FAA HORIZONS

JANUARY 1965

OFFICIAL EMPLOYEE PUBLICATION OF THE FEDERAL AVIATION AGENCY

EDITORIAL:

True Course for '65

The direction of our efforts in the New Year of 1965 is set by two events: the conclusion of the rapid expansion of our Agency and the demands of contributing to the building of the Great Society—the goal of the new Administration of President Johnson.

We have—all of us—for the past few years been concerned with creating the Federal Aviation Agency, staffing its organization, determining its objectives and setting up techniques for achieving those objectives. It has been a time of growth and change—a time for the new and the different. The time of preparation, the time of beginning, is over. Our concentration must now be on raising productivity, improving efficiency, and controlling the costs while inspiring creativity.

This turn—this inevitable development in our growth—will be accented by the leadership of President Johnson. He has many times made it unmistakably evident both in public statements and in talks with his staff and with agency heads that he requires performance. It is no secret the President is a demanding man who drives himself and expects the same from those around him. It is his requirement that when the Government expends its funds, energies or time in any endeavor, that endeavor shall show a suitable return to the American people. There is no one who can challenge this prerequisite.

Some will react to the hard tasks of 1965 with less than joy. To them, this future of mature prudence seems fairly unexciting and perhaps even a little grim. I think that with a little reflection most of us will, in fact, find it otherwise. The only basic and lasting satisfaction from work is high accomplishment and spirit—the conviction that because of one's effort, something moved, something was improved.

N. E. Halaby
Administrator

This knowledge should become doubly satisfying to us in FAA when we remind ourselves of the significance of our operations. Because of what we do, the aviation industry moves. Because each of us does his work and performs his daily tasks, the many millions of our air travelers arrive at their destinations safely, and many individuals, families and corporations enjoy the airspace. We are deeply involved and contribute directly to a very significant element of the American economy.

Again, it is imperative that we realize that though the period of FAA expansion is over, there must be no cessation of discovery, invention or creativity; no end of daring and dissent. There is no single phase of our operations that can not be bettered. We are, in truth, only entering the aviation age. Our manufacturers are turning out magnificent aircraft—efficient, speedy, dependable planes which are making their mark all around the world. But the industry has not had time to catch up. Our supporting systems lag and we find ourselves operating four-engine jets in a one-engine piston environment. There is much to be done, much to be learned, much to be discovered.

Finally, there will be the satisfaction of being part of the FAA organization. I am not sure why—perhaps because aviation is in itself a spirited career or perhaps because we are a relatively young agency—but whatever the reason, ours is what my daughter might describe as a real swinging outfit. I have learned from my trips that our people are, by and large, talented and dedicated and seem to enjoy their work. This is not unimportant, for in my book, morale is everything. FAA people are fun to work with.

We, in FAA, can, then, look forward to a busy, adventurous New Year—a New Year in which many good things will happen, many problems will be solved and many challenging prospects fulfilled.

N E Halaby

FAAHORIZONS

JANUARY 1965

FEDERAL AVIATION AGENCY

NAJEEB E. HALABY
Administrator

LT. GEN. HAROLD W. GRANT
Deputy Administrator

CHARLES G. WARNICK
Director,
Office of Information Services

MARSHALL C. BENEDICT
Chief,
Employee Information Division

THOMAS J. WHOLEY
Editor

MURRAY NATHANS
Art Director

News and feature stories appearing in FAA HORIZONS which highlight regional personnel or the various aspects of regional activities are prepared by Regional Public Affairs Officers and members of their staff.

FAA HORIZONS, the official employee publication of the Federal Aviation Agency, is published monthly by the Employee Information Division in the Office of Information Services. Articles of general interest pertaining to employees on an Agency-wide basis are welcome. They should be addressed to: Editor, FAA HORIZONS, IS-40, Federal Aviation Agency, Washington, D.C. 20553. Tel. No.: WO 2-5574.

CONTENTS

2 TRAINING FOR THE UPPER LEVELS
5 THEY ROLL THEM AROUND AT NAFEC
6 FLYING CLUBS TOPS WITH FAA
8 BOOMSVILLE, U.S.A.
9 NEW DF MAKES 1ST SAVE
10 NO LITTLE GRASS SHACK
12 THERE'S NO BUSINESS LIKE SHOW BUSINESS
13 MODERN AIR TRAFFIC
16 FAA NEWSREVIEW
24 ON THE SCOPE
25 AFTER HOURS
26 PERSONNEL PIPELINE
27 TECH TALK
28 YOUR HEALTH . . . AND SAFETY
29 TO TAME ENGINE FIRES
30 FAAers ON THE JOB

COVER:
Bernard J. Vierling, director of FAA's Systems Maintenance Service, received an Economy Achievement Award from President Johnson for saving the Government more than $8 million in FY 1964. The citation, read by Administrator Halaby, stated that during that period production increased by six per cent. *(Civil Service Comm. Photo)*

TRAINING FOR THE UPPER LEVELS

An ear-splitting explosion ripped through the rarefied air of the cabin, and 20 airmen calmly placed oxygen masks over their faces. A white vapor clouded their vision, but no one panicked.

Tony Page, a well-known woman pilot and aviation editor, started involuntarily at the noise even though it was expected, but she regained her composure immediately and glanced at the altimeter. The needle was spinning dizzily, indicating a rapid climb. In less than 20 seconds the indicated cabin altitude climbed from 8,000 to 29,000 feet. Air was rushing *out* of the cabin, and the air pressure would soon indicate reaching an altitude almost six miles above sea-level.

At this altitude, a pilot without oxygen would become unconscious in less than a minute. The lowered pressure at this altitude could have many serious effects: hypoxia, hyperventilation, dysbarism, spatial disorientation.

Thoughts of these uncomfortable effects and loss of cabin pressure didn't disrupt Tony Page's calm. For one thing, a doctor who was an authority on just such problems was in the cabin with her. Besides, the cabin which she and the 19 other pilots occupied was firmly anchored to Oklahoma ground all during the time the altimeter recorded drastic changes of altitude and the air around it took on the characteristics of the indicated altitude.

Dr. Harry L. Gibbons, Flight Surgeon for FAA's Southwest Region, had arranged the whole thing. It was part of a two-day course he has set up for general aviation pilots who fly—or are interested in flying—the new executive jets and other high performance general aviation aircraft which are becoming commonplace.

These new aircraft, which operate at altitudes formerly occupied mainly by military and commercial transport planes, were creating a training requirement for general aviation pilots which wasn't being met by everyday flying experiences.

Dr. Gibbons decided to do something about it. With the help of FAA's Civil Aeromedical Research Institute (CARI) at Oklahoma City, he set up a two-day session for interested pilots of the Southwest Region. It was the first time that physiological and oxygen familiarization had been offered to private and commercial pilots in general aviation. Twenty pilots, including three women, were participants in the first of these two-day sessions. Other courses will be offered on an as needed basis throughout the five-state region.

Dr. Gibbons opened the course with an explanation of the flyer's total environment. The physical nature of the earth's atmosphere was outlined so the students could understand the physiological problems related to exposure to altitudes higher than those in which the human organism evolved.

Summarizing the basic anatomy and physiology of the repiratory and circulatory systems, he reviewed their fundamental components, the characteristics of the heart and blood vessels and the oxygen carrying mechanisms. This gave the

Air Force Captain Pendergrass, (above) was in command of the "flight." Equipment and sensations to anticipate were explained by Joshua S. Mann and John W. Fitch in chamber.

Watching carefully for the effects of high altitude on his students, Dr. Harry L. Gibbons (left, below) briefs them on what to anticipate while Mann and Fitch "fly" the pressure chamber to 29,000 feet.

"Which way is up?" asks Capt. George E. Pendergrass as he briefs a student (left) on the effects of vertigo during spins. Above Tony Page is briefed on oxygen by J. L. Black.

class an understanding of how the different parts of the body work in conjunction with one another.

Cooperating with Dr. Gibbons in the presentation was Air Force Capt. George E. Pendergrass of FAA's Physiological Support Services. Others assisting in the lectures included CARI staff members, J. L. Black, oxygen equipment specialist, and Dr. Paul W. Smith, biochemist.

The development of high-performance aircraft, it was explained to the group, led to the development of such aids as artificial oxygen supply and pressurized equipment for use at extreme altitudes. Crew members need to be thoroughly familiar with them.

Today, the high-flying general aviation pilot is concerned with two atmospheric divisions, the lecturers explained. The first is that area of the atmosphere to which man's body is adapted—the airspace from sea level to approximately 12,000 feet. From aviation's beginning until WW II, pilots mainly operated in this zone and experienced only minor physiological changes, such as middle ear and sinus difficulties.

The second zone extends from 12,000 feet upward to 50,000 feet where man is in an environment to which his body is unaccustomed. This is the area where more and more of today's flying is being done.

The lecturers carefully explained all the medical and physiological terms which the pilots had recalled during the demonstration of "explosive decompression" simulating loss of cabin pressure at high altitudes.

Hypoxia, or oxygen deficiency, is as dangerous as alcohol, as insidious as carbon monoxide. This symptom of high altitude flight creeps upon a pilot without warning and even camouflages its dangerous effects by first bringing on a feeling of well-being and bravado similar to the effects of alcohol.

Hyperventilation, or the effects of rapid, shallow breathing sometimes develops in an oxygen rare atmosphere.

Dysbarisms, commonly known as the "bends" or decompression sickness was described as the effects of nitrogen bubbles which develop in the blood in a manner not too dissimilar to boiling.

Many of the characteristics of outer space are present, Dr. Gibbons explained, at altitudes above 50,000 feet. Above 60,000, blood and body fluids would boil without artificial pressure such as a pressurized cabin or pressure suit, and above 120 miles all of the characteristics of space are present.

Other less exotic physiological effects of flying described included the characteristics of noise and vibration found in the flying environment. Drugs and alcohol and how they affect the flyer were explained, and spatial disorientation or vertigo was covered along with other illusions which develop as a result of visual, motion and psychological stimuli which are not normal to the earth-bound environment. The students even learned ways of minimizing the effects of isolation and how to offset the interruption of the normal day-night or "diurnal" cycle which results from long trips at high speeds.

Highlight of the program, for even veteran pilots, was the altitude pressure chamber flight and the subsequent decompression.

The land-locked "flight" ended with a bang but no bust, and thanks to the training, the same thing would happen in actual flight.

When the unknown is explained, the fear and panic vanishes. When understanding is coupled with training, lifesaving reflexes become automatic and man remains the master of the machine. And high altitude flying is safer. ■

Sheila Scott of London was among the 20 students to receive certificates attesting to their receiving an FAA physiological indoctrination course. Captain Pendergrass (center) and Dr. Gibbons awarded the certificates.

THEY ROLL THEM AROUND AT NAFEC

Wheels for Wheels might be a good slogan for Leonard J. Appell to hang over his desk. But it would represent only one of the routine functions of his office—even if it is the most interesting. Appell is foreman of the Automotive Equipment Section at FAA's National Aviation Facilities Experimental Center (NAFEC), Atlantic City, N. J.

Prominent visitors flock to the Center from foreign countries, as well as from industry and Government, to learn what is new in air traffic control, navigation, airports, aircraft safety or aviation weather. Moving them around the 5,000-acre spread takes an efficient transportation system. Efficiency at NAFEC's motor pool is the product of good maintenance and versatile drivers.

Len Appell likes to boast about the versatility of his drivers. One could be chauffeuring a dignitary one hour, and driving a $40,000 snowplow over a runway a short time later. The pool's 250 vehicles make it necessary for each driver to be proficient on a wide variety of mobile equipment ranging from passenger cars to trucks for Center maintenance and flight line operations.

