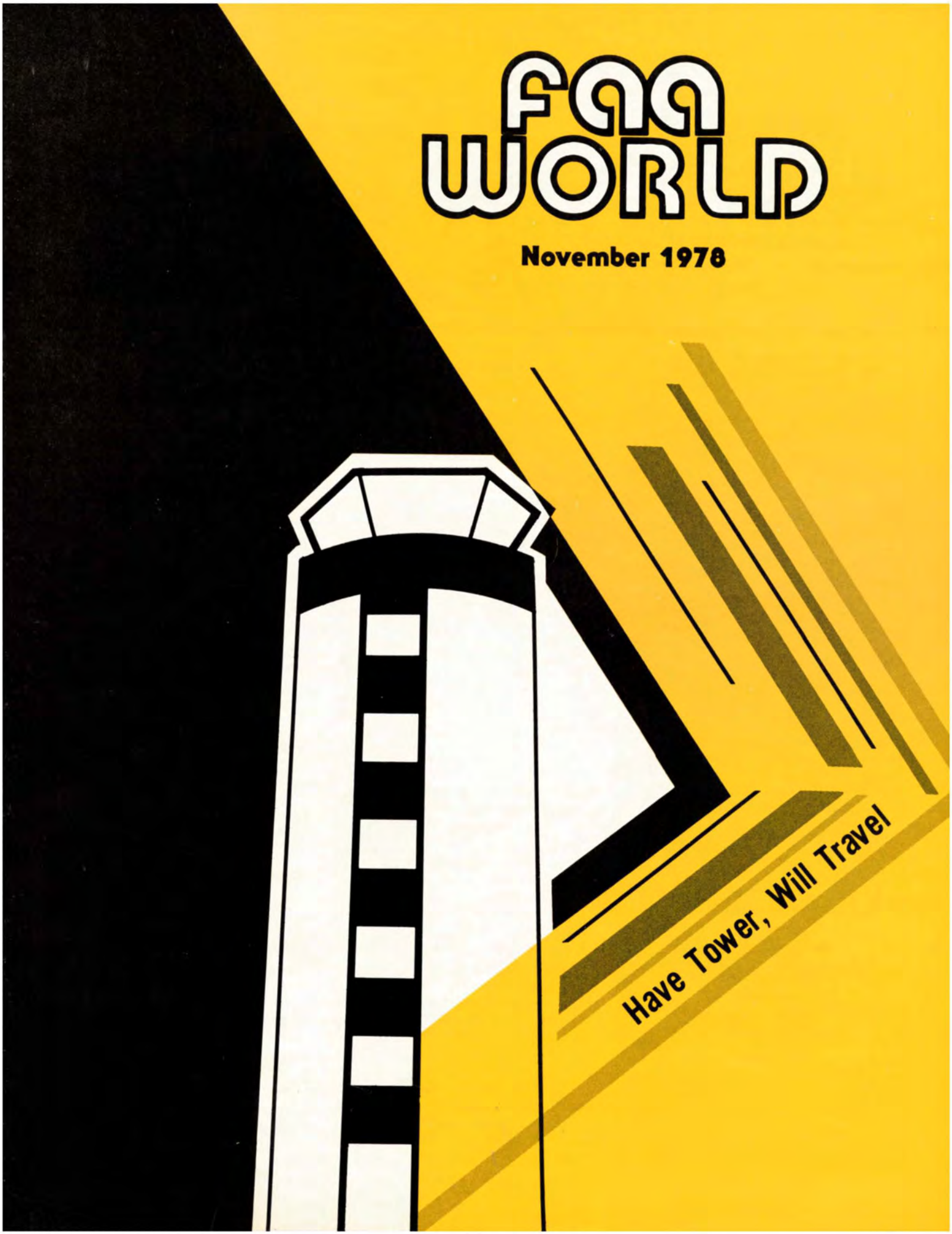
FAA WORLD

November 1978



Have Tower, Will Travel

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75th ANNIVERSARY OF POWERED FLIGHT * 1903-1978 *

Back cover: *The Friday afternoon line-up at Chicago O'Hare International Airport seen through the haze of jet exhaust.*

Have Tower, Will Travel

If you think all air traffic control towers are tall concrete and steel structures with glass cabs on top, you're in for a surprise.

That image might roughly fit most of FAA's 428 permanent control towers, but it won't do at all for the various makeshift temporary towers set up by FAA every year for special events at locations where no permanent towers exist.

In fact, calling some of the temporary contraptions "towers" at all is stretching the word quite a bit. George Maxey, chief of the Galesburg, Ill., tower, for instance, said the temporary tower he worked at in Lafayette, Ind., a few years back for a Purdue University football game looked more like an "uptown two-holer"—a description that needs no explanation for anyone over 40 who has lived in a rural area, but which may be unfamiliar to the younger set which knows only the luxury of indoor plumbing.

And Maxey should consider himself lucky. Some controllers at temporary towers have had to put up with far fewer amenities.

The facilities used for temporary control towers differ widely from region to region because there are no hard and fast specifications set down by FAA's national headquarters, only general guidelines.

The New England Region, for example, has a mobile tower equipped with a portable generator and air conditioner, an anemometer—a wind measuring device—and telephone jacks. Although it doesn't have a lifting mechanism like some of the more sophisticated temporary towers used by the military, it can be lifted by crane onto a flatbed truck or other base to give controllers a better view of traffic.

The Rocky Mountain Region also has a mobile tower mounted on the back of a pickup truck. It is unique for at least one reason: It was built in seven hours at the cost of $590 by Forrest Cordova and Harold Bray of the Airway Facilities Sector Office in Casper, Wyo., and Vern Harkins of the Jackson, Wyo., AF Sector Field Office.

This summer, the mobile unit was driven to Jackson Hole, Wyo., where it was used to provide service to aircraft involved in noise tests in Teton National Park. While there, controllers Frank Moreno and Jose Roybal of the Ogden, Utah, tower and Temple Johnson, Denver tower chief, also helped manage the increase in air traffic resulting from President Carter's vacation in that part of the country.

The major advantage of mobile towers is that they are always ready to be moved at a moment's notice to help in an emergency, such as a forest fire or natural disaster. They come in handy for less critical purposes, too. The Southern Region, for example, pressed its mobile tower into service for a few days during the summer of 1974 when the permanent tower at Opa Locka, Fla., had to be fumigated for termites. It appears the pesky little creatures have since returned, and the mobile tower will have to be dusted off and sent to Opa Locka again in the near future.

In cases where mobile or portable towers are not available, "suitcase" tower equipment is shipped from a nearby Airway Facilities office, and a makeshift tower is put together with whatever is available on the scene. Usually that means nothing fancy—setting up a table and chairs on the back of a truck, which is parked near the strip or runway. Sometimes an effort is made to add a few frills. For the Hughes Air Classic in June, for instance, the temporary tower at Destin, Fla., was installed on a flatbed truck, and a roof of 2 × 4s covered with a tarpaulin was added to provide protection from the sun or rain.

