NOVEMBER 1973

FAA WORLD

Service to Man in Flight

from CW to CRT

THE FSS STORY

FAA WORLD

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The cover: *The leaves falling from the calendar of FSS history reveal the changing scene—from uniforms to ties, from Morse Code arc transmitters to microwave-link voice transmissions and CRT self-briefing displays.*

Sustain The Rights Of all

I think all of us are aware that really great progress has been made in recent years toward enhancing the civil and human rights of minorities and women. Many of the early hard-fought "issues" have been resolved, and are now matters of law and public policy. And to a considerable extent, the focus has shifted. It is now on such subjects as economics, and opportunities for training and jobs.

Our FAA Office of Civil Rights took on the responsibility nearly five years ago for providing the selective recruitment, training, promotion and upgrading of minority groups and women . . . and for monitoring compliance with civil rights laws and orders by airports, airlines and government contractors. FAA contracts awarded to minority businessmen in Fiscal Year 1973 shot up to $26 million from about $9 million the previous year. Other affirmative actions over the period of the past two to three years have resulted in the selection from minority groups of Airway Facilities sector managers; division, branch and section chiefs; Air Traffic chiefs and deputies; and a multitude of supervisors in the technical and administrative-support fields.

Future plans, I am pleased to say, include increased recruitment in all job categories, development of upward mobility programs and the establishment of a system to communicate to all employees the true intent of the agency's EEO programs.

But the job of assuring equal employment opportunity also requires personal awareness, personal concern and personal commitment. Civil rights is an integral part of the agency's mission; denying it would be to deny ourselves the widest range of talents in today's workforce.

People need jobs. They need training, too, and opportunities and motivation—all coupled with the knowledge that management believes in the philosophy of equality and is determined to live up to that philosophy. I hold each of you accountable for reaching the equality goal, and for performing within the letter and the spirit of civil rights law.

Alexander P. Butterfield
ALEXANDER P. BUTTERFIELD
Administrator

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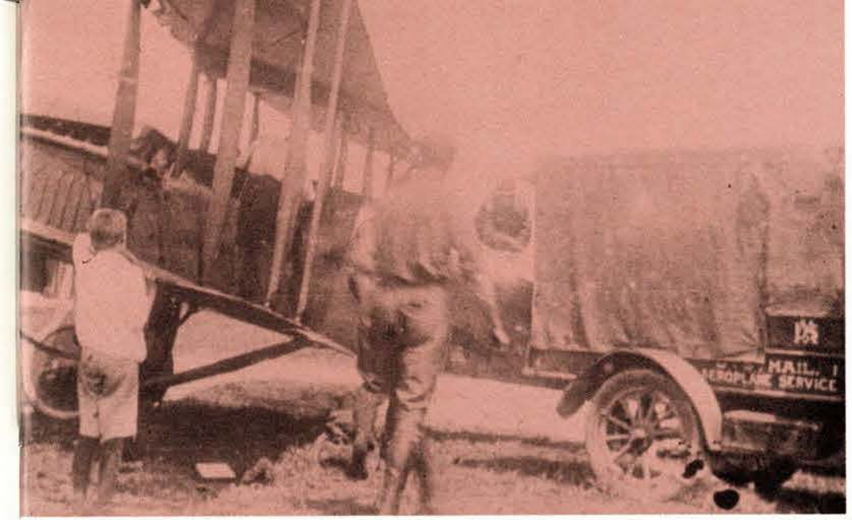


THEN . . .
The scene is circa 1923 as a possible future air mail pilot watches an Airway Radio Station operator on the wing help load the mail in the front cockpit of a DH-4.

AND NOW . . .
The scene's the same a half-century later, but FAA is no longer involved in mail service. It has a busy job with all of the nation's airway users, including this plane.

from CW to CRT

THE FSS STORY

The flight service station is FAA's front door to the flying public and has been for more than half a century. The modern FSS specialist provides a multitude of advisory services and assists pilots in distress from comfortable, air-conditioned quarters, using modern electronic tools to enhance his accuracy and keep up with the increasing demands for his services.

The life of a specialist wasn't always thus. Oh, he was busy, all right—operating and maintaining the station in aviation's early years and maintaining and even designing equipment, but the life was rugged and he didn't have the skills or training for dealing with the world above him in those days. In many cases, his was indeed a pioneering life.

His story began in August 1920 when the U.S. Post Office inaugurated a transcontinental air mail service, taking over a shorter route from the military, and authorized a string of 17 Airway Radio Stations from New Brunswick, N.J., and Washington to San Francisco.

Since airports were not commonplace, the stations were set up at convenient intervals with an adjacent airstrip. Point-to-point radio telegraphy—or CW—was used, rather than the more-expensive leased-wire telegraphy and less-reliable voice radio.

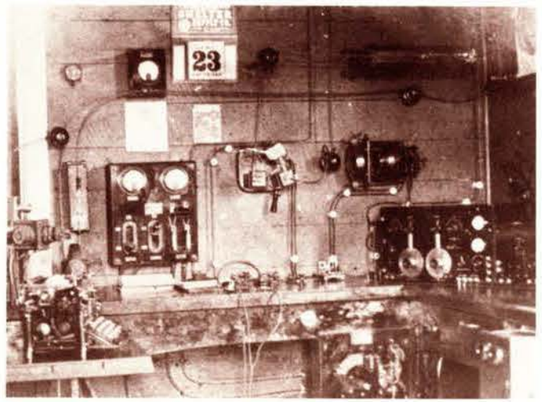
The lone "brass-pounder" worked split shifts seven days a week, gathering weather observations from other cities and relaying his own down the line. The operators seldom knew anything about cloud types and their heights, often estimating in error by thousands of feet. They certainly didn't have the

broad meterological knowledge they do now for giving briefings. The briefings were given to pilots when they landed in the morning and evening (the split shifts), for no radio equipment was carried aboard planes until late 1923, although the first air/ground CW communication was accomplished by pilot Elmo Pickerill as far back as 1910. By 1921, a second operator was added, extending the station to a 16-hour-day basis, still seven days a week.

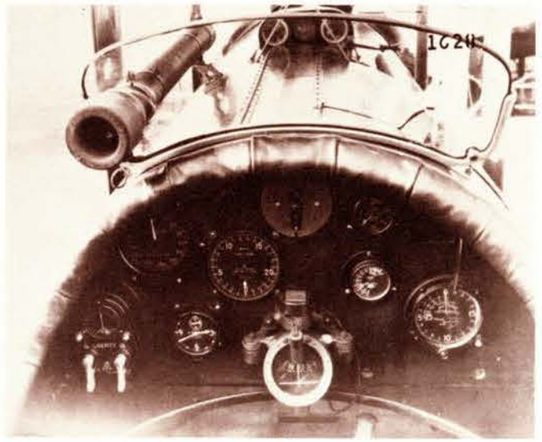
The earliest equipment they had to work with was a spark transmitter, shortly followed by a two-kilowatt arc transmitter, boosted in 1921 to 5 KW. One early operator reported that he had an old airplane radiator hooked up outside the building for water-cooling the equipment. Still, the copper anodes burned up pretty fast.

