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The Saga of Air Traffic Control Towers

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Beginning with next month's issue—March 1979, FAA WORLD will once again be mailed directly to each employee's home address to insure that the employee and his or her family have the time and opportunity to enjoy reading it.

CORRECTION

In the "Heads Up" of the January issue, Peter A. Nelson was listed as the new deputy chief of the New York Common IFR Room. Mr. Nelson is occupying the post under a temporary promotion. The position has not been filled.

The cover: La Crosse, Wis., turnkey tower—a standard design for low-activity facilities.
Photo by Neal Callahan



Right: The first air traffic control tower in the U.S. was this one at Cleveland, Ohio, in 1930. The device on top of the greenhouse cab is a wind "tee."



Like Cleveland, the towers at the old Shushan Airport, later renamed New Orleans Lakefront Airport (above left), and at Love Field in Dallas, Tex. (above), were combined with terminal buildings. This approach proved to be a strait jacket. The Shush tower, commissioned in 1933, is claimed to be the second oldest tower in the U.S.



The original Moisant tower in New Orleans (left) was a novelty—the first five-sided tower ever built, and it was designed by a woman architectural student at Tulane University. It eliminated outside light reflections and cut noise within the cab. It's claimed that the Pei design was modeled after this.



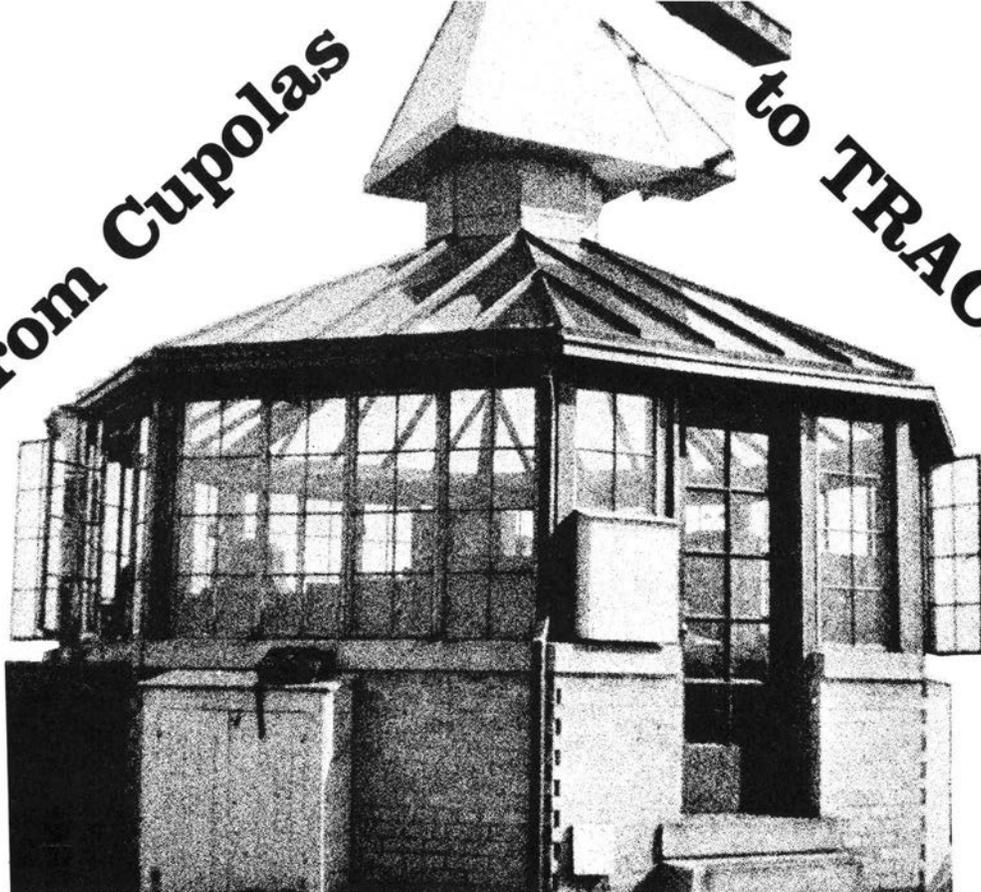
The Tallahassee, Fla., tower (below left) is not a modern version of terminal combination, but it is combined with a flight service station and the Weather Bureau. Note the four-sided cab, notorious for its reflections.

World War II-vintage military towers usually looked like this one at Corpus Christi (Tex.) Municipal Airport: a box on girders.



From Cupolas

to TRACABS



The Saga of Air Traffic Control Towers

A tower is a tower is a tower. If you've seen one tower, you've seen 'em all, some people say.

There is some truth to it on the operational side and in the general layout within the cab, but uniformity has not been the hallmark of air traffic control towers. They come in all shapes and sizes, depending on who built them and when.

Basically, a tower is just a high point from which controllers can see the runways. When runways were short and close to the terminal, the towers could be short, too. As a result, many early towers were combined with airport terminals, like at Washington National Airport—just a cupola surmounting the building.

Because eyeballing the planes was the sole function, most early towers that were independent structures were merely windowed boxes raised on wooden legs or girders, and a good many military towers during World War II were built that way, too.

They come in all shapes and sizes, depending on who built them and when.

As the need grew for equipment space, offices, airport radar and personnel accommodations for controllers and technicians, many tower shafts became enclosed structures, leading to the distinction between functional and non-functional shafts. A non-functional shaft is one that supports the cab and may enclose the stairway or

elevator and cables and ducts, but little else. A functional shaft incorporates offices, TRACON or equipment rooms.

The first towers were built by the cities, beginning with Cleveland in 1930. By 1936, 20 cities had established towers with light guns and low-powered radio transmitters. It wasn't until 1941 that the government—the Civil Aeronautics Administration—took over operation of air traffic control towers, but their construction remained in the hands of municipalities, airport authorities and the military.

From 1946 to 1962, most of the towers were being built under some form of Federal grant funding, which required meeting CAA-FAA standards for their acceptance for leasing to the government.

In 1962 came the most notable break with the past. The then FAA Administrator, Najeeb Halaby, wanted to create an image for FAA using the tower as a readily identifiable symbol.

The Las Vegas, Nev., tower of 1961 vintage looks strikingly similar to the Mock medium-activity design of a decade later.



A bare-bones approach similar to Corpus Christi was used at Idlewild Airport in New York, now JFK International (above left), except that offices were thrown on top of the girderwork with the cab and the stairway enclosed. Pull away the girders and you have a prescience of the Newark, N.J., tower to come in 1961 (above center).



An eight-sided cab graced the clapboard Abilene, Tex., tower of 1944 (above right).

Latter-day city-built towers showed creative design like this one at Denver's Stapleton Airport (right), but note that the non-functional shaft rises above a terminal.



El Monte, Calif., sports a 1972 functional-shaft tower, but there wasn't room to put the stairway inside the structure (below left).

The Golemon & Rolfe design for today's intermediate-activity facility combines a non-functional shaft, surmounted by an eight-sided cab, with various sized base buildings erected according to need.

The Wichita, Kan., tower is typical of its day (1961) and its non-FAA origins: an office building housing FAA requirements and state aviation officials, with a four-sided cab thrown on top, and attached to the terminal building (below center).

