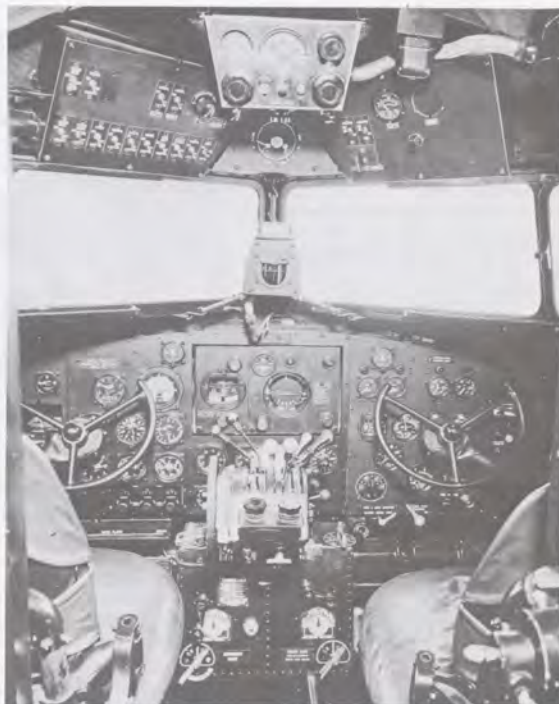


Finding the Boundaries of Technology

By H. Clayton Foushee



The modern Airbus Industrie A320 cockpit (shown at left) features fly-by-wire side stick controllers driven by computers. The cockpit is highly automated, unlike the cockpit of the DC-3 aircraft (right), which was first certified in 1936. With increased automation, questions are beginning to emerge about the respective roles of humans and the new technology equipment.



It has almost become a cliché to say that human error is the predominant cause of incidents and accidents in the aviation system. Designers and engineers are engaged in a perpetual struggle to reduce human error in the system. The obvious temptation is to address the

human error problem by automating many of those tasks traditionally performed by humans and prone to human error.

Under this design philosophy, the role of human operator is changing and has begun to assume the role of "systems

monitor," serving primarily as a backup to the automated systems.

Increased automation has resulted in an impressive array of aircraft and air traffic control technology that is highly reliable and that contains vastly superior capability from a pure performance

standpoint. Although no one questions that the technology is better, questions are beginning to emerge about the respective roles of humans and the new technology equipment.

Human factors is a question of how

(Continued on page 2)

Tower Management in Their Backgrounds

By Mary Culver

The New England Region's four female air traffic control tower managers were members of a small group of only 21 female ATM's nationwide. Despite their minority status in a male-dominated profession, Mary Young, Donna Barte Gropper, Cindy Grimm, and Sandra Bogosian are enthusiastic professionals who are comfortable in their career field. Ranging in age from 31 to 56, the four women share a common commitment to their profession

as well as a desire to encourage young women to follow in their footsteps.

Mary Young, tower manager at Beverly, MA, entered the field 19 years ago at age 37. At the time she was a part-time postal worker with a supportive husband and three teenaged sons. Young was interested in air traffic control because she saw the field as offering a challenging opportunity for competent individuals who were willing to work hard.

She passed the air traffic control test with flying colors and launched her second career in 1972 in a domain where only 2% of her fellow air traffic controllers were women. "I was a late bloomer," said Young, but today the FAA allows only people under thirty to take the test.

Although Young takes her turn controlling traffic 16 hours per month, her primary responsibility is managing her

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one designs a control, a display or a cockpit, an air traffic control work station, or a procedure so that it represents information in a way that humans process most efficiently. Selecting the right people (both controllers and pilots) and training them appropriately is also a human factors concern.

Given the rise of increased automation in aviation, what is the right role for humans and the right role for machines to play?

One of the things that we are beginning to discover is that it is simply not true that automation is an easy way to remove human error from the system. While automation can and does eliminate certain classes of error, we have begun to see that it can also create whole new classes of error.

We have spent most of our time trying to solve human performance problems by automating things. Automation is a wonderful tool when it is designed appropriately, but we shouldn't put all our eggs in one basket.

Researchers studying automation in aviation and other high technology systems have observed that, in some cases, new errors can be introduced through automation if not properly designed, and occasionally these new types of errors can be worse than those addressed by the automation. Thus, it is becoming increasingly common to hear suggestions that we examine our automation philosophy and consider new approaches to automation that are more "human-centered."

A prime concern is not so much the current levels of automation seen in aircraft such as the B-747-400, MD-11, and A-320 and in air traffic control concepts such as AERA II, but it is how far down the same road we can afford to go with future systems. Do we continue to automate more and more functions, leaving humans with less and less to do?

Although anecdotes on the subject of automation are abundant, there is little systemic, scientific research that either supports or relieves our increasing concern about the application of more extensive automation in the aviation system.

Some of the most common examples



of human error in today's airspace system are errors in communication or information transfer.

Approximately 70% of the 100,000-plus FAA/NASA Aviation Safety Reporting System (ASRS) reports involve some sort of information transfer problem, suggesting that information transfer may be the single most difficult problem facing the aviation system. Many of the reports concern communication between air traffic controllers and pilots.

As system complexity increases and traffic grows, we can only expect the frequency of information transfer difficulties to increase. Priorities for research in this area revolve around the most efficient and reliable ways to exchange information, what information should be available to each, and when.

Eliminating or reducing the system's reliance on verbal communication is often mentioned as a promising solution, with a considerable amount of research being aimed at designing and evaluating the best uses of data-link technology. Although few will question the need for improving the current system, as with other "automation solutions," the implications of introducing data-link as a complete substitute for verbal air-ground communications must be carefully considered.

aviation human factors research is being developed in partnership with the National Aeronautics and Space Administration, the Department of Defense, industry, and academic communities. This technical plan will cover human factors priorities over the next ten years.

Studies are being planned in the following areas: automation and advanced technology; aviation system monitoring capability; basic scientific understanding of human performance factors; human performance measurement; information transfer; controls, displays, and workstation design; training and selection; and certification and validation standards.

Primary issues for research could include:

- Too little workload during certain phases of flight and too much workload associated with programming when flight plans or clearances are changed.
- The potential for substantially increased head down time.
- An inadequate "cognitive map" of what the system is doing, which makes recovery from automation failures problematic.
- Operator hesitancy to question or take over from an automated system even when there is compelling evidence of a problem.
- Degradation of basic skills.
- Job dissatisfaction associated with the lack of a challenge.
- Complacency, lack of vigilance, and boredom.

This plan managed by the FAA will, for the first time, provide for the coordination of virtually all of the government's research and development efforts in areas relevant to human performance in aviation. Perhaps more importantly, however, the national plan will be focused on the development of solutions to the most operationally significant problem areas in aviation today. ■

Dr. H. Clayton Fowdore is FAA's Chief Scientific and Technical Advisor for Human Factors.

Tower Managers Young from New England from page 1



The author, Mary Culver is a secretary in the FAA's New England Region Public Affairs Office.

Current and former tower managers, from the left, are Donna Barie Gropper, Cindy Grimm, Sandra Bogosian, and Mary Young.

staff and training new controllers. "In our job teamwork is essential," Young explained, "and safety is always our primary concern."

Young was the only female tower manager in New England until October of 1988 when Donna Barie Gropper was appointed manager of the Hartford-Brainard Tower in Connecticut.

A licensed pilot with seaplane ratings, Barie Gropper graduated from Queens College and was an import specialist for the U.S. Customs Service before becoming an air traffic control specialist in 1975. During her career, she has served in increasingly responsible air traffic control positions from Worcester, MA, tower to Providence, RI.

In her spare time, Barie Gropper is an avid PCer, bicyclist, crocheter, and a regular visitor to the home-bound elderly. She recently received a promotion to operations specialist at Eastern Region headquarters.

New Bedford, MA, ATM Cindy Grimm began her career with the FAA in 1982 after graduating from Ohio State University with a degree in aeronautical science and meteorology. While in college she obtained her private pilot's license and later an instrument rating.

Grimm's air traffic career has taken her from Michigan to Indiana to Maine before she was appointed ATM at New Bedford in November 1989. Grimm approaches her position in the same way she approaches life—with a strong commitment and a wonderful sense of humor. "Work is a vacation every day," she said laughingly. "I have a red-headed two-year-old; NOTHING bothers me!"

"The FAA offers fantastic opportunities for women," noted Grimm. The work of an air traffic controller is always challenging and changing. Although an ATM career is demanding, "it is also extremely satisfying to watch new FAA employees gain confidence in themselves and expertise in their jobs."

An avid outdoors enthusiast, Grimm travelled with other FAAers to Vail, CO, this year for downhill skiing. She remarked ruefully that after three dislocated vertebrae she has decided to switch to the cross country variety.

Grimm also enjoys sailing and plans to spend the summer living on a sailboat with her daughter—an experience that she notes will be not only challenging, but also economical.

When asked about future career goals, Grimm remarked thoughtfully, "I never make a decision until I'm on top of it. I see a bird and say, 'Hey, I'll try that.' Someday I'd like to just farm, sail and write—what a dream!" Right now, though, she's happier and busier than ever before.

Like Cindy Grimm, Groton, CT, Tower's ATM, Sandra Bogosian, also began her career with the FAA in 1982. She originally planned for a career in the medical field, and after graduating from Northeastern University spent five years as a medical technician at a major Boston hospital.

However, in 1980 she decided to take flying lessons—a decision that was to change her life. Because she so thoroughly enjoyed aviation, she took the FAA air traffic controller exam in 1980, realizing that a career of guiding air-

planes would provide the dynamic elements she wanted to keep her interested and involved with her work.

Bogosian now has her private pilot and glider licenses, as well as an IFR rating.

In her eight years as a controller, she has held increasingly responsible positions, serving at the Ois Terminal Approach Control Facility, Cape Cod, and at the New England regional office. In February 1989, she took over as ATM of the Groton Tower.

Bogosian remarked that she has been extremely happy with her decision to join FAA. "I have been fortunate to have been involved with managers who have encouraged and promoted career progression," she commented. "I have also received a great deal of satisfaction from the opportunities I have at Groton to guide, teach, and assist the controllers in learning their jobs plus the policies and procedures at FAA."

Bogosian has given a great deal of thought to her career with the FAA, and when asked what advice she would give to women pursuing a management position in air traffic, she remarked, "Defining female or male managers is not the issue. What is more appropriate is defining effective managers."

"A truly effective manager is responsible and accountable, industrious, consistent in his or her management philosophy, flexible, and concerned about the welfare of his employees. Most importantly, an effective manager must be open, honest, and fair." ■

FAA World

July 1990

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FAA WORLD is published monthly for the employees of the Department of Transportation Federal Aviation Administration and is the official FAA employee publication. It is prepared by the Public and Employee Communications Division, Office of Public Affairs, FAA, 800 Independence Ave., S.W., Washington, D.C. 20591. Articles and photos for FAA WORLD should be submitted directly to regional FAA public affairs officers:

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Few thought that the FAA could reduce the 6 to 18 months it took to hire an air traffic controller to as little as 45 to 60 days, but the Human Resource Management's Staffing Policy Division at Headquarters did it using MATES—the Modular Applicant Testing, Examining, and Screening program.

With the help of lots of people, especially those in Human Resource Management, Air Traffic, and Civil Aviation Security, MATES is fully operational and going strong. The FAA can now make offers of employment to air traffic control specialist (ATCS) candidates within 45 days from the preemployment interview.

Not long ago, Wanda Reyna, manager of the Staffing Policy Division had this idea: that the FAA could hire ATCSs faster if it assumed more responsibilities for preemployment processing and put computerized systems in place to do things more quickly. She put together a workgroup to explore the possibilities.

MATES—Quickly Pairing People to Jobs

By Dolores Richard

The group, led by Ross Hamory of the Southern Region and Dolores ("Dee") Richard of Staffing Policy, developed and implemented "fast track" procedures that streamlined the various stages of the preemployment process for ATCSs. It wasn't easy, but as Dave Smith of Civil Aviation Security's Investigations and Security Division said, "There is no turning back when you're committed."

Being committed, the FAAers found ways to assume more testing authority from the Office of Personnel Management (OPM); convinced OPM to give FAA the responsibility to scan and score the ATCS test electronically; got the computer equipment and developed the software to give applicants who take the ATCS test immediate test results; and convinced both OPM and the Federal Bureau of Investigation that the FAA could do a major portion of the security investigation to promote faster processing and clearances on their parts.

These were major steps in shortening the time it took to hire air traffic controllers. Soon, other government agencies were asking for briefings on how FAA had improved its procedures.

But the streamlining of procedures isn't stopping there. To make a good system better, as much of the preemployment processing as possible is being automated under three major automation projects.

First there is the security system that links the MATES security coordinators across the country. Computer tapes from the FBI and the U.S. Postal Service were merged to develop a police vouchering system whereby letters are automatically printed and mailed to law enforcement agencies at the state, county, and city levels where ATCS candidates have lived or worked. According to the Aeronautical Center's Paul Frenzel, AAC-351, who oversees the massive MATES automation efforts, "This is the first time that I know of variable text of duplex print [printing on both sides of the paper] being handled in one pass."

The security system also transmits information on the status of the FBI fingerprint checks in Washington, DC, and the review of military records at the National Records Center in St. Louis, Missouri.

The second project to further automate preemployment processing is PETS (Personnel Employment Tracking System), an applicant tracking system devel-

oped in the Northwest Mountain Region and adopted as a national system under MATES. The newest version of PETS, says systems analyst Walter Houk of ANM-43, enables the regions to obtain immediate preemployment status on any ATCS applicant, provides reports and messages for both Headquarters and regions, tracks the progress of ATCS applicants to provide the FAA Academy with the required number of ATCSs who have appropriate clearances, and identifies preemployment processing trends and problems so that the hiring process can be fine tuned.

The third automation project is the transfer of the competitive employment registers from the OPM in Macon, Georgia, to FAA's Aeronautical Center in Oklahoma City. This transfer will allow the Aviation Careers Examining Division (AAC-80) quickly to supply the regions with lists of eligible candidates for employment consideration.

"Of the thousands of agencies that are

serviced by the OPM, this is the first time that an agency has been successful in assuming responsibility for registers of this size and complexity," said Sharon Morrow, the MATES coordinator at AAC-80.

A good program like MATES just keeps opening up new directions for making improvements, especially when people in different work locations, grade levels, and program areas are committed to working together for a common goal.

From the start, the MATES program has tapped resources both in and outside of Headquarters to develop a way of doing business that benefits the FAA, its employees, and new applicants. As part of the program, over 700 ATC preemployment interviewers have been trained in the new MATES procedures and in effective interviewing techniques.

MATES is also expanding into other safety-related occupations. A workgroup has been developing procedures to speed up the application and preemployment

processing for aviation safety inspector applicants, starting in the air carrier operations area. The occupations of civil aviation security specialist, flight test pilot, airspace system inspections pilot, and electronics technician will be incorporated into the MATES program in fiscal years 1991-92.

Those involved in the MATES program are proud of their accomplishments. Employees in three primary program areas—human resources management, air traffic, and security—have worked together as a team dedicated to providing the agency with the best way of selecting other FAAers.