Flimsy, makeshift towers offer only minimum protection from the elements, however, as controllers from the Northwest Region discovered a few years ago when they were operating an emergency tower on the roof of the Bend, Ore., airport in support of forest-fire-fighting operations. An A-frame tower made of two sheets of plywood—along with chairs and papers—were scattered all over the airport property when a sudden thunderstorm blew through the area, and tower operations had to be shifted to a more hospitable site.

Minimum "suitcase" equipment normally consists of radio

Dubbed "Moby Dick," this truck-mounted mobile tower was homebuilt by Northwest Regional Office volunteers from an old frequency-management van. It has radio equipment, air conditioning, emergency power and carpeting.

Controller Bill Owen (now retired) of the Troutdale, Ore., Tower mans "Moby Dick," which is used for emergency services for forest fires, other disasters and air shows.

transmitters/receivers, light guns for communicating with aircraft without radios, and binoculars. Wind-speed and direction indicators, altimeter-setting indicators and other items can easily be added, depending on the need.

Some temporary tower operations can keep controllers awfully busy, says Hugh Doyle, chief of the Rockford, Ill., tower, recalling an experience he and two other controllers had several years ago at the Farm Progress Show in Malta, Ill.

Says Doyle: "There was a 2,500-foot strip in a farmer's field running downhill. It culminated in a 40-foot-wide by 20-foot-deep ditch. At the other end of the strip, there were silos and power lines. So, there we were on a hay wagon in a wet field, completely exposed to the cold rain and wind, constantly telling pilots to watch out for the power lines at one end or advising them to 'go around' at the other end to avoid ending up in the ditch."

Doyle says he has worked at the Experimental Aircraft Association Fly-In at Oshkosh, Wis., which attracts thousands of aircraft of all shapes and sizes, but he says he has "never seen anything as hairy as the Farm Progress Show at Malta, Ill.'

"It virtually rained aircraft," Doyle recalls. "In fact, by 11:00 a.m. the first day of the show, we had to close down the airport temporarily because we had no more room to park aircraft. We had about 500 aircraft on the ground by that time," he said.

Running a temporary tower from the top of a 10-story building for the annual convention of the Helicopter Association of America early this year also presented some unique problems, says Richard Morris, chief of San Diego's Lindbergh tower.

Morris said that landing pads and parking areas for the helicopters were

Lindbergh Field controller Dave Godsey's tower domain was the top of a 10-story San Diego building for a Helicopter Association of America fly-in. The "suitcases" for such sites are much more compact.

This driveaway air-conditioned mobile tower has a portable generator. It's been used for 11 years by the New England Region for Aviation Day activities at the Concord, N.H., Municipal Airport.

set up on a golf course across the way, and "it was our job to get the helicopters in and out of there." The helicopters would pick up prospective customers, give them a quick ride, bring them back to the golf course and take off immediately with another group. "So, there was no let up for myself and the other two controllers," says Morris. "There was almost continuous communications with the pilots."

The biggest problem, he said, was when irate residents started calling with complaints that the pilots were straying from their assigned areas and flying over noise-sensitive areas. It got so bad, in fact, that the local sheriff reportedly was threatening to march out to the golf course and lock up the helicopters and fine the pilots for disturbing the peace. Before that could happen, Morris said that he shut down

The Western Region's "Porta-Com" is set up on a flat-bed truck for emergency service. A few years back, controllers (left to right) Harry Nickolson, Phil Aune and Larry Tancraitor and a trainee took their suitcase tower to a fly-in at Santa Suzana, Calif.

operations, called a meeting with the pilots and made them an offer they couldn't refuse—conform with FAA operational procedures or he'd shut it down for good. "They bought it," said Morris.

Some temporary towers are in operation for a matter of hours, while others stay open for weeks. When there was a rash of forest fires in California during the summer of 1976, FAA personnel were on duty for 18 days putting in 13-14-hour days. More recently during a timber fire in Rocky Mountain National Park, Donald Rizer, chief of the Cheyenne, Wyo., tower, spent eight days from 8 a.m. to 6 p.m. daily running a temporary tower at the

This air-conditioned temporary tower mounted on a flat-bed at the Opa Locka, Fla., Airport is a sturdier structure for regular use around the region.

Unfortunately, forest fires are big in the Northwest, and a variety of approaches to portable towers are needed. Here, a controller stands watch at a jury-rigged tower on the Grangeville, Ore., Airport in support of forest-fire-fighting activities.

Sometimes, you take your tower sites as you can get them. Controller Jerry Beardsley operates off the top of a mobile home at Paso Robles, Calif., Airport on a forest-fire mission.

Ft. Collins/Loveland, Colo., Airport. With help at the outset from Phil Skeith and Larry Ebert of the regional office in Denver, Rizer helped expedite the flow of Forest Service aircraft shuttling firefighting personnel and equipment in and out of the area.

So, while FAA doesn't exactly run an itinerant air traffic control business, it can't be accused of running an ivory-tower operation either. FAA tries to be where the action is; more specifically, the agency is willing to send controllers—preferably on a reimbursable basis—wherever there is enough air traffic or a potential safety problem.

That means controllers will be found

At the Experimental Aircraft Association fly-in in Oshkosh, Wis., controllers have radio-equipped cars at runway-side to monitor the real tower but do their thing with paddles right on the runways.

in places like Ruidoso, N.M., on the Fourth of July and Labor Day holidays when visitors crowd that city to watch the horse races, or in Angels Camp, Calif. (Calaveras County of Mark Twain fame) during May to help handle the air traffic generated by the Fair and Jumping Frog Jubilee.

Obviously, some of the assignments are tougher than others. Fred Mozo, evaluation and proficiency development specialist at the Memphis, Tenn., tower, says he always enjoyed handling the temporary tower at Oxford, Miss., for certain Ol' Miss football games.

"When assignments like that came along, he said, "we were ready to fight over them. We're treated like kings there."

The only drawback he could think of was that controllers never got to see the football games. **By Gerald Lavey**

FEDERAL NOTEBOOK

REFORM SYNOPSIS

The Civil Service Reform Act is now law, and the changes it makes in Federal employment are pervasive. The Civil Service Commission will become the Office of Personnel Management (OPM), handling its hiring, classification and labor-management functions. CSC's appeals function and its guardianship of the merit system will be installed in a new Merit Systems Protection Board (MSPB). The law bans reprisals against employees who disclose information not specifically prohibited by law and, particularly, disclosures to the Special Counsel of the MSPB, an agency Inspector General or Congress. Among provisions of the new law are: ■ The MSPB is authorized to issue stays of prohibited agency personnel practices and must give deference to recommendations of the Special Counsel that a stay is needed. If the Special Counsel determines there are prohibited personnel practices, he may recommend corrective action to the agency head. If the action is not taken, the MSPB may be asked to act, and its decision is final. The Special Counsel is prohibited from disclosing the identity of the complaining employee except if necessary to carry on the investigation.

■ An employee is entitled to an evidentiary hearing on appeal to the MSPB and to representation in adverse actions. ■ The burden of proof in allegations of misconduct or unacceptable performance is on the agency. In misconduct cases, it will require a preponderance of evidence. In performance cases, it will require substantial evidence in the record before the MSPB.

■ In discrimination cases, the decision of the MSPB will be final unless a losing employee files a petition to reconsider with the Equal Employment Opportunity Commission. ■ Reimbursement of attorney fees is authorized where an employee wins on the merits and the hearing officer judges it warranted in the interest of justice.

