, manager, Inspection & Certification Branch, Storage & Transportation Management ... **Walter C. Richardson**, manager, Acceptance & Distribution Branch, Storage & Transportation Management ... **Geraldine D. Smith**, manager, Reutilization & Marketing Branch, Storage & Transportation Management ... **John H. Smith**, manager, Terminal Performance Verification Branch, Air Traffic Performance Verification Program Div., from Ft. Worth, TX, ARTCC ... **A. Jeanette Spencer**, supervisor, Certification Section F, Airmen Certification Branch, Civil Aviation Registry.

Central Region

Michael K. Dahl, manager, Standards Office, Small Airplane Directorate ... **Steven A. Ehmke**, environmental support unit supervisor, Kansas City, MO, AFSFO, St. Louis, MO, AFS ... **David W. Schaer**, manager, Vandalia, OH, Manufacturing District Office, Aircraft Certification Div., from Rotorcraft Directorate, Bethany, OK ... **Judith Shifrin**, manager, Resource & Program Management Branch, Flight Standards Div., promotion made permanent ...

Melvin D. Taylor, branch manager, Atlanta Aircraft Certification Office, College Park, GA, from Chicago Aircraft Certification Office, Des Plaines, IL.

Eastern Region

Frederick J. Bolster, area manager, Washington National ATCT, Arlington, VA ... **Jessie J. Buchanan**, unit supervisor, Norfolk, VA, AFSFO, Norfolk AFS, promotion made permanent ... **George D. Dalton**, unit supervisor, Baltimore AFSFO, Glen Burnie, MD, Capital AFS, promotion made permanent ... **Sze-On Leung**, unit supervisor, LaGuardia AFSFO, Queens, NY, Metro NY AFS, promotion made permanent ... **Ferdinando O. Martino**, manager, Andrews ATCT, Camp Springs, MD, from Washington ARTCC, Leesburg, VA ... **Dwight McBride**, unit supervisor, Syracuse, NY, AFSFO, Empire AFS, promotion made permanent ... **Judy G. Noble**, area supervisor, Millville, NJ, AFSS, promotion made permanent ... **Rodolfo Perez**, assistant manager for program support, Metro NY AFS, Garden City, promotion made permanent ... **Joseph Reilly**, unit supervisor, Maintenance Engineering Staff, NY ARTCC AFS, Islip, promotion made permanent ... **Lesly Samedy**, unit supervisor, LaGuardia AFSFO, Queens, NY, Metro NY AFS ... **Michael J. Sammartino**, manager, Westchester ATCT, White Plains, NY, from regional office ... **John Savarese**, area supervisor, Teterboro, NJ, ATCT, from Newark, NJ, ATCT ... **Raynor F. Thompson**, unit supervisor, Camp Springs, MD, AFSFO, Capital AFS.

Great Lakes Region

Robert H. Allen, unit supervisor, asst. manager, Detroit, MI, Airports District Office, promotion made permanent ... **Cathleen R. Bruner**, asst. manager, quality assurance, Chicago, IL, ARTCC ... **James J. Callahan**, supervisor, Installation Section, Ypsilanti, MI, Establishment Engineering Branch, Airway Facilities Div., from Michigan AFS, Belleville ... **Thomas M. Downey**, asst. manager for training, Indianapolis, IN, ARTCC ... **Robert F. Everson**, manager, South Bend, IN, ATCT, from Chicago O'Hare ATCT ... **Stephen P. Ford**, asst. manager, traffic management, Chicago ARTCC ... **Timothy A. Goodall**, AF watch supervisor, Chicago AFS ... **Willie J. Gripper**, manager, Chicago Civil Aviation Security Field Office, Schiller Park, IL, from Dallas/Ft. Worth Civil Aviation

Security Field Office, Euless, TX ... **Desmond L. Haynes**, area supervisor, Mansfield, OH, ATCT ... **Mark D. Hvezda**, unit supervisor, Minnesota AFS, Minneapolis, MN, from Apple Valley, MN ... **Gregory M. Ingraham**, unit supervisor, Minnesota AFS ... **Randall J. Menard**, area supervisor, Grand Forks, ND, ATCT ... **Douglas L. Molin**, asst. manager, quality assurance, Indianapolis, IN, ARTCC ... **Douglas F. Powers**, special assistant, Special Projects Staff, Air Traffic Div. ... **Alan L. Reilly**, area manager, Chicago, IL, ARTCC ... **Constance M. Walters**, asst. manager, programs, Kankakee, IL, AFSS ... **Willie L. Wells**, unit supervisor, Telecommunication & Spectrum Engineering Branch, Airway Facilities Div., from Indiana AFS, Indianapolis ... **Darryl A. Winter**, area supervisor, Kankakee, IL, AFSS, promotion made permanent.