Bruce Clunich, Air Traffic's representative on the MATES team, sums it up by saying, "Never before have the air traffic, security, medical, and human resource management organizations worked together so well to accomplish so much. It shows what FAA can do when it tries." ■

Dolores Richard is MATES program manager. Susan Reyes and Jimmy Jackson, personnel management specialists in APN-200, also contributed to this article.



Dorothy Gibson, ASW-14 (center), meets with new ATC interviewers during a training session.



Dave Hicks, APN-100, explains a point during a Personnel Employment Tracking System (PETS) development meeting. Listening are, from the left, Jeff Jameson, AGL-14; C. Joy Everhart, AAC-351; Nancy Wilcher, ANM-14; and Walt Houk, ANM-43.

Keeping FAA's Training Up-to-Date: CMD Wants Input

Thanks to Dr. Roberta Sappington, program management specialist at the Center for Management Development, and Roland Herwig, Aeronautical Center Public Affairs Office, for this information.

To keep courses at the Center for Management Development (CMD) technically correct and up to date, the Office of Human Resource Development and the CMD put together a team of FAA subject matter experts (SMEs) from FAA Headquarters, regions, and the Aeronautical Center.

Each SME is matched to a faculty member, who is on contract to the Palm Coast, FL, facility. The SMEs will review their areas of expertise and will route relevant information to their CMD matchup. SMEs will also answer inquiries from course developers and instructors about the effectiveness of the materials and methods used. This process will enrich the school's existing materials and methods of instruction as well as keep the CMD's training program current.

The SMEs invite you to contact them if you have operational information that may be useful for the center to incorporate into its learning materials. They will relay your information to the CMD faculty and course developers.

The following handy list gives the key resource person to contact with your input for a wide-range of subject areas. FTS phone numbers are included.

If the information is mailed, include the identification "CMD SME Proposal" on the envelope. ■



Aerial view of FAA's Center for Management Development, which is located in a wooded area at Palm Coast, Florida, north of Daytona Beach.

- Air traffic, enroute**
Bruno Clunich (ATZ-220), 267-9214
- Air traffic, flight service stations**
Ken Mays (ATZ-220), 267-9366
- Air traffic, tower**
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- Airway facilities**
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- Budget, straightlining**
Jane Mayne (AHR-10), 267-7475
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Chris George (AHR-20), 267-8886
- Conduct & discipline**
Carol Nero (ALR-200), 267-3987
- Culture change**
Barry Williams (AHD-100), 267-3939
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Bob Lowe (AMS-420), 267-9940
- Drug program**
Harnetta Williams (ALR-200), 267-7207
- Employee Assistance Program**
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- Employee benefits insurance programs/child care**
Ginny Bachman (ALR-200), 267-3988
- Employee survey program**
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Lilith Ren (AHD-100), 267-3940
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Jovee Lee (ACR-3), 267-3259
Patricia Webster (ACR-3), 267-3259
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- Human resources planning, NAS Plan**
Capital improvements:
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- Individual Development Plan**
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- Information Resources Management**
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- Labor-management relations**
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- Legal, procurement**
Brian Reed (AGC-530), 267-3480
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Nancy Greenfelder (ALG-320), 267-3657
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Chris Early (AHR-4), 366-2788
- Performance Improvement Plan (PIP)**
Performance Management Recognition System (PMRS)
Nancy Welch (AHD-230), 267-3933
- Performance Management System (PMS)**
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- Supervisory Identification Development Program (SIDP), Air Traffic**
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- SIDP, Aircraft Certification Regulatory Program**
Chris Heizer (AHR-510), 267-7026
- SIDP, Airway Facilities**
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- SIDP, security/aircraft certification**
Karen Rymer (AHD-210), 267-7830
- Time & attendance**
John Brown (AA-100), 267-8938
- Total quality management (TQM)**
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Kui-Peter Koenig (AHD-100), 267-7232

The Case of N724N— An FAA Attorney Recalls the Facts

By Andrew J. Dilk

The marshland, mudflats, and coastal plains of Louisiana are places where the meandering estuaries of the Mississippi coastal plain slowly distance themselves from the waters of the Gulf of Mexico. That inland bayou region described by Longfellow in "Evangeline" as "a maze of sluggish and devious waters" provided a retreat for pirate Jean Lafitte. More than a century later, individuals arousing assorted suspicions navigate the airspace far above those twisting channels, often carrying treasures of an entirely different sort.

Early in the afternoon of Saturday, December 22, 1979, when most people were reading themselves for the Christmas season, a gas pipeline crewboat labored across the waters of Timbalier Bay, southwest of Houma, Louisiana. Some five miles north of the main coastline, the attention of its crewmembers was attracted to the reflections from a strange object jutting six or eight feet out of the water. A closer inspection revealed the crumpled metal of the tail section of a crashed submerged aircraft.

Notice of the accident was given to the Federal Aviation Administration and the National Transportation Safety Board (NTSB), and later that afternoon the wreckage of N724N was hoisted by crane from the sucking mud of the inland waters. Found onboard were the bodies of two men.

The identity of the pilot was traced through a flight plan filed with the FAA and the registration number of the aircraft. FAA records revealed that the pilot was one Sabah Dawlett, the owner of a struggling aviation business at the airport in Turners Falls, Massachusetts, a small mill town along the banks of the Connecticut River in north-central Massachusetts.

Dawlett was a 43-year-old male of modest height (5'6") and immodest weight (205 pounds), who was born in Baghdad, Iraq. FAA records disclosed that in 1965, as an Iraqi citizen, he had entered a pilot training program sponsored by the FAA under an Agency for International Development grant. He received his flight training in Minnesota and obtained a commercial pilot certificate in the summer of 1965. Late in 1967 he emigrated to Canada with his wife and two children, moving to the United States in 1969, and then settling in Massachusetts. He and his wife were divorced in 1972, and in 1975 he was naturalized as a citizen of the United States. In the early 1970's he opened a flight school to instruct student pilots, as well as conduct an air taxi business.

A reconstruction of Dawlett's flight experience, which was taken from his pilot logs, disclosed that he had accumulated 2,403 hours of flight time, none of which had been in turbine engine aircraft. As with most pilots, his dealings with the FAA had been limited; it was only in 1979 that a civil penalty action was initiated against him.

Early that year, while flying in the traffic pattern at the Northampton, Massachusetts, airport, his aircraft had overtaken another aircraft already established on the final approach for landing, causing a mid-air collision. Although such accidents are typically fatal, almost miraculously both aircraft were landed safely. As a result of Dawlett's lack of certification, the FAA suspended his pilot certificate for forty-five days, effective August 14, 1979. Dawlett appealed that suspension to the NTSB, and the issue remained unresolved at the time of his fatal flight.

With this information on the pilot of the N724N in hand, the government investigation spread from Louisiana to Florida and Massachusetts in an attempt to reconstruct the history of the flight and, ultimately, the cause of the accident.

The plane was a relatively high-performance Beechcraft King Air, with its electric white color outlined in soft contrast by trim of brown and gold. Manufactured in 1965 and maintained in excellent condition, this complex twin-engine, turbine-powered propeller aircraft had been purchased in 1979 by an aircraft sales agency in Orlando, Florida. Dawlett signed a sales agreement in the amount of \$220,000 on December 13, 1979, depositing \$22,500 while arranging for the financing of the remainder through a Massachusetts bank.

While the seller, an experienced pilot, attempted to explain the system on N724N, the impatient Dawlett "wouldn't take time to hardly listen. He'd go on to something else, jumping around from one thing to another, not really sitting down and understanding point by point things we had to explain to him."

The seller described how he and another pilot "explained to him he was a long way from being checked out in the airplane and would have to hire a pilot, or go to school, or something."

Dawlett responded with: "I have to fly to Bimini in the Caribbean before I return to Florida."

The seller said that with Dawlett's approval he had telephoned a check pilot to fly with Dawlett the next morning. Shaking his head, the seller explained how he had found out the next morning that apparently as the only pilot, Dawlett had simply departed Orlando in N724N without any check flight. "I telephoned the

tower and found out that he had left about three or four o'clock that morning."

Dawlett had related to the seller some of his activities during the prior week, and investigation after investigation disclosed a frenetic itinerary, including flights to the Caribbean from Florida, a return to his apartment in Sarasota, a commercial flight back to Massachusetts to arrange financing for the purchasing of N724N, and a return to Florida for another trip to the Caribbean before the trip to Texas.

It was apparent that limited sleep during at least a four-day period had created a sense-dulling fatigue in Dawlett. Contributing to the impairment of his physical and mental abilities would have been the apparent stress and anxiety of his business endeavors.

Records in the Springfield, Massachusetts, office of the Drug Enforcement Administration (DEA) included a report that Dawlett had been suspected of smuggling drugs by airplane from Canada from some time. DEA records provided grounds for a suspicion that he was serving as a "courier," transporting drugs from the Caribbean to Canada as early as 1975. His business card had been found on an individual arrested in Miami for smuggling hashish, but the circumstantial evidence of records and contacts with the drug underworld was inconclusive and had never led to an arrest.

The fingerprints of Dawlett's passenger disclosed that he was one Leon Brooks of Miami, who also had been under surveillance by the DEA for a number of years. The DEA computer system revealed Brooks' contacts with suspected drug dealers, but the labyrinthine drug-oriented relationships had fallen short of providing evidence for any arrest. These DEA records on Brooks creating a "suspicion by association" were maintained in computer indexes in San Diego, New Orleans, Miami, and Philadelphia.

The trial of suspicion had begun with information from a "source" concerning the smuggling by Brooks and Dawlett of 12,000 pounds of marijuana from the Bahamas to Florida. Suspicions reportedly grew because of an assortment of ventures, including the smuggling of 250,000 pounds of marijuana from Columbia in 1979 and the distribution of a 150,000-pound marijuana shipment that same year to someone in the Boston area known as "Wings." Brooks' associations were reflected by his name being listed in personal address books found on numerous arrested drug dealers.

Reconstruction of Dawlett's activities before the accident disclosed that at about 6 p.m. on the previous night, he



The bent propeller in the wreckage of N724N indicates it was spinning on impact. The wreckage was pulled by crane from Timbalier Bay, Louisiana. The plane was a Beechcraft King Air.

had arrived at Andrau Airpark, west of Houston, after a flight from Bimini through Tampa. At 11:18 that evening he telephoned the FAA's flight service station in Houston, stating in a recorded call, "I would like to—ah, can you please give me the weather for Tampa?"

He was given the forecast and reported weather information. He then filed a flight plan for a three-hour flight to Tampa at an altitude of 19,000 feet and a speed of 240 knots.

Just before midnight Dawlett again telephoned the FSS, impatiently stating, "Yes sir . . . ah . . . I just called earlier and . . . ah . . . I was looking for the winds aloft."

He was informed that at 18,000 feet the winds were forecast to be from the west at 21 to 25 knots in the Houston, New Orleans, and Mobile areas. Dawlett then asked whether other pilots had reported the tops of the clouds along the route and commented, "They were around 6,000 feet on my way from Tampa."

Dawlett was interested in moisture in the air, which could create icing that aircraft at altitudes where the tempera-

ture was below the freezing level. The freezing level was forecast to be at 10,000 feet to the north of his route, sloping upward to 13,000 feet in the coastal area he planned to cross. The National Weather Service forecast for the New Orleans area was for occasional moderate to mostly "rime" icing (rough, milky, opaque ice formed by instant freezing of small water droplets), as opposed to "clear" ice in precipitation above the freezing level.

The pilot who used the telephone at Andrau Airpark after Dawlett was the chief engineer of a large Texas oil company. He generally recalled departing the airport that night and, after a review of his pilot log, recalled his flight to Lafayette, Louisiana, on a flight path that was some 30 miles north of the one to be flown by Dawlett. "I remember the night at Andrau with light rain, a high ceiling, overcast, with weather dropping. Since I was not instrument rated, I wasn't going to fly my Mooney in the clouds because icing is a typical condition at that time of year.

When questioned about a short, heavyset, dark-haired pilot who used the

telephone before him, he recalled that pilot going to a King Air parked nearby and described him as a man "who seemed like he was waiting, trying to decide whether or not to go."

At nine minutes after midnight, Dawlett departed Andrau Airpark in N724N. One minute later the airport target was identified by the FAA's Houston approach control radar controller. Dawlett subsequently climbed to 13,000 feet, and at 12:43 a.m. was advised to make radio contact with the controller of the next sector, as he was sequenced east. Nine minutes later he reported being in level flight at 19,000 feet and asked the controller, "Do you have a groundspeed on us?"

Unlike the driver of an automobile who can directly observe the groundspeed indicated on the speedometer, an aircraft's airspeed indicator only depicts the speed of its movement through the air. It cannot depict the speed of the wind increasing or decreasing the aircraft's speed over the ground. The airspeed indicator also does not reflect changes in a plane's groundspeed because of variation in atmospheric density

caused by altitude, pressure and temperature. To avoid making basic calculations on a slide-rule type computer utilized by pilots, Dawlett simply relied on the controller to provide him with the more accurate actual speed over the ground as determined by the radar computer. This would let him know if his speed was close to what he planned.

In response, the controller advised Dawlett of a groundspeed of 204 knots. This information should have suggested to Dawlett that his groundspeed was slower than he had planned, but with his senses dulled, he may have assumed that the winds aloft were fickle and less than forecasted.

He had engaged the autopilot switch, and N724N cruised throughout the troposphere 19,000 feet above the Louisiana coastline, poking its way through increasing cloudiness. Slowly ice began to accumulate on the impact areas of the aircraft. As the weight of the ice increased, so did the drag on the aircraft, and the true airspeed continued to decrease to a speed nudging 165 knots.

At 1:12 a.m., the controller, for reasons he couldn't recall, transmitted to Dawlett, asking him to "say your altitude."

The calm response of Dawlett was, "I'm at 19,000 feet."

Following that report, the powerful and urgent torque of the Pratt & Whitney engines was Dawlett's only remaining link with the world outside the cockpit. Complacency resulting from strain and fatigue caused him to rest

back in his seat and to ignore indications of the disaster to come. His unfamiliarity with the operation of a turboprop was even more critical because of the uniqueness of the anti-icing system installed on N724N. The mechanical operation of the controls probably meant nothing to the resting passenger. Brooks, who was not a pilot.

Even in the absence of visible moisture, a pilot experienced with the N724N would have carefully observed the outside temperature gauge and windshield. Such a pilot would also have examined the propeller spinners with a flashlight looking for any accumulation of insidious icing. At the first indication of icing, he would have extended the ice veins, initiated heat to the propellers and other critical parts, and turned the ice lights on to keep a careful watch for accumulation. For some 28 minutes, however, as Dawlett relied upon the autopilot, he was inattentive to the operation of his aircraft.

With increasing effort, the autopilot compensated for the diminishing airspeed caused by the weight and adverse aerodynamic effects of the icing. Though aware of the likelihood of icing, Dawlett

also failed to respond to the rising nose of N724N as the autopilot struggled to maintain altitude and speed. When the autopilot could no longer compensate, N724N collapsed like a person stepping off an unseen stair. The aerodynamic stall of its flight invited the torque of the engines to twist N724N to the left and into a critical downward spin.

