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'Giving a Boost to BOMEX'
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Under Pressure

Pilots from Oklahoma's Panhandle area are given a realistic demonstration of the effects of pressure and altitude on individual responses during a "ride" in the pressure chamber at the Civil Aeromedical Institute. Instructor Josh Mann (right), helps participants adjust masks for the demonstration, part of a program to reduce general aviation accidents in the Central Region.

Pilot Safety Guidance Is Provided at CAMI

OKLAHOMA CITY—Sixteen pilots from Oklahoma's Panhandle section visited the Civil Aeromedical Institute here recently and learned some things which should make them safer pilots.

The group was accompanied by J. W. (Bill) Grant, FAA Accident Prevention Specialist for Oklahoma City, one of the 12 key employees in the Central Region spearheading a regionwide aviation accident prevention program.

Panhandle pilots went through an altitude pressure chamber and were treated to a "trip" on the Vertigon—a machine which realistically simulates the loss of visual reference and dizziness encountered by pilots in soupy weather.

They were also provided with details on the dangers pilots face in using such over-the-counter medicines as sinus tablets and nasal sprays.

"One pilot fell out of the door of his airplane while attempting to take off," Grant told general aviation pilots during the orientation. "We found that it was due to his having taken two doses of sinus medicine prior to takeoff."

Many of the pilots were surprised to learn that smoking can reduce a pilot's safety threshold on altitude tolerance by as much as 2,000 feet. It was also pointed out to them that although some modern light aircraft can reach 29,000 feet on engine power, their cabins are not pressurized and oxygen available will not sustain a pilot at that altitude.

Pilots participating in the acci-

dent prevention program do so voluntarily and at no cost to themselves.

The program attempts to make pilots aware of safe flying practices and to enlist their cooperation in a general drive to cut aviation accidents.

Air Safety Measures Urged

WASHINGTON—The third in a series of rule-making actions has been proposed by FAA affecting the airworthiness and emergency evacuation and operating procedures of transport airplanes to increase probability of survival in the event of a crash.

Directed primarily at further updating the type certification requirements for the large future transports, the proposal draws on results of two years of intensive work with industry under the agency's leadership as part of a continuing cooperative program to further improve aircraft safety.

Administrator John H. Shaffer pointed out that this latest proposal represents more than 50 improvements in the standards covering passenger safety, when added to previous rule-making actions. "The proposed requirements," he said, "represent advances achieved through mutual effort to develop new techniques, designs and equipment that would enhance both the air- and crash-worthiness qualities of our passenger airplanes." He said these advances "are technically achievable within the current state-of-the-art."

Agency Facilities Hit by Hurricane

By Gerrie Cook

ATLANTA—Agency operations are almost back to normal in the wake of the death and destruction left by Hurricane Camille in a 600-square-mile coastal section of Mississippi and Alabama. No agency employees were killed or injured in the disastrous storm. However, many employees' homes were badly damaged according to Memphis Area Manager Birge D. Alexander.

El Paso FSS Employee Is Unofficial 'Diplomat'

EL PASO—Among the agency's unofficial goodwill ambassadors stationed at facilities near the United States-Mexico border is Pedro Tellez of the El Paso Flight Service Station.

Fluent in Spanish and German, Tellez has been of assistance to innumerable Mexican pilots who are unable to speak English or who hesitate to venture out of their native Spanish in contacting U.S. facilities. To make the job of communicating easier for Mexican pilots and for other FAAers, Tellez prepared a bi-lingual book containing key air traffic phrases in Eng-

lish and Spanish. The book was

More details on the manner in which other agency personnel are promoting friendship and understanding between the U.S. and Mexico will be found in the article, "Amigos," on Pages 4 and 5.

put to especially good use last year during the heavy trans-border traffic to the Olympic Games in Mexico City.

Tellez prepared the book after he heard a Chilean Air Force pilot,

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A Bit of German

Pedro Tellez, El Paso FSS, points to a weather map as he talks in German to two German Air Force pilots who are filing flight plans for their return home after bringing troops and supplies to Fort Bliss.

Employees Lauded

ATLANTA—Immediately after the recent hurricane, Southern Region Director James G. Rogers flew to Gulfport, Miss., and also traveled to other areas affected by the disaster.

Rogers praised agency employees in the two-state area for their courage in the emergency and for the excellent job they did in restoring facilities under the most difficult conditions.

