

MARCH 1973

FAA WORLD

Service to Man in Flight



ATC → → →



AND HOW
IT USED
TO BE

FAA WORLD

MARCH, 1973 VOL. 3, NO. 3

CONTENTS

Editorial	2
ATC . . . and How It Used To Be	3
Faces and Places	10
One Man's Trash	12
Like It Is	14
Mobility Gulch	15
Fables	15
Towers by the Score	16
Direct Line	18

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FAA WORLD is published monthly for the employees of the Department of Transportation/Federal Aviation Administration and is the official FAA employee publication. It is prepared by the Employee Communications Staff under the Associate Administrator for Manpower, FAA, 800 Independence Ave., Washington, D.C. 20591. Articles and photos for FAA WORLD should be submitted directly to regional FAA public affairs officers:

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The covers: Associate Administrator for Appraisal Archie League was one of a small but growing band of air traffic controllers in 1933 who spent a lot of time outdoors. At St. Louis Municipal Airport, he talks down a plane in IFR weather. Others in our scrapbook depict how it was a generation ago and what it's become in the space age.



A Farewell

The privilege of serving as Administrator of FAA during what was surely the most dynamic period in civil-aviation history was enormously satisfying. Through your hard work and total dedication to duty, we have developed and are now maintaining the safest, most efficient aviation system in the world. I am proud of you and these impressive accomplishments and I thank you for your tremendous efforts in achieving our mutual goals.

In 1969, the air traffic control system was basically a manual system, adequate system capacity was lacking, and, generally, our capital-investment programs suffered from cyclical funding.

The picture is much brighter today with revenue from the Airport and Airway Development Act providing funds for major system advances and capacity expansion. We now have automation in 20 of our air traffic control centers, Automated Radar Terminal Systems (ARTS) in 47 terminal facilities, a new accident-prevention program, major environmental-improvement programs and many other innovative efforts which are the foundation for an impressive new era of progress—the true air age.

The positive action taken to provide expanded opportunities for FAA people is equally important. The new air traffic controller career legislation, increased emphasis on upward mobility and equal opportunity, better training programs and implementation of a new Executive Development concept give new dimensions to our human resources.

It is clear that ever greater challenges will surface in the future. We have made major advances in air-transportation security, and it is especially important to put that problem in perspective; it's serious, but we seem to have it under better control with each passing day. We also have made great strides in making the airport a good neighbor, but we must press for better and broader understanding of aviation's benefits at the local and state levels. We should emphasize and re-emphasize the importance of airports to our communities and aviation to our nation. The advent of the quieter wide-bodied jet transports has shown what technology can do. The technology that produced these aircraft must now be expanded and applied to society's other troublesome problems.

Aviation is America's most dynamic industry. The FAA must maintain an equally dynamic and responsive posture if our National Aviation System is to remain Number One in all the world.

My service as Administrator has been the most gratifying experience of my adult working career. As I return to private industry, I am optimistic that the best is yet to come for all who use the system. I know you will show the new Administrator the same spirit, dedication and responsiveness that have made me justly proud of FAA and the great work it does in the service of those who fly.

John H. Shaffer
 JOHN H. SHAFFER
 Administrator

ATC . . .

AND HOW IT USED TO BE



One of the first controllers, Archie W. League is shown in his winter uniform at the St. Louis Lambert Municipal Airport in 1929.

"Far out on the field of Lambert, St. Louis flying port can be seen a gaudy umbrella besides which a figure manipulates a set of flags." This is how an early controller was described in a 1929 newspaper account telling about the life of a "field traffic dispatcher."

The controller was Archie W. League, now FAA's Assistant Administrator for Appraisal. His "control tower" was a wheelbarrow he pushed out onto the field each morning and back each evening. On the barrow he carried the day's needs—his two flags: a red one meaning *hold* and a checkered one saying *go*; a camp chair; a note pad; and his lunch, as well as a supply of drinking water. That's how it all started.

The first giant step forward took place in Cleveland where the first city-operated, radio-equipped airport traffic control tower was set up in January 1930. This was one year after the first successful instrument landing was made by James H. Doolittle and four years after the Air Commerce Act of 1926 transferred the Transcontinental Airways from the

Post Office Department to the Bureau of Lighthouses, Department of Commerce.

The equipment used by controllers in that first tower was rudimentary—practically nonexistent—compared to today's ARTS III-equipped towers. Nevertheless, the basic mission was essentially the same: to prevent collisions between aircraft and to provide for a smooth and orderly traffic flow.

By 1936 a total of 20 cities had established towers with light guns and low-powered radio transmitters. Locally determined procedures and common sense were the only rules that governed the controllers in those days.

After the Civil Aeronautics Act of 1938, however, municipal controllers were certified by CAA for theoretical knowledge, physical qualifications and experience, and shortly thereafter, regulations requiring pilots to comply with the controller's instructions were passed.

Five years after the first radio control tower went into business, the first en route center was set up at Newark Airport on Dec. 1, 1935. Like

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On duty in his summer office is air traffic controller Archie W. League, now FAA's Assistant Administrator for Appraisal. The picture was taken at Lambert St. Louis Municipal Airport in 1929. Note the rolled up signaling flags in the wheel barrow and his dangling lunchbox.

the first towers, this was not a government enterprise. It was operated by a group of airline companies that consolidated their ATC efforts and was manned by airline personnel. (Many of those early airline controllers subsequently joined the agency and made air traffic control their life's work.)

The next year, two more airline-operated en route centers were established—one at Chicago in April 1936 and one in Cleveland in June of that year. These centers were not long a private affair. In July of 1936, they were taken over by the Bureau of Air Commerce.

Everything was up-to-date in these "centers." The communications setup consisted of party-line telephone circuits connecting the center with the local airline radio stations, the airport control tower and radio range stations—the forerunners of today's Flight Service Stations.

Controllers used a blackboard to keep track of flight data, such as flight number, destination and time of arrival. The plane's progress was plotted on a map spread out on a table. The plane was represented by a small metal marker, cut roughly in the shape of a small boat and called, apparently from the very beginning, a "shrimp boat." As we enter the age of automation in ATC, the expression is still used. The position of the plane, which was guesstimated from its course and speed, was plotted on the map and updated every 15 minutes. This was essentially the same method used by the navigators of the era. Sometimes it worked fine. But sometimes unknown factors such as winds aloft changed the picture, and it didn't work fine at all. The method, used also by Columbus and Magellan and presumably known by Icarus, was named Deductive or Ded Reckoning, and often it was called Dead Reckoning. But it was all there was, and for many years controllers using these methods kept traffic flowing smoothly and safely through the still-lonely skies.

