FAA HORIZONS

OFFICIAL EMPLOYEE PUBLICATION OF THE FEDERAL AVIATION AGENCY / JANUARY 1967

Alan S. Boyd

COVER

Americans spend more on transportation than any other commodity. For the first time, one man, Alan S. Boyd, will be dealing with all of the related problems as one big picture. (See page 14).

CONTENTS / JANUARY 1967

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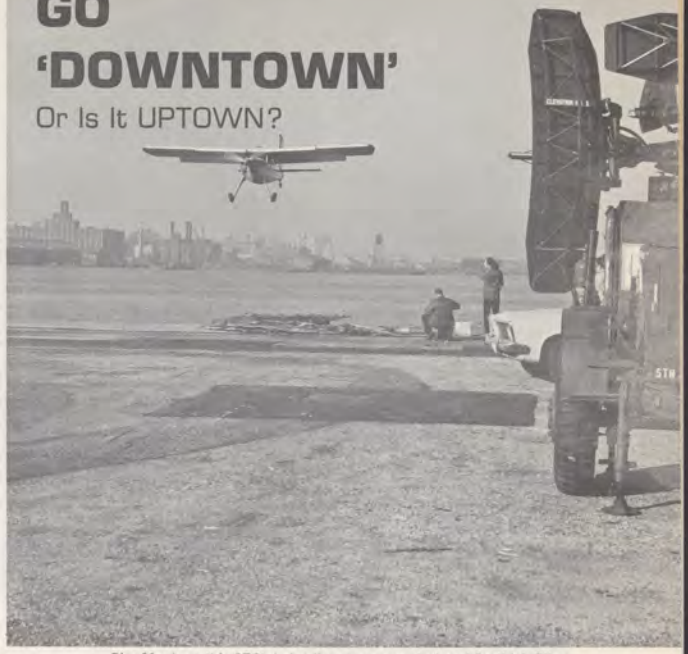
Whirlybirds and STOLS

GO 'DOWNTOWN'

Or Is It UPTOWN?



Pier 26, where this STOL is landing, was never designed for this! Other aircraft used equally unusual landing spots all over New York City.

Aircraft operating from New York piers, parks and streets have demonstrated that aviation can bring a large measure of emergency service to a "stricken" city. They were part of a two-day emergency airlift demonstration staged in New York City on November 5 and 6 by FAA's Eastern Region, the Office of Emergency Planning and New York City's Department of Marine and Aviation.

Labeled "Metro Air Support '66," the exercise was hailed as a resounding success by the three sponsoring agencies. Eastern Region Director Oscar Bakke, who conceived "Metro," called it "a perfect operation, reflecting expert planning, magnificent cooperation and truly unbelievable performance by the pilots and ground support personnel." He added that Metro '66 "proved conclusively that a major metropolis such as New York can indeed be supplied by airlift in the event of a crisis, and equally important, that city planning for the future should include provision for STOL (short takeoff and landing) airport facilities for everyday normal business and travel needs."

This viewpoint was endorsed by Herbert B. Halberg, New York City's Deputy Commissioner of Marine and Aviation. "I'm very much impressed," Halberg said after stepping from a STOL aircraft that used only 40 feet of the Hudson River Pier 26 to land.

"The possibilities of such facilities are enormous and would undoubtedly help considerably to relieve congestion at Kennedy and LaGuardia Airports," he said. Halberg added that he would recommend to Mayor Lindsay that some of the city piers now idle be made available for commercial STOL operations as soon as possible.

Albert D. O'Connor, Director of Region One, Office of Emergency Planning, and chairman of the central planning staff for "Metro '66" was elated with the outcome of the exercise.

"Air support to a stricken area has proven feasible in Alaska when it was devastated by an earthquake a few years ago, in northern California when floods have inundated vast areas, and in many regions hit by hurricanes or tornadoes,"

(Continued on page 6)

City Hall briefing for visiting city planners and industry officials was conducted in the Board of Estimate chambers by this group. From left, Congressman Joseph Addabbo of Queens, Deputy Mayor Timothy Costello, EA Director Oscar Bakke, OEP Director Albert S. O'Connor, Deputy Mayor Robert Price and Deputy Commissioner Herbert P. Helberg.

Manhattan skyscrapers form backdrop for U. S. Army's Vertol "Chinook" at Pier 42.

Futuristic? It Happened in Manhattan ... *Story pages 3 and 6*

A helicopter trip between the parking lot of Eastern Region headquarters and Pier 26 gave officials a first hand feel for the potential of airlift to and from city centers. **Left:** Oscar Bakke, with Administrator McKee at his left, briefed officials in Eastern Region Headquarters prior to their brief ride above city traffic.

Nine airlines, American, Eastern, United, Mohawk, Trans World, Northeast, Alitalia, Varig and Trans Caribbean, flew in emergency supplies and Red Cross workers from all over the world to Kennedy airport on scheduled flights.

STOL aircraft delivered CAP disaster workers and others to downtown areas.

Carrying a truck loaded with medical supplies, the Sikorsky **Flying Crane** demonstrates a versatility which allowed it to bring in a 15,000 lb. amphibious duck, an FAA portable tower and a New York telephone company communications truck among other loads. Airlifted items included Red Cross and Salvation Army mobile canteens, several thousand pounds of mail, portable generators, medical supplies, fuel, food and clothing from peripheral locations in New Jersey and Upstate New York, as well as Brooklyn and Long Island.

Controller Frank Bestard of Newark Tower gives instructions to a STOL pilot from the portable control tower set up at Pier 26.

Above: On duty in this temporary control tower are Peter Bernhard, David Sack and Robert Frank, all volunteers. **Below:** The first landing at Pier 26 was made by the Rev. Robert A. Bryan, an accomplished STOL pilot and educator who also serves as a flying missionary in Labrador, Newfoundland and E. Quebec.

Above: The largest of the STOL aircraft to participate in Metro '66, Army's DeHavilland **Buffalo,** takes off from East River Park. **Right:** The best way to get in and out of the parking lot at Eastern Region Headquarters, Federal Building at Kennedy Airport, is demonstrated as two choppers come in to pick up officials. **Below:** This is a sight never seen before—anywhere. A STOL aircraft is landing on Manhattan's Pier 26 on which an FAA-manned control tower has been deposited. A New York city official said he would recommend to New York Mayor Lindsay that some of the now idle city piers be made available for commercial STOL operations as soon as possible.

Whirlybirds/*continued*

he said. "But never before have we set out to demonstrate what could be done by airlift for a city as huge as New York. If there was any doubt that a city could be put back on its feet within hours after a major disaster, 'Metro Air Support '66' has dispelled that completely."

More than 200 aircraft, 53 of which were STOL and helicopters, flew missions during the two-day demonstration.

Mission coordinator Paul Baker of the New York Area Office's Flight Standards Branch expressed amazement at the proficiency of the pilots who flew these sorties.

"Remember that landing on a pier had never been done before," Baker emphasized. "Yet these people performed as if they had been doing it all their lives." Baker's appraisal of pilot performance was supported strongly by his aides in the project, Walter Kies and Jack Lee of the Air Traffic Division, and Peter Bernhard of the New York Area Office. Baker lauded this trio for their missions schedule that he described as "one of the most difficult assignments in the entire demonstration."

The New York *World Journal Tribune* commented editorially that ". . . The immediate purpose of the exercise was to test the use of airplanes and helicopters in the metropolis in case of some major disaster. In addition, it was hoped to demonstrate that STOL planes could land closer to the heart of the city than the major airports, making it more convenient for their passengers and reducing congestion in the skies. Metro Air Support was successful in both . . . New Yorkers may be grateful for having learned about the tested capabilities of these aircraft. They should be grateful, too, for the far-sighted City and FAA officials who have come up with at least a partial solution to New York's transportation mess."

computer scores again

"Instant" weather forecasts for pilots may be a reality in the not too distant future if an experiment being carried out at the National Aviation Facilities Experimental Center at Atlantic City proves successful.

Today, pilot briefings are based on weather data which is about three hours old. To provide up-to-the-minute forecasts, the Center has set up a network of automatic weather reporting stations called *Mesonet*. The name *Mesonet* comes from "meso (for middle scale, distance-wise) meteorological network."

When the weather is poor around Atlantic City, when the ceiling and visibility are down, when it rains or snows, or a cold front passes through, or when any type of severe weather occurs, the *Mesonet* swings into action.

Thirteen *Mesonet* stations are arranged in a concentric pattern around the Center at distances of 5, 10, and 20 miles. Each station gives surface weather information on air temperature, dew point, barometric pressure, precipitation and cloud height. And, to assure complete accuracy, the stations give light transmissivity and wind components. Several of the sites even record soil temperature and net radiation (energy).

All this information is automatically transmitted from each of the 13 stations *every 24 seconds,* for as long as the weather holds. That's getting your weather in a hurry, and getting it up to date. The net also provides information on weather conditions such as fog and low stratus clouds which are not readily detected by radar.

Information accumulated from all the stations presents an overall picture of the area's weather pattern. It is used in studies leading toward improving short range forecasts of less than one hour—a most valuable and useful service at any airport.

Managing the *Mesonet* for the Center is Joseph P. Myers, chief of engineering services, who describes a typical station like this: "Looks are deceptive. All you can see over a five-acre plot are various weather measuring instruments scattered around, and a trailer van. But we have some $2.5 million tied up in this highly sensitive equipment."

Myers says that under a joint FAA-Weather Bureau agreement, the Center provides the environment, including equipment and funding, to support necessary studies. The network is operated and maintained by the Observations & Methods Branch of the Weather Bureau's Test & Evaluation Lab, located at Sterling, Va.

