

# FAA WORLD

APRIL 1977

An aerial photograph of a city, likely Los Angeles, showing a dense urban area with a prominent skyline of skyscrapers. The image is overlaid with a complex, teal-colored geometric pattern consisting of interconnected lines forming various polygons, primarily hexagons and pentagons. The pattern is semi-transparent, allowing the city details to be visible underneath.

**MSAW**



**Q** I was hired as a GS-301 Flight Data Aid. Two years later I was changed to the GS-2152 air traffic controller series. During those two years, my job had the identical job description and responsibilities. Is there any way that these two years can be changed to count toward my 20 years retirement?

**A** Unfortunately, no. The two years of service when you performed the duties of a Flight Data Aid cannot be changed to allow credit for early retirement benefits under PL 92-297. In order to be creditable, service must be as a career controller, GS-2152, actively engaged in the separation and control of live air traffic.

**Q** As an operations inspector, I was recently scheduled to conduct two helicopter checks some distance away. I was to use rental aircraft for travel out and back and conduct training for a new employee enroute. I departed the airport where our office is located by government car at 0650 and arrived at the airport where the rental flight was scheduled for 0730. Because of mechanical trouble, the departure was at 0815. We arrived at our destination at 1115. After conducting the flight checks, we departed at 1500, landing at 1800, left for the office at 1825, arriving at 1900. I left my briefcase in the office and departed for home at 1910. Our normal duty hours are 0800 to 1630 with a 30-minute lunch break. Although my actual time was 12 hours and 20 minutes, time and attendance shows only 0800 to 1630. We are not allowed travel time as time worked as either overtime or compensatory time unless it is connected with an accident investigation. What Civil Service rules and FAA policies or Order allow this? Does this policy comply with the Fair Labor Act?

**A** Section 5542(b)(2)(B) of Title 5, U.S. Code, states that time spent in a travel status away from the official duty station of an employee during non-duty hours is not hours of employment unless the travel (1) involves the performance of work while traveling, (2) is incident to travel that involves the performance of work while traveling, (3) is carried out under arduous conditions or (4) results from an event which could not be scheduled or controlled administratively. This is repeated in Section 550.112(e)(2) of the Civil Service Commission's regulations and FAA Order 3550.10, "Pay Administration (General),"

Section 3. The travel you described does not meet any of the first three conditions listed above and cannot be considered travel which could not be scheduled or controlled administratively. This refers to the ability of the agency to schedule or control the event that requires the travel. Since the FAA could control the beginning and ending of the tests, the travel could not be considered duty status. The work situations described in Example 5 of Appendix 3 of Order 3550.10 are similar to the one you described. Agency travel regulations under the Fair Labor Standards Act have not been issued. Only nonexempt employees will be covered by the FLSA travel regulations, which doesn't include inspectors GS-9 and above.

**Q** Our tower chief and his assistants take over an hour for a coffee break. Is there the same time allowed controllers?

**A** There is no specific provision for coffee breaks in regulations issued by the agency or by the Civil Service Commission. However, brief relief periods during the daily tour may be granted when, in the discretion of management officials, such rest periods are considered beneficial or essential to the service. Obviously, an hour could not be considered a brief break.

**Q** Is there a conflict of interest when an employee of an FSS acts as a flight crew member of an aircraft and receives compensation?

**A** Whether or not the activity constitutes a real or apparent conflict of interest depends on many factors that are not described in the question, and determinations can only be made on an individual basis. Regulations on conflict of interest are in Order 3750.3A, which have been distributed to all FAA employees, and there is additional info in Handbook 3750.4. If an employee has a question on these guidelines or wishes a determination on a specific activity, he should contact his Review Official, who is identified in paragraph 12 of the order.

**The cover:** The Minimum Safe Altitude Warning system (see story on page 4) divides up terminal airspace into two-mile-square blocks programmed to warn controllers of aircraft not maintaining adequate terrain or obstruction clearance.

Aeronautical Center; Clifford Cernick—Alaskan Region; Joseph Frets—Central Region; Robert Fulton—Eastern Region; Neal Callahan—Great Lakes Region; Michael Benson—NAFEC; Mike Ciccirelli—New England Region; David Myers—Northwest Region; George Miyachi—Pacific-Asia Region; David Olds—Rocky Mountain Region; Jack Barker—Southern Region; K.K. Jones—Southwest Region; Eugene Kropf—Western Region

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## EDITORIAL

*In ceremonies at headquarters, Administrator McLucas (left) presented a plaque and a check for \$400 to Rudell Murphy of the Voucher Unit of Southern Region's Accounting Div. as Suggestor of the Year. Her idea involved cutting paperwork and data gathering. Southern Region Director Philip Swatek (right) looks on.*



## A Farewell Perspective

As I leave the FAA after nearly a year and a half, I would like to share with you my impressions of the agency gained from the unique perspective of the Office of the Administrator.

For the past 16 months, I have dealt with a wide range of issues: the Concorde; air-traffic-control job standards; a national noise-abatement policy; safety, management and procurement problems; R & D programs; and many more. I have seen the agency from every angle. I have heard the FAA described in glowing terms and have heard it characterized as an unresponsive pack of rascals. I am not unaware of the problems, nor can I say there is no room for improvement in dealing with them.

Yet, in light of all these considerations, I believe the FAA is a first-class organization that has an exceptionally large number of high-caliber professionals within its ranks. This is not a sentimental assessment made just at a time of leave-taking. I think the facts support this judgment. While FAA cannot claim credit for all the good things about American aviation, the agency can take justifiable pride in the part it plays in producing and maintaining an air transportation system that is without question the best in the world.

The president of the Air Transport Association, Paul Ignatius, told me recently, following an extensive trip abroad, that he was very much impressed with the high regard for FAA in the countries he visited. And this impression is substantiated, in my view, by the fact that

last year alone the agency provided advice and assistance to the civil aviation authorities of some 50 countries. Here at home, our record is equally good. Indeed, last year was one of the safest in aviation history. That remarkable achievement speaks eloquently and convincingly of the professionalism and high standards of the aviation industry and the FAA.

