



### To Save A Life

Getting ready to take off on a mission of mercy is Controller George Milligan of the Medford, Ore., Airport Tower. The Apache is one of four planes operated by Mercy Flights, Inc., an air ambulance service Milligan started 20 years ago.

## Controller's Enterprise Saving Lives in Oregon

By Theodore Maher

MEDFORD, Ore.—It is impossible to say exactly how many lives Controller George Milligan of the airport tower here has been directly or indirectly responsible for saving, but since he first organized an air-ambulance service more than 20 years ago, 2,800 patients have been carried over the rugged terrain of Oregon and Northern California.

Many of these patients were in critical condition and all of them urgently needed medical treatment. Milligan personally flew a large number of these flights, sometimes landing and taking off from remote strips cut out of the wilderness and sometimes flying through weather that he tackled only because a life depended on the flight.

Milligan's non-profit service, called Mercy Flights, Inc., was started on a shoestring in 1949 when he raised enough money to

buy an old twin Cessna "Bambino Bomber." Today, the ambulance service has a fleet of four planes, a Twin Beech, an Apache, a Cessna 206 and a PA-12 Super Cruiser. The service is supported by subscribers who are entitled to free emergency air-ambulance service within a 400-mile radius of Medford.

Milligan and four other volunteer pilots, who may be called at any time of the day or night, fly an average of five missions a week.

Although the flights must sometimes be flown in marginal weather, the service has a perfect safety record. Because there are times when the hospital planes must take off and land in spite of the weather, Milligan and his team have come up with some ingenious ways to keep operating safely.

When local ground fog obscures runway visibility in cold weather,

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## Aviation Safety Goals Emphasized

DETROIT—Industry and government together must do everything possible to further improve aviation's safety record, Administrator John H. Shaffer told the Midwestern Air Traffic and Flight Safety Conference recently. He was keynote speaker at the major aviation conference.

Positive control of all aircraft in busy terminal areas is necessary to achievement of that goal, he said, referring to the agency's proposed terminal control area rule.

"We must achieve effective separation of high and low performance aircraft and between IFR and VFR traffic, in VFR weather conditions. Whatever rule we adopt would apply only to limited areas in the immediate vicinity of major terminals and would not infringe in any way on the freedom of private pilots to use the airspace a very short distance from these terminals."

The configuration finally adopted will depend on what works best for that particular terminal area, after full consultation with local communities, he added.

"We are guided by the necessity to make charting and pilot identification of the area as simple as possible," he said. "In plotting airspace patterns, there are four 'customers' we must keep in mind: general aviation, the air carrier, the military and the air traffic controller. The controller's job is difficult as it is. It would become more difficult if he did not have ample airspace in which to vector traffic in terminal areas."

Shaffer emphasized that the agency would not seek to ban, nor would the proposed rule ban, any segment of aviation from operating within the terminal areas, but certain operating and equipment requirements would have to be met.

"Clearly there are advantages and disadvantages associated with either a circular area configuration or a narrow corridor concept. This means that a corridor-type configuration may be suitable for some airports, a mushroom-type configuration for others and a combination of the two for still others. The hearings now going on at the community level are intended to help determine what the best pattern will be for each area."

The Administrator said he did not foresee any end to the need for airports or aviation's potentials for growth and profit.

"But we don't need to continue forever the wasteful practice of using 10,000-foot runways for small airplanes, and we don't have to mix traffic indiscriminately to assure equality of the airways."

He called attention to the fact that general aviation air traffic, itinerant and local, continues to account for an increasing proportion of total aircraft operations handled by airports with FAA control towers.

"In 1960, with 229 towers in use, general aviation accounted for 57 per cent of the 25 million operations that year. In 1969, with 326 FAA-operated control towers, general aviation aircraft figured in 75 per cent of the 55 million operations—or three out of every four."

Use of Federal aviation facilities and services will continue to in-

(Continued on Page 7)

## Thomas Retiring on Feb. 15 After 32 Years of Service

WASHINGTON—One of the agency's outstanding pioneers—Deputy Administrator David D. Thomas—is retiring Feb. 15 after 32 years of Federal Service, all of it with FAA and its predecessors.

Thomas has been Deputy Administrator since 1965.

Over the years he has played a key role in development of the Federal system of air traffic control and airway facilities.

He began his FAA career in 1938 as a controller at Pittsburgh. He then held air traffic control positions at agency facilities in Detroit and Cleveland and in September of 1941 became Chief of Air Traffic Controls at the CAA's regional office in Fort Worth. In 1944, he became Chief of the Air Traffic Control Branch in Santa Monica and subsequently held increasingly important positions in Washington including Deputy International Services Officer; Chief, Planning Staff; Deputy Director, Office of Federal Airways; and Director, Office of Air Traffic Control.

From January 1959 to July 1963, he was director of the agency's Air Traffic Service in Washington.

Thomas was named Associate Administrator for Programs in 1963. In this position, he was responsible for planning and coordinating operating programs of the Air Traffic, Flight Standards, Airports and Systems Maintenance Services.

A long-time pilot, he holds a commercial pilot certificate with multi-engine and instrument ratings

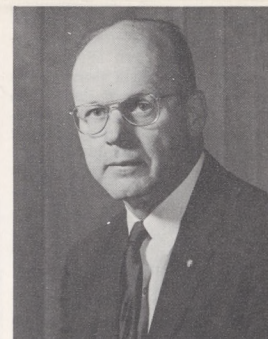
as well as piston, turboprop and jet aircraft type ratings. He is a graduate of the Air Force's fighter-interceptor and bomber aircraft indoctrination courses.

His many awards include the Flight Safety Foundation's Laura Taber Barbour Award for Air Safety, which cited Thomas as "... one of the outstanding experts in this country, if not in the world, on management of air traffic control." He received this honor in April 1963.

Two months later, in a White House ceremony, he received the President's Award for Distinguished Federal Civilian Service, given for exceptional achievement in advancing important domestic and international programs.

In December 1966, Thomas received Princeton University's 1966 Rockefeller Public Service Award

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David D. Thomas

## Decade Ahead Glimpsed

NEW YORK—Changes expected on the aviation scene during the 1970s were discussed by Administrator John H. Shaffer in a recent speech to the Aviation/Space Writers Association.

Intensification of the agency's safety activities will be continued during the decade ahead, Shaffer stated.

Improvement and expansion of the system, increases in needed personnel, improvement in aircraft and technological advances would, he said, be reflected in "increasingly more favorable statistics in the '70s."

"We enter the decade of the '70s with real prospects for true progress. To the best of my ability, I am going to do what I can to see that we waste neither time nor resources in bringing civil aviation what it needs most—a capacity equal to demand, the opportunity to grow and prosper and a safety record that leaves no question about what is the best way to

travel."

The Administrator outlined steps being taken by the agency in the interest of aviation safety, including the proposal for segregation and control of air traffic at 22 major terminals.

He called attention to the agency activities aimed at accident prevention in the general aviation field, citing the accident prevention program underway in the Central and Southwest regions.

The importance of airways-airports legislation under which more than \$14 billion would be generated for aviation over the next ten years was underscored.

"This legislation will provide more runways and more equipment. It will also expedite complete automation of our centers and towers and finance research and development essential to follow-on systems," he said.

He added that passage of the legislation would assure "an orderly ten-year program."

## Changes Announced at HQ

WASHINGTON—A number of important organizational and personnel changes were announced recently by Administrator John H. Shaffer. They include:

- Designation of Brig. Gen.

Gustav E. Lundquist as Acting Associate Administrator for Development, a position held by Joseph D. Blatt until his retirement on Jan. 31. General Lundquist has been Director of the National Airspace System Program Office (NASPO) since August of last year.