Chief of the Branch, Matthew Lefkowitz, explains that readings from weather sensing instruments at each site are piped into a trailer. There, they are converted into digital form and sent via telephone wires to the Center. In a data central, information from each of the stations is recorded on punched paper and later converted to computer tape.

By programming a computer to develop new techniques, a numerical forecasting method can be used by meteorologists. Experts on this project are private contractors working for the Agency. The data is also valuable for more basic research in meteorology and is available to other Government agencies on request.

"It has to go on computer tape," Lefkowitz explains, "when you consider the sheer volume of the data. Thirteen reports every 24 seconds that sometime go on for hours." The record, the meteorologist recalls, was a 70 hour and 45 minute operation made a year ago when a series of low pressure areas developed along a cold front near Atlantic City.

To evaluate these new weather forecasting techniques, another FAA-Weather Bureau agreement went into effect November 1. In this project, aviation forecasters from Boston, New York and Washington will be stationed at the Center temporarily to evaluate the new methods and to compare them with standard methods.

High-speed paper tape punch records weather readings.

footloose and FAST

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FAA engineer Ed Aikman walks past the point in front of the White House where placard-carrying pedestrians often champion a favorite cause. Aikman's only campaign is to lick the traffic jam and a health problem at the same time.

It started in the musty tweed-coat claustrophobia of an overheated, packed rush-hour-engulfed bus at Twenty-third and Constitution. With traffic hopelessly snarled and twenty blocks to go—and desperate for a breath of the cold morning air enjoyed only by the few window-seat passengers bold enough to open their ports a tiny crack—I lunged at the buzzer, bailed out the back door, and, gasping for fresh air, walked over to the headwaters of the reflecting pool at the Lincoln Memorial. Thence I proceeded east down the Mall, along the reflecting pool, up over Washington Monument hill, onto the Mall plain toward the Capitol, past Smithsonian buildings with their pleasant architectural contrast, the classic National Gallery of Art and on to my office just off the Mall.

I was amazed. What a delightful experience. The Mall was a large deserted oasis in the midst of commuter madness. Not a single pedestrian crossed my path from the Lincoln Memorial to the Washington Monument, and at that point, only three gents of the National Park Service who were busy raising Old Glorys on the 50 flag poles around the Monument base, the puffs of steam from their breaths rising silently with the colors. The Mall's occupants, other than myself, were 27 seagulls on the reflecting pool, and eight squirrels scavenging their buried loot. The rumble from commuter vehicles was too distant to disturb our peace.

What was even more amazing about my stroll was that it took only twenty minutes. This was not much longer than it takes buses to make the trip under rush-hour traffic conditions.

It was the delight of this chance experience that caused me to make further experiments in the use of shoe leather as a means of transport. The most direct bus route from my home to office is down Massachusetts Avenue, N.W., from the Maryland line, past Embassy Row, to Twenty-third Street near Dupont Circle, down Twenty-third Street, by Washington Circle, to Constitution Avenue, down Constitution to Seventh Street, and across the Mall on Seventh to my get-off bus stop at Independence Avenue. This is half a block from my destination.

My travel time via Roy Chalk's N-1 bus is about 45 minutes to work and an hour to home.

That very afternoon, after work, I set out from Ninth and Independence Avenue diagonally across the Mall to Fifteenth and Constitution, crossed the east edge of the Ellipse to the White House grounds, walked along the east fence of the White House to Pennsylvania Avenue, thence across Lafayette Square to Farragut Square to lower Connecticut Avenue, where those fashionable office buildings and shops unfold into Washington's most attractive and bustling business area. I arrived at Dupont Circle 35 minutes after the start of my walk. Fantastic! This was the very same time it takes my bus to make the afternoon trip.

During the week that followed I tried varying these routes a little. For the morning route I found I could abandon the N-1 bus at Washington Circle, walk past the George Washington University Hospital where my children were born, past the University where my GI Bill materialized, across the Elipse where I played third-string quarterback in intramural sports, on to the Mall and to work—time 30 minutes.

For the afternoon route I could walk across the Mall on Ninth Street to Pennsylvania Avenue, where the Government is now tearing down the historic old north side commercial buildings to construct J. Edgar Hoover's new FBI building, out Pennsylvania Avenue along the inaugural parade route to the White House and Lafayette Square, thence out Connecticut Avenue to Dupont Circle—time 35 minutes.

My comments so far indicate a preoccupation with time, like I'm trying to beat buses by marathon walking. Not so. What I mean is that although I was fascinated to learn that on almost any route I picked through the Mall or downtown Washington, I traveled as fast as rush-hour buses, my object was not speed. I would say I was just strolling along and even though I'm a long-legged creature, many attractive, stacked secretaries in spike heels walked past me at a smart gait. Another of walking pleasures.

My experimental trail blazing began two years ago. I've been walking ever since—spring, summer, fall, and winter. Each morning I abandon my bus near Lincoln Memorial or Washington Circle or Farragut Square. Each afternoon I pick it up near Dupont Circle. My walking distance is about two miles each way. I have only missed on rain days. On snow days walking is a necessity. And oh, what joys have come from this, in observation, in philosophizing, in health, in freedom—particularly of movement—and then it's just a plain education. The whole of the Mall and of downtown Washington have been open to my pleasure.

Take health for instance. Of course, all the medics proclaim walking as preventive maintenance against the ills of modern man, particularly heart problems.

I have never been what you might call a health nut. And I wasn't worried about my heart when I started walking; nor did health, other than nausea from bus fumes, have anything to do with my developing the walking habit.

But when I started my escapades I was having a minor problem. I attributed it to the fact that about a year before I began walking I was transferred from a nearby country project, where I worked outdoors mostly, to a swivel chair in town. The problem I had was proctological in nature. I had even been tempted to follow up on those advertisements usually found in the comics section of the newspaper.

After a month of walking, however, the swivel chair weakening of my posterior had greatly improved and I have not been troubled since.

And as regards from freedom of movement, I soon found that in spite of all the efforts of traffic engineers to regulate signals for the benefit of vehicular movement, what they have really done is set up ideal timing for pedestrians. I was surprised to find that the timing of all traffic lights in downtown Washington is tied together by a central control so that, for instance, the changing of a traffic light on Constitution Avenue always has the same time relationship to the changing of a traffic light at Dupont Circle clear across downtown. This means that once you become familiar with the lights on a certain route you can count on their interrelationship to always be the same. Thus, you can judge your walking pace so you never miss a light. This walking pace becomes a habit and is soon accomplished without thought. Your walking time between points as much as two miles apart never varies more than two or three minutes, no matter what the vehicle congestion.

Another thing that helps freedom of movement is clocks. My favorite clock is located in the Romanesque tower of the old Post Office building at Twelfth and Pennsylvania Avenue. It can be seen from almost anywhere on the Mall or the Federal Triangle. Then, there are those nice old pedestal clocks on F Street. There is a charmer in the tower of the bank building at Fifteenth and New York Avenue, and, up on Connecticut Avenue, they have those neon jobs that also tell you're hot or cool. They can all be seen from long distances, and the old-timers are very pleasant to the eye.

Under the watchful eyes of a fellow pedestrian, Aikman pauses near the White House to perform a routine inspection of the equipment so essential to his mode of transportation.

But the best thing about walking's freedom of movement is its simplicity. All you do is grab your coat and strike out. Gone are all the tensions and complications of starting the car, waiting your turn in exhaust-filled parking garages, being pleasant to the car-pool members, risking life in hell-bent traffic, finding a downtown parking place, and being late for appointments. Walking, you arrived relaxed, on time, and if it's for lunch, with good appetite.

The most important benefit of walking by far, however, comes from philosophizing. And the best walk for philosophizing is the Mall, a place of such inspiration that I have on separate occasions contemplated inviting LBJ, Dean Rusk, Stewart Udall, and even Martin Luther King to join me.

What is this majestic power of the Mall? At first you don't notice it. At first you are only charmed by the simple peace and beauty of your surroundings, a solitary peace in the winter. But slowly you begin to feel the presence of Lincoln and Washington. Then off to the near south, across the Tidal Basin, Tom Jefferson makes felt his presence. They have even removed a small section of the Japanese cherry trees which line the Tidal Basin so, even in the spring and summer, there is an unobstructed view from the White House balcony to the Mall to the Jefferson Memorial. It was Jackie Kennedy's favorite.

Once you become a Mall addict, you discover that Mall air literally crackles from their influences. The feel of their presence lifts your thoughts on high, makes your nerve-endings tingle, and walks you on bouyant cushion.

There is a certain enchanting Mall point where the straight line from the Washington Monument to the Lincoln Memorial intersects with the straight line from the Jefferson Memorial to the White House. Your view in each direction is free from obstruction. The cold clear morning I chanced on this point I stood in awe. From the west came Lincoln's compassion; from the south, Jefferson's wisdom; from the east, Washington's courage; from the north, valiant strivings of White House occupants, past and present.

No telling how long I stood there until the office influence intervened and I moved off into the everyday world. But enlightened, better prepared to face life's challenges. Thereafter, when I walked through White House demonstrations, pondered atrocities national and international, observed man's preoccupation with machine, viewed misplaced architecture, there was a glimmer of hope. Perhaps mankind will find resolution before annihilation. Walking will help.

—By Ed Aikman

EXECUTIVE JET TRAINING

Today's high flying business and corporate pilot is a new breed. He flies a fast, sleek, pressurized jet that may cost from half a million to several million dollars. He sometimes keeps to a schedule that would confuse an airline captain. And he files just as many flight plans, listens to just as many weather briefings and must be just as proficient in his flying skill as his airline counterpart.