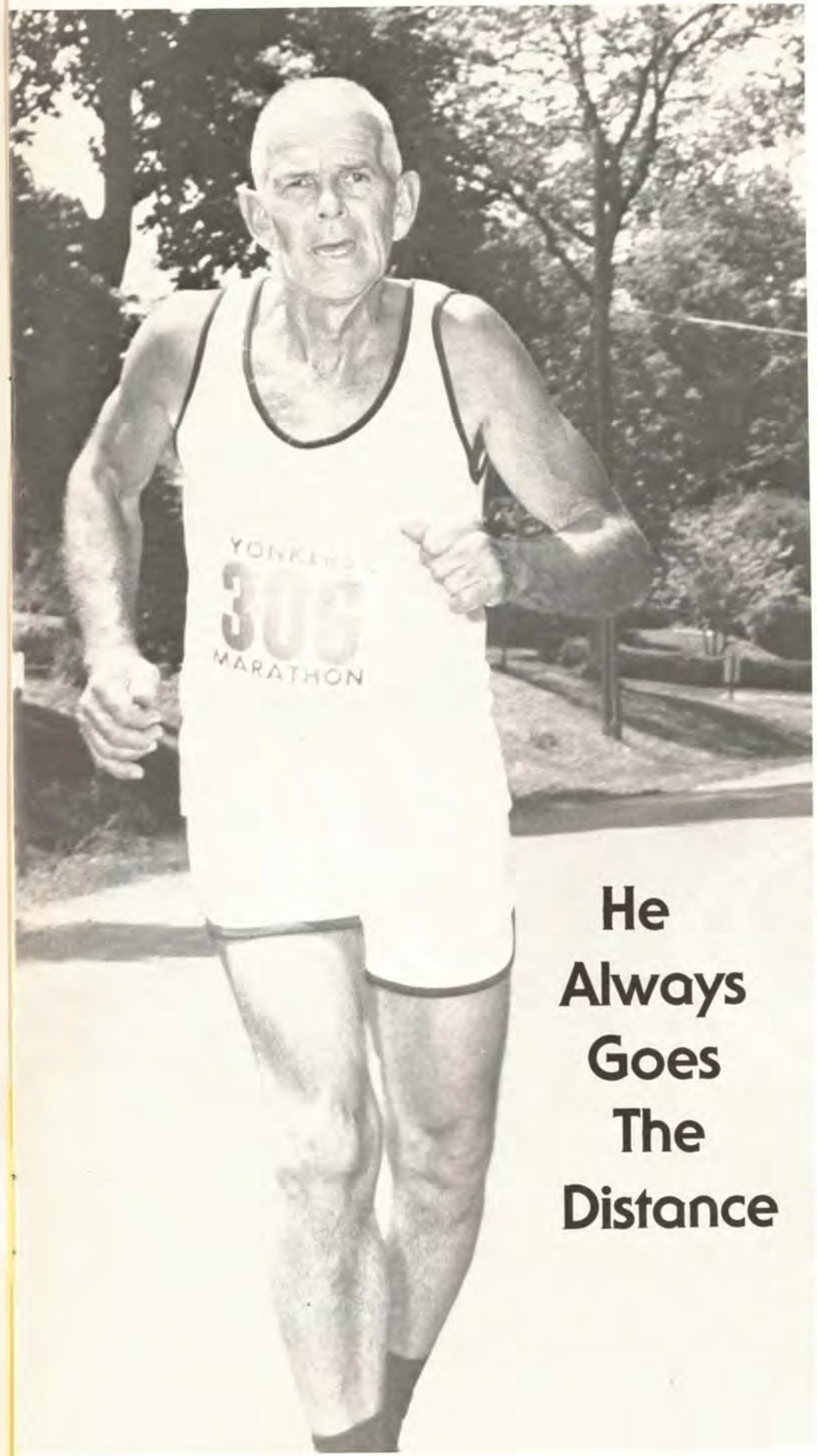
■ Veterans' preference in the main was unchanged, but disabled veterans' additional preference in reductions in force is limited to those with 30 percent disability or more. ■ A Senior Executive Service (SES) is established throughout the Civil Service for at least five years and will be launched next July. The SES will include about 10,000 GS-16-18 careerists and political appointees whose service is only performance-dependent and whose pay will be limited to $47,500 but who will be eligible for substantial bonuses. ■ Supervisors and managers in grades GS-13-15 beginning in 1981 will no longer receive regular step increases but only on merit and will receive only one-half of pay comparability raises. ■ Employees who are downgraded through reclassifications or RIFs and who held their former grades for at least one year will retain their former grades and pay for two years. After that, pay that exceeds the top step of the lower grade will be retained, but only one-half of pay comparability raises will be given until the retained pay equals the lower grade's pay. The lower grade will determine merit pay system coverage.

■ Future double-dippers (only) will be restricted to a combined pension-salary income of $47,500.

■ The new law sets a lower Federal employment ceiling, most of which will be absorbed on paper and through attrition.

More next month: labor relations

This news is based on information from non-FAA publications and does not reflect FAA policy or opinions.



He Always Goes The Distance

Charlie Nichols believes in the strenuous life. Many years ago, when the New York Center was in Hangar 11 at JFK International, Charlie Nichols was assigned there as a controller trainee. Shortly after, the center was relocated to Islip-MacArthur, about 80 miles from his home in New York's Westchester County. Nichols then switched from the driver's seat to the cockpit, commuting for the next five years via Beechcraft Bonanaza from Danbury Airport to Islip, until transferred back to JFK in the CIFRR.

The indefatigable Nichols has never been one to take the easy way out, whether at work or play. It's a philosophy of living.

"Everyone needs relaxation," says the 62-year-plus controller, "and I find it while jogging or sailing." He keeps a Sunfish and a Catfish at his home on a lake and another Sunfish at his summer place. He's entered many races and has walked away a trophy winner more than once.

In addition to walking away, however, Nichols has been jogging for 12 years. He jogs 10 miles every day before driving the 60 miles to work. Last year, he participated in the New York Marathon, which counted over 5,000 entrants, and finished second in his class.

"There are two types of people who enter marathons," according to Nichols. "Those who enter as participants and those who enter as competitors. I enter as a participant, and as long as I finish, I feel I come out a winner all the time."

Then, while visiting in Miami during the Christmas holidays, he took part in the Orange Bowl festivities, running in the Miami Marathon. Of the 700 entrants, he again was among the finishers.

Even for the future, the word "sedentary" isn't in Nichols' vocabulary. His dream is to get a larger sailboat and sail around the world. And in preparation for making that dream a reality, he has just completed a course in celestial navigation. Obviously, he's not kidding.

By Patricia Calise

WORD SEARCH

By Wallace L. Haynes
Leased Communications Specialist
Salt Lake City ARTCC

This month's puzzle is going to be tougher than last week's steak. It's a list of telephony abbreviations for civil aircraft companies, which, in many cases, may not be familiar to you, and the words do overlap and overlap again. They read forward, backward, up, down and diagonally, are always in a straight line and never skip letters. Letters may be used more than once.