The 1961 Concord, Calif., tower reflects how a tower looked when it was designed exclusively for FAA use (below right).



s began the government's building program and with what some still consider the most esthetically pleasing tower design in FAA's inventory. Famed architect I.M. Pei created the graceful, sweeping—nay, soaring—lines of the agency's five-sided high-activity towers, typified by the one that adorns Chicago O'Hare International Airport.

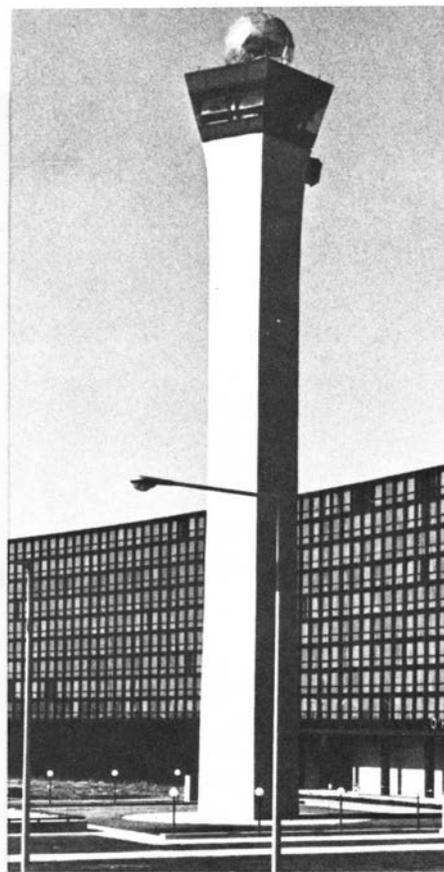
But the shaft was non-functional. To provide for all the requirements of a modern tower without cluttering the design, Pei built underground spaces at the base of the tower. The physical imitations of this design readily became apparent, as did cost factors, and subsequent designs—as in Oklahoma City—were built with above-ground buildings.

The shaft, too, was an expensive proposition. It was cast in place, with an entire wooden tower built as forms and disposed of each time. A lower-cost and more flexible alternative was needed.

In the meantime, the welter of municipal and military designs for low-activity towers was being resolved another Pei design—familiarily known as the Type O tower, sometimes called the windmill because of its sloping walls. Sturdy, relatively inexpensive and easy to build, some 20 of the Type O were constructed across the country.

In the 1970s, FAA began to build turnkey towers for low-activity

Eero Saarinen's magnificent design for Dulles International placed all tower functions at the top of a graceful, non-functional shaft. With today's needs dictating otherwise, this tower is the last of its breed.



I.M. Pei designed 22 of these pentagonal towers—O'Hare's shown here. Non-cab functions are below ground. The shaft's graceful lines are broken by only a permanent track-mounted window-washing bucket, which was recently replaced by a catwalk, permitting the job to be done better.



Another Pei design was the Type O tower. This one is in Van Nuys, Calif.

airports—towers that are delivered by the contractor entirely ready to operate. These modular units, which could be built in 10-foot increments to 90 feet, went up quickly at minimum cost. In the future, these towers could be accompanied by various sized base buildings for administrative offices, or if increased activity demanded, a TRACAB/TRACON operation.

At the upper end of low activity was the Mock design tower, which carried a six- or seven-story functional shaft. Popular between 1971 and 1977, this design will require for any future expansion for TRACON operations beyond four positions the addition of a 3,000-square-foot base building.

The intermediate-level facility now being built is a Golemon & Rolfe design, also up to 90 feet. But this non-functional shaft is made of precast C-shaped modules that are stacked and welded in place. This technique reduces both construction time and costs. The accompanying base buildings can vary from 1,400 to 7,000 square feet, depending on local requirements for ARTS II operation. Most of the base buildings for intermediate- and high-activity towers are being built with solar collectors in their south-facing walls for solar-assisted heating.

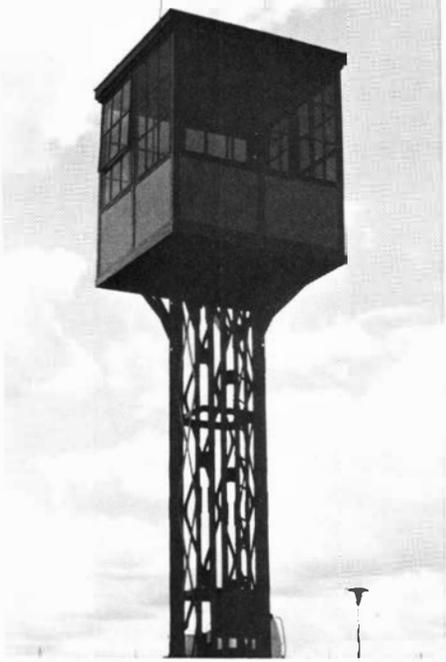
High-activity towers for Level III, IV and V will soar from 90 to 180 feet, with pre-cast columnar shafts. The modules in this Welton Beckett design are held together by cables, or "tendons," stretched between them. The base buildings for most of these will range from 8,500 to 20,000 square feet to house up to 19 ARTS IIIA radar positions.

The crux of the difference in approach between these latter designs and the municipally built, Type O or Mock design is that stacking tower functions in the shaft lacked flexibility—you had nowhere to go to expand. In a sense, the design of a tower had come full circle: The shaft is once again

Still abuilding as needed, the turnkey tower has become a standard low-activity fixture. 101 of these were built between 1972 and 1976. This one (at right) is in Lewiston, Ida.



New York's LaGuardia Airport Tower is another "arty" approach in a city-built facility. Because of the airport's original seaplane orientation, the tower was built in the shape of a capstan with porthole window



essentially non-functional, but an expandable base building has been added.

The cabs for the three activity-level towers are now standardized on 225, 350 and 550 square feet in floor area. Pei's cab, which was faired right into the five-sided shaft, was five-sided in an attempt to minimize reflections on the cab windows. As a result of further agency evaluations, the cabs are being standardized on six or eight sides, the latter appearing more as a rectangle with the corners cut off.



A mini-history of towers can be found at the Rochester (N.Y.) Monroe County Airport, which will soon host four towers at one time. Above is the original 1937 box in the air. At left in the photo below is the 1948 functional tower with a four-sided cab that now serves for equipment and classrooms, connected to the current tower at right, built in 1971. A major-activity design is scheduled to get under way this year (bottom).

The emphasis in today's tower designs is on efficiency and economy as well as form. The shafts have clean, vertical lines and can be assembled on the site in less than half the time of their predecessors. Base buildings have been standardized to accommodate the full range of administrative, technical and radar control functions, separate from the cab function. And they will be readily expandable to slow the pace of obsolescence and match the pace of growth in aviation.

By Len Samuels

The Welton Beckett-designed Dallas-Fort Worth tower typifies today's approach to high-activity towers, except that most will not have the microwave antenna projections near the top of the non-functional shaft.



Predevelopmental Training Improved

In an effort to strengthen and standardize its training activities in recruiting minorities and women for the air traffic field, the FAA Academy has revamped the 150 Program begun in 1970.

Now called the National Air Traffic Predevelopmental Training Program, the approach is to put students through a well-defined four-phase training procedure that includes a university environment.