New England Region

Carl L. Smith, supervisory electronics technician, Nashua, NH, AFS ... **Joseph F. Veiga**, manager, Budget & Information Systems Branch, Resource Management Div. ... **Anthony J. Willett**, manager, Communications & Analysis Branch, Resource Management Div.

Northwest Mountain Region

Larry S. Bird, manager, Maintenance Branch, Flight Standards Div., from Seattle, WA, Flight Standards District Office ... **David R. Bohlen**, unit supervisor, Denver, CO, AFS, promotion made permanent ... **Garry F. Brown**, manager, Olympia, WA, ATCT, from Seattle-Tacoma, WA, ATCT ... **Velda I. Brown**, asst. manager for program support, Denver, CO, AFS, promotion made permanent ... **Daniel I. Cheney**, manager, Propulsion Branch, Seattle Aircraft Certification Office, Transport Airplane Directorate ... **Murry D. Hess**, operations supervisor, Salt Lake City, UT, ATCT ... **Jane K. Inaba**, div. manager, Civil Rights Staff ... **Carla L. Knaup**, area supervisor, Colorado Springs, CO, ATCT, promotion made permanent ... **Brock L. Laffoon**, unit supervisor, Auburn, WA, ARTCC AFS ... **George A. Wallis**, section supervisor, Establishment Branch, Airway Facilities Div., promotion made permanent ... **James Ziemba**, asst. div. manager, supervisory logistics management specialist, Logistics Div.

Southern Region

Cinderita G. Allen, unit supervisor, Hampton, GA, AFSFO, Atlanta ARTCC AFS, promotion made permanent ... **Lynn R. Amrine**, manager, Ashburn, GA, AFSFO, Jacksonville, FL, AFS ... **Robert E. Armstrong**, supervisor, Services Section, Materiel & Services Branch, Logistics Div. ... **Billie D. Brandt**, area supervisor, San Juan, PR, CERAP, from Isla Verde ATCT, San Juan ... **James D. Brooks**, area supervisor, Nashville, TN, ATCT ... **Glenn E. Cannon**, area supervisor, Miami, FL, ARTCC, promotion made permanent ... **Justo P. Casablanca-Garcia**, asst. manager, San Juan, PR, CERAP ... **Dean C. Cole**, area supervisor, St. Thomas, VI, ATCT, from Orlando, FL, ATCT ... **George J. Dowd**, area supervisor, Hebron, KY, ATCT, promotion made permanent ... **Brian P. Foley**, area supervisor, Miami, FL, ARTCC, promotion made permanent ... **Thomas E. Hardin**, unit supervisor, Memphis, TN, Hub AFS ... **Richard A. Jehlen**, asst. manager, plans & programs, Miami, FL, ARTCC ... **Myron A. Jenkins**, area supervisor, Macon, GA, AFSS, promotion made permanent ... **Thomas W. Kibler**, unit supervisor, ARTCC/FSS Section, Construction Unit, Establishment Engineering Branch, Airway Facilities Div. ... **Daniel T. Lewin**, area supervisor, Hebron, KY, ATCT, promotion made permanent ... **Leonard J. McDaniel**, area supervisor, Macon, GA, AFSS, promotion made permanent ... **Harold W. Merideth**, manager, Payroll Branch, Accounting Div. ... **Barbara H. Miller**, unit supervisor, Miami, FL, Hub AFS, promotion made permanent ... **Michael L. Miller**, area supervisor, Miami, FL, ARTCC, promotion made permanent ... **Geraldine S. Morgan**, manager, Columbia, SC, AFS ... **Tommy L. Murphy**, unit supervisor, Miami, FL, ARTCC AFS, promotion made permanent ... **Alfred D. Owen**, area supervisor, Jackson, TN, AFSS, promotion made permanent ... **Robert T. Paul**, area supervisor, Miami, FL, International ATCT, promotion made permanent ... **Thomas J. Robinson**, manager, Accounting Operations Branch, Accounting Div., promotion made permanent ... **Ferdinand Sanchez**, area supervisor, Miami, FL, ARTCC ... **William E. Schieder**, area manager, Miami, FL, ARTCC ... **David T. Siggers**, environmental support unit supervisor, Miami Hub AFS ... **Judith G. Smith**, manager, Jackson, TN, AFSS, from Greenwood, MS, AFSS ... **Donald L.**