Similarly, the executive pilot needs training and must be checked out in his new jet aircraft. This task falls to the operations inspector at the local General Aviation District Office. But, to do this job, the GADO inspector also needs to be checked out and awarded a certificate for the several different types of corporate planes.

This specialized training for GADO inspectors is conducted by the Flight Standards General Operations Section's Executive Aircraft Unit at the FAA Academy in Oklahoma City.

The Executive Aircraft Unit is headed by S. E. Thomas, who is type rated in the Jet Commander and a pilot of wide experience. Under his guidance is a staff of seven instructors, two of whom fly the Jet Commander and two the Lear Jet. Both aircraft are used by the Academy for initial qualification training and recurrent training of GADO personnel, and in the recurrent training of others who are qualified in one of the several types of executive jet aircraft. The Jet Commander, which is certificated for Category II operations, will be used to qualify pilots for lowest weather minimums.

What does it take to become type-rated in an executive jet? "Surprisingly enough, no previous jet time is needed," says Eugene L. Anderson, a Jet Commander instructor. He pointed out that the jets are not difficult to fly, but that sometimes a pilot will find himself "riding the tail." In other words, he has let the airplane get ahead of him. It's easy to do in a plane that moves right along at 40,000 feet at about .8 Mach—close to supersonic.

The best qualifications a man can bring to the training course is that he be a highly proficient pilot, particularly on instruments. He must be a pilot's pilot, one who loves to fly and who needs to know all the answers to all the questions about his aircraft.

The initial qualification course in either of the two jets includes 160 hours of hard but enjoyable work. Each man receives 40 hours in the air—20 hours as a pilot and 20 hours as an observer.

The classroom work includes many hours of ground school on aircraft systems: hydraulic, electrical, engines, control systems, etc., interspersed with flight test procedures, aircraft performance, flight planning, high altitude meteorology and weight-and-balance. The course also includes 16 hours of ground school and "flight" time in the link trainer, 15 hours of pre-and post-flight briefing, and an eight-hour flight physiology lecture followed by a "ride" in the high altitude chamber. The chamber is used to familiarize a pilot with proper oxygen utilization and the reaction of the human body to the lack or complete absence of oxygen.

Pilots already type rated or qualified in jets go through a 48 hour, six-day course that has all the assets of the longer course. It consists of 25 hours of flight time, seven hours of link instruction, 12 hours of ground school, and four hours lecture on pre- and post-flight briefing.

The current instructor list in the unit's jet area shows Eugene L. Anderson and Chester A. Davidson in the Jet Commander and, in the Lear Jet, Edward A. King and A. N. Matera.

Davidson was the first Academy man to receive a type rating in the Lear Jet but he now flies the Commander. Edward A. King, formerly a Washington, D.C., general operations specialist, was the first Agency man to qualify in the Lear Jet. A. N. Matera joined the Academy early last summer after transferring from Washington.

John Doster, Supervising Inspector at the Allentown, Pa., GADO, served at the Academy on temporary duty long enough to qualify Anderson in the Jet Commander. He is now back at Allentown.

As the sales of executive jets increase each year, many corporate pilots will be seeking type ratings. This means more operations inspectors must be qualified, and this, of course, will keep the men of the Executive Aircraft Unit busy flying their favorite airplanes—and happy.

Top: This Jet Commander and Lear Jet teach the teacher. **Below:** Rental Officer Harry Doncell, right, hands over a training jet to instructors Ed King, left, and Chester Davidson. **Right:** Instructor Eugene Anderson, right, prepares to check out Jet Commander pilot S. E. Thomas.

Year-round duty in vacation land

The Caribair skimmed over Sara Hill in a gentle glide—then dropped into the handkerchief-size airport at St. Thomas. Passengers showed surprise as a calypso melody suddenly echoed through the cabin's loud speakers. The beat was strangely contrapuntal to the rumbling of the reversing props.

Travelers on Virgin Island holidays scanned the St. Thomas airport which seemed to straddle two widely different worlds. Near the terminal building in a converted hangar, firemen polished late-model equipment. Only yards away, maintenance men cut the grass with machetes, not mowers.

On the other side of the airport fence, natives fashioned percussion instruments out of discarded oil drums as they chattered in a French dialect. Occasionally, they had to turn away as Pan American 727s blasted their area with hot jet fumes.

The paradox at the airport signals many contrasts throughout St. Thomas. A coke costs more than rum. The island's luxurious hotels are among the most expensive in the world. But a 35 cent packing crate will make a crude home for an inhabitant of French Town.

St. Thomas is both an elegant tropical playground and a scene of poverty. Six FAA families live in St. Thomas, exposed, and somewhat affected, by the two extremes. For the most part, their daily routines are those of their Stateside counterparts. Five of the men—J. Paul Scott, Gilbert Carlson, David Duty, Bob Exley and Samuel Long—are married. The bachelor is Bill Milwee. Working days for these tower crewmembers are like those of controllers at any VFR airport. The same is true for the maintenance technician, Samuel Long.

Leisure time means hobbies just as it does for most families. Tower Chief Paul Scott is a professional musician who used to play the bass on Saturday nights at posh Bluebeard's Castle. The best selling LP throughout the Caribbean is his group's latest album, "St. Thomas After Dark," with tunes like "Loose Mongoose," "Chopin Merengue," and "Casanova's Bossa Nova."

Gil Carlson has rebuilt an Aeronca *Champion* in his spare time, but with a special feature. The wings are padded with styrofoam. He's experimenting to see if it will act as a buoy during an inadvertent water landing.

David Duty, a fine amateur tennis player, plays regularly at the Virgin Island Hilton's Racquet Club. Bob Exley has become an expert scuba diver and most of the fellows share his enthusiasm for underwater diving.

Scott, an Atlantan who personifies gracious hospitality in a massive frame, acts as the island's unofficial host. Known virtually to everyone in the permanent St. Thomas community, J. Paul is as much at ease with the Virgin Island's Governor Paiewonsky as he is with natives who sell fruit in the open squares.

Because even the simple things in life are expensive in St. Thomas, most of the wives augment their husband's incomes by taking part-time or full-time jobs.

Lynn Carlson is a supervisor at Chase Manhattan's branch in Charlotte Amalie, the island's only city to speak of. (She recalls the time a depositor wrote a letter to the bank, starting "Dear Miss Amalie . . . .") Margie Scott and Frances Exley help out in the airport's gift shop, a scene of bustling activity since tax-free purchases are often the last-minute thought of departing passengers.

All the FAA wives have a problem with groceries. Supplies come in by boat from Puerto Rico and Florida only once a week, and at prices higher than in the States. Lettuce is 45 cents a head, a three-pound bag of potatoes is 89 cents, four oranges 99 cents. Fresh milk is not to be had at any price.

Another problem is schooling. Because standards in the public schools are not those of the American mainland, the Scotts, Exleys, and Longs send their children to private schools. Duty's youngsters go to school back in North Carolina, his home. Like the schools, medical facilities on St. Thomas are not of the caliber the families are used to. Often they prefer or are nearly forced to fly 60 miles to San Juan's doctors and hospitals.

To be sure, life is expensive for the FAAers stationed there. It has its moments of inconvenience. Accustomed to getting things done today, FAA families often are frustrated by the sense of manana that pervades the island. With the peculiar blend of cultures, beliefs, language, and superstitions, FAAers also discover they are not always in the 20th century.

But there *are* compensations: the weather is faultless; the vista, breathtaking. From their control tower—a white building high atop a hill that seems to rise from a sea of undiluted blue—the controllers enjoy the panorama of hillsides peppered with pastel houses and verdant greens accented by splashes of bright bougainvillea, African tulips, and wild orchids. On a clear day they can see Puerto Rico in one direction and St. Croix in another.

Above all, perhaps, is the excitement and novelty of absorbing the foreign flavor inherent in this American possession. It often is said that the past never dies. On St. Thomas, it flourishes. Appreciating, rather than deprecating, the peculiar oddities of their environment—with its strange commingling of old and new cultures—FAAers take advantage of their two-year tour of duty armed with four indispensables: curiosity, ingenuity, patience, and a sense of humor.

—Sue Silverman

Sports of wealthy tourists are after hours pastimes here. **Right:** "Host" J. Paul Scott.

Dave Duty, left, and Bob Exley, center, form part of the five man tower crew. "Just like any Stateside VFR airport during duty hours," they say. Maintenance technician Sam Long, right, walks through the downtown area, a shopper's paradise.

Right: Gil Carlson, pads the wings of his Aeronca Champion with styrofoam to help keep it afloat in case of an inadvertent water landing. **Below:** "A white building atop a hill that seems to rise from a sea of undiluted blue."

the MAKINGS of a TEAM

What to do about national transportation problems has been the subject of concern since 1874. With the passage of the Department of Transportation Act in October 1966, all the problems were laid before one man, the Secretary for Transportation.

The man President Johnson has picked as the most likely to succeed in this gigantic job is Mr. Alan S. Boyd.

While the Senate had not received his nomination at the time HORIZONS went to press, Mr. Boyd had been working with an interagency task force toward organizing for the unprecedented job. He told a transportation forum in Washing during November that it would take a year to organize the Department—pulling together the 94,000 people in the agencies that now deal with air, rail, waterway, highway and pipeline transport.

Why Mr. Boyd expects the organization task to take a year is evident from the list of agencies and functions the Department of Transportation will absorb. (See facing page.)

Experienced Hand

When President Johnson announced his selection of Mr. Boyd to be the first Secretary of Transportation, he said Mr. Boyd had more experience for the job "than any other individual within or outside the Federal Government." - In his present position, as Undersecretary of Commerce for Transportation, he carries direct responsibility for, or exercises policy supervision over, many of the functions which will be in the Department of Transportation.