The students must successfully complete each phase before moving on to the next. In Phase I, the employee is given an orientation to Federal employment, FAA programs and policies and an introduction to the Air Traffic Service. This two-week segment is accomplished in the employing region, after which the employee enters Phase II for 17 weeks of formal classroom instruction in Oklahoma City.

Because of the new curriculum, agency planners decided that a university setting would enhance the Phase II portion of the training. A contract was awarded to the University of Oklahoma to provide classrooms, professional staff and living quarters. The first class of 24 students entered Phase II on Sept. 26, 1978, and by now, 72 students are on campus. The agency plans to train about 200 students a year in this program.

Twelve instructors in three classrooms guide the students through classes on good study habits and general communications skills and more technical subjects, like aviation weather, principles of navigation and FAA rules and regulations. This phase also includes trips to nearby facilities and role-playing to practice developing skills.

When Phase II is completed, the

trainees return to their regions to a planned program of six weeks each in facilities of the three air traffic options. They receive a combination of classroom instruction and monitoring work activities, augmented by training materials and guidelines developed by the Academy.

Phase IV is also in the region, with each employee assigned for 13 weeks of "hands on" training in a particular option. Upon the successful completion of this year-long program, the trainee returns to the Academy as a GS-7 enrolled in the Developmental ATC Course.

Academy officials believe they now have a stronger, more uniform program that gives employees a chance they otherwise might not have had to become first-rate air traffic journeymen.

By Bobbie J. Mardis

THE ETERNAL TRIANGLE . . . First there was the Bermuda Triangle ("mysterious" disappearances of ships and planes). Then came the Great Lakes Triangle (more of the same). Now we may have the Daytona Triangle. At least local myth makers were suggesting some supernatural involvement when four light aircraft crashed in the Daytona, Fla., area in a period of 50 hours recently. An area newspaper even carried a headline that said: "Daytona Triangle Crashes Are Mystery." But FAA controller Al Ensell of the Daytona Airport tower puts absolutely no stock in the triangle theories. "I don't think it's anything but a bunch of bad coincidences," Ensell said. "There's nothing to lead us to believe that it's anything more than that." Still, experience has shown that reason hardly ever prevails in these situations. Someone will write a book on the Daytona Triangle. Someone else will turn that into a movie. Then there will be a TV series and a lot of people will make a lot of money.



SUPER FLY . . . Christopher Reeve, the 6'4" actor who has the title role in "Superman," told Newsweek magazine recently that he had no problem with the movie scenes that required him to soar high above the majestic skyline of Metropolis because (to use his own words): "I'm a born flier . . . I've got ratings in airplanes, seaplanes and gliders." This prompted "Small World," always suspicious of the Hollywood hype, to check out Reeve's pilot credentials with the FAA Airman Registry in Oklahoma City, and what we found has restored our faith in the integrity of our celluloid heroes. Mr.

Christopher Reeve of New York City has a private pilot's certificate and is rated to fly single-engine airplanes (land) as well as gliders (air tow) only. But we didn't find a seaplane rating nor did we find that he's licensed to leap tall buildings with a single bound. (Admit it now, folks, you don't get this kind of real inside information on the Beautiful People watching Rona Barrett.)

JOY TO THE WORLD . . . The editor of "Small World" long has suspected that the reporters who work for wire services make up stories during holidays and other slack periods. Here's an example that ran over Christmas: "Raleigh, N.C. — A man who is quoted as saying he wanted to bring joy into Christmas apparently thought he was a gift and unwrapped himself aboard a jetliner yesterday. The five-minute holiday strip occurred on a flight from Raleigh to New York. About 125 people were aboard. No charges were pressed."

A seriously ill patient arrives in Honolulu for hospitalization, courtesy of the Flight Inspection Group and its Boeing 727.

Flight engineer Herb Aiwohi secures a patient before evacuation from Johnston Is.



Sweet Angels of Mercy

Several times a year, crewmembers of the Honolulu Flight Inspection Group serve as Florence Nightingales with wings.

Typically, the mercy missions they perform are adjuncts to their job of flight checking navairds around the far-flung Pacific-Asia Region. Medical evacuations are worked into the planned flight schedule. So, when a seriously ill civilian employee needed hospitalization in Honolulu, the flight inspection team aboard an agency B-727 returning from Guam made a stopover on Johnston Island to refuel and pick him up.

Wes Dunning, the Flight Inspection Group's operations officer, says it's not an unusual occurrence. "Every year, we medivac about three stretcher cases from isolated Pacific Islands back to Honolulu." As far as he can remember, the group has been involved in evacuating patients from such atolls as Midway, Kwajalein, Canton, Johnston and Marcus Islands. These were mostly non-ambulatory patients in serious condition.

In addition to Dunning, the group in-

cludes airspace systems inspection pilots Bill Hiatt, Tom Rose, George Murray, Dan Davis and William McLean, navigator Charles Jewell, flight engineers Herb Aiwohi and Richard Iwata and electronics technicians Ron Kam and Bill Sato.

No lines are drawn for the emergency assistance. One evacuation involved two Japanese fishermen at Johnston Island who were involved in a fuel explosion aboard their boat. In one instance, a special 1,600-mile round trip was made from Guam to Marcus Island in the middle of the night to whisk back a gravely ill Coast Guardsman for treatment on Guam. In addition, regional employees and dependents at such outposts as Guam, Samoa or Kwajalein who need special medical attention available in Honolulu are routinely handled by the Flight Inspection Group crew.

No matter how professionally cool and tough the crew may appear to me, to the seriously ill thumbing a ride, they must look every bit the sweet angels of mercy they are.

By George Miyachi



Johnston Island firemen standby while the flight-inspection B-727 refuels and awaits the delivery of a medivac patient.

WORD SEARCH

By Edgar D. Robinson, Jr.

TCS, Millville, N.J., FSS

Here again is a puzzle based on aircraft types and manufacturers, ranging from one of the oldest twins to one of the newest jets. The names read forward, backward, up, down and diagonally, are always in a straight line and never skip letters. The names may overlap, and letters may be used more than once.

Use the word list if you must, but try covering it first. All 42 names can be found. Circle those you do find and cross them off the list. The name "Duke" has been circled to get you started. When you give up, the answers may be found on page 18.

