# FAA HORIZONS

JULY 1964

OFFICIAL EMPLOYEE PUBLICATION OF THE FEDERAL AVIATION AGENCY

## EDITORIAL:

# *Effective Leadership*

Much has been said lately about management in FAA—which in essence boils down to effective leadership. But what is leadership?

Leadership is the art of influencing others to perform and move toward a common objective. Essentially this is done through personal interaction between the leader and his followers and is, unfortunately, not subject to scientific analysis. There are, however, certain aspects of leadership which can be identified.

Who is a leader? Anyone who directs the work of another. Since there are many levels of authority, most leaders are also followers. In this dual role intermediate leaders are responsible for counseling and contributing to the decisions of their superior and for supporting these decisions. The leader accepts the decisions of higher authority and adopts them as his own. He likewise expects his subordinates to respect his own decisions.

Basically, the leader's functions are to set goals, allocate resources, assign work and get results. While the techniques of leadership are many and varied, the ability to inspire others to follow a chosen path is the ultimate test of leadership. True leadership does not flow from technical knowledge nor from position, but from the attention the leader pays to the individual capacities of the people upon whom he must depend.

The leader knows his subordinates, particularly those who report directly to him. When he makes a decision, he should normally explain why it was made. Those who are asked to support it are entitled to this consideration, particularly those who may have counseled a different course.

Lieut. Gen. Harold W. Grant
Deputy Administrator

The leader honors his subordinates, respecting and using the chain of command. Failure to do so reflects upon his ability to establish an organization and to select subordinate officials. If either the organization or the immediate subordinates are inadequate, changes should be made; bypassing the chain of command will only weaken it, further aggravating the situation. The leader treats each subordinate as an individual, assigning work to best utilize individual strengths and to avoid individual weaknesses. He possesses the determination to require each person to work up to capacity, and the patience to understand and correct shortcomings.

The leader constantly checks the job performance of subordinates. In larger units, this is done by staff officers on behalf of the leader; in smaller units, by the leader himself. This is a necessary part of effective leadership.

The leader is above all loyal to his superiors, his organization, and to those subject to his direction. When his superior makes a decision, he accepts responsibility for it in his own organizational element even though he may have advised a different course. He presents the decision to his subordinates not as something foreign, imposed by misguided management, but as his own policy. When his subordinate acts, he accepts responsibility for the action before his peers and superiors, even though they may censure the subordinate. Loyalty does not, however, require that the leader blindly follow the advice of his subordinates. He should hear their advice and carefully consider it, but the responsibility for making the decision lies with the leader.

Ultimately, the leader must depend upon his subordinates to accomplish the goals which have been set for the organization. His task, then, is to inculcate in them an understanding of these goals, to instill a sense of identification with these goals, and to inspire in them a desire to give their best in accomplishing these goals.

*Harold W. Grant*


# FAA HORIZONS

JULY 1964

F E D E R A L  A V I A T I O N  A G E N C Y



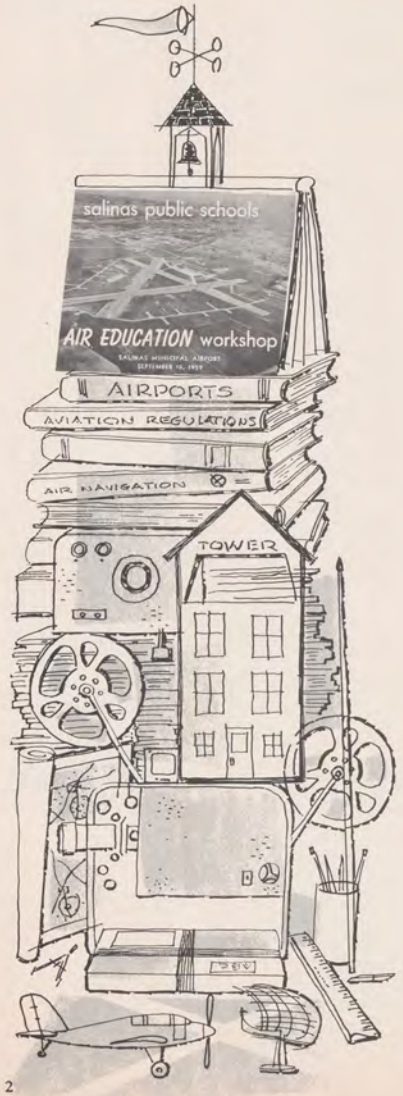

News and feature stories appearing in FAA HORIZONS which highlight regional personnel or the various aspects of regional activities are prepared by Regional Public Affairs Officers and members of their staff.


**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, ID-40, Federal Aviation Agency, Washington, D.C. 20553. Tel. No.: WO 2-5574.


## CONTENTS




**COVER:**
Edward J. Lutz, center, watch supervisor at the Columbus, Ohio tower, listens as his 18-year old son Steve, left, explains to him and younger brother Tommy, 16, each minute detail encountered during his first solo flight. Both boys soloed in a Cessna 150 this spring. Mr. Lutz, a rated instructor, coached them while Mrs. Lutz watched from control tower.




# FAA GOES TO SCHOOL

"'Readin', 'ritin', 'rithmetic, and aviatin'"—that's yesterday's old saw appropriately updated.

In classrooms across the nation, facts about the Federal Aviation Agency and its mission are being put across to students. As a result, there is a growing interest in the FAA and in its job.

One of the best ways found to reach the greatest number of students is through their teachers. The response from such contacts is high since it is multiplied many times in class after class, year after year. For this reason, the FAA pays a great deal of attention to teachers' aviation education seminars and workshops. In these workshops, groups of teachers meet for a period of from one to six or seven weeks to survey the entire aviation field.

How the Agency "goes to school" by taking an active part in these workshops is aptly illustrated by what has been done in the Western Region.

For the past six years, WE has taken part in 15 to 20 separate seminars and workshops per year in as many school systems. In this manner, literally hundreds of teachers throughout the West have gotten to know the FAA story.

The Agency portion of the program is carried out by the Public Affairs Office which provides speakers, films, displays and handout materials. In many instances arrangements are made for groups of teachers to visit FAA facilities for on-the-spot briefings regarding the job the Aegncy does. These visits are set up by local facility chiefs and area coordinators. Teachers attending the workshops represent all grade levels from primary to college.

Many of the programs include provision for "flight experience"—a short hop in a light plane provided by local flight schools and fixed base operators. Quite often this is the first such flight for the teacher. Many become so interested that they begin taking flight instruction and ulti-




Above: this picture shows a typical college "lab" where teachers, as well as students, learn firsthand the basics of aviation and the role FAA plays in its promotion. Below left: the Agency works with educators on many levels, national, regional and local. Here the Administrator talks to a group representing California colleges after a meeting at which he was principal speaker. Below right: San Jose State College, California, is one of many that offers teachers the opportunity to participate in aviation workshops.

AURORA TEACHERS LEARN ABOUT FAA

Gene S. Kropf of Los Angeles, regional public affairs officer for the Federal Aviation Agency, explains federal regulations of air transportation to the Air Age Workshop.

STARTED IN 1954

## School Workshop Has Aurora Teacher Training Up in Air

By ROBERT BURNS

AURORA, Colo. — The Aurora Public School system boasts an in-service training program for teachers unparalleled in scope and subject matter in the nation.

The Air Age Workshop is the only program of its kind for teachers. It is set in the world of missiles, jet airliners, launching facilities and aerodynamics.

The program, serving as a study model for the National Aviation Education Council, [illegible] in 1954 by the [illegible]ols in co-

Above: Gene S. Kropf, regional public affairs officer, WE, explains the Federal Air Regulations to an Air Age Workshop in Aurora, Colo. This city has one of the finest in-service aviation training programs in the country. Below: The Salt Lake City tower chief, Theodore H. Marvin, moderates panel discussion on flight safety.


Aviation education takes many forms—lectures, films, manuals, slides and discussions. Here a group of pilots conduct a meeting using cutouts for their visual aids.

# . . . TO TEACH THE TEACHERS

mately secure pilots licenses.

The program has been growing year after year—and is still expanding. Such FAA briefings have had a favorable cumulative effect. Teachers have been able to return to their classrooms better equipped to kindle students' interest in aviation matters and in the FAA's role in the realm of flight.

Another vital facet of the FAA educational effort is concerned with the "flying public"—the pilots whom the Agency serves most directly.

Because pilots are already enthusiastic about flying they are usually quite receptive to programs aimed at improving their aviation skill and knowledge.

In the Western Region, notably at Spokane, Wash., and Cheyenne, Wyo., a skit-type presentation by FAA personnel was found to be a fitting and worthwhile device to reach pilots with facts on FAA services.

A touch of drama is added by Agency employees taking such roles as pilots and controllers, using cutouts as aircraft, towers and flight service stations.

The skit idea, which originated in Oakland, has made its mark at several locations in the Western Region. Wherever it was used, it was found to be well accepted.

Another approach was to work with pilots enrolled in schools and colleges. Typical of the subjects discussed were pilot liability, special weather phenomena, special VFR flying, flight plans and pilot briefing. Hangar flying with pilots in the schoolhouse pays off in good air traffic dividends and flying discipline.

Thus the FAA story is being put across to the benefit of both the Agency and the user.



# "...THEY BEAT 'EM TO PIECES"

Aviation safety is the Federal Aviation Agency's chief stock in trade; safety before, during and after flight. For aircraft, this preoccupation with safety begins on the drawing board as the designer's first sketches begin to take form. It continues as the engineering data emerges to support the designer's concept of what the plane is supposed to do.

Before any new aircraft reaches the assembly line stage FAA specialists, working in close cooperation with the manufacturer, have the design concepts put through numerous tests to eliminate defects before they become built-in "bugs" costly in terms of lives and dollars. Even the most experienced design teams make errors that can only be spotted when prototype components are subjected to tests that sometimes result in destruction of the part under study.

Before the tests begin, the applicant develops and submits his basic loads data and proposed testing program to the FAA inspectors. When the inspectors are satisfied the data is accurate and the test program meets the requirements laid down in the pertinent Civil Air Regulations, the testing begins. It covers dynamic and static tests of the air-frame, systems functioning, vibrations surveys, and flight performance.

How much stress can a given component—tail surfaces, wings, fuselage, landing gear—take before it fails can only be determined by increasing the test load, in carefully graduated increments, until the breaking point is reached.

Lead "pigs", laid on in carefully calculated sequence at specific points of the structure, provide the load. What is happening to the component as the weight is increased is accurately recorded by strain gauges placed at key points. These transmit their findings electrically so that the engineers and inspectors know precisely when and at what point failure occurred.