As the fourteenth en route center was commis-

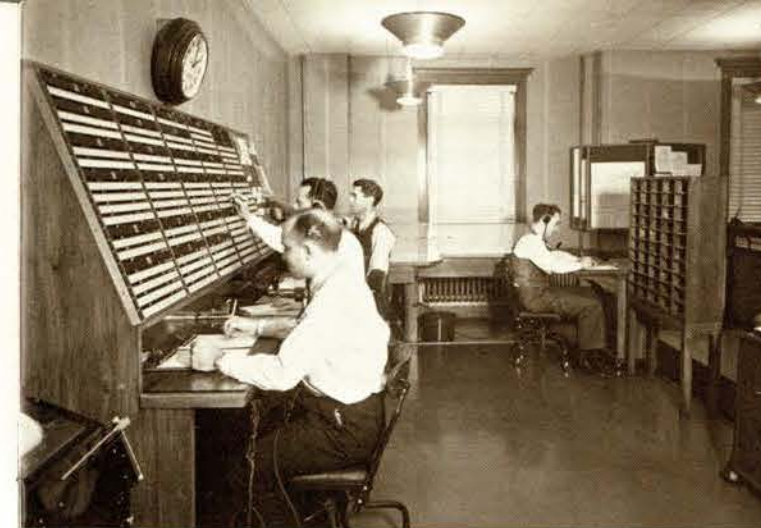
sioned at Cincinnati and the fifteenth was readied at Jacksonville, steps were taken to include certain busy air traffic control towers in the Federal system. Under a procedure established by Congress as essential to National Defense, CAA began to take over the operation of towers on Nov. 15, 1941, just three weeks before the Japanese attack at Pearl Harbor. Among the first things the agency did was set up a training program and devise a system of uniform methods, equipment and standards. In July of 1942, training schools were established in each of the seven CAA regions. Generally, the courses were six months long, but some consisted of three months of classes and three months of apprenticeship in a facility. Between 1942 and 1945, approximately 4,000 agency employees were trained—about 90 percent of them women.

At first, the controllers in these towers only controlled traffic operating visually in the immediate neighborhood of the airport, but as traffic increased and as more and more planes operated on instruments, the controller's workload grew. By 1944, the safety and separation of planes operating on instruments in the vicinity of the tower became their responsibility.

These early approach controllers worked out their own methods as they went along. William Flener, now Director of the Air Traffic Service, told us about those early days when he was one of the first approach controllers in the Portland, Ore., Tower.

He explained that although they could transmit on one frequency and receive on three, often clear-

The first air traffic control tower in the United States was this one at Cleveland, Ohio. The device on the top of the greenhouse tower is a wind "tee."



Flight-strip racks are prominent in this 1938 picture of the St. Louis en route center. The controllers manning the facility are (from the left) John Knoell, Cleon Freeman, Charlie Clift and Charlie Carmody.

ances had to be routed through local radio-range stations or through an airline's company radio. Their equipment consisted of a stack of flight-progress strips mounted in a wooden rack.

"We had to take the pilot's word for his position, course and airspeed, and then we would estimate his time of arrival." He explained that they would hold the planes in a stack over the low-frequency range or over the fan markers and bring them in one at a time. Sometimes, they stood on the catwalk and talked planes in by the engine noise. In this way they landed one about every five to seven minutes. It couldn't handle today's traffic, but it did the job until something better came along. The something better was radar, which allowed the controller to "see" way out into the sky.

No longer did the controller have to depend solely upon the pilot and the pilot's estimate of his position. Now he could look at the radar and by following the "blip" on the scope, follow the plane's course through the night or cloudy sky. What a boon to the controller who up to this time had

The latest equipment and tower design can be seen in this 1936 shot of the Newark, N. J., Tower.



The Corpus Christi, Tex., Tower was perched atop this open structure in 1941. Note the spiral staircase—not too comfortable a climb in inclement weather.

sweated separation by guess and by God and could now actually measure the distance between planes on his radar!

The first radar-equipped tower for civilian flying went into business at the Indianapolis Airport on May 24, 1946. Starting with basic radar devices developed for the armed services, CAA and industry engineers modified the equipment to include many late improvements, such as moving-target indication and an improved search antenna.

Other military radars were also set up at Washington and Chicago to test the practicability and usefulness of radar in surveillance and control of air traffic. Although these converted Army systems were not satisfactory for continuous use, the concept of using radar proved to be practical. In April 1948, contracts to replace this equipment were awarded, and in 1950, radar was purchased for use at 49 airports with high traffic density.

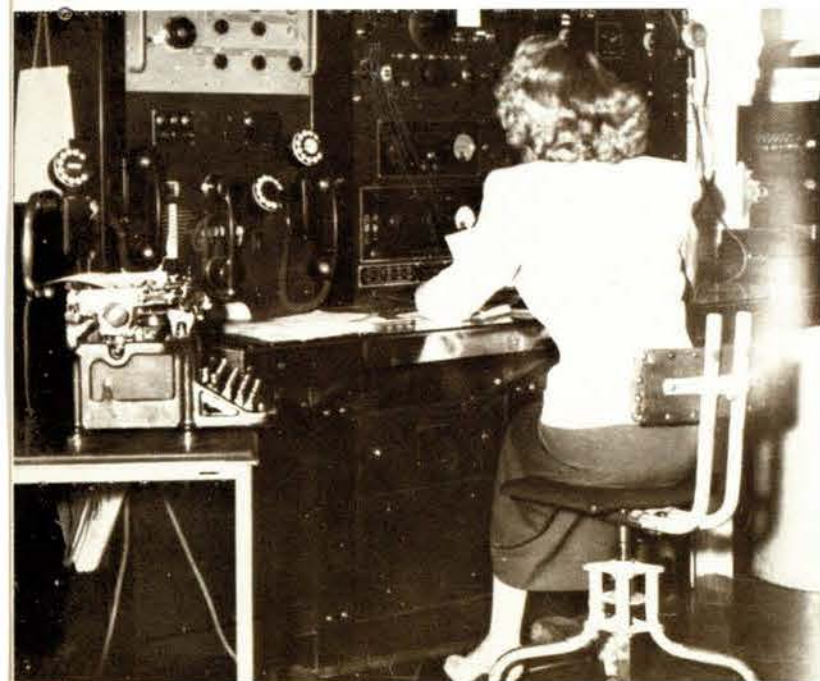
Long-range radar—for use in the en route centers was a little longer in coming. By 1948, engineers were studying the possibilities of developing long-

Controller William Flener on duty in the Great Falls, Mont., Tower in 1943. He is now Air Traffic Service Director.



range radar for use in the 27 en route centers that by then dotted the continental U.S. After several experiments with military radars, the first long-range radars for en route control of civil aviation were installed at the New York, Chicago and Norfolk air route traffic control centers. This equipment, which had been supplied to CAA by the military, had a number of limitations and was replaced by a more sophisticated system, the ASR-1, beginning in August 1958.

Now that controllers were able to "see" through the blackness of night and through all sorts of weather, the next step was to tell them what they were seeing. From the raw radar return, all they knew for sure was that there was a target out there a certain distance and direction from the antenna. Identifying the target often called for time-consuming radio exchanges between controller and pilot.



In the early days, both enroute centers and airport towers often had to route communications through radio stations such as this. These forerunners of Flight Service Stations were often manned by women, particularly during World War II. This photo dates back to 1940.

To give controllers a hand with this vexing problem, the agency launched a comprehensive research and development project in the field of radar-beacon systems in 1954. Much of the initial development work had already been completed and was incorporated in the military radar-beacon system known as IFF—"Identification, Friend or Foe." However, refinements and improvements were required if such a system was to be adapted for use in the nation's air traffic control system.

