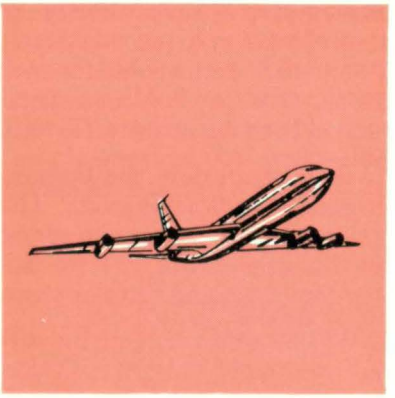
THE FEDERAL AVIATION AGENCY



FOREWORD

At any busy hour in the Nation's airspace, there may be as many as 70,000 human beings aloft. Their safety in the sky, and the safety of the people below, is the Agency's first responsibility, the job that comes before all others.

Safety begins with the planes themselves, and the men and women who fly them. Proficiency of both pilots and planes must be demonstrated to the FAA.

The 79,000 aircraft comprising the Nation's active civil aviation fleet—air carriers, business and corporate planes and private and pleasure craft—all have a right to use the crowded airspace. So do the 27,500 military airplanes which are vital to national defense.

With this many airplanes, it follows that air traffic must be controlled, for the same reason that highway traffic is controlled. About forty percent of FAA's employees—about 17,000—are engaged in some form of air traffic control work. It takes nearly a half million miles of wire to maintain communications between them.

More than 700 "omni" radio ranges, the electronic devices which create the highway network of the skies, must be constantly checked for accuracy and maintained at peak efficiency. Fifty-nine specially equipped FAA aircraft fly approximately 65,000 hours annually testing them.

The job FAA has across the country and around the clock is big, but the responsibilities are bigger. In order to meet these responsibilities and do the job better, reorganization and modernization of FAA was initiated in mid-1961.

Assistant Administrators, with authority to resolve operational problems and provide better service in the field, were made responsible for each of the seven Regions, five in the continental United States and one in both Alaska and Hawaii.

These Assistant Administrators in the Regions report to the Administrator in Washington. The Administrator has three deputies, one who serves as general manager for operations, one for administration and one for plans and development.

There are also in Washington heads of the different technical services, including Air Traffic, Flight Standards and Aviation Facilities, as well as supporting offices. It is in the Washington Headquarters of the Services and Offices where policies and programs are drawn, on behalf of the Administrator for implementation in the field.

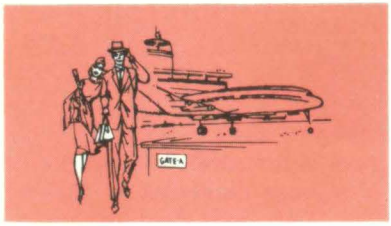
FAA's 43,000 employees in every part of the country are aware of their responsibilities to maintain the most highly developed civil aviation in the world today and to make certain the United States remains on top in the world of flight.

Administrator

BACKGROUND

The Federal Aviation Act of August 23, 1958, created the Federal Aviation Agency (FAA) as an independent branch of the United States Government charged with the safety and progress of American civil aviation. The new Agency emerged at a time of great technological change—when civil jets were already in existence, supersonic transports in the planning and ultrasonic aircraft in the discussion stage. Electronic computers and automatic data processing equipment, well beyond the trial stage, were being considered for use in the control of air traffic.

FAA began operating on the final day of 1958, consolidating the activities of the 20-year-old Civil Aeronautics Administration, the year-old Airways Modernization Board and part of the Civil Aeronautics Board. From these elements a single organization was welded to meet the challenge of America's expanding wings.



Today FAA is responsible for writing safety rules and regulations, for allocating and regulating airspace, for managing air traffic and for conducting research and development.

Historically, the Federal Aviation Agency reaches back to the Air Commerce Act of 1926 which created the Aeronautics Branch (later the Bureau of Air Commerce) in the Department of Commerce. This was the first recognition by the Federal Government of the need for some regulation of an infant industry—civil aviation. The Department was authorized to license pilots, develop air navigation facilities, promote flying safety and issue flight information.

By the late 1930s the infant industry was maturing rapidly. Larger and faster aircraft appeared on the airways and passenger travel increased, soaring ten-fold from 1929 to 1939. Air transportation had become an integral part of American life and an adjunct of national defense. During this period of great expansion, the Bureau of Air Commerce carried on its regulatory activities, the Post Office Department established air routes and awarded mail contracts and the Interstate Commerce Commission fixed the carrier rates. This system was obviously cumbersome.