At the motor pool garage, the mechanic is kingpin, according to Charles P. Donovan, chief of the section. "With the variety of vehicles we have, our mechanics are thinkers, not switchers of replacement parts," he reports. Many of his men are graduates of special courses conducted by equipment manufacturers.

Donovan also points out that some trucks have other types of power units aboard; for example, hydraulic lifts, winches, pumps, etc. His mechanics repair these items, too. They also maintain other mobile units, such as air compressors, generators, and jet starters. "When you realize that the call for some of this equipment is frequently on a semi-emergency basis, you know our mechanics must be the best. We cannot do our job otherwise," Donovan says.

With professional drivers and expert mechanics handling the equipment, the safety record at the Center is correspondingly good.

Keeping track of all equipment and required preventive maintenance checks can be complicated. John E. Fowler, transportation clerk, does the job by using huge peg boards which show at a glance the current status of all equipment and required periodic checks.

Other duties of the section are licensing new drivers and investigating accidents involving Government vehicles. ■

A truck-mounted snowplow is among the many vehicles driven by men of NAFEC's motor pool. To go from this to a staff car is normal.

Inspecting a new engine are Craig H. Stewart (left), mobile equipment repairman, and Maurice Campbell, lead foremen of the garage.

Charles P. Donovan, chief of automotive equipment, stands in the bucket of a multi-purpose electrical line maintenance bucket truck designed at NAFEC. It is a combination of the chassis and parts of many vehicles. The bucket is insulated to withstand 80,000 volts.

The workhorse of the flying training program is this Cessna 150. Most students move up to the Cessna 172, but they still get time on the Aeronca to learn the characteristics of conventional tail-wheel types.

This Mooney Mark 21 is the most popular plane for long trips. Purchased in a damaged condition, it had only 100 hours flight time, so members restored it to new condition and added navigation equipment.

Nine of the eleven men on "Pick up the New Airplane Day" are (from the left) Everett Swearingen, credit union representative, and members Gerald W. Cloud, Bernard O. Whitford, Gerald S. Holiday, Roy L. Mills, Miguel H. Ferdin, Robert A. Johnson, Bob B. DeGroat and Harold Krueger.

FLYING CLUBS TOPS WITH FAA

Threatening weather failed to dampen the enthusiasm of several members of the Aeronautical Center's Flying Club when it came time to pick up a new Cessna from the factory in Wichita. Nine club members and one representative of the employee Credit Union, together with the local Cessna dealer, flew three aircraft to the Wichita site to pick up a 1965 model *Skyhawk* at the delivery center.

Such enthusiasm for flying club activities is not unusual. At least 350 FAAers are advancing their flying skills through eight Agency clubs which have applied for and received official sanction under ground rules established by OA 3710.4 dated Mar. 3, 1964.

The new *Skyhawk* was the eighth plane purchased by the five-year-old FAA Flying Club, Inc. at Wiley Post Airport. Starting with a damaged Cessna *170*, successive trades and purchases have resulted in the present five aircraft which include an Aeronca, a Cessna *150* and a *172*, the new *Skyhawk*, and a Mooney *Mark 21*.

The first three listed are used extensively for training. Each Cessna logs approximately 100 hours per month with some 60 hours logged on the Aeronca. The 75 club members keep the remaining ships busy on cross-country flights, logging about 75 to 100 hours monthly on each.

Membership in the club is limited to 75 at the present time, and the quota is now filled. Talk about new members and more equipment is now being bandied about, and additional members may be accepted in the near future. Only one FAA flying club has more members. This is the Washington, D. C. Club with 100.

Membership in the Oklahoma organization costs an initial $50 fee plus a fixed monthly charge of $10 for dues. Aircraft are rented on a "dry" basis with users supplying gas and oil. Fees per hour for the club planes are as follows: Aeronca—$1.50; Cessna *150*—$2.00; Cessna *172*—$3.00; *Skyhawk* and Mooney *Mark 21*—$4.00.

In the Washington Club the Cessna *172* rents for $13.50 "wet," and in Atlanta, the Cessna *150* costs the club member

Not all flying club activities take place in the air. A third of the members participate in a monthly breakfast business meeting.

$6.00 per hour "wet." While differences in monthly dues and initiation fees account for some of the differences in hourly rates, the Oklahoma City club provides flying for its members at, by far, the lowest net price of any of the FAA clubs. Their secret lies in the fact that members do almost all of the maintenance, and the club owns its aircraft, thanks to a unique arrangement with the Credit Union.

Each member, in addition to his initiation fee, obligates himself to the Credit Union for a line of credit of approximately $400 which is used to purchase club aircraft. The Washington club rents its planes from a fixed base operator who provides all maintenance, scheduling, and other services and guarantees new aircraft every 600 hours.

Twenty-two students at the Center are now vying for the available training aircraft which makes scheduling somewhat tight. Students get first choice in trainers but have to wait their turn for other aircraft. Scheduling on the cross-country aircraft can be as much as two months ahead.

Aircraft are scheduled by a private firm which accepts calls on a 24-hour basis. When the new *Skyhawk* scheduling began right after midnight on Nov. 5, the man who called in at 12:01 A.M. was second in line. Such is the fierceness of competition between members for the aircraft. One member stranded in Wichita on the *Skyhawk* pick-up made a long-distance call to be among the first to schedule the new plane.

Members of the Oklahoma City Flying Club are now located in every FAA Region in all parts of the world. Once a member, always a member, is an axiom come true here. The first $50 is not refunded when a member leaves the Oklahoma City area, but should he return, he needs only to pick up the current month's dues to qualify again as a member in good standing. This fact is unheard of in most flying clubs. However, reciprocal memberships among FAA flying clubs is under study.

There is no "typical" member. Experience varies from beginners to several with over 10,000 hours. Some fly for a living with the FAA. Others have no connection with flying at all. Ratings held by members range from gliders to ATR with multi-engine jet qualifications.

Club aircraft are put to a variety of uses. The most common is the cross-country for annual leave purposes. Some pack up the wife and kids each year and take-off for a week or two of sunny weather in Florida or California. Some go northward during the summer months to vacation in the northern states.

The first club aircraft, a Cessna *170*, was purchased in September, 1959. It needed a major engine overhaul plus repairs due to hangar damage to wing and tail surfaces. It took the members several months to put it in first class flying shape, but the presence of some good A & P mechanics on the rolls helped in no small measure.

Other aircraft owned and worked over by the club (and flown, too) include a *140*, a *182*, and the present *172*—all Cessnas.

The Mooney *Mark 21* was purchased in June, 1963, and the club finally added a tail-wheel aircraft for the present crop of flyers last August when the Aeronca was added to the inventory.

There are ten instructors at the present time, seven of whom are qualified instrument instructors. Maintenance personnel number six qualified A & P mechanics with many others willing to lend an extra hand.

Club officers are Bernard O. Whitford, electronic specialist, FS-863, president; Luther M. Lott, electronic technician, FS-867, vice-president; Gerald W. Cloud, electronic equipment specialist, FS-854.1, secretary; Gerald S. Holiday, electronic equipment specialist, FS-854.1, treasurer; Allan W. Hunting, general aviation operations specialist, FS-905.1, operations officer and Bob Byron DeGroat, flight engineer, DC-6, PT-956.6, maintenance officer.

Formation of flying clubs by Agency employees is encouraged, and considerable assistance in overcoming problems of organization is offered by the Office of General Aviation Affairs at headquarters in Washington, D. C. ■

Con Fortissimo et Sostenuto!

BOOMSVILLE, U. S. A.

Oscuro Range Camp at the White Sands Missile Range, N. M., is a wild sort of spread that would set an old-time cowboy talking to his horse.

It has all the earmarks of an abandoned ranch that somehow fell in with fast company in its fading years. Its weather-beaten farm house, outbuildings and dried-out cistern mingle uncertainly with a motley collection of modern buildings including four single-story structures, one two-story house, one prefabricated dwelling—and a greenhouse. A 40-foot trailer completes this unlikely scene.

And the neighborhood is noisy, as well it might be since this is the site of the Agency's two-phase sonic boom tests to determine the effect of high overpressures on typical American structures. The first phase, which began on the afternoon of Nov. 18, when a Holloman AFB F-104 boomed the "town" in three successive passes, ended Dec. 17. The second phase is scheduled to run from Jan. 5 through Feb. 4, 1965.

During the study, as many as 30 boom runs a day will be made with the level of intensity being increased at planned increments from two pounds per square foot to a maximum of 30 pounds per square foot. In the tests conducted over Oklahoma City from Feb. 29 through July 30, scheduled overpressures ranged from 1.0 to a maximum of 2.0 pounds. The scientifically controlled Oklahoma City tests yielded over 100,000 items of data in 1,252 runs.

The following have been invited by the Agency to participate or observe in the White Sands Missile Range tests: Civil Aeronautics Board; National Aeronautics and Space Administration; Veterinarian Service, USAF; representatives of the insurance and building materials industries; and representatives of the British and French governments.

Site manager is Lieut. Col. David C. Lilliard, USAF, of the Office of the Deputy Administrator for Supersonic Transport.

In announcing the tests Gordon M. Bain, Deputy Administrator for Supersonic Transport Development, noted that this country has been conducting sonic boom tests for about nine years and has subjected selected persons to overpressures up to 120 pounds with no adverse effect.

The current series, like the Oklahoma City tests, are being conducted under the strictest scientific discipline. The inquiry will probe in detail five major areas of interest:

- response of a variety of structural components to varying sonic boom overpressures.
- determine, as precisely as possible, boom magnitudes that will crack or break various sizes and types of glass.
- sonic boom "triggering" effects.
- discover standards relating overpressures to incipient or progressive damage to various structural components.
- sleep interruption through limited night booms at nominal SST cruise overpressures.

(Design objectives for the United States supersonic transport specify boom maxima of 1.5 pounds during aircraft cruise and 2.0 pounds during acceleration to supersonic speed at lower altitude.)

In the initial phase of the test 110 channels of instrumentation were used. Twenty, including two instruments suspended from tethered balloons at 50 and 100 feet, measured pressures. The remainder were strain gauges of various types. Though very complex, the instrumentation was set up at different points to obtain a wide spectrum of information.

The direction which the second phase of the series will take will be determined by lessons learned during the first. The program is not fixed in a rigid frame but is flexible and can be altered to accommodate changes indicated by new knowledge.

The aviation community world-wide has its eye—and ear—focused on the little village in the desolate expanse of the White Sands Missile Range. The noisiest neighborhood in the West is destined to become a landmark in aviation history. Long after the desert reclaims it, engineers will check their theories against the facts developed at Oscuro Range. ■

NEW DF MAKES 1st SAVE

A strange antenna with the impressive name of Doppler made aviation history recently when its electronically turned fingers pointed the way to safety to a pilot over rugged Alaskan terrain.

The new VHF-UHF direction finder at Kenai Flight Service Station—first of its kind to be installed in the United States—recently was put through its paces when it made its first aircraft save in Alaska.

Pilot Richard L. Clark of Anchorage, flying a single-engine aircraft with nearly dry fuel tanks, one night called, "Kenai Radio, this is *Pacer* Eight Five Three One Kilo. I'm lost and in the soup with 30 minutes of fuel remaining. Can you give me a steer to Kenai?"

"Roger *Pacer* Eight Five Three One Kilo. Give me a short count," answered John H. Hummell, facility chief at Kenai. The pilot counted. Hummell's eyes watched a green strobe of light as it streaked from the top of the azimuth ring to the center of the cathode ray tube.

"You're north of Kenai," Hummell radioed. "Take up a heading of one eight zero degrees. We'll be able to bring you over Kenai Airport to an altitude of 600 feet. Present ceiling is 900 feet broken with visibility three miles."

