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Jack A. Gertz Appointed Public Affairs Chief



Jack A. Gertz, former national director of public affairs with the Mutual Broadcasting System, has been appointed Chief of the FAA's Office of Public Affairs. He has been chairman for five terms of the combined radio-TV industry's committee to coordinate broadcasting activities with Congress and the President.

The new FAA official began his news career as a reporter with the Denver Post after graduation from Denver University in 1936. He was later appointed radio news director for the Columbine Broadcasting System in Colorado. He has also served in the State Department as director of public affairs in Singapore and Malaya from 1951 until the end of 1953. He held the rank of Vice Consul in the Department's Foreign Service.

Mr. Gertz enlisted in the Marine Corps during WWII and served as a combat correspondent in the Pacific Theatre and was later commissioned. He was recalled at the beginning of the Korean War and still holds the rank of major in the Marine Corps Reserve.

Mr. Gertz, his wife Dorothy, and daughter Kathryn Jean, 16, live in Arlington, Va.

Nine FAA Air Route Traffic Control Centers To Be Placed in Air Force SAGE Sites

Under an agreement signed by officials of the FAA, Department of Defense and the U.S. Air Force, nine FAA centers for en route air traffic control will be established at Air Force SAGE (semi-automatic ground environment) super combat centers. The super combat centers are part of the SAGE system for air defense.

The FAA Air Route Traffic Control Centers, to be located at the nine SAGE installations, will provide en route coverage throughout the United States and should substantially reduce the traffic burden on the existing 30 FAA ARTCCs now charged with handling en route traffic at all altitudes. After the combined centers are operating, the existing FAA ARTCCs will become Terminal Transitional Centers and assigned the control of traffic below 24,000 feet in heavy traffic areas.

Administrator Quesada said that use of SAGE centers in en route air traffic control will result in increased safety for high altitude civil and military jets. He added that use of a system such as SAGE also means earlier realization for civil aviation of highly complex and effective technical advances developed by military resources.

Plans for the integration of the air traffic control system and the air defense system will include arrangements for FAA and Department of Defense to share the cost of joint use of the facilities.

Location of the FAA facilities will in no way delay or interfere with the schedule established by the Department of Defense for the planning, selection of sites, construction or operation of the SAGE system for military needs.

FAA's Bureau of Research and Development has been studying the application of

the SAGE computer to the needs of air traffic control. Electronic computers are one of the latest devices being used to relieve FAA air traffic controllers of the "bookkeeping" chores which are essential to the safe handling of the current, high density air traffic. Several important advantages will be obtained if it is found that Air Force computers can serve both air defense and air traffic needs. The FAA is presently negotiating with the Mitre Corporation of Lexington, Mass., and the USAF for engineering services and for the use of air defense facilities.

Design of the experimental system will conform to the operational concept specified by FAA and will demonstrate the required air traffic control functions. The experimental system will include--but not be limited to--the following capabilities:

- Simultaneous surveillance and control of up to 100 aircraft within a specified area.
- Processing of flight plan progress reports, radar and beacon data.
- Control of airways, direct, radius and air defense interceptor flights.
- Coordination and hand over with adjacent facilities.
- Tie-in to experimental air traffic control facilities at NAFEC.
- Backup or emergency mode of operation.
- Testing with simulated and live inputs.

A working group representing the FAA and the Air Force has been formed to develop plans for locating en route air traffic control facilities and equipment at each of the nine Air Force SAGE sites.

The Bureau of Research and Development will represent the FAA for exchanging information and developing additional plans as needed.



Regional ATC Division Chiefs pause during meetings held September 29, 30 and October 1, in Washington. Top (from left) G. A. Whitaker, Don Long, George Kriske, Wayne Hendershot; seated (left), Ponton de Arce, Dave Thomas and Paul Boatman.

Publication Provides Data On Active Civil Aircraft

A significant four percent increase in the number of active civil aircraft in 1958 over the preceding year is reflected in figures contained in the booklet "U.S. Active Civil Aircraft by State and County," released by the FAA.

Active civil aircraft registered with the FAA numbered 69,718 as of January 1, 1959, as against 67,153 on the same date in 1958. "Active" aircraft is defined by the FAA as aircraft holding a valid airworthiness certificate and which has had an approved inspection within the past 12 months.

California, with 8556 active civil aircraft holds first place in numbers of planes. Four other states, Texas, Illinois, New York and Ohio, combined with California, account for more than one-third of the total number. The same five states also contain one-third of the population.

On the other hand, states with the lowest population density have the highest aircraft ownership per capita, averaging one or more aircraft for each 1000 persons. Far out in front is Alaska with 9.1 aircraft for each 1000 people, Montana places second with 1.4 aircraft per thousand population followed by Wyoming, Nevada, and South Dakota.

When aircraft ownership is related to land area, an important consideration in aviation, 12 states boast more than 50 aircraft for each 1000 square miles. The top five in this category are New Jersey, Rhode Island, Massachusetts, Connecticut, and Delaware.

In addition to data on the geographical distribution of active civil aircraft, the figures are broken down to show the number of scheduled and irregular air carriers and general aviation aircraft. The latter category is further subdivided into multi-engine; single-engine, four-place; and all other. Also shown for each state and county are the number of airports by general use and by a combined total of limited use and restricted use airports. Limited use airports are available to the public for landing and take off of aircraft but are not equipped to offer minimum services of fuel and attendance. Restricted use airports are prohibited for use by the public, except in emergency.

Counties which have had no active civil aircraft registered with the FAA at the beginning of 1959, and no airport located within their borders are not included in the publication.

The report, prepared by the FAA's Office of Management Services from data maintained by the Bureau of Flight Standards and Bureau of Facilities, can be purchased for 55 cents from the U.S. Government Printing Office, Washington 25, D.C.

Dr. Bennie A. Moxness To Select Examiners

Dr. Bennie A. Moxness will be responsible for the selection, training and supervision of the designated medical examiners in his new position as Chief of the Examiner Training and Control Branch in the Office of the Civil Air Surgeon. The Branch is under the Medical Certification Division. Dr. Moxness has authority to institute a course of instruction for civilian flight surgeons, as well as for developing seminars and workshops for designated examiners.

These designated examiners are selected to carry out required physical checks of airmen applying for medical certificates, in order to ensure that they meet the physical standards established by the Civil Air Regulations. In addition, the Examiner Training and Control Branch will institute a course of instruction for civilian flight surgeons.