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WGNIEOBKESKYL ANEP SBF
CONVAIRLDEEHKCOLSPED
CQRATSIRTS SOGWBMCAEO
TARROSKYLINERAEERTCU
IRCFALCONFANJETTTCHG
BPIPERIONTGBJZCESAAL
OCIPIBJHHULJAEVGSTTA
NSKYAAKLCRETLRELPSCS
AFJEVCLHEBPEOLLUJOOB
NORABEESEOUCESSNARNO
ZSNPWRQRBGOOOJETEWCE
ALSKONULNOCZKLAESEOI
ESCKOQETIORATSTEJSRK
BOEIMKERWSEPREEFNTDW
REVIKKNPTECVKHJASWEA
NASRUJACENESCURNBIKH
NZHDOEIRBOUERLARKNNY
NSZSKYROAMEQUJEOWDRK
CITATIONEBRENILERBAS
MDZBLATNENITNOCRETN I
    
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ARROW	DUKE
AZTEC	ERCOUPE
BARON	ELECTRA
BEECH	FALCON FAN JET
BOEING	GATES
BONANZA	INTERCONTINENTAL
CESSNA	JETSTAR
CHEROKEE	LARK
CITATION	LEAR JET
COLT	LOCKHEED
CONCORDE	MUSKETEER
CONVAIR	NAVION
CORVETTE	NAVAJO
DOUGLAS	PIPER

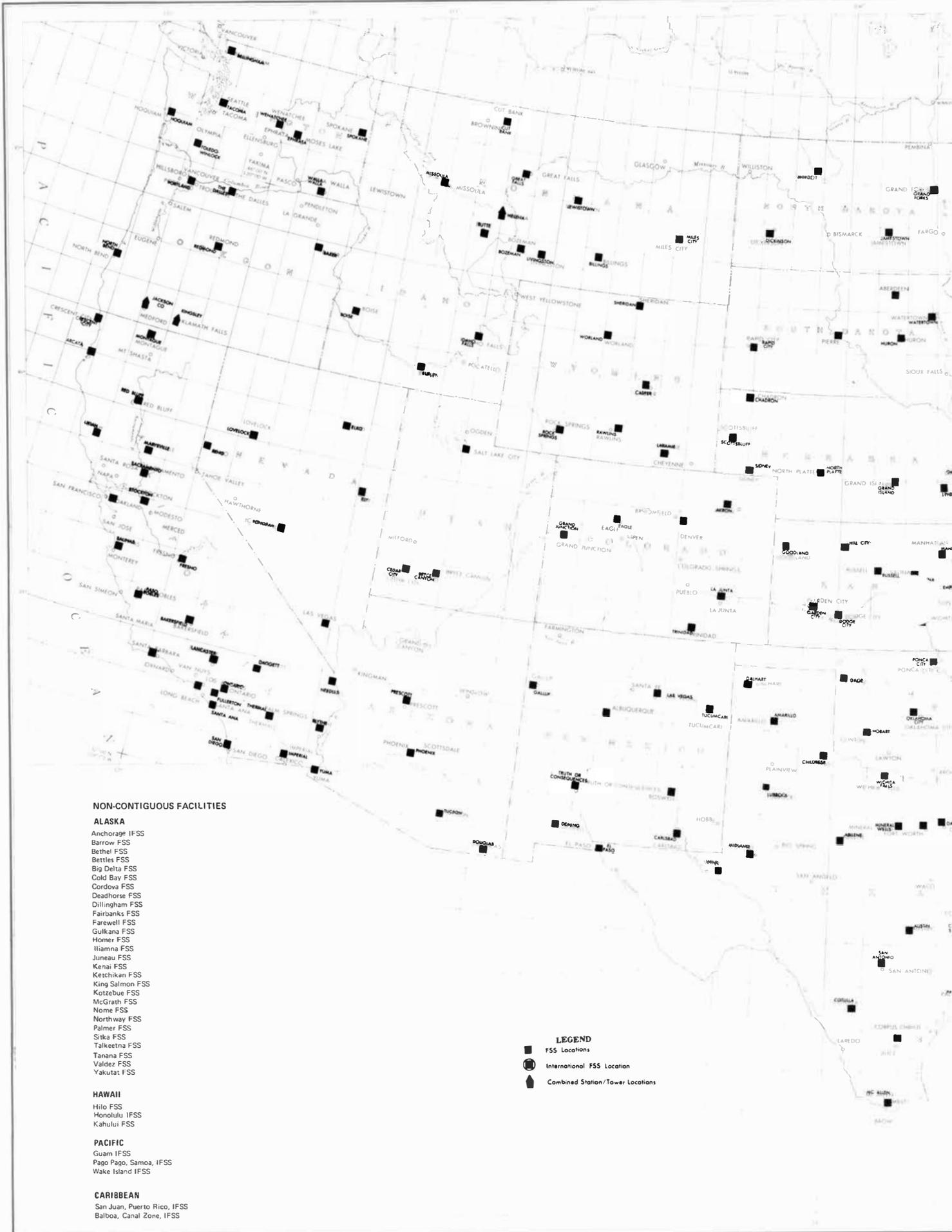
QUEENAIR	SKYHAWK	TRISTAR
ROCKWELL	SKYLANE	TWIN BEECH
SABRELINER	SKYLINER	TURBO GOOSE
SENECA	SST	WESTWIND
SHRIKE	TRIPACER	

Maps of FAA Facilities

Once again, FAA WORLD is making available facility maps of the FAA in the center spread of the magazine, convenient for removal and display.

In successive issues, beginning in this one with Flight Service Stations,

we will present maps of Air Traffic Control Towers, Air Route Traffic Control Centers, Airway Facilities Sector Offices and Flight Standards District Offices. All of the maps have been updated as of the autumn of 1978.



NON-CONTIGUOUS FACILITIES

ALASKA

- Anchorage IFSS
- Barrow FSS
- Bethel FSS
- Bettles FSS
- Big Delta FSS
- Cold Bay FSS
- Cordova FSS
- Deadhorse FSS
- Dillingham FSS
- Fairbanks FSS
- Farewell Bend FSS
- Gulkana FSS
- Homer FSS
- Iliamna FSS
- Juneau FSS
- Kenai FSS
- Ketchikan FSS
- King Salmon FSS
- Kotzebue FSS
- McGrath FSS
- Nome FSS
- Northway FSS
- Palmer FSS
- Sitka FSS
- Talkeetna FSS
- Tanana FSS
- Valdez FSS
- Yakutat FSS