Thus did Hummell and the station's new direction finder bring the distressed aircraft to a safe night landing in poor visibility.

The doppler DF at Kenai, operating in the VHF and UHF bands, is an improved version of older remote indicator control equipment which was more complicated and slower in operation.

The doppler equipment, at Kenai, brings aid to the pilot faster and with greater reliability. Its heart is a group of antennas arranged in a ten-foot circle.

The individual antennas of this system are activated electrically by alternately switching them in pairs to introduce the effect of movement.

Fundamentally, any radio signal picked up by a moving antenna will change in accordance with Doppler's principle. To illustrate the doppler effect, you have probably noticed that a continuously sounding automobile horn seems to increase in pitch when the car is approaching you and suddenly drops in tone when it is going away.

This same principle is used in direction finding by receiving high frequency radio waves from an aircraft. The signal will show an appreciable doppler shift as it strikes different components of the antenna, and the amount of this shift indicates the location of the target.

The minimum basic equipment a lost pilot needs to receive a "steer" to the station is a radio transmitter and receiver in his aircraft. Each time the pilot transmits, a slash of light appears on the DF scope indicating his bearing to the station.

Harold F. Consaul, chief of the Operations Evaluation Staff at Anchorage headquarters, says that "any pilot who can fly his airplane straight and level, and follow instructions, can depend on the DF equipment when he gets in a jam. It's too bad that so few pilots know about this service, or fail to request it until after it's too late."

The new DF's, which have made their first appearance in Alaska, will soon be installed in other locations in the "lower 48." This is another service provided by the Agency in an expanding air traffic control system to make flying safer. ■

The photographs on the opposite page, reading clockwise from upper right, show:

- Families and friends of employees gathered for a tour of the new building and an opportunity to hear the FAA Administrator deliver the dedicatory address. N. E. Halaby, who stopped in Hawaii for the occasion as part of a tour in the Far East, told visitors that the new building harmonizes with the concept that Federal employees should not be expected to perform with highest efficiency in sub-standard housing or drab surroundings.
- Secretaries Shirley Mercer, Thelma Picard and Barbara Sato, enjoy a beautiful office with excellent lighting. The modular design of the building permits the 75,400 square feet of floor space to be divided into areas 5 by 5 feet, each containing its own lighting and air conditioning fixtures. Under-floor telephone and electrical outlets are available in each module.
- A ninth floor lunchroom is still another employee benefit from the move. Mr. Halaby (left) and Robert I. Gale, regional director, are shown with Mrs. Emma Lines at the formal opening of the lunchroom. Mrs. Lines is manager of Sonnie-Gay, Ltd., which operates the lunchroom.
- Visitors enjoyed a lively program emceed by the popular producer and radio personality, Webley Edwards. In addition to fly-overs, exhibits, tours and speeches, the program included concert music provided by the Air Force Band of the Pacific and the Civil Air Patrol Band. The CAP drill team, shown in action, provided some first class close-order drill demonstrations.
- Patterned closely after ceremonies which might take place in any of the 50 states, this one still had its unique Hawaiian flavor of traditional leis. Hawaii's Representative Spark Matsunaga (left) is shown next to lei-adorned, Region Director Robert Gale. Continuing from left is Senator Dan Inouye, Governor John A. Burns, Administrator Halaby and Admiral U. S. Grant Sharp, Military Commander-in-Chief, Pacific.

NO LITTLE GRASS SHACK

To the accompaniment of the traditional Hawaiian good luck omen of gently falling rain, the Pacific Region dedicated its new ten-story office building at the edge of world-famed Waikiki in Honolulu in early November.

A strong resemblance to Agency headquarters in Washington is evident in the photograph *(opposite page)*, but more than beauty and uniformity was achieved by the move.

The new building met a pressing need for employees of the Regional headquarters who had been squeezed into cramped quarters in four separate locations. Five floors and a portion of another in the Hawaiian Life Building were used by the nucleus of the Director's staff. The fourth floor of the King Center Building, a mile from the Director's office, was used by Air Traffic and Accounting. Portions of two floors of the American Electric Building, nearly two miles from the Director's office—in the opposite direction—were used by Flight Standards and Audit. Defense Readiness was sandwiched in with Systems Maintenance in the Professional Center Building annex, also a mile from the Director's office. Administrative Services was divided into two locations a mile apart.

It was necessary to utilize teletype service among the offices in order to insure timely delivery of communications. The move cut down on the number of extra telephone circuits necessary to connect the widely dispersed offices, but the savings in Government cars was even more evident. The Region was able to turn in 25 per cent of the assigned cars to General Services Administration.

From the invocation by Rev. Dr. Abraham K. Akaka to the presentation of the building's keys by GSA Regional Administrator Thomas Hannon, the program was a success.

Government Services Administration leases the building for FAA from Ed Klein Associates for $215,365 per year. ■

There's No Business Like Show Business

The pilot is "caught in the soup" somewhere over Spokane. He is running low on fuel, unsure of his location, and having difficulty interpreting his instruments. After agonizing moments, men in three FAA facilities guide him safely and skillfully to a landing at the only available airport. But it's only an act.

The pilot's dilemma is being reenacted with increasing frequency throughout the Northwest by means of a dramatic educational skit presented by air traffic control personnel from the Spokane Tower and adjacent RAPCON and flight service station. Utilizing suspense, dialogue and touches of humor, they convey a lesson in flying safety that has all the impact of reality. In so doing, the relationship of the facility to the pilot is clearly and forcefully presented.

The cast includes Raymond C. Daves, Milton O. Sirois, Charles G. Starr, Richard N. Caldwell and Joseph P. Malloy of the RAPCON located at Fairchild AFB, and Kay D. Schuster, controller at the Spokane Tower.

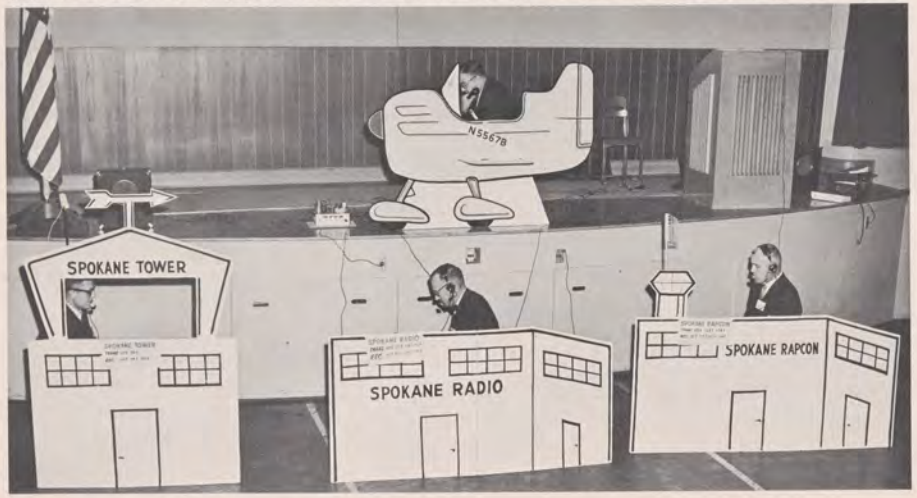
RAPCON Chief Roy G. McElroy, who was instrumental in launching the program after seeing a similar presentation in San Francisco, points out that it is designed primarily as an "ice breaker" to gain audience participation in the question-and-answer sessions which follow.

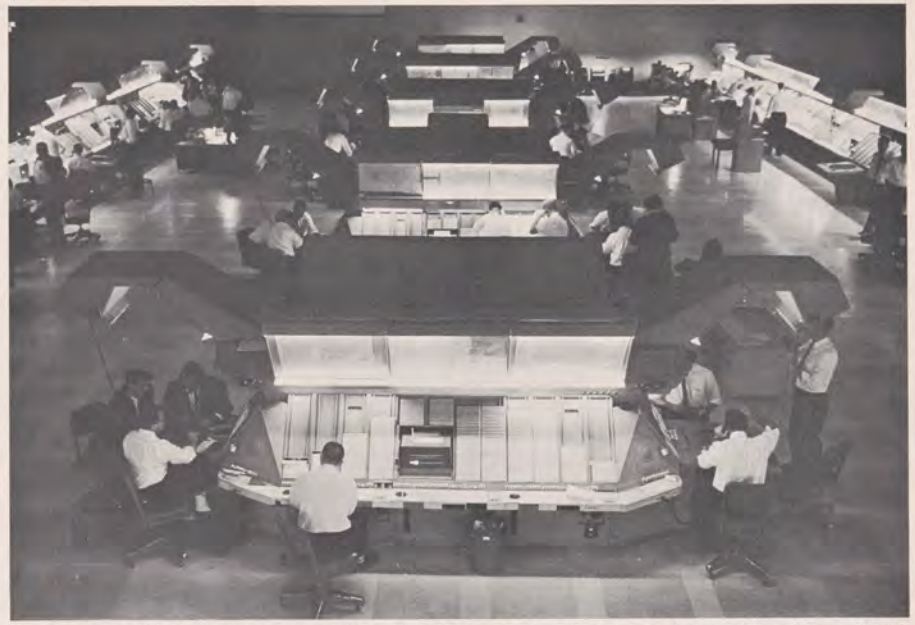
"Strangely enough," McElroy says, "many pilots seem unaware of the FAA services available to them, and the skit strikes a responsive chord. After every showing, pilots mingle with our controllers and describe similar situations they have experienced. Many say they would have been spared much uncertainty if they had seen this skit while learning to fly."

In addition to writing the script, the ATC specialists at Spokane built the props, put together the public address system and made recordings of background sound effects.

Since first put on before the footlights a little more than a year ago, the skit has been given at high schools and before civic clubs and pilot seminars in and around Spokane, Ritzville, Yakima, and Ephrata, Wash., and Coeur d' Alene, Idaho. Copies of script, sound effects and prop diagrams were sent to the Boise Tower and Cheyenne combined flight service station/tower for use in those areas. Wherever shown, it has evoked favorable comment and publicity. ■

Spokane air traffic controllers with props, sound effects and a dramatic script, give pilots better understanding of FAA's role in assisting them.





Operating Area, New York Center. There are more than 200 controllers, plus a large contingent of maintenance technicians, who are on duty around the clock.

MODERN AIR TRAFFIC

Men and Computers in Action

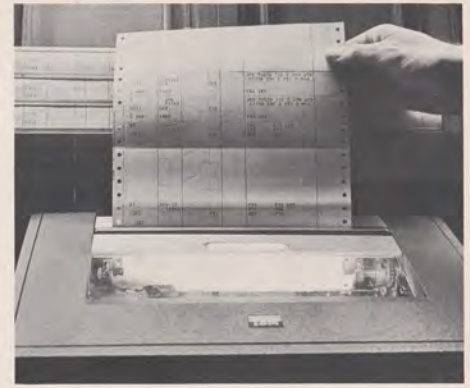
Day and night a never-ending stream of flight information pours into and out of the New York Air Route Traffic Control Center in a smoothly efficient partnership of men and machines. The machines—electronic computers—do the administrative work; the men do the thinking. The combination adds up to safe separation of aircraft flying by instrument flight rules (IFR) within and beyond the Center's boundaries, for New York is one of the air's great thresholds and the constantly changing traffic flow requires the exercise of flawless judgment. The men, all expert controllers, can analyze a potentially dangerous traffic situation and ease it by advising a pilot to slow down, speed up, change direction, change altitude, or hold. On the other hand the machines can remember incredibly large amounts of data and transmit them at incredible speeds, neither of which any human, or group of humans, could hope to emulate.