Progress was not to be denied, however, with this inventive lot, who were stuck with doing their own maintenance and modifications. Another oldtimer recalled his problems with CW radio perhaps a year later:

"Due to lightning storms and heavy atmospherics, there were times when communication was impossible. We then experimented with vacuum-tube transmitters, such as one using two ¼-KW tubes with a raw AC power supply. This equipment, including receivers, was built in our spare time while we were standing regular radio operator's watch. We had little or no money for the project and had to improvise in every way. The boys in the wing shop built some wooden frames in which we mounted the transmitter components. Discarded ¼-inch copper gas lines from Liberty engines were used to form inductance coils, and choke coils were wound on two-inch paper mailing tubes. Condensers were robbed from Navy spare parts. Discarded ½KW power-line transformers were bought from the power company for about $2 apiece. We did have to buy the tubes themselves, a filament voltmeter and a plate ammeter."



The radio-telegraph position in a 1925 Airway Radio Station, featuring both hand and semi-automatic sending keys.



The pilot was mute prior to 1923. This DH-4 cockpit shows no sign of air/ground or other amenities now commonplace.

High-frequency equipment was designed and installed first in western stations in 1926, the year before the Department of Commerce took over the job of maintaining ground support for the air mail planes, and the low-frequency transmitters were fully supplanted by 1928. CW Morse Code transmissions averaged 30 to 45 words per minute, fostered by the use of Philips Code abbreviations and later "Q" calls, another shorthand system. Voice came in in the early 30s at domestic stations and took over from CW a couple of years later. CW continued as the main method of handling pilot position reports and weather for international flights until 1948.

This station operator shows his background. Many CW radio men came to aviation from radio shacks on ocean vessels.

The man with the "cans" on his ears is Johnny Johnson at the Honolulu OFACS, around 1941. Communications between the CW operators and the teletypewriters was via conveyor belt. Messages would come around to the drop-off point in front of machine operators Pobanz, Pauley and Casey (left to right), where often as not, it would miss the box below and sail in behind the teletypewriter machines.

Meanwhile, other developments served to give pilots better vision, particularly at night. When a plane came in at night or poor visibility was expected, the operator would light the field any way he could—with bonfires, oil drums or even automobile headlights. At the busier fields, portable floodlights were available. The Transcontinental Airway began to be lighted in 1923 with 5,000 candlepower acetylene gas beacons or blinkers spaced three miles apart, and regular night airmail service over lighted airways on much of the route was inaugurated in 1924.

Teletypewriters came in around 1933, with the first one installed at Hadley Field in Dunellen, N.J. The going rate then was 40 words per minute, with flight plans intermingled with weather on the same circuit. Now, each has separate circuits and the speed is 100 wpm. Back in the 30s, the operators were responsible for the maintenance of these machines, too, and it was usually the midnight shift that was charged with tearing them apart for servicing.

Through the war years, the operators were still pretty much their own maintenance men. The agency—then the Civil Aeronautics Authority—had begun the program to assign maintenance personnel at key stations in 1939, but Joe Greten, now chief of the Washington FSS, relates that he only saw technicians about twice a year. The technician was mostly a traveling man and often had a whole state as his territory. Alpha Biewar, then a junior aircraft communicator, confirmed that in 1943 routine maintenance was still being handled by the operators at Texas INSACS, as the domestic Airway Communication Stations were being called. When they needed a technician, it was a 75-mile drive for him.

The operator's duties were always varied. During the days of the split shifts, his morning tasks included radio calls for weather and other data, helping load the mail, perhaps shooing stray cattle off the airstrip and propping the plane so the pilot could take off. He also had to arrange for runway lighting at night and in winter had to clear the runway of snow drifts.

In later years, with more equipment, but little more help, they had more chores. At nightfall, they had to go out to check all the field lights, the windsock lights and the beacon and then replace burned out bulbs—even on beacon towers and 300-foot-high obstruction light towers, ice on the steps or no. The beacon lights were especially important, for pilots would often fly VFR by the beacons when static made

the high-frequency radio range—introduced in the late 20s—unusable. In freezing temperatures, the globes enclosing the runway lights were often frozen on. To replace a bulb, the operator often had to supply the only heat available by relieving himself on them.

In addition, the operators often had other satellite duties through the years because of their communications skills. They were often involved, and still are, in fire-fighting, non-aviation search and rescue and calling for and cooordinating medical assistance in remote areas.

Sometimes, they had to go beyond verbal assistance in performing their primary duties. Joe Greten tells about the day at Vickery INSACS in Ohio when the wind was tearing along the runway at 70 mph. On hearing a small plane overhead without having made radio contact, the chief and assistant chief ran out on the runway about halfway along it and stationed themselves about a planewidth apart. As the plane came in, the two of them grabbed the wings and hung on to prevent it from flipping over in the strong gusts. As the plane came to a halt near the watch house, the pilot flung himself across a wing to hold it down as the operators tied the plane to the building, with the engine and prop overhanging the porch.

During World War II, weather reports were suspended as a security measure, and those that were broadcast to the military were classified and had to be numerically coded. Many of the airborne military CW operators were complete novices. Ill-trained, they might be capable of transmitting only a couple of words a minute, made repeated mistakes and often spent as much time transmitting corrections as they did new information. Frequently, the OFACS—forerunner of the international flight service station—would request the military operator to change frequencies, and that would be the last the OFACS would hear from him for hours as the novice fumbled with unfamiliar radio equipment.

When voice transmissions came to international airline flights after the war, many of the airline flight radio officers sought jobs with CAA OFACS or went to sea whence they came. The airlines established voice communications through a private corporation—ARINC. The military soon established their own voice ground facilities, which effectively ended CAA's international air/ground activity using CW code. It wasn't until the late 1950s that the ARTCCs gained their voices. Until then, the INSACS relayed clearances to domestic airborne aircraft.

During the war years, most regions had their own training schools—the FAA Academy wasn't begun until 1958. CAA used to train husband and wife teams in a Seattle school for assignment to isolated posts, particularly in Alaska. As a result, the wives really had women's lib then—they did the same job and got the same money as their husbands, having been taught communications, navigation, weather, Morse Code and radio theory during the six-month course. It turned out that there was a relatively high rate of divorce among these couples after they completed a tour—many wives found a new sense of independence of their husbands.