As testing proceeds, components are joined with others and the combination is again stressed to destruction. This "torturing" of the aircraft continues until the tests have run their course and all components measure up to the standards required for safe operation.

Testing is expensive. A manufacturer handcrafts an air craft knowing when he cuts and forms the first pieces of metal that his newest brain child will ultimately be bent, twisted, and torn into scrap metal. But the results are worth the price paid—safe, dependable aircraft the user can fly in with complete confidence that the manufacturer and the FAA have done their homework. That's why ". . . they beat 'em to pieces."

Calvin L. Stoner inspects "whiffletree" before loading wing with about 24,000 pounds. Below: 7,000 pounds of lead are laid on stabilizer to determine its failure point.

Stoner inspecting redesigned rear spar fitting after weakness showed up in testing. Below: wires leading to strain gauges are spotted throughout plane to measure effects.

*His parents had a law career in mind but...*

# HIS EYE WAS ON THE SKY

*By Frank J. Clifford*

The surest way to get a message from an airplane to the ground-back in 1929, when Deputy Administrator Harold W. Grant was a brand new Army Second Lieutenant, just out of flying school, was to tie it to a heavy object, toss it over the side, and hope for the best.

For ground-to-air communications, colored signal panels were most often used. The cranky, bulky aircraft wireless sets with their long trailing wire antennas and their hefty ground stations were just coming into use.

To Lieutenant Grant assigned directly from Kelly Field to an observation squadron at Selfridge Field, Michigan, this was an intolerable situation. Long on ambition, and with the boundless reserves of youthful energy, the lieutenant and his squadron mates tackled the problem of making ground-to-air, and air-to-ground communications as dependable as a phone call next door.

After a world war, a police action, and a decade of cold wars such communications are now a reality. In the intervening years, the lieutenant became a lieutenant general, ill-tempered radio sets have been taught manners and new tricks to make global communications a reality.

Hal Grant entered flight training after getting a degree from Northwestern University with something less than enthusiastic support from parents who were convinced that a career in law was a more suitable life pursuit. This was the time when newspapers used the term "aviator" interchangeably with daredevil, stuntman and barnstormer.

He was attracted to communications just as naturally as he was to flying. Quickly, the fledgling polished up the basic Morse Code drill, required in pilot training in those days, and soon acquired an authentic "brass pounders' fist," a knack he still retains.

Today, General Grant, whose soft-spoken manner is a trademake as well-known as his abundant eyebrows, is an authentic pioneer in communications. He was in on the early, do-it-yourself, cut-and-try developments and moved ahead with the trailblazers in the field.

His chance for eminence almost ended with abrupt finality in 1931 while flying a gunnery training mission. On a shooting pass, as he pulled his Thomas-Morse 0-19 into a chandelle, his engine failed and he crashed. His injuries were extensive.

When Japanese bombs left Pearl Harbor a smoking ruin, Harold W. Grant was a major and Special Assistant for Communications Matters in the newly formed Office of the Air Inspector, Office of the Chief of Air Corps. A few months later he became the Army Air Force Member of the Army Communications and Equipment Coordination Board, as well as the AAF representative on the Signal Corps Technical Committee. In June 1942 he was promoted to colonel.

The war in Europe was going full blast in February, 1943, when Grant departed for London to become the U. S. Air Signals Planner in the British Combined Operations Headquarters. Later he was sent on a special mission to Cairo with "Force 141" to plan the invasion of Sicily.

With the formation of the Supreme Allied Command, Southeast Asia, Admiral Lord Louis Mountbatten tapped Grant to be his Deputy Signal Officer-in-Chief. September, 1943, saw him back in the United States preparing special communications equipment for operations in India and Ceylon. By adroit juggling of components, he shoehorned communications and cryptographic gear into a C-47, converting that ungainly but loveable bird into an airborne command post known throughout the China, Burma, India Theatre of Operations as "Mercury"—which translates as "The Messenger of the Gods." This aircraft was the forerunner of the "Talking Birds" a much more sophisticated flying command and control center of today which is widely used by the Tactical Air Command in its global deployments.

Grant flew "Mercury" to India where Admiral Mountbatten immediately adopted it as his personal battle chariot from which he conducted his part of the war in the CBI.

The war in Europe still had a month to run when General Grant was recalled to the United States in April, 1945, to become Assistant Chief of Staff for Communications Electronics in the newly formed Continental Air Force, a unit that was to become the Strategic Air Command.

One high-level post followed another, and stars began to fall on his shoulders. He became Director of Communications and Electronics, USAF Special Staff School; Commander of the 31st Air Defense Division; Executive of the Joint Air Defense Board; Vice Commander, Japan Air Defense Force; Deputy Commander of the Fifth Air Force; Deputy Commander of the Taiwan Defense Command. He left Taipei in March, 1957, to become Deputy Chief of Staff, Operations, Headquarters Air Defense Command. He was named Director of Communications-Electronics, Headquarters, USAF in July, 1958.

On July 1, 1961, General Grant became the first commander of the Air Force Communications Service, organized under the single manager concept to operate all Air Force communications and navigation aids. This is the parent organization of all USAF controllers. During his tenure AFCS was also responsible for flight checking of military navigation aids, a job since transferred to the FAA.

In February, 1962, President John F. Kennedy nominated the General to be the FAA's Deputy Administrator. Under General Grant's guidance, FAA's communications net, second in size only to that of the Department of Defense, has developed into a more versatile tool for air traffic control as well as management direction.

Not long after he assumed the role of Deputy Administrator, General Grant effected a marriage of the FAA and DOD communications nets which strengthened both systems and produced a saving to FAA of over $6 millions annually.

Not measurable in dollars and cents, but nonetheless a towering example of efficiency, was the performance of the combined net during the Good Friday earthquake that shattered Alaska. The 49th State never went off the air.

His extensive background in air defense and military aircraft control have contributed greatly to the ease with which FAA and DOD solved the problems of developing a common control system called for by the Federal Aviation Act of '58. It was while he was Deputy for Operations, ADC, working with Jimmy Pyle, Administrator, CAA, that the first agreements were reached on the joint use of radars. The Joint Radar Planning Board has been one of the most effective instruments in achieving the common system.

Heavier-than-air powered flight was two months shy of being three years old when Harold Winfield Grant was born in Louisville, Ky., on October 16, 1906. Coincidentally, it was in 1906 that Lee DeForest, probably the world's most prolific inventor of communications devices, patented the radio telephone. The world in which Harold Grant was to play such an active role was taking shape.

General Grant is married to the former Dorothy Louise Silvis of Wagner, S. D. They live in Washington, D. C. with their two sons, Michael and Bruce, and daughter, Lina. Mrs. Grant is an accomplished equestrian who conducts children's classes in horsemanship.

Michael is a graduate of Stanford and recently earned his Masters degree in Business Administration at Northwestern University. Lina has a Masters degree in Fine Arts from the University of Maryland. Thirteen-year-old Bruce is a First Class Scout, horseman, honor student, and National Rifle Association sharpshooter. He and the General share a common interest in hunting and fishing.

After 35 years of dedicated service to his country, it's a safe bet people will be hearing from General Grant for some time to come.

During rare moment of leisure, the General enjoys the company of son Bruce and Mrs. Grant, an accomplished equestrian who conducts children's classes in horsemanship.

Under the guidance of Lt. General Harold W. Grant, the merger of FAA and DOD communications nets produced a savings to the Agency of $6.3 million annually.

Liana Takeuchi, daughter of Mr. and Mrs. Kazumi Takeuchi, aboard the General's shoulder at Canton Island.


The system of controlling air traffic merely by reference to a radar target that has an assigned altitude may be in for a change.

Today's increase in air activity has made it essential that something more sophisticated be adopted. What is needed is something that will give more than just target location and that will lead to the ultimate goal of the National Airspace System—automation in air traffic control centers and control towers.

But what system should be adopted? How close is the Agency to automation?

RAPPI gives air traffic control specialist increased radar information. William Waring of the Minneapolis Center observes the new RAPPI system.

Electronic Maintenance Technician Lyle Adams working on RAPPI, newest computer/symbol generator that converts digital messages into suitable form for display on the radar screen. The signals are sent over ordinary 'phone lines.

FAA's Systems Research and Development Service searched for an answer in the military's Semi-Automatic Ground Environment (SAGE) system. However, there was a hitch to it. The expense. The high cost of SAGE computers and other complex electronic gadgetry throughout the National Airspace System was out of the question. But not being able to buy the whole package didn't discourage SRDS. They found that the telephone circuits used in SAGE to transmit data from the radar sites to the direction centers were desirable and not too costly.

This manner of remoting signals is considerably less expensive than the microwave equipment now in use. Microwave stations must be duplicated approximately every 30 miles in order to produce the desired results.

Before the telephone lines could be used for signal data transmission and display it was necessary to find a substitute for the expensive computer-generated displays used with SAGE.

The answer was Random Access Planned Position Indicator (RAPPI), the system now being evaluated at the Minneapolis Air Route Traffic Control Center in Farmington, Minn.

How does RAPPI work?

Actually, it is a small signal converter and symbol generator which was designed as a piece of military test display equipment. It was found that RAPPI could be modified and used together with a digital data processor which is located at the radar site.

At the present time primary and secondary radar information at the Empire, Mich., site is fed into the digital processor where it is converted into digital messages. These messages are then transmitted via telephone circuits to the center at Farmington where they are reconverted to a form suitable for display on the RBDE-5 bright display equipment.

This latter process is done in the RAPPI which has been altered to give the desired results when used with the modified bright display equipment. Target information, which is limited to six types of data information, is shown as arrows, squares, crosses, circles, dots or slashes, depending upon the type of information called for. If the evaluation proves that this type of equipment, with its limitations, is acceptable for air traffic control on some low density airways, it will provide the Agency with low cost radar information for part of the National Airspace System.

RAPPI is one more step toward the ultimate goal of complete radar coverage and radar control throughout the country. If proved successful, it will be another move in the right direction.



*A Growing*

*New Sport of Thrills*

*And Sometimes Chills*

ARGOSY Magazine's skydiving model Mr. Leigh Hunt floats through space, "dressed for traveling" with parachute pack, sport clothes, luggage and reading matter.

# SKYDIVING!

*(Editor's note: The following article, which originally appeared in the Southern Region edition of HORIZONS for May, elicited such reader response the editors concluded it deserved a wider audience. We think you'll enjoy it.)*

Many young Americans, always searching for exciting new adventure, have found this adventure in sport parachuting. Among these young daredevils, skydiving has become quite the rage.