Essentially the system consists of a beacon on the ground and a small transmitter, called a transponder, in the aircraft. The beacon transmission interrogates the transponder—quite literally "it turns it on." Then the transponder sends back a signal which indicates the position of the plane and can indicate the plane's altitude, ground speed and flight number.

As is the case with many ATC developments, industry—or specifically the airlines—was more than casually interested in the development of beacons. This was dramatically illustrated by an incident that occurred when the development was in its later phases.

Team members of the Beacon Systems Section of System Research and Development Service were casually studying a radarscope one afternoon when suddenly a transponder target appeared on the screen when no transponder research flight was aloft. After watching the plane complete a standard approach pattern and land at Indianapolis Airport, the mystified experts drove to the terminal where they were told by the captain of the "mystery plane" that his airline was already equipping its fleet with transponders in anticipation of the benefits of the new program.

In 1959, after the "bugs" had been worked out of the system, the first radar-beacon facilities were commissioned at JFK, La Guardia and Newark. The system became nationwide with the installation of ground facilities in other areas in 1960, the year the use of beacons was made mandatory for planes flying positive-control route segments.

The advantages of the beacon/transponder system were immediately apparent. The blips, or targets, of transponder-equipped planes were electronically painted on the controller's display, making them easily discernable and not likely to get lost in clutter; and the target itself was easily identifiable—at the controller's request the pilot could be told to "Squawk ident," and the target in front of the controller would light up. Other pluses of this system—such as the ability of the aircraft to send an individualized code and altitude information—would become increasingly important as automation came to the National Airspace System in the late 60s and early 70s.

But these advances did not come easily. Trying to get enough money to do the job was a perennial problem. In the early 50s, particularly, money for ATC improvements was hard to come by. The staffing at en route centers, for instance, was below standards. In other words, there were not enough people to do the job properly.

Just as necessity is said to be the mother of invention, so tragedy spawned improved ATC systems. In June of 1956, two airliners flying outside of controlled airspace, collided over the Grand Can-



Center controllers sitting around an early long-range radar display keep track of planes by moving plastic "shrimp boats" on the display screen.

yon, killing 128 persons. A month later, Congress approved a supplementary appropriation of \$50 million for CAA. In the wake of this action, CAA's Office of Federal Airways split and the Office of Air Traffic Control was organized; a five-year plan to provide long-range radar was instituted; and 1,100 additional controllers were hired, some earmarked specifically to staff the high-altitude program. (By December 1957, CAA instituted continental control of airspace above 24,000 feet.)

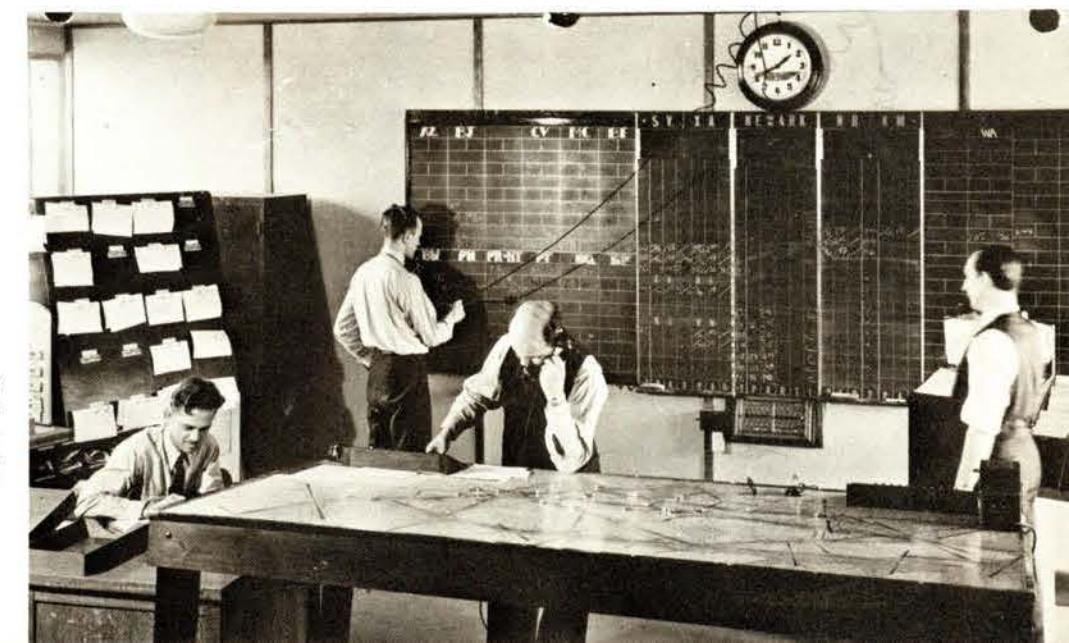
At the same time, a new philosophy—a critically important way of thinking—emerged. Instead of making controllers conform to the tools given to them by engineers, controllers operating the system were asked to develop broad performance specifications for the equipment they needed, and the engineers were required to use their ingenuity and skill to devise and perfect such equipment.

This kind of thinking continued to dominate as

ATC moved into the 60s. A system, based on the beacon/transponder link and designed to meet the needs of the people who manned it, was coming into being. In 1964, the Advanced Radar Terminal System (ARTS I) was hooked up in the Atlanta Tower, and for the next two years, this alphanumeric (letters and numbers) system was put through a series of tests to evaluate the feasibility of the automation concept for use in terminals.

ARTS I as well as the alphanumeric equipment being developed for en route centers allowed the controller to see the plane's identity, speed and altitude right on the radar display. The information was written electronically in the form of an alphanumeric tag that automatically followed the aircraft target.

There was a second major technological advance in 1965. The Stored Program Alphanumeric (SPAN) system was tested by the Indianapolis



Things were humming in the Newark Center back in the 1930s. Note that "shrimp boats" indicating planes were used on a map table, and the controllers kept track of flight progress by chalking it on a blackboard.



State-of-the-art in en route center equipment at Los Angeles involves radar and computer update equipment (CUE) for entering the flight-plan data. At the computer entry device (CED) is an alphanumeric computer readout.

Center. After it was clear that the system lived up to design specifications, the equipment was shipped to the New York ARTCC to help cope with the extreme high-density traffic.

At the same time, another automated system was developed for the New York Common IFR Room which would eventually handle all traffic landing and taking off in the New York Metro area. By 1968, both the basic and alphanumeric hardware in the "Common I" were successfully checked out, and limited operations began. Traffic landing or taking off from JFK came under the facility's control.

The alphanumeric equipment tested at Indianapolis was not designed to cope with the heavy N.Y. traffic and was once again dismantled and shipped to the Atlanta Terminal where it was used to augment the ARTS I prototype equipment being tested there.

As the centers began to be equipped with computers and alphanumerics appeared in the system, a plan to automate the entire en route system was approved in 1968. It was called NAS Stage A. The first phase of the plan called for the early installation of a computer and computer update equipment (CUE) to provide centers with automatic flight-data processing, while the second phase was conceived to bring automatic tracking and alphanumerics. At the time the plan was approved, the prototype equipment for both phases was being set up at Jacksonville, where it underwent years of testing. By 1970 the first flight plan was filed in San Francisco and flashed across the country auto-

matically along the plane's proposed flight path. In this way, each facility along the line was expecting the flight when it arrived in its area.