As in all FAA's modern centers, the working areas are spacious and functional, walls and ceilings soundproofed. Major divisions are the Flight Data Area where the information is gathered and the Operating Area from where the traffic is controlled. Both are well lighted and there is nothing to indicate the miles of wiring concealed beneath the floors and the streamlined exteriors of the electronic equipment.

Heart of the computer system is the multiplexor, a component that handles both incoming and outgoing data and transfers it to and from the input and output machines. The format for filing is so established that the flight plan data must always follow a specific sequence. The multiplexor is so sensitive that the slightest mistake in filing is immediately detected and a warning signal flashed so that the error can instantly be traced to the source and corrected.

Every 24 hours, these machines process thousands upon thousands of messages. Flight plans originating in some 25

Far left: Automation coordinators monitor computer operation to insure optimum performance. Left: Assistant controllers enter flight plans into the computer system from input teletypes. Above: Overall view of the FLIDAP (flight data) area where information to be processed is first received. From here it is transmitted to control area.



Above: Flight progress strips are produced at the operating positions. Right: Center Chief, James Boyle. Below: Controlling high altitude air traffic. Left: Control sector for Caribbean and Atlantic routes. Bottom left: Controller transmits flight information directly into the computer from CUE keyboard. After the information is processed by the computer, CUE displays flash it on to other controllers concerned with the flight. CUE provides air traffic controllers relief from direct time-consuming voice and interphone coordination between sectors.

air carrier offices arrive by teletype in the flight data sector and are transferred into the computer by a controller. At the same time similar data are being entered directly into the system by six military bases, the adjacent domestic and international flight service stations, Eastern Air Lines, presently the only airline with this capability, and the ARTCC's at Boston, Cleveland, and Washington. This is called "on line" input, and it appears on a teletype at the flight data positions.

The computer automatically assembles the information and automatically prints it directly on to flight progress strips at the operating positions in the control room. These strips—rectangular slips of paper 8" long x 1¼" wide—carry the aircraft type and number, the flight number, speed, altitude, route of flight, and an estimated time over pre-determined positions along the entire route. The strips are taken from the machines and posted on a flight progress board, where the controller can see and determine the relationship of any particular aircraft to others flying at the same time in the same sector of airspace. (A flight of 250 miles might require two to 12 strips; a transcontinental flight, which might be handed-off between as many as seven centers, could require up to 75.)

A great deal of information not subject to change is prerecorded and held in the computer's "memory drum." This "remembered" information includes such information as the number of all the airways of concern to the N. Y. Center, their navigation fixes, the mileage between them and their junctions. There it waits until such time as it is integrated with data timely to a flight.

So far only four other ARTCC's are automated to this extent. These are Boston, Indianapolis, Cleveland and Washington where flight plans are recorded and the strips printed automatically. All are fitted with electronic devices known as CUE, for computer updating equipment. This is a comparatively new development that enables a controller to add data to that already in the computer—factors pertinent to a flight, such as departure times, true airspeed, climb and descent paths, and wind at various flight levels. Some of this he gets from pilots, some from control towers and flight service stations. After he has tapped it out on the keyboard CUE flashes it to other controllers concerned with the flight, and over FAA's 100 wpm teletype circuits to adjacent computer-equipped centers. This one action eliminates the tremendous and time consuming coordination formerly handled by telephone.

For the past two years a computer has been automatically transferring arrival data from the Boston Center to the Boston Tower and this program has recently been extended to New York, Washington, Cleveland and Indianapolis. When the semi-automatic air traffic control system (National Aviation System Stage-A) begins to operate, radar information will also be keyed into the overall computer system as a matter of routine. But regardless of automatic flight processing, the controller always will make the final decision. ■

VIERLING SAVES GOVERNMENT MILLIONS: RECEIVES PRESIDENTIAL AWARD

The United States Treasury is richer today by more than $8 million because Bernard J. Vierling, director of FAA's Systems Maintenance Service, is an economy-minded civil servant.

In ceremonies held last month at Constitution Hall in Washington to mark the 10th anniversary of the Government employees incentive awards program, President Johnson presented Vierling and 29 other equally frugal men and women with plaques commemorating their achievements. They were chosen from a Government-wide field of 150 nominees.

During FY 1964, FAA saved $8.1 million through new management principles and procedures instituted by Vierling for maintenance of air traffic and air navigation equipment, facilities and systems.

By developing and providing supervisors with methods for self-evaluations through continuing and progressive analysis of maintenance programs, he generated a high degree of cost consciousness and productivity incentive throughout the Systems Maintenance Service. Productivity rose six per cent in FY '64, the equivalent of 566 jobs, or $5.1 million.

The increase made it possible for Systems Maintenance to provide improved and extended services to the aviation industry and the general public without employing those additional 566 workers who otherwise would have been needed.

In a different area, approximately $400,000 a year in overtime payments was saved by revising a policy governing the emergency repair of equipment.

Improved maintenance schedules for the short range navigation system (VOR's) resulted in a reduction of 135 positions representing a savings of $1.1 million annually. This action permitted the reassignment of qualified technical personnel to other duties and positions. It not only used to the maximum extent these available skills and people but precluded the additional costs of recruiting and training new personnel.

Director of Systems Maintenance Service, Bernard J. Vierling, who was honored by President Johnson for saving the Government more than $8 million in one year. Vierling received Economy Achievement plaque.

Re-evaluation of planned equipment replacements saved $921,000; re-evaluation of inventories, requirements and distribution of special test and working equipment another $525,000.

In addition, an analysis of tactical air navigation (TACAN) performance made possible major reductions in the amount of equipment required to complete the TACAN system. Possible initial savings are estimated at $5.2 million and annual recurring savings at $379,000.

Vierling was appointed to his present position on May 29, 1962, following four months of service with the Agency as a consultant to the Administrator. During this period he assisted in developing the present organizational framework of the Systems Maintenance Service.

Vierling's aviation career spans almost three decades. It began in 1936 shortly after his graduation from Stanford University with a B.S. degree in mechanical engineering when he went to work for the Douglas Aircraft Company as an engineering trainee. During his three years with Douglas he worked first as a mechanic and lead mechanic on military aircraft, followed by a year as sales and service engineer. Later he was project coordinator for transport aircraft overhaul, modification and repair.

Later he headed his own corporation, Aircraft Advisors, Inc., and was president of the Aircraft Supply Corporation in Washington, D. C., a brokerage and supply house for aircraft, engines and parts. It also operated as a manufacturers' sales agent and distributor for Hiller helicopters. Vierling continued with the company until he joined the FAA.

Vierling is a native Californian and is one of the founders and a past president and life member of the National Aviation Club.

Top Philippines Aviation Official Visits

Emilio M. Asistores, assistant director of Civil Aviation for the Philippines, is shown being greeted on his arrival in San Francisco by Area Coordinator Thomas F. Dowling (left) and Donald J. Haugen, acting San Francisco tower chief (right). Assistores came to the United States to discuss communications matters with FAA officials.

1st COMBINED DME/ILS AT JFK

The first combined distance measuring equipment/instrument landing system (DME/ILS) was installed in November on Runway 4-right at John F. Kennedy International Airport.

FAA plans to commission six other combinations early this year in an evaluation program aimed at providing greater safety to aircraft in busy terminal areas. Some of the DME/ILS combinations will be located at the ILS glide slope; others at the localizer.

The current program is the first step in a plan to add distance information to ILS and terminal VOR facilities.

RETIRED, RECALLED — ALL IN A 15 MINUTE SPAN

Administrator N.E. Halaby congratulates Lieut. Gen. Harold W. Grant on the occasion of his Air Force retirement and immediate recall to active duty. Air Force Chief of Staff Gen. Curtis E. LeMay looks on.

Lieut. Gen. Harold W. Grant will long remember Nov. 30, 1964. On that day, and all within a period of 15 minutes, he received the Distinguished Service Medal from Air Force Chief of Staff Gen. Curtis E. LeMay, retired from the Air Force after 35 years of military service and was immediately recalled to active duty.

The citation that accompanied General Grant's medal stated that he had ". . . distinguished himself by exceptionally meritorious service to the United States in a position of great responsibility as Deputy Administrator, Federal Aviation Agency. . . ."

General Grant came to the FAA in February 1962 from the Air Force Communications Service which he helped organize and served as its first commander. Before that he had been Director of Communications-Electronics. He had also served as Deputy Chief of Staff, Operations, Air Defense Command, in charge of defense operations for the entire North American continent and thus head of all Air Force controllers as well as aircrew radar observers and interceptor pilots.

Under General Grant's direction, FAA's communications network, second only to that of the DOD, has increased in scope and efficiency. Today it includes approximately 188,314 miles of interphone lines between air route traffic control centers, airport traffic control towers, flight service stations, military radar approach control facilities and airline offices; 12,000 miles of remote control air/ground communications lines for direct communications between pilots and controllers; 60,000 miles of weather communications and a 56,586 mile teletype network.

Newly Assigned Military Officers Get Orientation at Headquarters

Fourteen Air Force, three Army, three Navy and two Marine Corps officers took part in the annual FAA orientation at Washington headquarters for newly assigned military personnel. Deputy Administrator Lieut. Gen. Harold W. Grant, the Associate Administrators, the Assistant Administrators and the Directors of the offices and services explained the Agency's various policies and programs. Trips were made to Dulles International Airport, the Washington Air Route Traffic Control Center and to NAFEC.

TV FOR SAFETY AT SALT LAKE

Increased traffic control efficiency and safety on the ground have been realized at the Salt Lake City Municipal Airport as a result of a new closed-circuit television runway surveillance system.

When a new terminal building was constructed at the opposite side of the field some distance from the runways, use of binoculars for visual surveillance became difficult.

A closed-circuit TV system, consisting of two television cameras, a control console, monitor, and more than two miles of coaxial and control cable was installed.

The cameras were placed on a small "tower-type" structure in the middle of the field and on top of the old terminal building. The tower camera has a zoom lens and a pan and tilt feature, permitting precise surveillance of runways and taxiways. The second camera has a fixed focal length with pan and tilt capability.

Using a control console and monitor, controllers can observe either picture merely by pressing a button. This remote control permits them to identify aircraft.

The ability of the controller to monitor traffic simultaneously from two locations minimizes the possibility of an airport accident.

Clear picture of flight line on this monitor at Salt Lake City Airport benefits controllers who can push a button to observe through two TV cameras.

Hospital Establishes Heliport To Receive Patients

St. John's Mercy Hospital of St. Louis took a step into the aerospace age recently with the help of FAA engineers who helped establish a heliport that can receive patients at any time by air.

Acting District Airport Engineer Herman M. Lindsey and Thomas Murphy, supervising inspector of the St. Louis General Aviation District Office, Central Region, helped the hospital select a proper site and make test landings. Obstacles such as trees, powerlines and buildings were considered and the heliport was constructed on one of several proposed sites. Pilot Murphy took Sister Mary Mercy on a helicopter ride to test the landing site and the hospital reports she still talks about the experience.

The site was given a full-blown test in a disaster drill. Fostaire Aviation Ltd. donated helicopters and pilots to fly simulated casualties to the hospital.

ANIMATED TRAINING BOARDS HELP INSTRUCTORS

W. L. Adams, air carrier maintenance specialist/instructor (at trainer) conducts a Lockheed *Electra L-188* aircraft systems class at the Aeronautical Center. The class includes (from left, first row): Leslie H. Carney; Richard C. Hall; Arvid L. Hansen; Julius N. Krenzien. (From left, second row): Kay D. Go; Soekamto Martosoedarmo; Sjufri Saleh; Soegiono Wignjosoesastro. In the rear of the classroom is Roy L. Ledden.

How does an instructor explain and illustrate to a class of engineers the mechanics of a hydraulic power system buried deep inside a big airplane?