Dr. Moxness, a native of Brandon, Minn., is a graduate of George Washington University. He received his medical degree from Georgetown University Medical School.

From 1925 to 1931 Dr. Moxness served in the U.S. Army Medical Corps. He then joined the Veterans Administration as Medical Officer for seven years. In 1938 he accepted an appointment as Public Health Physician in the Connecticut State Health Department, leaving in 1941 to resume his career in the U.S. Army Medical Corps. He transferred to the Air Force Medical Service in 1949 where he was active in initiating standards for physical and mental fitness Air Force wide.

Dr. Moxness, who retired from the USAF in 1957 with the rank of Colonel, lives with his family in Chevy Chase, Md.

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Runway vacuum cleaner picks up foreign objects before they get chance to enter jet engines.

Simulator Operator Course Graduates 50 at NAFEC

Fifty simulator-pilot operators have graduated from the first training class at NAFEC and are working in the Systems Analysis Division.

The two-month course--condensed to 30 days--included all the functions of air traffic control procedures, navigation, air traffic rules and regulations, target generator operations and associated studies, and map interpretation.

The operators will "fly" electronically generated radar aircraft targets from 48

consoles. The simulated movements will show congestion, various degrees of area capacity, suitable or unwanted maneuvering, and various other segments of control that can be studied, analyzed and evaluated.

Principal speakers at the graduation exercise were Carl Russell, Deputy Chief, Systems Analysis Division; Lloyd Van Rawlings, Chief, Simulator Operators Branch; Alfred A. Castellano, Training Unit Chief; and Robert McCosker.

Instructors Justin Cervi and Robert Lucas, of the training staff, presented the certificates.



Simulator pilot graduates, Mrs. Dorothy T. Greenan (left) and Mrs. Mary L. Dougherty, use two of 48 consoles to make inputs into target generators during air traffic control studies.

Region 3 Gals Enter Powder Puff Derby

Region 3 claims honors in having the only two FAA gals as participants in the 1959 All Woman's Transcontinental Air Race. This annual event for women pilots is sponsored by the "The 99's," Women's Aviation Organization. The 2470-mile air race was from Lawrence, Mass., to Spokane, Wash., July 4-5.

The two FAAers, Carol Baney, Minot, S. C., ATCS, and Dorothy Lee, Rapid City ATCS, each entered the contest. They were unfortunate enough to be "weathered out" of possible winning.

In recognition of their participation in the air race, Dorothy Lee and Carol Baney spent two days in the Regional Office getting acquainted with "Big City facilities." They received congratulations from Leonard W. Jurden, Regional Administrator, for taking part in the event.

NAFEC Purchases Runway Sweeper

The purchase of a Sabre "Jet Vac-Matic" airport cleaner has been made by NAFEC to sweep its runways, taxiways, and ramp areas.

The equipment had been used at NAFEC since last November on lease with a purchase option arrangement with the manufacturer, the Sabre Aviation Equipment Company, Brookfield, Ill.

Designed particularly for airfields having jet traffic, the equipment vacuums a cleaning swath 12 feet wide to help prevent jet engine failures caused by ingestion of foreign objects.

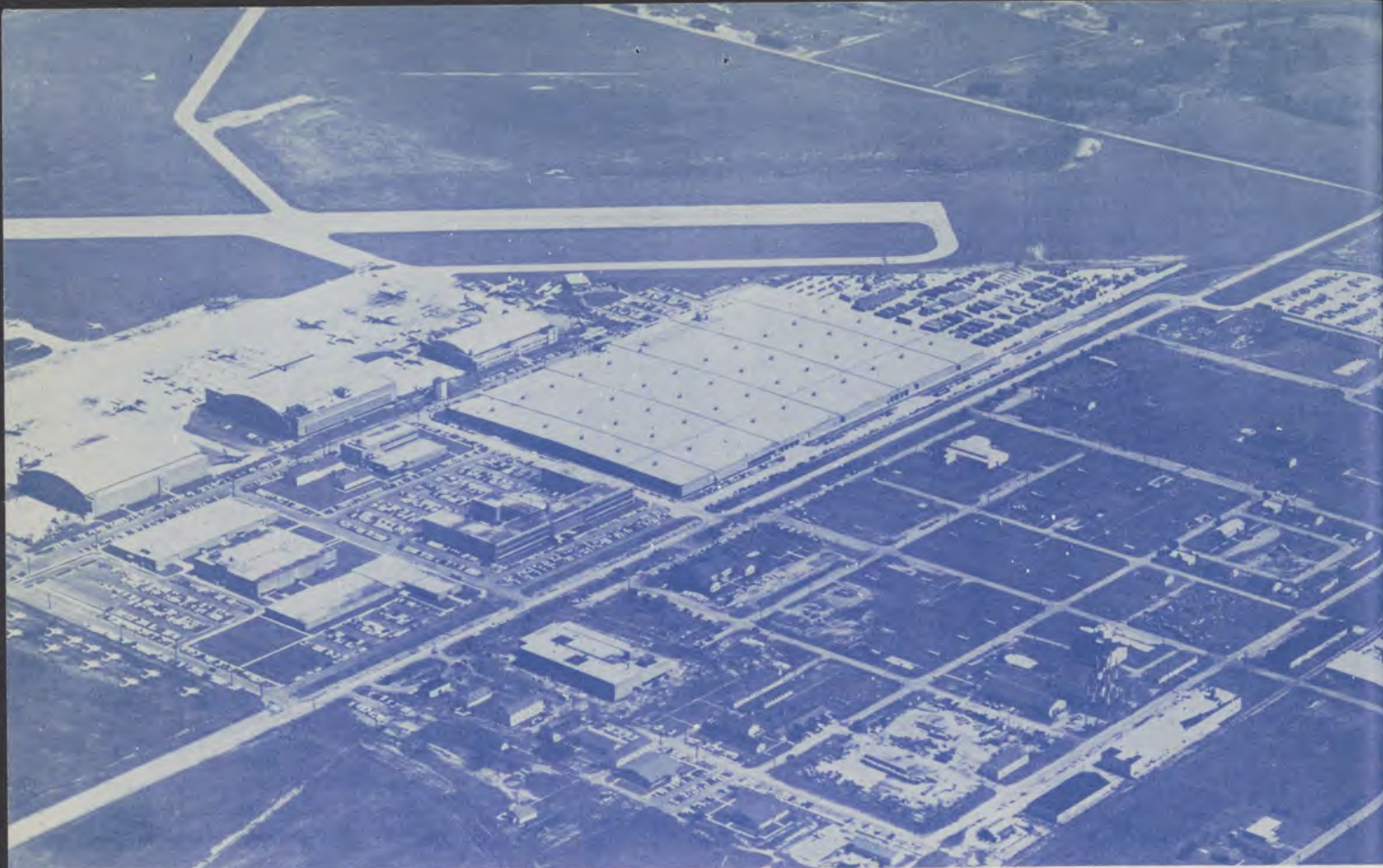
The 36,000-pound sweeper cleans 2,000,000 square feet per hour at speeds to 35 miles per hour. When it's not cleaning, the runway sweeper can zoom up to 65 miles per hour on the highway.