Skydiving actually is floating and maneuvering through space, much like a graceful bird, as the skydiver delays opening his parachute. In free fall, sport parachutists plummet toward the earth at speeds up to 200 miles per hour!

This sport started about 1956, and today there are more than 18,000 active sport parachutists in the United States. Moreover, the number is *doubling* every year! Because of the many sunny days in the South, sport parachuting in the Southern Region is growing more rapidly than in some other parts of the country.

There are many variations of this sport, from "baton-passing" in mid-air, to testing one's skill at landing on a predetermined target—the winner frequently landing only inches away from the second-placer's mark.

The sport has attracted so many and is so unusual that there is currently running a television adventure series, "Ripcord," which features 'chutists. The jumper in the series is a stunt man.

Obviously, as the zest for sport parachuting increases, it injects a new dimension in the air safety activities of the FAA. The Agency is most interested in seeing that this sport is conducted safely, and that it does not result in tragic accidents. Because of the increasing activity in skydiving, the FAA has issued a regulation (Federal Air Regulations, Part 105—Parachute Jumping) which outlines certain requirements for conducting intentional sport parachute jumping.

FAA urges all sport parachutists to read these new rules and to follow them for their own safety and the safety of others in the sky and those below. The regulation specifies that the parachutist, before making a jump, or the pilot of an aircraft before allowing a jump to be made, should contact the local FAA office well in advance to determine if it will be safe to jump in a particular airspace.

On the front cover of the March issue of the men's magazine ARGOSY, there appeared an unusual photograph (taken by expert parachuting photographer Bob Buquor) which captures the exuberance of skydiving.

FAA HORIZONS asked the publishers of ARGOSY for permission to reproduce the photograph which appears with this article. They not only readily agreed, but told an exciting story about the photographing of this picture.

Mr. Al Podell, director of ARGOSY photography, tells it this way:

"I thought you might be interested in a little sidelight to the shooting of that cover, and I think your readers might like to know that it was an FAA regulation that saved the life of our model.

"You see, the first shooting did not come out as well as I wanted, and I asked the skydiver to dress himself to look more like a man in a business suit than a skydiver. He switched his jump suit for a pair of slacks and sport jacket, switched his boots for shoes, etc. Then, I suggested that he dispense with the emergency 'chute since it blocked the view of his suit, and again made him look too much like a jumper.

"From my (very) limited knowledge of parachuting, I assumed he'd have very little need for his emergency 'chute. Our jumper, Leigh Hunt, being the rather fearless daredevil that he is, agreed with me and said he would be willing to make the jump without his emergency 'chute, but he said he could not do so since it was contrary to FAA regulations. I grudgingly then gave my OK for him to make the jump wearing the emergency 'chute.

"As it turned out, that emergency 'chute saved his life. He jumped from about 8,000 feet and attempted to pull his ripcord at about 1,500 feet. He could not do this with the suitcase in his hand, so he had to drop it. This suitcase then fouled up his 'chute and tangled it so as to render it useless. Leigh continued to plummet and was finally able to pull his emergency cord at about 500 feet. Thank God for that emergency 'chute and thank the FAA for that regulation requiring jumpers to wear two 'chutes!"

Right: Lake Hood, busiest floatplane base. Below: William B. Stolz, tower chief, and Cyril Keiehl discuss their busy acquatic traffic.

# LAKE HOOD, FLOATPLANE CAPITAL

From the air, the busiest floatplane location in the world resembles a slightly misshapen bar bell. The weighted ends are two lakes; the grip is a 2,000-foot channel connecting the two ends.

Lake Hood Airport, next to the Anchorage International Airport, logs 41,000 landings and take-offs annually. Over 300 floatplanes spill over its banks, forming a continuous fringe along the water's edge. There isn't room for any more. In fact, the waiting list for tie-down positions numbers a hundred.

One fourth of all the floatplanes registered in the United States tie down at Lake Hood.

The concentration of floatplanes in Anchorage is easily explained by a look at a map—the southern half of Alaska abounds with hundreds of lakes and waterways. Streams and inlets probe the mainland, their watery fingers making the "Great Land" a sportsman's paradise. In the southeastern Panhandle, short range travel is possible only by boat or seaplane. In a land where there is only one mile of paved road per 100 square miles of land, the airplane—especially the floatplane—becomes vitally important.

A drive around Lake Hood is like taking a trip to an outdoor exhibit devoted to the history of seaplane aviation. Amidst the bright new Cessnas and Pipers moored along the shores of Lakes Hood and Spenard are some veterans of a bygone era still full of life, putting in their hours of flying with the best of them.

One of them, a single-engine, seven place Travel Air circa 1929, is in as good a shape as it was over 30 years ago when it first came north. It's owned by Maurice Goff, the supervisor of maintenance of Pacific Northern Airlines, who coddles and fusses over the old bird, coaxing her on each year to another season of flying. "It takes a little more work each year," says Goff, "but it's worth every bit of it. She can still haul more people and cargo than any other single engined bird on the lake."

Nearby are a Curtiss Robin, vintage '28, and a Stinson SM.Jr., '29, and just about every type of airplane that took to the water. They are owned by men from every walk of life. They include anchorage bank President Elmer E. Rasmuson, Dr. John Hepler of the FAA, architect Francis Mayer who designed Merrill Tower, lawyers Stanley Mc Cutcheon and Pter Kalamarides, and a host of others—professional guides, carpenters, auto body mechanics, FAA employees and a neon sign maker.

Air taxi operators are based here and offer complete sales, service and repair facilities to floatplane owners. Rental aircraft are available to non-owners for flying to the duck flats or going after rainbow trout, Dolly Vardens or grayling in the swift streams. In winter, many planes are converted to ski operation and the snow covered ice is laced with patterns of ski runners.

In the summer, the water is seldom still. In the long summer days, an early daylight departure and late return can make one day off equal a weekend of pleasure. Even after-dark landings are safer here. Runaway lights along the banks of the canal outline civil aviation's only lighted seaplane base.



Left: World War II tower controls traffic at Lake Hood and Anchorage International Airport—latter's tower was destroyed by the earthquake. Above: Small floatplane churns the water on take-off run.

It wasn't always thus, comments Theron Smith, aviation chief of the Fish and Wildlife Service. "Before the channel connecting the lakes was dug in 1937, we didn't have more than 1,800 feet on either lake to use for landings and take-offs. It was pretty touchy. Now we have 5,000 feet of waterway for our operations if we use the channel and the two lakes."

In the early fifties, traffic at the lakes became so dense that Dr. Milo Fritz, an eye surgeon who was the founder of the Anchorage Airmens' Association, urged the CAA to consider establishing tower services at Lake Hood. Air traffic from the nearby International Airport was adding to the floatplane pilots' woes.

In 1954 a surplus Army Air Corps tower, dismantled at Yakutat and shipped to Anchorage, was commissioned for controlling the lake traffic. It was and remains today the only tower in use to serve floatplane operations exclusively. Of interesting note is that it now serves International Airport, too, since the destruction of International's tower during the Alaska earthquake.

Tower Chief at Lake Hood is William B. (Ben) Stoltz. He and his traffic controllers are handling the increased traffic for the two locations from the wartime tower which rode out the earthquake with hardly a wrinkle.

Ben and his controllers enjoy their unique assignment. Outdoorsmen themselves, they do a lot of floatplane flying and wouldn't trade their jobs for anything else. It's the kind of work for a man who likes to get away from the hubbub of the city and take refuge in the wild.



Above: David E. Jones, Ass't. Chief, Air Traffic Division, performing spring cleanup chores on his Cessna 180. Dave is one of many FAAers in Alaska who own and fly floatplanes. Below: Wesley K. Landes with his Cessna 180 on floats. Landes won the FAA Mechanic of the Year Award in Alaska in the general aviation category for his design of solid foam floats for light aircraft.

# THE C-135 IS A BUSY BIRD

A good recipe for promoting international aviation is to take an FAA flight inspection aircraft such as the C-135, fill it with intricate electronic checking instruments, add the competence of an FAA technician, and toss in a dash of American goodwill.

A recent C-135 flight over the Pacific and across Japan provided a sample of the recipe. The crew of the big, four-engined jet traveled over 15,000 miles; checked and rechecked hundreds of air navaids in 11 flying days, 13 individual flights, and a total of 90.2 flying hours. While on the trip, the crew checked navigational aids at 21 different terminal bases in Japan as part of an FAA and ICAO agreement.

On the Alaska-to-Japan leg of the trip, the C-135 crew made flight checks on the air navaids to see if additional ground based navigational aids were necessary in the vicinity of the Kurile Islands of Japan. These would be used to keep ocean flights along the route from straying out of the international air lanes into Soviet territory. The checks were done at two different levels going east and west. Recommendation for additional navaids are in the process of being made.

On arrival in Japan, aircraft commander Doug Doil and his crew had been on duty more than 24 hours. There were two sets of crews on board, which are part of the National Field Operations Headquarters. Each crew consists of three pilots, a navigator, a flight engineer and four electronic technicians.

Doil served as liaison man for the aircraft. He had contact with the FAA FIDO office, the U. S. Air Force, Japanese Self Defense Force, Japanese CAB, and U. S. Base Commanders of Tachikawa and Yokota Air Force Bases.

Jim Price served as protocol man. He briefed Japanese Self Defense Force officers on the functions of the mission and the operation of the equipment and was on board the aircraft when Japanese were given a demonstration flight.

Major General Masatake Oumiya of the Japanese Air Force wrote FAA officials to praise the mission and the excellent manner of the operation.

The eight Air Force men on board for the trip kept the C-135 in top shape. They performed progressive maintenance on the plane, and replaced such parts as two main landing gear tires and wheels, a nose wheel and tire, one brake assembly, both pilot and co-pilot windshields and a leading edge wing flap. The items were easily obtainable in Japan at one of the U. S. Air Force bases.

"We were very pleased with the excellent cooperation we received all along the route," Doil said, "and especially the excellent cooperation of the FAA office in Japan."

The worldwide operation of the organization will not stop with this trip. The C-135 will soon go on other similar missions.

Flight crew works with maze of instruments in C-135 cockpit.

Technicians monitor ground signals in the C-135 console area.



# WHIRLYBIRD AIRLIFT

"Hold it! Little bit more this way."

"Let'er down easy!"

These are some of the shouts you can hear from the two FAA facility installation technicians as they stand on ladders at the top of the VORTAC cone just as the Army helicopter prepares to lower an antenna into place.

When you hear the many colorful stories that installation engineers and specialists tell about their experiences in the field, you realize that these men must exercise much ingenuity and imagination, along with basic technical knowledge to get the job done.

