World

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Airway Science Program: Leadership for Tomorrow

US Department
of Transportation
**Federal Aviation
Administration**

Arneson Gets a Call

The first call, about noon before Christmas eve, was from an NBC reporter in Chicago who asked him, "Are you aware you are going to receive a call from the President shortly?"

"The president of what?" was the response from Lee Arneson, recently retired as manager of the Janesville, Wis., Tower. The reporter explained that President Reagan was calling five servicemen around the world to extend holiday greetings and that the President would be calling him to say he'd talked with his son Kevin, a senior airman on MP duty at Incirlek Air Station in Turkey.

Arneson's disbelief gave way to excitement. NBC wanted to send a crew to film the call and the family reaction, but Lee was alone; his wife, Teena, was at work.

"Five minutes later, the telephone rang again," he related, "and a woman said she was the secretary to the President and would I stand by for the call. Twenty seconds later, President Reagan came on the line, saying he had just talked to Kevin, and it was 8 p.m. Christmas eve there. And Kevin had asked him to call us, wish us all the best and say he missed us."

A few minutes after the President hung up, the reporter called to say he was sending a film crew, but Arneson told him he was too late. The reporter then asked if Arneson had taped the conversation, to which he replied, "No, I didn't feel I should be wiretapping the President."

That wasn't the end, though. The Arnesons received calls from friends around the country who had seen wire service stories. A Madison, Wis., TV station did a telephone interview on Christmas eve; a Milwaukee TV station filmed the family opening presents on Christmas morning and then stayed for brunch; one from Green Bay did a telephone interview on Christmas Day; still another from Rockford, Ill., did a film on the day after Christmas.

—By Marjorie Kriz

"People fly because they believe it is safe to fly, and they believe that because decades ago the airline industry and the government convinced them of that fact by the way they set tough safety standards. In effect, safety became the industry's 'strong heart.'

"Nothing has changed that philosophy—we simply are not going to permit a degradation of air safety. We have not in the past, and we won't today or tomorrow.

"We—the government and the industry—must do what we have always done. We must stay alert to safety threats . . . we must search for the dangerous trends . . . we must educate our flight crews . . . and in doing so we will keep what we have now: the safest aviation system in the world."

—Donald D. Engen

Front cover: *Instructor William H. Rhodes helps a student electrical wire an engine at the University of the District of Columbia, which has applied to establish an bachelor's program in airway science.* *See story on page 4.* Photo by Dennis Hughes

Back cover: *A tower controller's view of a Cessna taking off from Salem, Ore., Airport at sunrise.* Photo by Robert E. Olds

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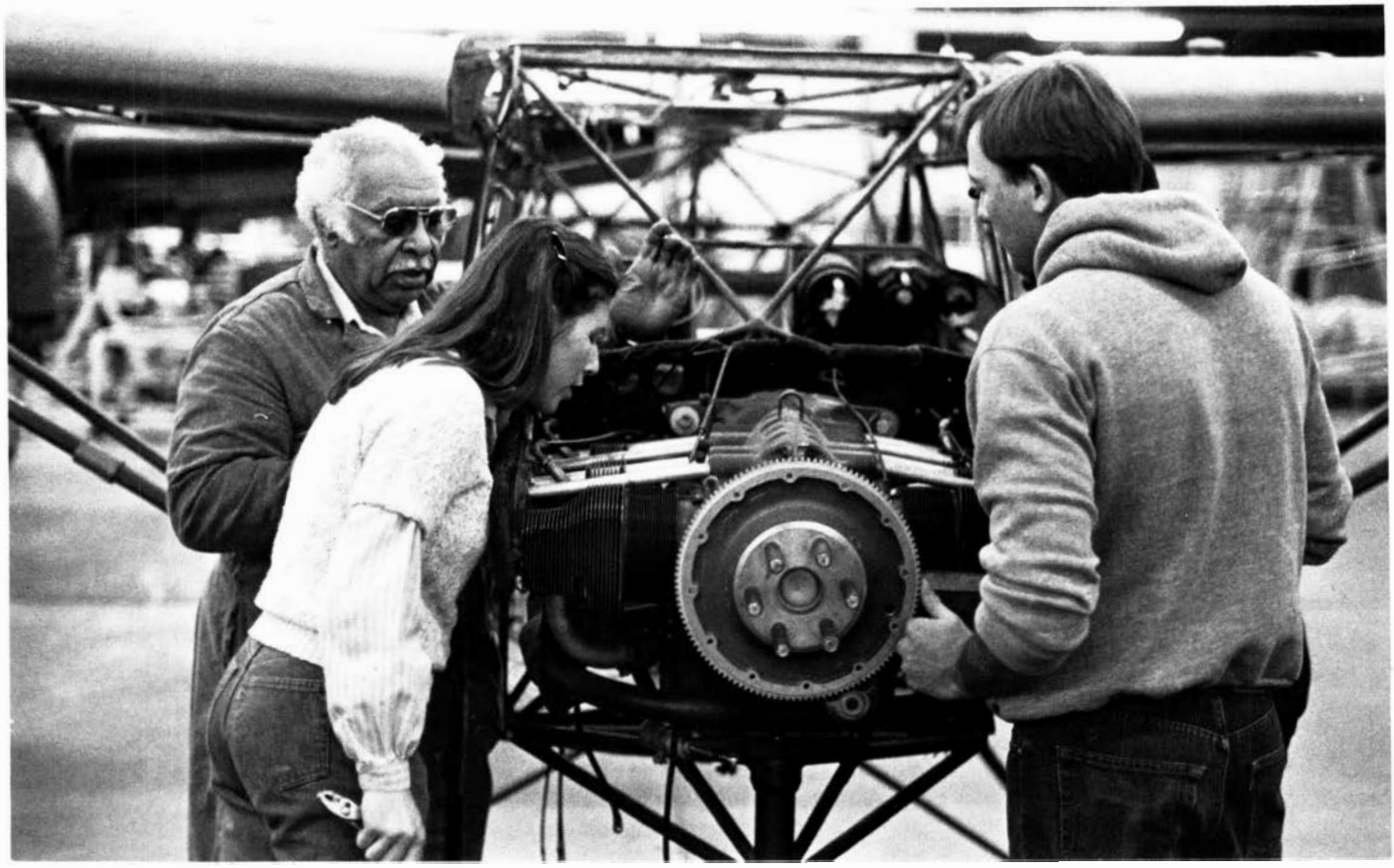
By Frank Clifford
A former writer for FAA and DOT Offices of Public Affairs, now retired, he has also been published in military aviation magazines.