In Alaska, it was pioneering days again. One specialist recalls that the station had to generate its own power and handle its own sewage via the "honey bucket" route. There were few amenities. The CAA had to fly in milk and bread, and hunting supplied the meat. As on the Transcontinental Airway, stations were set up along the airways, where often nothing else existed. They consisted of the watch house, an airstrip—the only acess—and living quarters. The complement usually was three specialists and a chief, an electrical specialist and a plant maintenance and equipment specialist. The specialist related that his post was so windy that poles had to be set up between the station and quarters to grab onto. One time, one of the specialists didn't make it—the wind pushed him from the poles and off course. Properly dressed, he found he could wait till the morning calm behind a hummock he'd reached. Another saw his house disintegrate as he opened the door and a wind pressure wave blew it apart.

Ted Price, currently in Headquarters, helped open the Tanana, Alaska, INSACS in 1943. "The winters were so bitter," he said, "there was no outside contact, and one had to take in nearly a full year's supply of food during the short summer, except for moose or caribou meat we would purchase from the Indians and Eskimos. We would keep the food in caches for freezing or under the house for cool storage, but after a couple of months storage, the wives quickly learned to crack the eggs open at arm's length and with head turned."

Though voice communications had come in a decade earlier, in Alaska, CW was more reliable for air/ground because it carried better and was now unaffected by atmospherics. However, more small planes relied on voice because of the skill needed for CW and the difficulty of transcribing the signals while piloting.

Station life for couples in the remote areas was a seven-day-a-week job. Isolated on an island off the Siberian coast, one specialist and his wife worked a 13-month period of 10-hour days without a single day off. Once when he came down with flu and pleurisy after going walrus hunting, his wife had to stand the whole watch alone for four months until he was back on his feet. He didn't get to see a doctor for 11 months.

In 1950, the first direction-finding equipment was authorized, providing the stations with one of the most-useful tools for helping locate and guide lost pilots.

The name "flight service stations" came into use when the CAA became the Federal Aviation Agency in 1958.

From 17 lonely men in 17 radio stations, the FSS has evolved to about 325 stations manned by 3,900 specialists. From a CW "bug" and balky spark and arc transmitters, FSS equipment has moved up to radar, direction-finding and computer-linked cathode-ray-tube displays. From face-to-face briefings on a runway with inadequate data, the FSS specialist now can supply face-to-face, telephone, airborne radio and—soon—remote CRT briefings. And the weather information they provide is far more accurate and can be given for anywhere in the U.S. in a matter of seconds through the Kansas City Switching Center.

Flight service stations are busier than ever. Where once the station operator ran out to greet a lone plane and pass along advisories to the pilot, a facility like Washington FSS provides 20,000 briefings and originates 10,000 flight plans each month.

The reassuring thing for pilots using the airways is that with all this capability, the men and women who staff the stations haven't lost any of the dedication of those early pioneer station keepers who helped bring aviation out of its infancy.

—By Len Samuels

The future: A mockup of a self-briefing terminal, with weather for the pilot's particular route displayed on a CRT display. The keyboard permits flight-plan entry.

THEN . . .
Typical of the buildings that served as Airway Radio Stations in the 20s and 30s was this mail-order prefab structure.

AND NOW . . .
An up-to-the-minute flight service station building designed—with style—specifically for its purpose and the public it serves.

DIRECT LINE

Q. I would like to know what the rule is on rehiring personnel after they have retired. By doing this, it seems that FAA is not being fair to the younger people that are trying to advance and is stopping new hires. These people have served their time; now let them stay retired and give the rest of us a chance to move up and those looking for a job a chance to get one. Also, when a station is authorized five journeymen and a chief, why are we forced to work with only four journeymen and a chief? Manpower studies have been completed costing many thousands of dollars, and now are ignored.

A. Actually, the number of reemployed annuitants is extremely small, and when a retiree is reemployed, it is usually for a short period of time. An annuitant certainly does not have any rights to reemployment. This staffing device is used only when management determines that the services of the individual are needed and he is willing to return. Typical examples of the use of annuitants are to complete special projects in which they were heavily involved or to continue the staffing of a position until a replacement is found. The authorized staffing level does not necessarily mean the indicated positions can actually be filled. Both budgetary and position restraints can have an effect on actual staffing. There are frequent occurrences where positions remain vacant for varying periods of time because of delays in recruitment or MPP processing.

Q. Why are field offices recently assigned to FINFO not allowed to bid on vacancies that occur in their own commuting area? The voluntary application for promotion consideration is available, but you have no guarantee that Manpower will refer it each time a vacancy occurs. Sometimes people forget. Also, why must it be on file before a vacancy is announced? What difference does it make if you submit it after an announcement comes out? How can you submit it for a certain position if you don't know about the position. After it's announced, it's too late.

A. A recent policy decision was forwarded to all employing jurisdictions, requesting they include FINFO organizations located within their geographic boundaries when advertising for MPP occupations that are known to be a potential surplus category in FINFO. Voluntary applications are those submitted by individuals outside the minimum area of consideration and are considered by the same means and to the same extent as applications from within the area of consideration. As a rule, only voluntary applications received prior to the issuance date of a vacancy announcement may be considered for that vacancy, for if an application received after that date were to be considered, the area of consideration would have to be extended to include the same levels of organizational elements as that from which the voluntary application was received—e.g.: FAA or DOT-wide. The purpose of this requirement is to assure other employees of the same opportunity to apply.

Q. Why is it that the Great Lakes Regional Office is putting more and more clerical detail work on the field offices? We do not have that much clerical help. Evaluation seems to worry more about some minor paper detail than the fact that we are landing airplanes safely. Who is supposed to do all the clerical work now being thrown to the field offices?

A. There is a certain amount of clerical work required of all field facilities on a regular basis, including monthly activity reports, annual budget and staffing-standards submissions and biweekly Manpower and Operational Statistical Reports. Initial input on these items must be generated at the field facility. In addition, events in the field prompt other reports and paperwork, some of which are accident and incident reports, system-error reports and packages to be completed when a new employee is hired. Each of these is essential for litigation, enforcement and system-improvement actions and must be initiated at the scene of occurrence. New hire information is not repetitive. We are not aware of any unnecessary clerical requirements levied on field facilities. We invite field chiefs to call any such situations to our attention. There is a continuing effort on your region's part to expand clerical assistance to the extent that fiscal limitations permit. At present, about 70 percent of all AT field facilities in the region have access to either full or part-time clerical/stenographic help. We plan to add help as rapidly as conditions permit. The reference to evaluation is not clear. Usually, a brief examination is made of administrative files during a facility check evaluation. Major emphasis is placed on operations and quality of service. Accident reports prepared by AT field facilities, however, are reviewed in depth by the Evaluation Branch. These reports must be factual and accurate since they may be used in litigation. Incomplete or inaccurate reports could reflect discredit on both the controllers and the agency.