Dawlett instinctively yanked backward on the elevator control in an attempt to regain a level altitude. This caused such severe gravitational stressing of the wing-spar carry-through structure that in an instant rivets were torn through the wing, resulting in both the outboard wing panels and tail being torn from the fuselage. The fuselage itself reached Timbalier Bay at a terminal velocity of several hundred miles per hour.

Almost 300 miles away, the controller at the Houston Center sat in a chair facing the flashing green lights, depicting aircraft spread over hundreds of miles. At 1:40 a.m. the controller transmitted, "N724N, I've lost your beacon squawk code 2100"—a transmission that tragedy left unanswered.

Nothing of financial value was reported to have been recovered from the wreck, and the tragedy left Brooks' remains unclaimed. Dawlett was claimed by his children and returned to Massachusetts. But the story of this member of the aviation community who had ignored his personal limitations and had let slip the wisdom of his training was not quite ended.

As a result of the accident, Dawlett's children filed a lawsuit against the United States, alleging negligence on the part of the Houston FSS employees in failing to advise Dawlett of forecasted icing conditions. As part of this litigation, in March 1984, on the day before Dawlett's son was scheduled to testify about his knowledge of the flight, he was arrested by the DEA for a drug-related offense. He had been under surveillance for more than a year.

Following consultation with his attorney, Dawlett's son agreed to continue with his deposition testimony relating to the accident and was temporarily released from his Springfield, Massachusetts, federal jail cell.

The \$1 million lawsuit for the death of Sabah Dawlett was subsequently settled by the United States for its nuisance value. ■

Andrew J. Dilk is an FAA attorney and manager of the Accident Counsel Branch in the Office of the Chief Counsel, Dilk's interest in the N724N case is based on his defense of a lawsuit by the estate of the deceased pilot against the United States.

The 'Best Person' Theory and Why It Fails

By Frederica H. Dunn

Although many of America's multinational companies are household names overseas, their corporate success has often been marred by individual failure. Executives assigned to help run operations abroad sometimes do their work woefully, despite a splendid track record at home.

Learning from corporate experiences in this area is important because failures are costly. It costs several hundred thousand dollars to transfer a manager to an overseas post. If the manager cannot perform well there, the company has made an expensive mistake, and the cost is aggravated by the mission's lack of accomplishment and any public relations damage to the company.

The problem has grown with the expansion of international commerce. The number of Americans who work for a U.S. company outside this country has surged in the last 30 years to about 200,000, according to government statistics. Despite the multinational corporations' attempts to choose employees for overseas transfers with care, personnel statisticians estimate that many workers sent abroad are later deemed inadequate.

While there are many reasons for the high rate of failure among managers chosen for overseas duty, most assignment mistakes are of these four types:

- Misgauging the employee's family situation.
- Selection of the "best person" who really isn't.
- Lack of orientation before the assignment.
- Lack of communication during the assignment.

On the basis of my experience as a consultant in international personnel selection, I would like to suggest some remedies for the mistakes made in picking men and women to work in a foreign country.

First, problems involving the family seem to offer the greatest hope for improvement. Too many companies give too little attention to the relationship between the employee's family and the employee's overseas job performance. In one study of 115 corporate personnel officers, 82% ranked the family situation either first or second as a cause of failure.

While some might react to this data by deciding to send only single people overseas, there are two obvious flaws in such a response. First, it would eliminate about 80% of the candidates. Second, it ignores the fact that a genuinely supportive family is a real asset to an individual thrust into a new environment.

The family situation is particularly important because employees overseas are more dependent on their family than they would be at home. As a result, if even one member of the family has serious problems adapting to the new environment, the organization will suffer.

Every personnel manager can tell horror stories about employees assigned abroad. One involves a young sales engineer, newly married, who was sent to Mexico City. He welcomed the assignment, and his bride looked forward to the new post as an extension of their honeymoon. In six weeks, however, the bride had fled her home.

It turned out that the sales engineer's previous assignment happened to be in the young woman's hometown. After they married, they lived just around the corner from her parents' house. The bride had never been out of the state. It would have been traumatic for her to move to Seattle or Atlanta—the cultural shock of Mexico was too much for her to handle. In this case, the company lost its relocation investment and the employee as well; he resigned as a result of the episode.

Most candidates for overseas assignments are eager to go. During interviews, therefore, they tend to gloss over family problems that might be caused by relocating. This is not deception; it is simply the normal instinct to hope for the best. One method used to probe the family's thoughts about the move is to interview—separately—the spouse of each candidate.

The second type of mistake, resulting from what I call the "best person" syndrome, has multiplied in recent years. Now that international business has become so important, organizations want to send the best person who can be found.

But who is best? If a certain executive has done a great job doggedly and forcefully tackling tough problems in the Los Angeles sales office, that person should be an ideal choice to tackle tough problems in Tokyo. Right? Wrong. Some companies have watched their best and brightest fail miserably because no one in the home office recognized that the rugged skills that made their candidate's success in America will only antagonize people in other countries.

A real case that developed involved a man chosen for a post in the Middle East. The qualifications of the executive, who we'll call Mr. Grant, seemed impeccable for a crucial, sensitive position. An honors graduate of an Ivy League business school, he had achieved an outstanding rating on every job assignment since college. He was brilliant, and his work record was exceptional. After six months, however, he pleaded to return to the United States.

Apparently, Mr. Grant's success in

school and on the job arose from his extraordinary zest for competition—a zest that is common in American business, sports, and politics. In the Middle East, however, he had to work with a multinational team, and his competitive spirit alienated many of its members. Some of them represented cultures where an individual winner is regarded as having offended all those who lost. Mr. Grant was wise enough to realize that his position was untenable, so he requested a transfer.

It is not enough to select a person on the basis of American criteria alone. Ob-

viously the person chosen must be technically qualified. In interviewing people for an overseas post, however, extra weight should be given to the candidates' ability to adapt to an alien culture. A person who ranks third or fourth by domestic standards may be the best bet.

Insufficient orientation is the third type of mistake often made. It is simply not enough to explain the new country's currency, reel off statistics about its population and gross national product, and give the departing employee a restaurant guide.



At an orientation for FAAers based abroad were, standing from left, Randy McIntosh, instructor Frederica Dunn, Floyd Seelye, ACS training liaison Pat Abeyta, and Dan Furlong. Seated are Joe Coyne, Cal Yuen, and Jesse Ayala.

Dr. Frederica (Ricky) Dunn has been dean of student and personnel services at the Community College of the Finger Lakes, Canandaigua, New York. She has been employed overseas and has done consulting in the area of international personnel. Her

work has also included time with the General Electric Company as an ombudsman and in its international division. Presently she is employed by the Office of Training and Higher Education at FAA Headquarters.



FAA personnel and spouses, from left, Cal and Stella Yuen, Randy and DeWanna McIntosh, Joe and Genevieve Coyne, Jesse and Patricia Ayala, Floyd and Isabella Seelye, and Dan Furlong.

Rochelle Kaber, aviation security specialist (not pictured) also provided orientation training for spouses.

FAA Increases Security Positions in Europe, Middle East

On April 4, 1989, Secretary of Transportation Samuel Skinner announced measures to enhance civil aviation security on the international front. One of his cornerstones is to increase FAA's Civil Aviation Security presence in Europe and the Middle East to deal with the escalation of unlawful acts against civil aviation.

As a result, approximately seven new overseas offices are now being set up with a total of 27 new positions to be established overseas by the end of FY-90. Of the 27 positions, three will be managers, 10 will be civil aviation security inspectors, and 11 will be civil aviation security liaison officers.

Similar increases are planned for Latin America and the Pacific region in FY-91 and later. Selections for these positions are anticipated from within and outside FAA's civil aviation security organization.

The first civil aviation security liaison officer, David Knudson, was posted in London. He has jurisdiction over the Republic of Ireland, the United Kingdom, and Iceland.

Knudson works directly with those who deal with civil aviation security in the host governments and in air carrier operations. One of Knudson's goals is to develop and coordinate standards so that U.S.-based airlines can take one action and satisfy the requirements of both the United States and host government authorities. Knudson also helped with the installation of the first TNA machine abroad in London's Gatwick Airport. ■



A gathering of American aviation officials in London includes Allan M. Kelly, customer service manager, USAir, London's Gatwick; David Knudson, civil aviation security liaison officer in London; and Ian Burden, American Airlines corporate security.



Pictured from the left are David Knudson, FAA's civil aviation security liaison officer in London; Benjamin Demps, Jr., Director, Europe, Africa, and Middle East Office; Gail Meltzer, FAA London; and Patrick Poe, FAA representative, London.

At most progressive companies, language training is also provided, and it is generally easy to find material on the country's history, geography, and arts. Even a half-hearted orientation program will cover these subjects, but it is not easy, short of living abroad, to understand the subtleties and nuances of another culture and to learn what motivates individuals in another society.

Before being sent to foreign assignments, each employee and his or her family should be exposed in an organized way to instruction in the cultural characteristics of their new land. Such a course would be as well organized as the presentation on sales opportunities there.

Perhaps the most vital part of the course involves the culture of the business in the new country. What is the relationship between professional people and workers who are paid by the hour? How far is authority delegated? What advertising is considered in poor taste? Problems often occur because of a misunderstanding of business mores.

The Germans have a special expression for the ability that an executive needs in any new cultural environment. The term is *fingerpitzengefühl*—sensitivity in the tips of your fingers.

The fourth major flaw in the multinational personnel system is a general failure to provide people overseas with channels of communication so that they can resolve personal problems with the corporate bureaucracy.

It gets lonely overseas. Managers in many companies have been told to keep an open door for subordinates with problems. Often, though, neither the boss nor the boss's boss can help solve the problems. Consider the personnel manager of a subsidiary in Latin America with 3,000 nationals hired locally and three employees from the United States. The manager is not likely to devote attention to the needs of the three at the expense of the 3,000.

The presence of an international ombudsman would be invaluable. Based geographically, several of these cultural troubleshooters could help significantly to reduce the failure rate of an overseas assignment program. The ombudsman concept can be even more valuable in the multinational situations than in domestic business.

A final mistake made by multinational companies occurs after an employee—one who did the job successfully overseas—returns to the United States. Sometimes the domestic reassignment is callously handled. An executive's career may unjustly suffer if promotions are given to managers who stayed home, where they could maintain personal touch with key people.

One way of dealing with this problem is to assign special responsibility to some person of wide influence at corporate headquarters who could keep overseas workers informed of all domestic matters that might affect their careers and ease their re-entry into the domestic operation. ■

Aeronautical Center

Sam E. Dupris, supervisor, Flight Operations Scheduling Section, Frankfurt FIFD, Flight Procedures & Inspection Div., from Oklahoma City. . . **Leo T. Epperson**, manager, Data Services Div. . . **Laurence E. Estes**, supervisor, Safety Data Analysis Section, Maintenance Support Branch, Regulatory Support Div., promotion made permanent. . . **Michael Hakim**, manager, Faculty Development & Certification Branch, FAA Academy. . . **Douglas A. Keller**, group supervisor, Atlanta FIFD, Flight Procedures & Inspection Div., promotion made permanent. . . **Fredric R. Priehard**, supervisor, Technical Support Section, Fleet Support Branch, Aircraft Maintenance & Engineering Div., promotion made permanent.

Alaskan Region

Carl N. Anderson, unit supervisor, Anchorage ARTCC. . . **Stanford O. Hill, Jr.**, manager, Information Resource Management Branch, Resource Management Div., promotion made permanent. . . **Herbert W. Hinman**, manager, Juneau FSS. . . **John W. Smith**, manager, NAS Program Management Staff, Airway Facilities Div.

Central Region

Barbara G. Boyle, deputy branch manager, regional counsel, promotion made permanent. . . **Gerald H. Dennis**, manager, Aviation Medical Div. . . **Sherwood M. Duffin**, unit supervisor, F&E Planning Section, Radar/Navigation Unit, Resources & Planning Branch, Airway Facilities Div., promotion made permanent. . . **Hal E. Foland**, staff chief, Standards Office, Small Airplane Directorate. . . **Dean M. Funk**, area supervisor, Chesterfield, MO, ATCT, from St. Louis ATCT-TRACON. . . **Larry G. Nelson**, manager, Minneapolis Manufacturing Inspection District Office, promotion made permanent.

Eastern Region

Marcus V. Arroyo, manager, Civil Aviation Security Div. . . **Michael T. Dawson**, area supervisor, New York ARTCC, Islip, NY, promotion made permanent. . . **Melvyn Freedman**, unit supervisor, New York Flight Standards District Office, Valley Stream, NY, promotion made permanent. . . **Mark L. Greffath**, manager, Niagara Falls International Airport ATCT, from Flint, MI, ATCT. . . **Michael O. Hanson**, unit supervisor, Allentown, PA, FSDO, promotion made permanent. . . **Richard J. King**, area manager, Washington National ATCT, Arlington, VA. . . **Harold M. Kozlow**, unit supervisor, Pittsburgh, PA, FSDO, Coraopolis. . . **David R. Maher**, area supervisor, Dulles International Airport ATCT, Loudoun County, VA, promotion made permanent.

Mark E. Manooagian, section supervisor, Establishment Engineering Branch, Airway Facilities Div. . . **John Kevin Moran**, security officer, National Capital Civil Aviation Security Field Office, Chantilly, VA, promotion made permanent. . . **Edwin C. Mortensen**, area supervisor, Farmingdale, NY, ATCT, promotion made permanent. . . **Daniel E. Moyer, Jr.**, unit supervisor, Harrisburg Flight Standards District Office, New Cumberland, PA, promotion made permanent. . . **Stephen M. Rich**, area supervisor, Trenton, NJ, Airport ATCT, from Newark, NJ, ATCT. . . **Leonard E. Smith**, unit supervisor, Charleston, WV, AFSFO, Charleston, AFS, promotion made permanent. . . **Miguel A. Soto-Escobedo**, unit supervisor, Farmingdale, NY, FSDO, promotion made permanent. . . **David E. Townsend**, GADO manager, Charleston, WV, FSDO, promotion made permanent. . . **Angus M. Wall, Jr.**, unit supervisor, Garden City, NY, AFSFO, Metro NY AFS, from Islip, NY. . . **Charles B. Wolring**, unit supervisor, Harrisburg FSDO, New Cumberland, PA, promotion made permanent.

Great Lakes Region

Bradley J. Chandler, unit supervisor, Aurora, IL, AFS, from St. Joseph County, IN. . . **Jon P. Fleweger**, manager, Fort Wayne, IN, Municipal Airport ATCT, from regional headquarters. . . **William E. Herbert**, unit supervisor, Emmet County, MI, AFSFO, Michigan AFS, promotion made permanent. . . **Mark D. Hvezda**, AF watch supervisor, Minneapolis, MN, AFS, from Gettysburg, SD. . . **Bruce A. Metz**, asst. manager, Chicago Midway ATCT, promotion made permanent. . . **Richard K. Petersen**, supervisor, Procedures & Traffic Management Section, System Management Branch, Air Traffic Div. . . **Robert D. Schofield**, manager, Outagamie County Airport ATCT, Appleton, WI, from Springfield, IL. . . **Edward M. Selega**, manager, Delaware County Airport ATCT, Muncie, IN, from Grand Rapids, MI.