New Bureau Established

The Civil Service Commission has established a new Bureau of Retirement and Insurance which will administer the new Federal Employees Health Benefits Act.

Headed by Andrew E. Ruddock, with David F. Lawton as assistant director, the bureau also will be responsible for administration of the Civil Service Retirement system and the Federal Employees' Group Life Insurance program.

The Civil Service Commission will have over-all responsibility for the health benefits program, and will negotiate contracts for the Government-wide health benefits plan.



This panoramic view of the Aeronautical Center will give you some idea of size--huge hangars and blocks of long, low, red-brick buildings.

THE AERONAUTICAL CENTER--

EDITOR'S NOTE: This special feature, second in a series, was developed to introduce FAA'ers to another of our major organizations--the Aeronautical Center at Oklahoma City. A first-hand report by the FLY-BY staff, this article attempts only to summarize the great variety of functions performed at the Center. The editor wishes to thank all the Division and Branch Chiefs for their technical assistance. Special thanks to William M. Jackson, the Center's Personnel Officer, and Robert Newkirk, Center photographer.

Letting down for a landing over the Oklahoma City area, the air passenger sees tall buildings, broad residential and industrial areas, and countless oil wells sweeping by below. The land is flat as far as the eye can see, and reddish-brown where it is not green with grass and trees. And, much to the easterner's surprise, there are lakes, large and small, all over the place. In Oklahoma City, where water skiing is just about as common as beef-steak, oil and water do mix.

Arriving at the air terminal and looking westward across Will Rogers Field, one sees the long backside of the Aeronautical Center -- several huge hangars and blocks of long, low, red-brick buildings

sprouting an assortment of antennae into the air. The Center proper is only a short drive around the north end of the runways.

Evolution

The Center is large, modern and impressive. Such wasn't always the case. Beginning operations in May 1946 in 37 temporary war surplus buildings, the Center grew until in 1952, it occupied 128 such buildings. As the termination of the original lease on the temporary buildings drew near in 1954, negotiations were started with the city to develop additional facilities according to the original agreement. The existing modern and permanent physical plant is the result. The first group of permanent buildings was completed during the summer of 1958 and the second group is scheduled for completion late this year, with additional construction planned.

The Center has five large red-brick classroom and laboratory buildings which total 250,000 square feet of floor space. The large warehouse and shops cover about 15 acres, all under one roof.

There are two hangars (a third under construction) tall enough to house the largest jet airliners. The new headquarters, or administration building, is a magnificent structure that includes 161,000 feet of space for offices, classrooms, the post office, cafeteria, auditorium, clinic, and a communications center. The Center also has a special radar antenna laboratory of 2800 square feet. There are outdoor storage and parking areas of 884,000 square feet. The construction, costing more than \$18 million, is the result of cooperation between the City of Oklahoma City, FAA and the General Services Administration (which acts for the U. S. Government in securing housing facilities for Federal agencies).

The City of Oklahoma City owns the Center and FAA rents the facilities under a long-term renewable lease. The rental rate is below the average paid by Federal agencies throughout the country for comparable facilities.

People and functions

The Center employs 2131 people with an annual payroll of \$13 million. There are



The headquarters building contains space for offices, classrooms, the post office, cafeteria, auditorium, clinic and a communications center.

FAA's "University of the Air"

1821 men and 310 women--most of whom are highly trained specialists in one of the Center's three major areas of operation: training, supply support, and aircraft-avionics.

We shall discuss the Center in terms of functions rather than in terms of organization. We have chosen this method for many reasons, one of which is that the Center is, to some extent, undergoing reorganization. This, while altering the lines of the latest Center organization chart, will have less effect on what the Center does as a major segment of the FAA.

Training

Where does the FAA get its air traffic controllers, engineers, electronic technicians, instructors, inspectors, and other highly specialized personnel? For the most part, they come from private industry and in most cases, they need varying amounts of additional training. Where do they get this training within the FAA? At the Aeronautical Center--FAA's "University of the Air," as it is popularly called.

Training is big business at the Center. The 510 Center employees who are engaged in training activities can teach you most anything you want to know about aviation--all the way from what makes an airplane fly to how to land a giant jet airliner under adverse conditions.

The Center's many training programs are designed to give the United States and other nations of the Free World the specialized manpower needed to keep the airways operating safely and efficiently. Students come from all the States and around the globe for training in many aviation specialties. The student enrollment runs around 1200 to 1500 at all times. Observers from the aviation industry, airlines, military and government agencies from various nations also attend the Center's classes to gain familiarity with new developments.

Centralized FAA training at the Center is broken down into these specialties: Civil Aviation Safety, Air Traffic Control, Air Navigation Facilities Maintenance, Air Navigation Facilities Flight Inspection, and Avionics.

Civil Aviation Safety Training--The FAA is responsible for promoting safety in

civil aviation. This is accomplished in part through the issuance and enforcement of the Civil Air Regulations. The Aeronautical Center trains the FAA safety inspectors who are assigned throughout the world to help enforce the FAA regulations. These inspectors are thoroughly proficient in all phases of aircraft operation and maintenance. Their interpretation and application of the CAR's must be consistent and uniform. Even after they have been assigned to positions in the field, all FAA inspectors return periodically to the Center for brush-up instruction. This may be either refresher or advanced courses designed to keep them proficient and abreast of the latest developments and equipment.

There are two general types of civil aviation safety training at the Center--Operational and Technical.

Operational training for all types of pilot personnel, includes airline operations inspectors, general operations inspectors, and engineering flight test inspectors. Specialized flight courses are provided for FAA inspectors whose duties involve advanced operational in-



It takes miles of wiring for the 707 jet transport simulator shown here undergoing a paint job.

strument flight techniques. In addition to using "live" aircraft in these training programs, aircraft simulators are also utilized in which realistic and complex in-flight problems may be conducted without leaving the ground.