Q. Concerning voluntary retirement, is there a retirement tax credit? What is it? Also, can an employee be paid for more than 240 hours of accumulated annual leave upon retirement?

A. The Internal Revenue Service thinks you may be inquiring about Retirement Income Credit, which is covered in IRS Publication 524 (10-72). This technical and complex subject cannot be covered in this column. Had you supplied your name and address, we could have sent you a copy of this pamphlet. IRS recommends you contact your nearest IRS office for information. Annual leave accumulated during the year of retirement that is in excess of 240 hours, if that is your ceiling, must be used or forfeited upon retirement. There is legislation pending to alter this rule, but it has not been acted upon. We cannot answer your question on controller annuity because it was not clear and lacked details.

Q. We have five ARTS and three radar technicians in this ARTS/radar unit. Each of us bid for our positions at one time or another and were selected through competition. Now the sector has informed us that they are writing a new position description to cover all of us. It will include all systems within the unit. We have been told that we will not be required to bid on our own jobs, but we must accept the new position description, although it may take years to become fully trained and certified on all the systems and subsystems. Can I be degraded on my PER for lack of certification due to these additions? If I refuse to sign the new position description, what recourse does the sector have? Would I become surplus?

A. FAA is facing staffing shortages in most areas, just as most government agencies are. Management must seek ways to utilize employee skills in the most productive manner. The placements of all ARTS and ASR technicians at a specific location on one job description is necessary to support and equalize the total facility workload if staffing is reduced or additional workload is assigned. If you are a journeyman radar technician, you can probably be trained to certify on the full ARTS system when training becomes available. The entire period of training is usually much shorter than you have visualized. Until you are fully qualified, you will not be assigned certification responsibilities for the full ARTS system. Your performance rating is based on the duties that you are expected to perform. Certification of the entire ARTS system will not be a factor in your performance rating until you are given a reasonable period of time to qualify for these additional duties. Your personal initiative and progress in preparing for ARTS training will also be a factor in your performance rating. An employee's signature on a position description verifies that the employee understands what the duties are; it is not required by regulations.

Q. An employee who has worked 20 years as an ATCS reaches age 50, at which time he has 30 years total creditable Federal service. Will his annuity be greater than 50 percent because of the additional 10 years?

A. Yes. His annuity will be 56.25 percent of his high three-year average pay. This employee's annuity will be computed just like that of any other employee who meets the conditions for optional retirement. See Order 3800.5B, Chapter 5, for details.

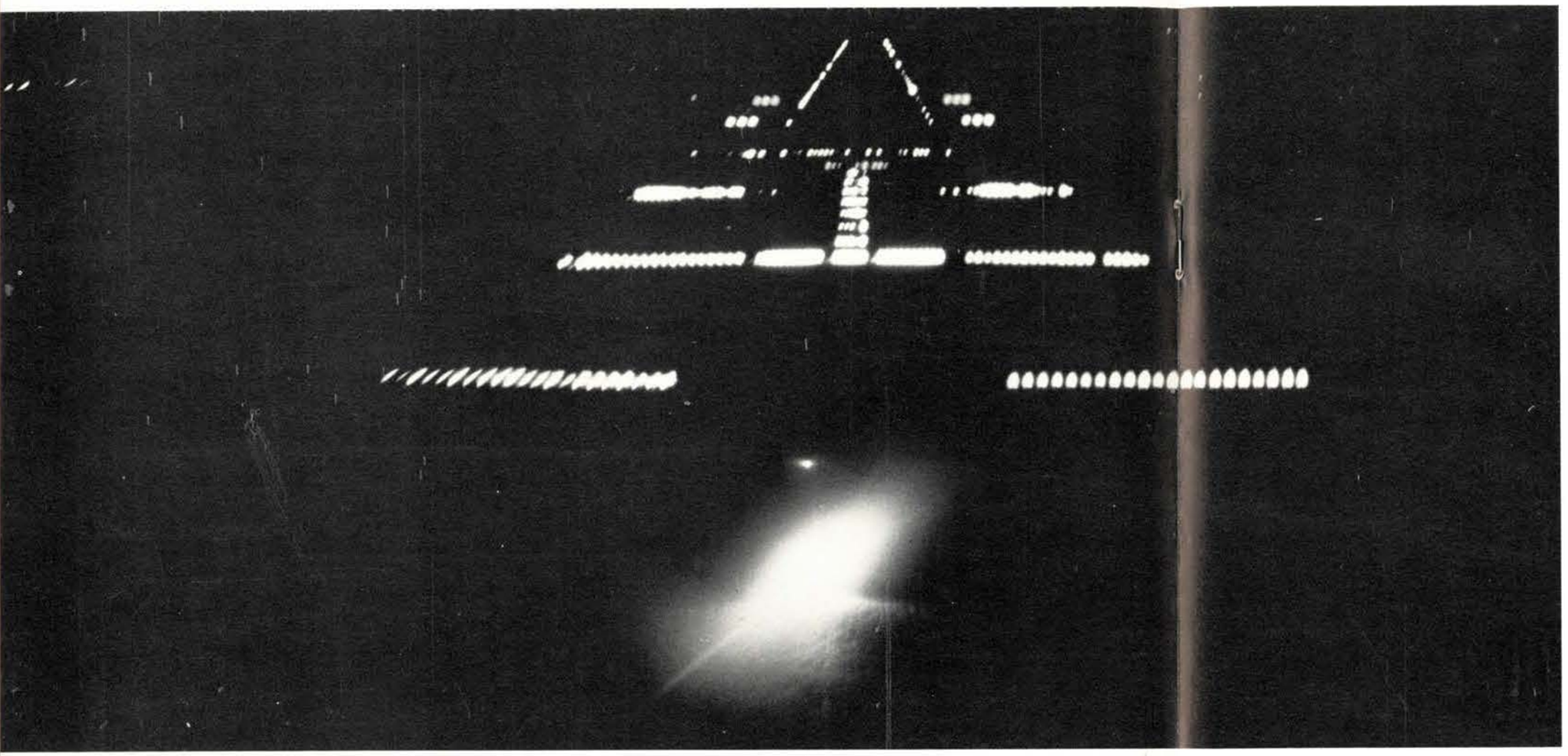
Q. This is bugging me and has caused me considerable monetary loss. I was given an oral order for official change of station by a supervisory electronic technician at 5:00 p.m. to report to the new station the following day at 8:00 a.m., 85 miles away. He said that it originated from the sector office. I find nowhere in travel orders that a SET can officially issue a verbal travel order for official change of station. I lost money on this move and deducted it from my income tax as a loss, but the IRS has questioned this. The individual cited in the sector office has refused to give me a letter of explanation.