You may have to use the word list first this time, but if you're game, try covering it first. All 69 words can be found. Circle those you do find and cross them off the list. The word "island" has been circled to get you started. When you give up, the answers may be found on page 19.

G I S L A S E M O D A O T R O P W E N S
R I D L H S A B A W R O B R A H A O L A
C I L R O C U B A N A C A D E L I C R I
E E A L A D N T A M P O C E N L L O O L
N A D D I N E Y E L A P L I A O S R Y A
R I A D R A W H L R A E R G V W U A A T
O M C R I A A O A A R I A E E I N T B I
Y E M E A L C P R E E V R L R I A P A L
A U R I A H C E E B R O L E I S I I L A
L E G N I K I V R O E A E R A E R S A T
A L N Z C A E Y E D G I L L E Y B A B A
D L B I E R T Y N E E R L A P A M L P M
E A L I R R E A T A C I A R S B A S L P
S S A R E A L A H O L A P C A U C U B A
E A I B A S M U N Z Y E K S R H T U E N
M T I H I E P O C O N N A E R E C L E M
P L A V C O C H R A H C V E R K T M A A
A E A E R O M A R E C N E A E U Z N A R
T D V P P S C A T H A Y T Y E M E N I K
I B E R I A N A I R Y S E X E C U A I R

ABALAIR
ACADAMY
AERIAL
AEROMARINE
AERSA
ALIA
ALITALIA
ALLEN
ALOHA
ALTUS
ATAL
BASLER
BEECHAIR
BROW
BUCKEYE
CAMBRIAN
CARDAIR
CATHAY
CENAM
CHARLIE BROWN
CLOVER
COCHISE
CUBANA
DAVIS
DELTA
EUREKA
EXECUAIR
GALION
GILLEY
HARBOR
HUB
IBERIA
INTERCARGO
ISLAND
KACEE
KING
LADE
LAER
LAPAIR
LIBERTY
LYNCH
MAC
MUNZ
NARDI
NEWPORT
PALM
PANMAR
PARA
POCONO
REEVE
ROSWELL
ROYAL
SACCHI
SCAT
SEMO
SEMPATI
SLICK
STAR
SUNAIR
SYRIANAIR
TAME
TAMPA
TOADOMES
VERO
VIKING
WABASH
WARDAIR
WHEELER
YEMENI

On the Track of O_3

FAA is still focused on the ozone problem besetting high-flying transpacific aircraft (see FAA WORLD, October 1977, p. 8).

Last month, the agency issued a Notice of Proposed Rule Making to adopt the Environmental Protection Agency and Occupational Safety and Health Administration's standard of exposure tolerances to ozone. And FAA is monitoring ozone levels on affected flights, while the Civil Aeromedical Institute is conducting studies on the short- and long-range effects of ozone on human beings.

Once the symptoms of burning eyes, shortness of breath, coughing and chest pains were identified as due to ozone entering aircraft ventilation systems, quick fixes and studies of the problem were undertaken.

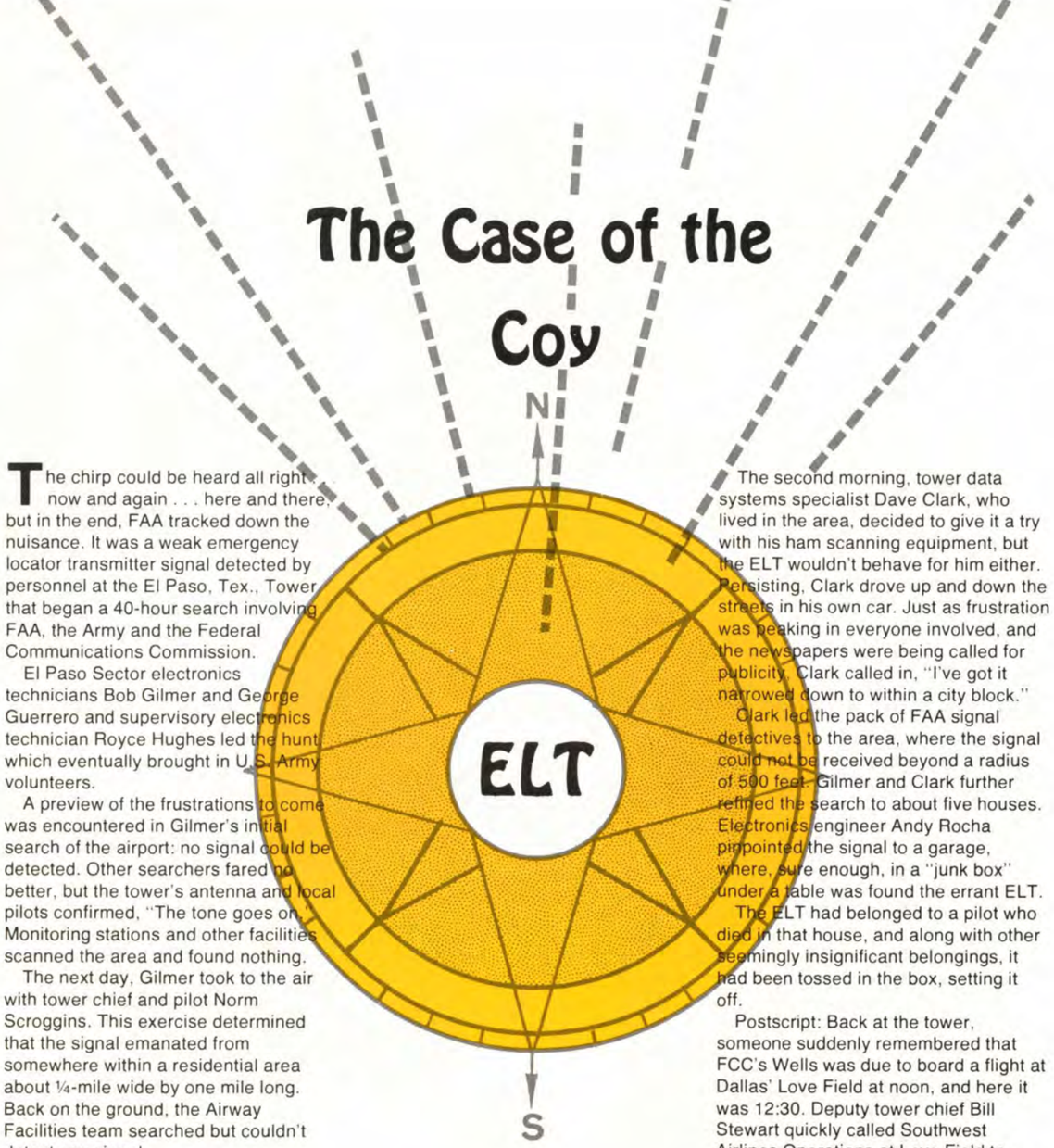
In late winter and early spring, atmospheric ozone descends below 40,000 feet over the northern Pacific Ocean. As a result of the connection being made between this and crew and passenger discomfort, Pan American instructed its pilots to fly at lower altitudes at such times and installed a modification that directed incoming air through the engine heat to burn off the ozone. Cooling the air again, however, uses excessive fuel.