The Degree's the Thing

Airway Science Program To Help Supply Technical Leadership



A 30-year veteran of aircraft maintenance, William H. Rhodes checks students' work at the University of the District of Columbia's hangar at Washington National Airport. At present, UDC offers a two-year associate degree in aviation maintenance technology and is awaiting approval to establish a four-year bachelor's program in airway science.

Photo by Dennis Hughes

While the Federal Aviation Administration moves right along toward its planned 1998 completion of the National Airspace System (NAS), it is also pursuing a parallel program that will help provide the technical expertise to staff the system.

The program—Airway Science—is as up to date as the training environment is traditional: blackboards, term papers, final exams and ivy-covered walls. The course content, from core curriculum to electives, is perfectly in keeping with the 21st Century system and the agency it is intended to serve.

Simply stated, the Airway Science Program is intended to provide the NAS and FAA with a dependable source of people who not only are competent technically but who also have the academic foundation for leadership jobs.

"The idea is not new. It was something that had simmered for years on our back burner," says Wanda Reyna, manager of the agency's Spe-

Embry-Riddle Aeronautical University, Bunnell, Fla., has developed and is beginning an Airway Science Program in the spring semester of 1985.

cial Emphasis Personnel Programs Staff, which has direct responsibility for the program. "But it took the air traffic controllers' strike in August 1981 to turn 'someday' into 'today'."

"Today" dawned in early January 1982, when the FAA sent a mailing to more than 400 universities inquiring into their interest in "establishing a stronger linkage between FAA career fields and the academic community." What was sought was not another trade school program—the aviation industry has an abundance of these—but a broad-based program of studies that would lead to a bachelor's degree.

The replies were prompt and encouraging. More than 150 colleges responded, and the airway science concept was on its way to reality. Administrator Helms tapped David A. Carmichael, then in Washington on an executive development program and now manager of administrative programs at the Aeronautical Center, to head a planning group. His instructions were brief and to the point: Develop a rigorous academic core curriculum that would provide the FAA and aviation community with a well-balanced combination of skilled technicians with management potential. To put it another way, we wanted people-oriented technicians.

At a Link Trainer monitoring console, Embry-Riddle instructors watch trainer cockpit panels and a dial showing course headings during IFR training. Through a communications hookup, they can act in the role of air traffic controllers.

He did not have far to go to assemble a team. He picked Donald B. Rock—then director of the Office of Personnel and Training and now special assistant to Charles E. Weithoner, Associate Administrator for Human Resources Management; Dr. James O. Boone, a psychologist from the Civil Aeromedical Institute; Judy Branting, an employee development specialist; and Michael Hill, a supervisory staffing specialist.

But this was only half of the equation. Needed also was a facile entry into the academic community. An easy choice for the task was Gary W. Kiteley, executive director of the University Aviation Association, a professional society involved in the academic world. He was joined by John D. Odegard, dean of the Center for Aerospace Sciences at the University of North Dakota. As it turned out, the University of North Dakota was the first institution to offer a degree program in airway science.

The FAA worked with the colleges and the University Aviation Association to create a bachelor's program that would be a modern and effective mixture of academic and technical studies that would satisfy all three parties.

Setting up the Airway Science Program also called for establishing a separate, non-competitive register—

Gerry Verner (right), assistant professor of aviation technologies at Southern Illinois University at Carbondale, and aviation student Larry Grant remove a propeller spinner prior to servicing.

SIU staff photo

Gene Ripple (left), director of the Kent State University Airport in Kent, Ohio, shows Great Lakes Region Director Paul Bohr and Keith Burt, manager of the Human Resource Division, through its facilities for the Airway Science Program.

UDC students of maintenance technology make adjustments on an aircraft engine.

Photo by Dennis Hughes

one apart from the regular civil service competitive register. In addition to being placed on the non-competitive list, airway science graduates would receive extra points on the strength of their degrees. The Office of Personnel Management (OPM), however, objected to what it considered a sidestepping maneuver to avoid long-established procedures to assure a quality, qualified career civil service.

FAA's position was that the program provided it with an opportunity to set aside some of the bureaucratic obstacles to staffing any large organization, whether government or private enterprise.

The legal mechanism for putting the proposal into effect was already in place: the Civil Service Reform Act of 1978, which authorized OPM to conduct demonstration programs that experimented with new and different personnel management concepts under controlled conditions.

The FAA's proposed demonstration project made its way with lively pro and con comment through the bureaucratic maze to win OPM approval in July 1983. Students entered the program in September and by May 1984, some 50 students had earned Bachelor of Science degrees in Airway Science. Eleven are now working for the FAA. An entirely new major had made its appearance in college catalogs.

There are now 24 participating colleges in the program. The largest number—11—are in the Southern Region. Next is the Great Lakes Region with four. All of the other regions have at least one, except Alaska. Awaiting approval are 14 schools, including the University of the District of Columbia in Washington, D.C.

Offshore, the Interamerican University of Puerto Rico has an approved program, and the International Institute of the Americas of the World University, also in Puerto Rico, is awaiting certification.

FAA Administrator Donald D. Engen is solidly behind the airway science concept. In an agency booklet describing the program, he says a career in aviation "demands of its workers technical excellence, the ability to think, to innovate, to communicate and to appreciate human values.