A. Based on the limited information in the correspondent's letter, it appears that either the employee did not actually effect a PCS or the appropriate FAA procedures were not followed. If the writer authorizes the release of his name, we shall be happy to research the facts of his case and determine what actually happened. For now, we can only cite the travel regulations, Handbook 1500.13A, Paragraph 203. Under emergency conditions and in situations where it is impossible or impractical to issue written travel orders in advance, when a written travel order is considered necessary, travel may be performed on the basis of a verbal authorization by an official having authority to authorize travel. In this region, the director has delegated the authority to authorize a PCS for employees assigned to an Airway Facilities Sector to the sector manager. Under these circumstances, the authorization must be confirmed by the issuance of a confirming travel order that should include a statement regarding the reason for non-issuance of an advance travel order. The confirmation will be issued not later than the workday immediately following the date of the verbal authorization and will be signed by the authorizing official.

faables

"I think you'd better come up with a different kind of incentive program, Nastage!"

NO DECISION HEIGHT



IT WAS NOW OR NEVER

by Lt. CHARLES R. STRICKLIN

Photos by TSgt. EDDIE McCROSSAN

Reprinted from AIRMAN magazine

TSgt. Gordon A. Canham, control tower crew chief, saw this Friday as a breeze. He expected little air traffic. Today the temperatures were subfreezing, snow was falling in white torrents and ice embraced everything outside.

Over in Radar Approach Control (RAPCON) about a quarter of a mile from the tower, TSgt. Thomas M. Chetkovich and his crewmen figured the day like Canham did. They planned a tall-tale bull session over freshly perked coffee—a lazy day, snug in their one-story, red and white checkered building . . . or so they thought.

Before this frigid day was over, however, these men would find themselves entwined in a staccato of harrowing events with two lives and a $2 million aircraft at stake.

The sudden turn of events wouldn't catch them unready, though. As veteran air controllers at Selfridge Air National Guard Base, about 25 miles northeast of Detroit, they get a fair share of the hairy ones.

Today's drama began about six in the evening.

"Selfridge Approach, this is Cleveland Center. Phantom One-One, an inbound F-4, is diverting from Wurtsmith. Fuel problems."

"Roger, Cleveland Center," replied SSgt. Gary A. Moon, a young, lanky bean pole of an airman. He's a fully qualified, seasoned controller who this day as an assistant approach controller was operating the air/ground communications console.

Several hours before Cleveland Center broke up Selfridge Approach's coffee session, the F-4 Phantom began its mission from a West Coast base. At the time, the weather looked good. But a sneaky low-pressure area stalled, and as it neared its destination—Plattsburg, N.Y., the airport was socked in.

The alternate, Wurtsmith AFB, Mich., was also unsuitable because of rapidly deteriorating weather. The pilot of Phantom One-One immediately contacted Selfridge Weather Metro. He got TSgt. Leonard R. Whitcomb, a veteran Air Force weatherman of nearly 20 years experience. Whitcomb's forecasts and NOTAMs for several Air Force bases in the Great Lakes area weren't overly encouraging. The pilot decided Selfridge was his best bet.

It was only minutes later that Sergeant Moon got his call at the Selfridge RAPCON.

"Hey, chief," Moon called to Chetkovich, "got one inbound with fuel problems."

At that moment, Phantom One-One was 40 miles north-northeast of the airport and flying at about 30,000 feet. Sgt. Lawrence J. Fitzsimmons, the approach controller, checked his radar and spotted him.

"Fitz, tell Cleveland to turn him right to a two-one-zero degree heading," Chetkovich said. "That'll head him toward the field."

Sergeant Moon began his normal communications procedures. First, he contacted Canham in the tower, who was monitoring Cleveland Center's communications. As Moon received clearance from base operations for the F-4 to land, Canham activated the red crash phone.

Within 30 seconds, the firehouse alarm sounded and six crash trucks rolled toward Runway 36. A Coast Guard HH-52 rescue helicopter started its blades churning, and stood by for the "pickup" word—if it should come.

It had been two minutes since the first word about Phantom One-One was received, and all the emergency facilities were on the ready.

Now Moon contacted Detroit Metro to clear Victor 176, an airway normally congested with commercial traffic. It runs about eight miles south of the base.

At the same time, the control tower chief got another call.

"Tower, Crash One."

"Go ahead, Crash One."

"We are in position at Runway 36."

"You've got about 10 minutes to remove the MA-1A," said Canham.

"But I need at least 15!"

"Crash One, cut it away," Canham ordered, deciding that dismantling would take too long.

The MA-1A is a web barrier between stanchions attached to a chain energy absorber, which is operated from the tower. It stretches across the runway about 150 feet from the threshold and is designed to slow down an aircraft by engaging its main strut when the aircraft runs off the departure end of the runway.

Canham explained to the crash crew chief that he was sure Phantom One-One would attempt a tailhook barrier engagement, using the BAK-12, a mechanical energy absorber stretched across the runway about 50 feet from the threshold —only 100 feet from the MA-1A— and used to slow down landing aircraft.

The MA-1A would only be in the pilot's way, he reasoned. If Phantom One-One accidentally hit it as he attempted a hook engagement of the BAK-12, it would surely end in disaster.

Cleveland Center came back on the air. "Phantom One-One, 10 miles southeast of Peck (a VOR-TAC station about 40 miles north of Selfridge), squawking zero-two-zero-zero."

Moon wrote the information on a white tab about eight inches long and handed it to Fitzsimmons. The approach controller checked his scope and affirmed radar contact with Cleveland. It was then that the RAPCON crew heard Cleveland turn the F-4 over to them. "Phantom One-One, Cleveland Center. Contact Selfridge Approach Control on two-niner-zero-point-niner."

Almost immediately, the F-4 pilot called in on the frequency Cleveland gave him. "Selfridge Approach Control, this is Phantom One-One."

The curtain had risen. Everyone was on stage. It would be a one-act play that wouldn't last more than 10 minutes. But it would have more real drama than the imagination of any playwright could ever create. The question at this point was, "Would it have a tragic or happy ending?"

"Phantom One-One, Selfridge Approach Control," Fitzsimmons replied. "Turn left heading one-eight-zero. If no transmissions are received for one minute within the pattern or for five seconds on final approach, attempt to contact me on three-six-three-point-eight. If unable—cleared for approach. We have eight hundred overcast with one and three-eighths-mile visibility, winds zero-six at three-one-zero degrees. RCR zero-two (Runway Condition Reading showing almost no runway friction for braking an aircraft). Altimeter two-niner-point-six-niner. Request fuel status."

"Emergency fuel, one-seven-zero-zero pounds fuel, two souls on board."