Change came with the enactment of the Civil Aeronautics Act of 1938, which created the independent Civil Aeronautics Authority, comprised of the Civil Aeronautics Board (CAB) and the Civil Aeronautics Administration (CAA). The Civil Aeronautics Administrator was responsible for the enforcement of safety, the control of air

traffic, the operation of the Federal airways communications system and the improvement of airports. The Board was charged with writing the Civil Air Regulations, investigating accidents, awarding routes and establishing mail and passenger rates. In 1940, the Act was amended. Although the functions were unchanged and the Board remained independent, the CAA was placed under the Department of Commerce.

World War II gave a tremendous impetus to civil aviation. In the years immediately following, the number of civil aircraft doubled and it became apparent that the air traffic control capabilities of the CAA could not cope with the serious problem of our increasingly congested airspace. The enormity of the airways gap was identified by the White House Aviation Facilities Study Group in 1955. This was the year in which appropriations for Establishment of Air Navigation Facilities declined to $5,000,000 and the appropriation for Research and Development declined to $1,750,000. The President and the Congress moved toward a solution. One of the first and most important actions taken was the passage of the Airways Modernization Act of 1957, creating the Airways Modernization Board for the express purpose of speeding the necessary improvements. The Act also specified that Congress would establish an independent Federal Aviation Agency. This was done in August 1958. The Federal Aviation Act of 1958 repealed the Air Commerce Act of 1926, the Civil Aeronautics Act of 1938 and the Airways Modernization Act.

Today, FAA's responsibilities and activities are worldwide. They encompass all of the United States and its possessions and touch upon the international areas in which our flag carriers operate, providing the around-the-clock services necessary to assure the safety and regularity of air travel.

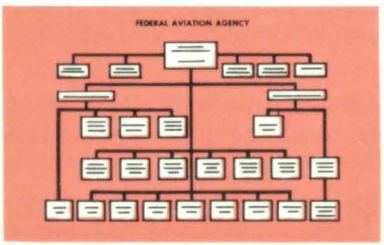
THE TASK

The growth of civil aviation in the decade following the end of World War II exceeded all forecasts. In 1945 the airlines flew 3.4 billion passenger miles; in 1960, FAA's second year of operation, the figure had leaped to 39 billion. General aviation (a term used to describe all civil flying except airline) numbered 38,000 active aircraft in 1945 and 75,549 in 1961. At the same time military flying also continued to increase. Daily, there were likely to be from 8,000 to 15,000 civil and military planes aloft at any one time—not spaced evenly over our 3,000,000 square miles of sky, but concentrated around cities and along the Federal airways.

FAA found itself facing sizeable problems: congested airspace, an outmoded traffic control network, outdated navigation facilities and an all too limited knowledge of civil aviation medicine and research. For example, no comprehensive revision of medical standards had been undertaken for 24 years. All this while technology was growing at its greatest rate in history.

A first step was to abolish many restricted airspace areas, reduce others in size and effect joint use of still others by civil aircraft when military maneuvers were not in progress. As a result, large tracts of airspace were returned to the public domain, permitting general aviation and air carrier flights to fly in space which had been off limits for some time.

Since 1959 the air traffic control pattern has been improved to a point where semiautomatic equipment is used at certain locations. Hundreds of new navigation aids, ranging from high-intensity lighting systems to large, complex radar networks, have been installed on the Federal airways. The pilot-controller communications system was speeded up. And the world's first Civil Aeromedical Research Institute was established at Oklahoma City. But much remains to be done.



ORGANIZATION

The structure of the Federal Aviation Agency rests upon a clear-cut, streamlined concept of management. Heading it is the Administrator,

assisted by The Deputy Administrator, a Deputy Administrator for Administration and a Deputy Administrator for Plans and Development. In the field, each of the seven FAA Regions is headed by an Assistant Administrator.

In Washington, technical Offices and Services assist the Administrator and his deputies in formulating programs and standards.

On the Administrator's immediate staff are the Board of General Advisors, the Office of the General Counsel, the Office of Congressional Liaison, the Office of Public Affairs, the Military Advisor and the Executive Secretary.