Before the President appointed him to the Undersecretary of Commerce position, Mr. Boyd was Chairman of the Civil Aeronautics Board. Before coming to Washington in 1959, the year he was first appointed to the CAB, he had served in his native Florida as general counsel of the Florida State Turnpike Authority, Chairman of the Florida Railroad and Public Utilities Commission and Chairman of the Civilian Committee for the Development of Aviation in Florida. During World War II, he was an Air Force pilot.

Approach to the Job

Published interviews with Mr. Boyd, and speeches he has made since the President's announcement, give an insight into his approach to the job.

He told a forum sponsored by the United States Chamber of Commerce that while he has every intention of making the Department of Transportation the guiding force in helping coordinate transportation policy, the Department was not going to be "the big daddy" to the transportation industry.

"The transportation system in this country is a private enterprise system, and the Department of Transportation will try to promote it rather than take over its activities and responsibilities," he said.

The Staff, he said, would be limited "to a very few people, probably less than 400."

Major Areas of Importance to be considered immediately are traffic safety, the post-1972 Federal highway study, the improvement of airport facilities and the relationship of the transportation department with the Department of Housing and Urban Development insofar as urban development is concerned. He cited a need for—

- development of far better analytical techniques than presently available.
- full coordination of all research and development to insure timely introduction of new technology for all modes of transportation.
- development of better measures of costs and benefits for alternative programs for achieving transportation objectives and for balancing transportation expenditures with expenditures in other sections of the economy.

"Unfortunately," Mr. Boyd said recently, "the concept of transportation as a single system has not yet been completely grasped by many people, including those who work in transportation."

Alan S. Boyd

As They Were

• All These Functions Become the Responsibility of the DOT. This is Where They Have Been.

Under Secretary of Commerce for Transportation

This office was created in 1965 with Alan Boyd as the first Under Secretary. Serving as the principal advisor on all transportation policies, he was responsible for developing an overall transportation policy within the Federal Government. This included coordination of interdepartmental transportation, and decision-making and policy research in such areas as Federal investment in transportation improvements affecting the public interest. In addition, Boyd as Under Secretary exercised policy supervision over the following Department of Commerce agencies, all of which will become a part of DOT, and the Maritime Administration, which will not.

• **Great Lakes Pilotage Administration.** Created in 1960, the Administration oversees waterway pilotage on the Great Lakes by registration of United States pilots, regulation of pilotage pools and establishing rates and charges for pilotage services in coordination with the Canadian government.

• **St. Lawrence Seaway Development Corporation.** The Corporation was authorized by statute to construct, operate and maintain a deep-water navigation works in the International Rapids Section of the St. Lawrence River working with its Canadian counterpart. The Corporation is self-supporting through tolls assessed shippers using the facilities.

• **Bureau of Public Roads.** Functions include coordinated development of the Interstate Highway System, Federal aid to primary and secondary systems, a highway safety program, assisting states and urban areas in planning integrated transportation systems, studying future highway needs in relation to population growth and distribution and economic activity, highway beautification and Appalachian Highway Development.

Coast Guard

(Originally in Department of Treasury). The Coast Guard is a military service that operates as part of the Navy in time of war. Its functions are search and rescue services, merchant marine safety program, providing navigation aids for the Armed Forces and marine commerce, port security, enforcement of Federal laws on the high seas or U. S. waters, oceanography, maintaining ocean stations, ice-breaking services and maintaining readiness for military operations including training reservists. It is staffed by approximately 35,000 military personnel and 5,500 civilians.

Bureau of Railroad Safety and Service

(Plus portions of the Bureau of Operations and Compliance and of the Bureau of Enforcement in the Interstate Commerce Commission). The Interstate Commerce Commission was created in 1887 to regulate common carriers engaged in interstate and foreign commerce transportation. The functions to be transferred to DOT have to do with emergency regulation of railroads and other vehicles and an extensive safety program having to do with equipment, personnel policies, signaling systems and operating practices. Certain types of private motor vehicles and pipelines (except natural gas) are included.

The Alaska Railroad

(Now Department of Interior). A Congressional Act in 1914 authorized the President to locate, construct and operate railroads in the then Territory of Alaska. Objectives were to stimulate settlement, and the industrial and agricultural development of Alaska by providing transportation and developing areas along the railroad and to provide transportation for the national defense. The railroad operates 482.7 miles of line. It owns and controls through a lease arrangement, a tug and a barge line, docks and terminals and provides limited dormitory and mess facilities for a few employees.

Certain Functions of Corps of Engineers (U. S. Army)

Functions to be transferred from the Corps to the DOT are: designation of certain areas as anchorages, regulating drawbridge operations, determining whether existing bridges are unreasonably obstructive to navigation and overseeing Government participation in the cost of necessary alterations, reviewing bridge tolls for reasonableness, policing of oil and chemical pollution and determining the proper vertical and horizontal bridge clearances over waterways.

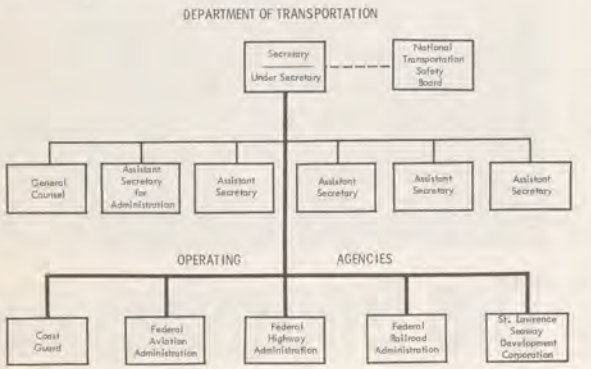
Federal Aviation Agency

The Agency transfers to DOT with all the functions given it by the Federal Aviation Act of 1958. Programs carried out are safety regulation, registration of aircraft, research and development of civil supersonic transport development, establishment and operation of air navigation facilities, airspace control and air traffic management, Federal-aid Airports program and encouragement of civil aviation abroad.

Bureau of Safety

(Now under Civil Aeronautics Board). The Bureau was established by the CAB to carry out its responsibilities in investigation of accidents involving civil aircraft occurring in the United States and its territories. It recommends to the Board the probable cause of all aircraft accidents, makes public reports on aircraft accidents and probable causes, makes recommendations which will tend to prevent similar occurrences and ascertains what will tend to reduce or prevent aircraft accidents.

The New Department of Transportation



A Catalina Seaplanes Inc. Grumman G-21 (above left) completes a run at Avalon, Calif. At Fort Worth's Meacham Field (above right) operations inspector Thomas H. Ray confers with chief pilot J. O. Bell of Hood Airlines, an organization that has grown in three years from a borrowed Cessna 172 to seven twin-engine aircraft. Tourists have "built" many of the air taxi organizations, especially in the Caribbean and Hawaii. (left)

The Booming Air Taxi Business

What does an Alaskan fur trapper do when he reaches the end of his trap line with tired sled dogs and an overload of pelts?

He calls a taxi.

Taxis that operate in the fur trapper's bailiwick are a special kind, but they can be found all over the world doing unique jobs. Their cargoes range from baby chicks and reindeer to high paid executives and cannery workers.

These are the "air taxis". They are the fastest growing segment of aviation and one of the Nation's fastest growing businesses. More than 5,000 planes were in the business in 1964, but 13,000 is the forecast for the 1975 period. This will out do the growth rate of the past six years during which the business has more than doubled in almost every aspect.

Behind this burgeoning growth are the resourceful people who have found new business opportunities and unique uses for aircraft. Amerine Air Service, for example, specializes in transporting millions of turkey eggs and poults between California production centers and Eastern markets. The service started when national air freight companies decided against installing special equipment to regulate temperature and humidity.

Butler Aircraft in Redmond, Ore., does a booming pre-Christmas business. They have made flying reindeer a reality by transporting live reindeer from ranches to cities throughout the country. After they've been on display through the Christmas season, they are returned to the ranches.

By providing aerial transport between major air terminals and outlying communities, air taxi operators have tapped one of their largest potentials. Economic studies by FAA's Office of Policy Development show that about 91 per cent of the air taxi flights made between 1958 and 1964 were passenger flights. This is true, at least, of the operators who are members of the National Air Taxi Conference. Although NATC, with only 200 members, represents less than 7 per cent of the 3,026 commercial operators who hold FAA Air Taxi Commercial Operator certificates, their growth trends are noteworthy.

From 1958 to 1964, aircraft trips of all types for NATC members increased from 34,000 to 73,450. The average passenger load has climbed from under two to almost three. The revenue aircraft miles increased by 223 per cent in the same time period—from 5.2 million to 16.8 million miles. Revenue *passenger* miles grew 557 per cent—from 8.7 million to 56.9 million.

This new passenger business has been made with the cooperation of, and not at the expense of, scheduled airlines. Major airlines have recognized the potential of air taxis to serve as "feeders" to major metropolitan terminals. In some cases, trunk airlines are investing their time, effort and money to help air taxis gain firmer roots in the aviation industry.

Travel agents, too, are encouraging passengers to "fly all the way" by using air taxis in place of the combination of trains, buses, airport limousines and taxicabs. In many cases, they claim, it is not only faster but just as economical.

But the passenger business is far from the whole story. Air Taxis are getting their fair share of the booming air cargo business. As major airlines streamline cargo hauls, more businesses are becoming aware of the economies and the opportunities involved in transporting valuable and perishable cargo by air. Some of them are turning to air taxi.