New England Region

Charles R. Borgia, asst. manager for training, Logan Airport ATCT, Boston. . . **Johnny J. Boyce**, asst. manager, Air Traffic Div. . . **Amy L. Corbett**, asst. chief counsel, Regional Counsel Office, promotion made permanent. . . **Richard A. Plouff**, unit supervisor, Nashua, NH, AFS, promotion made permanent. . . **Helyn B. Shoemaker**, area supervisor, Hancock Field, Bedford, MA, ATCT, from Santa Barbara, CA, ATCT. . . **Anthony J. Willett**, administrative manager, Management Systems Branch, Resource Management Div.

Northwest Mountain Region

Mary J. Carter, area supervisor, Seattle, WA, AFS, from Wenatchee, WA. . . **Mariann P. Crane**, manager, Human Resources Div., from Washington Headquarters. . . **David A. Darrow**, area supervisor, Seattle-Tacoma International Airport ATCT, from Boeing ATCT. . . **Edwin J. Justice**, systems engineer, Longmont, CO, ARTCC AFS. . . **Daniel A. Piper**, asst. manager, Salt Lake City, UT, Airport ATCT, from Ogden, UT. . . **Carl L. Sanders, Jr.**, manager, Cheyenne, WY, AFSFO, Billings, MT, AFS, from Longmont, CO. . . **Robert J. Tribble**, unit supervisor, Auburn, WA, ARTCC, promotion made permanent.

Southern Region

Daniel O. Carlson, unit supervisor, traffic management, Miami, FL, ARTCC. . . **Alvan T. Bazer**, manager, Flight Test Branch, Technical Facilities Div. . . **Malcolm A. Burgess**, branch manager, Hampton, VA, field office. . . **Jo Ann M. Delcorso**, unit supervisor, Materiel Management Section, Materiel Branch, Logistics Div., promotion made permanent. . . **Arthur J. Clark**, manager, Pensacola, FL, AFSFO, Montgomery, AL, AFS, from Nashville, TN. . . **Robert A. Cowell**, section supervisor, Memphis, TN, FSDO, promotion made permanent. . . **Carol Sue Gossett**, supervisor, Inquiry & Control Section, Payroll Branch, Accounting Div., promotion made permanent. . . **Russell R. Hammer**, unit supervisor, Miami, FL, FSDO. . . **James E. Kellett**, asst. manager for training, Gainesville, FL, AFS, from Pensacola. . . **Roger A. Lahaise**, area manager, San Juan, PR, CERAP. . . **Richard W. McManus**, area supervisor, Fort Myers, FL, ATCT, from West Palm Beach. . . **Albert R. Outen**, manager, Tyn dall AFB, FL, AFSFO, Jacksonville, FL, AFS, from Charlotte, NC. . . **Mark G. Palazzo**, asst. manager, NAS implementation, Miami ARTCC. . . **Woodrow A. Wilson**, unit supervisor, Savannah, GA, AFSFO, Columbia, SC, AFS, Brunswick, GA.

Southwest Region

Carl L. Allen, manager, Santa Fe, NM, Airport ATCT, from Tyler, TX. . . **Peter R. Cappadona**, team supervisor, Baton Rouge, LA, FSDO. . . **John Clasca, Jr.**, manager, Oklahoma City, OK, FSDO, from Little Rock, AR. . . **Bruce E. Cook**, section supervisor, Albuquerque ARTCC AFS. . . **Kenneth F. Davis**, section supervisor, Program Support Staff, Establishment Engineering Branch, Airway Facilities Div.

Neil F. Devoe, unit supervisor, Tulsa AFSFO, Oklahoma City AFS, promotion made permanent. . . **Andra M. McFarren**, crew chief, Establishment Engineering Branch, Airway Facilities Div. . . **William E. Record, Jr.**, asst. systems engineer, Fort Worth, TX, ARTCC AFS, from Houston ARTCC AFS. . . **Guillermo R. Rivera**, asst. manager, Establishment Engineering Branch, Airway Facilities Div. . . **Rene Suarez**, area supervisor, San Antonio, TX, Airport ATCT, from Little Rock, AR. . . **Maurice Wyatt**, asst. systems engineer, Fort Worth, TX, ARTCC AFS, promotion made permanent.

Technical Center

Douglas E. Adams, Sr., unit supervisor, Materiel Handling Section, Materiel Branch, Logistics Div., promotion made permanent. . . **Alvan T. Bazer**, manager, Flight Test Branch, Technical Facilities Div. . . **Malcolm A. Burgess**, branch manager, Hampton, VA, field office. . . **Jo Ann M. Delcorso**, unit supervisor, Materiel Management Section, Materiel Branch, Logistics Div., promotion made permanent. . . **W. Thomas Edwards**, deputy manager, Technical Facilities Div. . . **Lewis J. Levy**, unit supervisor, Materiel Handling Section, Materiel Branch, Logistics Div., promotion made permanent. . . **Dorothy M. McGehee**, unit supervisor, Terminal Requirements Section, National Terminal Field Support/Maintenance Branch, Automation Software Div. . . **Peter M. Trazera**, supervisor, Terminal Support Section, National Terminal Field Support/Maintenance Branch, Automation Software Div. . . **Thomas M. Walsh**, branch manager, Engineering, Research & Development Service, Moffett Field, CA.

Washington Headquarters

Mark R. Adams, manager, Plans & Evaluation Branch, Plans, Evaluation & Management Support Div., Office of Aviation Medicine, promotion made permanent. . . **Larry A. Bruno**, manager, Airports Branch, Civil Aviation Security Div., Office of Civil Aviation Security, promotion made permanent. . . **Edward C. Huntzinger**, manager, Industrial Evaluation Branch, Industrial Div., Logistics Service. . . **Donald L. Lomhard**, manager, Facilities Transition Branch, Transition Assessment Div., NAS Transition & Implementation Service. . . **Thomas M. Penland, Jr.**, manager, Program Management Branch, Air Transportation Div., Flight Standards Service, promotion made permanent. . . **Charles W. Pilgrim**, staff chief, Facilities Integration Div., NAS Transition & Implementation Service, promotion made permanent. . . **Ann M. Sadler**, manager, Administrative Management Branch, Administrative Systems Staff, Logistics Service. . . **James E. Siegman**, manager, Commuter & Air Taxi Branch, Aircraft Maintenance Div., Flight Standards Service, promotion made permanent.

Western-Pacific Region

Stephen A. Badger, aviation safety inspector, Honolulu, HI, FSDO, from San Diego, CA, FSDO. . . **Tommy E. Barclay**, asst. manager, Oakland, CA, TRACON. . . **Carlyce D. Colt**, asst. systems engineer, Oakland, CA, ARTCC AFS, promotion made permanent. . . **Robert G. Colburn**, section supervisor, San Francisco, CA, CMO, promotion made permanent. . . **Harvey L. Hartmann**, asst. manager, plans and procedures, Oakland, CA, TRACON. . . **Lettie C. Howland**, unit supervisor, Real Es-

tate & Utilities Branch, Logistics Div., promotion made permanent. . . **Kevin E. Jones**, federal air marshal, Los Angeles, CA, CASFO, from regional headquarters. . . **Bruce C. Martin**, asst. systems engineer, Oakland, CA, ARTCC AFS, Fremont, promotion made permanent. . . **Curtis J. Meschke**, unit supervisor, Reno, NV, AFSFO, Sacramento AFS. . . **Ruben R. Meza**, unit supervisor, Long Beach AFSFO, San Diego, CA, AFS, from regional headquarters. . . **Leonard A. Mohley**, manager, Los Angeles, CA, ATCT, from regional headquarters.

Wilson S. Moses, manager, Sacramento, CA, FSS. . . **Joseph A. Palmbo**, manager, San Francisco, CA, International Airport ATCT, from Oakland, CA. . . **Alfred T. Pruitt**, area supervisor, Oakland, CA, ARTCC, Fremont, promotion made permanent. . . **Thomas L. Rash**, area supervisor, Fresno, CA, FSS, from Riverside FSS. . . **Terry L. Rhodes**, manager, Fox Field ATCT, Lancaster, CA, from Edwards AFB, CA. . . **Betty J. Roque**, area supervisor, Reid-Hillview Airport ATCT, San Jose, CA. . . **Darrell L. Rucker**, section supervisor, San

The information in this feature is extracted from the Personnel Management Information System (PMIS) computer. Space permitting, all actions of a change of position and/or facility at the first supervisory level and to branch manager in offices are published. Other changes usually cannot be accommodated because there are thousands each month.

Francisco, CA, CMO, promotion made permanent. . . **Scott M. Speer**, area supervisor, El Toro, CA, TRACON, promotion made permanent. . . **Ronald L. Steele**, operations inspector, Reno, NV, FSDO, promotion made permanent. . . **Robert H. Viss**, area supervisor, Sonoma County Airport ATCT, Santa Rosa, CA. . . **Leland J. Wingard**, manager, Concord, CA, Buchanan Field ATCT, from Napa, CA.

Retirees

AERONAUTICAL CENTER

William C. Beavers
Dennis U. Brooks
Loran W. Mac
Betty J. Mann
Jan Nicholson
Alexander A. Prakis
Robert L. Westcott
Dorothy A. Williams

ALASKAN REGION

Franklin L. Cunningham
Bernard T. Santos

CENTRAL REGION

John W. Frost
Howard W. George, Jr.
Miles L. Homelvig
Carol E. Walker, Jr.

EASTERN REGION

Christian A. Baser
Billy E. Commander
Elhanan C. Cook
William P. Cryer
Donald M. Diperna
Hubert B. Maguire, Jr.
Robert T. Neider
Marion Payne
James R. Ryder
James D. Taylor
James W. Webb

GREAT LAKES REGION

John J. Baldwin
Raymond S. Baran
Jack A. Hutts
Robert L. Knapp
Gerald A. Kruger
Jack R. Paul
Glen E. G. Peper
John L. Post
Raymond J. Skocum
Anita G. Stokes
Ronald Westby
George D. Woods
James J. Zank

NEW ENGLAND REGION

James L. Brown
Carolyn A. Delnoce
Robert T. Dargan

NORTHWEST MOUNTAIN REGION

Phillip C. Abrahamsen
Larry G. Berry
Robert M. Fisher
Edward W. Garrett
Rash Jordan
Earl E. Palmer
Arnold V. Rasmussen
Frank R. Shelton
John F. Somers
Robert E. Speicher
Charles G. White

SOUTHERN REGION

Billy G. Berry
James G. Bryant
Edward J. Cook
Janice H. Davis
Burtos R. Drum
Lewis R. Greer
Henry K. Huber
Harrison R. Ragland
Thomas Ruffin
Larry A. Seay
Howard J. Shular
Albert E. Smith
David L. Stanford
Errence R. Sweeney
Newton L. Taylor

SOUTHWEST REGION

Walter R. Braddon
James S. Davis, Jr.
Charles Hensarling
Donald A. Payne
Harold G. Sedgwick
Richard D. Shelton
John A. Vialdi

TECHNICAL CENTER

Victor J. Misiewicz
William H. Nise

WASHINGTON HEADQUARTERS

Albert M. Angelastri
Francis J. Bawert
John Vincent Cogan
Billy O. Riffe

WESTERN-PACIFIC REGION

Frank E. Boyer
Richard J. Lawrence
Samuel C. Lee
Eddie E. Lewis
Burgam R. Mairich
Martha C. Mesicall
Luis Palacio
Ernest W. Schmuck
John R. Stone

World's Art Director Retires

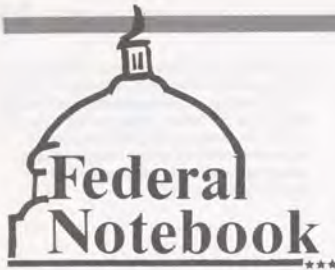
Eleanor (Lennie) Maginnis recently retired as art director of FAA World. Maginnis said the creative people she worked with during her tenure made her job both fun and enjoyable. She plans to continue designing publications on a free-lance basis.

Before beginning her nineteen-plus years of government service, Maginnis worked in the design department of Aircraft Owners and Pilots Association magazine.

An avid tennis player, traveler, and opera buff, at last report Maginnis is continuing her whirlwind of activities without skipping a beat and surrounded by her family and many friends.



Lennie Maginnis displays a trademark smile while working on the design of FAA World.



OPTIONS FOR CONTROLLERS PROPOSED

Rep. James Oberstar (D-Minn.) introduced legislation that would give air traffic personnel credit toward early retirement for time spent as second-level supervisors and managers. Under current law, retirement benefits are available to controllers, first-level supervisors, and traffic management coordinators after 25 years of service, regardless of age, or with 20 years of service after age 50.

Potential applicants for secondary jobs in air traffic operations may be discouraged from applying for or accepting promotions into those positions because time spent in secondary air traffic jobs does not qualify for early retirement credit, said Oberstar. Co-sponsors of the legislation are Reps. Mary Rose Oaker (D-Ohio) and William Clinger (R-Pa.). The bill (H.R. 4345) has been referred to the Post Office Civil Service Committee.

THRIFT FUND MEMBERSHIP OVER 1.5 MILLION

As of last spring there were approximately 1,543,000 federal and postal employees participating in the tax-deferred thrift investment program. The program represents about half the total workforce and registers earnings of about \$1.3 million every day.

The 900,000 workers under the Federal Employment Retirement System (FERS) who were hired since 1984 can invest up to 10% of their salaries (to a maximum of \$7,979) into any or all of the plan's three options: the G-Fund (Treasury securities), C-Fund (stocks) or F-Fund (bonds). Individuals who invest 5% or more get a matching 5% tax-deferred contribution from the government.

Employees under the Civil Service Retirement System can invest 5% of their salary. Until recently, they could only invest in the G-Fund. President Bush has since approved legislation (H.R. 2514) that would open up common stock (C) and fixed-income bond (F) tax-deferred investment funds to employees under the CSRS. As of April 30 there was \$100 million in the C Fund, \$29 million in the F Fund, and \$5.8 billion in the G Fund.

HEALTH CARE COSTS ESCALATE

Inflation in the medical field could soon result in the elderly paying one-fifth of their income for health care costs, compared to one-eighth a decade ago, according to the House Select Committee on Aging.

The committee found that medical costs are rising 8.2% percent annually, compared with 5.2% for the broader index of costs used to adjust Social Security benefits.

Out-of-pocket medical costs for persons over 65 averaged \$1,691 per individual in 1988, compared with \$721 in 1980 and \$522 in 1977.

SHARED LEAVE TAXABLE

Donated annual leave is considered a wage and is therefore taxable to the recipient, the IRS ruled in April. In addition, the donated leave is not an "untaxable gift" and is not deductible for federal employees who transfer leave time.

Despite the fact that the donor loses leave it is not clear if he or she would have ever been paid for it, the agency ruled. The leave-sharing program allows employees who have exhausted their leave to continue to receive wages.

The ruling is consistent with the existing IRS policy of taxing transferred leave as wages. Within the first six months of the leave-sharing program, workers in 55 agencies donated 482,000 hours. About 300,000 hours were divided among 2,400 recipients, according to OPM.