I leave my successor something of a mixed legacy. Many of aviation's perennial problems remain unsolved and new ones are certain to appear. But, fortunately, he will not have to face these problems alone. I know from experience that he can count on the support of every FAA employee in meeting the challenges that lie ahead and that the agency will continue to perform in the same outstanding manner that has characterized its 50 years of public service.

I want to thank all of you for your service during my time as Administrator. I will miss the many personal and professional relationships I have enjoyed during the past year and a half, and I will continue to follow the FAA with avid interest and fond remembrances.

*John L. McLucas*  
**JOHN L. McLUCAS**  
Administrator





## A BLINK FOR SAFETY

One of the FAA's newest safety features blinks when it wants the attention of air traffic controllers.

The "come hither" is one of the means that the Minimum Safe Altitude Warning (MSAW) system uses to alert controllers to a potentially unsafe approach to a terminal. It is being added to the agency's 63 ARTS III systems at major airports throughout the country and represents a major enhancement of that radar system through additional computer programming.

MSAW monitors the flight paths of aircraft equipped with transponders and automatic altitude-reporting equipment to determine adequate terrain and obstruction clearance. It does so by comparing the flight path with a three-dimensional map of the ter-

minal area that is stored in the ARTS III computer.

When a possibly unsafe condition is detected by the computer, a five-second alarm is sounded and the words "LOW ALT" blink on the radarscope just above the aircraft's data block. The controller then issues an advisory to the pilot, "Low altitude alert, check your altitude immediately."

According to Frank Cunningham, chief of the Air Traffic Operations and Procedures Branch, "This system in no way alters the basic responsibilities of pilots and controllers. Pilots still have the direct responsibility under the Federal Aviation Regulations for safe altitude management, and the controller still has the requirement to call the pilot's attention to any operation that, in his judgment,

may affect the safety of the flight."

MSAW is expected to be operational at all 63 ARTS III facilities by the end of May. The first two were commissioned last November at Los Angeles and Dulles International Air-

*This trio was instrumental in programming the minimum altitudes for airports served by the Los Angeles TRACON. Left to right are Jim Hinton and Jim Phillips from the Hawthorne Tower and Jim Gstoettner from Coast TRACON.*



ports, where an agency team worked with the contractor, Sperry-Univac, to shakedown the system before the remaining systems were installed.

Los Angeles Tower chief James A. Holweger said, "It took about eight or nine months of struggle before MSAW would play effectively here, but now it's definitely a help."

"It's become a routinely accepted tool at Washington-Dulles," tower chief Bob Logan noted. "We did a good amount of planning before the shakedown began, and we managed to pull together the training needed to get the system going."

Nevertheless, it does take the right kind of encoding transponders in the aircraft and a properly programmed computer and functioning beacon radar for MSAW to work. And deliberate low flight, such as with a VFR light plane, might put it below the line of sight of the beacon radar and unable to be monitored by the MSAW system. Of course, when it's deliberate, the system's blindness can be a boon—the controller won't be receiving continuous alerts.

The primary constraint on timely MSAW alerts relates to the fact that the antenna rotation, or scan, is about four seconds. The length of time needed to establish a definite course or altitude change is two scans or eight seconds. If a pilot makes an abrupt descent or course change toward an obstruction, depending on the distance from the obstruction, it may be too late for a controller alert to bring about correction in the aircraft's flight path.

FAA began the development of MSAW following the Eastern Airlines L-1011 accident on Dec. 29, 1972. The aircraft crashed west of Miami International Airport as the crew was preoccupied with a malfunction of the landing-gear position indicator. Following the investigation, the National Transportation Safety Board recommended that FAA incorporate an altitude monitoring/warning system into the ARTS III.

A concerted effort by the Air Traffic Service, the Systems Research and Development Service, NAFEC and a



*Los Angeles Airway Facilities Sector ARTS Unit chief Ron Farmer (left) discusses the MSAW enhancement program with regional automation specialist Doug LePage and DSS Dick Polk (in sport shirt), while ET Sam Myers checks a circuit in the TRACON's Sperry-Univac computer.*

## MSAW—How It Works

The Minimum Safe Altitude Warning System works for all aircraft operating under instrument flight rules (IFR) and on request for visual flight (VFR), provided, in both cases, that the aircraft are equipped with 4096-code transponders and altitude encoders.

MSAW performs two functions—General Terrain Monitoring and Airport Approach Path Monitoring—using three-dimensional grid maps of the terminal area that are stored in the ARTS III computer. Each grid is two miles on a side and reaches from ground level to the highest point of elevation or obstruction in its area. Each terminal area has 4,096 grids, which is coincidental—it has nothing to do with the number of transponder codes.

MSAW service begins when an aircraft enters the terminal area and is tracked by the ARTS III computer. During Terrain Monitoring, MSAW makes altitude checks each time an altitude report is received from an aircraft, or once per radar scan. Three checks are made:

- **Current**—The altitude report is checked to see if the aircraft is 500 feet or less above the high point of the grid directly beneath the plane. If no alert is generated, the second check is made.

- **Predict**—The next check is a prediction where the aircraft would be in 30 seconds if it were to continue with no change in its path. Regardless of whether the aircraft is level, descending or climbing, this portion of the computer program determines if the aircraft will be 300 feet or less above the altitudes of the grid squares along its path. If no alert is generated during the first two checks, the third is made.

- **Project**—This check is made along a projected five-degree climbing flight path to determine if such a path will take the aircraft 300 feet or less above all squares.

The Airport Approach Path Monitoring function takes over as the plane enters one of the rectangular areas called "capture boxes," which are two miles wide and extend out from the ends of runways about five miles. Here, the *Current* check is for 100 feet below the minimum descent altitude, while the *Predict* check determines if the aircraft will be 200 feet or more below the minimum descent altitude in the next 15 seconds.