Then Boeing developed a charcoal filter for the ozone, but it exacted an economic penalty in weight. Now, the company is developing a much lighter catalytic converter.

Meanwhile, FAA has purchased two portable ozone meters that are being used to evaluate the effectiveness of the charcoal filters and the ozone levels on aircraft not so equipped. (Frank Wally, an air-carrier inspector from the Honolulu FSDO is seen with one of the meters.) The meters have shown that 20 percent of all the flights effected would fail to meet the proposed standard.

The search for a solution goes on.

The Case of the Coy



The chirp could be heard all right now and again . . . here and there, but in the end, FAA tracked down the nuisance. It was a weak emergency locator transmitter signal detected by personnel at the El Paso, Tex., Tower that began a 40-hour search involving FAA, the Army and the Federal Communications Commission.

El Paso Sector electronics technicians Bob Gilmer and George Guerrero and supervisory electronics technician Royce Hughes led the hunt which eventually brought in U.S. Army volunteers.

A preview of the frustrations to come was encountered in Gilmer's initial search of the airport: no signal could be detected. Other searchers fared no better, but the tower's antenna and local pilots confirmed, "The tone goes on." Monitoring stations and other facilities scanned the area and found nothing.

The next day, Gilmer took to the air with tower chief and pilot Norm Scroggins. This exercise determined that the signal emanated from somewhere within a residential area about ¼-mile wide by one mile long. Back on the ground, the Airway Facilities team searched but couldn't detect any signal.

That afternoon, the army was brought in. Capt. Bob Martinez piloted a search helicopter, while Hughes monitored the electronic detection equipment. This narrowed the field to a 25-block area, but again, an intensive ground search turned up nothing.

It was now apparent that an ELT had been triggered accidentally and that no emergency existed, but they still had to get the thing off the air.

The Federal Communications Commission (FCC) in Dallas was contacted. FCC's Jim Wells promised that if the battery on the ELT didn't run down by the following day, he would come to El Paso to assist.

The second morning, tower data systems specialist Dave Clark, who lived in the area, decided to give it a try with his ham scanning equipment, but the ELT wouldn't behave for him either. Persisting, Clark drove up and down the streets in his own car. Just as frustration was peaking in everyone involved, and the newspapers were being called for publicity, Clark called in, "I've got it narrowed down to within a city block."

Clark led the pack of FAA signal detectives to the area, where the signal could not be received beyond a radius of 500 feet. Gilmer and Clark further refined the search to about five houses. Electronics engineer Andy Rocha pinpointed the signal to a garage, where, sure enough, in a "junk box" under a table was found the errant ELT.

The ELT had belonged to a pilot who died in that house, and along with other seemingly insignificant belongings, it had been tossed in the box, setting it off.

Postscript: Back at the tower, someone suddenly remembered that FCC's Wells was due to board a flight at Dallas' Love Field at noon, and here it was 12:30. Deputy tower chief Bill Stewart quickly called Southwest Airlines Operations at Love Field to forestall a pointless trip, since the ELT had been disarmed. The call was timely enough to save Wells the journey, since the plane was late in leaving, but his equipment was already aboard and made the trip to El Paso.

Case closed.

By Stan McDonnough

MS FOR FS—*Marilyn Sidwell is the first woman general operations inspector/instructor in the Flight Standards Training Branch at the FAA Academy. She's rated in single and multi-engine aircraft and hopes to instruct in turbo-props and light jets.*

THE QUIET APPROACH—*Lt. Bob Peters (right) of the Civil Air Patrol Torrance, Calif., Squadron talks about preflighting to CAPers Sgts. Stuart Jellison and Brooke Bundgard and accident-prevention specialist Paul Stebelton of the Long Beach FSDO. The occasion was a National Aviation Day "roll-in" at noise-sensitve Torrance Airport, sponsored by the Experimental Aircraft Assn. The planes were rolled onto the flight line.*

FACES and PLACES

PRAISE FROM THE TOP—*Electronics technicians Mark Barnes (left) and John Wilson of the Angel Peak LRR in the Las Vegas, Nev., AF Sector proudly display letters of appreciation from President Carter for their work as leaders of two regional civil defense optimization teams in 1976.*

GROUND-BLASTING—*Arriving at NAFEC for the ground-breaking ceremony for a new $50 million headquarters building, President Carter is greeted by Center Director Robert L. Faith, as (from the left) state Sen. Steven Perskie and Atlantic County Executive Charles Worthington look on. The President broke ground by setting off an explosive charge with a verbal command to a new preflight-briefing computer programmed for it.*

FOR GIVING OF HIMSELF—*Ohio Gov. James Rhodes (right) presented an award to Gus Brueckner, supervisory electronics technician in the Great Lakes Facilities Installation Section, for his election as "Foster Father of the Year" for Lorain County. The presentation was made at the state capitol.*

SONIC SESSION—*Ray Stone, New England Region Planning and Appraisal chief, was interviewed for Boston TV this past summer on the secondary sonic booms heard almost daily in Massachusetts and Rhode Island. The agency has installed a monitoring device on the roof of the Transportation Systems Center in Cambridge to seek the origin of the booms.*

IT'S ALL GREEK—*At least, the uninitiated might think the motel's greetings were to some Greek letter fraternities. Actually, it was for a Program Analysis and Resolution Course being held at the motel for data systems specialists from the Albuquerque, Houston and Fort Worth ARTCCs.*

WELL DONE—*Raymond G. Belanger, recently retired as Director of the Air Traffic Service, was awarded the Secretary of Defense's Civilian Meritorious Service Medal by Maj. Gen. Robert C. Taylor, USAF Director of Operations and Readiness. Belanger received DOD's highest civilian award for his support of national defense.*

Relax and Live

Potentially stressful events occur every day . . . at work, at home and even during recreation. By the very nature of their job, aviators are exposed to many more potentially stressful situations than the average person. And as aircraft become increasingly sophisticated machines capable of performing more complex flying maneuvers, possible stresses will increase dramatically.

Anxiety is a person's response to stressful conditions. We all experience it to some degree. Some just seem to be more anxious than others. They respond with more anxiety after stressful events than most. Some people have more difficulty tolerating anxiety; they don't seem to be able to relax as well after a stressful occurrence. Some then resort to alcohol or drugs to deal with stress. Both of these create special problems in the aviation environment and must be avoided. But what else is there. What can a person do about stress and anxiety?

We all agree that using alcohol or drugs to deal with our anxieties is unhealthy and possibly dangerous. And the thought of three or four years on a psychiatrist's couch probably makes you feel worse, not better. Well, there are two very simple and easy-to-use techniques, which are described below in enough detail for you to use either or both of them. They can help *anyone* learn to relax more effectively and to deal with stress and anxiety in a healthy and absolutely safe fashion.

Progressive Relaxation. The first of these is generally called progressive relaxation. It was developed by Edmund Jacobson more than 50 years ago and has been widely used in various settings and proven effective through the years. It is based on the idea that people can become relaxed if they are aware of their physical state. To develop this awareness, you first need to practice becoming tense and then relaxed.

By tensing muscle groups and then relaxing them, you can become aware of the way your body feels when it is tense. Soon, with practice, it becomes a simple matter to recognize tension and then simply relax your muscles and feel better. It should be obvious that you can't be anxious and relaxed at the same time.