SURVEY ON HATCH ACT REFORM

A recent government-wide survey disclosed that 22% of 16,000 employees desired greater activity in partisan politics, while a similar percentage said they were not interested in becoming more active. Forty-one percent said they were not interested either way, suggesting "that most employees don't hold strong views one way or the other on this issue," said the Merit Systems Protection Board, conductors of the survey.

President Bush recently vetoed the Hatch Act reform bill, which would have eased many restrictions on federal and postal workers' participation in political campaigns during off-duty hours. Bush said he vetoed the bill "because it politicizes the civil service."

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Finding the Boundaries of Technology

By H. Clayton Foushee



The modern Airbus Industrie A320 cockpit (shown at left) features fly-by-wire side stick controllers driven by computers. The cockpit is highly automated, unlike the cockpit of the DC-3 aircraft (right), which was first certified in 1936. With increased automation, questions are beginning to emerge about the respective roles of humans and the new technology equipment.



It has almost become a cliché to say that human error is the predominant cause of incidents and accidents in the aviation system. Designers and engineers are engaged in a perpetual struggle to reduce human error in the system. The obvious temptation is to address the

human error problem by automating many of those tasks traditionally performed by humans and prone to human error.

Under this design philosophy, the role of human operator is changing and has begun to assume the role of "systems

monitor," serving primarily as a backup to the automated systems.

Increased automation has resulted in an impressive array of aircraft and air traffic control technology that is highly reliable and that contains vastly superior capability from a pure performance

standpoint. Although no one questions that the technology is better, questions are beginning to emerge about the respective roles of humans and the new technology equipment.

Human factors is a question of how

(Continued on page 2)

Tower Management in Their Backgrounds

The New England Region's four female air traffic control tower managers were members of a small group of only 21 female ATM's nationwide. Despite their minority status in a male-dominated profession, Mary Young, Donna Barte Gropper, Cindy Grimm, and Sandra Bogosian are enthusiastic professionals who are comfortable in their career field. Ranging in age from 31 to 56, the four women share a common commitment to their profession

as well as a desire to encourage young women to follow in their footsteps.

Mary Young, tower manager at Beverly, MA, entered the field 19 years ago at age 37. At the time she was a part-time postal worker with a supportive husband and three teenaged sons. Young was interested in air traffic control because she saw the field as offering a challenging opportunity for competent individuals who were willing to work hard.

By Mary Culver

She passed the air traffic control test with flying colors and launched her second career in 1972 in a domain where only 2% of her fellow air traffic controllers were women. "I was a late bloomer," said Young, but today the FAA allows only people under thirty to take the test.

Although Young takes her turn controlling traffic 16 hours per month, her primary responsibility is managing her

(Continued on page 3)

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Boundaries of Technology from page 1

one designs a control, a display or a cockpit, an air traffic control workstation, or a procedure so that it represents information in a way that humans process most efficiently. Selecting the right people (both controllers and pilots) and training them appropriately is also a human factors concern.

Given the rise of increased automation in aviation, what is the right role for humans and the right role for machines to play?

One of the things that we are beginning to discover is that it is simply not true that automation is an easy way to remove human error from the system. While automation can and does eliminate certain classes of error, we have begun to see that it can also create whole new classes of error.

We have spent most of our time trying to solve human performance problems by automating things. Automation is a wonderful tool when it is designed appropriately, but we shouldn't put all our eggs in one basket.

Researchers studying automation in aviation and other high technology systems have observed that, in some cases, new errors can be introduced through automation if not properly designed, and occasionally these new types of errors can be worse than those addressed by the automation. Thus, it is becoming increasingly common to hear suggestions that we examine our automation philosophy and consider new approaches to automation that are more "human-centered."

A prime concern is not so much the current levels of automation seen in aircraft such as the B-747-400, MD-11, and A-320 and in air traffic control concepts such as AERA II; but it is how far down the same road we can afford to go with future systems. Do we continue to automate more and more functions, leaving humans with less and less to do?

Although anecdotes on the subject of automation are abundant, there is little systemic, scientific research that either supports or relieves our increasing concern about the application of more extensive automation in the aviation system. Some of the most common examples



of human error in today's airspace system are errors in communication or information transfer.

Approximately 70% of the 100,000-plus FAA/NASA Aviation Safety Reporting System (ASRS) reports involve some sort of information transfer problem, suggesting that information transfer may be the single most difficult problem facing the aviation system. Many of the reports concern communication between air traffic controllers and pilots.

As system complexity increases and traffic grows, we can only expect the frequency of information transfer difficulties to increase. Priorities for research in this area revolve around the most efficient and reliable ways to exchange information, what information should be available to each, and when.

Eliminating or reducing the system's reliance on verbal communication is often mentioned as a promising solution, with a considerable amount of research being aimed at designing and evaluating the best uses of data-link technology. Although few will question the need for improving the current system, as with other "automation solutions," the implications of introducing data-link as a complete substitute for verbal air-ground communications must be carefully considered.

aviation human factors research is being developed in partnership with the National Aeronautics and Space Administration, the Department of Defense, industry, and academic communities. This technical plan will cover human factors priorities over the next ten years.

Studies are being planned in the following areas: automation and advanced technology; aviation system monitoring capability; basic scientific understanding of human performance factors; human performance measurement; information transfer; controls, displays, and workstation design; training and selection; and certification and validation standards.

Primary issues for research could include:

- Too little workload during certain phases of flight and too much workload associated with programming when flight plans or clearances are changed.
- The potential for substantially increased head down time.
- An inadequate "cognitive map" of what the system is doing, which makes recovery from automation failures problematic.
- Operator hesitancy to question or take over from an automated system even when there is compelling evidence of a problem.
- Degradation of basic skills.
- Job dissatisfaction associated with the lack of a challenge.
- Complacency, lack of vigilance, and boredom.

This plan managed by the FAA will, for the first time, provide for the coordination of virtually all of the government's research and development efforts in areas relevant to human performance in aviation. Perhaps more importantly, however, the national plan will be focused on the development of solutions to the most operationally significant problem areas in aviation today. ■

Dr. H. Clayton Fauslore is FAA's Chief Scientific and Technical Advisor for Human Factors.

Tower Managers from New England from page 1



The author, Mary Culver is a secretary in the FAA's New England Region Public Affairs Office.

Current and former tower managers, from the left, are Donna Barte Gropper, Cindy Grimm, Sandra Bogosian, and Mary Young.

staff and training new controllers. "In our job teamwork is essential," Young explained, "and safety is always our primary concern."

Young was the only female tower manager in New England until October of 1988 when Donna Barte Gropper was appointed manager of the Hartford-Brainard Tower in Connecticut.

A licensed pilot with seaplane ratings, Barte Gropper graduated from Queens College and was an import specialist for the U.S. Customs Service before becoming an air traffic control specialist in 1975. During her career, she has served in increasingly responsible air traffic control positions from Worcester, MA, Tower to Providence, RI.

In her spare time, Barte Gropper is an avid PCer, bicyclist, crocheter, and a regular visitor to the home-bound elderly. She recently received a promotion to operations specialist at Eastern Region headquarters.

New Bedford, MA, ATM Cindy Grimm began her career with the FAA in 1982 after graduating from Ohio State University with a degree in aeronautical science and meteorology. While in college she obtained her private pilot's license and later an instrument rating.

Grimm's air traffic career has taken her from Michigan to Indiana to Maine before she was appointed ATM at New Bedford in November 1989. Grimm approaches her position in the same way she approaches life—with a strong commitment and a wonderful sense of humor. "Work is a vacation every day," she said laughingly. "I have a red-headed, two-year-old; NOTHING bothers me!"

"The FAA offers fantastic opportunities for women," noted Grimm. The work of an air traffic controller is always challenging and changing. Although an ATM career is demanding, "it is also extremely satisfying to watch new FAA employees gain confidence in themselves and expertise in their jobs."

An avid outdoors enthusiast, Grimm travelled with other FAAers to Vail, CO, this year for downhill skiing. She remarked ruefully that after three dislocated vertebrae she has decided to switch to the cross country variety.

Grimm also enjoys sailing and plans to spend the summer living on a sailboat with her daughter—an experience that she notes will be not only challenging, but also economical.

When asked about future career goals, Grimm remarked thoughtfully, "I never make a decision until I'm on top of it. I see a bird and say, 'Hey, I'll try that.' Someday I'd like to just farm, sail and write—what a dream!" Right now, though, she's happier and busier than ever before.

Like Cindy Grimm, Groton, CT, Tower's ATM, Sandra Bogosian, also began her career with the FAA in 1982. She originally planned for a career in the medical field, and after graduating from Northeastern University spent five years as a medical technician at a major Boston hospital.

However, in 1980 she decided to take flying lessons—a decision that was to change her life. Because she so thoroughly enjoyed aviation, she took the FAA air traffic controller exam in 1980, realizing that a career of guiding air-

planes would provide the dynamic elements she wanted to keep her interested and involved with her work.

Bogosian now has her private pilot and glider licenses, as well as an IFR rating.

In her eight years as a controller, she has held increasingly responsible positions, serving at the Otis Terminal Approach Control Facility, Cape Cod, and at the New England regional office. In February 1989, she took over as ATM of the Groton Tower.

Bogosian remarked that she has been extremely happy with her decision to join FAA. "I have been fortunate to have been involved with managers who have encouraged and promoted career progression," she commented. "I have also received a great deal of satisfaction from the opportunities I have at Groton to guide, teach, and assist the controllers in learning their jobs plus the policies and procedures at FAA."

Bogosian has given a great deal of thought to her career with the FAA, and when asked what advice she would give to women pursuing a management position in air traffic, she remarked, "Defining female or male managers is not the issue. What is more appropriate is defining effective managers."

"A truly effective manager is responsible and accountable, industrious, consistent in his or her management philosophy, flexible, and concerned about the welfare of his employees. Most importantly, an effective manager must be open, honest, and fair." ■

FAA World

July 1990

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FAA WORLD is published monthly for the employees of the Department of Transportation—Federal Aviation Administration and is the official FAA employee publication. It is prepared by the Public and Employee Communication Division, Office of Public Affairs, FAA, 800 Independence Ave., S.W., Washington, D.C. 20591. Articles and photos for FAA WORLD should be submitted directly to regional FAA public affairs officers:

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Few thought that the FAA could reduce the 6 to 18 months it took to hire an air traffic controller to as little as 45 to 60 days, but the Human Resource Management's Staffing Policy Division at Headquarters did it using MATES—the Modular Applicant Testing, Examining, and Screening program.

With the help of lots of people, especially those in Human Resource Management, Air Traffic, and Civil Aviation Security, MATES is fully operational and going strong. The FAA can now make offers of employment to air traffic control specialist (ATCS) candidates within 45 days from the preemployment interview.

Not long ago, Wanda Reyna, manager of the Staffing Policy Division had this idea: that the FAA could hire ATCSs faster if it assumed more responsibilities for preemployment processing and put computerized systems in place to do things more quickly. She put together a workgroup to explore the possibilities.

First there is the security system that links the MATES security coordinators across the country. Computer tapes from the FBI and the U.S. Postal Service were merged to develop a police vouchering system whereby letters are automatically printed and mailed to law enforcement agencies at the state, county, and city levels where ATCS candidates have lived or worked. According to the Aeronautical Center's Paul Frenzel, AAC-351, who oversees the massive MATES automation efforts, "This is the first time that I know of variable text of duplex print [printing on both sides of the paper] being handled in one pass."

The security system also transmits information on the status of the FBI fingerprint checks in Washington, DC, and the review of military records at the National Records Center in St. Louis, Missouri.

The second project to further automating preemployment processing is PETS (Personnel Employment Tracking System), an applicant tracking system devel-

oped in the Northwest Mountain Region and adopted as a national system under MATES. The newest version of PETS, says systems analyst Walter Houk of ANM-43, enables the regions to obtain immediate preemployment status on any ATCS applicant, provides reports and messages for both Headquarters and regions, tracks the progress of ATCS applicants to provide the FAA Academy with the required number of ATCSs who have appropriate clearances, and identifies preemployment processing trends and problems so that the hiring process can be fine tuned.

The third automation project is the transfer of the competitive employment registers from the OPM in Macon, Georgia, to FAA's Aeronautical Center in Oklahoma City. This transfer will allow the Aviation Careers Examining Division (AAC-80) quickly to supply the regions with lists of eligible candidates for employment consideration.

"Of the thousands of agencies that are

serviced by the OPM, this is the first time that an agency has been successful in assuming responsibility for registers of this size and complexity," said Sharon Morrow, the MATES coordinator at AAC-80.

A good program like MATES just keeps opening up new directions for making improvements, especially when people in different work locations, grade levels, and program areas are committed to working together for a common goal.

From the start, the MATES program has tapped resources both in and outside of Headquarters to develop a way of doing business that benefits the FAA, its employees, and new applicants. As part of the program, over 700 ATC preemployment interviewers have been trained in the new MATES procedures and in effective interviewing techniques.

MATES is also expanding into other safety-related occupations. A workgroup has been developing procedures to speed up the application and preemployment

MATES—Quickly Pairing People to Jobs

By Dolores Richard

The group, led by Ross Hamory of the Southern Region and Dolores ("Dee") Richard of Staffing Policy, developed and implemented "fast track" procedures that streamlined the various stages of the preemployment process for ATCSs. It wasn't easy, but as Dave Smith of Civil Aviation Security's Investigations and Security Division said, "There is no turning back when you're committed."

Being committed, the FAAers found ways to assume more testing authority from the Office of Personnel Management (OPM); convinced OPM to give FAA the responsibility to scan and score the ATCS test electronically; got the computer equipment and developed the software to give applicants who take the ATCS test immediate test results; and convinced both OPM and the Federal Bureau of Investigation that the FAA could do a major portion of the security investigation to promote faster processing and clearances on their parts.

These were major steps in shortening the time it took to hire air traffic controllers. Soon, other government agencies were asking for briefings on how FAA had improved its procedures.

But the streamlining of procedures isn't stopping there. To make a good system better, as much of the preemployment processing as possible is being automated under three major automation projects.



Dorothy Gibson, ASW-14 (center), meets with new ATC interviewers during a training session.



Dave Hicks, APN-100, explains a point during a Personnel Employment Tracking System (PETS) development meeting. Listening are, from the left, Jeff Jameson, NGL-14; C. Jay Everhart, AAC-351; Nancy Wilcher, ANM-14; and Walt Houk, ANM-43.

processing for aviation safety inspector applicants, starting in the air carrier operations area. The occupations of civil aviation security specialist, flight test pilot, airspace system inspections pilot, and electronics technician will be incorporated into the MATES program in fiscal years 1991-92.

Those involved in the MATES program are proud of their accomplishments. Employees in three primary program areas—human resources management, air traffic, and security—have worked together as a team dedicated to providing the agency with the best way of selecting other FAAers.

Bruno Clunich, Air Traffic's representative on the MATES team, sums it up by saying, "Never before have the air traffic, security, medical, and human resource management organizations worked together so well to accomplish so much. It shows what FAA can do when it tries." ■

Dolores Richard is MATES program manager. Susan Reyes and Jiny Jackson, personnel management specialists in APN-200, also contributed to this article.