This approach-monitoring function ends when the aircraft is two miles from the end of the runway, because it isn't practical to monitor it during the final few seconds.



large number of field and regional personnel resulted in demonstrating the feasibility of a terrain-monitoring system at NAFEC, letting a contract to develop a prototype and installing it at Stapleton International Airport in Denver in February 1975.

The Denver test lasted for two months. SRDS project engineer Bill Wilson reported that refinements were needed, which were made and retested at NAFEC's Terminal Automation Test Facility.

Then, Los Angeles was selected as the first operational site because it has dual beacon radar, the support equipment to debug the system and the rugged terrain and volume of traffic that would point up any further problems in the system.

"Getting the MSAW to work has been a slow process," Leroy Dibble of Air Traffic's Terminal Operations and Procedures Branch, noted. "It's a new program and requires tailor-made digital terrain maps for each of the 63 ARTS III sites. Digging out the terrain and obstruction-elevation data and the job of verification was the herculean



The NAFEC program team for MSAW prepares for a flight check in which the flight path will be deliberately low to trigger alerts. Team members are (from the left) Bob Clark, project manager; Ted Billen, project flight test pilot; Jesse Terry, project pilot; and Don Schlots, program manager.

task of the field facilities." James O'Malley, of the AT Automation Division's Terminal Systems Branch, added, "In Los Angeles alone, the field staff had to look at 500 U.S. Coast and Geodetic charts to check the terrain data."

Although further refinements to the

MSAW system will be made, it is here and now for terminals. But SRDS and Air Traffic planners are looking ahead to terrain monitoring for enroute centers. Considering the amount of real estate to be mapped there, they've really got their work cut out for them!

—By Alexander F. Garvis

**ROCKY MOUNTAIN HIGH** . . . Dave Olds, the FAA Public Affairs Officer in the Rocky Mountain Region, has come up with a list of air traffic control definitions that probably will earn him a place on the "enemies list" of the various controller labor and professional organizations. For example, an "ATC Clearance" is defined as "A verbal method of compelling a pilot to fly a route and altitude he otherwise would never have selected." But the one we like best is his description of "Basic VFR Minimums" as "Those weather conditions under which a chicken can clear a low fence while maintaining satisfactory forward visibility." Maybe Dave has been breathing that rarified air in the Denver office a little too long.

**BY THE TIME HE GETS TO PHOENIX (HE'LL BE HUNGRY)** . . . When Stan Grates was promoted from chief of the San Jose, Calif., General Aviation District Office to chief of the Phoenix Flight Standards District Office, his co-workers

## SMALL WORLD

decided no expense was too great in arranging his farewell luncheon. So they held it at the local McDonald's, arranged for the head table to be covered with a red and blue "Snoopy" paper tablecloth and gave the guest of honor carte blanche to order anything on the menu. After devouring his "Big Mac" and downing his jumbo shake, Grates looked over the assembled guests, discarded his prepared remarks and said simply: "I find it difficult to say 'thanks'." "Small World" doesn't doubt that for a minute.

**DON'T FENCE ME IN** . . . Recently, a nine-year-old boy in Arlington, Tex., submitted an unsolicited proposal to the

FAA's Southwest Region for an airport design that included such things as multiple runways, ticket and reservation facilities, boarding gates, fueling facilities, automobile parking lots, highway and taxiway bridges, interchanges and ramps and even a hotel. Southwest Airports chief Hugh Lyon responded to the youngster and commended him for his interest in and knowledge of aviation. However, he did find one minor flaw in the airport design and wrote: "One of the things you might want to look at again is the size of the airport. I believe you will find that you would need more than 15 acres. . . ."

**SIGN OF THE TIMES** . . . To the victors belong the spoils. So it was not surprising that shortly after the new Administration took office in January, this sign appeared in the central Xerox facility at the FAA Washington Headquarters: "Please No Xeroxing Republican Resumes." At least somebody in Washington has a sense of humor.

# FEDERAL NOTEBOOK

## THE PAY STORY

While a 6.5 percent increase for October was built into the budget, to which the new Administration did not object, former Rep. Jerry Waldie of California thinks that the recent Congressional pay raise may be a fly in our ointment. Will Congress agree to a full comparability raise when it means a second raise for themselves in the same year? ■ As Chairman Robert Hampton left the Civil Service Commission, he reiterated the idea that blue-collar pay should be held down to produce a 12 percent cut over the next few years. CSC believes that blue-collar pay exceeds prevailing industrial rates and in some cases produces inequities between blue-collar and white-collar pay.

## THE RETIREMENT SCENE

Each year, the reading is the same: The "aggregate 80" retirement bill's chance of passage is slim and the chances for passage of a 30-years-at-any-age bill is better. The "aggregate 80" bill would permit an immediate annuity when the total of years of service and age is 80.

■ The General Accounting Office is looking into the idea of combining all Federal retirement systems into one. There are 51 Federal and quasi-Federal systems, according to GAO, which began the project at the behest of Rep. Melvin Price (Ill). ■ Rep. Gladys Spellman (Md), chairwoman of the House Compensation and Employee Benefits Subcommittee, has introduced legislation on two survivor-annuity problems. Under her bill, when the designated survivor of a single retiree predeceases, the reduction of the employee's annuity would end, just as it does for a married employee under a

1974 law. The other provision corrects the law whereby a retiree who remarries automatically has his survivor annuity designation reinstated, whether he wants it or not. Her bill would give the retiree a year in which to decide.

## WHAT THE OUTSIDE WORLD IS LIKE

CSC statistics show that there are 63 inquiries for every Federal job opening and that a rating below 95 on the PACE exam leaves only a slim chance of being hired.

## WITHOUT COMMENT

Rep. Teno Roncalio (Wyo) has introduced a bill to convert FAA into an independent government corporation.