One of the oldest and most famous of the simulators is the link trainer. The Aeronautical Center has a "fleet" of these, and also has a Boeing-377 Strato-cruiser simulator. The newest simulator—and one which is causing a great deal of interest at the Center—is the 707 jet transport simulator. A production model Boeing 707 costs around \$5 million to \$5½ million and is expensive to operate. The 707 simulator costs

\$900,000 and is very economical to operate. The student inspector can be seated in the pilot's, co-pilot's or engineer's seat of the simulator and can be checked out in 707 operations that are so realistic that oftentimes after a flight, the "pilot" is wringing wet with perspiration and is thoroughly exhausted.

The simulator will reproduce most any operation involved in actually flying the 707—even motion. A TV camera (known as a Visulator) can scan a large dummy mockup of an airport and can project it onto a screen in front of the simulator cockpit. The effect is startlingly real—even landing visibility can be controlled and varied. The "pilot" can then be checked out on his ability to land the 707 on the runway he sees through the cockpit windows, straight ahead. All kinds of electrical and mechanical troubles can be injected into the flight to see how skillfully the pilot (or the co-pilot or engineer) can cope with them. The simulator will even crash! If the pilot cannot cope with the problems he encounters in "flying" the simulator—and if a real 707 would actually crash in an identical situation—then suddenly there is a loud crash warning signal—all the controls and instruments go dead—and then, nothing but silence to indicate the disastrous end of the flight.

All such training at the Center isn't as "safe." A pilot must be taught to cope



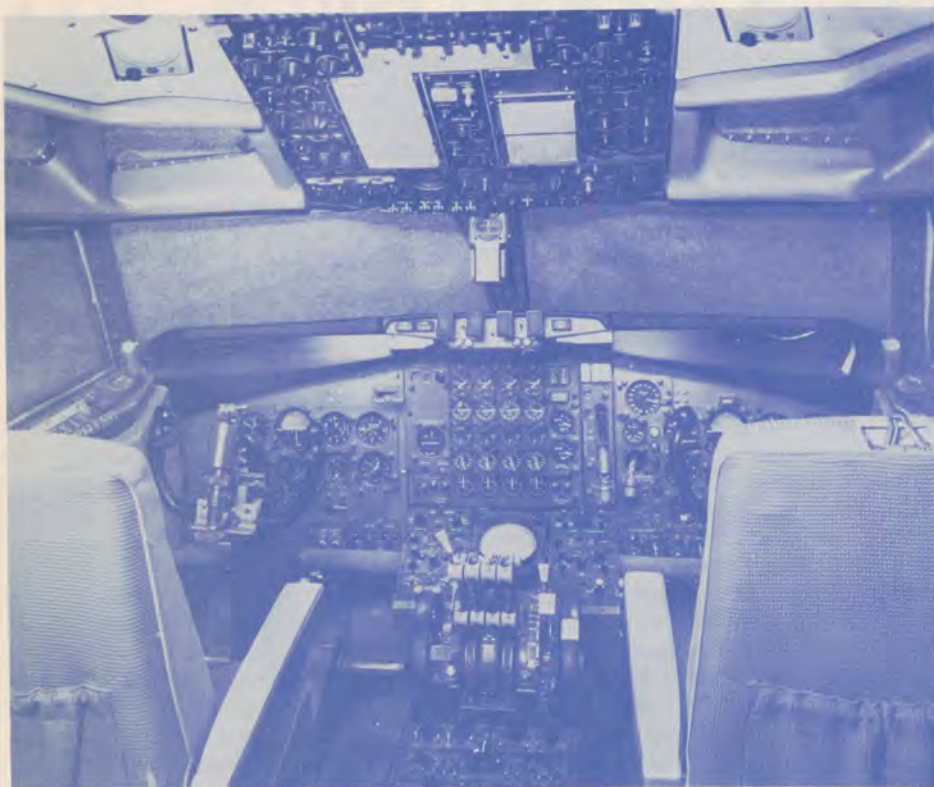
Airport mockup, scanned by TV camera, is shown on screen in front of simulator cockpit.

with actual emergencies in the air—and the acid test comes, not in a simulator, but in the air. The Center conducts training programs in which an engine might be cut (turned off) deliberately when the aircraft is zooming down the runway or shortly after it is airborne. The Center's training philosophy is that no pilot should be permitted to take passengers into the air, and thereby subject them to the dangers which could follow an emergency, unless he has previously been confronted with this emergency in training and has been taught to cope with it successfully.

Technical training for airline and general maintenance inspectors, electronic-electrical systems inspectors and engineering personnel is the other general type of civil aviation safety training taught at the Center. This phase of aviation safety training stresses new technical developments in aircraft and their FAA inspection requirements. Subject matter deals with inspection of airline maintenance, maintenance of aircraft in industrial operations, business flight operations and private flying in general.

Air Traffic Control—When you tell your neighbor that FAA controls air traffic to promote flying safety, chances are that your neighbor will think of air traffic control only in terms of take-offs and landings. Few people realize that as a plane moves through the air, three different sets of aviation operation specialists on the ground are involved in the safety of that particular flight. These are the air route traffic controllers, the terminal traffic controllers, and the airways communications specialists.

The "control of air traffic," as most of us know, is the term used to signify the spacing of aircraft in the air so as to provide a safe, orderly and expeditious flow of air traffic. There are three ways in which this spacing can be done: (1) lateral—aircraft flying at the same altitude but on different routes or in dif-



The 707 jet simulator contains all the controls that are found in a regular jet airliner. Pilot, co-pilot or engineer is checked out in all electrical and mechanical troubles.

ferent geographical locations; (2) longitudinal--aircraft flying at the same altitude but separated by time and distance, such as one aircraft behind another on the same airway--ten minutes later; and (3) vertical--aircraft flying at different heights so that one will not collide with the other (or even come dangerously near).

The air route traffic controller is concerned with all air traffic operating on the Federal airways while en route between terminals. Control is passed to terminal controllers as flights approach their destination airports for landing. Airways communication specialists are responsible for communications between controllers and pilots when distance prevents direct contact.

Three types of air traffic control training are given at the Center: (1) basic training and certification of new personnel employed by the FAA Regions to work in air traffic control; (2) a similar but more extensive course for students of cooperating foreign nations; and (3) a condensed course in basic air traffic control, future requirements and planning. This last course is for personnel in managerial positions in FAA and other governmental agencies having responsibilities relating to air traffic control.