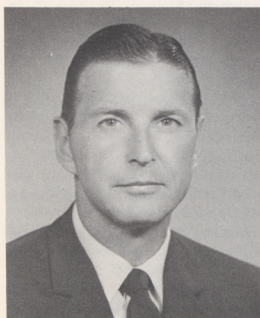
- Designation of J. W. Rabb, former NASPO Deputy Director, as Acting Director of that Office.

- Establishment of a Facilities Installation Service under the Associate Administrator for Operations.

The new Facilities Installation Service will have staff responsibility for assuring timely accomplishment of the agency's facilities establishment program. This responsibility was formerly assigned to the Logistics Service.

The Facilities Installation Service will carry out engineering func-

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Brig. Gen. Gustav Lundquist

## FAA Technical Study Envisions 1980 Traffic

WASHINGTON — A technical study report describing an advanced air traffic control and navigation system for possible implementation in the 1980s has been published by the agency.

The system uses precisely timed air-to-ground and ground-to-air radio signals to determine aircraft position and to provide automatic communications between ground control facilities and aircraft. The signals could be relayed by satellite for round-the-world coverage. The system also would provide both air and ground-based collision avoidance systems.

Precisely timed radio signals, the report says, can be used to calculate aircraft position with greater accuracy than systems now in use, by measuring the time it takes for a radio signal to travel from an aircraft to satellite or ground receivers, or vice versa.

Information from aircraft, such as air-derived position, speed, direction and altitude, would automatically be relayed to the ground. Routine control instructions and collision-avoidance instructions would be transmitted automatically from the ground to the aircraft.

The time-ordered data link techniques proposed make maximum possible use of available radio frequencies. The information is transmitted in a coded "burst," precisely timed, so that the system is at full capacity when all messages are sandwiched virtually end-to-end. In the new system design, however, conventional voice communications equipment would be available at all times as a backup for the automatic system.

A major benefit of the design is the fact that it can be installed in stages, as existing equipment becomes obsolete. Furthermore, it would not become saturated.

The title of the report is "Analysis of an Advanced Time-Frequency National Air Space System Concept" (RD 69-32). It is published in four volumes by FAA's Systems Research and Development Service.

Volume I (AD 695 435) includes a summary of a typical application of the system concept, estimate of

system costs and a recommended research and development program.

Volume II (AD 695 436) is a compendium of time and frequency technologies, concepts and systems including precise oscillators and synchronization techniques.

Volume III (AD 695 437) is a detailed description of the system concept, the methodology used for synthesizing, analyzing and selecting the recommended system, cost estimates to develop and implement the system, and a description of a cost prediction model. It also presents a detailed recommendation for the system engineering approach for completion of the concept formulation and definition.

Volume IV which deals with military systems is classified.



### 35 Years of Service

Upon retirement after more than 35 years of Federal service, William C. Flanik (second from left), Chief of the Lynchburg, Va. Tower receives a silver tray from his colleagues. The presentation was made by W. Calvin Falwell (left), chairman of the Lynchburg Chamber of Commerce Aviation Committee. Looking on are Washington Area Manager Stanley Henceroth (second from right) and Col. William G. Plentl, director of Virginia's Division of Aeronautics. Flanik was Lynchburg Tower Chief for 25 years.

## New Traffic Patterns Cited

WASHINGTON—When the decade of the 1970s ends, there will be a dramatic new airport traffic distribution pattern among the three commercial air carrier airports in the Washington-Baltimore metro-

politan area—WNA, DIA and BAL.

By fiscal year 1981, the number of air carrier passengers will be divided almost equally among Washington National, Dulles International and Baltimore Friendship Airports. This contrasts with today's traffic pattern in which Washington National handles more than three times as many airline passengers as Baltimore Friendship, and almost five times as many as Dulles.

These predictions are contained in the "Washington National and Dulles International Airport Forecasts for Fiscal Years 1970-1981." The forecasts were prepared by the agency, which operates both airports. The report also contains operations and passenger data for Baltimore's Friendship Airport.

Fiscal year 1981 forecast highlights for Dulles International and Washington National include:

- Washington National will have 16.4 million air carrier and other passengers, a 63 per cent increase over the fiscal year 1969 total of slightly more than ten million. However, its present two-thirds share of the Washington-Baltimore market will drop to close to one-third. Dulles, meanwhile, will have 13.2 million passengers, compared with about 2 million in fiscal year 1969, a more than 550 per cent increase.
- Dulles will have 411,000 land-



### For Exceptional Service

Former Assistant Administrator for Congressional Liaison Edward W. Stimpson received the agency's Decoration for Exceptional Service from Administrator John H. Shaffer at Headquarters recently. Stimpson left the agency to become a vice president of the General Aviation Manufacturers Association after seven years of Federal service.

## Republic Airport Controllers Join FAA En Masse

NEW YORK—Seven controllers at Republic Airport in Farmingdale, L.I., became FAA employees en masse when the agency recently took over responsibility for air traffic control at the airport.

They formerly worked for Flight Safety, Inc., which had a contract with New York's Metropolitan Authority to operate the facility.

The seven new FAA controllers are Louis T. Riley, Russell B. Dow, Otto Kothe, Basil M. Angelo, William F. Fearn, Nicholas R. Nuzzi and Paul R. Wilkes. All are Long Island residents.

Chief of the new FAA tower is Rupert G. Tiffany, formerly an evaluation and procedures specialist in the Eastern Region's Air Traffic Division. Tiffany has had 30 years of experience with the agency, all in air traffic positions.

The Republic Tower is being operated 16 hours a day, seven days a week from 7 a.m. to 11 p.m.

Aircraft operations (landings and takeoffs) at the airport during 1969 totaled 226,000, an increase of 24 per cent over 1968.



Rupert G. Tiffany

ings and takeoffs, close to a 90 per cent increase over the 217,000 in fiscal year 1969. Washington National will have 353,000 operations, 14 per cent less than Dulles.

- Combined cargo traffic at Dulles and Washington National is expected to climb to 420 million pounds, an increase of 83 per cent over the 230 million pounds handled in fiscal year 1969. Dulles is expected to handle 235 million pounds in 1981—almost four times its 1969 volume. Washington National will handle 185 million pounds, 20 million pounds more than in 1969.

## REPORTS and PAPERS

Unless noted otherwise, the source for the reports and papers listed is TAD-484.3.

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*Study of Flame Propagation Through Aircraft Vent Systems*, Samuel V. Zinn, Project Engineer, Final Report No. NA-69-32 (DS-68-20), August 1969.

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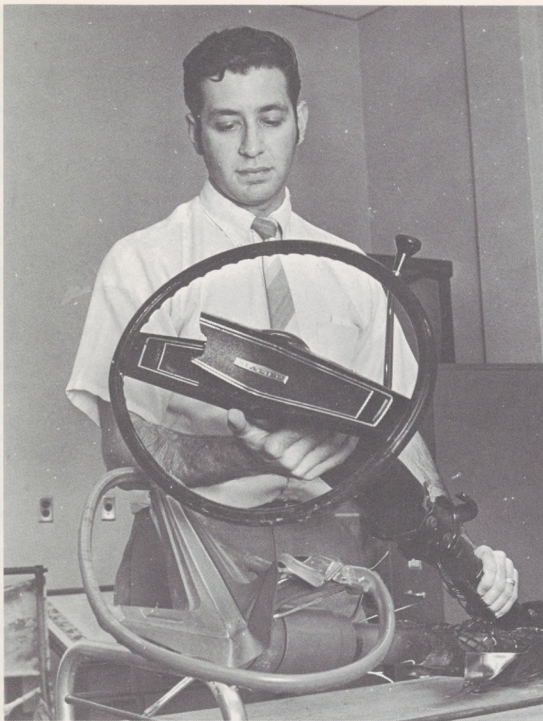
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*Analysis of a Capacity Concept for Runway and Final Approach Path Airspace*, SRDS technical report No. RD-69-47 prepared by National Bureau of Standards under DoT/DoC Interagency Agreement, November 1969.