## CATCHING UP

Women employees have had the option of using "Ms" and/or their maiden names in payroll and personnel records, but now CSC is revising all of its personnel forms to include "Ms" and has instructed agencies to incorporate it on their internal forms.

## UP OR OUT

The U.S. Court of Appeals has supported the agency's right to remove employees who fail to progress satisfactorily toward target positions, saying it was necessary to ensure safety.

## HATCH INCUBATING AGAIN

Twenty-five Congressmen are co-sponsoring this year's bill to amend the Hatch Act, but despite Administration support this time, the staff director of the House Post Office and Civil Service Committee says it's not a shoo in. Some voted for the bill last year, he says, because they were sure of a Presidential veto.



A real child keeps the company of a pair of extant infant dummies. New ones planned will look more like the figure in the middle.



## Of Dummies and Kids and Body Maps, Of Health

## and Safety Planning

Children are not just little people, doctors have come to realize. They not only are shaped differently from adults but also are balanced differently.

The significance of this is important in human engineering for safety. It's important to Dr. Clyde Snow, head of the Physiological Anthropology Research Unit of the Civil Aeromedical Institute (CAMI) at the Aeronautical Center, who is doing the research that will lead to making new impact dummies that can be used in crash tests of new machines and safety equipment.

Existing child-size crash dummies have proved unsatisfactory because they weren't modeled after the real thing. Dr. Snow says, "As humans mature, the center of gravity of the

body shifts downward. In infants, the head accounts for 25 percent of the body's length, while in adults, it represents only 10 percent."

FAA scientists have been measuring small children, from ages 2½ to 6½, as a prelude to manufacturing a pair of dummies representing typical three- and six-year-old children. These mannequins will be so anatomically correct that even the center of gravity of different parts—arms, legs and head—will be true to life.

Using techniques that were employed to monitor shifts in the physiologies of astronauts subjected to extended periods of weightlessness, the CAMI anthropologists are trying to build dummies that will flop and pitch about like real children in collisions.

In gathering the data, a child's body is photographed from four angles simultaneously. The four photos are put into a stereoptical viewer, which provides a three-dimensional effect for evaluation in the Bioisometric Laboratory in Houston. This facility is collating all the measurements that engineers will use for constructing the dummies. While many of Dr. Snow's people are anthropologists, many of the specialists on the project in Houston are actually cartographers, or map-makers.

After photographing, the children are taken to a device that measures their height and proportions at various points with extreme accuracy. The machine shines a thin bar of light across the child's body until it hits reference



A baby map by the Bioisometric Laboratory



Fontaine Young, CAMI anthropologist, operates the photoanthropometer, which is used to measure pre-schoolers' body structure prior to mapping.

points and then feeds 40 measurements into a computer. In a minute and a half, it can measure even the squirmiest child.

"What we are producing is actually a contour map of a typical child's body," Dr. Snow explained. "But the measurements are so precise and fine that from this contour drawing's one-centimeter increments, we can compute the body volume to within one percent."

Once the dummies are delivered—in about another year—they will help in the design of safety restraints usable by both children and adults. While all this is being done at the behest of the National Transportation Safety Administration, the spin-off for FAA is obvious, and the dummies will also be useful in air crash tests and in evaluating life preservers.

Dr. Snow turned back to a five-year-old girl he was measuring, who now presented her chin for a reference mark. As he made notations on the chart, he said, "What she is doing today probably will be of benefit to her own children some day."

You're on the job one day when one of your co-workers suddenly collapses. The person may have fainted, be choking or having a heart attack. Seconds count. Do you know what to do to save a life?

Because time is vital, there is a growing recognition of the need for trained personnel to be on the site of emergencies, until medical help arrives. While training programs for cardio-

pulmonary resuscitation (CPR) have been getting under way in many private and government offices, few are going at it to the extent NAFEC is.

If you work at NAFEC, chances are that someone nearby does know what to do, for more than 100 employees have completed this training during working hours. The center's goal is to train at least 250 of its 1,800 employees in CPR.

Cardio-pulmonary resuscitation is a lifesaving technique used to revive a person whose heart has stopped by manually keeping the heart and lungs going. The NAFEC employees—all volunteers—are taught how to determine in seconds what caused the person to collapse and what to do.

"The CPR technique is of great value and comfort to our employees," NAFEC Director Robert L. Faith says. "Just knowing that if something happens to you, someone near can help is important."

He considers the CPR training so important that he authorized the classes to take place during working hours, provided the employees can be spared from their jobs.

The course was planned by Dr. Albert E. Marchetti, Medical Staff chief, and Tim Barry, chief of the Labor Relations Branch, who is a CPR instructor certified by the American Heart Association. Dr. Marchetti believes the center's program is unique, that such training elsewhere isn't on the scale of NAFEC's.

Barry, a former lifeguard, is the

captain of the rescue squad in his home community and has had considerable training and experience in lifesaving techniques. As a consequence, Barry trained the initial class of seven instructors at the center.

NAFEC got the program moving by soliciting volunteers with a coupon application in *Intercom*, according to George Rau, chief of the Training Branch, which handles the course. "Initially, about 250 signed up. After word got around following the first few classes, still more asked to sign up. We expect still more to volunteer."

The size of each class is about a dozen persons and consists of three three-hour sessions with two instructors per class. Barry's training of the instructors, though, took 20 hours in a curriculum specified by the Heart Association.

For classroom practice, three types of mannequins were purchased. One life-like dummy, named "Resusci-Andy," is used for practicing the precordial thump used for restarting a stopped heart and for mouth-to-mouth resuscitation. "Recorder-Annie" is a more complex dummy. Its built-in recorder indicates immediately how good the student's CPR technique is—hand position, depth of compression, ventilation and timing. The third dummy, "Resusci-Baby," is just for learning how to handle babies. The course also teaches students the early-warning symptoms of when CPR is needed.