"Phantom One-One, request your fuel status in time."

The pilot's answer was chilling: "Selfridge Approach Control, Phantom One-One. I have about 12 minutes of flying time."

Fitzsimmons knew the normal 10-mile final approach would have to be shortened to save the aircraft.

"Selfridge Approach," the pilot called, "request information on BAK-12. What's its location?"

The controller answered and also told him they were dismantling the MA-1A.

"Selfridge Approach. Will the barrier be ready?"

"It better, hadn't it?" After a moment, Fitzsimmons continued, "Phantom One-One. Descend and maintain 2,000 feet."

Fitzsimmons pushed the amber light on his console. A corresponding light in the tower began flashing, telling Canham and his crew that Phantom One-One was 10 miles from touchdown. Canham pushed his amber button which steadied both lights, and signaled RAPCON that he was on top of the situation.

Sweating out whether the crash crew would succeed in time, the four in the tower watched with binoculars. Then the call came in. "Tower. Crash One. Runway clear and barrier removed."

Phantom One-One was now five miles southeast of the runway at 2,000 feet. Fitzsimmons called out the base leg: "Phantom One-One, turn right to two-seven-zero." The dog leg: "Phantom One-One, three-three-zero." The approach controller's job was finished.

Now it was Sgt. Stephen C. Jugg's turn at the RAPCON. The PAR—Precision Approach Radar—controller took over. "Phantom One-One, how do you read me?"

"Loud and clear."

"Phantom One-One, do not acknowledge further transmissions. If no transmissions are received for five seconds, attempt contact three-six-three-point-eight. If unable, cleared for approach.

"Approaching glide path. Wheels should be down." Or should they? Jugg asked himself. More drag will cause the F-4 to use more fuel.

"Turn right to three-four-zero."

As the line—the F-4's radar return—on the azimuth portion of his screen turned in toward the glide path, Jugg instinctively instructed. "Turn right to three-five-zero."

And within seconds, "Turn right to three-six-zero."

Ah, he's lining up beautifully, Jugg thought to himself. "On course, on glide path. Begin your descent."

Although the pilot was cross-checking his navigational aids within the cockpit, he now relied on the controller to bring him safely below the ceiling.

As Jugg called, "Four miles from touchdown," he pushed the green button on the key-system box. The steady amber light changed to a pulsating green on the control tower board.

"Tower, RAPCON. Phantom One-One, F-4 four miles from touchdown, full stop."

Canham pressed the green button on his panel and replied, "Phantom One-One cleared to land. BAK-12 operative."

Seconds passed. As the F-4 descended to within 3½ miles of the airport, Jugg observed a change on his scope and called, "Slightly below glide path, on course."

Then, "Well below glide path, on course."

Sweat drops beaded on Jugg's forehead. He must get low to engage the BAK-12, he thought, but if he gets too low . . .? Not enough fuel to try it again.

"Extremely below glide path. You should be correcting. On course."

Someone in the green and amber lit control room blurted out, "He's not correcting."

"Phantom One-One, dangerously below glide path. Correct."

"Tell him to level off," Chetkovich exclaimed.

"Phantom One-One, level off!"

Phantom One-One did.

"Approaching the glide path, on course.

"Three miles from touchdown—On course, on glide path." Then two, then one mile from touchdown. It was still on course, on glide path.

The tower crew spotted Phantom One-One as it came within one-half mile of the end of the runway. Canham felt his heart palpitate to the rhythm of the strobe lights as they led the aircraft to safety.

"Decision height," Jugg called. Normal procedure calls for a pilot at that point to decide whether to land or go around. His fuel was almost nil; the decision was out of his hands.

The F-4 skimmed 20-30 feet above the BAK-12. Seconds later, the aircraft touched down on the black-streaked, ice covered runway. The chute deployed. The pilot contacted Ground Control and met the Air Force-blue "Follow Me" truck on the taxiway.

The emergency terminated with *two minutes of fuel* remaining in the F-4's tanks.

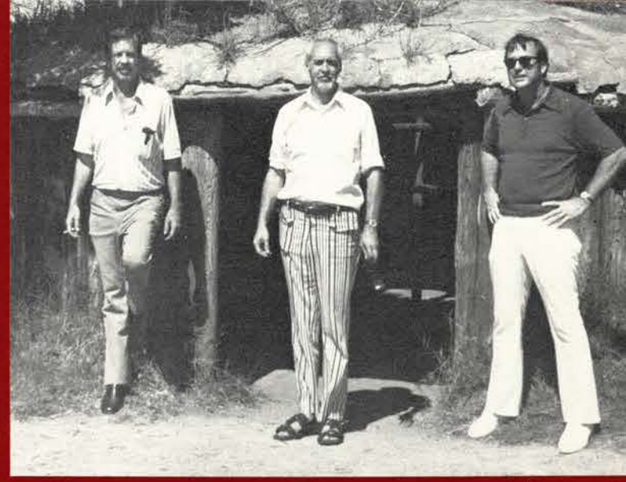
FACES and PLACES

THEIR HANDIWORK—*Inspecting the newly installed pole-mounted middle marker for the ILS at Jefferson County Airport, Colo., are (left to right) engineer John Alf, Salt Lake City; Dale Johnson, ET; Harry Morgenson, NAVAIDS supervisory ET; Jess Sechrest, ET; and William Lowe, chief of the Facilities and Equipment Field Unit.*

NEW RADAR—*Southwest Region Director Henry Newman (left) and Ken Smith of E-Systems, former FAA Deputy Administrator, observe Jim Lyles (foreground) and Mark Deemer at the scope of the new airport surveillance radar commissioned at the Midland Regional Air Terminal in Texas.*

SAFETY BOOSTER—*For contributing articles on aviation safety to national publications, Columbus, Ohio, FSS specialist Don Watson is presented the Administrator's Certificate of Appreciation by Great Lakes public affairs officer Neal Callahan (right). Paul Scott, Columbus FSS acting chief, looks on.*

INDUSTRIOUS GROUP—*Western Region Director Arvin Basnight looks over an arts and crafts exhibit that summer employees from the regional office and Los Angeles hangar found the time to create, in addition to working and going to school. The exhibit was well enough received to suggest it may become an annual event.*



OFF-CAMPUS QUARTERS?—*Taking a breather from their studies in the Basic Supervisory Course at MTS at the nearby Indian village of Anadarko are (left to right) Bill Schilling, Denver Center; Thom Hook, Washington Headquarters; and Howard Goode, Jackson, Miss., Tower.*

HIS PRIDE AND JOY—*Inside those size 13 shoes are the feet that made Cleveland Center controller Jim Patchett the third-ranking barefoot water skier in the world. The sport is an exciting way to get more speed, he says, but falls are like tripping over a brick wall. Having big feet isn't a prerequisite, but it sure helps to have 'em.*

SAFETY CONFAB—*FAA accident prevention coordinators from around the country gathered at the Rocky Mountain Regional Office to discuss their program. Heading up the group, front and center, is James "Pete" Campbell, chief of the Accident Prevention Program Staff.*

SOARING RECORD—*In recognition of the 100,000th flight at the Schweizer Soaring School, which operates at the Chemung County Airport, Elmira, N.Y., Eastern AT Division chief Clay Hedges (right) presents a plaque to the owners and instructors. It's the largest number of sailplane flights for any commercial soaring school in the country, accomplished without any serious accidents.*

THREE DAYS WITH LMR . . .