The Federal Aviation Agency employs approximately 43,000 persons, the great majority in the engineering and technical areas. Fewer than 10 percent are located in the Washington area, the remainder in the Regions and overseas.

THE ADMINISTRATOR

The Administrator of the Federal Aviation Agency is appointed by the President and confirmed by the Senate. The incumbent also serves as principal aviation advisor to the President. The responsibilities of the Administrator, as outlined in the Federal Aviation Act of 1958, are:

". . . The regulation of air commerce in such manner as to best promote its development and safety and fulfill the requirements of national defense:

". . . The promotion, encouragement and development of civil aeronautics;

". . . The control of the use of the navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and efficiency of both;

". . . The consolidation of research and development with respect to air navigation facilities, as well as the installation and operation thereof;

". . . The development and operation of a common system of air traffic control and navigation for both military and civil aircraft."

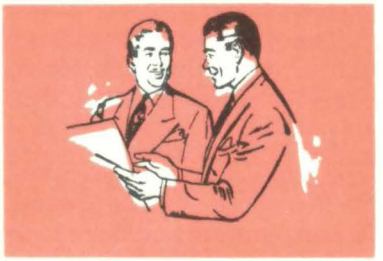
THE DEPUTY ADMINISTRATOR

The Deputy Administrator is also appointed by the President and confirmed by the Senate. As the General Manager of the Agency, the Deputy Administrator is responsible for the direction and execution of Agency operations and for coordinating the activities of the seven Regions and various technical staff Services and Offices, as well as the operations of the Bureau of National Capital Airports.

During the absence of the Administrator, the Deputy serves as Acting Administrator.

DEPUTY ADMINISTRATOR FOR ADMINISTRATION

Plans, directs and coordinates the administrative management program of the Agency through an Office of Management Services, Office of Budget and Office of Personnel and Training, and operates the FAA Aeronautical Center at Oklahoma City.



DEPUTY ADMINISTRATOR FOR PLANS AND DEVELOPMENT

Directs and coordinates long-range planning and research and development programs through an Office of Plans and an Aviation Research and Development Service.

THE ASSISTANT ADMINISTRATORS

Because FAA's operating responsibilities span the Nation, the seven Assistant Administrators in the field hold key positions as managers of their respective Regions.

Each Assistant Administrator has broad authority for carrying out the work of the Agency, subject to direction and guidance from Washington Headquarters in the form of national policies, programs and standards.

Each Assistant Administrator is responsible for all FAA activities in his Region—air traffic

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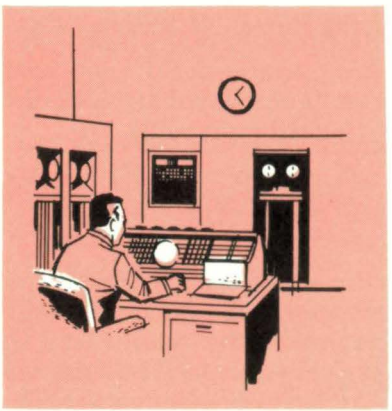
control, facilities and materiel, flight standards, personnel and training, legal, medical and other operational and administrative functions.



AIR TRAFFIC SERVICE

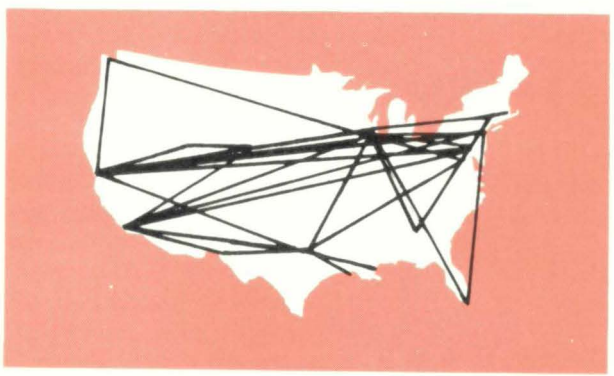
The Air Traffic Service assists the Administrator in developing the plans, standards and systems for control of air traffic.

Air traffic control is concerned with (1) keeping aircraft safely separated while operating in controlled space—on the ground, during take-off and ascent, enroute and during approach and landing; and (2) providing pre-flight and in-flight assistance services to all pilots.