To become skillful at progressive relaxation requires some repetition and you shouldn't expect to be perfect initially. Each session takes about 20 minutes. If you practice once or twice a day, in about 10 days you'll find yourself able to become very relaxed in 10 to 15 minutes and easily be able to identify tension that occurs outside the relaxation sessions.

The basic step is alternating tension with relaxation of various muscle groups. For example, you might start with your right forearm and hand. First clench your muscles—clench them tightly and study the tension. Hold it for about 5 to 10 seconds and then completely relax. Notice the difference. Note how good your hand feels when it is relaxed and be aware of how relaxation differs from tension. Repeat this about three times and then go on to another muscle group.

This time bend your right arm at the elbow and tense your biceps muscle. Notice the tension and hold it for about 5 to 10 seconds and then relax. Repeat this about three times and move on to the triceps, which you can flex by straightening your arm. The accompanying chart gives a good sequence of muscle groups through which to progress. Initially, the whole exercise should take 20 to 25 minutes. Eventually, you should be able to do the whole thing and become completely relaxed in 10 to 15 minutes. You won't always need to tense and relax your muscles as many times to achieve the deep relaxation you are seeking.

Relaxation Response. The second technique is called the relaxation response, a name based on the result of practicing the exercise about to be described. This technique was originated by Herbert Benson about six years ago but has not been as widely used as progressive relaxation. Benson and his coworkers were attempting to find out what makes meditation work. They discovered that apparently only four things are necessary to achieve profound levels of relaxation.

- First, there should always be a constant stimulus, such as a sound, word, or phrase repeated silently or audibly. Staring at some object also seems to be suitable. Apparently, this procedure helps you focus your attention on one thing and avoid thinking about other things.
- A passive attitude is also important. If distracting thoughts occur during repetition of the gazing, they should be disregarded.
- Third, decreased muscle tone is necessary. This can be achieved by merely sitting or reclining in a comfortable position.
- Finally, a quiet place in which to practice helps decrease environmental distractions.

Those who have practiced transcendental meditation will recognize many similarities. It appears that Mr. Benson and his fellow workers have separated the effective techniques from the mystical aspects and made them available for use by all who want to learn how to relax more completely.

To achieve the relaxation response, follow these instructions: Sit quietly in a comfortable position; close your eyes; then deeply relax all your muscles beginning at your feet and progressing up to your face. Keep them deeply relaxed. As you breathe out say the word *one* silently to yourself. For example, breathe in . . . out, *one;* in . . . out, *one.* Continue this for about 15 to 20 minutes. Do not worry about whether you are succeeding in achieving a deep level of relaxation. Retain a passive attitude and permit relaxation to occur at its own pace. If distracting thoughts occur, ignore them.

It is difficult to say which method will work best for you. Some prefer just to lie down and relax, as the relaxation response exercises require. Others prefer some sort of structured system like progressive relaxation. Why not try both and select the one that seems to produce the most comfortable end results for you? Perhaps you will find both useful. In any event, the sooner you begin, the sooner you will be on the road to a more relaxed and less stressful life.

By Dr. Dennis R. Brightwell
Veterans Administration Hospital
Lexington, Ky.

Reprinted from the U.S. Army *Aviation Digest*

SEQUENCE FOR RELAXING MUSCLE GROUPS

Relaxation of Arms (Time: 4 to 5 min)
- Clench right fist, hand and forearm
- Clench left fist, hand and forearm
- Clench both fists, hands and forearms
- Flex both biceps
- Flex both triceps (straighten arms)

Relaxation of Facial Area, Neck, Shoulders and Upper Back (Time: 4 to 5 min.)
- Wrinkle forehead
- Frown and crease brow
- Close eyes tightly
- Clench jaws
- Press tongue against roof of mouth
- Purse (or pucker) lips
- Press head back, roll to right and then left
- Press chin down on chest
- Shrug shoulders

Relaxation of Chest, Stomach and Lower Back (Time: 4 to 5 min)
- Breathe in deeply and hold
- Tighten up stomach and abdominal area
- Draw stomach and abdominal muscles in
- Push abdominal and stomach muscles out
- Arch lower back

Relaxation of Hips, Thighs and Calves (Time: 2 to 3 min)
- Flex buttocks and thighs
- Press heels down against floor
- Straighten knees
- Point toes downward
- Cock feet and toes upward

Complete Body Relaxation (Time: as desired)
- Keep eyes closed
- Breathe slowly and feel yourself becoming heavier
- Think about raising right arm, notice the tension, and let it disappear
- Continue breathing slowly, relaxing as long as desired

Adapted from Behavior Therapy Techniques by Joseph Wolpe and Arnold A. Lazarus, New York, Pergamon Press, 1966.

A conventional-looking house except for the south-facing window wall, which isn't a window at all. It's a passive solar collector for hot water and space heating.

His House Faces the Future

Jerry Schultz has a two-faced house. That's not to say it plays him dirty in any way; rather, on three sides of it, the house appears like any other today, but the fourth side belongs to tomorrow.

The Rochester, Minn., tower controller has built a solar home. In the main, it's a three-bedroom modern version of an old farmhouse, super-insulated all around—six inches in the walls, 12 inches in the roof. The south wall, however, looks like a cathedral-ceilinged panoramic window; actually, it's blind. The double-glazed windows are backed up by black-painted sheet metal as the house's solar collectors.

Similar to the solar walls being built for FAA air traffic control tower buildings (see FAA WORLD, May 1978, p. 7), outside air is drawn into the system from below the glass panels, heated by the sun and directed by a blower to a 15-kilowatt electric furnace through which it is distributed throughout the house.

If the heat isn't enough, an electrically operated heat pump supplements it. If the outside temperature gets below 10 degrees below zero, the electric furnace comes into play instead of the heat pump. If too much solar heat is generated, the excess is directed beneath the front porch to a battery of storage containers filled with Glauber's salts, which is capable of holding three to five days of heat.

The salts—a sodium sulphate discovered in the 17th Century as a cathartic—melt at only 90 degrees Fahrenheit. "The melting process itself produces heat, "Schultz explains, "but more important is that liquids store heat better than solids and these salts store heat five times better than water." And water, he adds, would freeze in Minnesota's winters when it's not storing heat. The salts don't freeze, cake or corrode, and they're guaranteed for a lifetime.

Schultz's hot water also is warmed by the solar-heated air but is given a boost by a conventional water heater. Another energy-saving design is a see-through fireplace between the dining and living rooms, which is fitted with a special heat-deflecting cone over the hearths to increase the warmth in both rooms.

The inventive controller's interest in solar heating actually began several years ago, an outgrowth of a waste-not viewpoint, which objected to sending so much still-usable household wash water down the drain. As a consequence, his solar home also is equipped with a system that permits wash water from the bathroom, kitchen and laundry to be used for watering his lawn and garden.

"Modern bleaches and biodegradable soaps don't harm the lawn," Schultz claims. "In fact, they are good for growing because earthworms love soapy water, and the worms help aerate the soil."