"We believe these people will most likely emanate from collegiate aviation education, particularly the Airway Science Program, with its blend of hard science, management, humanities and specialty education."

The core curriculum worked out is rigorous enough to command the respect of anyone in the academic community. Required are courses in algebra, trigonometry, calculus, physics, geography and chemistry, as well as computer science and principles of management, organizational behavior and techniques of supervision. Under general studies, students take courses in English composition, technical writing, economics, government, psychology, humanities, history and speech.

Of course, aviation itself is part of the core. Students can choose between an introduction to aeronautics or private pilot certification. Required courses include aviation legislation, flight safety, air traffic control and the National Airspace System.

In addition to the above, candidates for a bachelor's degree in airway science have five career specialization options, each with 40 hours of study: airway science management, airway computer science, aircraft systems management, airway electronic systems and aviation maintenance management. The five options not only have direct FAA application but also are the heart of the civil aviation industry.

Does a degree in airway science

Southern Illinois University student Steve Hawkins checks the routing of control cables in an aircraft's tail section. SIU staff photo

guarantee a job with the FAA? No such assurance is possible. However, the agency has declared a policy that is the next best thing: For the next several years, the FAA will help to support airway science education by hiring up to 500 qualified graduates each year. The entry grade is GS-7.

Such a set-aside does not shut the door to FAA employment of applicants lacking the airway science credentials. The demonstration program recognizes the variety of sources producing aviation expertise. Indeed, the program uses an acronym—KSAO—to describe people joining the agency with the same ***knowledge, skills, abilities*** and ***other*** characteristics as those attained by graduates of an airway science program.

Mary L. Terpening, for example, is a KSAO-qualified person hired under the Airway Science Program. She joined the FAA in May 1984 and is now an aviation safety inspector at the Miami, Fla., Flight Standards District Office. Older than the typical airway science hire, she took a degree in finance at the University of Illinois in 1963.

Since then, however, she has acquired more than 5,500 hours in a variety of aircraft, having ratings in single- and multi-engine aircraft, land and sea. She is a rated flight engineer and a ground and flight instructor. She claims to have been the first woman air transport pilot in the U.S., flying for Continental Airlines.

Raymond L. Beauchemin, hired by the FAA last September under the program, is another KSAO. He earned his degree in marine resources development from the University of Rhode Island in 1978. He is an electronics technician at the Boston Airway Facilities Sector.

A private pilot since 1971, he began to accumulate his aeronautical qualifications while serving as an internal communications technician aboard a Polaris submarine. He added civilian and military technical school training. As a change of pace from his FAA duties, Beauchemin is an airborne electronics technician in a Navy reserve squadron, ironically, flying anti-submarine patrols.

More typical of the people who have joined the FAA under the Airway Science Program is John H. Thiem, who earned his degree from the University of North Dakota in 1983. He is now an operations inspector at the Minneapolis, Minn., General Aviation District Office. Thiem is a commercial pilot with single- and multi-engine ratings and is a flight instructor in these categories.

A final example is Gerard F. Bolduc, who earned a B.S. in electrical engineering from the University of Maine in May 1984 and joined the FAA at the end of the year. Hired as an electronics technician at the Bangor, Maine, Airway Facilities Sector, Bolduc is now taking additional courses in electronics at the FAA Academy. Like Beauchemin, he is a "weekend warrior," flying in KC-135s as navigator.

Applicants to the Airway Science Program should note that "the FAA does not grant scholarships in airway science," according to Cecelia English, who has the day-to-day management responsibility for the program in the Special Emphasis Personnel Program Staff. "However, we have had discusssions with aviation professional societies on their contemplated sponsorship of scholarships."

Prominent in the talks is the National Coalition of Black FAA Employees. The Air Traffic Control Association already has a scholarship program.

And it's logical that there should be such resources, for the program itself is a resource to be mined not only by FAA and the aviation industry but also by the brightest and the best who want to move ahead. ■

By Barbara Abels
The public affairs officer of the Western-Pacific Region, she also is editor of *Bear Facts*, the magazine of the California Wing of the Civil Air Patrol.

Upward Isn't Only for Flying

Woman Air Carrier Inspector Bootstrapped from Secretary

"I thought I couldn't afford the aircraft rental, let alone flying lessons on my limited salary," says Marion Dittman, aviation safety inspector in the Los Angeles Flight Standards District Office. "But," she continues, "I have discovered that in this life, you can afford to do anything that you really want to do."

Dittman recently earned the distinction of being the first woman ever to take the Boeing 727 Inspector Pilot and Flight Engineer Qualification Course at the FAA Academy. While there, she also was one of the flight crew who made the historic 60,000th landing of its 727.

What's more, she became the first woman air carrier airman certification inspector in the country, conducting airman certification in the Boeing 727.

Dittman's career has been filled with such progress. During the early 1960s, she came to work for the FAA as a secretary in the Western Region's Flight Standards Division. "I came to the FAA right out of high school," she recalls, " . . . when they had a recruitment drive."

After a few years, she left FAA to pursue a business career in the aerospace industry.

Her being in FAA and aerospace wasn't coincidental. Even as a child, Dittman loved aviation. "In fact," she recalls, "when I was only 13, knowing that my mother would never agree to my learning to drive a car, I asked her if I could take flying lessons instead. To my amazement, she agreed." Little did she guess at the time that in her mother's infinite wisdom, she knew that little Marion would not have the money to learn to fly.

Photo by Ellis Young

It wasn't until 1967 that Dittman did complete her pilot training.

"I really have to thank former GADO inspector Ralph Thomas," comments Dittman, "who donated his time and taught me to fly. Somehow, I managed to come up with the necessary money for the aircraft rental."

In 1975, Dittman left the aerospace industry to actively pursue an aviation career. She completed the steps required for a commercial pilot with ratings for aircraft, single-engine land, multi-engine land and instruments.