As 1973 dawned, all 20 NAS en route centers were plugged into the national, computerized flight-data system which meant that a flight plan entered at any center can be sent to any destination along any route and be updated along the way—all automatically.

As these "space age" tools were being developed, the national airspace system was becoming saturated. By 1969, unprecedented traffic bottlenecks occurred at major traffic hubs.

The agency attacked and continues to attack the problem with both short and long-range programs. The so-called quota rule was adopted for major hubs, which limited the number of IFR operations at JFK, La Guardia, Newark, Washington National and Chicago O'Hare. Although originally instituted for a limited period, the quota rule has so successfully cut delays that it has been retained year after year. Also helping to reduce delays at this critical time was a technological boost. The New York Common IFR room shifted from a manual radar to a computerized alphanumeric system. Subsequently, Common IFR rooms or TRACONS (Terminal Radar Approach Control) using alphanumeric equipment similar to that used in New York were set up at Dallas and Oakland. Among the long-range programs was the speeded-up introduction of Area Navigation routes into the system. This program reduced congestion by multiplying the number of "highways in the sky."

Also vigorously pushed was the program to equip towers with automated alphanumeric equipment. This Automated Radar Terminal System (ARTS

The first field facility to get the Automated Radar Terminal System was Chicago O'Hare. The controller watches a display that automatically shows the identity, altitude, speed, range and bearing of aircraft in the terminal area.



III) equipment—like the slower, less versatile ARTS I prototype—allowed the controller to see the plane's identity, speed and altitude, on the radar display. This information is written electronically in the form of an alphanumeric tag which automatically follows the aircraft target.

The ARTS III was first ordered in February of 1969, and these highly complicated, sophisticated systems began to move off the assembly line at the end of the following year. The first two systems were delivered in December 1970. One went to the FAA Academy for training purposes, while the other was delivered to Chicago's O'Hare Tower for the control of live traffic. Produced at the rate of three a month, all 64 of the systems ordered were delivered to the agency by the end of 1972. By January this year, 48 were operational.

As the campaign to equip the nation's busiest terminals with automated, alphanumeric systems draws to a close, the first alphanumeric equipment is being delivered to en route centers in the second phase of NAS Stage A. In December of last year, the radar data-processing package of the Computer Display Channel (CDC) was delivered to the Los Angeles Center. This is the first center to test the equipment that electronically writes an aircraft's altitude and identity on the controller's radar display or "plan view display." The center is expected to reach its initial operating capability by next May. The CDC, is scheduled to be installed in 15 of the NAS centers.

However, the five busiest centers, New York,



The modern Cleveland Center, efficiently organized and human engineered, with carpeting to cut noise levels.

Washington, Cleveland, Chicago and Fort Worth, will be equipped with an even faster system driven by the IBM 9020 E display computer. According to the Stage A automation plan, all 20 of the en route centers are expected to reach radar data processing—or alphanumerics—initial capability by the end of 1974.

Then the plan will be fulfilled. But FAA will have another plan—if you fly, you can bet your life on it.

—By Theodore Maher



Large panes of glass and a low-profile console add up to an unobstructed view in this modern air traffic control tower.

FACES AND PLACES



WHERE THE ACTION IS—Western Region controllers (left to right) Harry Nickolson, Phil Aune, Larry Tancraitor and a trainee take their suitcase-tower with them. The region designed "Porta-Com" was set up on a flat-bed truck for a fly-in at Santa Suzana, Calif.

RARIFIED SUMMER—Seattle high school students James Bowser (No. 76) and Kyle Warner (No. 45) received Special Achievement Certificates and cash awards for their summer work with a Maintenance Field Party at the Ashton, Idaho, radar atop 9,000-foot Sawtelle Peak. Presenting the awards were Northwest's Don Fuller (left), AF environmental specialist, and Don Opsal, general maintenance foreman, Seattle Field Working Group.



AVIATION PIONEER CITED—In recognition of 45 years of outstanding service to aviation, Anthony "Speed" Hanzlik (second from right), manager of Flushing Airport, Queens, N.Y., was awarded FAA's Certificate of Appreciation by Eastern Region Director George Gary. Joining in are Flight Standards Division chief Harry Bernard (right) and Air Carrier Branch chief Jack Behrens.

SIGNING UP—Charles "Red" Schild (left), Denver operations inspector and vice president of the Air Carrier Operations Inspector Society, welcomes Usto Schulz as a new member of the society. Schulz is chief of the Air Carrier Operations Branch in the Rocky Mountain Region.



PATCHWORK—Albuquerque Center controllers Nicholas Williams (left) and Robert Williams have begun a unit patch collection to exhibit in the center's lobby. In three months, they collected 80 military unit patches and five air carrier pilot wings for the display.



EEO TRAINER—James S. "Scotty" Riggan, AF program analyst in the Alaskan Region, received the Exceptional Service Citation from former DOT Secretary John Volpe for his work in planning, developing and implementing a vocational training program for Alaskan natives.



TAKES THE CHAIR—Administrator John Shaffer congratulates William Reddick on his selection as chairman of the headquarters Civil Rights Committee. Reddick is program manager for Navigation, Surveillance and Weather Programs in the Short Haul Air Transportation Systems Office.