Alaska's salmon industry is an example of a business that depends on the service. Since salmon migrate, fishermen use air taxis to patrol the coastal waters looking for great schools. During fish runs, when every hour counts, air taxis rush workers to the headwaters from their isolated canneries. Many an Alaskan trapper, too, will charter air taxis to haul himself, his dogs, sled and provisions to the distant end of his trap line. He sets a date when he wants to be picked up. If he has been successful, he will board the taxi with thousands of dollars worth of fox, mink, martin, lynx, muskrat, beaver or wolverine. *continued*

In the "family" business of Henry Griffing, Sandusky, Ohio, veteran pilot, Henry (32 years), and son Tom share flying chores while wife, Sue, and daughter, Melody, cover the office. Both girls fly, Sue over past 30 years.

Beaver performance is discussed (below) between Edward Allen, center, Jack Corey, left, and Jim Ellis.

Above: ". . . you can't tell an air taxi by the cant of its nose . . ." They double as instructional, rental, etc. **Above right:** Bob Stone, maintenance inspector, right, confers with Stanley Roth, of Hawaiian Air Taxi Service on a maintenance problem.

Air Taxi Business / Continued

From the FAA's point of view, the increase in the complexity and volume of air taxi activity has required more surveillance and inspection. C. F. Olson, executive assistant in the San Francisco Area Office, observes that these inspection procedures can become complicated.

"It is almost invariably true," says Olson, "that you can't tell an air taxi by the cant of its nose or any other physical or structural attribute. Since it may double in brass in instructional, rental or executive use, owners rarely mark it in any way that would enable our inspectors to identify it for surveillance or special inspections."

While FAA General Aviation and Flight Standards District Office staffs might admit to this problem, they are quick to praise air taxi service for its versatility and convenience.

George E. South, supervisory inspector of the GADO in Phoenix, reports that air ambulance taxi flights to such out of the way places as Lukachukai, Teec Nos Pos and Kayenta often mean the difference between life and death to stricken victims on Indian reservations.

In Puerto Rico, J. P. Riviere of the Flights Standards District Office stresses the importance of air taxis in the Caribbean.

"Small island towns separated from large cities by vast expanses of water depend heavily on the small operators for their needs and livelihood. Needed articles are flown in while seafood products and small fabricated items are delivered to large cities for sale in market places and hotels. In Puerto Rico itself, isolated mountain communities are reached in a few minutes by air from San Juan, while automobiles would require three hours through congested, twisting mountain roads."

Until recently, many air travelers would have responded to the question, "What is an air taxi?" like Australian aborigines replied to explorer James Cook when he inquired about a strange animal. The natives replied, "Kangaroo," which in their native tongue meant "I don't know."

The kangaroo trademark of the National Air Taxi Service is appropriate from that standpoint, but more likely, it was chosen because it carries its passengers on short hops. It is equally symbolic of the entire taxi service as it grows by leaps and bounds.

There are about 9,500 airports in the United States and the trunk and feeder airlines reach about 600 of them with scheduled service. Air taxis have made 7,000 additional communities accessible by air.

Claims Bob Shippee, an official at United Air Lines, "Air taxi is an established segment of transportation—it's come of age. This is no longer the leather jacket era."

aviation partners

Dr. Mervin Strickler explains Agency's Aviation Education Program to committee members.

John Kuhn, right, of the Weather Bureau and Anchorage Aviation Insurance Sales Executive Ed Dimock discuss committee plans.

Richard Thwaites discusses carrying of survival equipment with William Burns of the Alaska Air Commerce Department.

George Gary knew each of the men who filed into his office. He looked up with a start, then suddenly remembered the reason for their presence. He had been so engrossed in plans for their meeting he had completely forgotten to check the time.

The Alaskan Regional Director enthusiastically welcomed each of the airmen who had come for the first meeting of the newly formed General Aviation Advisory Committee.

Representing every field of aviation endeavor in America's northernmost State, the committee is the first organization of its type to be formed anywhere in the Nation. Its function is to exchange information between the general aviation public and the Agency; it brings together a group of experienced airmen who will advise Alaskan Regional Director George M. Gary of their problems and needs.

In welcoming the airmen to their kickoff meeting, Gary stated that "There is one common bond that draws airmen of every inclination together—safety in aviation.

"Whether it is the pilot who flys for pleasure or hire, or the aircraft mechanic who supports the effort, or the men and women in the various govermental agencies who serve aviation, all have a common concern—the safe utilization of this Nation's airspace by all who wish to fly or engage in air commerce.

"The Government's concern in promoting safety in aviation was expressed in the Federal Aviation Act of 1958 which charges us '. . . to provide for the regulation and promotion of civil aviation in such manner as to best foster its development and safety, and to provide for the safe and efficient use of the airspace by both civil and military aircraft, and for other purposes'."

The committee, composed of representatives of many aviation organizations in the State, will advise Gary on improvements in airports and heliports, establishing of airways, airmen certification or rating, aviation facilities and services, and aviation education.

Ten to twelve members serve one year terms on the committee. They represent pilots and aircraft owners, flight and ground schools, helicopter operators, repair stations and mechanics, flight instructors, guides, pilot and airmen associations, air taxi and commercial operators, and aircraft sales and service agencies.

"In forming this Committee, we have recognized that general aviation is the fastest growing segment of air activity in the nation today," said Gary, "It far exceeds air carrier and military aviation. This is especially true in Alaska where general aviation aircraft are the sole means of transportation and communications for many.

"My wish is that the best possible communications should exist between us at all times. We are all working toward the same goal, and that is to develop aviation to its full potential to serve the expanding needs of all Alaskans for safe, efficient air transportation."

Safety is Not a Puzzle

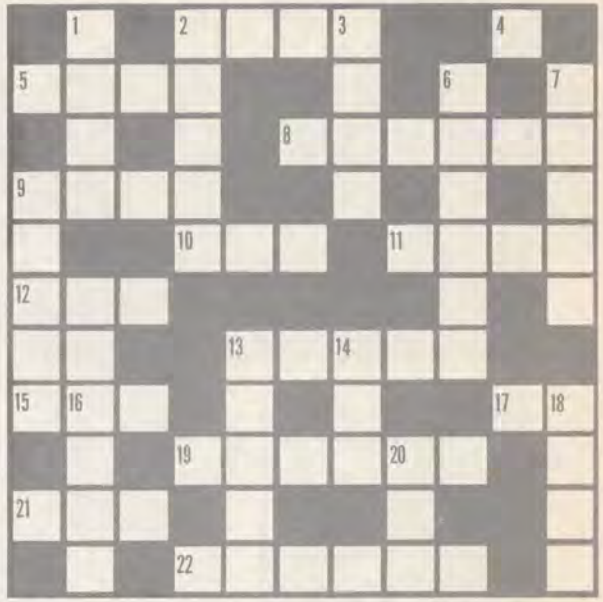
Designed primarily for pilots, this puzzle is part of a safety education program conducted by Flight Standards Service. How many in your work group, pilots and non-pilots, can work it? For solution, watch INTERCOM.

CLUES ACROSS

2. Caused by excessive rudder
4. Unit of acceleration measurement
5. Vertical to relative wind
8. Makes angle of attack greater at wing-tip
9. Prevents escape of fluids
10. Downwind side of mountain
11. Reserve supply is proper
12. Rearward
13. Tube in airspeed system
15. Triming device
17. Must be kept within limits
19. Fin on back of aircraft
21. Stablizer
23. Ratio of wing span to mean chord

CLUES DOWN

1. Usually necessary to exceed red line
2. Occurs when angle of attack exceeds angle of maximum lift
3. Increases as angle of attack increases
6. Forward directing force
7. Dihedral
9. Opposite of shut-down
13. Small airfoils
14. Abbreviation of airspeed when entirely corrected
16. Vertical, longitudinal or lateral
18. A sudden and brief change of wind velocity
20. Traffic management



book blips

Selected new library acquisitions for professional reading. Check your local FAA library for these aids to professional development.

Aviation, The Creative Ideas. Oliver Stewart. The finest medium for creative ideas during the past 60 years has been aviation according to Stewart. In this book, he examines some of the major ideas of the people who have had the greatest impact on aviation development and describes the inventions that best reflect the unique quality of aviation as a stimulant to creative thought. (N. Y., Praeger, 1966, 244 p.)

A National Study of the Aviation Mechanics Occupation. David Allen. An aviation mechanic can never rest on his laurels. Because of the changing technology in his field, he needs up-to-date initial training as well and continuing in-service training. This study provides a platform from which a system of training can be established. It includes a means of maintaining an up-to-date curriculum in aviation mechanic schools and establishes a method that can guarantee the proper instructional emphasis at predetermined levels. (Dept. of Health, Ed. and Welfare, 1966, 229 p.)

Great Airports of the World. Roy Allen. A wealth of information on 26 of the world's airports is documented in a fashion that makes this book invaluable to operational people, airlines, aviation writers and reference librarians. Each history is accompanied by data on runway lengths, air traffic control facilities, landing aids and other facts. Almost 100 photographs illustrate the book. (London, Allan, 1964, 128 p.)

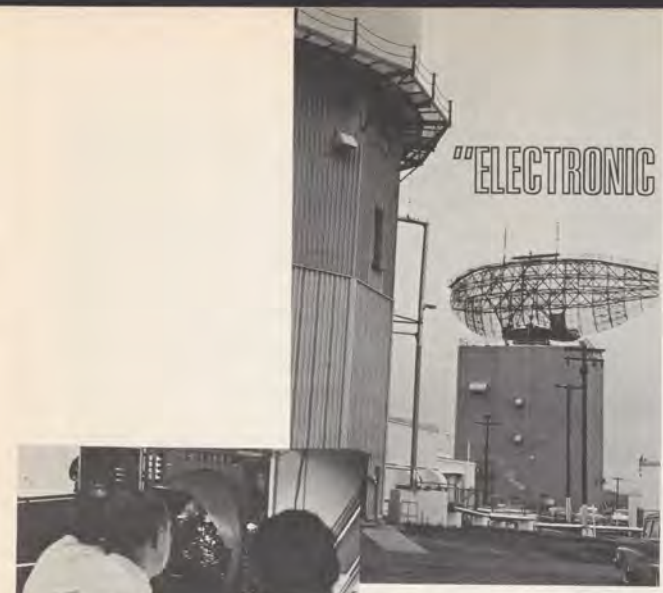
General Aviation Airports for the Future. The increasing number of general aviation aircraft and the declining number of airports in the New York Metropolitan region is of primary concern to the publishers of this report, the Tri-State Transportation Committee (Conn., N. J., N. Y.). Facing the fact that general aviation is increasing as more businesses turn to executive aircraft, the report includes suggestions as to size, location, ownership and management of needed airports. (Tri-State Transportation Committee, N. Y., March, 1965, 62 p.)