She went on to obtain all flight instructor ratings and completed a flight engineer rating program in the Boeing 727 and earned an airline transport pilot certificate. By now, Dittman was working as a full-time pilot, both instructing in all pilot programs and ferrying new production aircraft throughout the continental United States.

During this new career, she has acquired several thousand hours of flight time in a diverse array of aircraft, including all current U.S. production single- and multi-engine aircraft under 12,500 pounds. In addition, she's flown the Swearingen SA227 Metro III, North American Rockwell Sabreliner and the Boeing 727.

Dittman returned to the FAA and quickly advanced to the journeyman level as a general aviation district office aviation safety inspector in Santa Monica, Calif. She became responsible for the certification, inspection and surveillance of FAR Part 135 air carrier operating certificates, pilot schools, pilot/written test examiners and operations programs of executive and industrial operators. She also was active in accident/incident investigation and compliance/enforcement of the Federal Aviation Regulations.

In 1982, she turned her attention to air taxi/commuter operators as an acting principal operations inspector, eventually completing the SA227 Metro III type-rating program. Her duties were expanded to include airman certification and pilot proficiency checks in the SA227, as well as route-proving flights and evaluation and approval of training programs for pilots, instructors and check airmen.

A year later, Dittman completed air carrier indoctrination training at the FAA Academy. She ws promoted to air carrier inspector at the Los Angeles Flight Standards District Office in 1984 and completed a five-week Boeing 727 inspector pilot and flight engineer initial qualification course at the Academy.

She is a member of a number of aviation organizations, including the Ninety-Nines—the international organization of women pilots—and the U.S. Air Force Auxiliary—the Civil Air Patrol.

So far, Dittman admits, she's had very little time for her outside interests—hiking, skiing and oil painting. "But I have a great career," she says. "I thoroughly enjoy my job and the people I work with."

You can't ask for much more. ■

A DC-9 flying between two heavy weather cells was battered by a hailstorm even though it was 5-7 miles from its fringe, suffering about $1.5 million damage, primarily to its nose, cockpit window, leading edge and No. 1 engine nacelle. New controllers should note that the potential for this is why pilots request to deviate widely around heavy weather cells and thunderstorms.

Update Your Mailing Address

A facility reassignment often means that you have to move your home. Have you made sure that FAA WORLD moves with you?

The home address used by the agency to mail FAA WORLD is the same one used for mailing W-2 income tax forms every December. The list normally is canvassed each November, but if you want your address corrected sooner to ensure that FAA WORLD keeps coming, you will have to initiate the change yourself.

Ask your time-and-attendance clerk for FAA Form 2730-18, "Payroll Address Information," and complete items 1 and 2 only. (Items 3 and 4 are for changing the mailing address of paychecks.) The T&A clerk will forward the form to payroll for processing. In the case of the Southern and Southwest Regions, the Technical Center, Metropolitan Airports and Headquarters, payroll is ASO-26.

People

Aeronautical Center

■ **George J. Chappell,** unit supervisor in the Radar Training Facility Section, Air Traffic Branch, FAA Academy.

■ **Harry R. Colfax, Jr.,** chief of the Support Systems Staff, FAA Depot.

■ **Shirley J. Cox,** supervisor of the Recruitment and Placement Section, Human Resource Utilization Branch, HRM Div., promotion made permanent.

■ **Donald R. Ellis,** unit supervisor in the Nonradar Section, Air Traffic Branch, FAA Academy.

■ **Daniel M. Harrington,** unit supervisor in the Radar Training Facility Section.

■ **Georgetta James,** supervisor of the Computer-Based-Instruction System Section, Training Methods & Operations Branch, FAA Academy.

■ **George D. MacKillican,** chief of the Inventory Systems Staff, FAA Depot.

■ **Bascom W. Routon,** unit supervisor in the Special Services Section, Air Traffic Branch, FAA Academy.

Alaskan Region

■ **Michael E. Landon,** manager of the Procurement Branch, Logistics Division.

■ **Robert L. Moore,** area manager at the Bethel Flight Service Station, from the Ketchikan FSS.

■ **Joseph Rollins II,** area supervisor at the Anchorage ARTCC.

Central Region

■ **Daniel M. Batliner,** area manager at the Kansas City ARTCC, from the Denver ARTCC.

■ **Gerald R. Mack,** assistant manager of the Atlanta, Ga., Aircraft Certification Office.

■ **Gary L. McCullough,** area manager at the Kansas City ARTCC.

■ **Larry R. Miffleton,** assistant manager for training at the Kansas City ARTCC.

■ **Neil J. Schroeder,** manager of the Burlington, Iowa, Airway Facilities Sector Field Office, Des Moines AF Sector.

Eastern Region

■ **John B. Azzarone,** area supervisor at the New York ARTCC.

■ **John F. Biddle,** supervisor, South Section, Operations Branch, Air Traffic Division, from LaGuardia Tower.

■ **Raymond H. Dietz,** unit supervisor at the Teterboro, N.J., Flight Standards District Office.

■ **George A. Dodelin,** assistant manager, airspace and procedures, at the Norfolk, Va., Tower.

■ **Frank D. Havlin,** area supervisor at the Newark, N.J., Tower, from LaGuardia.

■ **Channon D. Hupp,** assistant manager for technical support, Charleston, W. Va., Airway Facilities Sector.

■ **Rolf A. Kettenburg,** area supervisor at the Washington ARTCC.

■ **Paul B. Laukaitis,** manager of the Roanoke, Va., AFSFO, Charleston AF Sector, from the Harrisburg, Pa., AF Sector.

■ **Raymond E. Lemelle,** watch supervisor in the New York TRACON Airway Facilities Sector Field Office, Metro New York AF Sector.

■ **Thomas W. Marshall,** assistant manager for technical support, Pittsburgh, Pa., AF Sector.