### CAP Honorary Membership

George M. Gary, Eastern Region Director, receives Certificate of Honorary Membership in the National Civil Air Patrol from Col. Lemuel H. McCormack, USAF, Deputy Commander, National Headquarters CAP-USAF, Maxwell AFB, Ala., during Northeast Region Annual Conference held recently in Atlantic City. Gary is already an active member of CAP Northeast Region.



**Studying Accidents**

Examining mangled steering wheels taken from wrecked automobiles is University of Oklahoma graduate student Russ Fine who is using the lab facilities at CAMI to study injuries resulting from auto accidents.

**CAMI Laboratory Utilized In Auto Accident Research**

OKLAHOMA CITY — Public apathy is one of the greatest handicaps to an effective automobile accident reduction program, according to Russ Fine, a graduate student who spent 17 months on an accident study at the agency's CAMI laboratory here. Fine is an FAA student intern.

"Most people are just not interested in preventing accidents," said Fine, a Ph.D. candidate in public health studies at the University of Oklahoma Medical School.

Drunk drivers and ineffective safety devices rank as the next two major factors resulting in a rising toll of deaths and injuries on the nation's highways each year, according to Fine.

He believes that many victims of so-called "minor" accidents may be walking around with heart damage as a result of body impact with steering wheels or other surfaces. With this in mind, he is beginning a study of accident victims who suffered bruises and contusions and were dismissed from medical care without any heart damage being noted.

To study the effect of accidents on the human body, dummies were strapped to a seat in the laboratory and motion pictures were taken as the dummies were flailed against doors, windows and steering wheels.

Fine feels that the American car buyer is probably his own worst enemy.

"People buy cars for esthetics, sex appeal—all kinds of reasons having nothing to do with safe operation or protection in case of an accident," he said.

In explaining the significance of the work he has been doing at the Aeronautical Center, Fine said, "Trauma is trauma, whether it occurs in an automobile or an air-

plane. Any device that is effective in one could be effective in the other."

The young researcher, who already holds a Bachelor's and Master's Degree, has been working under the direction of Dr. John Swearingen, Chief of the Survival and Protection Laboratory at CAMI. He will enter Chicago Medical School next year for his Ph.D.

**Changes Proposed In Seat Belt Rules**

WASHINGTON—A new rule that would require everyone aboard a U.S. civil aircraft to fasten safety belts during takeoffs and landings has been proposed by the FAA.

The only exception to the proposed rule would be infants under the age of two. They could be held by an adult and share the adult's safety belt.

Present FAA rules specify that all U.S. registered aircraft be equipped with approved safety belts for all occupants. Moreover, in the case of air carriers, including air carrier helicopters, the rules specify that everyone over the age of two must occupy an approved seat or berth with an approved safety belt properly fastened during takeoffs and landings. However, there is no similar requirement for occupants of non-air carrier aircraft, other than required flight crewmembers.

The proposed rule would extend the air carrier requirement to all U.S. aircraft. It would apply to each person on board "who has reached his second birthday." For purposes of clarity and uniformity, this definition of minimum age would be substituted for the language in the present rule which makes it applicable to each occupant "over two years of age."

**U. S. Aviation Safety Record Shows Gains During 1969**

By Don Byers

WASHINGTON — Commenting on preliminary statistics for 1969 issued by the FAA showing the lowest air carrier accident rate since the jet age began a decade ago, DOT Secretary John A. Volpe said it was "the best year of the jet age, from a safety standpoint."

The Secretary also took note of an improved general aviation safety record which showed a substantial drop in both total accidents and fatal accidents from 1968.

"We're very encouraged by the 1969 safety record for both air carriers and general aviation," Secretary Volpe said. "While the workload in FAA air traffic control facilities has more than doubled over the last ten years, both the number of air carrier accidents and the accident rate are down. Obviously, nothing short of perfection in air safety is good enough, but we're gratified that the decade drew to a close so well. All of us are indebted to the FAA safety inspectors, air traffic controllers, maintenance technicians and all of the other FAA people who helped facilitate a safe flow of mounting traffic."

Among the highlights of last year's safety record for air carriers (including commercial operators):

- Total accidents were down from 73 in 1968 to 68 in 1969.
- The accident rate was down from 1.12 to 0.98 per 100,000 hours flown.
- Fatal accidents were down from 16 to 10 over the year.
- Total number of fatalities were down from 352 in 1968 to 160, the lowest number since 1957, for a rate of 2.3 per 100,000 flight hours, compared with 5.4 in 1968.

FAA Administrator John H. Shaffer noted that the air carrier accident trend has been significantly downward over the last ten years. He pointed out, for example, that the total number of air carrier accidents has declined rather steadily from 102 in 1959 to 68 in 1969.

**Turbulence A Factor**

"Moreover," Shaffer said, "I think it is important to understand that 34, or exactly half, of the 68 accidents last year were not the type of events which the general public normally considers as accidents. Eighteen cases were classified as accidents because of personal injury to passengers or crewmembers resulting from aircraft encountering in-flight turbulence. The remaining 16 happened while aircraft were still on the ground and involved personal injury or damage to the aircraft."

"The fatality record has shown an equally impressive ten-year down-trend," the FAA Administrator added. "The rate has declined steadily from the 1960 high of 10.5 per 100,000 flight hours to 2.3 last year. During the same time period, the number of fatalities dropped from 500 to 160. The total number of hours flown by air carrier aircraft, meanwhile, has increased from 4,743,406 at the start of the decade, to an estimated 6,932,053 in 1969."

Analysis of preliminary general aviation activity data also reflected improvement in 1969 as total accidents dropped to 4,931—98 less than the total for 1968. The accident rate, meanwhile, dropped to 19.8 per 100,000 flight hours, which is down 1.6 per cent from 1968.

The total number of fatal accidents also decline in 1969 to 651

from the 1968 total of 696. The fatal accident rate during the same time period dropped from 3.0 per 100,000 flight hours to 2.61. The total number of fatalities, however, increased slightly from 1,379 in 1968 to 1,388 in 1969, but the rate was down from 5.9 to 5.71 per 100,000 flight hours.

The number of aircraft in the general aviation fleet and the number of hours flown have increased significantly over the past decade. From 76,549 aircraft in 1960, the general aviation fleet increased to 124,237 aircraft in 1969. The number of hours flown, meanwhile, increased from 13,121,000 in 1960 to an estimated 24,900,000 in 1969.

**Aircraft Delays Show Sharp Drop At Year's End**

WASHINGTON—December delays at the five "high density" airports serving New York, Chicago and Washington were the least of any month since the FAA established flight quotas at these locations June 1.

Total recordable delays (those exceeding 30 minutes) at the five airports during December was 3,074 compared with 10,528 in December 1968. The previous low monthly total since the flight quota rule is benefiting the traveling public logged in August 1969.

"The December delay figures are further proof that the flight quota rule is benefiting the traveling public by easing congestion and reducing delays at our major hub airports," DOT Secretary John A. Volpe said. "I was particularly gratified to see that those who chose to fly home for the Christmas-New Year's holidays had a much easier time of it this year than last. Delays were down by 75 per cent over the two holidays."

Administrator John H. Shaffer pointed out that there were only 545 aircraft delays of more than 30 minutes nationwide during the ten-day holiday period, Dec. 24-Jan. 2, just passed. Last year, the total for the same ten-day period was 2,226.