". . . If we can make this (Labor-Management Relations) program work better, we can make government work better. . ."
—President Nixon

"Renegotiating the Labor Agreement" was the theme of a three-day conference held at Washington headquarters recently with participants from around the country.

The first day dealt with renegotiating national and local agreements. The second day was Field Day—featuring inputs on local programs from field LMR representatives, followed by an after-hours social. The final day was devoted to the subjects of Goals and Objectives; Administering the Labor Agreement; Functions/Staffing of Labor Relations branches; the proposed new Civil Service Appeals System; and Labor Relations Program Guidance, Reporting and Evaluation. The wrapup was given by Labor Relations Director Ed Curran and Deputy Bill Heimbach.

Also on the agenda were talks by Associate Administrator for Administration James Dow, his Deputy—Gene Weithoner, DOT Personnel Director Ken Chandler, FAA Personnel Director George Reeves, Air Traffic Service Deputy Director Bob Martin and John Murtha of the Civil Service Commission.

Labor Relations representatives from the field were Jim Egan and Herb Beard, EA; Dale Huddleston and Stew Hinds, SO; Jim Ryan, AC; Jim Gill, SW; Ben Parker, NE; Ross Burnett and Frank Baker, WE; Erick Erickson, RM; John West, CE; Bob Hunter, NW; Art Dalton, PC; George Wilson, AL; Greg Maguire, Ken Burger and Wally George, GL; Bing Landry, NA; and Carol Arnold, Van Smith and Stan Markowitz, PN. Also attending was Johnie Withers, representing MTS.

Labor Relations staffers participating included Jack Embrey, Jim Gillespie, Joe Noonan, Keith Burt, Frank Kaegi, Bernie Thiman, Earl Portlock and Alan Armstrong.

—By Thom Hook

Scenes from the conference, clockwise from the top, show participants intent on the business of the day and relaxing at the evening social: Bob Martin, Air Traffic Deputy Director, and Labor Relations Director Ed Curran field questions during a panel session; Associate Administrator for Administration James Dow and Western Region representative Ross Burnett address the gathering; Ed Curran discusses a point with Roger Kaplan, general counsel for the National Association of Government Employees (NAGE); FAA lawyer Jane Golden, who represents the agency in LMR cases, studies a staff paper; Labor Relations personnel Alan Armstrong, Jim Gillespie and Bernie Thiman listen to a regional problem; Jim Egan and Herb Beard, Eastern Region representatives, chat before a meeting; Labor Relations staffers Laura Krupa, Gay Smith and Pat Funderburk head for the hors d'oeuvres at the social.

An ET Goes to Sea

Few wouldn't want the fringe benefits of Lyle Nelson's hobby. Year round, he's an electronic technician at the Los Angeles ARTCC, but in summer, he goes to sea as communications officer in the Transpacific Yacht Races.

In his ninth Transpac Race, which this year ran to Honolulu, he served aboard the 66-foot ketch "Tranquility," owned by architect James Van Dyke, who worked on the Los Angeles Center and the FAA hangar/office complex at Los Angeles International Airport. Pictured above, the Tranquility really boasts all the comforts of home—automatic dishwasher, clothes washer and dryer.

Nelson has sailed since 1959 as navigator and communications officer in Transpac Races. In 1964, after a Tahiti race, he cruised the rest of the summer aboard John Scripps' 90-foot "Novia del Mar" to Bora Bora, Cook Islands, Tonga and Samoa. In 1967, he was honored with a gold watch and a standing ovation from 1,400 people at a Transpac banquet.

He has published articles on his cruises and presented a technical paper on sea navigation at this year's Symposium of the American Institute of Aeronautics and Astronautics.

Next year, he hopes to make his fourth race to Tahiti and loll around there and the Tuamotus for the Bastille Day celebrations.

... Like it is!

TRAVELING ON THE BOSS
As prices continue to rise, Federal workers who travel on the job have been finding it increasingly difficult to cover expenses on the current per diem allowance. They say it frequently costs them out-of-pocket especially in the big cities. The General Services Administration, charged with adjusting per diem allowances, has been advised by other agencies that the study of actual expenses would indicate a rise from a maximum of $25 per day to $30 or $35.

ANOTHER PENSION BONUS
The inflation spiral may trigger a mid-year cost-of-living bonus for retirees. The August Consumer Price Index started the countdown that will result in a January annuity increase if September and October held to at least the August level. Employees retired by Jan. 1 would be eligible. ■ However, the House has passed and sent to the Senate a bill that would eliminate that deadline and cut the retirement logjam.

IF YOU'RE HURT ON THE JOB
The House Select Labor Subcommittee will be holding hearings on legislation to boost death or injury compensation payments. Introduced by Rep. Dominick Daniels (NJ), the bill would boost basic payments, treat widowers on equal basis with widows and set maximum funeral allowances at $1,250. Each year 28,000 Federal on-the-job injury claims are approved.

IT'S NOT UP TO YOU
The United States Court of Claims has decided that agencies have the broad authority to grant or deny incentive awards and to decide the cash awards as they see fit. Except for a clear showing of abuse of discretion, the court refused to interfere. The suit contested a $300 award where the employee believed he was entitled to over $1.5 million.

EMPLOYEE RIGHTS GAIN
A Federal labor-law judge has ruled that government employee unions have the right to examine agencies' promotion evaluation records to determine whether employees have been unjustly denied promotions. Denying this right would violate unfair labor practice provisions of Executive Order 11491, the judgment concluded.
■ The House Civil Service Manpower Subcommittee plans to begin hearings on legislation to beef up Federal employees' bargaining rights. Chairman David Henderson (NC) favors creating an independent "little NLRB" that would operate the labor-management program and provide for binding arbitration in impasses.

MORE GRIEVANCE GROUNDS
The Civil Service Commission has issued regulations to permit employees to file grievances against their agencies on charges they have been victims of coercion, reprisals or retaliation. Previously, agencies said such complaints should be made to CSC, but CSC has not accepted such cases. Now, such grievances will be heard within the employees' agencies.