If a picture is worth a thousand words, an animated training board is worth millions of them.

A number of such boards are a part of the Flight Standards training laboratories at the FAA Academy. Animated and back-lighted, they portray exactly what happens in the system when activated by controls in the cockpit.

Systems are inter-connected so that an instructor at the small extension panel attached to the right end of the rear panel can control the entire operation of the hydraulic power supply, landing gear, brakes and nose wheel steering systems. These are exact replicas of the actual systems concealed in the aircraft, and students can observe how they function.

The instructor can operate the system in a normal manner or can build in problems to challenge the students' ability to detect malfunctioning and take proper emergency action. This Academy course includes discussion of aircraft service problems, modifications or design changes, adequacy of airline maintenance and training programs and many other factors affecting public safety in international aviation.

Such animated training boards are also used in Air Carrier Operations Inspector training courses for inspectors who conduct pilot and flight engineering rating programs for airline flight crews.

These novel training aids provide the most effective training possible in 30 to 50 per cent of the time required to obtain comparable objectives by other means.

New Version of Plane of the 30's Certificated

The Alon *Aircoupe*, a two-place sport trainer first introduced in the late 1930's, is back in production. John A. Carran, chief of the Central Region's Engineering and Manufacturing Branch, presented a type certificate for the new version, called the A-2, at the Alon plant at McPherson, Kan., recently. The older model was known as the *Aircoupe*.

Major design changes include a sliding bubble-type canopy, better arranged instrument panel, and soundproofed interior. The new version will cruise at 120 miles an hour with a range of 455 miles and has a service ceiling of 17,300 feet.

Lafayette Tower Receives Plaque From Navy's Appreciative Pilots

Lafayette, La., Tower controllers recently received recognition for their excellent service—an engraved plaque from Navy Squadron VT-27.

In a surprise presentation, four S2F's landed at the Lafayette Airport and the Navy pilots staged their impromptu ceremony in front of the administration building. The citation read: "To Lafayette Approach Control for cooperation extended Squadron VT-27."

VT-27, based at nearby New Iberia Naval Auxiliary Air Station for several years, recently moved to Corpus Christi. Squadron training officers thought the plaque appropriate for the cooperation and assistance given their student pilots by the FAA controllers.

During the four-year period cited, the squadron trained many United States and foreign cadets. Both training officers and cadets met often with the controllers to discuss mutual problems. Flight instructors and cadets visited the facility to learn the operation of the approach control. In addition, controllers often assisted the student pilots on their training flights.

New Semi-Automated ATC System Explained In Southern Region

Jacksonville Center Chief James E. (Jim) Pound and Hal R. Culp, SMS supervisory electronics engineer and Southern Region Director Arvin O. Basnight (extreme right) study graph as James E. Dow, director, National Airspace System Special Projects Office, explains one facet of the new semi-automated air traffic control system (NAS) scheduled for installation in the near future at Jacksonville ARTCC.

Jacksonville Center will be the first to receive hardware developed by the Agency as a follow-on to the Project Beacon study which recommended an air traffic control system capable of handling demands of the supersonic era.

NOVOTNYS ARE FAMILY OF HIGH SPEED OPERATORS

The aquatic Novotnys ready to start a race. From left: Mike, who is acting chief, LaCrosse, Wis., FSS, daughter Joanne, Mrs. Novotny, and Mike Jr.

There are many things that families can do together, but the Mike Novotnys of LaCrosse, Wis., picked something unusual—high-speed boat racing.

Besides building their own boats, this sea-going family does all its own engine repair and a pretty snappy job of driving too.

Mike Novotny Sr., is acting chief of the LaCrosse Flight Service Station, a landlocked facility in northern Wisconsin, where, nevertheless, water sports are big sports. The whole family, Mike and Mike Jr., Mrs. Novotny and daughter Joanne, are experts at boat racing.

As a matter of fact, Mike Jr. drove the family's Class A hydroplane to overall fifth place in the world championship boat races last summer on Lake Spivy in Atlanta, Ga. The races were filmed by CBS television and shown later on the "Sports Spectacular." Mike Jr. survived qualifying and elimination heats to reach the top 15 eligible for finals in the race. He then ran in two heats of the finals, spinning out twice. He ran well in both heats and recovered well enough from one spin to place third, which qualified him for fifth place overall.

Mike Sr. has piloted hydroplanes for the past seven years and at times "showed some of the young whipper-snappers the way around the race course," but he gave the driver's seat to Mike Jr. for the Atlanta race. The Novotnys use methanol fuel with nitro methane and castor oil added. A gallon of this fuel is quite expensive and lasts about 4½ minutes at full throttle. The boat carries a 2½ gallon fuel tank. The Novotnys carry their four boats around the country on a special trailer pulled by a pickup truck with camper. They also can carry nine engines in the trailer. Normally they use four German-built *Konig* engines and the three *Mercury* engines for racing. The German engines, which develop 45 to 50 horsepower, skim the boats across the water at speeds of more than 75 miles on hour.

Last year the Novotnys traveled 18,000 miles during the race reason and ran in 19 regattas from Selkirk, Manitoba to Atlanta, Ga.

'Colonels' Thicker Than Birds In Some Sections of SW Region

If you are not using the title of "Colonel" in some parts of the Southwest Region, you will be conspicuous by the absence of your rank.

That, at least, seems to be the trend reflected in a recount of activities during October in Farmington, N. M., and New Orleans.

While attending the Second Annual New Mexico Aviation Conference in Santa Fe, Gerald R. Williams, Farmington Flight Service Station chief, was commissioned a "flying colonel and aide-de-camp" on the Governor's staff for his "outstanding contribution to the development of general aviation in the State of New Mexico."

It was a mass promotion to "colonel and aide-de-camp" on the staff of the Louisiana Governor for seven supervisors in FAA offices at New Orleans Lakefront Airport who were cited for their "outstanding contributions to aviation."

Receiving the honorary commissions were: C. Otho Reasoner, ARTCC chief and area coordinator; Alvin A. LeBlanc, chief, SMDO-6; Lazard S. Falcon, Lakefront Tower chief; Harry D. Arnold, FSS chief; Billy W. Franklin, chief, SMS-613; Olin K. Haley, supervising inspector, GADO-8; and Michel D. Hinton, I&M Division representative.

Fire Watchers at NAFEC Complete Year of Testing

Two series of fire tests, one conducted in an airplane cargo compartment and the other inside a passenger cabin, were completed recently at FAA's National Aviation Facilities Experimental Center at Atlantic City. Both tests involved about 40 fires conducted over a period of 11 months.

Aircraft fuselage used as laboratory to determine if protective standards are adequate for the detection and control of fires in large cargo areas.

The cargo fires tested improved methods of detecting and controlling burning cargo compartments. Fires in the passenger cabin determined how various fabrics used in upholstery stood up under flame. Results will be published later this year.

FAA has placed increased emphasis on all fields of fire control and fire prevention during the past several years. At NAFEC the fire-test group simulated situations which would threaten the lives of persons abroad the aircraft were they actually to happen. In all cases the deliberately-started blazes were extinguished within given time limits.

Both projects were managed by John F. Marcy, who was assisted in the cargo tests by Julius Gassman and in the passenger plane tests by James E. Demaree and Elden B. Nicholas, all of RD-742.

NEW TYPE TOWER

Workmen slowly move the 25-ton cab of the new air traffic control tower at Lawton, Okla., into place. The Lawton Tower, scheduled for completion Feb. 1, 1965, will be one of the first type "O" towers in use in the continental United States. A number of others are either under construction or planned.

H-250 DESIGNED FOR SHORT TAKE-OFFS, LANDINGS

John A. Carran (third from left) chief, Flight Standards Engineering & Manufacturing Branch, presents airworthiness certificate to Clarence H. Brent (second from left) Helio Aircraft Corp., Mid-Sales Manufacturing Branch. Others are, Mike McDermott, Helio test pilot (right) and Leslie Melton, FAA test pilot.

When a new model of an old plane can leap off a runway using less power and carrying a heavier load than the original model, then that's news.

Take the new Helio *H-250*, or *Courier II*, as it also is called. It was designed for super-short take-offs and landings. But more unusual is the fact that its 250 horsepower is lower than that of its predecessor, yet its 3,400 pounds gross weight is higher.

The *Courier II* was certificated by the Central Region this fall in a brief ceremony at Kansas City Municipal Airport. John A. Carran, chief of Flight Standards Engineering Branch for the Central Region, presented the certificate to Clarence H. Brent, chief engineer for Helio Aircraft Corporation's Mid-States Manufacturing Branch located at Pittsburg, Kan. The home office of the firm is in Bedford, Mass.

It was after this brief ceremony that the *Courier II* did its stuff on demonstration rides for members of the local press, Carran, and Leslie Melton, an FAA test pilot who has flown the plane himself.

Giant jets streaked down the runway, landing and taking off, while the almost tiny silver and blue *Courier II* waited its turn. When it did take off, test pilot Mike McDermott gunned the engine and then hauled it off the runway in the phenomenal distance of about 75 feet.

To those watching on the sidelines, a crash seemed inevitable. It seemed that the *Courier II* went straight up, its forward speed less than its vertical, and it would stall out any minute. But it continued up, up, up. Later in the flight, McDermott hovered the craft in mid-air by slowing it down to a speed matching that of the wind. The reporter in the front seat stared open-mouthed at the stationary ground below.

Coming in for a landing, the plane was so high observers thought it would overshoot not only the airport but all of Kansas City. Here again, everyone was surprised because it settled down like a Canada goose in a marsh, rolling about seventy feet before McDermott braked and turned off the runway.

The *Courier II* is able to make these backyard takeoffs because of its design, which incorporates large flaps, wing spoilers and a movable leading edge. This leading edge is free-moving, and extends forward from the wing about six inches whenever the angle of attack is high enough. When it extends, it increases lift and virtually turns the wings of the plane into giant umbrellas.

The plane was designed for use in inaccessible areas such as South American and African jungles and mountain reaches. It is particularly adapted for use by missionaries, ranchers, farmers and doctors.

The *Courier II* uses a Lycoming A1A5 engine and cruises at 160 miles an hour. It can fly at a snail's pace and, with the right winds it can fly backwards.

B-58 Used in Flight Evaluation At Little Rock Air Force Base

Personnel of the Aeronautical Center's Standards Development Division recently journeyed to Little Rock Air Force Base, Ark., to join forces with the USAF Strategic Air Command for a flight evaluation of the B-58 in the approach and landing environment.

FAAers taking part in the evaluation tests were Ernest E. Callaway, division chief; Russell S. Fleming, Lee G. Schoen and Frank R. Parr.

The evaluation was to determine the airspace requirements of the supersonic B-58 bomber during the circling approach so that visibility requirements could be set for the various aircraft in the B-58 speed range.

Additional evaluations were made of the capability of the *Hustler* to make final alignment corrections to the runway under minimum ceiling conditions.

SAC project officer was Capt. James G. Jones, a recent FAA Academy student. Results of the test were used to establish visibility and obstruction clearance minimums for circling and straight-in instrument approaches. They will be applied to all aircraft in the "over 165 knot approach speed" category in the revised instrument approach criteria.

Mass. Coordinating Committees Are Presented FSJC Certificates

Richard J. Calandrella (center), Massachusetts campaign director for the Federal Service Joint Crusade, presents a Certificate of Appreciation to S. L. Poe (right), chairman of the Boston, Mass., Area Coordinating Committee and E. Proulx chairman of the Westfield, Mass., Area Coordinating Committee.