The first is accomplished under a highly specialized system of control procedures from two types of facilities: Air Route Traffic Control Centers and Airport Traffic Control Towers. Centers supervise the operation of aircraft flying under Instrument Flight Rules (IFR) in controlled airspace; Towers supervise the operation of aircraft on and in the vicinity of airports. This separation is achieved by an extensive system of radar and radio communications. Short-range radar is used by Towers to control arriving and departing aircraft. Long-range radar, which extends outward to 200 miles and upward to 60,000 feet, is used by Centers to control enroute traffic. As an economy measure, many of the radars used by air traffic controllers serve a dual purpose—they are also used by the military in the air-defense radar warning network. Radar control requires direct, instant voice-radio communication between control personnel and pilots.

The second major function is carried out by a third air traffic facility—the Flight Service Station. Although these Stations have no control functions of their own, they are of paramount importance in air traffic service. They provide preflight weather briefings and in-flight following service to any pilot who requests them; they broadcast local and area weather reports, changes in radio frequencies, operating conditions at certain airports, temporary airport restrictions and similar notices of interest to airmen. One of the Stations' most important duties is the search and rescue operation put into effect when an aircraft is overdue at its reporting Station or destination; another is the assistance they give to aircraft in difficulty, orienting the pilot and directing him to an emergency airport.

The three facilities—Centers, Towers and Stations—are linked by thousands of miles of teletype and interphone lines. Their personnel are in constant touch with one another, with aircraft aloft and with the operations offices of the military services and the scheduled airlines. FAA employees are assigned to various units of the Air Defense Command, Strategic Air Command and Tactical Air Command to assure continuous liaison between the FAA and the Department of Defense.



Electronic computers have been installed in the busier Air Route Traffic Control Centers in the Eastern States and comprise the world's only computer-to-computer air traffic control network. The essential facts of a pilot's flight plan are fed into these machines which automatically calculate his estimated time of arrival over designated check points within the Center's area of responsibility. The machines also print this information

on flight progress strips, which are placed in front of controllers who use them for separating traffic in their individual sectors.

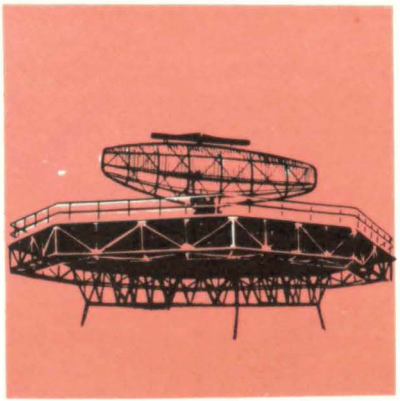
Efficient use of the navigable airspace by the various types of users is a principal concern of the Air Traffic Service. Since January 1959, many areas previously restricted to military use only have been abolished, others reduced in size and still others placed at the disposal of civil aircraft when military maneuvers are not in progress. These actions have resulted in the return to the public of some 25,000 square miles of airspace.

A related activity of this Service is the issuing of rules and regulations governing air traffic and noise reduction in the immediate vicinity of terminal areas.

While progress has been made recently in installing new equipment, the problem of designing and engineering a comprehensive, modern system for optimum airspace utilization is far from solved. An intensive review by a distinguished panel of systems engineers—Project Beacon—has concluded that many essential improvements can be made. New programs are being set in motion to modernize the present inadequate network into an up-to-date system.

AVIATION FACILITIES SERVICE

The engineers and technicians of this Service, the Agency's engineering and construction arm, plan and standardize the installation and maintenance of the thousands of electronic, mechanical and other components used in each Region. These components are the heart of the Nation's system



of aids to air navigation, air traffic control and aeronautical communications—the United States' "common system," so called because it is designed to be used by the air carriers, business and personal aircraft and the armed services alike.

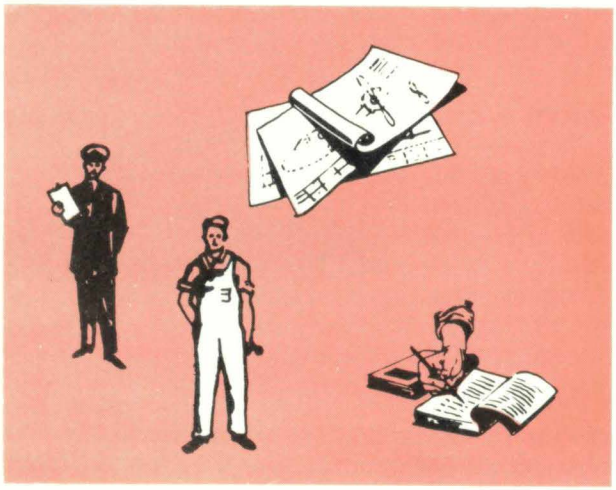
The system crisscrosses the country with 176,000 miles of very high frequency air routes. It depends on precise, uninterrupted operation of "VORs" and "VORTACs," very high frequency omnidirectional radio ranges, which send out radio signals to give direction and distance information to aircraft aloft.