Great Mysteries of the Air. Ralph Barker. The author tells the stories of 14 classic lost airplanes including Amelia Earhart's, Leslie Howard's, Glenn Miller's and Bill Lancaster's. (London, Chatto and Windus, 1966, 211 p.)

Metropolitan Transportation Politics and the N. Y. Region. Jameson W. Doig. The patterns of cooperation and conflict involved in the post-war transport policies in the New York area are examined as they affect the nature of critical power in the metropolis. Transportation emerges as the one major regional issue in the largest of our urban complexes. (Columbia Univ. Press, 1966, 327 p.)

Domestic Transportation: Practice, Theory and Policy. Roy J. Sampson. The style and scope of this book are intended for students at the university level. The text is concise and stimulating, requiring only that the reader have a basic knowledge of our business and economic system necessary for understanding the concepts and problems of transportation. Additional references supplement each chapter. (Boston, Houghton Mifflin Co., 1966, 464 p. —prepared by HQ Library Staff.

"ELECTRONIC NUPTIAL"



This radar antenna, measuring 120 feet wide, 44 feet high, and weighing 86.5 tons is one of the largest in the country.

Center Controllers peer into the radarscope they refer to as alphabet soup because symbols appear right on the screen.

In a blockhouse at Malmstrom Air Force Base near Great Falls, Mont., there is a unique setup between FAA and the Air Force Air Defense Command (ADC).

Here the Great Falls Air Route Traffic Control Center and the 28th Air Division's Semi-Automatic Ground Environment (SAGE) Direction Center are using the same facilities but performing different operations.

The Center is using computerized radar information "borrowed" from eight Air Force radar sites in Montana and North Dakota. Use of these sites permits the Agency to extend its radar coverage over a vast area that might otherwise have been void of such coverage for years.

In another room not far from the ARTCC, Air Force men use identical radar scopes for practice intercepts and other missions of the ADC and Strategic Air Command. Air Force and FAA controllers are able to transfer control of aircraft among themselves without having to talk to each other.

An agreement in 1963 between the FAA and the ADC set up the Northern Tier Integration Project (NOTIP) which served to provide radar coverage for air traffic control over a vast area of the North Central United States adjacent to the Canadian border. Most of the airspace above 24,000 feet over the entire nation was under Area Positive Control (continuous and mandatory radar control), and NOTIP would have required centers at Great Falls in Montana and Minot and Grand Forks in North Dakota to extend this coverage. When the Air Defense Command decommissioned SAGE centers at Grand Forks and Minot, their radar information was piped to Great Falls enabling the Great Falls center to control this vast area.

Radar information coming in from eight sites is fed into a giant computer, heart of the SAGE system. Every radar scope in both the ARTCC and the SAGE Direction Center may then be adjusted to display any or all of the entire area covered by the eight radar stations. Since individual scopes receive radar information from many antennas, failure of any one antenna site does not result in loss of aircraft targets. The sophisticated Air Force equipment also eliminates unwanted targets, like ground clutter and precipitation, from the radar scopes.

The system also displays a variety of symbology relating to each target on the scope, similar to the Stored-Program Alpha Numerics (SPAN) system being installed in the New York Center. The SAGE computer displays aircraft identification, altitude, and other information in easily read digits right on the scope. This information tracks right along with the target, eliminating the need for manual tracking of the targets with plastic "shrimp boats."

The computer also calculates ground speed and geographic position of all aircraft and will display it if requested by the controller. Other advantages of the system include a feature which makes it possible for one controller to transfer (hand-off) control of an aircraft to another controller without having to talk to him.

The SAGE computer continuously and simultaneously records position and speed of all aircraft on the scopes in the system. This information can be recovered in case of an incident or accident.

"Because our people work side-by-side with the Air Force in this building," said Center Chief Leroy R. Nedrow, "we have reached a high degree of understanding and cooperation."

The magic of the SAGE computer and the uniqueness of data available to controllers gives the ARTCC the capability of switching controllers to trouble spots at will. This, and many other features of the operation, makes it an ideal test bed for some of the concepts which will exist in the National Airspace System of the future.

Facility Officer Roy L. Olson, who has briefed Washington Headquarters planners on the details of the Great Falls operation, said an item of high interest was the use of computers in centers. Teams from Washington and the National Aviation Facilities Experimental Center have also visited Great Falls for first hand information.

In the meantime, the Air Force and FAA continue to operate with ease under one roof in what an Air Force writer once referred to as an "electronic nuptial."

Boeing full-scale mock-up seems to 'spread its tailfeathers' as the variable sweep wing is demonstrated in triple-exposure.

Behind The Decision On The SST

Whether this nation is ready to proceed with the development of the supersonic transport should be decided soon. If the signal is green, a manufacturing team—selected by the Government—will push ahead early this year with the construction of flying prototypes.

Actually, two prototypes of the same design would be built. The first of these would take to the air in late 1969 or early 1970 to begin intensive flight tests. At about the same time, production development would get underway—and the first production model would roll off the line early in 1973. Certification and entry into commercial service would be accomplished by mid-1974.

Competing to build the SST prototypes are the Boeing Company and the Lockheed Aircraft Corporation, both airframe manufacturers, and the General Electric Company and the Pratt & Whitney Division of the United Aircraft Corporation, both engine manufacturers. All four concerns have been working under Government cost-sharing design contracts since June 1, 1964.

The SST program was launched by President Kennedy in 1961. At his request, Congress appropriated $11 million for a two-year feasibility research program. Leadership was provided by FAA, NASA, and the Department of Defense. The preliminary studies established the validity of proceeding with the development program.

Describing supersonic transportation as "the challenging new frontier in commercial aviation," and "essential to a strong and forward-looking nation," President Kennedy—on June 5, 1963—called for a joint Government/industry effort to develop an SST. Congress subsequently appropriated $60 million to finance the design phase of the program and FAA was assigned responsibility for management.

In August of 1963, FAA released formal Requests for Proposals (RFPs) to the aviation industry. Three airframe manufacturers—Boeing, Lockheed, and North American—responded. So did an equal number of engine companies: General Electric, Pratt & Whitney, and Curtiss-Wright.

Five months later, all six concerns submitted their design proposals to FAA for a Government/industry evaluation. This initial competition was funded entirely by the participants. As a result of the evaluation, North American and Curtiss-Wright were eliminated from the competition. The four remaining firms were awarded fixed-price cost-sharing contracts to continue their design work.

These contracts were let for a six-month period, beginning on June 1, 1964. The cost-sharing arrangement was 75 per cent Government and 25 per cent industry. The four contractors submitted their designs for a second-round evaluation in November 1964.

At the conclusion of the 30-day evaluation period, President Johnson directed that the four design contracts be continued on a month by month basis until his Advisory Committee on Supersonic Transport could make a detailed and thorough analysis of the total SST effort. The Committee is chaired by Secretary of Defense Robert S. McNamara and comprises the Secretaries of Commerce and Treasury and the Administrators of NASA and FAA.

The Advisory Committee subsequently proposed that design work be continued for an additional 18 months with the aim of bringing the SST program to the prototype construction phase by the end of 1966. President Johnson adopted the recommendation in a decision announced on July 1, 1965.

In accordance with that decision, the two airframe and two engine manufacturers participating in the SST program were authorized to continue their design work through 1966. New contracts were negotiated which continued the 75/25 per cent cost-sharing arrangement. Contract work funds again were appropriated by Congress.

Included in the work to be accomplished by the airframe contractors was the construction of full-scale engineering mockup. They also were required to build and test certain full scale sections of their fuselage and wing. The engine contractors, on the other hand, were to assemble three full-scale prototype engines and achieve a minimum of 100 test hours during the 18-month period. Pratt & Whitney fired its first engine in the spring of 1966 with General Electric not far behind.

On September 6, 1966, the four SST contractors submitted their final design proposals for evaluation by a team of approximately 235 Government aeronautical experts. Members were drawn from NASA, Air Force, Navy, CAB and FAA. Major General J. C. Maxwell, FAA's Director of Supersonic Transport Development, served as chairman of the group.

The Government's evaluation was focused in six major areas—airplane technical, engine technical, system integration, management/manufacturing, cost and economics. Each of these areas was divided into items and factors and even subfactors where appropriate.

Under airplane technical, there were five major items—system engineering, aerodynamic design, airframe design, systems and propulsion. These were further divided into 28 factors. The seven listed under airframe design, were weight and balance, design criteria and loads, materials and processes, aerodynamic heating, flutter, component design and structural tests.

Concurrently, 10 domestic and 18 foreign airlines conducted separate analyses of the designs. Each was asked to select an overall design which would best meet their individual needs.

The results of the Government and airline evaluations were submitted to FAA Administrator William F. McKee on October 31, 1966. These reports were the basic documents used in determining whether U. S. commercial aviation is ready to move forward into the supersonic era.