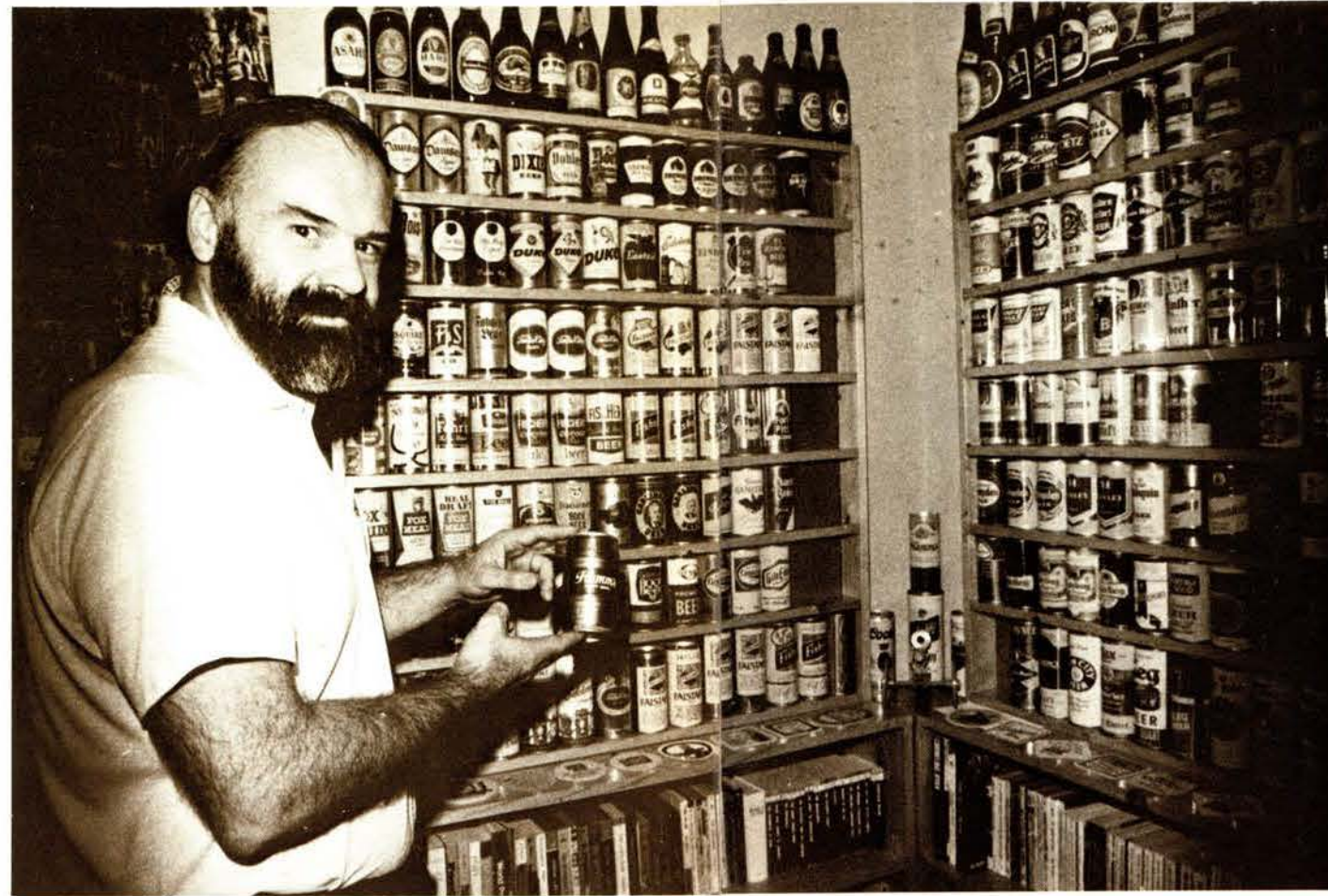
A LOVELY WAY TO GO—Helping dedicate the Sacramento FSS were (left to right) Robert Blanchard, Western Deputy Director; Miss Sacramento 1972 Laura Harrison, whose father is a controller at Lenmore RATCC; Jack Moore, acting FSS chief; Frank Happy, area coordinator; Joseph Crotti, California Director of Aeronautics, George Schwab, Sacramento GADO chief; and specialist George Menkie.



LET THERE BE LIGHT—When a dump truck felled power poles and cables in remote Bethel, Alaska, plunging the village into darkness, AF personnel Clyde Bolyan, facilities superintendent; Lester Stallcop, construction lead foreman; and Earl Hiett, carpenter, working on a project nearby, pitched in to restore service over a weekend.



ONE MAN'S TRASH IS ANOTHER MAN'S TREASURE



Opening a Markmeister from the bottom—that's the only way to do it, Don relaxes with his wife Joan, who works for Airports Service, following a tour of his collection.

A library of beer cans—Don Schroeder holds a Hamm's can made in the form of a beer keg. With some 975 cans, Don is a "brewmaster."

"I was weaned on Genesee Beer in upstate New York," said Don Schroeder, as he carefully opened a can of beer by puncturing it on the bottom.

He poured the brew—a little known brand—into a glass and handed it over. It smelled like something besides beer and tasted fair. "I guess I'm just a natural accumulator," Schroeder said as he led the way to his collection of some 975 beer cans, gathered from nearly every part of the country over the last few years on personal visits or in trades by mail. Most were full when he got them, but they're empty now. He has cases of full ones which he empties as needed to make trades by mail. The serious collector never opens a can from the top—that would mar its appearance. Small holes are punched in the bottom.

A senior policy analyst in FAA's Office of Aviation Policy and Plans at Headquarters, Schroeder belongs to the Beer Can Collectors of America, an organization founded in St. Louis in 1970 and grown now to nearly 1,000 members whose motto is "Don't Kick the Can."

His collection is startling—and beautiful. The

hallway of his home and three corners of his den are lined with shelves reaching nearly to the ceiling filled with beer cans of every label known to the television viewer and hundreds of labels known to almost no one—except beer-can collectors and people who live in towns where the beer is brewed and sold locally.

"There have been about 13,000 different canned brands brewed in this country," Schroeder said, "but the number is going down fast because big companies keep merging and buying out little breweries." He held up a picture of a can of Soul Malt Liquor, which was made in the Watts section of Los Angeles several years ago. "They went out of business in a few weeks, so a can like this is a great find. It could be worth 25 other cans in trade. I'd sure like to have one." Members of the B.C.C.A. are fervent in their desire to keep money out of their hobby. Cans are almost never bought for cash, but traded for other cans.

Schroeder missed the B.C.C.A.'s First Annual Convention in St. Louis in 1971 but attended the second convention last year in Lake Geneva, Wis. He's all set to go to this year's in Cincinnati, Sep-

tember 14-16. Members bring their beer cans and set up displays, trading shrewdly for cans they want to add to their collections. The Can of the Year and Miss Beer Can are chosen, and commemorative beer cans, donated by a beer company, are given out. Awards go to the best collections.

"Until I heard about the B.C.C.A. a couple of years ago, I thought I was the only nut collecting beer cans," Schroeder said. Many collectors roam the woods and dumps looking for choice cans and helping in the process to keep America beautiful—one man's trash is another man's treasure. The touchstone of collecting is having different cans: different brands, different types—aluminum or steel, pop-top or flat, seamed or seamless, tax stamped or not—and different kinds of lettering and color schemes. Many labels undergo major or subtle changes in a complicated evolutionary cycle. "The thrill of discovery makes beer-can collecting exciting," Schroeder said. "My first interest is beer cans, but I've collected other things, too—rocks, stamps, coins." Lately, he's been dabbling in license plates and has the nucleus of a collection.

—Text and photos by Don Braun

... Like it is!

TAX HELP IS WAITING

IRS has expanded its taxpayer assistance, now offering some evening and Saturday office hours. The service is provided over the phone and on a walk-in basis.

\$ KILL 4-DAY-WEEK TEST

In line with the Administration's economy moves, the 4-day workweek test with selected agencies has been shelved. It would have required overtime pay for the 10-hour days, which law forbids even employees to waive.

COURT TO SIT ON HATCH ACT

The Supreme Court is expected to rule on the constitutionality of the Hatch Act in June, while staying the ruling of a 3-judge Federal panel that the law barring political activities by Federal employees is unconstitutional.

YOU'RE NOT ENTITLED

The Comptroller General has recently ruled on three cases where employee reimbursement is disallowed. ■ If you have an accident in a government vehicle, let your agency handle all claims. Volunteering payment when not legally liable leaves you out in the cold. ■ No repayment is possible if you suffer a loss when your scheduled leave is canceled. The case involved a vacation deposit lost when annual leave was cancelled by the government. ■ Reimbursement for expenses in buying/selling a home can be sought beyond a year, but not for those between real estate firms and the seller.