You may wonder why the course given under (2) above is more extensive than the course we give our own controllers. This is the reason. Our own FAA controllers, upon completing their instruction at the Center, are then returned to the Regions which recruited them. Back in the Regions, the new controllers are given extensive on-the-job training. The foreign student in many cases can't go home and get this on-the-job training. In other words, when he returns home, he should be a full-fledged controller, for chances are, he might be called upon to



Air traffic and ground control problems are worked out from the tower's console in just one of the many modern and up-to-date classrooms located at the Aeronautical Center.

establish and maintain similar training courses back home.

Did you know that English is the international language of aviation in the nations of the International Civil Aviation Organization? It is, and for that reason, all instruction of foreign (as well as domestic) students at the Center is given in English only.

Air Navigation Facilities Maintenance-- Where does the FAA get the thousands of engineers and specialists who keep the Federal airways "on the air"? The FAA recruits and trains them at the Aeronautical Center.

This is the largest training program at the Center from the standpoint of man-weeks of instruction. Both resident and directed home study training is conducted, and the list of resident courses alone takes up four pages in small print! Such courses include study in receivers, transmitters, remote control equipment,

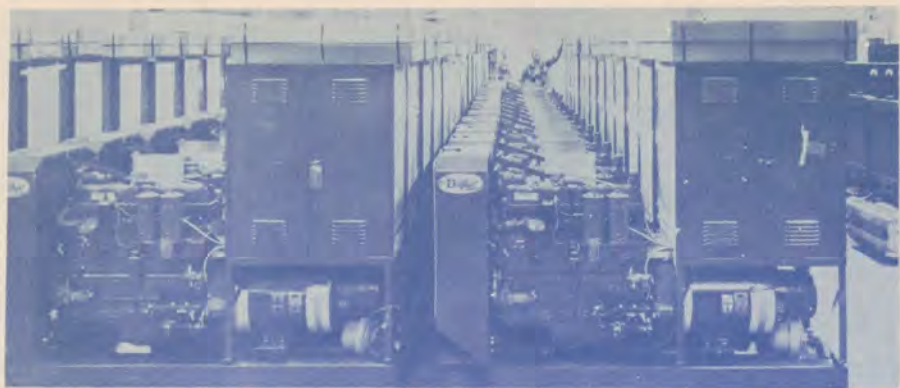
all types of electrical circuitry, radar, and all other types of navigation equipment used on the Federal airways and at airports. Here again, the Center trains many foreign students who come from the free nations of the world.

Air Navigation Facilities Flight Inspection-- It is not enough for the FAA to know that a certain navigational device has been put back "on the air" after being knocked out by a thunderstorm, for example. The FAA must know for certain that the device is not only functioning--but functioning with utmost precision. Measuring the degree of operating precision is ordinarily done from the air in a specially equipped plane and by a specially trained crew of FAA'ers.

The Center provides training for both the pilots and the crew who conduct such continuing flight inspections of ground-based navigational devices.

The RB-57 jet is used in the Flight Inspection Program to check the measurement of air navigation facility performance at levels above 20,000 feet.





Just one section of the 15-acre warehouse which holds items for use stateside and overseas.

Avionics--The simplest definition of this word that we can find is that avionics is the term applied to "airborne electronics." Avionics, then, does not include the VORTAC or TACAN which sits on the ground and sends out signals--but avionics does include the apparatus inside the aircraft that is designed to receive the VORTAC and TACAN signals.

The Center provides specialized instruction for FAA technicians who are responsible for the installation, modification, calibration, and maintenance of airborne electronic equipment used in the flight inspection of air navigation facilities. Classroom instruction in theory is combined with procedure and laboratory work on actual equipment to give the technician a high degree of capability in this field.

Supply Support

Having disposed of the Center's tremendous training operation with a quick and inadequate brush, we come now to the second major area of operation--supply

support. This function involves 684 center personnel.

It takes a lot of electron tubes, standby generators, transmitting cable, aircraft parts--even lead pencils and snake-bite kits--to maintain FAA operations around the world. And, to supply these items wherever they are needed, the FAA has its own supply depot at the Aeronautical Center.

FAA's supply catalogue alone weighs 18 pounds and lists some 40,000 stock-line items. Most of these items are procured and stocked at the Center to provide centralized logistic support for the installation and maintenance of our air traffic control stations and navigation aids in the U. S. and overseas. In addition to carrying out this supply support function for air traffic control navigation aids, the Center also provides maintenance supply support for the FAA fleet of some 100 airplanes. This function alone calls for 20,000 stock-line items--all the way from aircraft propellers to wings.

The Center does much more than just stockpile parts and equipment in its

15-acre warehouse and then ship them out wherever they are needed. The Center has a continuing program for modification and re-use of existing equipment. Shops located in the warehouse repair, fabricate and modernize existing equipment. The Center also performs a central overhaul and repair service on certain components of the Federal Airways System which requires specialized skills and laboratory test facilities not always available in the field to insure perfect functioning.

At "Oke City," the warehouses and storage areas are so big that you don't walk if you have to get across them--you ride in special little cars! Such is the magnitude of supply operations at the Center.

Aircraft-Avionics program

Having compounded our crime of brevity by reducing 15 acres and 684 people to one column, we come to the third major Center function, the aircraft-avionics program.

The FAA owns and operates some 100 aircraft including the Convair C-131E, Douglas DC-3 and DC-4, Lockheed Constellation and T-33 and F-80 jet, Martin RB-57A twin jet and Beechcraft C-45.

Most of these aircraft are the "flying laboratories" used for the in-flight inspection of ground-based navigational devices. Others are used in pilot training programs, and in giving logistic support to remote stations in areas such as Alaska and the Pacific Ocean.

The Center performs assembly and installation plus periodic checking and adjusting of the avionic equipment used in our flight inspection programs. For economic reasons, the Center also carries out periodic inspections and does standardization and modernization work on the aircraft at the same time work is being done on the avionics equipment. Technological changes and advances in avionic equipment used in flight inspection causes a never-ending challenge and workload, for as radio ranges and other equipment advance, so must the avionics equipment used for their inspection.

The Center is continually engaged in developing, modernizing, standardizing and installing ever-more complex avionic equipment in the "flying laboratories." FAA is the only agency conducting this type of program.

As you probably know, the flight inspection program is programmed at three altitude levels--low, middle and high. Therefore, the FAA must have specially equipped aircraft to check on the accuracy of ground-based navigation devices used at each of the altitude levels.

These supplies, maintained outside the warehouse, are ready for shipment and will be used.