Spivey, area supervisor, Huntsville, AL, ATCT, from Dayton Beach, FL, ATCT ... **David H. Storey**, area supervisor, West Palm Beach, FL, ATCT, promotion made permanent ... **John H. Thomas**, area supervisor, Pensacola, FL, ATCT, promotion made permanent ... **Allen B. Tillett**, unit supervisor, Raleigh, NC, AFS, promotion made permanent ... **Thomas W. Wolfe**, area supervisor, Ft. Pierce, FL, ATCT, promotion made permanent.

Southwest Region

Wilson E. Fisher, unit supervisor, Houston, TX, Civil Aviation Security Field Office ... **Jimmie E. Keck**, unit supervisor, Ft. Worth ARTCC AFS, promotion made permanent ... **Philip W. Russell**, area supervisor, Dallas/Ft. Worth Limited Radar Cab, from Corpus Christi, TX, ATCT ... **Hector Vela**, manager, Houston, TX, Civil Aviation Security Field Office ... **Maurice Wyatt**, unit supervisor, Ft. Worth ARTCC AFS, promotion made permanent.

Technical Center

Norman N. Hopkins, manager, Flight Service Branch, National Data Communication Systems Engineering Div. ... **Edward J. Schuman**, manager, National Data Communication Systems Engineering Div. ... **Richard B. Shinpaugh**, deputy manager, National Data Communication Systems Engineering Div. ... **Robert L. Welch**, manager, ARTS 111A Terminal Support Branch, National Terminal Systems Engineering Div. ... **Thomas F. Wood**, branch manager, Labor Relations & Information Resource Staff, Human Resource Management Div.

Washington Headquarters

James O. Boone, manager, Organizational Planning & Development Div., Office of Human Resource Development ... **James Burns**, manager, Safety Quality Assurance Div., Office of Integrated Safety Analysis ... **Katherine M. Hakala**, manager, Commuter & Air Taxi Branch, Air Transportation Div., Flight Standards Service, promotion made permanent ... **Allen J. Hill**, staff chief, Administrative Systems Branch, Office of Acquisition Support ... **Mark K. Hoover**, manager, Auto Surveillance R&D Nails Implementation Branch, Nails Program Div., NAS Transition and Implementation Service, promotion made permanent ... **Thomas Ryan**, manager, Internal Security Branch, Investigations &

Security Div., Office of Civil Aviation Security Operations, promotion made permanent ... **Norma Saafir**, staff chief, Appraisal Staff, Executive Director for Acquisition ... **Richard J. Wu**, center counsel, support services supervisor, Associate Administrator for Airway Facilities.

Western-Pacific Region

Robert Annecone, unit supervisor, San Francisco Civil Aviation Security Field Office, promotion made permanent ... **Gene M. Barnett**, section supervisor, Facility Operations Branch, Air Traffic Div., from Orlando, FL, ATCT ... **John S. Dehart**, area manager, Las Vegas, NV, ATCT ... **Stanley J. Dyer**, area supervisor, Lindbergh International ATCT, from Palomar ATCT, Carlsbad, CA ... **James T. Elder**, unit supervisor, Los Angeles ARTCC AFS, promotion made permanent ... **Gary F. Fay**, asst. manager, Southern California TRACON, from Chicago, IL, ARTCC ... **Lucius W. Hope**, manager, Palmdale, CA, ATCT, from regional office ... **Jay F. Jacobsen**, area manager, Sierra Nevada, CA, AFS, McClellan Air Force Base, from Sacramento, CA ... **Theodore D. Johnson**, systems engineer, Southern California TRACON AFS, from Ohio AFS, Cleveland ... **Richard K. Kagehiro**, asst. manager for training, Honolulu, HI, ARTCC, promotion made permanent ... **Ronaldo C. Mata**, asst. manager for training, Honolulu, HI, ARTCC ... **Richard D. Mauck**, area supervisor, Prescott, AZ, AFSS, from Bethel, AK, FSS ... **Cecil T. McReynolds**, asst. manager for program support, Los Angeles AFS (LAX) ... **Deborah T. Saito**, asst. manager, Honolulu, HI, ATCT ... **James F. Weismann**, unit supervisor, Los Angeles Civil Aviation Security Field Office.