HAWAII

- Hilo FSS
- Honolulu IFSS
- Kahului FSS

PACIFIC

- Guam IFSS
- Pago Pago, Samoa, IFSS
- Wake Island IFSS

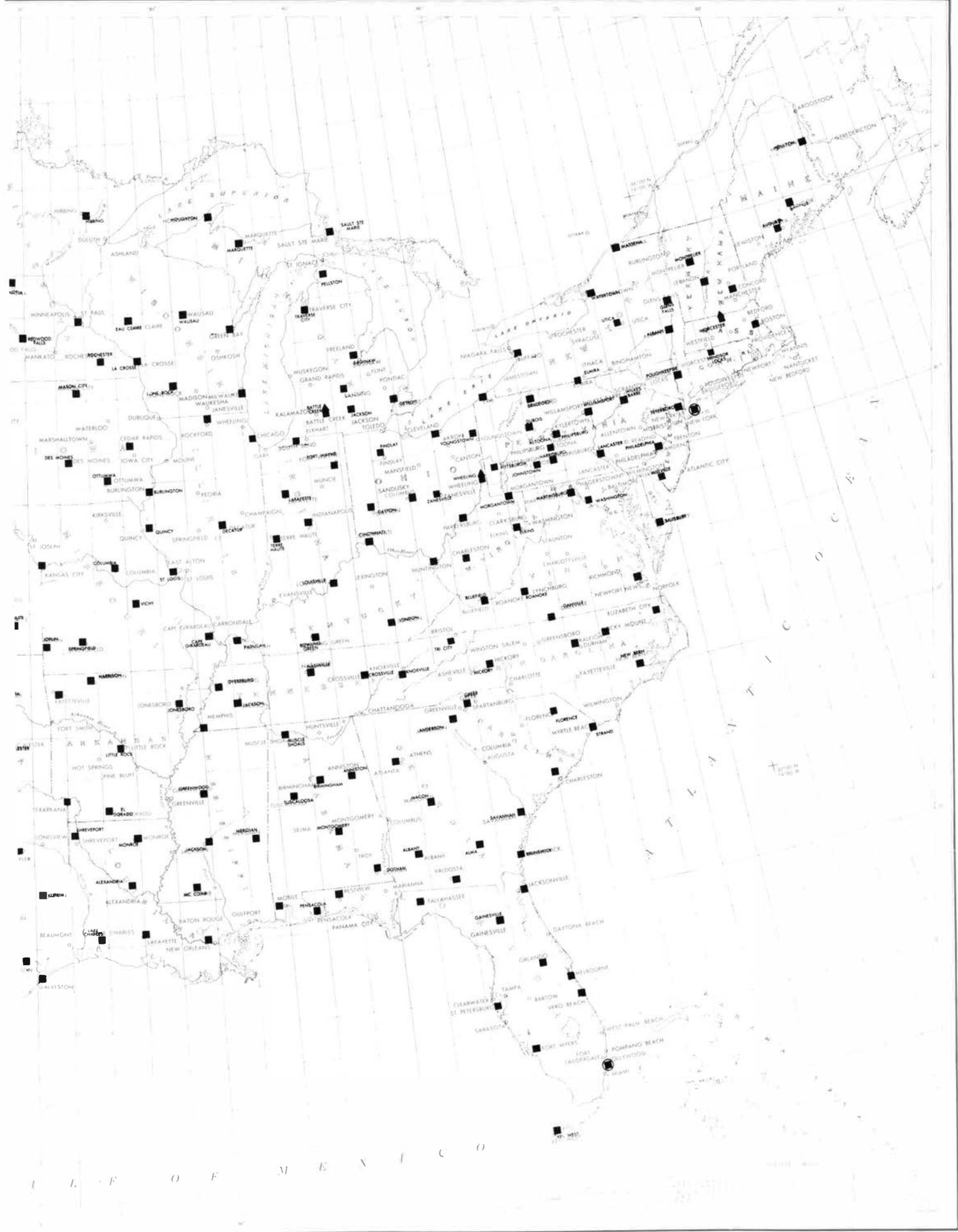
CARIBBEAN

- San Juan, Puerto Rico, IFSS
- Balboa, Canal Zone, IFSS

- LEGEND**
- FSS Locations
 - ⊕ International FSS Location
 - ⬆ Combined Station/Tower Locations

CE STATIONS

FEDERAL AVIATION ADMINISTRATION
ONE INCH = 60 NM LAMBERT CONFORMAL CONIC PROJECTION



FEDERAL NOTEBOOK

NEW OLD TEAM

The President has named Alan K. Campbell as director and Jule M. Sugarman as deputy director of the new Office of Personnel Management (OPM), one of two agencies that replaced the Civil Service Commission (CSC). Campbell and Sugarman had been chairman and vice chairman, respectively, of CSC.

RETIREMENT BALLOONS

The costs of funding of Civil Service retirement and the Social Security system continues to occupy the attention of Congress and the Administration. The Congressional Budget Office has floated some options for Congress to consider: *continue the present Civil Service retirement system as is *reduce benefits for retirement under the age of 65--3.5 percent per year for ages 60-64 and 4 percent for ages 55-59 *set tighter standards for disability retirements *nearly double employee contributions to reduce the government's share and cost *limit cost-of-living annuity increases to 70 percent of the Consumer Price Index. Another approach to the last point favored by the Administration --but not for this year--would be to cut the two-per-year cost-of-living raises to one, saving about half a billion dollars a year.

THE BUDGET

The Administration's Fiscal 1980 budget includes an "anticipated" 5.5 percent Federal pay comparability increase this October, depending on economic conditions, although full comparability was stated as probably requiring a 10.25 percent raise. It also recommended a 2 percent drop in GS employment, or 35,700 jobs, by September 1980. Other requests were

for reform of the pay-fixing system, eliminating some Wage Grade steps, creating an area pay system for clerical, technical and administrative employees and tightening up disability retirements.

MORE LIFE INSURANCE

Under an Administration proposal, younger employees would get up to double the regular life insurance now available at no additional cost, and all employees would be able to purchase optional life insurance up to five times their basic salaries at present rates or lower. The increase in regular insurance for employees under age 45 would be at no cost to the government, based on projections of greater participation by premium-paying employees. A lesser decline in face values after age 65 is also proposed, based on length of participation in the insurance.

HEALTH INSURANCE HAPPENINGS

OPM has proposed that coverage of a newborn or newly acquired child for a self-only health plan enrollee in a pay status be effective with the pay period in which the child was acquired. Currently, family enrollment can be obtained to cover the child only in the pay period starting after the change request is received in the employing office. ■ A rebate might be in the offing for Blue Cross/Blue Shield enrollees. A U.S. Court of Appeals has ruled in favor of the National Treasury Employees Union that the courts do have jurisdiction over the rate negotiations between CSC (OPM) and health insurance carriers. NTEU's suit against a 1976 increase in premiums of 35.3 percent by the Blues, if successful in the District Court, could result in a \$50 million rebate.

Bright Idea in a Black Box

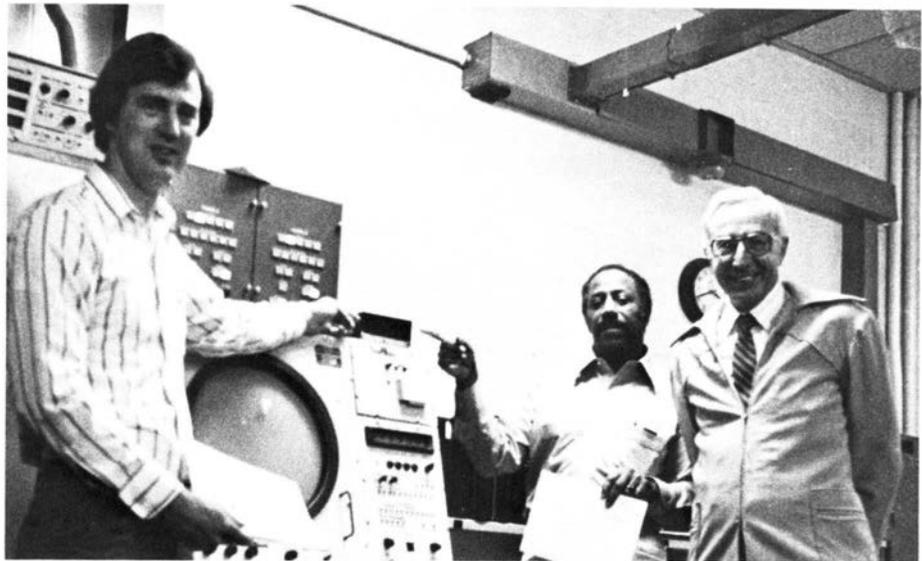
Before technicians from the Indianapolis AF Sector put on their creative thinking caps, they didn't even have it as good as the radio personalities of yesteryear, who could cup a hand over an ear to help gauge how their voices were coming across.