Other facilities include: long-range flight tracking, airport surveillance and precision approach radar, instrument landing systems, data processing and communications systems, continuous weather reporting equipment, high intensity lights, Air Route Traffic Control Centers and Airport Traffic Control Towers.

This Service is also responsible for the procurement of materiel for the Agency, and the operation of the Aviation Facilities Depot at the Aeronautical Center in Oklahoma City, Oklahoma. Other major responsibilities are: the development of an adequate national system of civil airports; the administration of funds under the Federal Aid to Airports Program; and the determination of standards for the proper design and location of airports.

FLIGHT STANDARDS SERVICE

This Service establishes standards for certifying the safety of the entire air transportation system, including the airworthiness of aircraft and parts, the flight competence of airmen, the accu-



racy of navigation aids and the licensing of flight schools, ground schools and repair stations.

Flight safety inspectors ride in the cockpits of airline planes on a spot-check basis to observe routine flight operations. They also supervise the maintenance and operations policies and activities of all scheduled and non-scheduled air carriers; periodically check the competence of pilots and mechanics; and inspect navigation aids to assure their constant operating reliability.

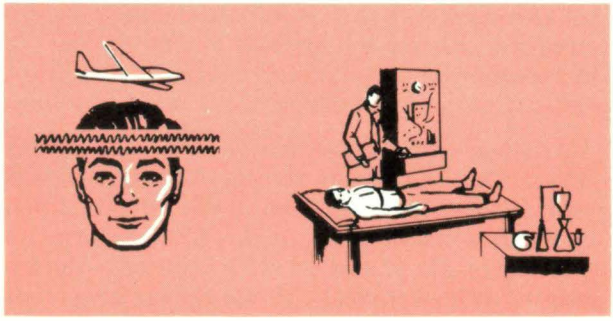
This Regional and systemwide surveillance involves the establishment, revision and enforcement of the Civil Air Regulations which the FAA originates. These regulations affect the design, manufacture and certification of aircraft and engines, and establish qualifications for pilot, navigator, flight engineer, mechanic and airplane dispatcher, all of whom must be certificated. A program for recodification and simplification of these rules of the air—some originated in 1938—has recently been undertaken.

An important tool in the Flight Standards program is FAA's fleet of planes. Among these are the aircraft that check navigation aids along the Federal airways at three levels—low, under 14,500 feet; intermediate, from 14,500 to 24,000; and high, beyond 24,000—to insure accuracy and adequacy of these services to airmen. These check planes are airborne electronic laboratories equipped with devices for fast, frequent and economical checking of radio ranges, instrument landing systems, communications systems and other aids to flight.

AVIATION MEDICAL SERVICE

The Aviation Medical Service is concerned with the solution of medical problems peculiar to civil aviation. It is headed by the Civil Air Surgeon who develops and recommends to the Administrator the standards, rules and regulations governing the mental and physical fitness of airmen and other persons who support flight activity. In addition to medical certification of civil airmen and maintenance and processing of their medical records, this Service designates and trains Aviation Medical Examiners. Any licensed physician may apply for this designation and, if qualified, receive FAA courses in civil aviation medicine and related fields.

In two of its most important medical research projects FAA is exploring the aging processes of the human body, and the physical and psychological environments of air traffic control personnel. In a broad five-point medical program, the Agency is working in the fields of biophysics, aviation psychology, environmental physiology, clinical examinations and employee health. Furthermore, FAA is studying the relation of human reaction to jet aircraft characteristics. The effects of ventilation, temperature and humidity on aircrews and passengers at high altitudes are also being studied.



FAA's medical staff also participates in the investigation of certain fatal air carrier accidents. Their approach, similar to that used in the study of epidemic diseases, involves examination of the operating personnel of the aircraft and conditions aloft. Some of the country's leading forensic pathologists—physicians who specialize in analyzing death from violence—are on FAA's consulting staff to assist with the work of accident investigation.