During Minnesota's long, cold winters, he can flick a switch and divert the wash water to his septic system . . . that is, unless he wants to make a private ice-skating rink for his family—his wife, Mary, and children Scott and Lisa.

Schultz expects that the solar heating system will reduce his annual energy bill from the local average of $900 to about $150, which includes hot water. If he gets a tax credit for his energy conservation, he will save even more to offset the cost of the solar installation, which was about $10,000 above the normal costs of construction. In all, he sees the payoff period as a reasonable one.

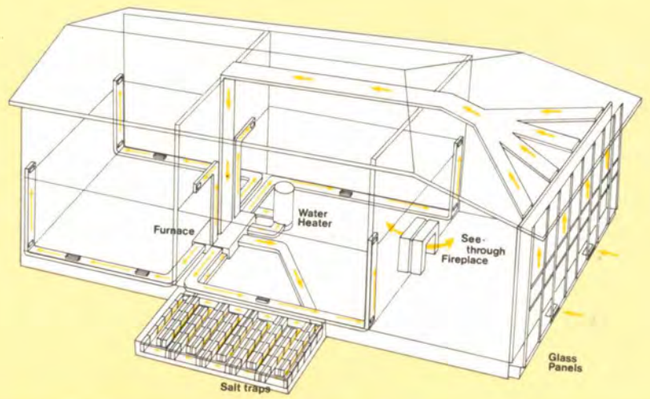
Building the solar wall is just a beginning for Schultz. His next project is studying methods for using photovoltaic cells for lighting and photo cells or the waste heat from the solar wall in summer for cooling the house, which is now done by the heat pump.

And in the event that the sun never shines again in Minnesota, Schultz can always open a mini-pharmacy and sell his Glauber's salts for their original purpose.

By Marjorie Kriz

Schultz holds a Glauber's salts tray, a battery of which stores solar heat on dark days.

SCHEMATIC OF A SOLAR HOME



Rochester, Minn., tower controller Jerry Schultz and his family are happy with their Schultz-designed solar house. The fresh-air intakes can be seen just below the collector wall, along with the supplementary heat pump at the right.

DIRECT LINE

Q At the busy flight service station where I work, no effort is made to comply with the provisions of Order 7210.3, Para. 70, and there are no plans to implement it. Employees sometimes work for 12 consecutive hours without being offered a relief period by management. Management's interpretation of Para. 70 is that if an employee desires a lunch break, he should ask for it. No one asks for fear of being out of favor with management. Is this a valid interpretation or is the intent that management should offer a lunch relief period? I submitted a plan for implementing the lunch-break program and received a snide, unsigned note from the front office.

A The agency's policy is stated in 7210.3, Para. 71: "Facility chiefs shall use all available qualified personnel to provide relief periods. First priority should be given to providing a reasonable amount of time away from the position of operations for meals . . ." Further, article 30, Section 2, of the NAATS/FAA Agreement of Nov. 1, 1976, states: Subject to the staffing and operational needs of the facility, the employer shall provide relief periods away from the positions of operation. How this is accomplished is left to the discretion of facility management. Relief periods (excluding lunch breaks) are for the purpose of allowing an employee to meet his physiological needs; e.g.: toilet, drink and physical exertion. While to some extent these needs could be met by scheduling, it is difficult and many times impractical in a work environment such as the flight service station to rigidly schedule meal and relief periods. Therefore, we sometimes must rely upon the employee to initiate the action, since, obviously, the supervisor cannot know the individual's physiological needs. Facility interpretation and implementation of the relief period for meals have evolved depending upon the needs of the individual facility. Different sizes of facilities, resources available, peak traffic periods and employee desires expressed through the union facility representative have resulted in diverse practices. You may find some facilities where the supervisor takes an aggressive role and solicits or schedules the meal periods, subject to the traffic volume and staffing levels; or in some facilities, facility management and the facility union representatives have agreed that lunch breaks would be provided but not scheduled and would be provided upon the request of the employee, if traffic and staffing conditions permit. Either method of implementation is permissible, and no employee should feel "fear of being out of favor" when operating within the practice of the facility.

Q I volunteered for a reduction in grade from GS-13 to GS-12 under the provisions of the current field placement program. One of the provisions of the program is a two-year salary retention at the present pay scale. With the general across-the-board pay raise in October, was I scheduled to receive the raise, or is my salary frozen for two years?

A The two-year salary-retention provision of the field placement program includes General Schedule rate increases provided by statute. Based on the information in your query, you were entitled to and did receive the statutory increase of the rate held in the GS-13 grade immediately prior to demotion.

Q It is my understanding that first-level supervisory employees in the Eastern Region were paid back pay under the FLSA retroactive to 1974. How can one region pay this and another region—the Southern—not? What is the justification regarding this matter, and why aren't first-level supervisory employees entitled to this back pay, especially since they are also required to have a pre-duty briefing? The supervisor is also at the facility several minutes before the watch begins, doing such things as making position assignments and handling other related matters.

A It is true that in 1975, the Eastern Region identified some of the first-level supervisory positions as nonexempt. Consequently, these employees were paid retroactively for the period July 1, 1974, to June 26, 1976. However, in June 1976, the Eastern Region, under instructions from Washington headquarters, changed these positions, thereby establishing criteria for exemption under FLSA. Supervisory positions have always been exempt in the Southern Region, so none of these employees are eligible for overtime pay under FLSA.

Q I completed one year in the flight service station option this past August. About a month after I transferred into a Level I facility, the new Civil Service standards for FSS came out, and my station was upgraded to a Level II. All the journeymen received GS-10 grades as a result. This facility is short-handed and they would need me to have enough to man the watches. Since everyone is a GS-10 except me, will I have to be a developmental for another year and work under supervision all the time or can I assume a watch as a GS-9? Can I receive a promotion to GS-10 under these conditions even though I don't meet the Whitten requirements? If I do work a position alone, I feel I should get GS-10 pay like the rest.

A If your permanent duty station is a Level I FSS and the facility is upgraded to Level II, you may progress without competition to the GS-10 journeyman level when all requirements are met, but you must meet the Whitten Amendment requirements each time you are promoted. You will have to be a developmental GS-9 until you do meet all requirements, and you may work rotating shifts alone only if you are promoted or detailed to the GS-10 journeyman position. If you are facility rated and your services are required at the journeyman level prior to having the time in grade, you may be detailed to the position for a limited period of time. You will not receive the GS-10 pay, but you will receive credit for the journeyman experience when bidding on other positions.

Q I would like to know why only the Northwest Region requires recent radar experience for supervisory positions, particularly in Level I and II VFR towers. If there is a logical reason this type of experience would be required, which I doubt, why is this requirement not agency-wide? There are many controllers with considerable experience in VFR towers who would make excellent supervisors but are unable to attain radar certification due to lack of positions and bids, not being able to meet Whitten requirements and age discrimination when bidding on radar positions. Why is there no training available outside of actual radar certification which would qualify for these supervisory positions?