A comparison of delays at the five high density airports during the first seven months the flight quota rule was in effect (June-December 1969) with a similar period in 1968, shows a decline for every month except June. The greatest decline on a percentage basis was recorded in August when delays dropped to 4,600 from the 15,344 logged in August 1968, a 70 per cent drop.

Total delays for the seven months numbered 52,698, a 33.7 per cent improvement over the 79,440 recorded in the same period in 1968.



By Sue Silverman

Today's pilots don't need to be given an X-ray picture of the national airspace system. They know about its irritations and its symptoms.

Less obvious to the pilot is his own prognosis for a safe flying future. Three current FAA films try to prescribe a sensible attitude for good health because so many pilots ignore preventive medicine.

Take Dr. Charles Preston, for example. He's a physician and he should be the first to know that flying and drinking don't mix. Like a lot of us, he enjoys a drink, but doesn't adhere to the sensible "eight hours from bottle to throttle" rule. His judgment and his life are changed by alcohol, as told in "Charlie" (FA-618), which runs about 20 minutes.

"RX for Flight" (FA-606), provides a good 20-minute survey of various aeromedical problems which confront general aviation pilots. Among them are the effects of drugs, hypoxia, disorientation, smoking and alcohol.

Various psychological problems can also beset a pilot, ranging from preoccupation over business matters to the nag, nag, nag of an overbearing wife. "All It Takes Is Once" (FA-801) deliberately treats the subject with good-natured humor, but does not joke about the serious flight hazards created by mental distraction. This film, the most recent of the three, runs about 25 minutes.

Prints are available from the FAA Film Library. Other inquiries should be addressed to the Chief, Special Projects Division, PA-30.



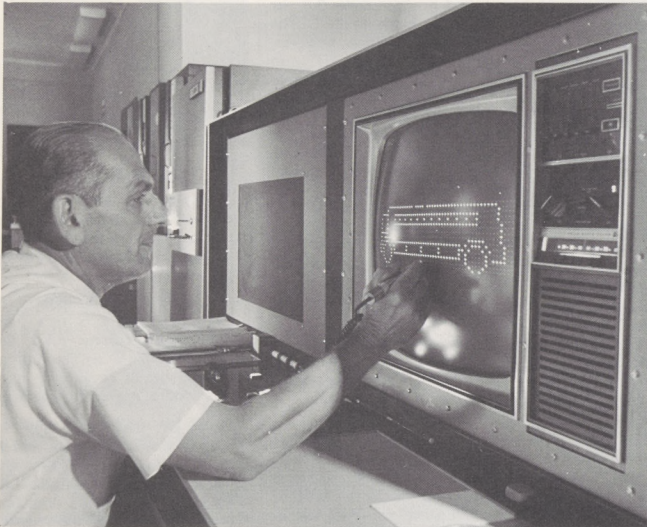
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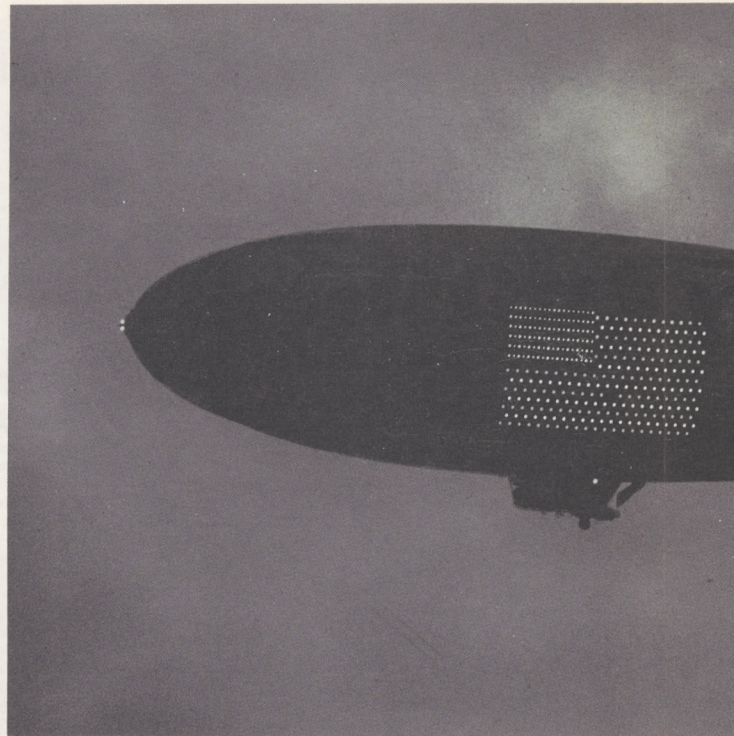
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Administrator JOHN H. SHAFFER  
Acting Assistant Administrator for Public Affairs DENNIS FELDMAN  
Chief, Employee Information Division CLIFFORD CERNIK  
Layout/Production GERNOT RASMUSSEN



A technician in a special lab in Akron, Ohio, "draws" the animation and copy he wants to appear on the blimp Super-Skytacular sign on a cathode ray tube, using a light gun. A computer then takes over, and a magnetic data tape gives a pre-planned six-minute program 25 feet high and 105 feet long on the sides of the blimp, readable a mile away with ease.



Messages flashed at night from both sides of the three blimps now flying are 80 percent associated Commercial messages have not been purchasable by the public or industry for over five years. The



Rarely do the three public relations blimps get together for a picture. At top, the shorter but fatter, "Mayflower;" center, the 192-foot long "Columbia," and bottom, her sister ship, "America." Each blimp is staffed by a rotating crew of 18, including five FAA-certificated pilots, a dozen ground crewmen and a public relations man. A traveling bus, truck and station wagon make each blimp self-sufficient on barnstorming flights.

## FAA Inspects, Tests and Certifies for Safety . . .

# BARNSTORMING AMBAS

By Thom Hook

As many as 15 million television watchers of a single bowl game recognize the ubiquitous, silver dirigible as the nation's "biggest" sports fan. When not serving as aerial TV camera platforms, the Goodyear blimps *Mayflower*, *America* and *Columbia* are riding out winter's rough winds, respectively, in Miami, Houston and Los Angeles.

The last in a long line of 300 airships produced by the aerospace industry manufacturer since 1917, the blimps have emerged from a proud military record to a new role in public relations. They cover golf championships, auto races, the World Series, America's Cup yacht races and all the big football bowls. (Traditionally, the blimps are named after yachts that have won the America's Cup.)

Flying low and slow (cruising speed is 35 m.p.h.; altitude from 1,000 to 3,000 feet above the surface), the blimps barnstorm 100,000 air miles a year, devoting 80 per cent of their well-known huge night sign spectacles to public service messages.

Each blimp has its own ground crew of more than a dozen men who precede their slow-moving charges in a handful of station wagons, trucks and special vehicles, including facilities for a mooring mast. The men who man the lines for landings and takeoffs also can fix radios, engines, leaking bags and any of the myriad things that can go wrong in lighter-than-air craft.

Of the 55 commercial blimps built (245 others served the Army and Navy), the record shows more than a million passengers carried without a fatality. Since a blimp can carry only six riders at a time, the total is impressive.

Part of the credit for this safety record goes to the FAA men and their predecessors who inspected, ground and flight tested the blimps before they were certified airworthy. Current airships reflect numerous technological improvements. Today's blimps have larger powerplants, improved fuel systems and more sophisticated and expanded computerized signs.

The Eastern Region's Flight Standards Division has a number of people concerned with certification of each new Goodyear airship. One of them is Irving Mankuta, of the propulsion section.