INTERNATIONAL AVIATION SERVICE

A continuing major objective of the FAA is to encourage and foster the development of aviation overseas. The International Aviation Service assists the Administrator in carrying out this responsibility in a number of ways. One main activity, carried on in cooperation with the State Department's International Cooperation Administration (ICA), is the formation of Civil Aviation Technical Assistance Groups to provide technical assistance to other countries. There are 33 of these groups operating around the world today at the invitation of the governments concerned. They act as consultants on safety matters, supervise construction and modernization of airports and the installation of airways and navigation facilities, and provide legal and organizational assistance.

Another joint project carried out by FAA and ICA is the training of foreign nationals. Every year hundreds of men from many of the nations in the free world come to the United States for training in all phases of civil aviation. Courses ranging from 6 weeks to 18 months are given these students in subjects such as advanced flying techniques, air traffic control, maintenance and repair of air navigation facilities, airways communications, airplane and engine mechanics, aviation law and airport management. These foreign technicians are also given practical experience working with the FAA, the commercial airlines, manufacturers, engineering firms and factory service schools before returning to their homelands.

In the field of international aviation relations, this office is the focal point of contact with the

International Civil Aviation Organization (ICAO) of which the United States is one of 86 member States. Through ICAO, international practices and safety procedures are standardized so that pilots everywhere in the world operate under the same set of rules. FAA, on behalf of the State Department, provides the full-time services of the United States Member of the ICAO Air Navigation Commission in Montreal, and the U.S. Civil Representative on the NATO Committee for European Airspace Coordination (CEAC) in Paris.

The Service also furnishes technical advice in the negotiation of agreements involving intergovernmental exchange of commercial air rights, and the recognition of airworthiness of aircraft manufactured abroad. Additionally, the Service is the center for exchange of civil aeronautical information with foreign governments.

BUREAU OF NATIONAL CAPITAL AIRPORTS

This Bureau was established to direct operations of the federally owned Washington National Airport and the planning, construction and operation of the International Airport being built at Chantilly, Virginia.

This International Airport, the first airport in the world designed especially for the use of civil jet aircraft, will serve as an international gateway to America when construction is completed.

OFFICE OF PLANS

The Office of Plans is concerned with the long-range policies and objectives of the Agency. These include the role of the FAA in the defense of the country so as to assure the continuous operation of the Federal airways system under emergency conditions, the support of essential military and civil traffic, the deployment of trained manpower and the stockpiling of strategic supplies and equipment.

Studies are made here of subjects affecting the future and safety of aviation. Among them are the development and production of new, revolutionary aircraft, such as the 2,000-mile-an-hour supersonic transport; new types of cargo aircraft; aircraft that will take off and land vertically; and those that will operate from extremely short runways.

AVIATION RESEARCH AND DEVELOPMENT SERVICE

This Service initiates, develops and coordinates FAA's multi-faceted research programs.

One of its most urgent tasks is to put the entire air traffic control system on a semiautomatic basis so that the routine work of processing flight plans and displaying information on the location of aircraft will be done automatically. Under this system the controller will have more time for decision-making within his particular area of control. Steps have been taken toward this goal. Components of such advanced systems are tested at FAA's National Aviation Facilities Experimental Center (NAFEC) in Atlantic City, N.J.

Strides are being taken in other important areas of aviation safety and airways modernization. New and more powerful radar has been devised; new types of airport lighting and landing systems have been developed; new methods of forecasting weather, speeding up communications and improving navigation methods have been put into operation to help meet the needs for safe operation of civil and military aircraft. Research is underway to enable the air traffic controller to determine the relative altitude separation between aircraft, and other methods of preventing mid-air collisions.

OFFICE OF MANAGEMENT SERVICES

The major mission of this Office is the efficient utilization of FAA's financial, manpower and material resources. The Office maintains fiscal accounts and directs the audit program, conducts studies of organization, methods of work and standards of performance and recommends or institutes improvements in these fields. It is concerned with both the procurement of property and services and their utilization, as well as with the development of reports and statistics on program accomplishments and deficiencies. Other administrative functions include office space management, data processing, records management, historical and library services, publications planning, printing, duplicating, mail and aeronautical information services.

OFFICE OF BUDGET

This is the Agency's financial office where budget estimates are developed and funds appropriated for Agency operations are administered.