Retirees

Aeronautical Center

Ula J. Barksdale
Lloyd D. Juhlin
Edgar J. Koscielniak
Henry A. Manek
Eli E. Rowls
Claude J. Schuld

Alaskan Region

Alfred A. Rise

Central Region

John D. Burris
Charlene Emmerich
Robert A. Supplee

Eastern Region

Raymond G. Baumgartner
Richard M. Bowman
Annie L. Hicks
Henry J. Lengel
Gilbert Magnan
Robert S. Papasodero
Roger L. Wilson

Great Lakes Region

Wayne H. Anderson
John H. Bryant
Clifford C. Miller
Donald H. Polston
Michael E. White

New England Region

Harold D. Banks
Ralph B. Nelson

Northwest Mountain Region

Robert W. Colldeweih
Peter R. Engelking
James E. Hirning
Robert A. Hutchings
Helen M. Lenehan
John C. Lingwall
Robert D. Martinelli
Merrill R. Menlove
Gordon K. Millerberg
Larry A. Roberts
Glen A. Samuels
Ernest F. Shorb
Francis W. Somersall
Robert C. Spackman
Lane K. Stephens
George E. Wagner
Grant W. Walker

Southern Region

Walter E. Adair
Robert F. Barganier
Larry O. Buddin
Ovid S. Campbell
Thomas F. Carrico
Maple Collins
Eugene M. Coulter
Thomas D. Crowley
James R. Dunn
Henry Gelman
James C. Gothard

Walter W. Greatrex
Robert E. Hayden
Wayne Hero
Patricia H. Hooks
Marvel K. Kruse
James R. Lee
Anthony W. Logue
Ronald D. MacKie
John A. Mangialetto
Walter D. Mc Collum
James H. McGhee
Henry M. Medlin
Charles H. Metcalf
James A. Northcutt
Michael J. Opalewski
Ray Ortega
Robert J. Owen
Paul E. Parish
John J. Passailaigue
Michael J. Rentz
Billy M. Riley
John E. Rowe
Paul O. Suppa
James S. Taylor
Eleanor K. Thompson
Paul E. Thompson
Jimmie R. Watson
Betty H. Zummach

Southwest Region

Covin C. Bennett
Frank Boone
Wayne T. Brown
Jesse C. Chapman
Richard J. Cibak
Freddie H. Davis
Rodney L. Derr
Raymond J. Friesen

Richard A. Glover
Carl E. Harrington
Billy L. Henderson
Milton F. Jones
John C. Kilburn
Wilmar W. Klaehn
Robert E. Lester
Glyndalin M. Manfredi
William E. McCombs
James M. McDaniel
Sandra M. Moore
Roger S. Myers
Archie A. Newby
Clark E. Nowe
Daryl D. Peterson
Jimmie L. Pinner
Rex A. Powell
Dean J. Ritter
Wilson B. Stewart
Helen M. Wilkerson

Technical Center

Franklin D. Fann
Elizabeth M. Goodwin
Elaine P. Shaw
Frank P. Zito

Washington Headquarters

Richard A. Clevenger
Frederick H. Farrar
William R. Hendricks
Joseph J. Jenkins
George H. Johnson
Nancy I. Lambert
Joann L. Sloan
Jere A. Styer