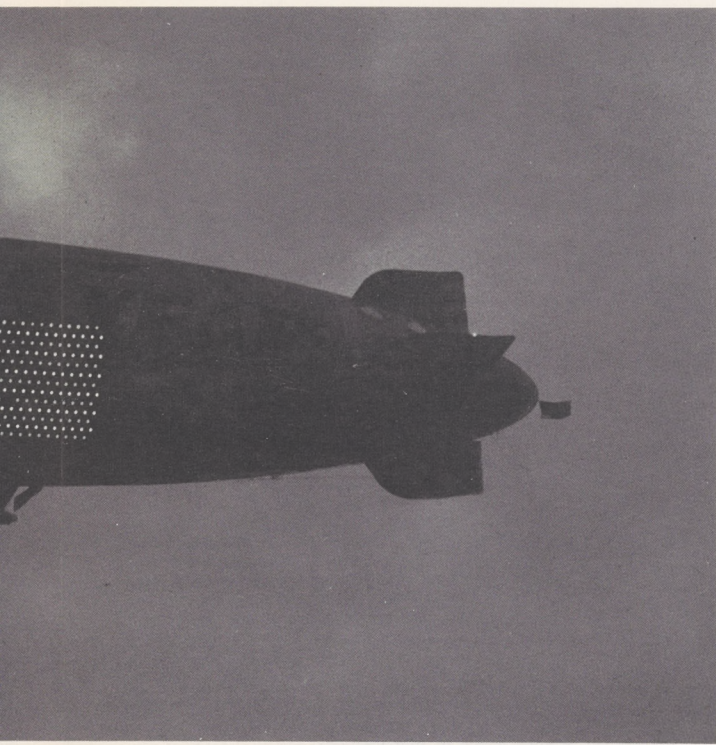
"Due to the increased size and gross weights on the current ships, engines of greater horsepower are needed," says Mankuta. "We gave the two 210 h.p. powerplants powering the big blimps special ground and flight vibration tests. All rotating components—reversible prop, engine cooling fan, generator and pulley assembly—were subjected to a 100-hour in-house bench test, to insure that they would operate safely when mated in a propulsion system."

Mankuta and others in propulsion also evaluated fuel system flow, transfer and dumping; function or powerplant controls; prop pitch; engine generator stress and mechanical integrity; heater installation and powerplant cooling.

### Modern Fuel Transfer

Today's blimps have two 50-gallon auxiliary fuel tanks, mounted under the outriggers and providing a 20-hour cruising range. The fuel powers both engines and a generator for the 7,560 night sign lamps, as well as the cabin heater. Until 1968, extra fuel for long cross-country flights was carried aboard in five-gallon cans and wobble-pumped into the system. The new system is safer and had to be tested and evaluated by the FAA for today's blimps.

Aerospace engineer Frederick Lee of Flight Standards coordinated the program for a recent type certification with the Cleveland EMDO and the manufacturer. Lee determined that the new blimp complied with airworthiness standards, Civil Air Regulations and good design practice. He evaluated aerodynamics reports, applied air and ground loads data, structural design criteria, stress reports and production drawings. When his engineering phase was completed, Lee developed Type Inspection Authorization, listing limitations of the airship.



percent associated with public service work—Savings Bond drives, Heart Fund, United Appeals, etc. over five years. The sponsor serves the aerospace field with wheels, brakes, 747 cargo containers, etc.



Review of operating limitations and issuance of the Airworthiness Certificate for a Goodyear blimp is made by Chester L. Swinehart (right), Supervising Inspector, and Arthur C. Settlege, Manufacturing Inspector. Both FAA men are assigned to the Cleveland Engineering and Manufacturing District Office.

# BASSADORS

Electrical Engineer William J. White of aircraft systems evaluated the blimp's electronic, navigational and electrical systems. The new sign area alone involves 80 miles of wiring.

## Flight Tests Held

Aerospace engineer Charles Arnold from New York test flew the newest blimp to ascertain that systems and controls functioned properly, engines performed satisfactorily and that takeoffs and landings could be made within the approved operating envelope.

"This included testing to VNE—Velocity Never Exceed," says Arnold. "That's all of 50 miles per hour, which is at full throttle, nose down 30 degrees."

The blimp is the only flying machine that can lose all power on takeoff and still climb, Arnold points out. Even then, the pilot has to worry about going up too fast.

Arnold explains that each blimp has a simple IFR "full panel"—needle, ball and airspeed.

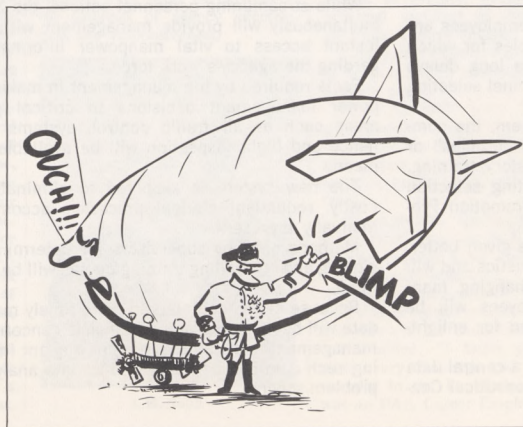
"Sometimes, air traffic controllers find it a new experience to wait, wait, wait for us to report 'ground contact' after we pass the outer marker inbound at 40 miles an hour," Arnold says.

The Cleveland EMDO recently inspected and certificated the new blimp *America*. Supervising Inspector Chester L. Swinehart and Manufacturing Inspector Arthur C. Settlege made conformity inspections during fabrication and assembly of components, engines, propellers, envelopes and car. They witnessed tests of the electrical equipment, fuel system and control surface rigging to determine airworthiness in preparation for the FAA flight test. A Standard Airworthiness Certificate followed successful completion of the shakedown flight.

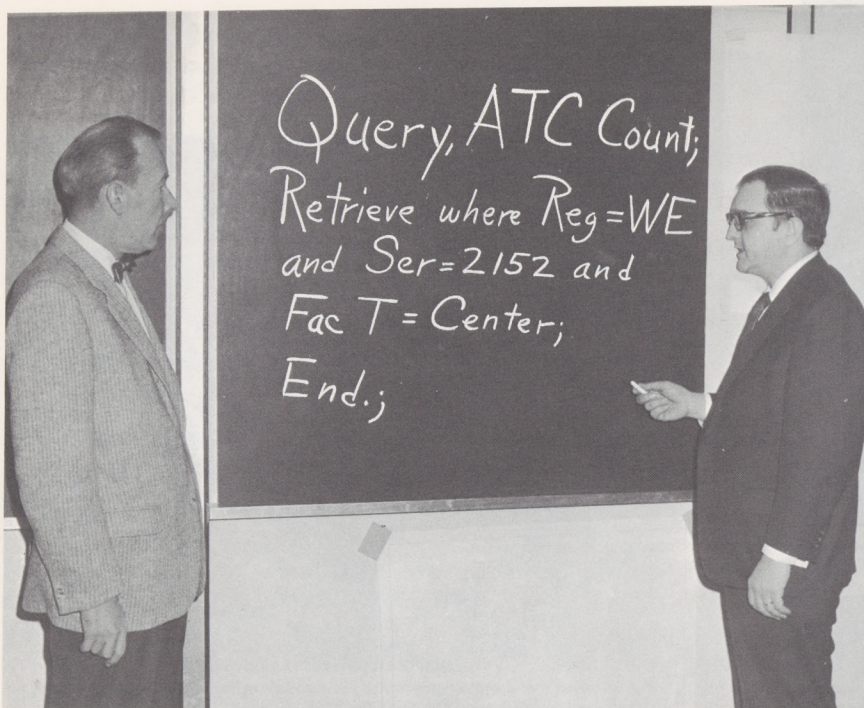
Even in our age of space exploration and mammoth jet airliners, the blimps command maximum attention as they move from hamlet to town to city. Their safety record is appreciated by all connected with lighter-than-air operations.