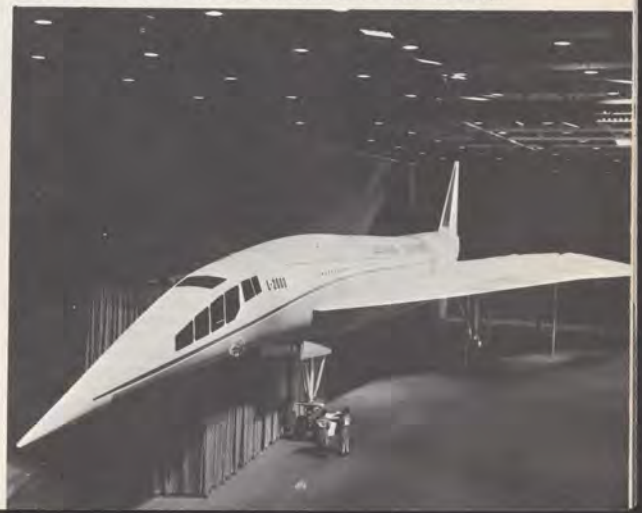
Inspection team views test sections.

Evaluation team visits research facility. Maxwell is 3rd from right.

Interior for the somewhat larger passenger of 1980s.

General Maxwell (left) and Donald L. Taylor, Lockheed.

People by gear emphasize the size of the Lockheed full scale mock-up.



SEVERAL SAFETY PROJECTS UNDERWAY IN THE NAFEC LABORATORIES

The National Aviation Facilities Experimental Center at Atlantic City is humming with activity involving aviation safety. Some of these projects include:

• A super-bright search radar display (ASR-4), developed and tested at the Center, was recently installed at Washington National Airport for field tryout.

• Air traffic for the proposed regional airport for Dallas-Fort Worth has been duplicated on the simulation laboratory radar to see how its traffic can be handled.

• Fighter planes, equipped with hooks, were arrested on a NAFEC runway to test a modification of the BAK-9 arresting system. The new modification permits the cable to lie flat on the surface, rather than four inches above.

• Tests have begun on an all-weather approach system called Microvision which projects an image similar to that of a lighted runway on the windshield. The pilot makes an approach using Microvision in bad weather until the runway is actually seen through the Microvision image.

• Radioactive gas was used in an experiment to guide an airplane along a taxi strip under zero-zero fog conditions in a project at the Center. A pipe containing radioactive gas has been buried in one of the taxiways for the test. A special radioactive detector, installed in an airplane, demonstrated the feasibility of such a direction device.

• Two years of in-flight fire protection tests of a jet engine were concluded at the Naval Air Test Turbine Station, Trenton, N. J. Information obtained from more than 700 engine fires will be useful in the design of new engines and aircraft.

• A new all-weather landing system installed on an Air Force C-141 StarLifter, the giant cargo and troop transport, is being tested at the Center.

• A new fire-fighting foam having an expansion ratio of 500 to 1, compared to the 6 to 1 ratio of conventional foam, was tested in several fuel fires.

• A computer-aided approach system, developed and tested at the Center, was installed at Kennedy Tower for field trials.

• Radio frequency interference levels were checked at Philadelphia International Airport. It was part of a siting criteria survey for remote transmitters.

• New beacon lights were installed on a television tower in Oklahoma City to test the high intensity obstruction beacons. They will be evaluated by Flight Standards Service.

• Twelve TACAN stations in the Central and Southwest Regions having azimuth restrictions were surveyed.

Flight Crew Saves the Day for Pilots Stranded in Canadian Wilds

The chilling and all too familiar cry of "Mayday, Mayday, Mayday" recently led an FAA flight crew on a rescue mission in the wilds of northeastern Canada.

An Agency flight inspection aircraft was on a routine trip to make a flight check of the Saglek, Canada, TACAN when the distress call was heard.

The crew spotted the aircraft, saw it touchdown, roll, then stop abruptly with tail high and nose into the ground. Two Danish pilots left the plane uninjured.

The FAA crew packaged and dropped their own parkas, winter coveralls, mukluks and boots, plus an emergency subsistence kit and some tools. They then returned to Saglek to pick up additional survival equipment for the stranded men who were later picked up by helicopter.

MISSION ACCOMPLISHED—Rescuers (top to bottom from left) James Rogers, John Ferraro, Allen Metzger, Raymond Keronen, Chester Covert, Bryant Chestnutt, Harvey Hays and William Molesworth.

FAA Takes Over The 1966 Anchorage Beauty Pageant

"MISS ANCHORAGE"—Melinda Johnson captures crown.

The contest this year for "Miss Anchorage of 1966" was pretty much an FAA affair.

Winner of the crown was Melinda Johnson, daughter of Mrs. Andrew Johnson, a clerk-typist in the clerical pool in the Airway Facilities Division.

Mrs. Lois Cook, supervisory clerk stenographer in the clerical pool, served as Executive Director of the Miss Anchorage Scholarship Pageant. And, Mrs. Wallace Stripling, administrative assistant in the Anchorage Area Manager's Office, acted as Melinda's chaperone for the contest.

Other FAAers who entered this year's contest were: Pamela Jennings, daughter of Mrs. F. H. Watts, who works for the CAA-8 Credit Union, and F. H. Watts, air traffic control specialist; Phyllis Lipski, clerk-stenographer in the Airway Facilities Division; Leah Noakes, daughter of Mrs. Clifford (Betty) Noakes, clerk-stenographer in the Airway Facilities Division; and Miss Christine Torell, clerk-typist in the Airway Facilities Division. Miss Lipski won $100 and the coveted "Miss Congeniality" honors.

It's a Rough Life at the Miami Control Tower

In complete "control" of Control Tower Watch Supervisor Blake Norris at Miami International Airport are captivating Judy Shaw, "Miss Yellow Pages," (left) and Mary Conner, "Miss White Pages," as they deliver first copies of the new Greater Miami Telephone Directories. The front cover features Miami's famous skyline and modern airport complex in full color. The new books are being distributed locally and furnished to directory libraries through the world. This type of delivery service is not guaranteed in other locations.

Watch supervisor Blake Norris is certainly pleased to get his copy of the new phone book.

Duty in Southeast Asia

Above: The Ban U-Tapao (Sattahip), Thailand, goes up with the help of local workers. Right: One of the most ancient modes of transportation is used on the tower construction for the most modern form of transport.

Four new air traffic control towers for the USAF have gone up in Southeast Asia—two in South Viet Nam and two in Thailand.

A team of six FAA civil and electronic engineers is winding up a year-long tour of duty in Southeast Asia where they supervised construction of the four towers.

The team, composed of two men each from the Western Region, Washington and the Aeronautical Center, volunteered to serve on U. S. Air Force tower projects at Phan Rang and Cam Ranh Bay on the east coast of South Viet Nam, Ban U-Tapao (Sattahip) on the South Coast of Thailand and Nakhon Phanom, an airport in northeast Thailand near the Laos border. All the towers are now either completed or nearing completion.

Clyde G. Trusch, Installation and Materiel Service, was civil engineering coordinator on the four-tower project. The other two civil engineers working with him are Richard L. Turnbull, from the San Francisco Area, and James E. Buecheler, Los Angeles Area.

James N. Cancro, Installation and Materiel Service, Washington, coordinated electronic engineering aspects of the new towers. The other two electronic engineers on the team are Jack V. Haliburton and Paul G. Welch from the Aeronautical Center.

John F. O'Rourke, International Plans and Programs Branch, Washington, coordinator of the entire project, paid high tribute to each member of the team.

"Each volunteered for hazardous duty in this distant, troubled part of the world." O'Rourke said. "Each is worthy of commendation and recognition and each has done a fine job of coordination requiring a great deal of improvisation and cajoling."

Penny-a-Pound Airlift Provides New Playground Equipment

Kids in Frankfort, Ky., will be getting lots of new playground equipment thanks to a penny-a-pound airlift in which FAAers from the Lexington, Ky. Combined Station/Tower and Airway Facilities Sector office (AFS) played a major role.

Staged at Frankfort's Capitol City Airport, the airlift was sponsored by the West Frankfort Kiwanis Club with the profits going to the purchase of the playground equipment and for other youth work in the city.

A temporary control tower from the Cleveland Area Office was set up for the airlift by Earl Layman and John McKennedy of AFS-236 and manned by Tom O'Rourke and Gerald Swigart of the Lexington CS/T. The tower handled 336 operations which carried 574 persons on aerial sightseeing tours of the Frankfort area. They weighed in at more than 30 tons.

retirements

Mervin Bennett, who retired from the Agency a year ago, has a bit of advice for new retirees: "Have a hobby and keep busy at it."

Taking his advice are:

• Archie B. Rieder who began his career as a radio communicator in 1932 aboard a slow-moving Coast Guard cutter, and has now ended it at Albuquerque Sunport, a jet airport, where he has been a flight service specialist since 1957.

• Erwin A. Cook, electric accounting machine program supervisor at Anchorage, who has decided on a rest after 37 years of Government service.

Alaskan Region Director Shares The Pride of Kenai Citizens

"As partners, we share your joy and pride in watching Kenai grow from a small fishing community of 250 residents in 1941 to a bustling city of 13,000 which literally is 'busting its seams,'" said Alaskan Region Director George M. Gary in a speech at the dedication of a new airport.

Gary added, "In air operations alone, Kenai is the second busiest airport in the State. Some 47,400 flight services were performed this past year by your flight service station. This is an increase of 44 per cent over the previous year. And there is no end to this phenomenal growth in sight."

Through Federal aid to airports, the Agency contributed $650,000 to the development of the new runway, taxiways, ramp, access road and runway lighting system, for the million-and-a-half-dollar airport. Kenai is second busiest airport in the State.