From the jungles of Panama to the mountains of Tennessee and the Carolinas, each job has its own peculiarities.

Treacherous mountain roads, dense swamps, and hot, arid plateaus seem to be the lot of field construction parties. For some strange reason, VORTAC's aren't placed in beautiful or easy places. They are placed where they work best, and where they do the job as silent sentinels of the airways.

FAA installation people are among the best in the nation. They get the job done regardless of weather or other hardships. It is always a wonderful day when the engineer-in-charge can say, "She's ready—let's get a flight check!"

And when the flight check specialist prove the reliability of the signal, it is a satisfying day for all.



This Stearman (above), dependable aerial kindergarten for fledgling flyers in WW II is still the favorite steed of ag pilots whose job demands an extremely maneuverable ship. (Right) This AG Cat, specially designed to meet the exacting demands of low-level flying, is rugged, safe to fly, and easy to maintain. Ag pilots, or "crop dusters" as they are sometimes called, log seven per cent of all U. S. general aviation. Last year this amounted to some 889,000 hours.

(Above) The Well dressed ag pilot about to perform his chores not so high above a cultivated field, is togged out in "hard hat", safety harness, and respirator. Open cockpit flying brings the pilot into proximity of the poisons he sprays. (Right) 'Copter dusting accounts for two per cent of dusting in the Southwest Region. Initial cost of equipment is high.

# SOUTHWEST AG FLYING IS BIG . . . 1,457 PILOTS . . . 1,686 PLANES

Agricultural aviation is more than the mere mixing and spreading of chemicals as part of the nation's farming activities. It is a specialized and exacting type of flying, requiring precise operation of heavily-loaded aircraft.

Now taking a seven per cent slice of the total flight hours in U. S. general aviation, "ag pilots" or "crop dusters," as they are generally called, flew 889,000 hours during the last yearly reporting period, dispensing 800,000 tons of material on 52 million acres.

In the Southwest Region, stretching from the rice-rich Delta country of the Mississippi River to the arid brush-covered ranges of West Texas and New Mexico, lies a greatly diversified agricultural empire. Records show that ag pilots spend more time over this area than any other FAA region.

Inspectors from the Southwest's 11 GADOs have a first name acquaintance with the 1,457 ag pilots operating the 1,686 aircraft in their districts. Helpful suggestions, better equipment and improved operating techniques are making agricultural aviation—with its reputation of hazardous flying—a much safer and more business-like operation.

But there is still a need for better regulations to aid both the inspectors and the industry. Proposals for further regulating the industry are now being studied by operators and others vitally interested in this phase of aviation.

Part 55 of the Federal Aviation Regulations, now under study for possible changes and adoption, would serve as a guide for the operators and pilots. The proposed regulations would supplement and incorporate other parts of Civil Air Regulations in this field.

At the present time, Part 8 of CAR has made it possible to use commercial aircraft for economical spraying operations. Under the rules, aircraft can be modified to carry loads which give the operator greater operating efficiency.

Several other waivers have been approved to aid the pilots of agricultural work, pipeline patrol and other activities which involve low altitude flying. However, all flights must be conducted in a manner that will not create a hazard to persons or property in the air or on the ground.

In the proposed Part 55, the FAA has recognized the potential danger of low flying aircraft, plus a second hazard—the effects of some sprays on the pilot and persons and property in the vicinity of operations. The rules proposed in Part 55 are designed to provide standards, requirements and limitations which will enable FAA to exercise reasonable control over agricultural flying operations in order to attain a practical level of safety in its everyday operation.

These regulations would abolish the old waiver system—which FAA has termed a negative approach—and give the industry a positive direction. An operating certificate, issued after certain qualifications are displayed and requirements are met, could give the operator authority to conduct his business anywhere in the United States and its possessions.

A Wichita Falls operator said, in favoring the proposed regulations, that it all added up to "good management" and that most operators already were very close to the regulations under study. "Agricultural flying has been a stepchild and has had no real place in aviation," he said. "Part 55 would recognize the operation as a legitimate industry."

He traced a change in the industry away from the area of cheap surplus aircraft and an excess of pilots. Expensive equipment and the need for a school to train future ag 'pilots and better maintenance of equipment would be necessary to combat the higher costs of planes and operations.

Aerial operations on farms is not new, and various practices have evolved during the years. Commercial use of the airplane to help the farmer was first tried in 1923, but it did not gain too much importance until the end of World War II. A surplus of pilots and excess aircraft, plus newer and better chemicals, pushed aviation onto the agricultural scene.

Of the many jobs performed by aircraft, the application of insecticides is by far in greatest demand. Weed control, fertilization, seeding and defoliation are included in the popular practices. In the range country, aircraft have the added uses of brush control spraying and cattle surveillance and roundup.

Probably the most popular aircraft is the Boeing Stearman, a World War II trainer, which has been modified for spraying. Other manufacturers are now marketing special spraying planes, designed for greater efficiency. Helicopters make up about two per cent of the aircraft used.

In 1962 operators in the Southwest Region flew 333,882 hours in treating nearly 20 million acres. A total of 566 operators were listed with 1,686 aircraft and 1,457 pilots. Operations ranged from 67,172 hours in the rice country of the Little Rock district to a modest 1,985 hours in the area reported by Albuquerque.

Other GADOs reported the following hours of agricultural aviation: Dallas, 10,931; El Paso, 9,045; Fort Worth, 19,391; Houston, 37,884; Lubbock, 34,785; New Orleans, 30,308; Oklahoma City, 33,625; San Antonio, 65,592 and Shreveport, 33,169.

Agricultural aviation is providing better and more plentiful food and fiber for the American consumer. The FAA's role is only to provide guidelines to assure safety for pilots, operators and the general public in these operations.

# BOSTON CENTER IS TOPS WITH HANDICAPPED KIDS

Boston ARTCC personnel take pleasure in presenting a check for $500 to the Crotched Mountain School for the Rehabilitation of Physically Handicapped Children. From left: controllers Paul Osgood and Leo Nangle; Luther N. Grimes, Executive Director of the Rehabilitation Center; special student Joey Mallen and controllers Robert Milligan, Gordon Garland and Bob Harrington.

To youngsters at the Crotched Mountain School for the Rehabilitation of Physically Handicapped Children, Boston center personnel are something like heroes. Not satisfied with general morale-boosting and spare time visits to the school, Boston center personnel decided to campaign for monetary support. Contributions from two pay periods netted the children more th $500, with an additional $300 in pledges received.

The school relies primarily upon voluntary contributions to carry on its heartwarming work.

Boston center employees' interest in the Crotched Mountain School was spurred by radio/radar controller Bob Harrington, controllers Bob Milligan, Gordon Garland, Paul Osgood and Leo Nangel.

## PC Bond Drive Underway

*William K. Hanifin (right) State Director of U. S. Savings Bonds Division for Hawaii, assists Jim Watley, Flight Standards, to get the 1964 PC Bond Drive off to a good start with encouragement from Director Robert I. Gale (center). Drive to date is netting PC high returns.*

# Retiree Retires Again After Long Career in FAA

In 1913 a young carpenter, Kenneth D. Wyant, carved out a replacement wing and installed it on a pusher-type aircraft which had crashed near his home in Bolivar, Mo. A quarter of a century later, after a successful career in the building and construction business, he started building airports for the descendants of that early flying machine.

Last June 30—after another quarter century—Mr. Wyant retired from the FAA at the compulsory age of 70. Since 1953 he had been at SO's headquarters working on the installation of ILS, ALS and HH facilities.

The installation of some 60 ILS facilities in the Southern and Southwest regions were supervised by Mr. Wyant.

A civil engineer, Mr. Wyant began his career with the CAA after a five-year stint with the Public Works Administration of the depression days. His CAA-FAA duty assignments include Washington, Kansas City and Atlanta in addition to Fort Worth. He was resident engineer for the Olathe Naval Air Station when World War II stopped his portion of the work. He then went to Atlanta as resident and design engineer and helped in the construction of airfields along the Gulf Coast.

Wyant's first venture into Federal service was with the 82nd Field Artillery Band in WWI in which he played saxophone and clarinet. He was also a writer for the *Stars and Stripes* and edited the Ft. Bliss *Guidon*. Following the war he received bachelor degrees in building construction and civil engineering from the Carnegie Institute of Technology.

He and his wife will continue to live in Fort Worth and pursue his hobby—the cultivation of more than 80 varieties of roses.

## FAAer's Fly in KC-135

*Six watch supervisors from the Minneapolis ARTCC recently flew aboard KC-135 Stratotankers of the Strategic Air Command and witnessed refueling of SAC's B-52H bomber. From left: Lawrence F. Daily, Fred Howland and Helmer Carlson. Others who participated were Bernard Clough, James Christian and Robert Davies.*

# AGENCY'S ROBINSON CRUSOE OWNS SURPLUS ISLAND IN POTOMAC RIVER

Who hasn't dreamed of escaping to an uninhabited island to get away from it all? Well, Farrar Simons, FAA's senior representative on the National Communications Staff, can do just that whenever the feeling overtakes him—and still stay within an hour's drive of home.

Mr. Simons actually owns an island in the Potomac River near Quantico, Va.—11 acres of trees and brush, complete with an abandoned quarry said to have supplied stone for the Capitol and the original White House—the one the British burned down in 1814.

Simons bought it from the government, which had owned it since 1792, at a surplus property sale. Before that, it was the possession of one George Brent, who purchased it in 1694 from the heirs of Lord Fairfax. They, in turn, held it under a grant from the British Crown.

What's Simons going to do with his island? Right now he's busy bulldozing a road around the perimeter and clearing a site for a house to be built with stone from his own quarry, naturally.



# FAA COMMISSIONS NEW OAKLAND RUNWAY LIGHTS

The Federal Aviation Agency has cut minimum visibility at Metropolitan Oakland International Airport to 2,000 feet because of greater safety of the new lighting system.

FAA officials have commissioned the newest runway lighting system, the first in the West, at Metropolitan Oakland International Airport. Lights are set flush in the runway paving and at high-speed turnoffs. The new lighting will permit the FAA to reduce the minimum visibility for instrument operations from the present 2,600 feet to 2,000 feet. Later, it is expected the minimum visibility will be reduced to 1,300 feet.

Oakland International is one of five airports in the nation to qualify for these low minimums, which will reduce interruptions in airline operations because of inclement weather. Others are JFK, PNE, DIA and EWR.

Edward C. Mash, deputy director of the FAA's Western Region, officiated at the commissioning. Also participating were Elwyn Rowe, FIDO, chief at Oakland; Ted Holmes, Oakland tower chief; and Gene Kropf, regional public affairs officer.