FACTS ABOUT FACS

FACS, a CSC computer skills inventory of certain employees, is now being used government-wide. The

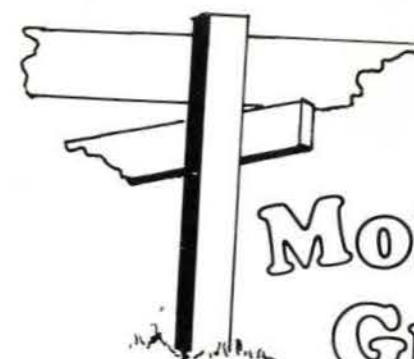
Federal Automated Career System is designed to locate candidates for key vacancies throughout the government. Included are GS 13-14s in administration, finance and accounting, engineering and architecture, business and industry, and mathematics and statistics; and GS 11-14s in personnel. FACS listing is mandatory for employees in the affected job/grade categories, but voluntary participation is available for other employees who meet the job/grade qualifications. FACS will supplement the bidding system in FAA. More info is available from your local personnel office or CSC.

MEDICARE FOR US

Last session's Social Security law asks CSC to develop a plan for supplemental Medicare coverage for Federal employees by 1975. This applies to employees who had past Social Security coverage from private employment, but it might be extended to all government employees, which would likely require payroll deductions during your working career.

WE ALWAYS KNEW IT

BLS figures show that a much-higher salary is needed in larger cities than in small. So, Rep. Benjamin Rosenthal (NY) has sponsored legislation to give cost-of-living bonuses to Federal employees living in metropolitan areas of 500,000 or more. This would affect 78 percent of all Federal employees. ■ If Rep. Bill Chappell, Jr. (Fla) has his way, employees who retire after the date of cost-of-living annuity increases will get the benefit. This would prevent the logjam that occurred last June and spread retirements over the year.



Mobility Gulch

Is there a move in your future? Are you planning a vacation away from home? Do you have a house you wish to sell-rent-buy? This column is your stepping stone to planning ahead. If your home will be up for sale, another FAAer coming your way might be a likely customer. A home advertised from your future post is the place to look into first on your free house-hunting trip. A mountain retreat may be just the ticket for vacationing flatlanders, or a beach house for the landlocked... and you can arrange for it before you slam the car door. Do you have an airplane to sell? An FAAer within flying distance may be looking for you.

This free service is open to principals only. Ads will appear approximately six weeks after submission. Send your ad with address and phone number, including the area code, to "Mobility Gulch," FAA WORLD, 800 Independence Ave. SW, Washington, D.C. 20591.

ALABAMA

House for sale in Mobile, 20 minutes from FAA; 2302 sq. ft. living area on ¼ acre, 4 bedrooms, 1½ baths, central air conditioning-heating system, central vacuum cleaning system, large double carport with utility, fenced yard, screened porch, terrace with gas grill, small greenhouse; one of best neighborhoods near 3 public and 6 private schools, 5 churches, shopping centers, country club and neighborhood swim club; \$35,000. Call 205-661-1411.

CALIFORNIA

Custom-built house for sale in San Fernando Valley, 9 miles from Hollywood-Burbank Airport; half acre, zoned for horses, surrounded by riding trails; 2 bedrooms, convertible den, 1½ baths, 40 ft. heated pool, beautifully landscaped with many fruit and shade trees; \$39,000. Call 213-896-8569.

FLORIDA

Wanted: for second and third week of March, 2 bedroom apartment or small furnished house in vicinity of Bradenton, Sarasota, Venice or Naples. Write Bill Hanka, Skidmore Rd., Mt. Pleasant Valley, N.Y. 12569, or call 914-635-3311.

HAWAII

Furnished vacation apartment for rent at Lahaina, Maui, 150 feet from beach; 1 bedroom, 2 baths, living room, kitchen, lanai, color TV, air conditioning, closets; furnished including linens, towels, dishes, pots and pans, service for 8; available any time of year; reasonable rates. H. W. Schuermeyer, 1051 E. 26th Ave., Anchorage, Alaska 99504. Call 907-272-9705.

MARYLAND

Furnished apartment for sale on bayside at Ocean City; 1 bedroom, air conditioned, heated, wall-to-wall carpeting, sleeps six, private boat slip at door; \$18,900. Call 703-356-5913.

Chesapeake Ranch Club lot at Drum Point for sale, 1 hour from Washington; 100x150 feet, wooded and level; club has adult and teenage clubhouses, golf courses, swimming pool, tennis courts, 2 beaches on Chesapeake Bay and one on a fresh-water lake, 2 marinas, 2400-foot landing strip, own water system, police and security system; \$3,440 and take over payments of \$40 per month or full price of \$5,500. Call 301-577-1486.

NEW YORK

House for sale in Huntington, Long Island (north shore); wooded lot in beautiful area, short walk to beach; "move-in" condition for immediate occupancy; 3 bedrooms, 2 baths,

dining room, living room with fireplace, eat-in kitchen, finished playroom, basement with shop and outside entrance, 2-car garage, aluminum combination storm windows; \$45,000. Call 516-HA 7-8040.

NORTH CAROLINA

Beach house for rent on unspoiled stretch of beach in Nags Head, N.C.; new chalet has 3 bedrooms, 1½ baths, beautifully furnished, sleeps 6; off season \$135 per week, July-August \$200 per week. Call eves 301-656-3447, days 202-755-1442.

TENNESSEE

Swiss chalet style 3-story house for sale at Renegade Ski Resort, 12 miles east of Crossville; 4 bedrooms, 3 baths, 2 living rooms, 2 kitchens, 2 fireplaces; complete furniture, furnished to sleep maximum of 15 for resort rental; lot 130 feet by 218 feet; \$25,000. Call 615-484-5979.

VIRGINIA

Lot for sale on Lake Caroline in Ladysmith, 1 hour from Washington on I-95; approximately ½-acre, wooded and level; includes charter membership and clubhouse privileges, swimming pool, sandy beaches, tennis courts, picnic areas, two fishing lakes, blacktop roads, police and security system, water and electricity available; \$6,500 negotiable. Call 317-247-2261.