Poe and Proulx accepted the certificate on behalf of the FAA personnel in Massachusetts ". . . in recognition of outstanding achievement in support of Federal Service Joint Crusade . . ." Poe is Boston Air Traffic Area Office supervisor and Proulx is Westfield Tower chief.

ALASKAN MERCY FLIGHT SAVES CONTROLLER'S LIFE

David W. McAlduff, air traffic control specialist, rests comfortably after emergency flight. T/Sgt. Harry D. Whitehead, Air Force medical technician accompanied the FAA mercy flight crew.

It had all the ingredients of a TV thriller: a man who needed surgery to live; a night flight in snow and poor visibility; a difficult operation for a perforated ulcer performed by doctors racing the clock; and a happy ending—the patient pulled through. The story had one more ingredient, too: It was true!

The patient who arrived at the hospital with no time to lose was David W. McAlduff, air traffic control specialist of the Galena Flight Service Station, located 260 miles west of Fairbanks. He suffered such severe stomach pains while on watch Nov. 7, that Area Manager Lawrence Smith became alarmed and called the Fairbanks Center for assistance.

Horace L. Burns and Donald Christensen of the Anchorage Flight Inspection District Office, who happened to be in Fairbanks on a flight check job, were alerted to the emergency and took off for Galena in an Agency DC-3 at 11:27 P.M. They were accompanied by Air Force Technical Sergeant Harry Whitehead of the Eielson Air Force Base Hospital who volunteered for the mission upon learning of McAlduff's plight. Snow was blowing, visibility was poor but they were back at Eielson in four hours.

McAlduff was rushed to St. Joseph's Hospital in an Air Force ambulance where doctors, alerted beforehand, rushed him into surgery. Later, they revealed that he could not have lived more than a few more hours had the operation been delayed.

AIRPORT OFFICIAL COMMENDED

Administrator Halaby presents award to Francis Fox, general manager of Los Angeles International Airport, for his cooperation with FAA in connection with aviation visits to this country by foreign aviation officials and students. Mrs. Fox attended the presentation ceremony which was just prior to departure of N. E. Halaby and Fox on a global trip to meet with airport officials.

FAAer's Shirt Tail Snipped

Hard working secretary Carrol A. Brozak of SRDS and FAA Flying Club member gets shirt tail clipped at a traditional ceremony when she soloed recently. From left: Clippers are Albert Brown, Joseph D. Blatt and William V. Gough all of SRD.

DOCTOR LAUDS FAA's HELP

Dr. John D. Moore of Ely, Nev., was so impressed with FAA efficiency during an emergency that he sent a commendatory letter to John R. Mondt, chief of the Ely Flight Service Station, with a copy to the *Ely Daily Times*.

That newspaper reprinted the letter, which follows:

"Dear Mr. Mondt:

I had occasion recently to participate in an emergency flight from Ely to Salt Lake City and wanted to express my deep appreciation to you for the great help that the Federal Aviation Agency afforded us at this time.

"We had a patient who was severely injured with damage to the femoral artery requiring extensive arterial surgery in order to save his leg, and, in a case of this type, time was of the essence. We flew from Ely in a Cessna *Skylane*.

"The FAA was most helpful in aiding with all aspects of the flight, and especially in obtaining the clearance for us to fly across the large restricted area just east of the Utah-Nevada line. The time thus saved by being able to fly in a straight line to Salt Lake City undoubtedly contributed to the fact that the patient's leg was saved.

"In addition to thanking you for this help, I would like to express my deep thanks for all the services that the Federal Aviation Agency has afforded us who fly in this rather dangerous mountainous area.

John M. Moore, M.D."

Those who assisted in the mission were H. Russell Morrison, Ely FSS, and Jack H. Murdock, Salt Lake City Center.

FAAer ASKS FOR END TO 'HYPHENATED AMERICAN'

Several hundred thousand Greater Los Angeles television viewers had their attention called to a letter written to the station by an FAA employee, Walter J. Doyle, who is a controller at Burbank.

George Putnam, popular newscaster at KTTV, Channel 11, reported as follows on Doyle's letter:

This reporter receives an amazing amount of thought-provoking mail from television viewers of many persuasions. These communications are inspiring and a source of great warmth and reassurance. It is good to receive them and they are vastly appreciated. Among letters received over the past few months is this one, from Walter Jack Doyle of Los Angeles, who writes in part:

"I am 45 years of American thinking age and must admit that since my arrival in this growing metropolis, I have watched your news. I believe in the quietly strong words, 'My country, right or wrong, but always my country.' And I believe in those fine words, 'Here's to a better, stronger America.' "

And then Mr. Doyle continues, "If I may bring up a minor point of reference—the hyphenated American. Most of my adult years have been spent in aviation. First, in flight crew and now in control. In all my travels to various parts of the world, I have never met a fellow American who places family origin before the word American. No passports state that a person is Irish-American, or Mexican-American, or Afro-American. Yet here in America we continually use the hyphen to designate a certain group when the news or times seem to call for it.

"I recall an incident as a boy—I had a date for the school prom. In answer to a question posed by my dad as to which girl I had decided on spending my allowance for a suitable corsage, I said, 'Dad, she's a nice Irish-American girl from Springfield,' and Dad replied, 'Son, there's no such thing as an Irish-American. Either she is Irish or she's American. If you must attempt to inform me as to her other qualifications, besides the fact that she calls our country her home, then she's of Irish descent. Remember, my boy—America comes first."

"This was explained to me 30 years ago by a man to whom I've always listened with great respect. I've been guilty, at times, of using the hyphen. I see it in the newspapers, and I hear it on radio and television. I wonder why? Are we becoming a nation of hyphens? True, America's made up of many groups, but America should always come first.

"My family background is Irish, but the only time I show any signs of it is on a day in spring when I take out a green necktie. My point is this—could you do one of your verbal editorials on the banishment of the hyphenated American? I love my country. I fought for my country, and if necessary, I'd die for my country—but not the hyphen."

And it's signed, Walter Jack Doyle. Well, sir, Mr. Doyle, you have written a pretty good editorial yourself, and it reminds me of a poem called—"I Am Just An American." It goes like this:

I Am Just an American

Anonymous

Just today we chanced to meet
Down upon the crowded street.
And I wondered whence he came,
What was once his nation's name.
So I asked him, "Tell me true,
Are you Pole, or Russian Jew,
English, Irish, Scotch, or Russian?
Belgian, Spanish, Swiss, Moravian,
Dutch, Greek, or Scandinavian?
Then he raised his head on high
As he gave me his reply.
"What I was is naught to me
In this land of liberty—
In my soul as man to man
I am just—an American"

TV CAMERA FOCUSES ITS EYE ON NEW YORK CENTER

As part of a television documentary dealing with the feasibility of locating a fourth major jet-port in the New York Metropolitan Area, CBS TV sent a team of TV directors, producers, and cameramen to N. Y. Center. Caught in the act by Eastern Region photographer Anthony (Tony) Figurella are: left to right, Tony Alatis, supervisor CBS TV; Fred Hoffman, cameraman, and Art Matura, N. Y. Center watch supervisor.

'Pop' Moore Closes His 46-Year Aviation Career With Retirement

Wyle V. (Pop) Moore, 66, handles the microphone for the last time at Love Field in Dallas, Tex., before retiring from the Government on December 1.

Forty-six years ago, Wyle V. (Pop) Moore was given a plane ride from a grass strip in Dallas which later became Love Field. Two and a half hours later he soloed in an OX-5 powered *Jenny* and decided to stay around for a three-year enlistment in the Army Air Service at Love Field.

On Dec. 1, 1964, the 66-year-old air traffic controller retired from duties carrying with him fond memories of a life rich in aviation. The last 22 years were spent at or near Love Field.

Moore left the cockpit in 1939 for the control tower after nearly 21 years and 11,000 hours of flying time. He became one of the first five controllers to work in the 40-foot wooden tower which the city of Dallas opened that year at Love. When the CAA took over the tower two years later, Moore transferred to Albuquerque where he was the only man with a tower operator's certificate.

He returned to Love Tower in 1943 and remained there until 1962 when he went to nearby Redbird. Prior to his retirement he transferred again to Love for the last few weeks of his active aviation career.

Moore has an "aviation room" in his home where he keeps the mementos of his many years spent in barnstorming, instructing and commercial flying and of his last 25 years in the tower cab. Among his most cherished possessions is his Air Service pilot certificate signed by General Billy Mitchell.

A final honor came from an appropriate group, the Dallas Businessmen's Flying Association, who staged a reception and retirement dinner for Moore.

LOS ANGELES EMPLOYEE CONTRIBUTIONS HELP SUPPORT A HOME FOR BOYS

When he came to Pacific Lodge Boys Home in Los Angeles, Harold Pirie was a detached, withdrawn, frightened boy. He was inhibited, desperately unhappy, and unable to communicate with others.

Today he has poise and self assurance. He is the recipient of the Los Angeles Junior College Man of the Year Award, a $2,400 scholarship, a Bank of America Achievement Award and was valedictory speaker for the Pierce College graduating class last June.

Pirie is typical of the young people who have been helped by FAA contributions through their United Way contributions to Pacific Lodge Boys Home. Western Region Director Joseph H. Tippets, who headed the Federal agency phase of the United Way drive in the West, met with Pirie recently. The youth expressed his thanks for the help given him by FAA and others.

"Pacific Lodge is the home I never could have had—it gave me a future when I had none. It opened doors that would have been closed to me.

Harold Pirie (right) thanks Director Tippets for the help given by FAA to the Pacific Lodge Home.

"It was the necessary link in a chain that made my development possible. I had three strikes against me when I arrived. I was dead, meaning that I had no present, no future, and a past that was closed.

"Through the environment of the Lodge I was able to emerge educationally and socially until I began to assimilate and give of myself. Then we became a team working together toward my future in a surrounding conducive to scholarship."

Harold is a liberal arts major and will continue in this field at Pomona next fall. His ultimate aim is a doctorate in philosophy.

Pacific Lodge Boys Home is one of the agencies of the United Way which conducts an annual drive during the fall.

At Western Region headquarters alone, employees contributed more than $11,000 to Pacific Lodge and other United Way member agencies.

UW, in common with similar groups throughout the country, also arranges special schooling for retarded children and provides crippled children with braces and other orthopedic aids.

Life Saving Dog Owned by Son of Area Manager

Ray William Blacka is the proud owner of "Boo," which was named "Dog of the Year" by the Alaskan Chapter of the American Society for the Prevention of Cruelty to Animals. Ray, the son of William H. Blacka, FAA area manager at Unalakleet, Alaska, wrote the following letter to the SPCA headquarters in Anchorage, describing Boo's heroic action which saved his, and two friends' lives, last year:

"The candidate that I wish to nominate for the 'Dog of the Year' award is my dog, Boo. Boo is half husky and half boxer and she is 5 years old.

Last summer I went with two other boys to camp overnight at North River which is about 12 miles from my home in Unalakleet. The other two boys that went with me were Bob Woodruth and James Moore. I took my dog, Boo, with me, and James took his dog, Butch.

That night we built a fire outside the cabin to keep any animals in the area away from the cabin. While we slept some sparks from the fire blew underneath the cabin and started a small fire that spread rapidly. Boo started to bark and bothered me until I smelled the smoke and got up. I woke the other boys, and we went outside and discovered the fire in time to put it out.

I know my dog, Boo, is a smart dog and probably saved our being burned because the fire was right under the door and the windows of the cabin were boarded up.

Another reason that I think she is smart is that James' dog, Butch, had crawled under the covers and had not warned us at all."

Ray Blacka (age 11)

Ray Blacka, son of FAA area manager at Unalakleet, poses with "Boo" his mixed husky and boxer which won an award for saving three lives.