Participants also included Mayor John C. Houlihan, Nils Eklund, pres., Oakland Chamber of Commerce; George J. Vukasin, pres., Board of Port Commissioners; members of the board. Ben E. Nutter, exec. dir.; and George D. Hext, airport manager.

Light bars on each side of the runway centerline are installed in the touchdown zone for the first 3,000 feet of the 10,000-foot runway. These eliminate the "black hole" effect which has bothered pilots for years as they make the transition from approach to touchdown.

All of the flush lights are white and their intensity, or brightness, can be varied. Brightness is controlled so as to be compatible with the intensities of other field lighting systems, such as approach lights and runway edge lights.

# Jones Is New Assistant Air Traffic Chief in AL

David E. Jones was appointed assistant chief of the air traffic division in the Alaskan Region on May 21.

Mr. Jones, an FAA veteran of 15 years, has served most of this time in the 49th state. He hails from Bozeman, Mont., and attended Baldwin Wallace College in Ohio before joining the Navy in 1944. He served as aerial navigator in the Pacific Theater during WWII.

In his new position, Mr. Jones will assist division chief, Donald Wolfe, in administering the far flung system of centers, towers and stations in Alaska.

## HUSBANDS TRAP WIVES TRAPPINGS

*The wives of FAAers at the Murphy Dome facility should be sporting new fur coats soon thanks to the trapping efforts of their husbands at that isolated spot. Located 27 miles northwest of Fairbanks, Alaska, Murphy Dome is an Air Force radar site. The big bag of wildlife captured this past winter included 138 lynx, fox; mink, wolverines, beavers, weasels and martens. The trappers were Donald D. Lange, Frank D. Slavik, James P. Beaman, Thomas E. Dutton, Thomas D. Clark, Wallace I. Waldron and Marvin O. Hassebroek.*

## Dr. Siegal Honored as Fellow, Aerospace Medical Association

Dr. Peter Siegal, chief of the Aero-medical Certification Division recently was named a Fellow of the Aerospace Medical Association. Dr. Siegal, one of nine chosen from a field of several hundred, was the only representative of the Federal government to receive this signal honor. The Association's membership covers all aspects of aerospace medicine and biotechnology and selection is based upon significant contributions to aviation and space medicine programs, civil and military.

## GA PILOTS TAKE FAA TOUR

Pilots and fixed base operators in northeast Indiana have helped to make the ATS Pilot/Specialist Briefing Program at Ft. Wayne, Ind., FAA facilities a successful venture.

Interest in FAA operations has been demonstrated by organized groups of pilots and business people who are encouraged to become familiar with the aviation industry and FAA facilities.

Flight service station and tower specialists have demonstrated their skills and encourage the flying public to utilize available facilities.

Upon arrival at the airport terminal the tour groups visit the systems maintenance (daytime only), Weather Bureau, flight service station, control tower and terminal radar facilities. Following evening tours United Air Lines frequently provide a tour through an airliner.

Station chief Ross F. Hall and tower chief Ray E. Robinson report that pilots in the area have taken a keener interest in the FAA and the services the Agency offers since the inauguration of the Pilot/Specialist Briefing Program.

# BEECH AIRCRAFT'S KING AIR MAKES OFFICIAL APPEARANCE AT WICHITA

The FAA recently officially certified America's first pressurized, turbine-powered aircraft in its weight and price category—the Beechcraft King Air.

John M. Beardslee, director, FAA Central Region, Kansas City, Mo., headed the Agency's team and presented the certificate to Mrs. Olive A. Beech, president, during impressive "King Air Coronation" ceremonies at Beech Aircraft Corporation. The presentation followed a review of all engineering and flight test data by Agency representatives.

Other FAA officials present included George W. Ireland, chief of flight standards division, Central Region, and John A. Carran, chief of engineering and manufacturing branch, Central Region.

Representing the manufacturer, in addition to Mrs. Beech, were: Frank E. Hendrick, executive vice president; James N. Lew, vice president—engineering; and Wyman L. Henry, vice president—marketing.

Formal certification of the King Air was made in Wichita, Kansas, May 27, 1964, with appropriate ceremony.

Also present for the brief ceremonies and associated King Air program, were many business, industrial, governmental, financial, educational, military, and news media representatives.

Issuance of such a type certificate by the FAA is a requirement for newly designed aircraft. It certifies that the aircraft meets or exceeds all safety requirements of Part 3 of the Civil Air Regulations.

The new Beechcraft King Air is a six-to-eight place business airplane capable of cruising at 270 mph, and is powered by twin Pratt and Whitney turboprop engines.

FAA's certification was made under the delegation option procedure in which the manufacturer determines compliance with the regulations and the FAA makes a check of this compliance during the certification program.

Examination included witnessing of structural tests, basic load analysis, power plant installation and a recheck of certain ground and flight tests all carried out at the Wichita plant.

# FAA Generosity Appreciated by Alaska's Governor

Agency-wide contributions totaling $5,774 were turned over to Alaska's Governor William A. Egan by Regional Director James G. Rogers following the March earthquake.

"These very generous contributions," said the Governor in accepting the checks, "together with those made previously by individual agency employees in Alaska, are tangible evidence of the common concern and spirit which has long made the Federal Aviation Agency and its personnel an integral part of Alaska.

"Please convey to each of those who contribute my personal appreciation."

In Anchorage, Alaska's Governor William A. Egan accepts FAA employees gift-check from Director Rogers.

*FEMININE FLYERS VISIT HONOLULU. Two lady round-the-world fliers casually stopped off in Honolulu en route back to the States. Above right: Bob Carter, President of Hawaiian Aircraft Sales and PC Director Robert I. Gale welcome Joan Merriman. At left: Jerrie Mock poses in front of "Spirit of Columbus."*

# All's Well That Ends Well When Fairway Substitutes for Runway

A Bothell, Wash., pilot can thank an FAA controller for the latter's clear mental picture of terrain around Seattle.

The pilot was commuting to Boeing Field from Bothell when carburetor icing caused engine stoppage in his light plane.

The pilot alerted the Boeing Field tower, where Lester Robinson, working on local control, exercised some quick thinking under pressure.

Robinson was familiar with the terrain of the Jefferson Park golf course in the area and suggested the pilot land there. The pilot acknowledged and shortly afterward reported a safe landing on the course. He was able to correct the engine trouble and take off 30 minutes later for Boeing Field.

# SECOND RETIREMENT FOR BELL

The completion of a second full career was celebrated in May when Harris T. Bell, chief, special maintenance project group in the Central Region, was feted by fellow employees. Bell, who retired in 1937 after 20 years in the U. S. Navy, joined the agency in 1938 and stayed 26 years, with the exception of a stint of active duty during WW II. Floyd C. Emmanuel, chief, engineering branch, presented a Certificate of Retirement to Mr. Bell and his co-workers gave him a tape recorder. The Bells have moved to Racine, Wisc., to be near a daughter.



# BIG DAY AT HOUSTON AS CENTER IS DEDICATED

Sandra Haycock, "Miss Houston of 1963" deposits a document in the time capsule during program at Houston ARTCC now under construction. Archie W. League, Southwest Region Director is at Miss Houston's right.

Interim construction progress on the Houston ARTCC was marked April 29 with a time capsule program. Representatives of several Houston and area civil groups, aviation organizations and educational institutions placed documents in the capsule which will be opened in the year 2000. Assisting in the program was Sandra Aycock, "Miss Houston of 1963."

Under construction at the Houston Intercontinental Airport, the center building is designed to blend with the airport architecture and master plan. When completed in mid-1965, the new facility will consolidate the present San Antonio and New Orleans center areas, which includes South Texas and the southern portions of Louisiana, Mississippi and Alabama.

# Fifth Annual Report Is Issued, Covers Fiscal '63

FAA's Fifth Annual Report, covering Fiscal '63, if off the press.

Highlighted are some of the safety measures instituted during the period—the program that established annual awards for aviation mechanics; a clearing house for daily reports of airline mechanical malfunctions and deficiencies; a propulsion system reliability program that reduces time lost through flight delays and off-schedule maintenance work, and a new system of reporting NAVAID performance.

On the economic side, studies were begun to determine whether scheduled facility maintenance can be reduced without affecting performance; air route traffic control center consolidations improved service while reducing the number of centers from 29 to 20 within the 48 States; a flight service station study of costs vs. benefits was made; and an annual savings of $6 million is expected as a result of FAA/DOD joint use of communications facilities.

A Europe-Africa-Middle East regional organization with headquarters in London was set up and associate administrator for programs appointed to direct and coordinate the air traffic, flight standards, airports and systems maintenance programs.

## BERLIN — 1964

*Flight inspectors check glide slope at Templehof. FAA has been active in modernizing NAVAIDS and traffic control complex at Berlin.*

## WELL, THEY'RE DIFFERENT

*Hard hats were SOP for a time in the Honolulu tower. Reason: protection from falling debris—construction going on upstairs.*

# Eastern Tower Takes First Place With Its Top Seeded Bowling Team

Paced by John S. Feild's 258 league high score, and Carmen Schlettino's 187 season average, the Richmond, Va., tower bowling team took first place in the Eastern Bowl Airport League 1963-1964 season. Back row, from left: John S. Feild, William K. Mawyer, Archie G. Fincher, Asa L. Miles, John J. Bannister. Front row, from left: Carmen Schettino, Richard B. James.

# Gypsy Camper Sees Special Duty As Emergency Tower at Seward

A symbol of the outdoor life in Alaska is the ubiquitous "camper" attached to a half-ton pickup truck. Resembling the wagons in gypsy caravans, they may be found along the banks and shores of Alaska's streams and lakes. They make an ideal home for "gypsies" who practically live in the outdoors during the hunting and fishing seasons.

One such camper saw special duty shortly after the March earthquake. It was pressed into use as a temporary control tower at the Seward, Alaska, airstrip to service aircraft which were bringing relief supplies to the quake and tidal wave stricken city.

The temporary "tower" was set up by William Cook, an air traffic control specialists at Merrill Tower, who volunteered to go to Seward when the call for emergency traffic help was received. The tower was in business at noon the day following the quake. Having no commercial power available, Cook controlled traffic with a battery powered light gun and a portable transceiver in the camper which was provided by Civil Defense.

These makeshift operations were expected to end upon the opening of highways and rail lines to Seward and the repair of docks serving the port at the end of May.

# BELL'S MODEL 206 HELICOPTER QUALIFIES FOR FAA TYPE CERTIFICATE

Bell V. President James F. Atkins holding model of the company's 'copter poses with SW Region Director Archie W. League and Colonel L. Gude, LOH Manager.