The technicians at the radar site couldn't tell how good a picture an ARTCC was getting on its radar scopes—that is, until they ingeniously created a little black box they called a re-enforced-rate computer.

The device continuously monitors every antenna rotation of the primary and secondary long-range radar, as well as functions of the common digitizer. "We depended on the center to tell us about fluctuations in their radar pictures," said Ed Ellis, sector manager. "With the box, we know what's going on and can take immediate steps to assure high-quality targets on the scopes. It's particularly valuable during bad weather, which can adversely affect the basic radar system."

Ellis continued with a technical explanation. For the device to accomplish its job, he said, electronics technicians Riney Bryson and Gary Louk, who led the developmental work on the project, had to devise a new system for converting eight digits of binary fractions to a decimal percentage. Computers use binary numbers, made up of only "one" and "zero," but the percentage they needed had to include the common digits from "two" to "nine."

"This was an aspect of mathematics that no one had ever worked before in quite this way," according to Ellis. "The percentage was important because technicians need to know the ratio between the scan returns from the two types of radar." Since one type of radar signal is reflected and the other transmitted, they return at different rates, he explained. The common



Indianapolis AF Sector electronics technicians Gary Louk (left) and Riney Bryson point to the unobtrusive black box—their re-enforced-rate computer—which monitors long-range radar. Joining them is Frank Platner, assistant sector manager.

digitizer processes the two types of returns for display on ARTCC scopes. The black box helps the technicians assure that the rates remain constant to provide a stable image on the scopes. It's hooked into a maintenance-test radarscope at the long-range radar site. The cost of materials for the device is about \$120.

The first two boxes have been installed at the Indianapolis and London, Ohio, long-range radars. Eight more are being assembled by technician trainees for use at other long-range radar sites throughout the Great Lakes Region, and one will be kept as a spare.

In addition to Bryson and Louk, electronics technicians Carroll Lemonds, Vern Hall, Douglas Van Demark, Hugh Robbins, Gerry Rhodes and Roy Harden worked on the project and shared in a group suggestion award.

In another five years, long-range radars will be getting new common digitizers that will include a monitoring function. In the meantime, however, the region has found an inexpensive way to provide its four ARTCCs with reliable radar images now.

By Marjorie Kriz

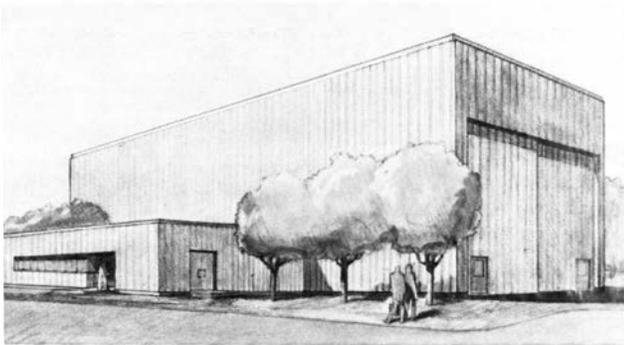


Dave Euler, developmental engineer, and Candy Dobkins, electronics technician trainee, assemble re-enforced-rate computers, which consist of integrated-circuit boards and a forest of pins and wires.



STRIKING OUT BIRD STRIKES—FAA and the Fish and Wildlife Service of the Department of the Interior have concluded an agreement to train airport personnel and to exchange information on reducing bird and other wildlife aircraft strikes. Discussing the agreement are (from the left) Robert J. Aaronson, Assistant Administrator for Airports Programs; Administrator Langhorne Bond; Lynn Greenwald, Director of the Fish and Wildlife Service; and Harvey K. Nelson, Associate Director of Wildlife Resources, Fish and Wildlife.

Faces and Places



ON THE DRAWING BOARD—This architect's drawing for a proposed Fire Test Laboratory building is part of an extensive NAFEC research and test program designed to reduce the number of post-crash deaths due to fire in aircraft.



RECOGNITION—Joyce Thomas, an ATCS in the Austin, Tex., FSS, was recently recognized for her contributions to the Austin Community by the Serwa Yetu (Noble Woman) Chapter of the Order of the Eastern Star. She is also a member of the Negro Airmen International and the Bronze Eagle Flying Club.



WHEEL DOCTOR—Leroy Gammon, Seattle Engineering and Manufacturing District Office inspector (right), and Bill Broadhurst, Boeing Co. engineering liaison, check over the B-737 wheel gravel-and-rock deflector that protects the belly of the airliner upon landing.

PICK 'EM UP TOWER—Temporary tower service at the Nut Tree Airport, Vacaville, Calif., for a one-day fly-in of 16 military and 414 general aviation planes was provided by (left to right) Bill Reustle, electronics technician, Santa Rosa AF Sector Field Office; Joe Burris, chief of the Napa Tower; Tim Seal, Napa controller; and Mike Newman, Napa team supervisor. The fly-in was sponsored by the Air Force Assn. for the Civil Air Patrol's California Wing.

Photo by Barbara Abels



NEW MEN IN TOWN—Three newly certificated Airport Certification Safety Inspectors (ACSI), Messrs. Southerland, Neilson and Hutchins, received their credentials from Southwest Region Director Henry L. Newman, as supervisors and co-workers looked on. From the left are John A. Dufficy, chief, Airports Division; Gus Melton, Office of Airports Programs; Shirley Roberts, ACSI, Northeast Texas; Bill Southerland, Houston ADO; Director Newman; Keith Neilson, Oklahoma City ADO; Tom Graves, Airport Certification Safety Officer; and Bob Hutchins, Albuquerque ADO.



OUTSTANDING—William Morges of the New England Region's Flight Standards Division received an award from the Massachusetts Aviation Trades Assn. as the "Most Outstanding Person" in 1978 for his work as chief of the Norwood, Mass., GADO. He was cited for his work in regulation and safety programs.

FAA employees, like the general population, are into all sorts of activities in their free time, whether just enjoying themselves or helping others, but there's one that comes closer to aviation for the earthbound than any other.

"Skiing is like flying," rhapsodizes Guy Dalla Riva, an aerospace engineer in the Western Region's Aircraft Engineering Division. "You love to be up there, close to the sky, on top of the world, to admire the horizon and enjoy the challenge of speed as you move from point to point quickly. It doesn't matter if you've been flying or skiing for 20 years, each time is like the first—the same exhilaration."

Dalla Riva and about 23,000 others have an even more virulent infection with "flying" on skis, devoting themselves to the National Ski Patrol System (NSPS). At over 700 ski areas across the country—from the Appalachians to the Sierra Nevadas—Ski Patrollers are the FAAers of the slopes. They help the injured in ski accidents and in any aircraft accidents near the area; check the slopes for safety, closing off any dangerous areas; secure avalanche areas or set off controlled avalanches; and conduct search and rescue for lost skiers.

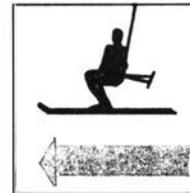
Ski Patrollers form an elite group. Whether volunteer or paid, they must be strong skiers, with their technique under absolute control. Before joining a patrol, they must complete the American Red Cross Advanced First-Aid and Emergency Care Course and a cardiopulmonary resuscitation (CPR) course. Then, if their skiing ability is acceptable to a patrol leader, they can become a candidate patroller.