Enor B. Olson
Deputy Director of the Aeronautical Center

For example, the FAA procured the RB-57 jets to carry out flight inspection at the highest levels.

Another phase of the flight inspection program provided by the Center is the processing for the Regions of the recordings made during inspection flights. When received by the Center, the recordings are analyzed by specialists who transcribe the indications on charts which are returned to the submitting office within 24 hours. These charts are then used to evaluate the operation of the aids as to accuracy, safety and efficiency.

The Center is frequently called upon to assist Free World Nations by standardizing and equipping their facilities flight inspection aircraft.

Engaged in the aircraft-avionics program are 844 Center personnel--more than are engaged either in training or supply support.

The BIG Word

The "big word" that we heard at the Center over and over again--all the way from training to avionics--was "standardization." We heard, for example, of standardization of pilot training, air traffic control procedures, standardization of aircraft and navigational aids.

The emphasis on standardization is not too difficult to understand when one talks specifics. For example, all of our DC-3 flight inspection aircraft must be made to fly alike, perform alike, and carry identical equipment when such aircraft are used for identical purposes. Otherwise, our pilots, engineers and technicians would have to be trained to work on a particular DC-3 if it were somehow

different from the others. Only when the aircraft becomes standardized can the training as to their operation and use be standardized.

Let's take another case for standardization--this time, standardization of terminology. When a pilot is told by the control tower, "Extend downwind leg" or, "Hold your position," such instructions must mean the same to the pilot whether he is approaching Tulsa, Cincinnati, or New York. Otherwise, confusion would result.

Observation

In addition to the truly excellent facilities at the Aeronautical Center, we noticed something else just as obvious--an "esprit de corps." The Center, all the way from the Director's office to the smallest Branch, operates with a "oneness" and a pride not often evidenced in an organization of such size.

Everyone we contacted--and there were many--seemed anxious to tell us about his work and the equipment he uses in carrying out his duties. There definitely is a pride at the Center--not the least bit boastful, but rather one that stems from an awareness of performing important functions and an acceptance of the challenge that lies ahead.

In conclusion, we quote from the last page of a booklet published by the Center,



Fred M. Lanter
Director of the Aeronautical Center

about the Center: "Here men from the United States and foreign lands representing all facets of aviation work together in daily contact. Here men gain knowledge and awareness of each other and the contribution each makes to aviation and FAA. Under these conditions occurs the 'cross-fertilization' essential to the development of leaders and career employees not only for FAA, but for aviation around the world."



One of the hangars loaded with aircraft that are undergoing alterations and repairs which are maintained by personnel at the AC. The hangar can house the largest jet airliner.

Health Benefits Start Next July

On September 28, 1959, President Eisenhower signed into law the "Federal Employees Health Benefits Act of 1959." It will take effect next July 1.

Since it is estimated that more than 90 per cent of the Government's employees will participate in the Health Benefits Act, the chances are that you are among the many who have questions regarding the program. The FLY-BY staff has gathered all available information on the new health program and presents it here for your information. It must be emphasized, however, that all we have now is a law—not a health program. It will be months before any action on your part will become necessary.

In the meantime, here is what is known. Generally speaking, all employees who are eligible for Federal Employees' Group Life Insurance will be eligible for health benefits. The one exception to this rule is Tennessee Valley Authority employees who already have their own health benefits program. You may carry both life insurance and health insurance, or only one. If you have signed a waiver of coverage of the group life insurance, you will still be eligible for health insurance because the two are separate and not related to each other.

The health benefits program will not be compulsory. You do not have to apply for it if you do not wish to be covered. On the other hand, if you do want coverage, it will not be automatic. You will have to apply at a later date. If you enroll at the first opportunity, age will not exclude you or your family from joining. Neither you nor your family will have to pass a physical examination. But, if you enroll later (after passing it by the first time), you may have to furnish evidence of good health. The fact that you or a member of your family has a hazardous job will not exclude you from joining a plan.

You will be able to enroll for yourself or, for yourself and family. Members of your family will include your wife (or husband) and any unmarried children under the age of 19. This takes in adopted children and also stepchildren if they live with you. An unmarried child may be covered regardless of his or her age if he is incapable of self support because of a disability which began before he reached age 19. Parents or other relatives cannot be covered even though they may live with you.

If you are married and your wife (husband) is also a Government employee, you have a couple of choices involving enrollment. You may each join

as individuals or one of you may enroll for the family. If one of you enrolls for the family, your children will also be covered. But if you each enroll as individuals, your children will not be covered.

Enrollment may be made by you if your post of duty is outside the United States. This applies even if the Government provides free medical facilities for you. By your enrolling, it will cover your wife and children if they are living in the States or with you overseas.

Types of plans.—You will have a choice between two types of Government-wide plans. One will be the service benefit type; the other will be the indemnity benefit type. Some employees will have a further choice. Instead of joining one of the Government-wide plans, they will be able to enroll in an employee-organization plan or in a group-practice prepayment plan or in an individual-practice payment plan. Here is how they break down.

- The Government-wide service benefit plan is provided through Blue Cross-Blue Shield organizations. It is similar to the kind of plan furnished by Group Hospitalization, Inc., and Medical Service of the District of Columbia. It is called a "service benefit plan" because it works on the principle of paying benefits directly to the doctor or the hospital which supplies the service to you.

- The Government-wide indemnity benefit plan is of the type which is usually provided by commercial insurance companies. It works on the principle of paying cash benefits directly to you—in other words, indemnifying you—although, usually, arrangements can be made for the plan to pay the hospital or doctor directly.

- The employee-organization plan would include several national employee organizations, such as the American Federation of Government Employees and the National Association of Letter Carriers, which sponsor health benefits for their members. The Civil Service Commission may approve such plans and any employee who is a member of an organization that sponsors a plan approved by the Civil Service Commission may enroll in the approved plan and get a Government contribution toward its cost.

- Group-practice prepayment plans are few in number. They operate only in certain areas. For example, the Group Health Association in Washington, D.C., the Health Insurance Plan in New York, and the Kaiser Foundation Health Plan in California. These plans have their

own medical center or centers and their own doctors who practice as a group. If you live in an area where there is a group-practice prepayment plan and if it is approved by the Civil Service Commission, you may choose to join it instead of one of the other plans.

- An individual-practice prepayment plan is one where doctors agree to accept regular payments from the plan instead of the usual charge to the patient. Like the group-practice plans, they operate only in certain areas. An example of these plans is the Group Health Insurance Plan in the New York City area. If you are in a locality which has such an approved plan, you may choose to join it instead of one of the other plans.