Discussing design details of the blimp "America" are Eastern Region Flight Standards engineers (left to right): Fred Lee, airframe section; Irv Mankuta, propulsion; Bill White, aircraft systems and Charles Arnold, flight test pilot. Once design is approved, Cleveland EMDO personnel inspect the airship for conformity to design details.



The name "blimp" for a lighter-than-air, engine-driven and steerable dirigible originated in 1915 when a British airship station commander playfully flipped his thumb at the taut gasbag. Hearing an odd echo, he imitated it by saying, "blimp!" Blimp it has been for 55 years.



"How many air traffic controllers, center option, are currently employed in the Western Region?" This question—translated into command language on the blackboard—is typical of management queries that the agency's automated personnel data system will be able to answer almost instantaneously when it begins operation. Lou Gettman (left), Chief, Systems Development, Manpower and Planning Staff, and Joe Cucinelli verify the accuracy of this query.

## To Benefit Employees, Management . . .

# MPIS—On the Way

A retirement opens up a key job in the Western Region. In the personnel office, an operator goes to a typewriter positioned in front of what appears to be a television set but is actually a cathode ray tube.

The operator types out requirements for the position as outlined by the supervisor and finishes her message—being transmitted to the computer complex by FTS—with this request to the computer: "How many employees do we have meeting these requirements?"

Almost instantly, the screen in front of the Los Angeles operator lights up. The supervisor is told that there are eight persons on the agency payroll capable of filling the position. The computer proceeds to provide their name, position, location and other pertinent data.

The information is accurate, up-to-date, directly responsive to immediate needs. No lengthy file search, correspondence or other paperwork is required.

Situations like the above will be typical once the agency's new automated Manpower and Personnel Information System goes into action, some time late in 1972 or early 1973.

The new system will insure that all employees are automatically considered for all vacancies for which they have the basic qualifications. The long delays which frequently occur in today's personnel selection process will be a thing of the past.

This is because, under the new system, the computer will be able to provide required "profiles" or printouts of candidates, employment history, training, awards and accomplishments, facilitating selection processes under the agency's Merit Promotion Program.

At the same time, the agency will be given better, quicker data on its work force characteristics and will have up-to-the-minute forecasts of changing manpower needs. Supervisors and employees will be equipped with the raw material needed for enlightened career guidance.

The new system consists basically of a central data base in a computer complex at the Aeronautical Cen-

ter linked to TV-type cathode ray tubes and printers in each of the operating personnel offices.

FTS lines linking these devices feed data into and extract data from the central computer. Information required by personnel offices can be displayed visually on the Cathode Ray Tube (CRT) or printed out for record use, whichever is desired.

Data on all employees to be stored in the central data base include such details as age, salary, sex, title, grade, series, organization, employment history, education, performance appraisals, honors, licenses, awards, training, geographic location and service computation data. Also included will be training data such as training requirements, course authorizations, schedules and costs. Budgetary information relating to position authorizations, ceilings, appropriations and cost center codes will be "cranked in" to the system.

The CRTs and printers will be used to produce official personnel action documents in personnel offices and to simultaneously update central data base records.

While streamlining personnel actions, the MPIS simultaneously will provide management with almost instant access to vital manpower information regarding the agency's work force.

Facts required by top management in making manpower management decisions in critical program areas such as air traffic control, systems maintenance and flight inspection will be available on demand.

The new system is expected to eliminate many costly, redundant clerical processes accomplished manually at present.

Methods used by supervisors for determining, assigning and controlling training quotas will be streamlined.

Because more accurate and more timely manpower data will become available to officials concerned with management and training, time now spent in gathering such data can be redirected to data analysis and problem solving.

Use of the system is expected to facilitate identification of problem areas within the agency's manpower structure through the system's capability for "reporting by exception."

The system also will permit modeling various manpower strategy alternatives before making a decision, enabling managers to determine in advance the impact of several proposed courses of action, thus facilitating the ultimate decision.

Access to all data will be tightly controlled so that only authorized users with a need to know will be able to obtain it.

Establishment of the agency's automated Manpower and Personnel Information System dates back to early 1968, when a special team began evaluation of various system designs.

On the basis of the design team's ten-month study, a go-ahead for the MPIS was given by the Executive Committee approximately a year later.

The next phase of the program began this month when the Data Services Division at the Aeronautical Center started detailed logic diagramming for the system. This process will require about eight months and must be completed before ADP programming can start.

To insure maximum coordination of the total effort, an MPIS Management Development Team has been created. It consists of Elroy L. Nieweg of the Data Systems Division; David L. Wyrick of the Data Services Division; and Robert H. McGuigan of the Systems Development Staff. This team will formulate a comprehensive development and implementation schedule, complete with each significant action required, a time schedule for each and then monitor and report on adherence to the schedule. The team will also identify problems requiring resolution by higher levels of management.



A presentation highlighting the basic concepts upon which the system is based and how it will operate is currently under development. Efforts are being made to include in this presentation a simulation of some of the basic operations of the system, utilizing an actual CRT. This orientation package should be ready for presentation in Washington and the field some time this spring.

Agency managers concerned with the program emphasize that human elements in personnel work are not being de-emphasized with introduction of the new system. In other words, employees are not being "reduced to a series of numbers in a computer data base." Person-to-person consultation on personnel problems will continue as in the past. The difference now will be greater efficiency, less "red tape" and what amounts to taming of the "paper blizzard" that has often hampered efficient personnel administration.



Agency's central computer complex at Oklahoma City can be interrogated by means of the keyboard attached to the Cathode Ray Tube which resembles a conventional television set. CRTs will be installed in each of the agency's operating personnel offices. Answers to questions will be flashed back by the computer and will appear instantly on the screen. Printout device allows both queries and answers to be printed for record purposes. Shown during trial demonstration at the system are Bob McGuigan and Ann Silvers, both from the System Development, Manpower and Planning staff.

## DIRECT LINE

This is your direct line to the top! Your questions will get answers! Employees are encouraged to discuss questions with supervisors or their local personnel office, but for those who do not have ready access to a personnel office, this column will provide an opportunity to get questions answered. Send your letter to Acting PT-1, Federal Aviation Administration, 800 Independence Avenue, S.W., Washington, D. C., 20590. Ground Rules: • All questions must be signed. • This column should not be used to supplant formal grievance and appeals procedures. • Questions should concern personnel and training policies, programs and procedures, not operational or technical matters. What's your question?

**Question:** Please define "transfer of function" as referred to in N 3330.26, The New Merit Promotion Program, paragraph 5 a(3).

**Answer:** The general rule is that a function is transferred when it disappears or is discontinued at one location and appears in identifiable form at another location. However, movements of activities or assignments entirely within a competitive area are not transfers of function; they are reorganizations. A competitive area is that geographic location or organizational entity within which employees compete for retention when reduction-in-force is necessary. A transfer of function occurs when the performance of a continuing function is removed from one competitive area and is added to one or more other competitive areas. Thus, if a records and filing function located in Washington were shifted to Philadelphia and set up as a new office and a new competitive area, the shift is a transfer of function. Similarly, if the same function were shifted to New York and added to an existing organization, that too would be a transfer of function.

**Question:** At our facility, the chief sometimes works on Sunday to avoid calling in a controller. When this happens, he normally takes Monday off or some other day during the week. Should he receive Sunday premium pay?

**Answer:** Based on facts in your letter, Sunday was not part of the basic workweek for the chief of your facility who worked overtime on Sunday instead of calling in a controller. He cannot be paid Sunday pay (25 per cent differential) for overtime work. Under the circumstances you cite, your chief may take compensatory time off instead of overtime pay (paragraph 11, PT P 3550.11). The compensatory time may be used on Monday or any other day within his basic workweek.