Left: Looks like a great way to spend military leave. Actually, Kansas City's Bert Perina happened to be the first to arrive in Yuma for the maneuvers so he got the red carpet treatment.

Right: Adrian Batson (right), Millinocket, Me., FSS receives a career service award from facility chief I. Lawrence.

Right: Nance Ito has been invited to try out for the U.S. Women's Basketball Team which will compete in the Pan American Games in Canada and Czechoslovakia.

Below: Administrator McKee wishes President Johnson a successful trip as the President prepares to leave for the six-nation conference on Viet Nam in Manila.

names & faces

Above: Community leaders participate with WE's Joe Tippets in dedication of the new $180,000 FAA office building at Metropolitan Oakland International Airport.

Above: After a busy day visiting the many laboratories and experimental test sites at NAFEC, members of the Women's Advisory Committee on Aviation board the plane for the return trip to Washington.

Above: Oakland ARTCC chief Frank Happy presents Air Force Col. Harry Shoup a plaque symbolizing FAA-military cooperation.

Below: The Western Region Credit Union celebrates International Credit Union Day with a birthday party.

Below: Air Force Col. Robert Hazzard, left, briefs Arlo Severns of the Pacific Region who will be stepping into a one-of-a-kind-in-the-Agency job in Okinawa. Severns will be responsible for upgrading the proficiency of military controllers at Kadena Air Base.

Left: The Agency is presented with a picture of an Air Force glider soaring above the Air Force Academy in recognition of the assistance given toward the establishment of a certified Academy flying school.

Above: Salt Lake City Center controller Robert Chambers, top row, right, skippered his Little League club to the league championship this year and a near-victory in the Little World Series.

Right: Eastern Region Director Oscar Bakke participates in the dedication of the new terminal building at MacArthur Airport.

Above: This "pilot" spurned the runway at the Phoenix airport, Sky Harbor, swooped down on the tower cat walk, landed, and then strolled nonchalantly into the tower cab. After inspecting the cab's facilities, "Homer" decided he needed a rest.

Above: Actor Cliff Robertson, who spent two weeks at the Aeronautical Center in an instrument refresher course, describes a polar bear hunt for Doris Nichols.

Left: 15-year-old Kathy Little, daughter of Silas Little of Systems Maintenance, is quite a celebrity around Falls Church, Va. She wrote, directed and produced what was probably the neighborhood's first "backyard ballet."

Above left: Western Region's Lee Warren (from left) Joseph Tippets and FAA test pilot Joseph Tymczyszyn visit North American Aviation's flight simulation laboratory.

Left: Brig. Gen. George Wilson displays the Air Force's "Certificate of Recognition Meritorious Service" awarded to Flight Standards Division chief Gordon Becker (left) as William Flener looks on.

Above: Western Region public affairs officer Eugene Kropf inspects part of a collection of more than 300 model aircraft he had constructed over the past eight years. His collection fills 20 cabinets and, according to Kropf, is gradually "moving me out of my den."

Left: John Latham, left, supervises a portion of the 4-week training course in the Fort Worth area. Afghan Air Authority technicians Abdul Fazli and Said Mahmud add practical skills to the theoretical concepts they learned at the FAA Academy.

names & faces / *continued*

Left: For one day recently "Arnie's Army" was made up entirely of air traffic controllers. The Boston Area controllers crowd around Arnold Palmer (center) for some pointers.

Above left: Alan Dean, left, congratulates C. E. Mayhall on receiving a Certificate of Achievement, the Agency's third highest award. Adding their congratulations are Joseph Blatt and Donald King.

Left: Rear Admiral H. S. Persons, left, pins the Navy Commendation Medal for "exceptionally meritorious achievement" on Capt. Hugh Laing for his service as deputy director in the Pacific Region as his wife, Betty, smiles proudly.

Above: Mrs. Catherine Oard, cartographer at the Denver Center, displays a mural depicting the history of flight which she painted in her spare time for the lobby of the Center building.

Left: Central Region GADO inspector Henry Diekmann checks curriculum of the Aviation Technology program at Southern Illinois University with coordinator Edmund DaRosa. The course was recertified.

Right: Controller John Robinson of the Washington Center is a very busy man on his off-duty hours, and all of it is connected with aviation. He talks on air traffic control to groups such as the Kiwanis and Rotary Clubs and also is a Major in the Civil Air Patrol.

Below: Dr. Abdul Khaleq (third from right) vice president of the Afghan Air Authority, meets with Aeronautical Center Director W. Lloyd Lane (on his right), and (from left) Dr. C. Dale Rea, Jim Maupin, Richard Skully and Robert Dille while on a United States tour.

personnel pipeline

Summer trainee Cynthia Jones, SW.

Stacy Egeland at Seattle FIDO.

Beverlyn Lee of Hawaii in YOC job.

Helped People Help Themselves

School vacations and summer employment programs are still months away, but the planning phase is almost on us. Advance planning, both by potential users of summer help and by personnel offices, will make the program again pay off for the employing offices as well as for the students.

The 1966 Summer Employment Program was an outstanding success. Vice President Humphrey commended FAA for its Back-to-School Program which helped more than 500. More than 1,000 young people were hired under summer employment programs of various types. In addition, 125 gained work experience — and pay — under the Neighborhood Youth Corps and Work Experience programs.

While the numbers are important, the real story lies in the programs' effect on the participants. How did the young people profit from their jobs? How did they perform, and how much did they improve? How did supervisors and coworkers react to them?

The answers were provided by a questionnaire completed by about 75 per cent of the summer employees and their supervisors. Answers from summer hires revealed that:

- 80 percent said that summer earnings would help them return to school.
- 95 percent are interested in working for FAA again.
- 99 percent recommended similar Government programs next year.

Replies from supervisors indicated that:

- 90 percent considered summer employee work satisfactory or outstanding.
- 91 percent described them as cooperative, willing workers who are eager to learn and profit from experience.
- 93 percent recommended the program be continued.
- 75 percent reported substantial improvements during the summer in their behavior, appearance, attitude, work habits and ability to follow directions.

A statement volunteered by one of the young people typifies, perhaps, the change in attitude that took place in both groups: "When I first heard of YOC, I felt it was just another bureaucratic program. To my surprise, I found that I was wrong. I found the YOC program to be a sincere effort on the part of Government to help people help themselves."

Many career employees reported that they, too, were pleasantly surprised by results. A new program with new challenges is in store for us in 1967, but 1966, the "Action Year", has taught us that we can do the job.

Draftsman Clifton Clark in Ft. Worth.

Steve Delquardo, Salt Lake City YOC.

Marion Figley, left, and Ray Mayfield discuss remodeling problems.

REVAMP for McGrath

Housewives in McGrath, Alaska, are proudly asking even strangers to look through their "new" homes.

Although built in the early 1940's, their Government housing has been periodically remodeled through the years but never as extensively as now.

Alaskan Region Director George M. Gary saw the "rehabilitation of quarters" program as an important part of keeping up employee morale. So, knowing that happy wives make happy homes, he stepped up the remodeling program throughout the Region.

Wives were interviewed to find out what could be done to increase the livability of their homes and suggestions were included in the overall planning.

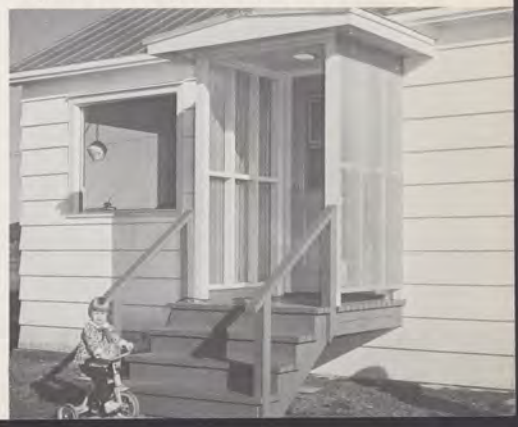
The results have been startling. New walls, both inside and out, new kitchen and bathroom fixtures, thermopane picture windows, utility porches, new pantries and added storage space. And in McGrath, an extra touch of individuality was added to the trim white row of houses along the airstrip; each sports a gaily painted door, the choice of the occupant—and each is a different color.

The McGrath families may live in a remote area and may not have all the comforts of big-city living, but you won't find neater, better-equipped houses or happier occupants anywhere.

Ray and his bride, Jane, think setting up housekeeping is great fun.

Jane finds cooking a joy on her new double-oven electric range.

Two-year-old Denise Forsgren pedals by the new porch of her home.



Donnis Stines

A roaring fire, a fluffy rug to curl up on and a good book on interior decorating make for a highly enjoyable evening for Donnis Stines. Twenty-four-year-old Donnis is a clerk-steno in personnel and training in Atlanta, and has been "decorating" the office since last June. Here she is posed to both illustrate her favorite way to spend an evening and to help *Horizons* launch a program to bring new beauty to its pages. More little FAA "decorators" will be pictured here in the future as readers help us discover them. Donnis lists some of her other interests as cooking, hunting and a guy named Larry.

after hours

Robert F. Gates

When any new type of airport ground lighting system is operationally evaluated at the National Aviation Facilities Experimental Center, the hand of Bob Gates usually is in on it. Whether the systems being tested are visual glide slope indicators as shown in this photo, approach lighting, or runway and taxiway lighting or reflectors, Bob acts either as project manager or consultant. In his specialty, he has seen and tried out all kinds of systems both here and abroad. Bob has been US member to the ICAO visual aids panel for the past nine years and is a well-known member of the illuminating engineering society, frequently reporting to that group on FAA lighting activities. He joined the Agency right after World War II service as a pilot. He started flying while attending Oklahoma State University in his home state.