There will be two main differences between the two options offered by each of the Government-wide plans. One will offer less benefits than the other. The option with less benefits will also cost less. However, all options of the Government-wide plans will include both "basic health" and "catastrophic" coverage. Basic health coverage is the kind most people now have. It gives some protection against the more common kinds of hospital and surgical expenses. Catastrophic coverage gives some protection against the more unusual and heavy expense of a serious or prolonged illness. It often includes such costly items as long periods of hospitalization, expensive operations, private nurses, medical care received at home, drugs and medicines, medical supplies and equipment. Many of the other plans may carry catastrophic coverage but, unlike the Government-wide plans, the law does not require them to have this coverage included.

The cost.—Naturally, all of these health benefits are not going to be free of charge. But you can save some money if you enroll in a plan or option that carries approximately the same benefits you now have because the Government will be contributing part of the cost you now pay. And you will have the opportunity to enroll in a plan which offers much better benefits and will cost more than the plan you now have. Even if this happens, you might come up with a savings because the Government will be contributing part of the extra cost. You will be paying about the same amount as you do now. In this way, you'll be getting much better protection at little or no additional cost to you.

The Government's contribution toward the cost of your coverage (with the exception of female employees who enroll for themselves and family which includes

a nondependent husband) ordinarily will be not less than \$2.80 a month if you enroll yourself only or, \$6.75 a month if you enroll for yourself and family.

If the total charge for the plan in which you enroll is less than twice the specified Government contribution--that is, if the charge is less than \$5.60 or \$13.50 a month--then the Government will contribute one-half the cost of your enrollment. For example: If you enroll for yourself and family in a plan the total cost of which is \$10 a month, the Government would contribute \$5 and you would contribute \$5. If you enroll for yourself only in a \$4 a month plan, the Government would contribute \$2 and you would contribute the remainder.

While the exact charge for each plan will not be known until the specific benefits which each plan will offer have been agreed upon, it is expected that at least one option in the two Government-wide plans will offer both basic health and catastrophic benefits. The total charge for this will be about \$13.50 a month for a family enrollment so that you will pay about \$6.75 and the Government will pay \$6.75. Similarly, at least one of these options will cost about \$5.60 a month for a self-only enrollment so that you would contribute about \$2.80 and the Government would contribute \$2.80. The other options of the Government-wide plans will offer greater benefits and therefore, will cost more.

In many instances, like those mentioned above, the Government will always contribute one-half the cost of the plan. However, if you enroll in a plan the total monthly cost of which is more than twice the specified Government contribution--that is, if the charge for the plan is more than, say, \$5.60 for a self-only enrollment or \$13.50 for a family enrollment, then the Government will still make its specified contribution and you will pay the difference. For example: If you enroll for yourself and family in a plan the total cost of which is \$15 a month, the Government would make its specified contribution of \$6.75 and you would contribute \$8.25. If you enroll for yourself only in a \$6.00 a month plan, the Government would contribute \$2.80 and you would contribute \$3.20.

The Government's contribution for a female employee will be on exactly the same basis as for a male employee but under the following conditions:

- If she enrolls for herself only.
- If she enrolls for herself and family and the family does not include a husband or does include a dependent husband.

The Government will contribute for a female employee under a family enrollment which includes a husband who is

not dependent, not less than \$3.90 a month if the total charge for the family enrollment is \$13.50 or more a month. In this case, she will contribute the difference between the \$3.90 and the total charge. If she enrolls in a plan the total charge for which is less than \$13.50 a month for the family enrollment, the Government will contribute 30 per cent of the charge and she will contribute 70 percent.

In the case of all Government employees, contributions of your share of the cost will be through payroll deductions. The proper percentage of the monthly charge will be withheld from your salary each pay period depending on how often you are paid.

There is no guarantee that the cost of the plan in which you enroll will not increase. Eventually the cost may increase because your plan may provide additional benefits or because the cost of paying for hospital and medical care may go up. There is, however, a maximum limit on the amount the Government can contribute--\$3.95 for self-only enrollment; \$9.55 for a family enrollment; and \$5.60 for a family enrollment which includes a nondependent husband. It is expected that these limits will have no effect on the Government's contribution for a number of years and then only if the cost of a plan keeps going up to the point where the Government's contribution reaches these limits.

Retirement--For those looking ahead to the day when they'll be retiring, you will be able to continue your health benefits after you retire if the following five requirements are met:

- You must have retired under the Civil Service Retirement System or some other system for civilian employees of the Federal or District of Columbia Government.

- You must have retired after the date the health benefits program became effective in your employing office--that is, after the first day of your first pay period which begins on or after July 1, 1960.

- When you retire, you must have been enrolled in an approved plan for at least the shorter of the following two periods of time: the five years of service immediately before your retirement; or, all your service between the time you first had the opportunity to enroll and the time you retire.

- You must have retired after at least 12 years of service or on account of disability. (The 12 years of service can include military service, but must include at least five years of civilian service.)

- You must have retired on an immedi-

ate annuity--that is, the beginning date of your annuity must be not later than one month after your separation from service.

The health benefits coverage will continue for your wife (or husband) and children after your death if these two requirements are met: (1) At the time of death, you must have been enrolled for yourself and family and have completed five years of civilian service; (2) Your wife (or husband) and children must be eligible to receive a survivor annuity from your retirement system.

In order to continue the health benefits, an employee-annuitant or survivor-annuitant will have to pay. But the cost will be no more than for an employee who is enrolled in the same plan. The annuitant will pay the portion of the enrollment cost by having it withheld from the monthly annuity. All plans will provide the same benefits for annuitants as they do for employees. The Government will contribute to the cost of an annuitant's enrollment on the same basis as to an employee's.

The future--Here are some of the problems yet to be encountered. The Civil Service Commission has a large and difficult job to do in the next few months. Just one of these requires extensive consultation with agencies, employee organizations, vendors of services, and insurance carriers. The Commission's staff has already prepared a list of 24 action items to be completed by next July 1. Priorities and target dates for these are being set.

Another of the jobs that lies ahead is to work out an "open season" (during which you will be permitted to change your coverage) which will not place the carriers in a disadvantageous position, or place an impossible administrative burden on the Government.