Ray attended the annual luncheon of the Alaska Chapter of the SPCA held in Anchorage and accepted the honors on behalf of Boo. Boo has been nominated the National "Dog of the Year."

Want to Know What's a CENDAR? Read This and You'll Know What.

Latest facility to be placed in operation at NAFEC is Central Data Acquisition and Recovery (CENDAR). Used when testing airborne equipment, airplane movements or pilot physiological reactions, CENDAR automatically records performance information on magnetic tape so it can be processed on a computer after flight. It replaces visual instrument readings.

Guenther H. Christiansen, technical services engineer who worked on the development of CENDAR, will head its airborne system, while Charles A. Richardson, computer expert, will supervise the ground-based system.

Fly VLF Demonstrations at NAFEC

A week-long informal conference on very low frequency radio propagation and navigation was held recently at FAA's National Aviation Facilities Experimental Center, Atlantic City, with representatives of the United Kingdom, U. S. Navy, U. S. Coast Guard and the Agency participating. Alton B. Moody, RD-340, acted as chairman of the meeting.

As part of the session, demonstration flights were conducted in the RAF *Comet* and the Navy's *C-54* research airplane.

ON THE SCOPE

DOROTHY SIGNS OFF

After 19½ years of Federal service, 18 of them at the McGrath Flight Service Station, air traffic control specialist Dorothy E. Bryant has finally hung up her headset.

Mrs. Bryant's calm measured voice crackling through the Arctic air served over the years as a reassuring link to the ground for thousands of pilots.

At her retirement dinner, "Ma," as she is known throughout most of Alaska, was presented a citation attesting to her long and faithful service.

Making the presentation is Bert F. Cortright (right) while Marion J. Figley, McGrath manager who earlier pinned a white orchid on Mrs. Bryant, looks on.

YOUNG WILL DIRECT SCIENCE FAIR

Ted R. Young, chief of the Operations Branch, Systems Maintenance Division, Alaskan Region, was named director of the 1965 Greater Anchorage Science Fair.

Young is a member of the Institute of Electrical and Electronics Engineers, a professional group which will co-host the Science Fair with the Anchorage Chapter of the Armed Forces Communications and Electronics Association Area and Alaska Wing of the Civil Air Patrol.

FAA engineers and technicians in Alaska are active in professional and civic activities. Many of them belong to both the IEEE and AFCEA.

Young's appointment is a tribute to all FAAers who give generously of their time and work for their communities.

From left: Ted Young, Astronaut Walter Cunningham, of NASA, and Patricia Abney, chairman of the upcoming Science Fair, meet to discuss ideas.

RADAR HIGH POWER TUBE AWARD

San Pedro Hill, California Systems Maintenance Sector 150, Western Region, was awarded the Air Defense Command's Microwave Power Tube Award Trophy by Maj. Lawrence E. Schutte, commander of the 670th RADRON, 28th Air Division (left).

Richard R. Simpson, chief of the facility (second from left) accepted the award. Also at the presentation were John E. Hesla, a member of Simpson's staff, and Air Force Capt. John A. Panarese.

The award honored the Sector for attaining the highest average operational hours on the ZM-3038 radar tube. The tube, which costs $35,000, was used for 4,083 hours. San Pedro Hill is a joint civilian-military radar installation.

FAMOUS CERTIFICATES DISPLAYED

On public view in the Airman Certification Branch of the Data Services Division, Aeronautical Center, in the new Aviation Records Building are replicas of the pilot certificates of many famous airmen. Among those on view are Charles A. Lindbergh, Douglas Corrigan, Wiley Post and many others.

EMPLOYEE HEALTH PROGRAM EXPANDS

SW Regional employees are told to blow hard into a tube while the doctor watches. It is part of the Southwest Region's expanded health program.

Southwest Region's employee health program was expanded to include additional tests for participating employees.

In addition to the regular immunization program, an electrocardiogram, diabetic screening, blood pressure test and time vital capacity evaluation are now offered.

Dr. Harry L. Gibbons, regional flight surgeon, pointed out the importance of the time vital capacity (lung) test to detect early stages of pulmonary diseases which he said were on the increase.

CONGRESSMAN VISITS HAWAII

Pacific Region had some distinguished visitors prior to the holidays. Among them was Rep. J. Arthur Younger (Calif.) seen here sporting a typical Hawaiian aloha shirt. He's being briefed by Frank Buck, PC Budget Chief, and Deputy Director Capt. Hugh K. Laing, USN. Congressman Younger is a member of the Interstate and Foreign Commerce Committee.

AFTER HOURS

HOEKSTRA HONORED BY SAE

Chief of the Engineering and Safety Division, Aircraft Development Service, Harold D. Hoekstra (center) recently received his 35 year Society of Automotive Engineers membership plaque from T. Duncan, chairman of the Washington Section. W. Flinn, Vickers Inc., (right) past SAE chairman was on hand to congratulate Hoekstra.

Hoekstra still is active on several national Technical Committees for Aircraft and Air Transport matters. He is a past national vice president for aircraft (1950) and a national director (1960). Hoekstra also recently was made a member of Tau Beta Pi, the National Honorary Engineering Fraternity.

CHICAGO ARTCC 'ADOPTS' CHILDREN

The Chicago Air Route Traffic Control Center has "adopted" the children of the John F. Kennedy School for Retarded Children in Aurora, Ill., and has set a goal to raise $600 for equipment for them.

The school was named after the late President because of his work with the retarded. It has 43 children ranging in age from 6 to 18 years and operates in a building rented from a Catholic Church. So far, the Center has given an intercom system to the school and plans to purchase a tumbling mat and playground equipment to help the children lead as normal a life as possible.

Inaugurating the new intercom at the JFK School are: from left, John Germata, Harold Lufkin, Le Roy McCarthy and Mrs. Hope Wall, school director.

TOASTMISTRESSES LINK-UP

In the June issue of *FAA HORIZONS* the Western Region's FAA LaFayettes Toast-Mistresses Club asked if there were other toastmistresses in the Agency. Well, there is at least one group and they are working at the National Aviation Facilities Experimental Center (NAFEC) or are married to NAFEC employees. Known as the Mainland Club, it received its charter in June, 1962.

Shown at Atlantic City last summer are: from left, Mrs. H. V. Hermansen, Mrs. Vincent Allen, John McGarry, Chamber of Commerce; Mrs. Philip Camp, vice president and Mrs. Gloria Scavullo, president.

WAKE FETES HALABY

Administrator Halaby and Pacific Region Director Robert I. Gale were treated to an arts and crafts exhibition on Wake Island during their recent stopover en route to the Far East.

The FAA Community Club held an employees' night featuring arts and crafts in the motif of the Island. Items on display included carved and polished driftwood, glass floats from fishermen's nets, coral and shell collections, live fish and an eight-foot mounted sailfish.

The decor was arranged by Mrs. Lyne Grba, wife of controller Mike Grba, with the help of several FAAers.

AIR PIONEERS GATHER IN ALASKA

Arctic aviation notables including the best known Alaskan bush pilots join the Commander in Chief, Alaska, Lieut. Gen. Raymond J. Reeves, (center) at the Arctic Aviation Pioneer Dinner held at Elmendorf in November. Arctic aviation notables included: from left, Ray Peterson, president Northern Consolidated Airlines; Jack Jefford, chief pilot FAA; Bernt Balchen, noted pioneer Arctic explorer and aviator; Noel Wien, founder of Wien Alaska Airlines and noted for some of the most important pioneer flying in Alaska; Bob Reeve, president of Reeve Aleutian Airways and one of Alaska's best known aviators; Jim Dodson, pioneer bush pilot and now vice president of Northern Consolidated Airlines, and Alaskan Air Commander Maj. Gen. James C. Jensen. Jefford and Balchen discuss early Arctic rescue missions they flew together.

WING MAN

Alfred Sanell of Flight Standards Maintenance Division, headquarters, collects wings and other aviation insignia. He now has several hundred from all over the world.

PERSONNEL PIPELINE

"SO YOU'RE PLANNING TO RELOCATE"

Sometime in your FAA career you may have to move. You might move for your own convenience, at FAA's request, to get a promotion or to take a job in line with your career planning. Breaking local ties, uprooting the family and moving to a new location, whether it be 50 or 3,000 miles away, is not easy. A thousand questions will arise.

Obviously, it is impossible to anticipate all of them but here are some most frequently asked:

Q. *Should I begin my travel before I receive my travel orders?*

A. No. Don't travel without travel orders. If you do, you might not get paid for your travel. If there is a delay in your travel orders, play it safe—don't depart. Ask your personnel representative to help you get squared away.

Q. *Are there any personal things I should take care of before leaving?*

A. Yes. Some important ones are: (1) Pay all your debts. (2) leave forwarding instructions for your mail and your pay checks. (3) Pick up your children's school records. (4) Arrange for a friend, co-worker or neighbor to close out unfinished personal affairs. Don't forget to give him a power-of-attorney if it's needed, but only on advice of your attorney. (5) If you are going overseas, get a dental check-up and take care of any medical work you need. (6) Review your insurance with your agent. (7) Buy additional insurance to cover your household goods if you think you need it. (8) Keep passports and immunization records with you if you're going overseas. (9) If driving, notify close relatives of the make, model, year and license number of your car as well as the route you plan to take. In this way, you can be reached quickly, by the state highway patrols in an emergency.

Q. *How are household goods shipped?*

A. If you are moving individually, you must make your own arrangements. You hire a carrier at your own expense. Later, you will be reimbursed. If you're wise, you will get an estimate from several reliable carriers before you pick the one to move you. If a number of FAA employees are being moved from the same duty station to another station and the total weight of their goods is 50,000 pounds or more, a Government bill of lading will be used.

Q. *Can I get an advance of funds to help pay for the move?*

A. Submit SF-1038 showing the origin, destination and estimated weight of your household goods.

Q. *How much weight may I ship?*

A. Generally, 7,000 pounds if you have a family, and 2,500 pounds if you are single. These weights include containers and packing materials.

Q. *How much do I get paid for shipping my goods?*

A. It depends on how far you are going and how much you ship. General Services Administration publishes figures for moves of various distances. These rates change from time to time but your personnel office has the latest figures.

Q. *What can I ship as household goods?*

A. Almost anything. Furniture, clothing, baggage and other similar articles. However, you can't ship, within the United States, motor vehicles, boats, wines, liquors, pets, explosives, or inflammables such as matches, cleaning fluid, photo flash bulbs, or fireworks. For overseas shipment, check with your personnel office.

Q. *What happens if I can't find a suitable home immediately at my new location?*

A. If you don't know where you are going to be living at your new location, you may want to store your goods temporarily. You can store them in your home town or at your new station for 60 days, and the FAA will pay for it within allowed limits. This is in addition to paying for shipping your goods.

Q. *What if I exceed my authorized weight allowance?*

A. You may find it cheaper to give away or sell some heavy articles, rather than ship them at your own expense.

Q. *What can I do to help the movers?*

A. Before the day for pickup of your goods, disconnect or otherwise prepare for shipment your automatic washer and dryer, kitchen stove, refrigerator, etc.

Q. *How about leaving things in drawers?*

A. Empty furniture drawers of all heavy and fragile articles. Leave in blankets, clothing and other bulky items. Remove flat linens. Never leave liquids or breakables in furniture drawers.

Q. *Should I ship any food?*

A. Get rid of all groceries and foods you don't need. Empty the deep freeze and eat or give away all frozen foods.

Q. *How about plants and flowers?*

A. Don't ship plants and flowers.

Q. *Must I be there when the movers come?*

A. If you can't make it, have someone else present both at pickup and delivery of your property.

Q. *Are there any things I* shouldn't *do?*

A. Yes.

- Don't pack your dishes, glassware, or other bric-a-brac. The movers aren't responsible for damage to these things unless they themselves do the packing.
- Don't ask for your goods to be shipped anywhere except to your new duty station without finding out how much it is going to cost you personally.
- Don't get excited if the movers don't arrive exactly on time. They are busy too. However, you can expect them sometime during the agreed day.
- Don't expect any special services from the movers unless you agreed to pay for them.