To win their Heart Association certificates and CPR jacket patches, the students must pass a multiple-choice written test as well as a practicum on all three dummies. If "Recorder-Annie" doesn't like their technique, they fail.

—By Frank McHugh

NAFEC Labor Relations chief Tim Barry demonstrates CPR technique on "Resusci-Annie" for (from left) Training Branch chief George Rau, Dr. Albert Marchetti and NAFEC Director Robert L. Faith.







**COVER GIRL**—To pay tribute to his secretary, Charlie Korn, New England Airway Facilities Program and Planning Branch chief, arranged with draftsman Val Hale to sketch Mary Davidson onto the cover of the region's F&E budget, for which she typed more than 250 pages of manuscript.

## FACES and PLACES



**THREE DEPUTY ADMINISTRATORS**—Joining in honoring the 1976 winners of the Radio Technical Commission for Aeronautics' William E. Jackson Award are (left to right) Frank Jensen, RTCA chairman; Dr. Constantine Balanis, West Virginia University; award winner Yuk-Bun Cheng of WVU; previous winner Pete Hwoschinsky, Office of Systems Engineering Management; Jeff Cochran, Acting Deputy Administrator; Dave Thomas, former Deputy Administrator and Acting Administrator; and Lt. Gen. Hal Grant, former Deputy Administrator.

**MR. CLEAN**—Local coordinator and Green Bay, Wis., Tower chief Phil Krinsky presents a Certificate of Appreciation to Airport Director Joe Liebergen (left) for his excellent maintenance of the terminal and grounds, including superior snow removal and janitorial service.



**WE POINT WITH PRIDE**—Eastern Region Director William Morgan recently presented awards to Coast Guardsmen (left to right) Lt. Cdr. Keith Nichols, Lt. j.g. Charles Stephens and Aviation Machinist 3 Lee Taylor for their save of a ditched pilot in the Atlantic Ocean.



**PELICANS AT SUNSET**—A finalist in the 1976 Kodak International Newspaper Snapshot Awards, Bruce Romick, of the headquarters Flight Standards General Aviation Division, had this photo displayed at the Kodak Photo Gallery in New York. His photo was in competition with 325,000 other entries.

**HE FOUND THE WAY**—Administrator John L. McLucas presents a Presidential citation to NAFEC mathematician John VanderVeer (left) for devising improved navigation routes to Hawaii via computer simulation that will conserve five million gallons of fuel per year, a saving of about \$1.5 million.



**TAKE A BOW**—Kermit Imsdahl (right), manager of the San Francisco Airway Facilities Sector, accepts the Sector of the Year Award for his facility from Bob Payne, chief of the Western Region Maintenance Operations Branch.



**A WELL DONE**—All smiles are New England Regional Director Quentin Taylor and local coordinating committee chairmen (left to right) Ray Roschbach, Conn.-W. Mass.; Ralph McDonald, Boston-E. Mass.; Paul Kelleher, R.I.-S. Mass.; Jack Ryan, Maine; and Don Turner, N.H.-Vt., after presentation of Certificates of Appreciation for the quintet's work during their completed two-year terms.

**OUR DEFENSE POSTURE**—Recent visitors to the North American Air Defense system's underground headquarters for orientation briefings were (left to right) Southwest Region Director Henry Newman; Northwest's C. B. Walk, Jr.; Central's C. R. Melugin; Great Lakes' Lyle Brown; NORAD host Brig. Gen. William Comstock; and Western's Robert Stanton, here examining a piece of a space satellite. Rocky Mountain Director Mervyn Martin was also present.





**P**ilot, airplane builder, former CAA "airway communicator," meteorologist, TV weatherman, ex-businessman and incumbent Congressman—all these describe Dale Milford, Representative for the 24th District of Texas.

With that kind of expertise, his opinion in matters of the air traffic system and aviation in general has to carry some kind of weight.

Representative Milford traces his involvement in aeronautics back to 1942 when, as a 17-year-old, he worked in CAA's Engle, N.M., Airway Communications Station, located in a remote mountainous section of the



## He's Big on Aviation

state. The station had a seven-man staff, including him.

"We kept busy," he recalled recently in his more comfortable Congressional office on Capitol Hill. "We had about 40 aircraft contacts a day. We also took hourly weather observations and transmitted them over the teletype, maintained and operated a four-course radio range, lit the airway beacon and maintained an emergency landing field. We volunteered to work 12-hour shifts six or seven days a week—and got no overtime or extra night pay. But that gave us the chance to take longer weekends at other times."

Things could be rough in other ways, too. In a recent statement in the Congressional Record explaining FAA's

flight service station modernization program, Milford recalled the curious circumstances in which he found himself one day back in Engle. "Just after daybreak I had to transmit this very embarrassing weather message on the national teletype circuit:

"Engle, New Mexico — ceiling — missing; visibility — missing; cloud cover — missing; sea level pressure — missing; temperature — missing; dew point — missing; remarks — weather elements missing due to skunk underneath the instrument shelter."

Today, the Engle station is no more; years ago it was replaced by the Truth Or Consequences, N.M., Flight Service Station.

Milford's CAA experience served him well later, when the Army, hungry for men with his communication skills, waived the requirement for basic training and sent him directly to Annette Island, Alaska, as an air controller/communicator. After the war, he earned his wings as an Army pilot and served in Europe and Korea, leaving the service as a captain in 1953.

After attending Baylor University in the mid-1950s, he became a fixed-base operator in Waco, Tex. In the 1960s, he became a nationally recognized aviation and meteorological consultant.

As he pursued his aviation career, Milford earned a walletful of pilot ratings, including private, commercial, multi-engine, helicopter and IFR. Then he built his own airplane.

"In my consulting work, I learned quite a bit about aircraft hardware and FAA certification which encouraged me to build my own. I used plans for an aircraft that was not put into commercial production and built it in four years of part-time work." The single-engine, two-place, low-wing monoplane boasts fully-retractable landing gear and a shark-teeth paint job under the nose.