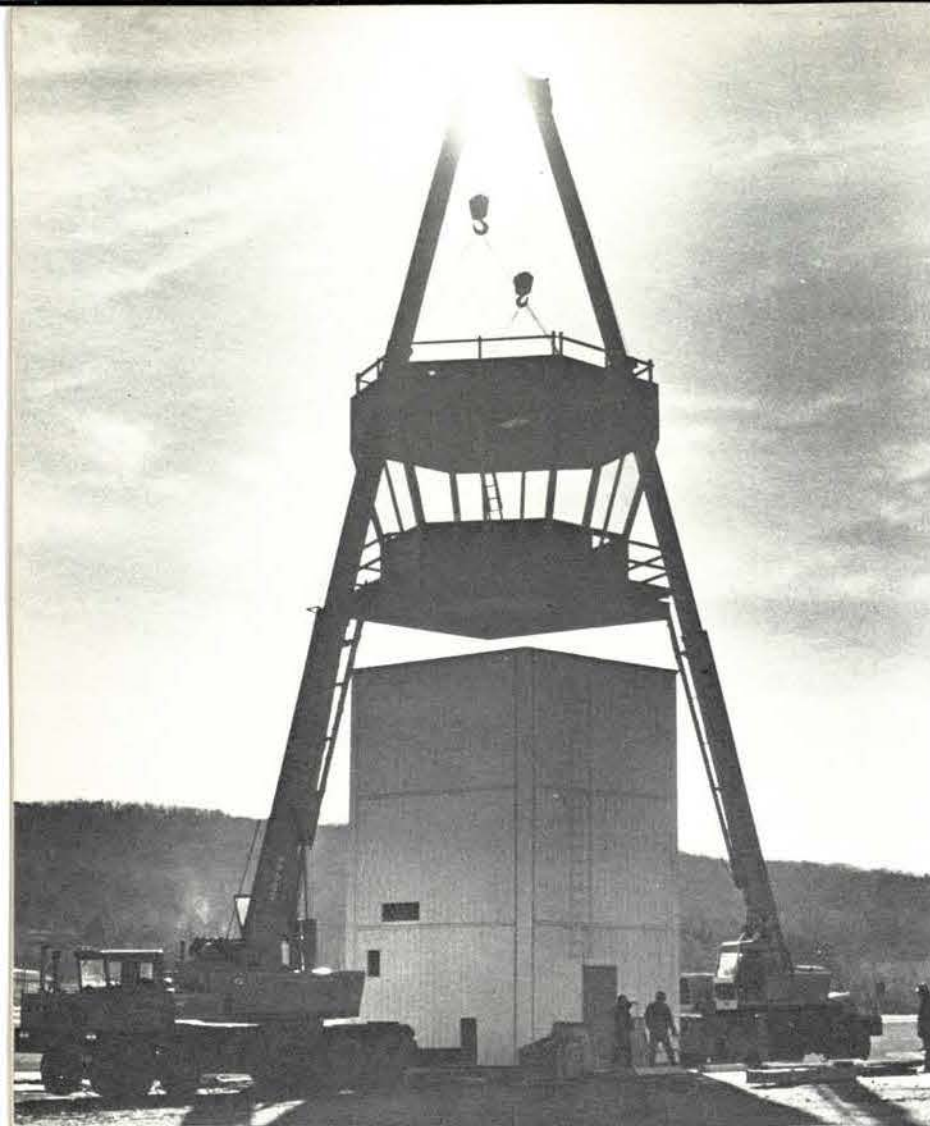
House for rent in Fairfax, 70 minutes from FAA; brick rambler, 3 bedrooms, 2½ baths, finished recreation room, walk-out basement, air conditioning, new washer and dryer; walking distance to schools and churches, FAA carpool next door; \$275 per month, 2-year lease with 1-year option available. Call 703-273-4104.

Town house for rent at Sequoyah, Alexandria (Fairfax County), 40 minutes from headquarters; 2 stories, 2 bedrooms, 1½ baths, central air conditioning, central TV antenna, all electric kitchen with disposal, dishwasher, washer and dryer, carpeted throughout, patio, garage, pool and playground; convenient to schools, shopping, churches; minimum lease 1 year, \$260 per month, 3 bedroom, 2½ bath town house also available at Sequoyah at \$300 per month. Call 703-765-7093.

faables



"Of course I wanted this done today, Nastage! If I wanted it tomorrow, I'd have brought it in tomorrow!"



William Zauche (left), March AFB RAPCON chief and local coordinator, discusses operations in the Chino cab with tower chief Logan Locke, as controller Dennis McConnell checks his traffic.

Two huge cranes lower the 13-ton cab into position on the 30-foot tower being erected at Danbury, Conn., Airport. Courtesy of the News-Times, Danbury, Conn.

TOWERS BY THE SCORE

PREFABRICATION PUTS THEM WHERE THEY'RE NEEDED, FAST

Before the spring of 1974 wanes, FAA's air traffic control towers will grow by 20 percent. The one-a-week commissioning pace is becoming a reality through the construction of 64 prefabricated modular VFR (non-radar) towers for low- and medium-activity airports in 33 states and Puerto Rico. On-site work requires only 18-20 weeks as contrasted with 12-15 months for a conventional structure.

The first to be commissioned under the program was the 58-foot tower at Chino, Calif., where six controllers will be handling 200,000 aircraft operations annually.

Typical of these VFR towers, which will average between 30 and 70 feet plus cab, the Chino Tower is made up of four modules 10 feet high and 18

feet on a side, prefabricated at the factory with a baked-enamel finish and assembled on site. Each module includes all structural members, stair sections, ladders and elevator shaft. (Towers 50 feet and over get elevators.) The tower design permits extension up to 90 feet.

The cab is assembled on the ground, set in place atop the shaft and furnished with a full range of solid-state equipment and a convenience unit with range, refrigerator and sink. The hexagonal cab provides 240 square feet of work space surrounded by a catwalk and is fitted with 15-degree-sloped windows.

The floors in the shaft modules are being used for offices, maintenance, training and storage.

The "turnkey" approach and the number of loca-



Jack Crenshaw (left), Western Region project engineer discusses low-activity tower plans with flying resident engineer Dennis Warth before the Chino, Calif., tower, the first of 64 to be commissioned.

tions involved have kept Bob Pumphrey, Jose Roman and Dick Eischeid of the Environmental Engineering Division's Building and Structures Branch on the move, but perhaps the most mobile person involved in the program is Dennis Warth, Western Region civil engineer.

Under a concept devised by Parke Potter, chief of the Facilities Establishment Branch, Warth, who is also an instrument-rated pilot, was assigned as resident engineer to monitor the construction of the nine low-activity towers being built in California. Normally, a program of this magnitude—\$2,000,000—would have required a minimum of three resident engineers, but with special training and the use of rental aircraft, Warth can do the job alone. The procedure is working well enough for the region to consider using it for other types of turnkey programs.

The total program is costing \$12,896,645, with individual units ranging from \$164,500 to \$264,500.



Bob Pumphrey (left), AF tower program manager, and civil engineer Jose Roman wait for workmen to rig the Morgantown, W. Va., cab for setting atop the tower shaft, in front of which is the temporary tower.

This is a tower? Actually three such truckloads of prefabricated components make up the average tower in the program and go together in a third of the time of conventional towers. At the rear of the trailer is the tower siding; at the front is the cab floor.



As the tower at Chino, Calif., goes operational following dedication ceremonies, an FAA flight-inspection DC-3 receives the first taxi clearance.



DIRECT LINE



Q. Our facility recently got a letter from our regional office to lower all ratings of controllers, etc. Do you think this is fair when they have not observed us working? So, now our chief is rating us real low. This certainly did nothing to add to controller morale.

A. While you did not supply the letter from the regional office, we would guess that it did not require the lowering of ratings on all employees. The message the Administrator and other management officials have been trying to get across is: Rate all employees realistically. Those who perform good, solid work—that is, they fully meet all aspects of their performance standard—are rated in the meets-requirements column of Part II on the Performance Evaluation Record and, generally, in column B of Part IV of that form. Realism and fairness in the rating process require that those who consistently perform their major job assignments at a level beyond the expectations of their performance standards should be rated in Part II of the PER as "exceeds requirements" or "far exceeds requirements, as well as in the appropriate skills, knowledge and abilities in columns C and D in Part IV. A rating official's misunderstanding of and/or over-reaction to the concept of realistic rating that results in ratings lower than they should be is certainly as bad as his giving inflated ratings.