OPTIONAL SS STATUS
At this writing, a bill to authorize optional Social Security coverage for Federal workers has 65 sponsors in the House, and 7 senators have introduced similar legislation, according to Affiliated Government Organizations.

SLEEK FLYING LABS

Among the new jets that FAA is acquiring for its flight-inspection fleet ("Info on FINFO," FAA WORLD, September) are five Jet Commanders that will go on the line beginning January 1.

Designated the Model 1121C, the aircraft are in the process of being outfitted by Qualitron Aero Corp. with extensive avionics for maximum efficiency in flight-inspection operations. On duty at the contractor's facility are FAA engineering and quality-control personnel to provide guidance and to monitor all stages of the job—from engineering through fabrication and installation to acceptance.

Included in the fittings are dual integrated flight-director systems, an auto-pilot with ILS/VOR coupler, dual compass systems, emergency-locator transmitter and receiver, a VHF/DF system and the latest TACAN system with a comprehension TACAN signal-analyzer unit. In addition to a standard complement of other navigation and communications equipment, there will be a high-capacity computer and inertial-guidance system to provide automatic computations and precise positioning of the aircraft.

When operational, the Jet Commanders will be manned by a pilot, co-pilot and flight-inspection panel technician.

HIGH HONOR FOR FAA

FAA has been awarded the Honorary Group Diploma of the Fédération Aéronautique Internationale for its efforts to improve air-traffic-control safety and efficiency during 1972.

One of FAI's highest awards to scientific bodies, aerospace corporations, government agencies and other organizations, the Honorary Group Diploma was presented to Acting Deputy Administrator James Dow at the federation's 66th general conference, held in Dublin, Ireland, in September.

FAA's citation was "in recognition of its outstanding contribution to air-traffic efficiency and safety for the development of the Automated Radar Terminal System (ARTS III) . . . these systems have demonstrated an outstanding improvement in air-traffic control and safety of both commercial and general-aviation aircraft."

Acting Deputy Administrator James Dow (left) accepts the award from FAI president Andre Dumas (right). At center is Peter Barry, Minister of Transport and Power, Republic of Ireland.

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ARKANSAS

Lot for sale at Greer's Ferry Lake, Tannenbaum Resort, Heber Springs; approx ½ acre with water, sewer, electricity and frontage on road; access to stables, golf course, recreation area, fishing; $4,500 and can be financed. Call 901-386-3001 or write J. Cosby, 6330 Brightwood Drive, Memphis, Tenn. 38134.

FLORIDA

Home for sale in one of most desirable sections of Miami, near excellent schools; 3 bedrooms, 2 baths, formal dining area and living room, large eat-in kitchen, central heat and air conditioning, large swimming pool with extra large deck; $56,900 and will handle second mortgage. Call 305-274-4598 or write Bill Southerland, 10405 SW 98th St., Miami 33156.

Ideal homesite in Port Charlotte community, ½ mile from Port Charlotte harbor, 30 miles north of Fort Myers on Florida's west coast; 2 lots available: corner lot 100 x 125 feet, adjoining lot 80 x 125 feet; both lots only $8,000. Call 305-273-2248 or write William D. Murray, 1516 Gattis Drive, Orlando 32807.

One-acre boulevard corner lot in major land-development project 8 miles west of Palm Beach, excellent as land investment; close to developed residential area, golf courses, tennis courts, boat ramps; will be ready for building December 1975; $8,000. Call 305-686-5946 or write C. W. Whipple, 206 Superior Place, W. Palm Beach 33401.

Improved homesite for sale in General Development Corp. community of Port Malabar on the east coast; 80 x 125 feet; $3,500. Call 313-946-5789 or write A.D. Slusarchuk, 15376 Vivian Ave., Taylor, Mich. 48180.

MARYLAND

Lot for sale at Ocean Pines, Ocean City; over 9,000 square feet in developed section with utilities and sewerage available, access to stables, golf course and swimming, ideal for investment; only $10,950 with $1,700 down, second trust and assumption available. Call 703-361-8391 or write Paul de Mange, 7396 Roxbury Ave., Manassas, Va. 22110.

Colonial house for rent in Belair development of Bowie, 40 minutes from headquarters; 3 bedrooms, 2½ baths, central air conditioned, w/w carpeting, fireplace, dishwasher, garage, patio, fenced yard; $330 per month. Call 301-464-0653.

MASSACHUSETTS

Ranch house for sale in Dracut, 16 miles from Boston Center and regional office, 118 feet long on 2 acres; all granite veneer stone walls, 5-zone oil heating, hot-water baseboard radiators, 12 rooms, 4 bedrooms, 3½ baths, finished basement, steel beams, steel fenestra windows, frames and door frames, 2-car garage, 200 evergreens and landscaping; $110,000, mortgage terms. Call 617-459-7281 or write Dr. Emile A. Houle, 50 Arthur Ave., Dracut 01826.

NEW MEXICO

Cozy 3-bedroom, 1¾-bath home for sale in Albuquerque; gas range, dishwasher, disposal and drapes; carpeting in living room, hall, baths and "king-size" master bedroom; fireplace in family room-kitchen, central heat, air conditioning, 2-car garage, Southwest landscaped with evergreens and roses; $25,000, $5,000 cash down or negotiate, assume 7% FHA at $193 per month. Call 505-299-8732.

VIRGINIA

All-brick, 2-story colonial house for sale on ½-acre lot in Annandale, 30-35 minutes from headquarters and Leesburg Center; 5 bedrooms, 3 baths, paneled library with built-in bookcases and fireplace, half-paneled rec room with fireplace, garden shed, many trees; $75,995, will accept first trust at 8½% with $19,000 down. Call 703-280-1217.

Townhouse for rent at Cardinal Square in Springfield, 35-40 minutes from headquarters and Leesburg Center; 3 bedrooms, 2½ baths, dishwasher, washer-dryer, patio, fenced yard; $315 a month including utilities except electricity. Call Bob McCarthy at 301-736-0209 eves.

House for rent in Kings Park West, Fairfax, 45 minutes from headquarters; 4 bedrooms, 3 baths, living room, formal dining room, eat-in kitchen, large paneled and carpeted walk-out basement, carport, central AC, dishwasher, wall-to-wall carpeting throughout, some drapes, lots of storage, wooded lot; 3½ years old, near excellent schools and bus, pool membership available, no pets; available on lease January 1 at $350 per month. Call 609-646-7426 or write Larey Ketchner, 538 Marita Ann Drive, Northfield, N.J. 08225.

Brick rambler for rent in Alexandria, 20 minutes to downtown Washington; 3 bedrooms, 1½ baths, fireplace in living room, central air conditioned, carport, patio, nice shaded lot with fenced rear yard; $275 per month. Call 703-971-2144.