Once, while flying the plane with his wife aboard, Milford was shocked by a sudden silence when his engine quit over Dallas. He radioed Mayday to air traffic control which gave him the choice of landing at either Love Field or Lancaster Airport. He chose Lancaster and was given directions that took him right over the airport where he made a safe dead-stick landing.

As Congressman, aviator, frequent user and former purveyor of FAA services, Milford is keenly interested in the air traffic system and the health of the American aviation industry. He visited the automated flight service station. (Continued on page 15)

## THE FAA AIRPORT MANAGERS

**T**hey both were trained as air traffic controllers, and now they're using the decision-making skills they learned controlling aircraft for controlling everything but aircraft.

Hugh Riddle, Jr., and Dexter P. Davis are called on to control auto traffic, taxi traffic, bus traffic and especially passenger traffic as part of their jobs as FAA airport managers. Their positions are also unique as the only airport managers in the country employed by the Federal government.

Riddle, the manager of Washington National Airport, learned his controlling craft over a 10-year period at Midway, Meigs and O'Hare Airports in Chicago. Davis was "on the boards" at the Memphis ARTCC for nine years.

The DCA manager occupies a wood-paneled office overlooking the airport. It's not large, but it has a nice substantial feel to it, and it has a great view for those of us who like to watch airplanes take off and land. Riddle talks enthusiastically about his job. "It's like being the mayor of a small community," he says, "with a permanent population of about 8,400 and a transient population of about one million passengers a month."

**A**lthough he is responsible in one way or another for all of these people, only about 400 work directly for him. These are the policemen, firemen, security specialists, engineers, technicians, custodians and financial specialists. They are the people who run the airport community and keep the passenger flow moving to and from the airliners lined up on the airport's many ramps 16 hours a day, every day, with no closed doors for Thanksgiving, Christmas or New Year's. In



*Dulles Airport, far out in the Virginia countryside, and not an aircraft in sight. Only mobile lounges park at the terminal's departure gates.*



*Dexter P. Davis, Dulles International Airport manager*



*Hugh Riddle, Jr., Washington National Airport manager*

*The many-fingered, busy Washington National terminal sits across the Potomac River from the nation's capital.*





fact, during the holidays, they just have to work a little harder.

A major part of Riddle's job is to keep this staff and, therefore, the airport, functioning smoothly. When there's a fire, he's at the scene to settle any problems arising from it. When a political V.I.P. arrives and his 127-member police force is stretched almost beyond its capability, Riddle, in concert with his police chief, decides who will go where and when. And then, there are the complaints that inevitably find their way to his office.

If the fast-food service causes odors in the corridors, he knows about it. If one of the four airline chief pilots stationed at Washington National finds something that is not to his liking, the executive airman calls Riddle. If a tenant's parking space is changed, he's the one who gets collared about it. In fact, all 8,000 tenants at the airport look to Riddle when they have problems to settle or arbitrate.

Passengers also find their way to the airport manager's office with problems as varied as their destinations. Parking is a recurrent one, for at DCA, there aren't enough spaces to go around. He hears about late departures and arrivals and difficulties with taxis, security checks and food service.

"I was working late one evening," Riddle recalls, "when a passenger knocked at my door to complain that he had been unable to purchase a lettuce sandwich at the airport. All I could do is suggest that he invest in a bacon, lettuce and tomato sandwich and discard the bacon and tomato. The man would not be mollified. He insisted that the lack of lettuce sandwiches was unconscionable, and that was that."

Had the situation been rectified—were lettuce sandwiches now on sale at the airport? Riddle conceded that nothing had been done. "We get very few calls for lettuce sandwiches," he said.

Although most of Riddle's day-to-

*The Dulles terminal is a compact 600 feet long. The gates are side by side, for they need to serve only the mobile lounges. Aircraft are half a mile away.*

day dealings are with people problems, he is also responsible for airport operations. He is the person who must close the airport when the runways are clogged with snow, and at DCA, closing the main runway is tantamount to closing the airport completely.

Before Riddle takes this step, which diverts traffic to other East Coast cities and inconveniences local citizens as well as national politicians, he drives out to the runway to see first hand what conditions are like. Then he consults with the airline chief pilots and with his airport snow committee. If there is any question of safety, the airport is closed.

In his own idiom, like the mayor of a small community, he's usually there personally to make the decision, for it's such decisions that ensure a million passengers each month will pass through the airport safely and conveniently.

Riddle prepared for this job by his 10-year stint as a controller, following which he served in the Bureau of National Capital Airports, beginning in 1966. Seven years later, he was appointed manager of DCA.

Dexter Davis came to Dulles International Airport in similar fashion. After nine years as a center controller, he moved to Dulles via the Administrative Management Development Program at Syracuse University. In 1967, he became a special assistant to the airport manager. It took him only five years to become manager.

His office, like his airport, is more spacious and more contemporary than Riddle's, but it lacks the view. Although he surely has a lot more space to work with and fewer passengers to worry about, Davis shares many of Riddle's problems, as well as the DCA manager's enthusiasm for the work.



Still, Davis has some unique concerns at Dulles.

He doesn't exactly run a bus line, but he is responsible for a ground transportation service that must meet demanding schedules and always be on time. Dulles has 33 mobile lounges that ferry passengers between the architectural-prize-winning terminal building and the aircraft parked a half-mile away on the jet apron.

The immediate responsibility for the day-to-day operation of this one-of-a-kind transportation service is delegated to the FAA dispatchers on the field under the management of Hugh Gudger, but when something goes wrong, Davis usually hears about it.

Davis even hears about it when something goes wrong on the road to the airport. An access road usually is someone else's concern, but at Dulles, the 13-mile road is part of the Federal airport. Patrolling the limited-access highway and keeping it free of snow and ice falls under Davis' aegis, too.

addition to representing airport management, I represent the customer, the passenger and the visitor. It's what makes for successful management."