That's the beginning. After extensive training in rescue toboggan handling, on-the-hill rescue techniques, avalanche control and lift evacuation, the candidate is ready for a two-day test to advance to regular patroller. Every year, every patroller must attend first-aid and hill-procedure refresher courses.

Safety Is Their Business, Too



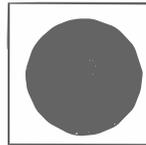
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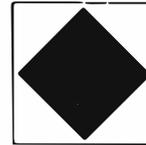
Caution



Easiest



More Difficult



Most Difficult



Western Region aerospace engineer Guy Dalla Riva puts in many weekends as a volunteer ski patroller on June Mountain, Calif., in the Sierra Nevada range.

Dalla Riva came naturally to this bent, having grown up in the foothills of the Italian Alps near Cortina d'Ampezzo. A volunteer member of the Southern California Region of the NSPS since 1966, he used to serve on Mt. Baldy. Like all other patrollers, he's on call for emergencies at his current regular station—June Mountain, some 320 miles from Los Angeles in the Sierra Nevada range.

With the increasing number of aircraft flying to mountain resort areas, Dalla Riva sees a greater need for pilot

education in winter flying techniques. Unfortunately, the FAAer finds, there are too few aviation-minded individuals like himself who are also trained to rescue fliers in the snow. For example, not enough patrollers are familiar with what could trigger a fire or explosion after an aircraft accident, and he believes that efforts should be made to train patrollers in rescuing victims of such accidents.

The Ski Patroller's day begins early. After a roll call, the patrol leader assigns individuals to specific areas and ski runs



and checks their equipment and first-aid belts. Most NSPS volunteers receive no outside support and each must even provide his own first-aid supplies. One patroller says the belt he purchased carries \$35-\$50 worth of first-aid items.

One of the great joys of patrolling can be the morning "milk run," where the patrollers survey the slopes before they are opened to the public, stopping to rope off dangerous areas that may have developed overnight and post warning signs.

At June Mountain, patrollers usually work in pairs and station themselves at the top of the slopes. When they are notified of an accident, one takes off down the slope while the other follows with the rescue toboggan. Because of the liability situation, if the victim is conscious, the patroller must ask permission to assist before proffering first-aid. After providing first-aid, including the immobilization of suspected fractures, the patrollers transport the victim to a first-aid station on the rescue toboggan or summon helicopter evacuation, if available.

A slightly different procedure is used at Canaan Valley, West Virginia, and Massanutten, Virginia, two of the areas patrolled by John L. Gable, an operations research analyst in the Office of Aviation System Plans in Washington. These areas use a "bump" system. When a patroller arrives at the top of a lift, he "bumps" the patroller who is waiting at the top of the slope, who then skis down. This rotation always has someone at the top, on the slopes and on the lift.

Some areas provide a heated shelter at the top of the mountain, where patrollers may divide their duty time between standing by and skiing the slopes.



Taking a break from their ski patrol duties at last year's World Cup Races at Stratton, Vt., were John Gable, FAA operations research analyst in Headquarters (left), and Bill Olden, a NASA aerospace technologist.

Communications may be strictly visual, by telephone to the shelter or by walkie-talkies. Gable says he's heard of experiments with radar to scan the slopes.

Both Dalla Riva and Gable agree that more accidents take place in the later afternoon when skiers get tired and don't realize they are losing control of their skiing technique. This busiest period merges with the patrol's final act for the day—sweeping the slopes as

dusk falls. At about 4:30 p.m. when the lifts have brought their last passengers to the top, the patrollers meet at the top of the mountain. They are assigned specific runs to sweep to assure that no one is missed or left lost in the trees or lying injured in the snow.

When someone is reported missing, particularly in bad weather, it's back to the slopes with miners' lanterns, sometimes all night, until the person is found.

Gable joined the NSPS in 1970. A patrol leader for the Metropolitan Washington, D.C., Ski Patrol for two years, he now serves as public relations advisor for the Eastern Division of NSPS. Last year, he served on a Special Ski Patrol for the World Cup Races at Stratton, Vt., and assisted with the Ski Club of Washington's Qualified Amateur Ski Instruction Program at Ski Liberty in Pennsylvania.

Why does he do it? In addition to the love of skiing and the beauty encountered in the wind, snow and scenery, there are two reasons. On the practical level, he gets in a lot of skiing this way and also has a charitable contribution tax write-off for some expenses. On a higher level, "I feel a sense of satisfaction from the fact that I'm giving something back to a hobby that has given me so much," he says. "There's also a great feeling of camaraderie within the Ski Patrol. All of these people are highly skilled and dedicated to helping others in an emergency."

By Barbara Abels

DIRECT LINE



Q Isn't there something in the Privacy Act covering the distribution of our pay slip information? While working in one region, we received them covered, so no one but the employee and the accounting department knew how much you were paid, your annual and sick leave balances, etc. In my current region, I have yet to receive my pay slip information without our secretaries and anyone else who happened to care having examined my pay slip before even I saw it. I don't think it's any of their business. In my facility, there are records kept in the chief's office showing our annual and sick leave used and accrued. Each pay period, our pay slips are compared with these records. If we call in sick, a record of name, date, reason and supervisor receiving the call is made. These files are open to review by the assistant chiefs, deputy chief and chief. The secretaries by the nature of their jobs also see them. They claim it's to keep track of possible sick leave abuse, but any supervisor worth his salt doesn't need a running record when we work under a team concept. I think one's annual leave is between the employee and the accounting department. The manual states that excessive annual leave will be charged to leave without pay at the end of the leave year, but our chiefs don't believe in LWOP, and if any will be involved, they turn it down. Why are the regions and laws so different?

A The pay slip information referred to is covered in Appendix 3 of DOT/FAA Order 1350.22. This data is part of the FAA Employee Payable System. Methods used for transmitting records subject to the Privacy Act are to protect personal data from unauthorized disclosure. Pay slip information is transmitted in opaque envelopes from the payroll section in your region to the time and attendance clerk responsible for maintaining individual employee time and attendance. Supervisors responsible for approving annual leave, sick leave and leave without pay, etc., are not excluded from having available to them working copies of information in the Employee Payable System. In fact, it's necessary in the performance of their jobs as supervisors. Section 5 of Order 1350.22, page 52, specifically authorizes supervisors to maintain notes on employees' attendance and leave that are separate from time and attendance reporting and recordkeeping. Annual leave is not a matter solely between the employee and the Accounting Division. Supervisors have the responsibility to authorize and approve annual leave and for accurate reporting on time and attendance. In addition, current regulations governing leave without pay require supervisory approval. An employee cannot demand that he be granted leave without pay as a matter of right (see FAA Order 3600.4, Change 3, Chapter 5, Para. 46). Procedures used by your facility to distribute pay slips were reviewed. Upon receipt of the slip, the time and attendance clerk or the appropriate supervisor verifies that the leave

charges agree with the notes maintained there, folds the slip and gives it to the employee personally, or puts it through a slot of the employee's locker or places it in an addressed, sealed envelope for employees who do not have an assigned locker. These procedures meet the requirements of the Privacy Act, and personnel involved in the distribution are periodically cautioned to ensure the degree of confidentiality required.