Q. How close to his duty station does an employee need to live to meet the requirements for selling his home and be reimbursed? Where does it say you have to commute daily to receive the benefits in selling your home? What difference does it make if you commute daily, weekly, monthly or whatever? Finally, why is a journeyman subject to understanding the Travel Handbook? This should be the responsibility of supervisors or personnel in the Voucher Office.

A. There is no specific distance that the home must be located from the duty station to be entitled to real estate expenses for the sale as long as this home was the employee's actual residence at the time he was first definitely informed by competent authority that he

is to be transferred to the new official station (Par. 630d, Order 1500.13A). Travel regulations do not specifically require that an employee must commute daily to receive the benefits in selling his home. However, in those cases where an employee does not commute on a daily basis from home to duty station, the question naturally arises as to whether the home was in fact the employee's actual residence. In this respect, the Comptroller General has ruled that generally the cost of selling a residence not located at employee's old official station or place from which he commutes on a daily basis may not be reimbursed except where an employee cannot obtain a residence for himself and family at a location which permits commuting on a daily basis. Employees, for their self interest, should be aware of travel allowances and benefits to which they may be entitled. Barring unusual circumstances of travel, an employee should be able to read and understand the provisions of the Travel Handbook, 1500.13A, to the extent that he becomes aware of his entitlements. The servicing accounting division should be contacted for clarification and assistance.

Q. Many of us here would like dental services available as an option on our health-benefits plan. What action has to be taken to get them?

A. The authority to negotiate and approve changes in coverage in Federal health-benefits plans rests with the Civil Service Commission, not with individual agencies. Currently, each insurance carrier enters into a master contract with CSC to provide certain benefits to all employees who enroll in its plan. If you want to start the ball rolling in getting dental services, you can express your interest by writing to the Bureau of Retirement and Insurance in CSC, directly to your insurance carrier or to your Congressman.

Q. We understand that new positions known as "administrative officer, GS-7" will be established in the district offices of Airway Facilities in the Western Region. From what we have heard, these positions will not be bid but will take the GS-5 clerk-stenos which occupy the head-girl positions now and upgrade them. We work for Flight Standards and for years have been trying to get head-girl positions upgraded from 6s to 7s because of our responsibilities and supervision of aviation clerks. Why can't we bid on these new jobs for career advancement? We have more years at a higher grade in administrative work and, as supervisors, attend supervisory training. We also deal with the public. Why hasn't someone done a job audit on these positions prior to this upgrade action?

A. The agency is at the present time studying the classification of clerical positions in the GADOS. It will take into account the knowledge required and the ability to deal with the public in arriving at a recommended grade for these positions. Manpower together with Airway Facilities in the region are studying the feasibility of establishing an administrative type position,

but if a decision is made to do so, it will be advertised in compliance with the agency Merit Promotion Program.

Q. As an assistant chief who is being treated unfairly by his chief, what recourse do I have? May I file a grievance or did I surrender my rights to appeal when I became a part of management?

A. Any employee, supervisor or management official in the FAA may file a grievance under the agency's grievance procedure. In accordance with Order 3770.2A, Chapter 505, you may seek advice from a specialist in the Manpower Division in your region, or you may seek advice from a supervisor or management official of higher rank than your immediate supervisor. The right to file an appeal or a grievance under the agency procedure is not forfeited upon promotion to a managerial position.

Q. I've found that many general-supply specialists and materiel and logistics specialists in the field do not understand their organizational relationship with the regional Logistics Division. Materiel support personnel in the field serve under Airway Facilities. When it comes to solving problems of consequence, we find that a game of musical chairs is played. What are the connections? Also, in reference to Order 3500.2.8f, what career development programs are now in effect?

A. The specialists you referred to serve under the AF Division, and their sector managers exercise line authority over them and prepare their PERs. The regional Logistics Division exercises a staff supervision over their functions by implementing logistics policies, standards and systems and by evaluating field performance of logistics functions. As far as your suggestion of buck-passing on problems is concerned, you'll have to supply specifics to get a comment. Present agency-wide logistics programs do offer career-development and progression opportunities. The progression paths are there. To progress, however, the employee should sometimes be willing to relocate organizationally and geographically and to change to a related occupational series. Also, vacancies are usually needed. Tabulations showing the occupational series and grades of logistics positions by location were supplied to regional and center directors by ALG-200 on 30 August 1971. The subject of the letter was: Progression in Logistics Careers.

Q. During the system shakedown of the 9020A Simplex at our center, the computer technician is separated from responsibility for the equipment for a year under the manufacturer's maintenance contract; he only assumes a look-over-the-shoulder position, even though the manufacturer's personnel aren't necessarily trained as instructors. The air-traffic data system specialist has complete freedom of operation and responsibility during his computer time, with no outside or contractual assistance. Shortly after his formal training, he is in a hands-on situation. Does the agency feel that this year

of training is more advantageous for the computer technician than a year of hands-on responsibility?

A. Most centers are further along in this situation or have completed their contract maintenance, but the reason for this arrangement is that the agency feels it promotes a smoother transition for the computer technician into the operational maintenance environment. While the contract is for one year, once the region is satisfied that the facility has the capability of maintaining the computer in addition to supporting the test and integration activities, it can cancel the contract with 30 days' notice. Also, as soon as the contracting officer's technical representative, usually the AF sector manager, feels the FAA technician is ready, the situation changes to the technician "doing" and the manufacturer "looking over the shoulder." The idea of the contract was to relieve AF personnel of maintenance responsibilities to be able to participate in test and integration and permit technicians to obtain training on the specific equipment from the manufacturer.

Q. Is it permissible to involuntarily assign an employee in the GS-855-0 Electronic Engineering Series to the GS-856-0 Electronic Technician Series? Isn't this an adverse action? Any fully qualified electronics engineers with degrees working as Academy instructors would consider a technician's position offered under the Return Rights Program a demotion—a very large backward step in career progression—even with the retention of pay grade.

A. Assignments are made in keeping with management's responsibility to get the job done and in accord with good manpower-utilization practices. The assignment of an employee from a position classified in the engineering series to a non-engineering position may result because engineering work is not available. It is not an adverse action, any more than it is for the numerous employees along with engineers who hold degrees or licenses in a profession—like teachers, doctors and attorneys—who perform in positions other than in their basic disciplines. An assignment does not alter the fact that an employee has received recognition in a certain profession. The Return Rights Program is operated in accordance with the principles and policies of FAA personnel practices.

Is there something bugging you? Something you don't understand? Tell it to "Direct Line." We don't want your name unless you want to give it, but we do need to know your region. We want your query, your comment, your idea. All will be answered in this column, in the bulletin-board supplement and/or by mail if you provide a mailing address.

Better two-way communication in FAA WORLD's "Direct Line" is what it's all about.

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