A type certificate has been awarded to Bell's entry, Model 206 (Army OH4A), in the light observation helicopter competition sponsored by the Army.

It was the first type certificate ever awarded by the FAA for an American-designed lightweight turbine helicopter. Also, it was the first simultaneous civilian and military type certificate awarded to any helicopter developed specifically to meet military requirements. The certificate is required by the LOH program before the ship can be finally accepted by the Army and is also a requirement before it can be sold commercially.

Bell and two other competing companies, Hiller and Hughes, were chosen to build five LOH ships each for intensive evaluation. Bell's was the first of the three ships to fly, and Bell was the first to deliver the five test ships.

In the LOH program the Army has called for a lightweight, 250-horsepower, turbine-powered, single-rotor, four-place helicopter of advanced design which would be readily air-transportable, inexpensive and easy to maintain. Its primary missions will be visual observation, target acquisition, reconnaissance and command control. Evaluation testing by the Army was scheduled to end June 30, with the Army then slated to award production contracts to the company with the winning design.

# NAFEC MANAGER HONORED BY UNION EXECUTIVES

From left: NAFEC Manager William F. Harrison, C. P. McCarthy, and T. J. Norton, President of the Council.

An engraved plaque for demonstrating cooperation with organized labor was recently given to William F. Harrison, Manager of the National Aviation Facilities Experimental Center during a testimonial luncheon in Atlantic City.

It was presented by the South Jersey Building Trades Council, which represents various unions in the building trades. Union leaders and NAFEC officials heard union official T. J. Norton praise Mr. Harrison for developing an outstanding labor relations program.

The award by the Council, which represents some 3,600 members in the five counties of southern New Jersey, was the first ever presented by the group.

In accepting the honor, Mr. Harrison recalled the day he first reported to the Center 18 months ago, when he had to pass through a line of pickets at the main gate. Later, he met with the particular union, heard their grievances, and helped settle their problem.

The basis of the successful labor relations program which Mr. Harrison developed at Atlantic City primarily involves closer communication between labor and the Center. One of the principal methods used is a monthly meeting with union leaders where problems of mutual interest are discussed and identified, and solutions worked out. Union leaders are kept informed of the latest plans at the Center.

# CAP Cadets Have A Ball at Annual Military Gala

CAP cadets of the Copper Valley school in Alaska were presented achievement diplomas at the annual military ball upon completion of training in flight subjects and attending summer encampments. Children of FAAers in Alaska were included in the group. These CAP awards are given to honor the memory of Billy Mitchel, the late Air Force general famed air power exponent of the 30's. Second from right, Lt. Margaret Cook, Anchorage CAP Squadron, presented the awards to the following FAA family, left, Gerald Curry, Cadet Major, son of William P. Curry, ATCS, McGrath; Vaughn de Rae Harry, cadette, and Raymond C. Harry, cadet, children of Raymond F. Harry, Farewell station manager. Mr. Harry's daughter was also valedictorian of her graduating class at Copper Valley school.

# Perplexed Pilot Seeks Pi in Sky, Finds It's Still 3.14159265+

Strange requests out of the blue don't faze John W. Harrisson (above) and Manhattan FSS station chief Hugh Hayes. Assisting during interlude was James R. Taylor.

The motto of the Manhattan, Kan., flight service station could be "We Serve." Or so it may seem to the pilot of an aircraft who recently flew over the station and asked a non-routine question.

The pilot radioed the FSS, identified himself and explained that those on board were working a mathematical problem. He asked if the specialist could relay the formula for finding the volume of a sphere.

While specialist John W. Harrison continued to talk to the pilot, station chief Hugh Hayes obtained the formula from the Mathematic Department of Kansas State University in Manhattan. Mr. Hayes had heard the request on a monitor in his office.

By the time the pilot had given his heading and destination, Mr. Harrison had the answer.

"Are you ready to copy?"

"OK, Manhattan Radio, go ahead."

"The formula is four-thirds times Pi times the radius cubed."

The pilot acknowledged the message. This was followed by the usual flight data.



# WESTERN REGION WILL BLAST OFF POWDER PUFFS

The Western Region once again was the starting point for the famed Powder Puff Derby, known internationally as the All-Woman Transcontinental Air Race.

Racers were flagged off July 4 from the Fresno, Calif., air terminal, and headed for the ocean-front finish line at Atlantic City, N. J. A deadline of noon, July 8, was set for completing the course.

An estimated field of 60 competing planes from all over the nation and some foreign entries were slated to land at NAFEC.

A contest of speed and skill, the 18th annual classic was open to all qualified women pilots flying single or multi-engine stock model aircraft, 145 to 400 horsepower.

Only daylight flying in VFR or "contact" weather as defined by FAA was permitted.

Designated stops along the 2,573-mile route included Las Vegas, Nev.; Winslow, Ariz.; Albuquerque, N. M.; Amarillo, Texas; Oklahoma City, Okla.; Fayetteville, Ark.; Cape Girardeau, Mo.; Lexington, Ky.; and Morgantown, W. Va.

The FAA provided temporary towers at a number of uncontrolled fields along the race route.

# Women's Advisory Committee Holds First Meeting

The 32-member Women's Advisory Committee on Aviation, appointed by President Johnson to advise the Administrator on matters relating to civil aviation held its first meeting at Agency headquarters May 25-27. At the conclusion of three days of discussions the group presented the Administrator with a list of 15 recommendations reflecting their wide knowledge of the industry and their clear and definite ideas of the areas that need building. These included FAA programs aimed at interesting more young people in aviation careers; adult and community education; further research into cockpit simplification; parallel runways at larger airports for the use of small aircraft, and a review of the FARs pertaining to pilot training and flight training facilities.

# IA Expert Retires to 202 Year Old Family Farm

Claude H. Smith, FAA authority on international aviation and holder of 32 commendations and awards for his work in the field, retired from the Agency last month after completing 26½ years of Government service.

In his work with the International Civil Aviation Organization, Smith pioneered development of the first international standards for air traffic services, search and rescue, aircraft accident investigations and airports.

A native of Culpeper County, Virginia, and a Fairfax County resident since 1935, Smith and his wife are retiring to the family farm in Culpeper County which has been in his family since 1762.

## They Met in Honolulu

*Standing: Joseph Hildebrand and Edwin Harris, Training Officers, PC. Seated: Chester Stalker, Chief, Training Branch, WE. Joseph Fisher, Chief Training Branch, PC, and George Woodbury, Training Officer for AL.*

## Red Carpet for McKay

*C. Woodrow McKay, Chief, Cincinnati tower (right) receives Lexington Rotary Club "Red Carpet" plaque following presentation to membership. Rotary Club president Logan G. Gray, Jr. presents plaque.*

## Administrative Services Chief Leaves Alaska for Headquarters

John B. Moore, new Property and Services Officer, OMS.

John B. Moore was appointed property and services officer in the Office of Management Services, Washington, D.C.

Mr. Moore, a federal service veteran of 17 years, served the past three years in the Alaskan Region as chief of the administrative services division. He was with the Bureau of the Budget in the Nation's Capital as deputy administrative officer before he came north. He entered government service with the Federal Trade Commission in 1947.

He departed Alaska the later part of June to join his wife, Marian, and son, Timothy, who preceded him to D.C.

## POSTMAN HONORED

Retiring Postman Billy Hildebrandt was given a pleasant surprise as he delivered his last batch of mail at the FAA's Santa Monica, Calif., mailbox. FAA tower chief at Santa Monica, Jim Oliver, right, was waiting with an award honoring Hildebrandt for 20 years of faithful mail service to FAA. On hand with a large cake was Santa Monica airport director Clyde V. Fitzgeral, and Bill Crunk, FAA tower watch supervisor.—Photo: Santa Monica *Evening Outlook*.

## WHAT'S A BIRTHDAY WHEN IT COMES LIKE THIS?

On his 65th birthday and in recognition of his service to aviation, Vernon M. Denison, FAA principal air carrier maintenance inspector for North Central Airlines, was honored by 20 North Central maintenance personnel at Minneapolis/St. Paul. Stewardess Virginia Aune presented Denison with an FAA operations specifications form signed by his North Central friends. He also received a birthday cake and the book, "Saga of the U.S. Air Mail Service," on pioneer airmail flyers. He is based at the Air Carrier District Office—34. Denison was assigned to North Central in early 1963.

## Desk Audits This Summer for Some Eastern Facilities

A number of EA field facilities will be visited this year by a position classification specialist.

What does the position classification specialist look for? He (or she) gathers information on current duties and responsibilities of personnel working at each facility. The specialist does this by means of a "desk audit," an interview with an employee during which he describes his duties. The specialist also reviews positions or operation, certification responsibility for electronic systems, and other data which round out the picture on current work assignments of facility employees. This information is verified with the facility chief against the position description. A summary discussion of the specialist's findings is held with the supervisor at an informal close-out.

If minor duty changes are found, pen and ink changes are made to the position description. If current duties are considerably different from those officially described on the original position description, a new PD is written. Upon return to the regional office, the classifier prepares a report of his findings. The responsible operating official then reviews the findings with the classifier, and initiates appropriate personnel actions. The classification branch makes certain that all personnel actions required for classification purposes have been taken.

### Visitor from Philippines

*Eugenio D. Paguio (center) head of the Air Traffic Division of the Philippine Civil Aviation Agency, is welcomed to Sacramento by (from left) Dick Patterson and Rollie Wilson of the Sacramento-Manila Friendship Association, Vernal Jones, Chief, Sacramento flight service station and Ed Sullivan, the tower chief.*

### Proud Day for Durbano

*Ernest Durbano, Chief, airport traffic control tower at Ogden, Utah, receives the FAA Certificate of Achievement from Western Region Director Joseph H. Tippets. Durbano's quick action was instrumental in the rescue of two men crashed on a highly inaccessible mountain side at Dalton Ridge Creek, Utah, last winter.*

### Young and Pretty and Smart Too—She's Stockpiling Savings Bonds

Administrator Halaby congratulates Judith H. Bloom, MS-100, for increasing her savings bonds purchases through the payroll savings plan. Judith was one of 96 headquarters' employees personally congratulated and photographed with Mr. Halaby for helping put Operation Security over the top.

### TWO NAFEC DIVISIONS CITED

Directors of two divisions at NAFEC in Atlantic City, N. J., recently received citations from the U. S. Treasury Department on behalf of their division, "In recognition of patriotic service in strengthening the Nation and its citizens through the United States Savings Bond program." The citations were presented by NAFEC Manager William F. Harrison to Woodrow C. Cronkrite, chief of the executive staff; and Henry V. Hermansen, acting chief of the evaluation division, for their achievements during the Savings Bond campaign last year.