Keeping FAA's Training Up-to-Date: CMD Wants Input

Thanks to Dr. Robert Sappington, program management specialist at the Center for Management Development, and Roland Herwig, Aeronautical Center Public Affairs Office, for this information.

To keep courses at the Center for Management Development (CMD) technically correct and up to date, the Office of Human Resource Development and the CMD put together a team of FAA subject matter experts (SMEs) from FAA Headquarters, regions, and the Aeronautical Center.

Each SME is matched to a faculty member, who is on contract to the Palm Coast, FL, facility. The SMEs will review their areas of expertise and will route relevant information to their CMD matchup. SMEs will also answer inquiries from course developers and instructors about the effectiveness of the materials and methods used. This process will enrich the school's existing materials and methods of instruction as well as keep the CMD's training program current.

The SMEs invite you to contact them if you have operational information that may be useful for the center to incorporate into its learning materials. They will relay your information to the CMD faculty and course developers.

The following handy list gives the key resource person to contact with your input for a wide-range of subject areas. FTS phone numbers are included.

If the information is mailed, include the identification "CMD SME Proposal" on the envelope. ■

Air traffic, enroute

Bruno Clunich (ATZ-220), 267-9214

Air traffic, flight service stations

Ken Mays (ATZ-220), 267-9366

Air traffic, tower

Kathy Vargo (ATZ-220), 267-9214

Aircraft certification

Jack McGrath (AIR-100), 267-9580

Airway facilities

Betty Jones (ASM-4), 267-3056

Budget, straightlining

Jane Mayne (AHR-10), 267-7475

Candidate development (SES identification & development)

Chris George (AHR-20), 267-8886

Conduct & discipline

Carol Nero (AHD-300), 267-3987

Culture change

Barry Williams (AHD-100), 267-3939

Bill Masters (AHD-100), 267-8844

Directives

Bob Lowe (AMS-420), 267-9940

Drug program

Harnetta Williams (ALR-200), 267-7207

Employee Assistance Program

Frank Pirhalla (ALR-200), 267-3976

Employee benefits

Ginny Bachmann (ALR-200), 267-3988

Employee survey program

Alynn Hertzbach (AHD-100), 267-8103

Lilith Ren (AHD-100), 267-3940

Bob Turner (AHD-100), 267-7614

Equal employment opportunity

George Gordon (ACR-2), 267-3259

Joyce Lee (ACR-3), 267-3259

Patricia Webster (ACR-3), 267-3259

Dave Bonnick (ACR-9), 747-4381

Flight standards training

Bill Cooper (APR-130), 267-8005

Gwen Jones (AHT-200), 366-7200

Lionell Driscoll (AFS-6), 755-2938

Freedom of Information Act

Lisa Baccus (AGC-110), 267-3362

Human resources planning, NAS Plan

Capital improvements:

Shelley Thomas (AHD-300), 267-8098

Karen Franco (AHD-300), 267-8844

Tech review:

Brenda Boone (ANS-120), 267-7312

Hank Skalski (AHD-300), 267-7615

Dick Cullins (AHD-300), 267-7295

Individual Development Plan

Juan Amador (AWP-17), 984-1254

Information Resources

Margaret Binns (AMS-300), 267-9980

Ellie Klein (AMS-310), 267-9980



Aerial view of FAA's Center for Management Development, which is located in a wooded area at Palm Coast, Florida, north of Daytona Beach.

Labor-management relations

Mal Coghlan (ALR-100), 267-3983

Sasanna Leon-Guerrero (ALR-100), 267-3975

Scott Kallman (ALR-100), 267-3984

Legal

Dan Long (AGC-205), 267-3444

Legal, procurement

Brian Reed (AGC-330), 267-3480

Logistics

Nancy Greenfelder (ALG-320), 267-3657

Logistics Center (Depot)

Bill Bailey (AAC-400), 747-4358

Occupational health & safety

Mike Lenz (ALR-200), 267-5989

Pay demonstration project

Ed Curran (AHR-4), 366-2788

Chris Early (AHR-4), 366-2788

Performance Improvement Plan (PIP)

Performance Management Recognition System (PMRS)

Performance Management System (PMS)

Nancy Welch (AHD-230), 267-3933

Performance standards

E. C. Hutchinson (AHD-230), 267-3932

Earl Porlock (AHD-230), 267-3931

Privacy/ethics

John Walsh (AGC-110), 267-3362

Retirement & workmen's compensation

Scott Roberts (ALR-200), 267-3991

Security

Automated information:

Steve Smith (ACS-340), 267-7361

Information and communications:

Mary Walsh (ACS-320), 267-3959

Physical, operations, and security management:

Bob Daudelin (ALG-320), 267-9576

Supervisory Identification Development Program (SIDP), Air Traffic

David Cook (AHD-210), 267-8053

Ken Mays (ATZ-220), 267-9366

SIDP, Aircraft Certification Regulatory Program

Chris Heizer (AIR-510), 267-7026

SIDP, Airway Facilities

Carol Hugh (AHD-210), 267-7831

SIDP, general

Larry Lackey (AHD-210), 267-3934

SIDP, security/aircraft certification

Karen Brown (AHD-210), 267-7830

Time & attendance

John Brown (AAA-100), 267-8938

Total quality management (TQM)

Wes Eder (AMS-500), 267-8060

Kal-Peter Koenig (AHD-100), 267-7232

The Case of N724N—An FAA Attorney Recalls the Facts

By Andrew J. Dilk

The marshland, mudflats, and coastal plains of Louisiana are places where the meandering estuaries of the Mississippi coastal plain slowly distance themselves from the waters of the Gulf of Mexico. That inland bayou region described by Longfellow in "Evangeline" as "a maze of sluggish and devious waters" provided a retreat for pirate Jean Lafitte. More than a century later, individuals arousing assorted suspicions navigate the airspace far above those twisting channels, often carrying treasures of an entirely different sort.

Early in the afternoon of Saturday, December 22, 1979, when most people were readying themselves for the Christmas season, a gas pipeline crewboat labored across the waters of Timbalier Bay, southwest of Houma, Louisiana. Some five miles north of the main coastline, the attention of its crewmembers was attracted to the reflections from a strange object jutting six or eight feet out of the water. A closer inspection revealed the crushed metal of the tail section of a mostly submerged aircraft.

Notice of the accident was given to the Federal Aviation Administration and the National Transportation Safety Board (NTSB), and later that afternoon the wreckage of N724N was hoisted by crane from the sucking mud of the inland waters. Found onboard were the bodies of two men.

The identity of the pilot was traced through a flight plan filed with the FAA and the registration number of the aircraft. FAA records revealed that the pilot was one Sabah Dawlett, the owner of a struggling aviation business at the airport in Turners Falls, Massachusetts, at a small town along the banks of the Connecticut River in north-central Massachusetts.

Dawlett was a 43-year-old male of modest height (5'6") and immodest weight (205 pounds), who was born in Baghdad, Iraq. FAA records disclosed that in 1965, as an Iraqi citizen, he had entered a pilot training program sponsored by the FAA under an Agency for International Development grant. He received his flight training in Minnesota and obtained a commercial pilot certificate in the summer of 1965. Late in 1967 he emigrated to Canada with his wife and two children, moving to the United States in 1969, and then settling in Massachusetts. He and his wife were divorced in 1972, and in 1975 he was naturalized as a citizen of the United States. In the early 1970's he opened a flight school to instruct student pilots, as well as conduct an air taxi business.

A reconstruction of Dawlett's flight experience, which was taken from his pilot logs, disclosed that he had accumulated 2,403 hours of flight time, none of which had been in turbine engine aircraft. As with most pilots, his dealings with the FAA had been limited; it was only in 1979 that a civil penalty action was initiated against him.

Early that year, while flying in the traffic pattern at the Northampton, Massachusetts, airport, his aircraft had overtaken another aircraft already established on the final approach for landing, causing a mid-air collision. Although such accidents are typically fatal, almost miraculously both aircraft were landed safely. As a result of Dawlett's lack of caution, the FAA suspended his pilot certificate for forty-five days, effective August 14, 1979. Dawlett appealed that suspension to the NTSB, and the issue remained unresolved at the time of his fatal flight.

With this information on the pilot of the N724N in hand, the government investigation spread from Louisiana to Florida and Massachusetts in an attempt to reconstruct the history of the flight and, ultimately, the cause of the accident.

The plane was a relatively high-performance Beechcraft King Air, with its electric white color outlined in soft contrast by trim of brown and gold. Manufactured in 1965 and maintained in excellent condition, this complex twin-engine, turbine-powered propeller aircraft had been purchased in 1979 by an aircraft sales agency in Orlando, Florida. Dawlett signed a sales agreement in the amount of \$220,000 on December 13, 1979, depositing \$22,500 while arranging for the financing of the remainder through a Massachusetts bank.

While the seller, an experienced pilot, attempted to explain the system on N724N, the impatient Dawlett "wouldn't take time to hardly listen. He'd go on to something else, jumping around from one thing to another, not really sitting down and understanding point by point things we had to explain to him."

The seller described how he and another pilot "explained to him he was a long way from being checked out in the airplane and would have to hire a pilot, or go to school, or something."

Dawlett responded with: "I have to fly to Bimini in the Caribbean before I return to Florida."

The seller said that with Dawlett's approval he had telephoned a check pilot to fly with Dawlett the next morning. Shaking his head, the seller explained how he had found out the next morning that apparently as the only pilot, Dawlett had simply departed Orlando in N724N without any check flight: "I telephoned the

tower and found out that he had left about three or four o'clock that morning."

Dawlett had related to the seller some of his activities during the prior week, and investigation after investigation disclosed a frenetic itinerary, including flights to the Caribbean from Florida, a return to his apartment in Sarasota, a commercial flight back to Massachusetts to arrange financing for the purchasing of N724N, and a return to Florida for another trip to the Caribbean before the trip to Texas.

It was apparent that limited sleep during at least a four-day period had created a sense-dulling fatigue in Dawlett. Contributing to the impairment of his physical and mental abilities would have been the apparent stress and anxiety of his business endeavors.

Records in the Springfield, Massachusetts, office of the Drug Enforcement Administration (DEA) included a report that Dawlett had been suspected of smuggling drugs by airplane from Canada from some time. DEA records provided grounds for a suspicion that he was serving as a "courier," transporting drugs from the Caribbean to Canada as early as 1975. His business card had been found on an individual arrested in Miami for smuggling hashish, but the circumstantial evidence of records and contacts with the drug underworld was inconclusive and had never led to an arrest.

The fingerprints of Dawlett's passenger disclosed that he was one Leon Brooks of Miami, who also had been under surveillance by the DEA for a number of years. The DEA computer system revealed Brooks' contacts with suspected drug dealers, but the labyrinthine drug-oriented relationships had fallen short of providing evidence for an arrest. These DEA records on Brooks creating a "suspicion by association" were maintained in computer indexes in San Diego, New Orleans, Miami, and Philadelphia.

The trial of suspicion had begun with information from a "source" concerning the smuggling by Brooks and Dawlett of 12,000 pounds of marijuana from the Bahamas to Florida. Suspicions reportedly grew because of an assortment of ventures, including the smuggling of 250,000 pounds of marijuana from Columbia in 1979 and the distribution of a 150,000-pound marijuana shipment that same year to someone in the Boston area known as "Wings." Brooks' associations were reflected by his name being listed in personal address books found on numerous arrested drug dealers.

Reconstruction of Dawlett's activities before the accident disclosed that at about 6 p.m. on the previous night, he



The bent propeller in the wreckage of N724N indicates it was spinning on impact. The wreckage was pulled by crane from Timbalier Bay, Louisiana. The plane was a Beechcraft King Air.

had arrived at Andrau Airpark, west of Houston, after a flight from Bimini through Tampa. At 11:18 that evening he telephoned the FAA's flight service station in Houston, stating in a recorded call, "I would like to—ah, can you please give me the weather for Tampa?" He was given the forecast and reported weather information. He then filed a flight plan for a three-hour flight to Tampa at an altitude of 19,000 feet and a speed of 240 knots.

Just before midnight Dawlett again telephoned the FSS, impatiently stating, "Yes sir . . . ah . . . I just called earlier and . . . ah . . . I was looking for the winds aloft."

He was informed that at 18,000 feet the winds were forecast to be from the west at 21 to 25 knots in the Houston, New Orleans, and Mobile areas. Dawlett then asked whether other pilots had reported the tops of the clouds along the route and commented, "They were around 6,000 feet on my way from Tampa."

Dawlett was interested in moisture in the air, which could create icing on his aircraft at altitudes where the tempera-

ture was below the freezing level. The freezing level was forecast to be at 10,000 feet to the north of his route, sloping upward to 13,000 feet in the coastal area he planned to cross. The National Weather Service forecast for the New Orleans area was for occasional moderate to mostly "rime" icing (rough, milky, opaque ice formed by instant freezing of small water droplets), as opposed to "clear" ice in precipitation above the freezing level.

The pilot who used the telephone at Andrau Airpark after Dawlett was the chief engineer of a large Texas oil company. He generally recalled departing the airport that night and, after a review of his pilot log, recalled his flight to Lafayette, Louisiana, on a flight path that was some 30 miles north of the one to be flown by Dawlett. "I remember the night at Andrau with light rain, a high ceiling, overcast, with weather dropping. Since I was not instrument rated, I wasn't going to fly my Mooney in the clouds because icing is a typical condition at that time of year.

When questioned about a short, heavyset, dark-haired pilot who used the

telephone before him, he recalled that pilot going to a King Air parked nearby and described him as a man "who seemed like he was waiting, trying to decide whether or not to go."

At nine minutes after midnight, Dawlett departed Andrau Airpark in N724N. One minute later the airport target was identified by the FAA's Houston approach control radar controller. Dawlett subsequently climbed to 13,000 feet, and at 12:43 a.m. was advised to make radio contact with the controller of the next sector, as he was sequenced east. Nine minutes later he reported being in level flight at 19,000 feet and asked the controller, "Do you have a groundspeed on us?"

Unlike the driver of an automobile who can directly observe the groundspeed indicated on the speedometer, an aircraft's airspeed indicator only depicts the speed of its movement through the air. It cannot depict the speed of the wind increasing or decreasing the aircraft's speed over the ground. The airspeed indicator also does not reflect changes in a plane's groundspeed because of variation in atmospheric density

caused by altitude, pressure and temperature. To avoid making basic calculations on a slide-rule type computer utilized by pilots, Dawlett simply relied on the controller to provide him with the more accurate actual speed over the ground as determined by the radar computer. This would let him know if his speed was close to what he planned.

In response, the controller advised Dawlett of a groundspeed of 204 knots. This information should have suggested to Dawlett that his groundspeed was slower than he had planned, but with his senses dulled, he may have assumed that the winds aloft were fickle and less than forecast.

He had engaged the autopilot switch, and N724N cruised throughout the troposphere 19,000 feet above the Louisiana coastline, poking its way through increasing cloudiness. Slowly ice began to accumulate on the impact areas of the aircraft. As the weight of the ice increased, so did the drag on the aircraft, and the true airspeed continued to decrease to a speed nudging 165 knots.

At 1:12 a.m., the controller, for reasons he couldn't recall, transmitted to Dawlett, asking him to "say your altitude."