■ **Paul Massanopoli,** area supervisor at the Washington ARTCC.

■ **Harry M. Matthews III,** area supervisor at the Washington ARTCC.

■ **Donald L. Rausch,** systems engineer at the New York TRACON AFSFO.

■ **Natalie D. Tyler,** area supervisor at the Washington ARTCC, from Washington headquarters Office of Personnel and Training.

■ **Curtis L. Zimmerman,** area supervisor at the Washington ARTCC.

Great Lakes Region

■ **James W. Berge,** group supervisor in the Regional Communications Control Center.

■ **James A. Bradach,** assistant manager, airspace and procedures, at the Minneapolis, Minn., ARTCC.

■ **William L. Calhoun,** assistant manager for system performance in the Minneapolis ARTCC.

■ **Eugene J. Hall,** area supervisor at the Evansville, Ind., Tower, from the Carbondale, Ill., Tower.

■ **Terence J. Hehir,** systems engineer in the Minneapolis ARTCC AF Sector.

■ **Lawrence W. Holben,** area supervisor at the Saginaw, Mich., Tower, from the Grand Rapids, Mich., Tower.

■ **Albert J. Hoss,** assistant manager for system performance at the Chicago ARTCC.

■ **James R. Murray,** manager of the Plans and Program Branch, Air Traffic Div.

■ **Patrick M. Murphy,** manager of the Bloomington, Ind., Tower, from the Indianapolis, Ind., Tower.

■ **Gerald D. Probst,** area manager at the Chicago ARTCC.

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 branch managers in offices are published. Other changes cannot be accommodated because there are thousands each month.

■ **Larry K. Salser,** area supervisor at the Madison, Wis., Tower, from the Peoria, Ill., Tower.

■ **Robert J. Schultz II,** area supervisor at the Champaign, Ill., Tower, promotion made permanent.

■ **Ronald E. Schwartz,** unit supervisor in the Ohio AF Sector, Dayton, Ohio.

■ **Russell J. Sebold,** manager of the Minneapolis ARTCC AF Sector.

■ **Homer E. Stamper,** assistant manager, traffic management, at the Cleveland, Ohio, ARTCC.

■ **William J. Thomas,** area supervisor at the Dayton-Vandalia, Ohio, Tower.

New England Region

■ **Robert J. Conrad,** manager of the Bangor, Maine, Airway Facilities Sector, from the Boston ARTCC AF Sector.

■ **Roland H. Crossley,** assistant manager for training at the Bridgeport, Conn., Flight Service Station.

■ **Howard M. Gotham,** assistant systems engineer in the Boston ARTCC AF Sector.

■ **Janet M. Groden,** area manager at the Bridgeport FSS, from the Charleston, W.Va., FSS.

■ **Jay A. Murphy,** manager of the Boston ARTCC AF Sector, from the Bangor Sector.

Northwest Mountain Region

■ **Larry A. Brennis,** area supervisor at the Seattle-Tacoma, Wash., Tower, from the Renton, Wash., Tower.

■ **Gordon A. Burnet,** programs officer at the Portland, Ore., Tower.

■ **Mary J. Carter,** manager of the Hoquiam, Wash., Flight Service Station, from the Baker, Ore., FSS.

■ **Patrick G. Claxton,** area manager at the Seattle ARTCC.

■ **Domenic Digiallonardo,** assistant manager, plans and programs, at the Denver ARTCC.

■ **William E. Drew,** assistant manager of the Denver Tower.

■ **Monte D. Gillespie,** area supervisor at the Colorado Springs, Colo., Tower, from the Moses Lake, Wash., Tower.

■ **Ansel H. McAllaster,** manager of the Denver Flight Standards District Office.

■ **Russell L. Miller,** field office unit supervisor in the Seattle, Wash., Airway Facilities Sector.

■ **David L. Muir,** unit supervisor in the Seattle ARTCC AF Sector.

■ **Larry A. Roberts,** assistant manager, traffic management, at the Seattle ARTCC.

■ **Edwin L. Trudgeon,** supervisory engineering draftsman, Establishment Branch, AF Div., promotion made permanent.

■ **Clarence R. Wilson,** area manager at the Portland Tower.

Southern Region

■ **John A. Austin,** unit supervisor in the Miami, Fla., Hub Airway Facilities Sector, promotion made permanent.

■ **John C. Bolender,** area supervisor at the Montgomery, Ala., Tower.

■ **Buford Hyman,** manager of the Florence, S.C., Tower.

■ **David L. McCracken,** assistant manager for automation at the Miami Tower, from the San Juan, P.R., CERAP.

■ **Robert N. McDaniel,** area manager at the Memphis, Tenn., ARTCC.

■ **Warren M. McUmber,** area supervisor at the Montgomery Tower.

■ **Harry D. Pelphrey,** area supervisor at the Opa Locka, Fla., Tower, from the FAA Academy.

■ **Clayton E. Steinacker,** area supervisor at the San Juan Center/RAPCON, promotion made permanent.

■ **Harry W. Taber,** assistant unit supervisor in the Mid-South Flight Standards District Office, Atlanta, Ga.

■ **Thomas E. Wharton,** area supervisor at the West Palm Beach, Fla., Tower.

■ **John W. White,** manager of the Dothan, Ala., Tower, from the Jacksonville, Fla., Tower.

■ **Clarence H. Wise,** assistant unit supervisor in the Mid-South FSDO.

■ **Stanley Zylowski,** assistant manager, plans and procedures, at the Pensacola, Fla., Tower, from the Miami Tower.

Southwest Region

■ **Richard J. Cibak,** supervisor of the North Section, Operations Branch, Air Traffic Div., promotion made permanent.

■ **James E. Cox,** chief of the Regional Communications Control Center, promotion made permanent.

■ **Ralph E. Dildine,** unit supervisor in the Austin, Tex., Airway Facilities Sector.