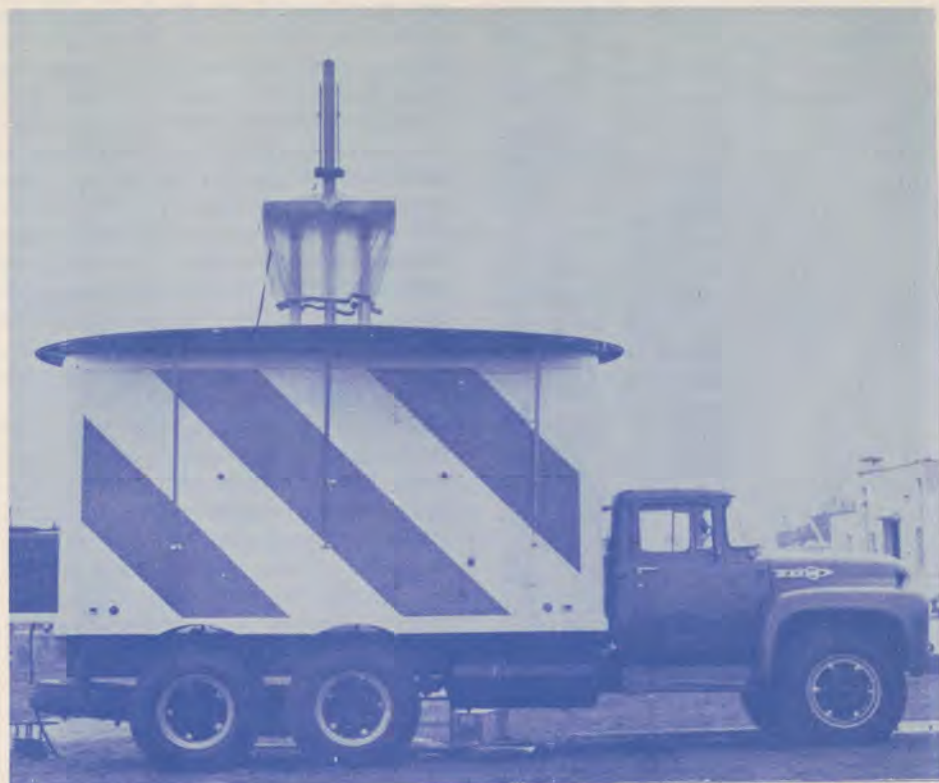
In summing up, there are a few things to bear in mind. Watch out for any person or group that tries to persuade you to sign up with some particular plan, sight unseen, and without comparing it with other approved programs. Don't cancel the health insurance plan you now carry in anticipation of the Government-sponsored health insurance. Although it won't hurt your eligibility next July if you drop the coverage you now have, it's best to play it safe by keeping it until you come under the Government-sponsored program. This way, you'll have continuous protection.

Health benefits under the new Act will not begin until the first pay period after June 30, 1960. You'll be given plenty of time to examine the various plans approved by the Civil Service Commission and to choose the one that best fits your needs.

Mobile VOR's Aid FAA In Flight Safety Checks

There is no evidence that it scares horses, but it does arouse considerable curiosity wherever it appears, and sometimes the explanation is received in skeptical silence. Painted gaily in wide diagonal orange and white stripes and sitting on a truck, it looks for all the world like a small circus wagon as it trundles along highways, turnpikes, country roads or places where there are no roads at all, such as up the side of a mountain. Actually, it's one of the FAA's portable omniranges, an electronic sleuth on wheels sent out to locate good sites for air navigation facilities. Occasionally it stands in for a VOR that is being converted to a VORTAC (the common system of navigation for civil and military planes). Once in a while it makes like a permanent station until the permanent station can be built.

Any "ham" knows that radio waves are among the giddiest of all atmospheric phenomena. Unless broadcast from a properly located station they can really



One of the FAA's portable omniranges, an electronic sleuth on wheels, gets ready to take to the highway in order to locate and set up a good site for air navigation facilities.

Insurance Act Amended

A recent amendment affects your insurance under the Federal Employees' Group Life Insurance Act of 1954. It does not affect those retired or deceased before September 23, 1959.

At all times during employment, you have the full amount of group life and accidental death and dismemberment insurance applicable to your annual salary. Formerly, insurance was reduced after age 65.

For employees 65 or over, payroll withholdings, starting with the first pay period beginning after September 23, 1959, are required at the same rates applicable to employees under that age. During employment there is no provision to continue insurance without cost in a reduced amount.

If you retire on immediate annuity, either for disability or after at least 12 years of creditable service of which at least five years are civilian service, your life insurance will be continued without cost to you. Each month, beginning on the first day of the second calendar month following the date of your retirement or 65th birthday, (whichever is later) your life insurance will be reduced by two per cent of the amount in force before the first such reduction. Your insurance cannot be reduced below 25 per cent of the amount in force before any reduction.

get mixed. This, fortunately for everyone--particularly the pilot trying to get a fix on his location--is not permitted by the FAA. FAA's know-how channels the waves so that with the right equipment any aircraft may home in on any VOR or VORTAC and find any station.

It takes a lot of figuring and flying to decide exactly where to install one of these facilities. In the early days there was always the chance that after the omnirange was built something immeasurable--rough terrain, or combinations of sloping ground with distant power lines--might throw it out of whack. There were times, the FAA admits, when a station had to be moved to another site, or completely rebuilt, for reasons such as these. Now, however, with the guesswork removed, many headaches are eliminated and large amounts of money are saved. A portable omnirange can be placed centrally in any area under consideration, cranked up and put to work sending out radio waves into infinity from the 360 degrees of the compass. Overhead an FAA flight test airplane tunes in on the transmitter and checks it out. If the spot comes up to expectations the plane may have to circle only a few times and make a half-dozen approaches to prove its usefulness. On the other

hand, if the site is borderline, the plane may have to fly 8 or 10 hours from many different angles before a final decision can be made.

Tests with these portable stations have shown that omniranges work best in places where the water table is high and worst in forested areas where tall trees and irregular terrain bend some of the beams every which way. On the occasions when necessity demands the use of such a site, however, the FAA has a way of preventing the distorted waves from ever getting into space. The omni is then equipped with an extra antenna known as the "Doppler" which stops them at the source so that only the correct signals reflect on the pilot's instrument panel.

The trucks are sometimes called upon to perform extra-curricular activities. In South Carolina once, when the Air Force needed a radio range at a new base so that Air Defense fighters could come in for safe landings, a portable omni was sent to the field, plugged into a power supply and worked efficiently as long as it was needed.

The FAA has approximately 650 VORS in active service on the 215,000 miles of Federal Airways, eventually plans to bring the total to 1200.