**Question:** Section 604(a) of the Federal Employees Pay Act of 1945, as amended, requires agencies to establish a basic workweek of 40 hours for full-time officers and employees, with the job to be performed within a period of not more than six of any seven consecutive days. In my facility, employees work a basic workweek of seven consecutive days and on occasion have been scheduled to work from 10 to 17 consecutive days. Does this situation violate the intent of the Federal Employees Pay Act of 1945?

**Answer:** No. According to the law, FAA must establish a basic workweek of 40 hours for full-time employees within the period of seven consecutive calendar days which constitute the administrative workweek. In FAA, the established administrative workweek coincides with the calendar week beginning at 12.01 a.m. Sunday and ending at midnight the following Saturday.

With this in mind, the situation you describe would fall into the "back-to-back" workweek category where it is possible to have an employee scheduled to work five days Tuesday through Saturday (first week); Sunday through Saturday the following week (five days straight pay plus two overtime days); then five more days the third week. Some employees prefer the back-to-back workweek because of the longer-than-usual break provided at the end of their last shift.

**Question:** I plan to retire at age 55 with 30 years service. I am also eligible for Navy retirement upon reaching age 60. Eight years of my 30 years government service were active duty with the Navy. Will I be able to draw full retirement from age 55 until age 60, then take a reduced FAA retirement to draw Navy retirement?

**Answer:** You will be able to draw full Civil Service retirement at age 55 when you have 30 years creditable service (including the eight years of active military duty). Also, the eight years active duty is given full credit for military reserve retirement if the Navy retirement you mention is from a "reserve" component as provided for in Chapter 67 of Title 10, U.S. Code. In this case you may, at age 60, be able to draw both CSC retirement and reserve retirement with no reduction in either. There is one possibility of a reduction in your Civil Service retirement. All active military duty after Dec. 31, 1956 is covered by Social Security. If you are ever eligible for an old age benefit from Social Security, the CSC retirement will be recomputed to exclude all active duty after Dec. 31, 1956 except for periods covered by military leave with pay. This subject is covered in Subchapter S3 of FPM Supplement 831-1.

**Question:** Why isn't it possible to be promoted from the administrative series to the personal management series (which seem to me to be directly related) unless you have actually worked in the personnel management series?

**Answer:** It is entirely possible to move into personnel management series through reassignment or promotion if you meet the qualifications. As is the case with most specialties, personnel management jobs basically require a certain amount of education or general experience, or a combination of both, plus specialized (in this case, personnel-related work) experience for positions GS-7 and above. For the GS-7 level, one year of specialized experience is required; for GS-9, two years; and for GS-11-15, three years. Your administrative work may count for some or all of the general experience requirement, but it would not count for specialized experience. Through a special CSC-approved training agreement, it is also possible to move into a series where you lack qualifications.

## Goals

(Continued from Page 1)

crease and today's estimated total of 134,000 general aviation aircraft is expected to grow to 205,000 by 1979, he said. General aviation will account for 79 per cent of the itinerant operations in 1979 compared to about 65 per cent today and we must prepare for that kind of growth.

General aviation should pay its fair share of the costs of aviation services, the administrator said.

"User taxes being considered by the Congress are eminently fair and proportionately appropriate," he told the group.

"I think the average general aviation pilot can afford to pay a fuel tax equal to or less than the gasoline tax he would pay to drive the same distance."

The Administrator outlined benefits for general aviation of the airport/airways financing, including the fact that in the first year some \$25 million will become available exclusively for general aviation airfields.

"In addition, we're recommending that funds earmarked for alleviating congestion in major terminal areas be applied whenever possible to the development of reliever airports for the convenience of general aviation. "I don't know of many private pilots who would prefer to go to a busy terminal if equal facilities were conveniently available elsewhere."

Infusion of spirit is required along with a transfusion of funds to restore capacity to the system and make of aviation the unexcelled form of transportation it can be, said Shaffer.

"We have to make air travel eminently safe. We have to end delays and curtail congestion. And we have to make airplanes good citizens and airports good neighbors of the community. I ask you to join me in pursuit of these goals."

## Changes

(Continued from Page 1)

tions involved in preparation of procurement specifications for production equipment. It will also prescribe technical instructions and standards for facility installations. These functions were previously assigned to the Systems Research and Development Service.

Remaining functions of the Logistics Service, primarily procurement and materiel management policy, are being transferred from the Associate Administrator for Development to the Associate Administrator for Administration.

The Administrator stated the changes were being carried out in the interests of agency effectiveness and responsiveness.



J. W. Rabb



## On the Ramp

Two FAAers on stand-by assignment at the agency's Los Angeles hangar recently spent a busy weekend when an inspection DC-3 developed a prop vibration. The mechanics realized that a prop change was in order and they went to work. Checking the engine shaft at left is Ralph White. Examining prop dome is Harold Eakins.

Photos by Joe Tymczyzyn

## New Opportunity Being Offered Aspiring Agency AT, ET Eligibles

WASHINGTON — The agency recently launched a new program designed to provide greater opportunity for promising candidates to enter the air traffic and electronic technician occupations.

Termed the "150" program because of the number of positions allocated to this initial effort, the new program shows promise of broadening FAA's recruitment base as well as equalizing employment opportunities for minority members. One hundred positions have been allocated for potential air traffic controllers, 36 for electronic technicians and 14 for instructors.

In the hope of motivating promising candidates to apply for the program, FAA recruiters are conducting publicity campaigns in colleges, other government agencies

and nearby communities throughout the country.

Candidates for the GS-4 entry level air traffic job must possess two years of experience which indicates the potential for learning and performing air traffic control work. They must also successfully pass the AT aptitude written test designed to measure potential for success on the job. Those selected for the electronic technician positions must meet the entrance requirements established by the Civil Service Commission for the GS-4 level.

Trainees in both occupations who successfully complete the initial six month training program will be promoted to GS-5. Training and developmental assignments continue until the trainee reaches the full performance level. Formal training classes under the new program began at the Aeronautical Center in February.

## Thomas

(Continued from Page 1)

in the Field of General Welfare or National Resources. He was cited for his services affecting the general welfare and the benefits realized individually by the public, and collectively by the nation, from a healthy, expanding air transportation system and also for his efficient management of the nation's airspace.

On April 21, 1967, Thomas received the Career Service Award of the National Civil Service League which recognized him as the leading authority in the highly specialized technical aviation field of air traffic control.

In 1967 he received the Monsanto Aviation Safety Award, sponsored by the Aviation/Space Writers Association. The award cited Thomas for "skillful and dedicated service to aviation safety as the principal architect of the U. S. air traffic control system."

Last spring Thomas was honored in Washington by members of the aviation press.

In a "farewell" letter to FAA employees last month, Thomas said he "never lost sight of the fundamental fact that these honors were for your work and I accepted them for you."

He expressed appreciation for the support given him by FAA employees over the years and said he would "sorely miss being a part of the team, represented by most of you, that has made aviation great—and safe—in the United States."

He added: "I know you will meet every challenge and I retire proudly in the knowledge that I was an FAA Career Employee."

## Enterprise

(Continued from Page 1)

the pilots clear a path through the overcast by seeding it with dry ice. By flying low over the runway and dropping the dry ice, they can clear a path wide enough to make a safe landing.

Milligan, a 28-year veteran with the agency, has had a number of unique experiences while flying the ambulance planes. On one flight a delirious patient tore his restraining straps and managed to smash open the door of the airborne plane. Fortunately the cold air quieted him and Milligan got the door closed with all his passengers still aboard.