■ **Arthur D. Faram,** area supervisor at the Fort Worth, Tex., ARTCC.

■ **Eugenio T. Garcia,** area supervisor at the Albuquerque, N.M., ARTCC, from the Houston, Tex., ARTCC.

■ **Dennis L. Holton,** systems engineer in the Fort Worth ARTCC AF Sector.

By Peter Demchuk
A writer-editor in the Office of Public Affairs, he came to FAA from the Urban Mass Transportation Administration.

Quest for Quality

Al Barr Leads Staff Via Innovative, Sensitive Management

The layout of Alphonso Barr's fourth floor headquarters office serves as a good metaphor for the management style he uses to head the Industrial Division of the Acquisition and Materiel Service—the voice of quality assurance for the FAA in the acquisition of systems and equipment throughout National Airspace System.

Showing an engineer's talent for efficiency of design, the modest-sized room appears uncrowded but contains a large desk in one corner, a personal computer and printer in another, shelves of bound quality-assurance reports, and a blackboard and task chart in front of a half-circle of chairs.

The computer (where Barr may often be found communicating or trouble shooting with glowing green figures) is evidence of the high-tech approach his service is using as a management tool. And the classroom-like arrangement of the blackboard and chairs offers proof of a manager who actively pursues an open style of managing, rooted in innovative training and career-development techniques.

Barr came to the agency in 1957 as an inspector through a summer program at Washington headquarters while he was earning a B.S. in electrical engineering from Howard University. He made a winning impression and was hired as an electrical engineer in 1958.

Barr held increasingly responsible positions in preparing standards for the design and installation of systems and working with airport programs. In 1973, after earning an M.S. in engineering (transportation) from Berkeley, he transferred to the Southwest Region as a special projects officer. The following year, he returned to Washington as assistant chief of the Industrial Division, assuming the top spot in 1979.

Referring to the fact that he has become a manager in the field where he began his career, Barr notes wryly, "I've made a sort of wide circle—I've ended up right where I started."

The Industrial Division is comprised of three branches: Quality Assurance (which maintains six field industrial sections in the vicinities of Boston, New York, Washington, Los Angeles, Oklahoma City and Kansas City), Industrial Evaluation and Quality Standards.

The Quality Assurance Branch serves as the eyes and ears of FAA's procurement activities by providing Quality Reliability Officers (QROs) at the plants of manufacturers who supply material and equipment for the National Airspace System. These representatives are responsible for evaluating the adequacy of the companies' own quality assurance systems, their continued compliance with those systems and the inspection, test witnessing and ultimate acceptance of the product.

The QROs are also responsible for monitoring overall contractor progress, advising other FAA organizations of potential problems and recommending solutions.

The Industrial Evaluation Branch is

Alphonso Barr Photo by Bob Laughlin

"He is managing an extremely diverse organization in a personal way."

Reviewing a significant activities chart for the ASR-9 radar program are (from the left) Ed Huntzinger, manager of the Industrial Evaluation Branch; Henry Arch, industrial engineer; Alphonso Barr, manager of the Industrial Division; and Paul Przedpelski, industrial engineer.

Photo by Bob Laughlin

responsible for evaluating a contractor's total manufacturing capabilities. The branch performs industrial engineering analyses on major system procurements, giving technical advice on the progress of a contract to the program offices and the contracts division. The staff also conducts pre-award surveys for headquarters procurement and for certain center and regional buys as well. This branch also is the focus of long-range planning in the division.

The Quality Standards Branch takes the lead in developing industrial and quality-assurance standards for NAS systems, equipment and computer software. The staff also is called upon by top management to perform a variety of special projects. Current examples include ▪ implementing a reprocurement data policy (whereby FAA may purchase the contractor's technical data along with the system and thus avoid future sole-source contracts), ▪ studying the effectiveness of current software quality standards, ▪ establishing a quality-assurance technology course at the FAA Academy and ▪ serving as the Department of Transportation's modal liaison for distributing information on faulty microchips uncovered by the Department of Defense.

As manager of this diverse group, Barr is in a unique position to help set state-of-the-art quality-assurance policies to fit the wave of new "Brown Book" systems—like TCAS I and II (collision avoidance), MLS (microwave landing system), Mode S (radar communications link), ASR-9 (new airport radar), advanced automation and the host computers—that are leading the agency into the next century.

To keep ahead of this tide, Barr has advocated extensive training courses to keep up with technological changes in the sort of procurement FAA makes, especially the meteoric rise in the importance and complexity of computer software.

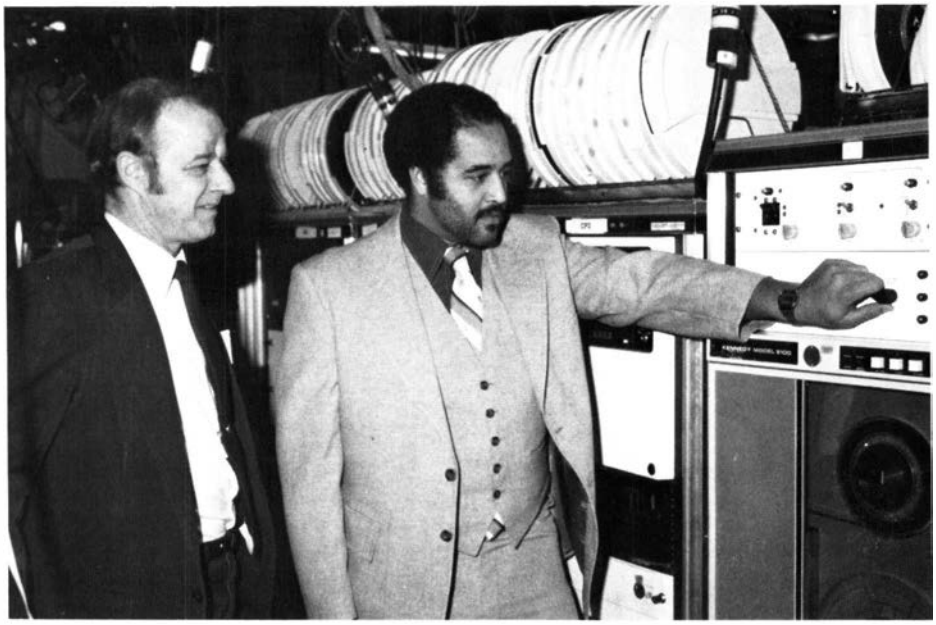
Says Barr, "I think we've been doing more training than many of our colleagues because of this explosion."