And when the duo needs support from a higher echelon of FAA management in getting the job done, they can turn confidently to Metropolitan Washington Airport Service Director

James T. Murphy, who is also based at Washington National.

It's a big job, and one that often does not end at 5:00. Both Davis and Riddle are on call 24 hours a day. In fact, they both have two-way radios in their cars that are tuned to their respective airports.

Nevertheless, they both love their jobs.

—By Theodore Maher

## The Managers' Managers

It is an entity in itself: the Metropolitan Washington Airports Service is like another FAA region, and James T. Murphy, MWAS's director, like the directors of the 12 geographical regions and two FAA centers, reports directly to the Administrator.

With his deputy, James A. Wilding, Murphy is responsible for the operation, safety and efficiency of one of the nation's largest airport systems.

With the MWAS office rests the overall responsibility for the management of the Washington area airports. This includes such things as the monumental update of the Dulles master plan, bringing the METRO subway to Washington National, dealings with Congress and the Office of Management and Budget, as well as a new

project to get citizen groups involved with noise-suppression programs.

These are just some of the office's concerns. Specifically in charge of engineering considerations, including a great variety of planning, design and construction projects at the two airports, is Francis J. Conlon, chief of the Engineering staff.

Concentrating on money matters is Joseph F. Cadigan, chief of the Financial Management Staff, who shoulders a variety of financial responsibilities, including contracts, property management and fiscal administration.

But as far as the day-to-day operation of the airports is concerned, the guys out there on the firing line, meeting the public are . . . the Airport Managers.

### DALE MILFORD (Continued from page 12)

tion in Atlanta and came away convinced that "it's the only way to go." He added, "We just can't afford to keep running the FSS system in the traditional way. With automation, we can hold down costs and give better service to pilots and the flying public."

A member of one House subcommittee on aviation and chairman of another, Milford is worried about the future of U.S. aircraft manufacturing. "We may lose our preeminence in this area if we don't meet the stiff competition we're getting from foreign manufacturers," he said. "Other gov-

ernments either own or heavily subsidize their aviation industries. Our Federal government should take the lead in aviation research and development for the benefit of American aircraft manufacturers. In this way, we can help offset the tremendous costs our companies face and enable them to build new types of airplanes without going broke. Otherwise, our aviation exports may well decline, and several million jobs could be threatened throughout the industry."

He also strongly favors development of an American supersonic transport.

"We shouldn't abandon this field to others," he declared. "We have the technology to build a fuel-efficient, environmentally compatible and economical SST."

Milford lives in Grand Prairie between Dallas and Fort Worth, and many of his constituents in the area depend on aviation for their livelihoods. Dallas/Fort Worth Airport, the American Airlines training base, Bell Helicopter, General Dynamics and E-Systems all are located in Milford's district. Aviation is big in Milford's home territory, and Milford is big on aviation.

—Story and photo by Don Braun





Air Traffic Division chief Bob Gale got a chance to dub Central Region Director C. R. Melugin one of the day's "heroes."

# A PAT ON THE BACK FROM THOSE WHO COUNT



Given FAA's reputation for service, it's not uncommon for employees to be thanked individually for a job well done. But what's it like when a whole town declares "FAA Appreciation Day?"

"Just overwhelming," is the way one St. Louis, Mo., Airway Facility Sector employee put it when that celebration was staged at Spirit of St. Louis Airport Nov. 20, in honor of all the local agency personnel and their families.

The idea that became "Appreciation Day" originated with St. Louis pilot Frank Block, who hangs his Beech Sundowner at Spirit, which is also the location of the St. Louis FSS, Spirit Tower and an AF Sector Field Unit. While preparing for a flight late last summer, Block received what he thought was an exceptionally good weather briefing from St. Louis FSS specialist Joe Anne Kraemer.

"I had long felt FAA was doing a

fine job," Block said in explaining how the event came about, "but after that briefing, it hit me; why not show the FAA people how we feel by having a celebration of sorts?"

"So often, people complain about the job being done by our government agencies, but here I saw government people doing an outstanding job, often going far beyond what's required. We pilots literally put our lives on the line on the basis of their work every time we fly. I just thought it's high time we let them know what a heck of a job we think they're doing."

The lady who inspired the whole affair, Ms. Kraemer, was somewhat taken aback by the turn of events. "I don't feel like I've done anything

special," she said. "I was just doing my job."

But that was the whole point to Block, who felt that the St. Louis FAAers had traditionally gone about their job in a most professional way. He quickly found that St. Louis' pilot organizations felt similarly, and yes, they would support his project 100 percent. By the time "Appreciation Day" came around, the banners announcing sponsors included the names of the St. Louis chapter of the Missouri Pilots Association; *Aviation World News*, a regional pilots' publication; the Greater St. Louis Ninety-Nines; the local flight instructors Association; and the Greater St. Louis Fixed Base Operators Council.



A crowd inside the homey terminal building at the Spirit of St. Louis Airport gathers to honor FAAers for their outstanding service to area pilots.



Two of the youngest "heroes" enjoying the party were Emily and Amy Ellis, the daughters of St. Louis' Lambert Tower controller Bill Ellis.



Pilot Frank Block tells Region Director Melugin how he originated the idea for FAA Appreciation Day based on his pleasant dealings with FAAers. Photo by Ed Basel

The result was a super Saturday airport open house, attracting what appeared to be most of St. Louis' pilot population. Activities were specially planned to omit speeches, while stretching informal relaxation in the airport atmosphere to the maximum. Free refreshments and snacks, as well as "Hero" buttons for FAAers and guest tags for others, made for good conversation and renewed acquaintanceships. Upward of 400 persons came and went during the two-hour-plus gathering, which centered in the Spirit Airport terminal building, but spread all over the field as the crowd grew.