A We are not aware of the requirements other regions may have in regard to radar qualifications when filling supervisory positions, particularly for Level I and II towers. The Northwest Region supplement to Order 3330.1A requires the following qualifications for GS-12 terminal facility chiefs: One year of experience as an assistant chief, Level I tower, and previous journeyman or supervisory radar experience. The supplement also requires the following of GS-12 terminal assistant chiefs: One year of experience as an assistant chief, Level I tower, provided candidate has previous journeyman or supervisory radar experience or two years journeyman experience in a Level II tower, provided candidate has previous journeyman or supervisory radar experience. The purpose of this requirement is to ensure that specialists who have the potential to attain levels of supervision beyond Level I and II towers gain the background and experience needed for supervisory and management positions at radar facilities. There is no training available because any training that could be provided outside of actual radar certification would not provide the employee with the experience necessary to permit him or her to direct, supervise and maintain proficiency in a radar facility. Ample opportunity exists for specialists whose career-planning objectives include supervisory or management goals to compete for frequently announced vacancies at radar facilities. Vacancies are also frequently announced for Level II and above VFR towers to provide intermediate steps to satisfy Whitten requirements. Although recency of experience may be considered after qualified candidates are referred to the selecting official, age is never a factor used in determining qualifications. Careful career planning requires specialists to determine their goals and what steps need to be taken to attain these goals.

Q My question relates to military retirees eligible for Social Security. If a person is retired on 40 percent medical disability from Civil Service and at the time of such retirement elected not to combine military service and Civil Service time, what happens at age 62? Also, the same circumstances if the combined service were elected?

A If you are retired from the military service and from the Civil Service, you would be eligible for Social Security benefits at age 62. If you elect to combine your military service with Civil Service (prior to reaching age 62), any military service performed after Jan. 1, 1957, will be credited for your annuity; however, upon reaching age 62 and becoming eligible for Social Security benefits, the Civil Service Commission will automatically recompute your annuity to exclude this military credit, which will then be credited to your Social Security benefits. You may wish to review a copy of Pamphlet 18, "Your retirement System," which has some information on this subject.

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—with specifics, so that a specific answer can be provided. All will be answered here and/or by mail if you provide an address.

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

'Pilots Will Not Wear Spurs'

January 1920 was a time of less sophistication in aircraft, civil and military pilots who flew them and regulations, when there were any. In retrospect, the following regulations seem more like fatherly advice, overly generalized and humorous, but the War Department was deadly serious in issuing them.

1. Don't take the machine into the air unless you are satisfied it will fly.
2. Never leave the ground with the motor leaking.
3. Don't turn sharply when taxiing. Instead of turning sharp, have someone lift the tail around.
4. In taking off, look at the ground and the air.
5. Never get out of a machine with the motor running until the pilot relieving you can reach the engine controls.
6. Pilots should carry hankies in a handy position to wipe off goggles.
7. Riding on the steps, wings or tail of a machine is prohibited.
8. In case the engine fails on takeoff, land straight ahead regardless of obstacles.
9. No machine must taxi faster than a man can walk.
10. Never run motor so that blast will blow on other machines.
11. Learn to gauge altitude, especially on landing.
12. If you see another machine near you, get out of the way.
13. No two cadets should ever ride together in the same machine.
14. Do not trust altitude instruments.
15. Before you begin a landing glide, see that no machines are under you.
16. Hedge-hopping will not be tolerated.
17. No spins on back or tail slides will be indulged in as they unnecessarily strain the machines.
18. If flying against the wind and you wish to fly with the wind, don't make a sharp turn near the ground. You may crash.
19. Motors have been known to stop during a long glide. If pilot wishes to use motor for landing, he should open throttle.
20. Don't attempt to force machine onto ground with more than flying speed. The result is bouncing and richocheting.
21. Pilots will not wear spurs while flying.
22. Do not use aeronauticle gasoline in cars or motorcycles.
23. You must not take off or land closer than 50 feet to the hangar.
24. Never take a machine into the air until you are familiar with its controls and instruments.
25. If an emergency occurs while flying, land as soon as possible.

Heads Up

ALASKAN REGION

A new assistant chief at the Anchorage ARTCC is **Robert L. Tarr.**

CENTRAL REGION

Assistant chief **John F. Keuhn** of the Burlington, Iowa, FSS has become the chief of the Chadron, Neb., FSS ... **Doyle D. Werner** left the North Platte, Neb., FSS to become an assistant chief at the Mason City, Iowa, FSS.

EASTERN REGION

William Van Bruinisse, late of the New York Common IFR Room, is now an assistant chief at the LaGuardia Tower in New York.

GREAT LAKES REGION

From the Saginaw, Mich., Tower **Robert D. Ellingsworth** was selected to be an assistant chief at the Timmerman Field Tower in Milwaukee ... Rockford, Ill., FSS assistant Chief **Milton Kinnunen** was promoted to assistant chief at the Minneapolis FSS ... **Anthony Borden** has been reassigned to assistant chief at the Minneapolis Wold-Chamberlain Airport Tower ... NAFEC has sent **James E. Higgins** to the Grand Rapids, Mich., AF Sector as a field office chief ... **Albert W. Pommier** left the Minneapolis FSS to become an assistant chief at the La Crosse, Wis., FSS ... Named chief of the Timmerman Field Tower in Milwaukee was **Joseph P. Jasper** from the Mitchell Field Tower in Milwaukee ... **Donald P. Arnold** of the Saginaw, Mich., FSS was selected chief of the Findlay, Ohio, FSS.

NORTHWEST REGION

Jerry W. Parker transferred from the Sacramento, Calif., FSS to the Seattle FSS as an assistant chief.

PACIFIC-ASIA REGION

The Honolulu FSS has gained **John J. Maloney** from NAFEC as an assistant chief.

ROCKY MOUNTAIN REGION

Promoted to assistant chief at the Jamestown, N.D., FSS was **Kenneth W. Baenen** ... **Douglas W. McKay** was selected field office chief at the Casper, Wyo., AF Sector ... **Temple H. Johnson, Jr.,** left the regional office to become chief of the Stapleton Airport Tower in Denver.

SOUTHERN REGION

Stanley D. Ensley of the Los Angeles ARTCC has been named an assistant chief at the Jacksonville ARTCC ... **Ralph E. Schetrom** of Washington headquarters has been promoted to chief of the regional property and Cost Accounting Branch of the Accounting Division.

SOUTHWEST REGION

The assistant manager of the Shreveport, La., AF Sector, **Harry D. Earl,** has been reassigned to field office chief of the Little Rock, Ark., AF Sector ... Another new Little Rock Sector field office chief is **John W. Fritts,** who held the same post in the Tulsa, Okla., Sector ... Tulsa assistant sector manager **G.B. Hendrix** is now assistant manager of the Fort Worth, Tex., Sector ... **Carl E. Harrington,** assistant chief at the Fort Worth, Tex., FSS, has taken the chief's spot at the Harrison, Ark., FSS ... Selected assistant chief of the Dallas, Tex., FSS was **Richard C. Grube,** former chief of the Lufkin, Tex. FSS ... Named manager of the Little Rock Sector was **James A. Dille** from Shreveport.

WESTERN REGION

A new assistant chief at the Los Angeles FSS is **Gregory Macy.**

Word Search Answer

Puzzle on page 8

G I S L A S E M O D A O T R O P W E N S
R I D L H S A B A W R O B R A H A O L A
C I L R O C U B A N A C A D E L I C R I
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