Jack Spankenbell, manager of Quality Standards, agrees, saying, "Quality assurance is much tougher with software; you can see and touch a problem with hardware. It's becoming a predominant factor in contracts, both in costs and schedules."

Another theme of Barr's watch is the shift towards relying on auditing, trend analysis and statistics for quality assurance, rather than using inspectors only as policemen. "With the auditing system," says Barr, "you free the inspectors from counting nuts and bolts. Instead you have a total accounting of the production, from early design to rolling off the production line."

A manager on Barr's staff notes that in the past, large contracts could have as many as 22 QROs in the plant, but with auditing, three is the norm. The simple idea behind this is to shift the onus for quality from the government to the contractor, where it belongs.

Barr's tenure also has seen the creation of many management training courses adaptable to the latest quality-assurance ideas in manage-



Roger Young (left) and Marc Saulet, both quality reliability officers in the Boston field industrial section, inspect hardware built for the DARC system.

Alphonso Barr (right) and Paul Przedpelski go over the status of tasks on the Industrial Division's planning board.

Photo by Bob Laughlin

ment circles. As Barr sees it, one of his major duties is reconciling two valid, but sometimes competing imperatives in the procurement process: "When technical people and engineers talk about quality, they talk about statistics and probability. When top management talks about quality, they talk about dollars and cents."

To keep the latest quality-assurance ideas in the foreground of management decisionmaking, the Industrial Division instituted the previously mentioned quality-assurance technology course conducted at the Academy last June and July. The 67 students attending represented headquarters and the field. Three classes have been tentatively scheduled for this fiscal year.

All of these efforts to keep the Industrial Division moving into new areas appear to derive from Barr's natural traits as a manager. It seems that Barr early on embraced the most dynamic elements of the human relations movement, seeing them both as good management sense and as offering employees the best chance at rewarding careers. He has been especially enthusiastic in his use of Individual Development Plans (IDPs), in which the agency uses formal training, both in the government and out, rotational assignments and temporary promotions to supervisory and nonsupervisory levels to encourage career development.

Kudos for his leadership are not hard to find among Industrial Division employees, and descriptions like "open and honest" and "people-conscious" frequently come up. Ed Huntzinger, manager of the Industrial Evaluation Branch, says, "He is managing an extremely diverse organization in a personal way. And he also must do a lot of coordinating with the offices who are on the receiving end of the systems we review."

Ray Guerra, manager of Quality Assurance, who coordinates the field industrial sections from Washington, says, "Al is very sensitive to the needs of our field people and their families, who have to uproot and move fairly regularly. He tries to explore every possibility before relocating people."

Herb Carnesecca, a field industrial section supervisor in Kansas City, concurs and notes that Barr's managerial concerns do not end at the Potomac River: "He gets out to the sections as much as possible, and he's very receptive to including the section supervisors and staffs in major decisions."

And Al Hochstein, who recently completed an IDP rotational assignment from the Tech Center in the form of a 120-day promotion to a headquarters industrial specialist post, attests to the success of the program which Barr nurtured: "It gave me the chance to be a part of the headquarters team, which is good for my career. But it also benefits the agency, because it was a very productive assignment." The mutual benefits of such programs must be particularly evident to a manager like Barr, who began his career in a summer co-op program.

All of which seems to show that for the employees of the Industrial Division, whose job it is to seek quality, Alphonso Barr has earned the seal of approval. ■

By Judy Nauman
The assistant public affairs officer in the Northwest Mountain Region, she's a would-be sports magazine writer.

Flightlines and Sidelines

Inspector's Second Love Is Working on a 'Chain Gang'

When it comes to watching football, the best seat in the house for most of us is the one closest to the television set. But for Bob Westhoff, unit manager of the Air Carrier Inspection Group at the Denver Flight Standards District Office, his best seat is as close as one can get without wearing shoulder pads.

Because Westhoff helps officiate for Denver Broncos games, every home game finds him close enough to hear groans as the players make con-ct and to experience, as only those i the field can, the intensity of the ians' cheers and boos.

And if his vantage point isn't enough to make every armchair quarterback green with envy, how about the fact that Westhoff gets paid for this thrill?

He works with five others on the "chain gang" or "chain crew"—or the "line-to-gain crew," as it is more formally known—and wears the white uniform of an assistant official. In the National Football League, it is the home team's responsibility to provide assistant officials, and Westhoff and his chain crew colleagues work in concert with the game officials.

Taking direction from the head linesman, the six-member chain crew moves up and down the field marking the progress of the team with possession of the ball. Two people hold a pair of stakes with a 10-yard chain stretched between them to mark the yardage necessary for a first down. One is the "box man," or down-marker carrier; another member is the auxiliary marker carrier on the opposite side of the field; one is the 30-second-clock time keeper; and then there's Bob Westhoff.

Westhoff's duties include putting a clip through a link on the yardage chain to note the yard line closest to the rear stake each time a team gets a first down and the chain is repositioned. It is this clip that is used by game officials for accurate placement when measurement is necessary to determine if a team gained enough yardage for a first down.

Air carrier inspector Bob Westhoff holds a yardage stake during a pre-game check of the chain crew's equipment.