Q I have heard many opinions about SF 160 "Fam" trips: Some maintain that the trips are paid for by the government, partially or in full; others say they are free, thanks to the airlines. The ticket-size forms that are given to the airlines say both "tariff valor" and "request for free transportation." What's the truth?

A The SF-160 Program has been made available to air traffic personnel by the air carriers and is obtained through the issuance of the SF-160 form at no expense to the government. This form is used by more than just FAA but is always used to request free transportation. The tariff-value portion of the form was used to keep accounts on the amount of free transportation being provided under Civil Aeronautics Board regulations—P-223, Subpart B—but is no longer required. More information on the SF-160 Program is contained in Section 1 and Appendix 1 to Part 1 of the Facility Management Handbook, 7210.3D

Word Search Answer

Puzzle on page 9

W	G	N	I	E	O	B	K	E	S	K	Y	L	A	N	E	P	S	B	F
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A 'Pioneer' Effort



Engineering & Manufacturing Branch chief Keith Blythe (center) discusses the new plane with its U.S. distributor, Robert Terry (left), president of Aero Industries, and Brazilian Consul Sr. Fernando Alves at Charlie Brown Fulton County Airport, Atlanta, one of 10 U.S. cities visited by the plane.

The FAA has awarded its first airworthiness certificate to an aircraft built in Brazil, the largest manufacturer of aircraft in South America and the sixth largest in the world.

The "Bandeirante," or Pioneer, made its U.S. debut last fall, shortly after certification ceremonies were held in Sao Jose dos Campos, Brazil, at the plant of its manufacturer, EMBRAER (Empresa Brasileira de Aeronautica, S.A.). Presenting the FAA Southern Region Type Certificate A-21SO for the commuter airplane was Keith Blythe,

chief of the region's Engineering and Manufacturing Branch.

Falling within the small-transport category, the Bandeirante can be configured for all-passenger, all-cargo or combination use. In its current design, it carries 18 passengers, a crew of three and 4,000 pounds of cargo. It is powered by two Pratt & Whitney PT6A-34 turboprop engines, is capable of 252 mph and has a maximum range of 1,100 nautical miles at a ceiling of 25,000 feet. Its wingspan is 50.26 feet and its length 49.47 feet. More than 50 percent of the plane's engineering and parts are supplied by U.S. companies. EMBRAER has submitted another application to the Southern Region for certification of an all-passenger version of the Bandeirante.

The Flight Standards team that conducted the certification includes John James, chief of the Propulsion Section and project coordinator; C. W. "Kit" Kaiser, chief of the Systems & Equipment Section; Robert W. "Ben" Davis, chief of the Airframe Section; Frank McGowan, chief of the Flight Test Section; and T. E. Stitley, chief of the Manufacturing Inspection Section.

By Gerrie Cook.



OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

Heads Up

ALASKAN REGION

Louise C. Long, assistant chief at the Phoenix, Ariz., FSS, has transferred to the Fairbanks FSS as deputy chief.

CENTRAL REGION

Promoted to chief of the Eppley tower in Omaha, Neb., was **Thomas G. Jones**, chief of the St. Joseph, Mo., Tower.

EASTERN REGION

The Newark, N.J., Tower chief, **Eugene Bryant, Jr.**, was selected to be chief of the Albany, N.Y., Tower . . . **Louis J. Deurlein** of the Pittsburgh, Pa., AF Sector has gotten the nod to be chief of the sector field office there . . . **Chauncey E. Damron**, an assistant chief at the Washington FSS, was named to the chief's spot at the Huntington, W. Va., FSS . . . JFK International deputy chief **James Edward Johnston** has crossed the river to become chief of the Newark, N.J., Tower . . . **Joe D. Hatcher** of the Huntington FSS is now the deputy chief of the Pittsburgh FSS . . . **Harold F. Consaul** has been reassigned at the Albany Tower as its deputy chief.

GREAT LAKES REGION

Wilbert E. Showers, Jr., of the Fort Wayne, Ind., FSS has transferred to the Eau Claire, Wis., FSS as its chief . . . **John W. Metcalf, Jr.**, has left Washington Headquarters to become an assistant chief at the Findlay, Ohio, FSS.

NAFEC

The new chief of the Aircraft Airworthiness Branch is **William T. Westfield**, who had been with the Systems Re-

search and Development Service in Washington Headquarters.

NEW ENGLAND REGION

Washington Headquarters has lost **William T. Cook** to the Norwood, Mass., GADO as its chief.

NORTHWEST REGION

John J. McLaughlin, chief of the Burley, Ida., FSS, was selected for an assistant chief's spot at the Seattle FSS . . . Taking McLaughlin's job at Burley as chief was **John P. Roberts**, who was chief of the Ephrata, Wash., FSS . . . **James T. Perkins** of the Portland, Ore., Tower has been named chief of the Troutdale, Ore., Tower.

PACIFIC-ASIA REGION

Alaskan pilot **Dustin L. Sloan** has been selected chief of the Tokyo Flight Inspection Group.

SOUTHERN REGION

Clifford Guetter has left his assistant chief's job at the Mobile, Ala., FSS to become deputy chief of the San Juan, Puerto Rico, IFSS . . . **Thomas T. Martin** has been boosted to an assistant chief at the San Juan ARTCC.

SOUTHWEST REGION

Thomas L. Reed has transferred from the Indianapolis ARTCC to the Houston, Tex., ARTCC as an assistant chief . . . The Moisant Tower in New Orleans has yielded up **Peter P. David, Jr.**, to the Lakefront Tower in New Orleans as its

chief . . . **James C. Harris**, chief of the College Station, Tex., FSS, has been promoted to chief of the Lufkin, Tex., FSS . . . The new chief of the Fayetteville, Ark., FSS is **Bert A. Clayton**, the chief of the Lubbock, Tex., FSS . . . **Curtis D. Jenkins**, the former deputy chief of the San Antonio, Tex., Tower, has transferred as chief to the Hobby Tower in Houston . . . **Marvin G. Shilling** from Washington Headquarters is the new assistant manager of the Bethany AF Sector in Oklahoma City.

WESTERN REGION

Named an assistant chief of the Paso Robles, Calif., FSS was **Emil J. Sereda**, an assistant chief from the Blythe, Calif., FSS . . . Selected from the Greater Pittsburgh, Pa., Tower for the Davis-Monthan AFB Tower in Arizona was **Clayton D. Boring** for the same job as an assistant chief . . . **Jerry W. Thames**, an assistant chief at the Fresno, Calif., FSS, has been promoted to assistant chief at the Los Angeles FSS . . . **Rex L. Finch** of the Roswell, N.M., Tower is now the chief of the Grand Canyon, Ariz., Tower . . . **Joseph J. McMullen** of the Thermal, Calif., FSS is still an assistant chief, but now it's at the Fresno FSS . . . An assistant chief at the Stockton, Calif., FSS, **Otho E. Lusk** has transferred to the Prescott, Ariz., FSS as an assistant chief . . . **Nancy Murdock** of the Aeronautical Center has been promoted to assistant chief at the Los Angeles FSS.