Recently, Milligan was called upon to fly a different kind of mercy flight. A plane was lost above the overcast in the vicinity of the Medford Airport. Milligan and Controller Victor Seeberger tried unsuccessfully to give the pilot a DF steer to the airport.

When they discovered that the pilot was a deaf mute and the man interpreting for him completely inexperienced, Milligan volunteered to fly up above the cloud and lead the plane to safety.

By following the Mercy Flight plane, the stray plane carrying the pilot and three passengers landed safely but with empty fuel tanks at Prospect Airport, 35 miles northeast of Medford. Milligan's flying skill, know-how and the service he set up once again paid a dividend in human lives.

# How to Spot Accidents . . . Before They Happen

Olier H. Angers, a Hartford, Conn. attorney, recently found a "calling card" from an FAA GADO inspector attached to the door of his plane.

The notice, from Inspector Walter Brigida of the Westfield, Mass. GADO, informed Angers that fuel cap seals on his plane were badly worn. Brigida pointed out that failure of the seals could have resulted in siphoning off of the plane's fuel by the slipstream during some future flight. The unhappy result could have been a forced landing or worse.

In a grateful letter to the Administrator, Angers declared he was "extremely pleased that one of your employees took the time to spot check my aircraft and advise me of the correction to be made. I wouldn't have picked this thing up on my own in a hundred years."

This is only one example of how the agency's 223 general aviation maintenance inspectors are helping to "spot accidents before they happen."

Although responsible primarily for overseeing maintenance work and carrying out accident investigations, maintenance inspectors spot check aircraft in accordance with a work plan.

If neither the pilot nor owner is on hand at the time the inspector checks the plane, he will confine his inspection to an external look over. If he spots anything wrong he will leave an Aircraft Condition Notice on the door. If the pilot or owner can be located, the inspector will suggest a thorough check of the cockpit and engine.

An FAA inspector's eye may be no sharper than a pilot's, but his background and his attitude are considerably more safety-oriented. An inspector is in no hurry to get airborne and is under no pressure to get somewhere precisely on time. Such "time pressure" has brought many a pilot to grief. An inspector who has recently investigated an accident caused by an oil-starved, overheated engine or a smooth tire which blew out on landing becomes particularly sensitive to such telltale signs of "accidents-to-be" as worn treads or suspicious cowling discoloration. He sees in such things portents of possible tragedy, injury and destruction.

Inspectors often develop a "sixth sense" about things that can go wrong on an airplane. They are

constantly on the lookout for planes showing such external symptoms of neglect as worn tires or fuel leaks.

They carefully study "Flight Standards Maintenance Trends," a computerized readout summarizing reports of maintenance problems sent to the Aeronautical Center from maintenance stations, inspectors and others. The "Trends" report reaches GADOs regularly and alerts inspectors to the type of aircraft in which problems are showing up, and the precise nature of the problems which affect aircraft throughout the country.

Armed with such special information, the FAA inspector keeps on the alert for specific malfunctions in specific models of aircraft.

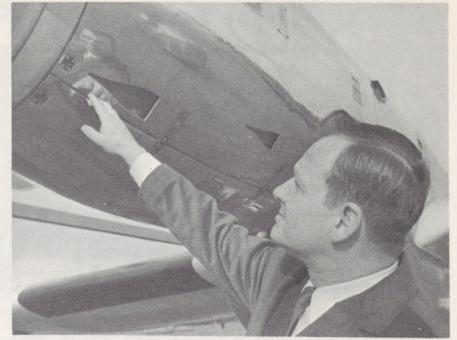
FAA maintenance inspectors come to their jobs with at least seven years of experience as mechanics plus experience at the foreman-supervisory level. In addition they receive five weeks of indoctrination training at the Aeronautical Center as well as supplementary on-the-job training at a GADO.

Whenever possible, an inspector visits plants turning out aircraft and aircraft components to get a look at new planes and equipment.

With such a background, it is no wonder that an inspector is able to spot "accidents about to happen." Signs portending danger are often overlooked even by conscientious pilots making preflight checks. Although the inspector is a man on the go, when he inspects an aircraft, he goes over it with a fine comb.

Giving guidance to inspectors in the field are personnel of the General Aviation Maintenance and Avionics Branches which are units of the Maintenance Division, Flight Standards Service. Maintenance Branch Chief Sam J. Corso explains that these branches provide the programs for the General Aviation District Offices in the form of directives. These directives specify what work should be done, how often inspections should be made and the manner in which they should be carried out. Through the Standard Procedure for Uniform Reporting program, these branches also analyze reports on work completed. Chief of the Avionics Branch is James L. Hemingway.

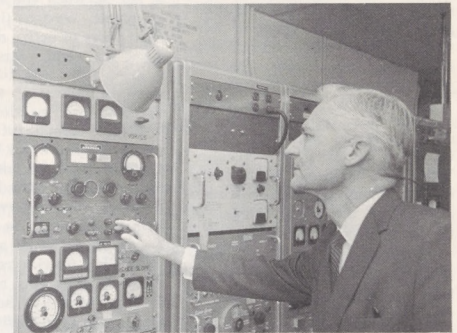
Maintenance inspectors have a vital aviation safety role to play and each of them makes daily contributions to the agency's goal of accident-free flying.



Checking engine access panels on a shiny Gulfstream is Inspector Edward Mulik of the Washington Flight Standards District Office.



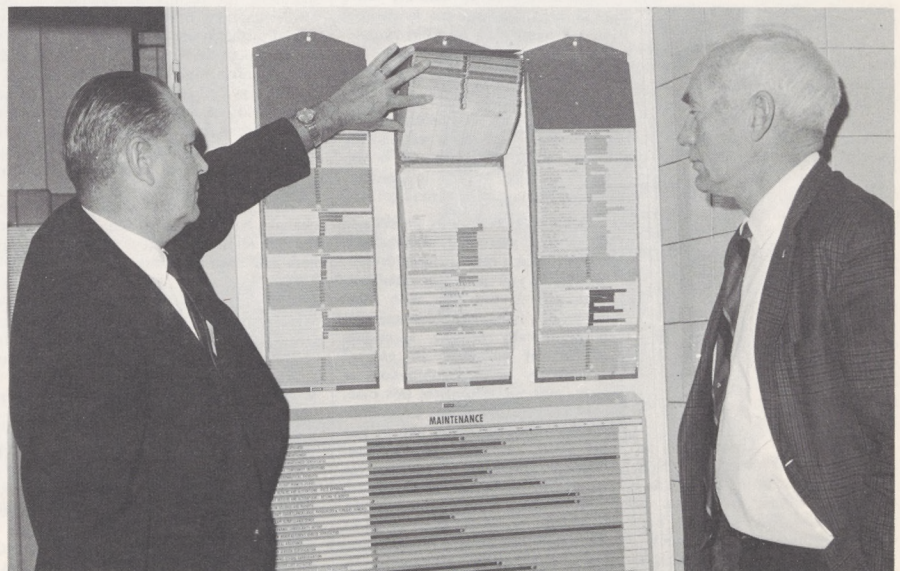
General Aviation Maintenance Inspector Douglas H. Kline of the FSDO in Washington gets down to take a look at the business end of a retractable landing gear.



Getting ready to test electronic equipment in the lab is Avionics Inspector Glenn R. Colvin of the Washington FSDO.



General Aviation Maintenance Inspector William E. Deeth of the FSDO in Washington runs through the check list during a cockpit inspection of a light twin, and he . . .



. . . reports to his boss, Jay A. McCausland, Supervising Inspector of the FSDO. The board is called the SPUR board (Standard Procedure for Uniform Reporting), informally known as the "Howgozit" board. The board enables McCausland to tell at a glance the status of an inspector's duties.