### CLIFFORD F. DANLEY RETIRES

A retirement dinner was held at Kanawha County Airport, Charles Town, W. Va., for Clifford F. Danley, FAA flight service specialist. More than 40 friends from FAA, Weather Bureau, and airport management gathered for the presentation to Mr. Danley of his retirement certificate and an engraved watch.

### CHAMPS AT THE DAYTON RAPCON

Members of the Dayton, Ohio, RAPCON basketball team received trophies for winning the league championship.

The team was made up of Jim Payne, Bob Hall, Ed Reynolds, Bob Smelko, Derald Roberts, Roger Hinson, Denny Murray, Dick Ketterman, Harry Pelphrey and Ned Franck.



## CE'S AIR CARRIER BRANCH HOSTS KC MEETING

The Air Carrier Branch of the Central Region flight standards division was host to the quarterly airman certification meeting held in Kansas City, Mo., May 12 to 14. Personnel from Washington, D. C., Oklahoma City and all the regions were in attendance.

The first day of the three-day session was allotted to the regional division chiefs for discussion. Pictured here are five of the eight division chiefs and a portion of the Washington group.

## SW Air Traffic Facility Chiefs Meet in Fort Worth

Southwest Region's air traffic facilities chiefs met during May at the Hotel Texas in Fort Worth for a three-day conference. It was the first regional get-together of air traffic chiefs since 1949.

Methods of achieving better utilization of manpower, improvement in the overall facility administration and the improvement of communications between all operating units were the goals of the conference.

Attending were 112 facility chiefs and representatives from both the regional and Washington office.

### PC Clergy Advisory Board

*Three members of the Honolulu Council of Churches pictured have been chosen as the Clergy Advisory Board for PC to advise the Director on religious matters. They are (l-r) Rev. Claude F. DuTeil, St. Christophers, Kailua; Rev. N. C. Ellerman, St. Marks Lutheran Church, Honolulu; Msgr. Charles A. Kekumano, Roman Catholic Diocese of Honolulu.*

### Saved Boys from Drowning

*Jeremiah Harrigan, left, Boston center, receives congratulations from center chief Clarence Kynock for the heroic rescue of three young boys from drowning last winter. Mr. Harrigan saw the youths fall through the ice while they were playing hockey. He immediately rushed in and by extending a heavy log to the boys, enabled them to crawl to the shore.*

### Air Force Base Wing Commander Salutes Indianapolis ARTCC

Controllers in the Indianapolis ARTCC were commended recently by the Commander of the 305th Bomb Wing at Bunker Hill AFB for their participation in two no-notice exercises held early this spring.

Col. Paul K. Carlton, in a letter to center chief Jack Wubbolding, stated that he was ". . . consistently impressed . . . by the superior service rendered by the Indianapolis ARTCC to Bunker Hill Air Force Base . . ." and that he shares "the very highest regard for the professionalism displayed by all members" of the Center.

### Real Estate Was Her Specialty

*Miss Catherine B. Handibode, a realty specialist in the real estate and utilities section, I&M Division, retired in April, 1964, after 32 years of service with the FAA and predecessor organizations. Miss Handibode entered on duty in March, 1932 as a junior stenographer with the Aeronautics Branch of the Department of Commerce. She received a certificate of service and pin signifying 30 years of Federal service in July 1963. She was presented with a Certificate of Retirement and a gift at a luncheon in her honor on May 21, 1964.*

### AWARD PLAQUES PRESENTED

Irving Strobing and Thomas Aldridge of Paducah, Ky., FSS received award plaques from Cleveland ATAO Allan Snyder in recognition of their outstanding assistance to a young girl patient whose hospital flight was forced to land because of lack of oxygen.

After considerable difficulty, Strobing and Aldridge procured the oxygen and had it on hand when the aircraft landed.

# ON THE HORIZON

● **BOB Holds the Reins**—The Bureau of the Budget is the watchdog of all public records and reports generated by Federal agencies under authority granted it by the Federal Reports Act of 1942.

Sidestepping BOB, intentionally or otherwise, has resulted in wasted motion and lost time, a situation which newly published AD 1340.1 (May 14, 1964) seeks to prevent.

The order emphasizes the mandatory requirement for prior Bureau of Budget approval of any plan or procedure, including a proposed contract (or applicable portion thereof), requiring record keeping of identical data by 10 or more respondents, other than Federal employees.

● **Going Somewhere?**—Order MS 4600.10 (May 15, 1964) interprets and amplifies GSA regulations and establishes Agency standards for the use of Government-owned, general purpose vehicles.

Subjects covered include: mileage use standards, documentation for assigned vehicles and the rotation of vehicles.

● **Additional Incident Reporting**—A 90-day field test is being conducted to determine the feasibility of promptly reporting certain incidents which appear to be relatively minor and not ordinarily reported. The plan calls for selected air traffic facilities to notify assigned flight standards district offices by telephone when such incidents are observed. It is possible that the test may reveal a pattern that could involve aircraft structural damage, maintenance irregularities, design deficiencies, or substandard pilot performance. Further details are contained in OA 8020.2 (May 2, 1964).

● **Joining Employee Organizations**—Management Neutrality under Executive Order 10988 and the Agency's Employee-Management Cooperation Program is outlined in PT 3710.4 (May 18, 1964).

Basically, the Notice prohibits any interference that will tend to encourage or discourage an employee's membership in any lawful employee organization.

● **Dual Compensation**—Senate sponsors of the dual compensation bill are still hopeful that the bill will be approved this year. It already has passed the House and has been approved by the Senate Civil Service Committee. The Comptroller General has agreed to continue to withhold action in the cases of certain retired reserve officers and temporary warrant officers in Federal civilian jobs who otherwise would have to give up their positions or lose their retired pay unless the law is changed.

● **Reduce Travel Costs**—OA 1500.3 (May 4, 1964) assigns the responsibility for reducing travel costs in FY '64 and subsequent years. Objective is an agency-wide level of travel not to exceed 85 per cent of the FY '64 estimate contained in the President's budget for 1964.

● **Don't Be Caught Short**—Every year more than 200,000 veterans or their beneficiaries miss at least one payment of their monthly compensation, pension or other benefit checks from the Veterans Administration.

This is due to their failure to notify the VA and the Post Office Department of a change in address when they move or plan to move.

The amount of money involved is more than $15 million annually. VA reports that undeliverable returned checks are one of its biggest headaches. In addition, failure to receive those checks often means hardships to the family involved.

Prompt notice to the VA and the Post Office, which has the authority to forward checks to the new address, will avoid this problem.

● **President Orders Production Rise**—In a special meeting held recently with government department and agency heads, President Johnson directed them to take steps to increase employee work productivity.

He noted that work productivity in industry has increased about three per cent a year in recent years. The President said there was no reason why the Government couldn't match this figure and directed the departments and agencies to take steps to increase employee work productivity along industry lines.

● **Selling A GI Home?**—Many veterans who sold their homes found that they were still liable to the government for money due on the original mortgage. This burden can be avoided by obtaining a "release of liability" on the GI loan from both the lender who holds the note and from the VA. Then the government will not attempt to collect if the purchaser defaults on the loan and the VA pays a claim under the guaranty. The release may be obtained from the VA regional office which originally processed the loan. Certain costs are involved—the cost of a credit report on the proposed purchaser, and also the cost of recording the Assumption of Liability Agreement and Release—which may be paid by either party. Complete information regarding the sale of the so-called GI homes is available from any VA regional office.

● **It's A Date**—FAA's Public Participation Calendar, ID 1210.5 (May 1, 1964), explains public meeting attendance procedures.

Listed in chronological order are meetings and conventions—domestic, foreign and international—which may be of interest to FAA personnel.

● **Real Estate Guide Available**—Advisory Circular 150/5300-2 (March 30, 1964) provides information to assist in the selection of sites for visual and electronic terminal facilities on and in the vicinity of airports.

This guidance is valuable to airport design engineers when selecting suitable sites for various elements of the airport navigation system.

● **Fringe Benefits Studied**—The Bureau of Labor Statistics has almost completed its nation-wide study to compare Government employees fringe benefits with those of industry.

The study is being made for the Civil Service Commission and the Budget Bureau. Results of the survey, which are expected this fall, will supplement the annual salary studies which are the basis for recommendations of periodic adjustments in government pay rates to maintain comparability with private industry.

The BLS study will cover: paid leave; premium pay, such as overtime and night differential; life, health, and accident insurance; social security, unemployment compensation; pension plans; savings and thrift plans, and bonuses for upper-level management.

The study should provide the answer as to whether Government employees' fringe benefits actually are better than those of private industry employees.



## CAMPAIGN SPEEDS COST CUTS

To commemorate the 10th Anniversary of the Federal Incentive Awards Act, President Johnson has announced a special suggestion campaign to accelerate efforts aimed at encouraging ideas for cutting costs. The President has declared special national awards for the best suggestion in cost reduction, increased productivity, methods improvement, man-hour savings and advancement of Agency missions.

Other awards will be given to selected supervisors who do the most effective job to encourage and help their employees make valuable suggestions or other contributions. Program officials at the operating level who make the most significant contributions in cost reduction and productivity will be selected for honors. Honorary awards will be made to at least 15 employees, three supervisors, and three program or management officials at ceremonies in Washington, D. C.

The Civil Service Commission will select winners from nominations submitted by agencies throughout the world.

Last year, the program resulted in savings worth $100 million through adopted work suggestions and superior job performance of nearly 190,000 Federal workers.

"In the months ahead," CSC Chairman Macy said, "the special 10th anniversary awards program should serve as an additional means through which managers, supervisors, and individual employees can give practical support to President Johnson's pledge to Congress that expenditures will be administered with utmost thrift and frugality and that Government will set an example for prudence and economy in its operations."

## NEW COURSE UNDERWAY AT ACADEMY

An extensive training program for air traffic facility chiefs began this spring at the FAA Academy with the inauguration of the Air Traffic Facility Administration Course. Designed to meet the technical management needs of facility chiefs, the course was developed by a team of air traffic specialists with experience and training in air traffic control, management, supervision and education.

Lee E. Warren, Director, Air Traffic Service, in addressing the first class, described his keen personal interest in such career training for all en route, terminal and flight service station chiefs. He expressed strong support for the program, which concentrates on the specific managerial problems associated with air traffic control.

Clifford P. Burton, Deputy Director, Air Traffic Service, who addressed the second class, commented on the ideal opportunity that this course gives for air traffic facility chiefs from all regions to meet and discuss common management problems.