Q. *What should I do if the movers damage my goods?*

A. Make a note of it on the delivery papers and have one of the movers also sign your statement. Then file a claim for damages. Don't throw away any of the damaged goods or have them repaired before they are inspected by an agent of the moving company.

There are many other questions you could ask about moving. Not all of them can be covered in one article. Most of the above was extracted from a GSA pamphlet, *Shipping Your Household Goods*. Your personnel officer can obtain a copy for you.

BACK ON CAMPUS

Registering for Administrative Management Development Courses at Syracuse U., Sept. 1964. From left: R. E. Kirby, WE; G. H. Carr, IM; E. C. Fernsten, EA; J. Bispo, WE; J. R. Vrooman, AL, and Q. S. Taylor, IM.

TECH TALK

CHECK YOUR OIL, MISTER?

If you think you have a sticky problem deciding when to change the oil in the family buggy, consider the situation facing Systems Maintenance Service technicians not too long ago.

The Agency has a never-ending oil changing problem at the more than 2,000 locations where it maintains engine generators to provide emergency electrical power for air navigation and air traffic control facilities. Involved is a great deal of oil—and climatic conditions, hours of running time of the engines and, equally important, hours of idle time.

Commercial power failure doesn't happen very often so the "mileage" or time when the standby engines actually run is usually small. But even with little use there is a slow but continuous accumulation of moisture and acids in the crankcase. At some time this concentration will be enough to damage the working parts of the engine and decrease its reliability and equipment life.

In the past, oil had been changed periodically to assure that the contaminants were removed before they could damage the units. Investigation disclosed that under this procedure good oil would often be wasted and in some cases dangerously contaminated oil would be continued in use. No matter what interval was set up for oil changes, the results were not satisfactory because each site had its own individual characteristics.

This hit-or-miss, cross-your-fingers and hope everything comes out all right procedure is a thing of the past, thanks to the ingenuity of Systems Maintenance personnel. Every technician now has an oil test kit to quickly determine the concentration of water and other contaminants. No longer is he dependent on the calendar to tell him when it's time to change. He can now safely use the oil for its full life. The result is longer periods between oil changes with assured safety to equipment, increased dependability, and less oil and labor costs, and a considerable amount of time saved.

SHEDDING LIGHT ON LIGHTNING

Airmen have always had respect for weather but lightning was not considered particularly hazardous. Minor lightning damage to aircraft is not rare and many instances have been recorded.

However, an airline accident near Elkton, Md., in December 1963 prompted authorities to consider lightning strikes on aircraft as a potential cause of major accidents. Although the evidence in the Elkton case is circumstantial and the Civil Aeronautics Board has not yet issued its conclusion, the FAA has initiated a major and continuing effort to identify and combat the hazards to flight introduced by lightning.

In a comprehensive discussion presented at the Flight Safety Foundation's 17th International Air Safety Seminar, Harvey L. Hansberry, chief of the Aircraft Branch, SRDS Experimentation Division, reviewed the entire FAA lightning program.

In January 1964, immediately after the Elkton incident, the Administrator formed the FAA Technical Committee on Lightning, which includes representatives from the CAB, Navy, Air Force, Weather Bureau and National Aeronautics and Space Administration.

Early committee discussions revealed a need for more knowledge of fuel vents, potential arcing and sparking within fuel tanks, prevention of fuel tank skin penetration by lightning, and evaluation of both static dischargers and lightning diverters.

These discussions launched a full program including:

- Collection of lightning strike data from all sources for analysis of useful trends and patterns.
- Direction for future development work.
- A special *ad hoc* committee of airframe, air carrier and oil industry representatives was established to review fuel safety problems.
- Establishment of a scientific panel on the physics of lightning.
- A safety review of lightning protective features on aircraft in service.
- Evaluation of fuel handling practices on the ground and in flight.

In the short-range investigation phases of the program, contracts were awarded to the Lightning and Transients Research Institute to conduct lightning experiments and to Atlantic Research Corporation to study fuel problems. Their findings demonstrated the possibility of hazardous sparking in the case of a direct lightning strike to certain fuel compartments. "Fixes" for these deficiencies have been published in Agency Airworthiness Directives.

A long-range program is planned to investigate all measures of aircraft lightning protection. In the final analysis, however, according to Hansberry, "we need more effort, or at least some effort, on developing a fuel that burns when and where we want it to burn, and does not burn when and where we do not want it to burn. Until we attain such a status, we must continue our research of detail which surrounds the real problem."

Navigation experts from the United Kingdom Royal Aircraft Establishment met recently with their United States counterparts to discuss research and development of a world-wide very low frequency (VLF) air navigation system. From left, Alton B. Moody, FAA, chairman of the talks; D. E. Hampton, chief of the UK group. Robert E. Haydon, FAA co-chairman; Allen N. Duckworth and M. F. Williams of the Naval Research Laboratory.

YOUR HEALTH

CANCER SYMPTOMS DESCRIBED

Cancer, a frightening word among Americans today, is a frightening disease. Millions of American families have had experience with cancer. Millions of words have been written about it in the public press. Most of us know something about it. But how many of us really know what cancer is?

A new pamphlet of the American Medical Association states that during the routine process of cell division—the basis of normal body growth and repair—cells become differentiated into the specific kinds needed for each organ or body function. Each kind of cell divides into its own kind, equipped to do the job it was designed to do. Under certain conditions not yet completely understood, some cells do not differentiate in this way. They multiply in irregular and disorderly fashion and compete with normal cells for nutrition and space. These cell masses are called tumors.

Unrestrained growth of cancer cells causes them to infiltrate and destroy vital organs, and eventually cause death. Slow growing cancers may take months to spread beyond control. More malignant types spread so rapidly that they become incurable in a few weeks.

The primary methods of treatment are surgical removal of the cancer and destruction of the tumor with some form of radiation. A few types of malignancy, particularly leukemia, react quite well to newly discovered drugs and chemicals. Drug treatment holds much hope, but it is not yet perfected. Surgery and radiation are still the major treatments, possibly supplemented by carefully selected drugs.

If treated promptly and properly, some cancers are highly curable. One-third of all cancers in the United States are being cured and more than one million Americans alive today have been cured of cancers. However, almost 300,000 Americans will die of cancer this year. Of this total, almost 100,000 might have been saved through early detection and treatment.

The cause of cancer in man is not known. Some cancers may follow some form of physical irritation, such as friction, heat, sunlight, X-rays and other forms of radiation. Chemical irritants may include infections, tars, certain of the heavy metals, hormones and certain dyes. There is no evidence that heredity is a factor.

It will pay you to know and heed the American Cancer Society's seven danger signals:

1. Unusual bleeding or discharge.
2. A lump or thickening in the breast or elsewhere.
3. A sore that does not heal.
4. Change in bowel or bladder habits.
5. Hoarseness or cough.
6. Indigestion or difficulty in swallowing.
7. Change in a wart or mole.

If any one of these symptoms persists for longer than two weeks, see your doctor. These symptoms do not necessarily mean you have cancer, but they are warning signs that might be fatal to ignore.

...AND SAFETY

SLIPS AND FALLS

Slips and falls are the top problem for those concerned with safety. These accidents head the list in both industry and home. They're responsible for many hours and days of time lost and often result in fatalities or permanent disabilities.

A serious accident at home to a member of the family causes worries so that minds wander from the job at hand and people become careless. The accident at home may then lead to another at work.

The best way to make a place safe to work in is to make sure the housekeeping is good, with a place for everything and everything in its place. Orderliness helps form safety habits which are the foundation of a good safety program.

Everyone must be on the lookout for the little things that cause slips and falls. Start with floor surfaces. All holes, cracks, and other imperfections in floors should be repaired promptly. It's up to you to keep the floor around your work area clean. Also, remember that tools or other objects placed on the floor can easily cause a fall.

The surface, regardless of whether it's concrete, wood, metal, linoleum, wood block, black top, or any other material, can deteriorate. Keeping these surfaces in shape is a maintenance problem, but it's your job to report defects and see that the necessary repairs are made.

If floors themselves are in first-class condition, another problem is objects left lying around or liquids spilled on them. Water, grease and oil should be cleaned up immediately. Either use some antislip preparation, or give the area a good old-fashioned scrubbing. Scrap and waste material should not be allowed to clutter the floors.

Often one of the major causes of falls is footwear. Shoes in poor repair or shoes not meant to be worn for work cause fatigue, and fatigue is an accident-maker. Safety shoes should be worn when there is a chance of objects falling and smashing toes. You can get off on the right foot by wearing the right kind of shoes for the job.

Other hazards are on stairways. They should be kept free from foreign matter, and nothing should be stored on them. Report treads that need repair, and be sure to use the handrails.

A few precautions will prevent falls from ladders. For your protection, all new ladders should be carefully inspected for defects. They should be equipped with ladder shoes which will firmly grip any base surface.

Last, but not least, realize the dangers of horseplay and know that it can cause serious falls.

Be safety-minded and on the alert. Report hazards and suggested improvements to the safety officer.

TO TAME ENGINE FIRES

In its never-ending quest for flying safety the FAA is currently conducting a full-scale fire testing program using a turbofan engine under simulated flight conditions. The tests, being carried out at the Naval Air Turbine Test Station, Trenton, N. J., are under the supervision of Systems Research and Development Service personnel based at NAFEC. Starting from upper left, clockwise: Project Manager Eugene P. Klueg (standing) and James E. Demaree, both of NAFEC, study test data. ● Pratt and Whitney JT3D-1 turbofan engine used in the tests. The engine, including nacelle and strut, has been installed in the ten-foot diameter test section ejector tube with the strut faired to the upper surface in a manner similar to a Boeing 720B aircraft. The facility is an open circuit induction wind tunnel powered by two J-75 turbojet engines. Using the exhaust gas of the engines as ejector pumps, ambient air is drawn through the duct in which the test subject is mounted. ● Klueg at the master control console. ● William T. Westfield (crouching), NATTS senior aerospace engineer, and Klueg study the complex interior of the instrumentation. ● Test crew at their positions during an experiment. ● Klueg reading gauges, an integral and vital part of the extensive FAA test environment.

FAAers ON THE JOB

Brenda J. Sunderlin

Girls and telephones, we're told, go together like purse and gloves and shoes and these two charmers seem to prove the point. Brenda J. Sunderlin (left), junior receptionist at FAA headquarters, shares desk space with senior receptionist (below) Ruth E. Evans. Together, they provide the Agency's welcome smile, greeting some 300 visitors a day and answering a like number of phone calls. Brenda, pert and trim, is married to a fellow FAAer who is with the Office of Headquarters Operations. She says that some day, when she gets the material collected, she intends to write a book about the wide variety of incidents and interesting people she has met in her work.

Ruth E. Evans

Like her co-worker Brenda, Ruth E. Evans represents the Agency wearing a chic electric blue uniform over a crisp white blouse. Blue patent leather shoes and a saucy cap in "aviation red" complete the outfit. Ruth has been with the FAA for about six years, coming here from Pittsburgh, her home town, where she was a secretary in a law firm. By a happy coincidence, she married a young lawyer who now heads his own firm in the Washington area. The Evans' have two children, Dorsey, 4, and Velma, a year and a half. Both Ruth and Brenda enjoy the traditional feminine interests—they love their homes and like to sew, cook and decorate.