OFFICE OF PERSONNEL AND TRAINING

This Office is responsible for personnel and training programs and standards which are among the most comprehensive in the Federal Government. The highly specialized nature of FAA's work requires a program of continuous training—at established FAA schools and by correspondence—for both management and technical personnel.

In the technical areas training falls into three major categories: air traffic control, facilities and flight standards.

Although considerable training is conducted in the Regions, in Washington and at the National Aviation Facilities Experimental Center, the principal activity is located at the FAA school at the Aeronautical Center. More than 100 courses of study—both beginning and advanced—are offered here, some on a continuous schedule and others periodically. These courses range from introductory studies in air traffic control to the training of experienced pilots and technicians to meet FAA requirements.

In addition to formal training, much on-the-job training is carried on throughout the Agency. For example, an air traffic controller receives 8 weeks of formal training in school and about 18 months of intensive training on-the-job before he is qualified as a journeyman controller.

BOARD OF GENERAL ADVISORS

Composed of veteran FAA senior employees, this Board advises the Administrator on the performance of the Agency as a whole and the effectiveness of its efforts.

OFFICE OF THE GENERAL COUNSEL

In cooperation with legal staffs in the Regions, the General Counsel's Office oversees all legal activities of the Agency. These include providing necessary legal advice and services in support of all FAA functions, as well as responsibility for the legislative program, protection of Agency legal interests in litigation and accident investigations, the legal aspects of rulemaking and the interpretation and enforcement of rules and regulations. This Office also deals with other departments and agencies in the formal negotiation of international aviation agreements.

OFFICE OF PUBLIC AFFAIRS

The Office of Public Affairs supplies the public, the news media and the aviation industry with current, accurate information about the programs and objectives of FAA.

It meets the needs of press, radio and television for news about Agency actions. It works with representatives of all the communications media to provide background material about the growth, progress and accomplishments of civil aviation in the United States.

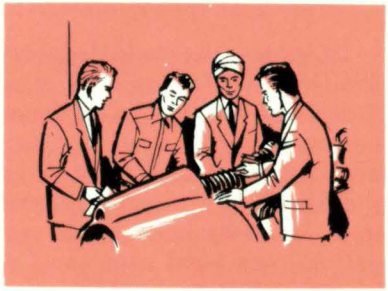
Individuals and organizations are provided with information about the Agency through nontechnical publications, motion pictures and exhibits, and by participation in meetings, forums and seminars sponsored by aviation groups.

MILITARY ADVISOR

Matters involving the Department of Defense are handled by the Military Advisor. This Office is also responsible for monitoring the Agency's role in the supersonic transport program.

OFFICE OF CONGRESSIONAL LIAISON

This Office provides liaison services between FAA and Members of Congress and Congressional Committees. The Office of Congressional Liaison expedites the preparation of replies to Congressional inquiries directed to the Agency. In addition, this Office keeps Congress fully and factually informed of FAA policies and programs—both in progress and problem areas.



THE AERONAUTICAL CENTER

The Aeronautical Center in Oklahoma City, Oklahoma, is known as "The World University of the Air," because it is the indoctrination and advanced training center for FAA's own technical, flight and management personnel, as well as for the foreign nationals who study there.

In addition to its educational programs, the Aeronautical Center plays a key role in many other FAA activities. It is the location of one of the largest warehouses in the world—more than 15 acres under one roof—and the hub of a supply line that is global. The Center also serves as a modern base for the overhaul and maintenance of Agency aircraft and the repair and fabrication of air traffic control equipment.

Newest addition to this ultra-modern aviation facility is FAA's Civil Aeromedical Research Institute, where the Agency hopes to achieve a degree of knowledge of the capabilities of the human body that will parallel advances in the aeronautical engineering field.

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LOOKING AHEAD

Today, with jet airliners carrying more than a hundred travelers at a time at speeds close to sound, with continents no farther away than our cities were just a few years ago, it might seem that aviation could pause for a while.

Change, however, is the law of life in the industry. There is no standing still in aviation. Gains are only consolidated in the wake of progress which must be swift and certain.

The Federal Aviation Agency, at the direction of the President, has already charted the course that civil aviation should take in the next decade. The problem of air traffic management continues to be explored in a quest for a system that will insure the safest and most efficient use of the Nation's airspace in an era when change is constant and always more challenging. Every day brings a New Horizon for the Federal Aviation Agency.