According to Enar B. Olson, Director of the Academy, the purpose of the course is to increase the effectiveness of the air traffic facility chief in planning, conducting and managing his facility operational program.

A survey, conducted jointly by ATS and the Office of Personnel and Training, verified the need for special training in air traffic technical management. The Academy was assigned the task of extensive research, study and field investigation which resulted in the Air Traffic Facility Administration Course.

The first six classes are being devoted exclusively to the problems of the en route traffic control centers. By June 15, most of the chiefs, their assistants, and operations officers of the en route facilities of the Agency had attended the course. Starting in FY '65, plans call for training tower and FSS chiefs.

The regular air traffic control specialist staff of the Academy presents about 85 per cent of the course. Augmenting the staff are guest lecturers who, in addition to Mr. Warren and Mr. Burton, include Clyde Klinstiver, Office of Management Services, Washington; Joseph White and Stuart Williams, Southern Region Air Traffic Division; M. F. Roscoe, head of the National Aircraft Accident Investigation School; Dr. Robert Dille and Dr. David Trites from Civil Aeromedical Research Institute; Ernie Schultz and Virgil Dominic of Oklahoma City's local WKY-TV news staff; and, from the Aeronautical Center, Allen Barr, A. K. Whitacre, Kent Fendler, and Robert Derdeyn.

## SUPERGRADES AND GRADE CREEP EYED

The Civil Service Commission now requires that all requests for supergrades contain statements to show specifically what other positions will be considered for upgrading if the supergrades are approved. In this manner the Commission hopes to make a positive contribution to the President's effort to prevent unwarranted escalation in the upper grade levels.

## P&T OFFICERS GATHER IN D. C.

*From left: Ken Stallo, PT-90, Hq.; Ken Wall, Pers. Off., WE; Frank Monroe, Pers. Off., SW; Bill Patterson, Pers. Off., NAFEC; Hobart Douglas, Pers. Off., A1.; Nelson Jump, HQ-100, Hq.; Jack Embrey, PT-23, Hq.; Earl J. Anderson, PT-20, Hq.; Joe Sellick, PT-23, Hq.; Jim Murphy, CS-1, Hq.; Virginia Johnston, PT-20, Hq.; Lou Gettman, Pers. Off., PC; Kent Fendler, Pers. Off., AC; Ernest J. Thomas, Pers. Off., CE, Dick Farrell, Pers. Off., EA; Shelton Taylor, Pers. Off., SO.*

# TECH TALK

## PARAMETRIC AMPLIFIERS PAY NEAT DIVIDEND

The Federal Aviation Agency has come up with another operational first by using parametric amplifiers on long range radar systems.

The 19 ARSR-2 radar systems were initially furnished and installed with parametric amplifiers. In addition, the modernization program on 32 ARSR-1 radars, which includes retrofit of parametric amplifiers, is more than half complete.

Parametric amplifiers increase range detection capability by improving the receiver noise figure by approximately 5 to 6 decibels. This, in operational terms, is the same as improving the range detection capability of the basic radar by 25 to 30 per cent for a given radar target.

Side benefits of parametric amplifiers are increased receiver stabilities with accompanying uniformity of receiver sensitivity, thus easing the maintenance burden considerably.

The parametric amplifier used on the ARSR series radars has an operating noise figure of 2.5 decibels, a gain of 17 to 20 decibels, and a bandwidth in excess of 100 megacycles. This extremely wide bandwidth makes the radar compatible with ECCM (Electronic Counter Counter Measure) techniques and also eliminates the need for retuning when system transmitting frequency changes become necessary.

Field operational comments verified that the engineering calculations and specification requirements were met. Flight checks and coverage observations, based on targets of opportunity, revealed that the 25 to 30 per cent increase in range had been reached.

Other agencies have used parametric amplifiers for specific sites. However, the FAA is probably the first to put this advanced technology into effect on a widespread operational basis.

Financially, the investment is extremely sound. The greater coverage made possible by the parametric amplifier, which costs less than $20,000, increases the area coverage by approximately 55 per cent. The original establishment cost was over $1 million per facility.

## KEY FAA OFFICIALS BRIEFED ON NAS STAGE A

To lay the groundwork for a better understanding of research and development directed toward air traffic control automation, a team of Systems Research and Development Service program managers has been briefing key Agency officials.

National Airspace System Stage A is the name given to the first phase of equipment and procedures being developed to provide an increased degree of automation for controllers. It is a concrete outgrowth of the plan called the National Airspace System design, prepared by the SRDS System Design Team in 1962. An engineering model, now being assembled at NAFEC, will be used to verify operational procedures and hardware. The assembly is expected to take about a year to complete.

Just what will it give the controller? Here are some things it will provide:

- Flight plan acceptance, processing, and distribution
- Remote on-line inputs
- Flight strip printing at control positions
- Computer/controller up-date capability
- On-line inter-center communication
- Mosaic display (optional)

The equipment in the engineering model will be able to handle 325 flights simultaneously in the en route phase of operation.

In a departure from usual research and development methods, SRDS engineers are planning to procure the first field system concurrent with the engineering model. This will reduce the time lag usually encountered when R&D activities are completed before actual field installation begins. As the procedures and components are developed, results will be immediately applied to the initial field installation at a selected ARTCC.

Hardware used for the Stage A portion will consist mainly of existing "off-the-shelf" articles modified to specific requirements. Major items in the system are the modular central computer and the radar video data processer. The latter equipment is already delivered and now being installed at radar sites in Philadelphia, Suitland, Md., and NAFEC. The central computer complex will be modular to provide added growth capability as future needs dictate.

Scheduled first in the test program will be a simulated environment using an actual ARTCC area. Later, a live test program will be conducted in the NAFEC area. All data from both test programs will be used for evaluation as it is generated, and applied to "first article" procurement. The full test program is expected to be completed by the end of 1965.

## ACCURATE STANDARDS DEVELOPED FOR COMPLEX WORK

The Systems Maintenance Service, with the assistance of Management Analysis Division, Office of Management Services, is conducting a study to develop engineered staffing standards for its field operations. This is part of the effort to develop more accurate standards for work of a complex nature. The problem is to determine the minimum number of people required to maintain the system of air navigation and air traffic control facilities, considering the cost of preventive and breakdown maintenance, and desired facility availability to the public.

The traditional workload and staffing measurement techniques although useful in many respects did not provide adequate means for investigating the significance of differences between locations, determining the random demand on personnel for correction of facility breakdown, or the effect of other interaction between facilities at a location.

In a pilot study, which started April 27, 1964, measurements are being made at maintenance sectors and facilities of 11 ILS in the five contiguous regions. Some of the techniques employed in this study are work sampling, queueing theory correlation, regression analysis and breakeven analysis. The significance of the approach is the design of the study to place in perspective individual attributes and contributions of techniques in relation to the problem.

An objective of this pilot study is to develop a measurement technique which would be applicable to the entire Systems Maintenance field activity. In addition, the method being developed will provide usable work element standards to the sector chief, and district and regional office personnel for planning and other management purposes.



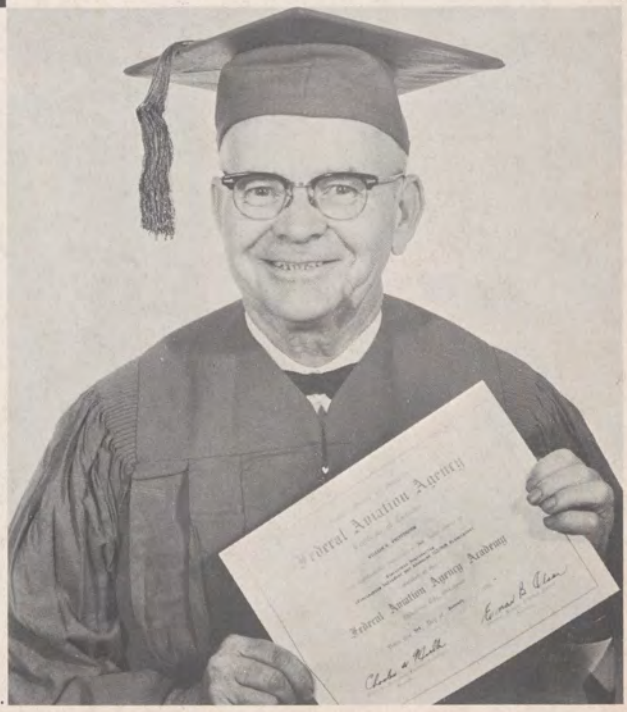
## FAA: PHOTO/GRAPHICALLY

FAA's printing plant, photographic laboratory and distribution are now located in a remodeled building at Washington's historic Naval Weapons Plant. Where precision lathes once rotated producing naval ordnance, printing presses turn out FAA regulations, and dark rooms have replaced machine tool bins. Some 120 employees work here on a 24-hour schedule. From upper left, clockwise: Glenn Harmon demonstrates one of the Linotype machines to William E Murphy, HQ-400, Jack B Hogan, HQ-1, and Richard Althaus, General Services Administration. • John Butler and Edward Taylor operate a folding machine in the printing plant bindery. • Wallace R. Bethel and Samuel Paige readying negatives for an offset printing plate. • Joseph F. Karam sets type at a Monotype keyboard. • Thousands of photographs like these pass through the hands of Pauline Sweeney and Joseph Blackwell each month. • Manuel Costa, an FAA staff photographer, sets up a negative for the enlarger. • Sandy Levi, distribution, delves into the files to fill an order for a back-copy of FAA HORIZONS. The photo laboratory and the printing plant were the last tenants of T-5 before the bulldozers erased the "temporaries" of WW II.

# FAAers ON THE JOB

## Merrilyn Grix

Here's a girl with everything—beauty, talent, enthusiasm and an interesting job. She's Merrilyn Grix, technical equipment illustrator on the Western Region's I&M plans and specifications staff, shown here with her boss, Elemo S. Hartwell. Miss Grix began her FAA career in June 1954 as a GS-3 typist and since that time, through sheer hard work, has climbed the ladder six grades. While doing this she has illustrated practically every type of agency publication, and was art editor of the old WE NEWS. In high school she majored in art and while in college sketched floor plans for a contractor.




## William W. Whittington

Appropriately capped and gowned for the occasion, William W. Whittington proudly displays his "degree" in Electronic Engineering. The diploma was awarded him by the FAA Academy when he completed resident ILS/VOR training. An ambitious young man of 56, Mr. Whittington is the senior technician in charge of Systems Maintenance Sector-450, Marianna, Fla. Last year he tackled the DFF-100 home study course that delves into electronic fundamentals and engineering mathematics. It didn't leave him much spare time, but he wrapped it up successfully in a little under five months.