Donald H. Vernon
Paul P. Yantchook
Frances A. Wirtanen

Western-Pacific Region

Curtis A. Alms
Roy Anderson
Jerome Baranow
William J. Bennett
Edward H. Bettinger
Paul R. Bigler
William F. Brissette
Lawrence Cowley
Alfred F. De Armier
David R. Des Armier
Virginia L. Dillon
Neil O. Folden
Joe B. Fowler
Albert S. Greenberg
Paul M. Haase
Kenneth R. Knoben
James D. Loughheed
Kenneth McGuire
Gerald F. McQuilliams
James H. Murakami
Willie B. Nelson
Donald J. Ohms
Jerry C. Perkins
Lawrence J. Renshaw
Ronald A. Riberal
Henry S. Robeson
Carmen S. Simbari
Dennis N. Stark
Glen D. Thompson
Robert J. Whitely
Larry E. Wright

FAA Remembers

William M. Flener, 70, died July 30 in Marshall, Virginia. He had Parkinson's disease.

Retiring from the FAA in 1979 as Associate Administrator for Air Traffic and Airway Facilities, Mr. Flener worked at the agency for 36 years. Starting his career as an air traffic controller, his varied FAA service included work in Seattle, the western regional office, Atlanta, as well as at Washington Headquarters. He was also a consultant during the creation of some international air traffic control systems.

Originally from Aberdeen, Washington, Mr. Flener attended the University of Washington and was in the Army during World War II.

Survivors include his wife Jean of Falls Church, Virginia, and son Kevin of New York.

Airports Service Announces New Computer-Based Course

The Airports Service has expanded training capabilities by producing its first CBI—computer-based instruction—course to provide orientation training for all areas of the FAA's Airports Program. Called "Orientation to the Airports Program," the course addresses a wide range of responsibilities from evaluating airport development plans and grant applications, to inspecting ongoing airport operations. The course, developed by Applied Science Associates, is based on interactive multimedia, using motion and still video, sound, graphics, and text. It will be provided on-site at offices across the country.

The orientation consists of two modules:

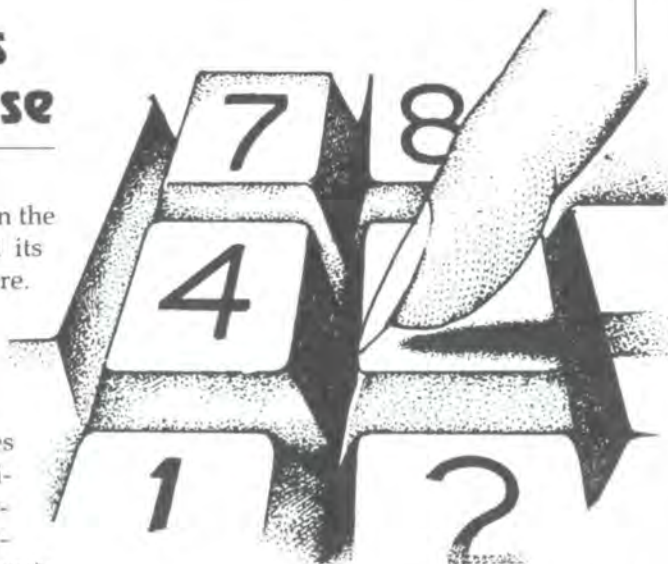
- In module one, an overview of the Airports Program gives par-

ticipants information on the FAA, its mission, and its organizational structure. It also provides a short history of the development of aviation and airports in the United States, addresses the roles and responsibilities of Airports personnel, and shows activities in a typical Airports office.

- Module two describes the airport development process in four phases: planning, design, construction, and operation. Students are introduced to the complex interaction between organizations and individuals required for airport development. They can explore airport development from a number of perspectives ac-

cording to individual interests.

The Airports course will be available during fiscal year '94. For more information, contact Minnie Brown, Office of Training and Higher Education, (202) 366-7019; or Elizabeth Walker, Office of Airports, (202) 267-3040. *



U.S. Department
of Transportation

**Federal Aviation
Administration**

800 Independence Ave., SW
Washington, DC 20591

**FORWARDING AND RETURN
POSTAGE GUARANTEED**

Official Business
Penalty for Private Use \$300

BULK MAIL
POSTAGE & FEES
PAID
FEDERAL AVIATION
ADMINISTRATION
PERMIT NO. G-44