Hangar flying, tours of the FSS and tower and a general good time seemed to be the dominant activities. Though no one really took a count, there were at least 150 or so FAA employees and family members spotted at various times and places around the airport.

From the looks of it, while most of the honored guests were just a little embarrassed by the praise being heaped on them, they were also genuinely moved by the display.

"It makes you proud of the job you do," was a Lambert Tower controller's comment. And how else could he feel after being officially designated a real, honest-to-goodness HERO, with a lapel button to prove it?

—Story and photos by Jon Ellis



A group of "heroes" basks in the limelight and good fellowship.





Missionary Dave Kepple's Hughes chopper, fitted with floats, draws the interest of members of the Zerma tribe as it sits on the banks of the Niger River in the African country of the same name.

There is a well-known inspirational aviation poem that speaks of slipping the surly bonds of earth to touch the face of God. One pilot, Dave Kepple, has taken the charge to heart literally. He's an aviation missionary, who not only spreads the word of God during his travels on the African continent but also the word of FAA on safety.

With fixed-wing and rotorcraft tickets and instrument and multi-engine ratings, Kepple flies for Air Evangelism International, Inc., an independent Baptist missionary agency. He has spent 18 years in Africa, following his graduation in 1954 from Chicago's Moody Bible Institute, where he completed their missionary flight-training program.

FAA's New York International Field Office has enlisted Kepple in Africa as a pilot examiner, accident investigator and as a licensed airframe and powerplant inspector, with annual inspection authorization. "I think I was the first FAA designee with the authorization in Africa," says Kepple, "but now there are a lot of FAAers in Africa . . . maybe as many as six."



Kepple, a pilot examiner, prepares to give a check ride to Jim Cozmanoff, helicopter pilot for Kirk Leasing Co.

Photo by W.E. Holtsberg, Jr.

During his year-long furloughs back to his original home in Indiana, which come every four years, Kepple's talents are once again tapped by FAA and the South Bend, Ind., General Aviation District Office. "He is invaluable as an examiner and inspector in whittling away some of the workload," says Eli Jerome, the GADO chief. While at "home" now, Kepple is working with the Kirk Leasing Co. to establish a

Part 135 (air taxi) authorization from the FAA. He is also responsible for having trained the Gary, Ind., police department in Hughes helicopters in getting their operation off the ground in 1970 and 1971.

Whereas FAA welcomes the extra hand while Kepple is in the U.S., he looks forward to the furloughs "to get myself recurrent. For the longest time, for example, there were no radars in

## He Spreads the Word

Here, cameraman Kepple photographs one of his field representatives, a village pastor, after landing his chopper.

On his latest quadrennial furlough, working as an A&P inspector, Kepple discusses a helicopter engine with South Bend, Ind., GADO operations unit chief Delmar Heiter (left) and GADO maintenance unit chief Bob Koester.

Photo by W.E. Holtsberg, Jr.



Africa, and no one had even heard of a transponder," he says. Of course, Kepple still works full time with the church while here and busily strives to renew stateside contacts.

Following his furlough in 1965, Kepple and his family flew back to Africa in a Cessna 175. The journey—from Chicago to North Africa—lasted 43 hours, with 22 of those over water, via Boston, Newfoundland, the Azores, the Canary Islands and Niamey, Niger.

"That aircraft later had two pistons disintegrate while 65 miles out in the Sahara Desert," he relates. "The aircraft vibrated so badly, some of the instrument needles disappeared." To protect himself and the airplane from the desert's brutal 140-degree heat, he built a grass hut that served as his hangar while repairing the aircraft.

"No one needed an airplane in Niger until they saw one," says Kepple, "and then they needed two." Though the fixed-wing is suited to the longer runs, Kepple tends to favor his Hughes



300B. Many of the people he visits are nomadic, and by the time he can hack a runway out of the jungle, the tribe may have moved on. The helicopter is ideal for reaching the otherwise inaccessible areas and for operating from jungle helipads on mountain ridges just barely wider than the chopper's skids.

But helicopters are expensive, and he had a difficult time convincing his church backers of their need. Eventually, the best recourse proved to be the organizing of other missions into Air Evangelism to provide a broader financial base. Following a detailed exercise in paper shuffling and recovery from a helicopter accident, Kepple was in Africa flying a new Hughes 300B by November of 1971.

In addition to working on a flight-training facility within the mission for Liberians, Kepple also does his own maintenance work on a Cherokee Six, as well as on the chopper.

He is anxious to get back to his present post in Liberia from his latest furlough so he can start work on a new base of operations. "Our first chore will be to get a runway chopped out of the jungle there," he says with unusual nonchalance. "Language is my only barrier, not the elements."

Though now based in Zeekapa, Liberia, in west Africa, Kepple doesn't feel restricted to just that area. Thanks to his wings, his sphere of influence reaches all of central and west Africa. He carries other missionaries and

freight and often helps out in famine relief, a problem that often plagues the continent. He is so dependent on aviation for transportation that he doesn't even own a car, a vehicle that would serve little purpose in much of Africa's rough terrain anyway.

Kepple plans to continue his missions for the church through aviation "at least until I retire and maybe longer." His son, David, just two years shy of graduation from Moody Institute, very well could follow in his father's tracks in Africa.

"I'd do it all over again the same way, if I had the chance," says an enthusiastic Kepple. And that's only natural, as anyone can appreciate who has slipped the surly bonds of Earth.

—By W. E. Holtsberg, Jr.

Drought and famine, a frequent problem for the desert regions of Africa, is another problem missionary Kepple deals with. Here, he has just off-loaded food from his Cessna for the Bela Tribe at the edge of the Sahara Desert.





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**HAIL TO THE CHIEF**—*Secretary of Transportation Brock Adams introduces President Jimmy Carter to a crowd in the courtyard of the DOT building during the President's visit to the agency. Mr. Carter emphasized the importance of transportation to the nation—20 percent of the gross national product—and reassured employees that no one would be fired or demoted during reorganization.*