Westhoff's other duty is an important link in the NFL's quality-control system for game officials. He keeps a record of every penalty call during the game, which official made the call, against which player and team, when and where the penalty occurred and the amount of yardage charged.

These statistics are then turned over to the NFL and compared with video tapes made of each official during the game. In this way, both the officials and the NFL keep track of the officials' performance. During halftime, while the coaches review their plays, the officials review their calls, using Westhoff's stats.

His workday on the chain gang begins with brunch in the press box,

rubbing shoulders with national sports media personalities and reporters and spicing up roast beef and chili dogs with a healthy dose of sports talk.

Shortly before the game starts, the chain crew makes its way through the sea of orange-clad Denver fans to the sidelines for a pre-game conference with the officials. Despite the paycheck signed by the Broncos, the chain crew is expected to abide by the same NFL rules governing the game officials. That includes no show of partisan support.

"That's no small feat," says Westhoff, who, like his colleagues, professes a long-term love for the Broncos. "We've all had years of experience officiating for high school sports, and one motivation to keep team loyalty under wraps is our respect for the highly professional role of game officials."

Possibly of equal incentive is the fear of losing the coveted position on the Broncos' chain crew. A position once landed is seldom resigned short of death or a serious infraction of the rules. The average service on the crew is over 15 years. Westhoff is new to the crew, having been appointed only a year ago because of the previous member's failing health.

There are some who would say that membership on the chain crew is based on well-placed connections, but an even greater criterion is experience in sports officiating. The six members of the Broncos' chain crew have had the whistle between their teeth for a collective 150 years.

For Westhoff, sports officiating has been a way of life for over 21 years. His favorite sports have been baseball and football, but he works

Black and White and Booed All Over

An hour and a half after the Denver Broncos-Seattle Seahawks football game in Denver, and I'm still so pumped up I can't sit down. There's nothing quite like seeing an NFL football game from the sidelines—eye to eye with the quarterback, ear to ear with the coach, face to face with the referee.

You see the game as the players do, experience the game as the players do and hear the roar of the fans as the players do. You become a participant, a part of the game, joining the choreography of the sidelines, as the press corps, chain crew and ball boys scurry back and forth following the progress of the football. Each individual scrambles to do his or her own job, each oblivious to the other.

This gave me a chance to observe the officials at a game—these people whose position requires courage and studied objectivity, something I had never appreciated.

"There's no such thing as a good ref; some are simply more blind than others!"

"How much they paying you for that call, ref?"

These are some of the songs that accompany the work of an official. Even before the Broncos game had started, this aspect was brought home to me. As I followed Bob Westhoff and chain crew colleague Bob Meschoe, both dressed in officials' whites (with black and white striped shirts underneath), into Mile High Stadium, they were greeted by fans already well lubricated with pre-game festivity for less-than-complimentary comments about sports officials in general.

As the game progressed, I began to understand the responsibility officials carry for the overall cadence of a football game and the overall blame they carry for the general outcome.

I also began to understand how courage—a requirement spelled out in any official's manual—figures in: the courage to stick to a call despite incredible pressure and the courage to intervene in an on-field brawl to separate 250-pound hulks with flailing arms and freight-train bodies; not to mention having the patience and diplomacy necessry to explain yet again to a Monday-morning quarterbacking associate why a call was made.

There's not a lot of glory in what these folks do nor a lot of money. Owning an infamous call is as close as some will come to being entered in the history books.

But there is a drive, an intensity and a commitment to the game comparable to what one can see on the faces of the players themselves.

Despite the countless rehashes on refs' calls, one can't help but feel that the teams have a respect and appreciation for the officials—sort of like the understanding a quarterback has for a defensive line: you can't do without them, but you sure don't want to get in their way. ■

Westhoff (second from right) attends a pre-game conference of the line-to-gain crew with Headlinesman Leo Miles (in striped shirt).

In mufti, inspector Westhoff (right) consults with an operator at Denver Stapleton Airport.

all four seasons, officiating for basketball and softball, as well. He played sports throughout high school and college and turned to officiating after college when "physical stature precluded going into pro ball."

Sports officials are rarely heroes in the eyes of fans, coaches or players, and financial rewards are slim. Therefore, there have to be intangibles that keep Westhoff and others like him on the road and countless playing fields weekends and evenings. "I'm into officiating because I really like the kids," he explains, "and I find it's a great way to burn off energy built up behind a desk during the day. After a game, I'm tired, but it's that kind of 'good' tired where you're physically beat but satisfied."

Westhoff downplays the possible risks of the avocation, claiming that the worst an official has to contend with is verbal abuse. His wife of 27 years, Bev, agrees. She used to watch when he had a game to call, "but it got so I couldn't stand what the fans would call Bob. The last time I went, I was with another official's wife, and she almost got into a fight with a guy behind her who kept yelling names at him."

Despite the abuse, sports officiating runs in Westhoff's family. Two of his three sons now work as sports officials. "You should hear all the second-guessing that goes on between those three after a close-called game," Bev comments.

When not officiating at sports, Westhoff kicks tires on 747s and DC-8s. In his work for the FAA at the Denver Flight Standards District Office, he supervises the work of 23 people, while maintaining currency on several widebody and commuter jets as an air carrier inspector.

Westhoff began his career as a pilot at age 16 on his dad's ranch in Colorado and his career with the FAA as a controller at the Greater Cincinnati (Ohio) Airport in 1957. Now, 6,000 flight hours later and after 31 years in federal service (including an Air Force stint and piloting for FAA headquarters), he still finds working in aviation a thrill.

When asked whether he loves airplanes or football better, Westhoff is torn. "Both are similar in their demands. Both require constant training, vigilance and awareness in applying the rules. You're also working with professionals in both, which is always rewarding."

When pressed to make a choice, he responds, "airplanes, for sure, but," he adds wistfully, "you know, aside from my wife and family, my idea of heaven would be to fly the space shuttle on the way to officiating at the Super Bowl." ■

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