The calm response of Dawlett was, "I'm at 19,000 feet."

Following that report, the powerful and urgent torque of the Pratt & Whitney engines was Dawlett's only remaining link with the world outside the cockpit. Complacency resulting from strain and fatigue caused him to rest back in his seat and to ignore indications of the disaster to come. His unfamiliarity with the operation of a turboprop was even more critical because of the uniqueness of the anti-icing system installed on N724N. The mechanical operation of the controls probably meant nothing to the resting passenger, Brooks, who was not a pilot.

Even in the absence of visible moisture, a pilot experienced with the N724N would have carefully observed the outside temperature gauge and windshield. Such a pilot would also have examined the propeller spinners with a flashlight looking for any accumulation of insidious icing. At the first indication of icing, he would have extended the ice veins, initiated heat to the propellers and other critical parts, and turned the ice lights on to keep a careful watch for accumulation. For some 28 minutes, however, as Dawlett relied upon the autopilot, he was inattentive to the operation of his aircraft.

With increasing effort, the autopilot compensated for the diminishing airspeed caused by the weight and adverse aerodynamic effects of the icing. Though aware of the likelihood of icing, Dawlett

also failed to respond to the rising nose of N724N as the autopilot struggled to maintain altitude and speed. When the autopilot could no longer compensate, N724N collapsed like a person stepping off an unseen stair. The aerodynamic stall of its flight invited the torque of the engines to twist N724N to the left and into a critical downward spin.

Dawlett instinctively yanked backward on the elevator control in an attempt to regain a level attitude. This caused such severe gravitational stressing of the wing-spar carry-through structure that in an instant rivets were torn through the wing, resulting in both the outboard wing panels and tail being torn from the wing. The fuselage itself reached Timbalier Bay at a terminal velocity of several hundred miles per hour.

Almost 300 miles away, the controller at the Houston Center sat in a chair facing the flashing green lights, depicting aircraft spread over hundreds of miles. At 1:40 a.m. the controller transmitted, "N724N, I've lost your beacon squawk code 2100"—a transmission that tragedy left unanswered.

Nothing of financial value was reported to have been recovered from the wreck, and the tragedy left Brooks' remains unclaimed. Dawlett was claimed by his children and returned to Massachusetts. But the story of this member of the aviation community who had ignored his personal limitations and had let slip the wisdom of his training was not quite ended.

As a result of the accident, Dawlett's children filed a lawsuit against the United States, alleging negligence on the part of the Houston FSS employees in failing to advise Dawlett of forecasted icing conditions. As part of this litigation, in March 1984, on the day before Dawlett's son was scheduled to testify about his knowledge of the flight, he was arrested by the DEA for a drug-related offense. He had been under surveillance for more than a year.

Following consultation with his attorney, Dawlett's son agreed to continue with his deposition testimony relating to the accident and was temporarily released from his Springfield, Massachusetts, federal jail cell.

The \$1 million lawsuit for the death of Sabah Dawlett was subsequently settled by the United States for its misadventure value. ■

Andrew J. Dilk is an FAA attorney and manager of the Accident Counsel Branch in the Office of the Chief Counsel. Dilk's interest in the N724N case is based on his defense of a lawsuit by the estate of the deceased pilot against the United States.

The 'Best Person' Theory and Why It Fails

By Frederica H. Dunn

Although many of America's multinational companies are household names overseas, their corporate success has often been marred by individual failure. Executives assigned to help run operations abroad sometimes do their work woefully, despite a splendid track record at home.

Learning from corporate experiences in this area is important because failures are costly. It costs several hundred thousand dollars to transfer a manager to an overseas post. If the manager cannot perform well there, the company has made an expensive mistake, and the cost is aggravated by the mission's lack of accomplishment and any public relations damage to the company.

The problem has grown with the expansion of international commerce. The number of Americans who work for a U.S. company outside this country has surged in the last 30 years to about 200,000, according to government statistics. Despite the multinational corporations' attempts to choose employees for overseas transfers with care, personnel statisticians estimate that many workers sent abroad are later deemed inadequate.

While there are many reasons for the high rate of failure among managers chosen for overseas duty, most assignment mistakes are of these four types:

- Misgauging the employee's family situation.
- Selection of the "best person" who really isn't.
- Lack of orientation before the assignment.
- Lack of communication during the assignment.

On the basis of my experience as a consultant in international personnel selection, I would like to suggest some remedies for the mistakes made in picking men and women to work in a foreign country.

First, problems involving the family seem to offer the greatest hope for improvement. Too many companies give too little attention to the relationship between the employee's family and the employee's overseas job performance. In one study of 115 corporate personnel officers, 82% ranked the family situation either first or second as a cause of failure.

While some might react to this data by deciding to send only single people overseas, there are two obvious flaws in such a response. First, it would eliminate about 80% of the candidates. Second, it ignores the fact that a genuinely supportive family is a real asset to an individual thrust into a new environment.

The family situation is particularly important because employees overseas are more dependent on their family than they would be at home. As a result, if even one member of the family has serious problems adapting to the new environment, the organization will suffer.

Every personnel manager can tell horror stories about employees assigned abroad. One involves a young sales engineer, newly married, who was sent to Mexico City. He welcomed the assignment, and his bride looked forward to the new post as an extension of their honeymoon. In six weeks, however, the bride had fled her home.

It turned out that the sales engineer's previous assignment happened to be in the young woman's hometown. After they married, they lived just around the corner from her parents' house. The bride had never even been out of the state. It would have been traumatic for her to move to Seattle or Atlanta—the cultural shock of Mexico was too much for her to handle. In this case, the company lost its relocation investment and the employee as well; he resigned as a result of the episode.

Most candidates for overseas assignments are eager to go. During interviews, therefore, they tend to gloss over family problems that might be caused by relocating. This is not deception; it is simply the normal instinct to hope for the best. One method used to probe the family's thoughts about the move is to interview—separately—the spouse of each candidate.

The second type of mistake, resulting from what I call the "best person" syndrome, has multiplied in recent years. Now that international business has become so important, organizations want to send the best person who can be found.

But who is best? If a certain executive has done a great job doggedly and forcefully tackling tough problems in the Los Angeles sales office, that person should be an ideal choice to tackle tough problems in Tokyo. Right? Wrong. Some companies have watched their best and brightest fail miserably because no one in the home office recognized that the rugged skills that made their candidate's success in America will only antagonize people in other countries.

A real case that developed involved a man chosen for a post in the Middle East. The qualifications of the executive, who we'll call Mr. Grant, seemed impeccable for a crucial, sensitive position. An honors graduate of an Ivy League business school, he had achieved an outstanding rating on every job assignment since college. He was brilliant, and his work record was exceptional. After six months, however, he pleaded to return to the United States.

Apparently, Mr. Grant's success in

school and on the job arose from his extraordinary zest for competition—a zest that is common in American business, sports, and politics. In the Middle East, however, he had to work with a multinational team, and his competitive spirit alienated many of its members. Some of them represented cultures where an individual winner is regarded as having offended all those who lost. Mr. Grant was wise enough to realize that his position was untenable, so he requested a transfer.

It is not enough to select a person on the basis of American criteria alone. Ob-

viously the person chosen must be technically qualified. In interviewing people for an overseas post, however, extra weight should be given to the candidates' ability to adapt to an alien culture. A person who ranks third or fourth by domestic standards may be the best bet.

Insufficient orientation is the third type of mistake often made. It is simply not enough to explain the new country's currency, reel off statistics about its population and gross national product, and give the departing employee a restaurant guide.



At an orientation for FAA's based abroad were, standing from left, Randy McIntosh, instructor Frederica Dunn, Floyd Sealey, NCS training liaison Pat Abeyta, and Dan Furlong. Seated are Joe Coyne, Cal Yuen, and Jesse Ayala.

Dr. Frederica (Ricky) Dunn has been dean of student and personnel services at the Electric Company as an ombudsman and in the Community College of the Finger Lakes, Canandaigua, New York. She has been employed overseas and has done consulting in the area of international personnel. Her work has also included time with the General Electric Company as an ombudsman and in its international division. Presently she is employed by the Office of Training and Higher Education at FAA Headquarters.



FAA personnel and spouses, from left, Cal and Stella Yuen, Randy and DeWanna McIntosh, Joe and Genevieve Coyne, Jesse and Patricia Ayala, Floyd and Isabella Sealey, and Dan Furlong.

Rochelle Kaber, aviation security specialist (not pictured) also provided orientation training for spouses.

At most progressive companies, language training is also provided, and it is generally easy to find material on the country's history, geography, and arts. Even a half-hearted orientation program will cover these subjects, but it is not easy, short of living abroad, to understand the subtleties and nuances of another culture and to learn what motivates individuals in another society.

Before being sent to foreign assignments, each employee and his or her family should be exposed in an organized way to instruction in the cultural characteristics of their new land. Such a course would be as well organized as the presentation on sales opportunities there.

Perhaps the most vital part of the course involves the culture of the business in the new country. What is the relationship between professional people and workers who are paid by the hour? How far is authority delegated? What advertising is considered in poor taste? Problems often occur because of a misunderstanding of business mores.

The Germans have a special expression for the ability that an executive needs in any new cultural environment. The term is *fingerspitzengefühl*—sensitivity in the tips of your fingers.

The fourth major flaw in the multinational personnel system is a general failure to provide people overseas with channels of communication so that they can resolve personal problems with the corporate bureaucracy.

It gets lonely overseas. Managers in many companies have been told to keep an open door for subordinates with problems. Often, though, neither the boss nor the boss' boss can help solve the problems. Consider the personnel manager of a subsidiary in Latin America with 3,000 nationals hired locally and three employees from the United States. The manager is not likely to devote attention to the needs of the three at the expense of the 3,000.

The presence of an international ombudsman would be invaluable. Based geographically, several of these cultural troubleshooters could help significantly to reduce the failure rate of an overseas assignment program. The ombudsman concept can be even more valuable in the multinational situations than in domestic business.

A final mistake made by multinational companies occurs after an employee—one who did the job successfully overseas—returns to the United States. Sometimes the domestic reassignment is callously handled. An executive's career may unjustly suffer if promotions are given to managers who stayed home, where they could maintain personal touch with key people.

One way of dealing with this problem is to assign special responsibility to some person of wide influence at corporate headquarters who could keep overseas workers informed of all domestic matters that might affect their careers and ease their re-entry into the domestic operation. ■

FAA Increases Security Positions in Europe, Middle East

On April 4, 1989, Secretary of Transportation Samuel Skinner announced measures to enhance civil aviation security on the international front. One of his cornerstones is to increase FAA's Civil Aviation Security presence in Europe and the Middle East to deal with the escalation of unlawful acts against civil aviation.

As a result, approximately seven new overseas offices are now being set up with a total of 27 new positions to be established overseas by the end of FY-90. Of the 27 positions, three will be managers, 10 will be civil aviation security inspectors, and 11 will be civil aviation security liaison officers.

Similar increases are planned for Latin America and the Pacific region in FY-91 and later. Selections for these positions are anticipated from within and outside FAA's civil aviation security organization.

The first civil aviation security liaison officer, David Knudson, was posted in London. He has jurisdiction over the Republic of Ireland, the United Kingdom, and Iceland.

Knudson works directly with those who deal with civil aviation security in the host governments and in air carrier operations. One of Knudson's goals is to develop and coordinate standards so that U.S.-based airlines can take one action and satisfy the requirements of both the United States and host government authorities. Knudson also helped with the installation of the first TNA machine abroad in London's Gatwick Airport. ■



A gathering of American aviation officials in London includes Allan M. Kelly, customer service manager, USAir, London's Gatwick; David Knudson, civil aviation security liaison officer in London; and Ian Barden, American Airlines corporate security.



Pictured from the left are David Knudson, FAA's civil aviation security liaison officer in London; Benjamin Demps, Jr., Director, Europe, Africa, and Middle East Office; Gail Meltzer, FAA London; and Patrick Poe, FAA representative, London.

Aeronautical Center

Sam E. Dupris, supervisor, Flight Operations Scheduling Section, Frankfurt FIFD, Flight Procedures & Inspection Div., from Oklahoma City . . . **Len T. Epperson**, manager, Data Services Div. . . **Laurence E. Estes**, supervisor, Safety Data Analysis Section, Maintenance Support Branch, Regulatory Support Div., promotion made permanent . . . **Michael Hakim**, manager, Faculty Development & Certification Branch, FAA Academy . . . **Douglas A. Keller**, group supervisor, Atlanta FIFD, Flight Procedures & Inspection Div., promotion made permanent . . . **Freddie R. Prichard**, supervisor, Technical Support Section, Fleet Support Branch, Aircraft Maintenance & Engineering Div., promotion made permanent.

Alaskan Region

Carl N. Anderson, unit supervisor, Anchorage AFS ARTCC . . . **Stanford O. Hill, Jr.**, manager, Information Resource Management Branch, Resource Management Div., promotion made permanent . . . **Herbert W. Hinman**, manager, Juneau FSS . . . **John W. Smith**, manager, NAS Program Management Staff, Airway Facilities Div.

Central Region

Barbara G. Boyle, deputy branch manager, regional counsel, promotion made permanent . . . **Gerald H. Dennis**, manager, Aviation Medical Div. . . **Sherwood M. Duffin**, unit supervisor, F&E Planning Section, Radar/Navigation Unit, Resources & Planning Branch, Airway Facilities Div., promotion made permanent . . . **Hal E. Poland**, staff chief, Standards Office, Small Airplane Directorate . . . **Dean M. Funk**, area supervisor, Chesterfield, MO, ATCT, from St. Louis ATCT-TRACON . . . **Larry G. Nelson**, manager, Minneapolis Manufacturing Inspection District Office, promotion made permanent.

Eastern Region

Marcus V. Arzoo, manager, Civil Aviation Security Div. . . **Michael T. Dawson**, area supervisor, New York ARTCC, Islip, NY, promotion made permanent . . . **Melvin Freedman**, unit supervisor, New York Flight Standards District Office, Valley Stream, NY, promotion made permanent . . . **Mark L. Grefrath**, manager, Niagara Falls International Airport ATCT, from Flint, MI, ATCT . . . **Michael O. Hanson**, unit supervisor, Allentown, PA, FSDO, promotion made permanent . . . **Richard J. King**, area manager, Washington National ATCT, Arlington, VA . . . **Harold M. Kozlow**, unit supervisor, Pittsburgh, PA, FSDO, Corapolis . . . **David R. Maher**, area supervisor, Dulles International Airport ATCT, Loudoun County, VA, promotion made permanent . . .

Mark E. Manogian, section supervisor, Establishment Engineering Branch, Airway Facilities Div. . . **John Kevin Moran**, security officer, National Capital Civil Aviation Security Field Office, Chantilly, VA, promotion made permanent . . . **Edwin C. Mortensen**, area supervisor, Farmingdale, NY, ATCT, promotion made permanent . . . **Daniel E. Meyer, Jr.**, unit supervisor, Harrisburg Flight Standards District Office, New Cumberland, PA, promotion made permanent . . . **Stephen M. Rich**, area supervisor, Trenton, NJ, Airport ATCT, from Newark, NJ, ATCT . . . **Leonard E. Smith**, unit supervisor, Charleston, WV, AFSFO, Charleston, AFS, promotion made permanent . . . **Miguel A. Soto-Escobedo**, unit supervisor, Farmingdale, NY, FSDO, promotion made permanent . . . **David E. Townsend**, GADO manager, Charleston, WV, FSDO, promotion made permanent . . . **Angus M. Wall, Jr.**, unit supervisor, Garden City, NY, AFSFO, Metro NY AFS, from Islip, NY . . . **Charles B. Wolring**, unit supervisor, Harrisburg FSDO, New Cumberland, PA, promotion made permanent.

Great Lakes Region

Bradley J. Chandler, unit supervisor, Aurora, IL, AFS, from St. Joseph County, IN . . . **Jon P. Fleweger**, manager, Fort Wayne, IN, Municipal Airport ATCT, from regional headquarters . . . **William E. Herbert**, unit supervisor, Emmet County, MI, AFSFO, Michigan AFS, promotion made permanent . . . **Mark D. Hvezda**, AF watch supervisor, Minneapolis, MN, AFS, from Gettysburg, SD . . . **Bruce A. Metz**, asst. manager, Chicago Midway ATCT, promotion made permanent . . . **Richard K. Petersen**, supervisor, Procedures & Traffic Management Section, System Management Branch, Air Traffic Div. . . **Robert D. Schofield**, manager, Outagamie County Airport ATCT, Appleton, WI, from Springfield, IL . . . **Edward M. Selega**, manager, Delaware County Airport ATCT, Muncie, IN, from Grand Rapids, MI.

New England Region

Charles R. Borgioli, asst. manager for training, Logan Airport ATCT, Boston . . . **Johnny J. Boyce**, asst. manager, Air Traffic Div. . . **Amy L. Corbett**, asst. chief counsel, Regional Counsel Office, promotion made permanent . . . **Richard A. Plouff**, unit supervisor, Nashua, NH, AFS, promotion made permanent . . . **Helyn B. Shoemaker**, area supervisor, Hanscom Field, Bedford, MA, ATCT, from Santa Barbara, CA, ATCT . . . **Anthony J. Willett**, administrative manager, Management Systems Branch, Resource Management Div.

Northwest Mountain Region

Mary J. Carter, area supervisor, Seattle, WA, AFS, from Wenatchee, WA . . . **Mariann E. Crane**, manager, Human Resources Div., from Washington Headquarters . . . **David A. Darrows**, area supervisor, Seattle-Tacoma International Airport ATCT, from Boeing ATCT . . . **Edwin J. Justice**, systems engineer, Longmont, CO, ARTCC AFS . . . **Daniel A. Piper**, asst. manager, programs, Salt Lake City, UT, Airport ATCT, from Ogden, UT . . . **Carl L. Sanders, Jr.**, manager, Cheyenne, WY, AFSFO, Billings, MT, AFS, from Longmont, CO . . . **Robert J. Tribble**, unit supervisor, Auburn, WA, ARTCC, promotion made permanent.

Southern Region

Daniel O. Carlson, unit supervisor, traffic management, Miami, FL, ARTCC . . . **Craig Chandler**, area supervisor, Nashville Metropolitan Airport ATCT, promotion made permanent . . . **Arthur J. Clark**, manager, Pensacola, FL, AFSFO, Montgomery, AL, AFS, from Nashville, TN . . . **Robert A. Cowell**, section supervisor, Memphis, TN, FSDO, promotion made permanent . . . **Carol Sue Gossett**, supervisor, Inquiry & Control Section, Payroll Branch, Accounting Div., promotion made permanent . . . **Russell R. Hammer**, unit supervisor, Miami, FL, FSDO . . . **James E. Kellett**, asst. manager for training, Gainesville, FL, AFSS, from Pensacola . . . **Roger A. Lahaise**, area manager, San Juan, PR, CERAP . . . **Richard W. McManus**, area supervisor, Fort Myers, FL, ATCT, from West Palm Beach . . . **Albert R. Outen**, manager, Tyn dall AFB, FL, AFSFO, Jacksonville, FL, AFS, from Charlotte, NC . . . **Mark G. Palazzo**, asst. manager, NAS implementation, Miami ARTCC . . . **Woodrow A. Wilson**, unit supervisor, Savannah, GA, AFSFO, Columbia, SC, AFS, Beunswick, GA.

Southwest Region

Carl L. Allen, manager, Santa Fe, NM, Airport ATCT, from Tyler, TX . . . **Peter R. Cappadona**, team supervisor, Baton Rouge, LA, FSDO . . . **John Clasca, Jr.**, manager, Oklahoma City, OK, FSDO, from Little Rock, AR . . . **Bruce E. Cook**, section supervisor, Albuquerque ARTCC AFS . . . **Kenneth F. Davis**, section supervisor, Program Support Staff, Establishment Engineering Branch, Airway Facilities Div. . .

Neil F. Devue, unit supervisor, Tulsa AFSFO, Oklahoma City AFS, promotion made permanent . . . **Andra M. McFerren**, crew chief, Establishment Engineering Branch, Airway Facilities Div. . . **William E. Record, Jr.**, asst. systems engineer, Fort Worth, TX, ARTCC AFS, from Houston ARTCC AFS . . . **Guillermo R. Rivera**, asst. manager, Establishment Engineering Branch, Airway Facilities Div. . . **Rene Suarez**, area supervisor, San Antonio, TX, Airport ATCT, from Little Rock, AR . . . **Maurice Wyatt**, asst. systems engineer, Fort Worth, TX, ARTCC AFS, promotion made permanent.

Technical Center

Douglas F. Adams, Sr., unit supervisor, Material Handling Section, Material Branch, Logistics Div., promotion made permanent . . . **Alvan T. Bazer**, manager, Flight Test Branch, Technical Facilities Div. **Malcolm A. Burgess**, branch manager, Hampton, VA, field office . . . **Jo Ann M. Delcoris**, unit supervisor, Material Management Section, Material Branch, Logistics Div., promotion made permanent . . . **W. Thomas Edwards**, deputy manager, Technical Facilities Div. . . **Lewis J. Levy**, unit supervisor, Material Handling Section, Material Branch, Logistics Div., promotion made permanent . . . **Dorothy M. McGehean**, supervisor, Terminal Requirements Section, National Terminal Field Support/Maintenance Branch, Automation Software Div. . . **Peter M. Trazzera**, supervisor, Terminal Support Section, National Terminal Field Support/Maintenance Branch, Automation Software Div. . . **Thomas M. Walsh**, branch manager, Engineering, Research & Development Service, Moffett Field, CA.

Washington Headquarters

Mark R. Adams, manager, Plans & Evaluation Branch, Plans, Evaluation & Management Support Div., Office of Aviation Medicine, promotion made permanent . . . **Larry A. Bruno**, manager, Airports Branch, Civil Aviation Security Div., Office of Civil Aviation Security, promotion made permanent . . . **Edward C. Hutzinger**, manager, Industrial Evaluation Branch, Industrial Div., Logistics Service . . . **Donald L. Lombard**, manager, Facilities Transition Branch, Transition Assessment Div., NAS Transition & Implementation Service . . . **Thomas M. Penland, Jr.**, manager, Program Management Branch, Air Transportation Div., Flight Standards Service, promotion made permanent . . . **Charles W. Pilgrim**, staff chief, Facilities Integration Div., NAS Transition & Implementation Service, promotion made permanent . . . **Ann M. Sadler**, manager, Administrative Systems Staff, Logistics Service . . . **James E. Siegman**, manager, Computer & Air Tax Branch, Aircraft Maintenance Div., Flight Standards Service, promotion made permanent.

Western-Pacific Region

Stephen A. Badger, aviation safety inspector, Honolulu, HI, FSDO, from San Diego, CA, FSDO . . . **Tommy E. Barclay**, asst. manager, Oakland, CA, TRACON . . . **Bruce C. Martin**, asst. systems engineer, Oakland, CA, ARTCC AFS, Fremont, promotion made permanent . . . **Curtis J. McCloskey**, unit supervisor, Reno, NV, AFSFO, Sacramento AFS . . . **Ruben R. Meza**, unit supervisor, Long Beach AFSFO, San Diego, CA, AFS, from regional headquarters . . . **Leonard A. Mobley**, manager, Los Angeles, CA, ATCT, from regional headquarters . . . **Lettie C. Howland**, unit supervisor, Real Es-

tate & Utilities Branch, Logistics Div., promotion made permanent . . . **Kevin E. Jones**, federal air marshal, Los Angeles, CA, CASFO, from regional headquarters . . . **Bruce C. Martin**, asst. systems engineer, Oakland, CA, ARTCC AFS, Fremont, promotion made permanent . . . **Curtis J. McCloskey**, unit supervisor, Reno, NV, AFSFO, Sacramento AFS . . . **Ruben R. Meza**, unit supervisor, Long Beach AFSFO, San Diego, CA, AFS, from regional headquarters . . . **Leonard A. Mobley**, manager, Los Angeles, CA, ATCT, from regional headquarters . . .

Wilson S. Moses, manager, Sacramento, CA, FSS . . . **Joseph A. Palumbo**, manager, San Francisco, CA, International Airport ATCT, from Oakland, CA . . . **Alfred T. Pruitt**, area supervisor, Oakland, CA, ARTCC, Fremont, promotion made permanent . . . **Thomas L. Rash**, area supervisor, Fresno, CA, FSS, from Riverside FSS . . . **Terry L. Rhodes**, manager, Fox Field ATCT, Lancaster, CA, from Edwards AFB, CA . . . **Betty J. Roque**, area supervisor, Reid-Hillview Airport ATCT, San Jose, CA . . . **Darrell L. Rucker**, section supervisor, San

The information in this feature is extracted from the Personnel Management Information System (PMIS) computer. Space permitting, all actions of a change of position and/or facility at the first supervisory level and to branch manager in offices are published. Other changes usually cannot be accommodated because there are thousands each month.

Francisco, CA, CMO, promotion made permanent . . . **Scott M. Speer**, area supervisor, El Toro, CA, TRACON, promotion made permanent . . . **Ronald L. Steele**, operations inspector, Reno, NV, FSDO, promotion made permanent . . . **Robert H. Voss**, area supervisor, Sonoma County Airport ATCT, Santa Rosa, CA . . . **Leland J. Wingard**, manager, Concord, CA, Buchanan Field ATCT, from Napa, CA.

Retirees

AERONAUTICAL CENTER

William C. Heavers
Deloris U. Brooks
Loran W. Macy
Betty J. Mann
Jan Nicholson
Alexander A. Praskin
Robert E. Wexcott
Doyle A. Williams

ALASKAN REGION

Franklin L. Cunningham
Bernard T. Sazoo

CENTRAL REGION

John W. Frost
Howard W. George, Jr.
Miles L. Homevrig
Carroll F. Walker, Jr.

EASTERN REGION

Christian A. Bauer
Billy E. Grossmader
Elhanan C. Cook
William P. Cryer
Donald M. Diperna
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World's Art Director Retires

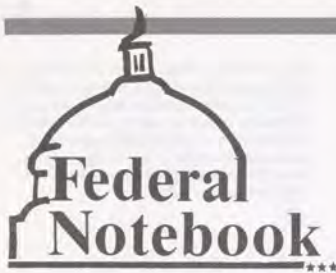
Eleanor (Lennie) Maginnis recently retired as art director of *FAA World*. Maginnis said the creative people she worked with during her tenure made her job both fun and enjoyable. She plans to continue designing publications on a free-lance basis.

Before beginning her nineteen-plus years of government service, Maginnis worked in the design department of Aircraft Owners and Pilots Association magazine.

An avid tennis player, traveler, and opera buff, at last report Maginnis is continuing her whirlwind of activities without skipping a beat and surrounded by her family and many friends.



Lennie Maginnis displays a trademark smile while working on the design of *FAA World*.



OPTIONS FOR CONTROLLERS PROPOSED

Rep. James Oberstar (D-Minn.) introduced legislation that would give air traffic personnel credit toward early retirement for time spent as second-level supervisors and managers. Under current law, retirement benefits are available to controllers, first-level supervisors, and traffic management coordinators after 25 years of service, regardless of age, or with 20 years of service after age 50.

Potential applicants for secondary jobs in air traffic operations may be discouraged from applying for or accepting promotions into those positions because time spent in secondary air traffic jobs does not qualify for early retirement credit, said Oberstar. Co-sponsors of the legislation are Reps. Mary Rose Oaker (D-Ohio) and William Clinger (R-Pa.). The bill (H.R. 4345) has been referred to the Post Office Civil Service Committee.

THRIFT FUND MEMBERSHIP OVER 1.5 MILLION

As of last spring there were approximately 1,543,000 federal and postal employees participating in the tax-deferred thrift investment program. The program represents about half the total workforce and registers earnings of about \$1.3 million every day.

The 900,000 workers under the Federal Employment Retirement System (FERS) who were hired since 1984 can invest up to 10% of their salaries (to a maximum of \$7,979) into any or all of the plan's three options: the G-Fund (Treasury securities), C-Fund (stocks) or F-Fund (bonds). Individuals who invest 5% or more get a matching 5% tax-deferred contribution from the government.

Employees under the Civil Service Retirement System can invest 5% of their salary. Until recently, they could only invest in the G-Fund. President Bush has since approved legislation (H.R. 2514) that would open up common stock (C) and fixed-income bond (F) tax-deferred investment funds to employees under the CSRS. As of April 30 there was \$100 million in the C Fund, \$29 million in the F Fund, and \$5.8 billion in the G Fund.

HEALTH CARE COSTS ESCALATE

Inflation in the medical field could soon result in the elderly paying one-fifth of their income for health care costs, compared to one-eighth a decade ago, according to the House Select Committee on Aging.

The committee found that medical costs are rising 8.2% percent annually, compared with 5.2% for the broader index of costs used to adjust Social Security benefits.

Out-of-pocket medical costs for persons over 65 averaged \$1,691 per individual in 1988, compared with \$721 in 1980 and \$522 in 1977.

SHARED LEAVE TAXABLE

Donated annual leave is considered a wage and is therefore taxable to the recipient, the IRS ruled in April. In addition, the donated leave is not an "untaxable gift" and is not deductible for federal employees who transfer leave time.

Despite the fact that the donor loses leave it is not clear if he or she would have ever been paid for it, the agency ruled. The leave-sharing program allows employees who have exhausted their leave to continue to receive wages.

The ruling is consistent with the existing IRS policy of taxing transferred leave as wages. Within the first six months of the leave-sharing program, workers in 55 agencies donated 482,000 hours. About 300,000 hours were divided among 2,400 recipients, according to OPM.

SURVEY ON HATCH ACT REFORM

A recent government-wide survey disclosed that 22% of 16,000 employees desired greater activity in partisan politics, while a similar percentage said they were not interested in becoming more active. Forty-one percent said they were not interested either way, suggesting "that most employees don't hold strong views one way or the other on this issue," said the Merit Systems Protection Board, conductors of the survey.

President Bush recently vetoed the Hatch Act reform bill, which would have eased many restrictions on federal and postal workers' participation in political campaigns during off-duty hours. Bush said he vetoed the bill "because it politicizes the civil service."

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