"Our people have done a terrific job in Alabama and Mississippi under the severest conditions possible," Rogers said. "With danger all around, roads severed and communications shattered, they displayed admirable devotion to duty far beyond the normal call."

"Through their outstanding efforts, we were able to get most of our facilities back into operation in the shortest possible time.

"We could never have asked any more from our employees than they gave during this disaster."

Except for the Gulfport, Miss., area, which was the hardest hit, communications and nav aids have been almost fully restored and virtually all FAA communications and facilities in the area swept by the hurricane are functioning on normal schedules.

Though Gulfport and Biloxi, Miss., bore the full brunt of the 200-mile-an-hour winds and torrential rains, there was facility damage and disruption also at Mobile, Ala., New Orleans, Jackson and Laurel, Miss., and other points.

Towers Knocked Out

Towers at Gulfport, Mobile, New Orleans and Jackson were knocked out by the hurricane for varying periods of time. Facility outages were reported at these points and at Laurel and Green County, Miss., and Grand Isle, La.

At Gulfport, a city of 30,000, where the hurricane literally battered down sections of the city, windows in the FAA tower cab were smashed and debris was driven into and in some cases through the tower structure itself.

Hurricane Camille's arrival in Gulfport coincided with Talmadge Henry's first day on the job as the new chief of the Gulfport Tower. Henry, formerly chief of the Key West Tower, evacuated the Gulfport Tower well in advance of the hurricane's arrival, then took refuge with others at a motel near the airport. When the storm struck, it blew the second story off the motel, but neither Henry nor others were injured. However, Henry's auto, parked outside, was damaged by the wind.

Flee Gulfport Tower

Other personnel forced to flee from the Gulfport Tower as the hurricane approached were controllers Charles McClellan, Robert McNeely, Wendell Cavalier, Jesse Corbin, J. L. McTartland, Joseph McBride, H. C. Odenwald, William Smith, William Taylor, Margie Reed and secretary Elsie Fail.

Savage winds ripped apart the Gulfport VOR and TACAN and battered down powerlines, leaving the airport without light or nav aids.

Weldon Reynolds, an electronics technician stationed at Gulfport, was one of the few who rode out the hurricane at the airport. He came through safely, as did the Chief of the Airway Facilities Sector at Gulfport, Eugene Workman.

In the New Orleans area, high tides and winds forced closure of two towers. The tower at New Or-

(Continued on Page 7)



New Contract Provides Automation Equipment

By Don Byers

GAITHERSBURG, Md. — A \$2,983,520 contract has been awarded by the FAA to the Federal Systems Division of International Business Machines Corporation. The award provides for the purchase of 18 flight strip printer control modules, 266 printer control units, 273 printers and 266 cable assemblies. All of the equipment is part of the complete NAS (National Airspace System) Enroute Stage A automation systems now being installed in ARTC Centers in New York, Cleveland, Atlanta, Memphis, Salt Lake City, Albuquerque, Miami and Minneapolis.

By the end of 1973 the agency expects to have all 20 centers serving the continental United States fully operational with the semiautomated system.

The flight strip printers and associated IBM 9020 Central Computer Complex automatically provide en route air traffic controllers with information on an aircraft's identity, type, time of departure, route of flight, planned airspeed, altitude, estimated times of arrival at navigational checkpoints and the final destination airport.

The Central Computer Complex stores this flight plan information, after calculating estimated times over checkpoints, until actual departure.

When notified by the originating control tower of actual departure time, the computer recalculates the arrival times, if necessary, and feeds the information to all affected control sectors in the center, through the printers. The printers are actuated selectively 30 minutes before the flight is due to enter each control sector.

Assistant controllers place the flight information strips produced by the printer in racks and help the radar controller identify flights and post updated information. Any changes are communicated to the computer for flight data updating.

Through another subsystem of the automated centers, the radar controller who actively works the air traffic will be provided with flight information and identification on the face of his radar display, in the form of an electronically generated alphanumeric data block that automatically follows the aircraft "blip."

The position printers also automatically forward to sector control positions additional information too lengthy for the electronic Computer Readout Device, which is a cathode ray tube presenting brief messages. The longer messages provided by the printer could be answers to specific controller inquiries, corrections of previous messages, or detailed weather reports.



He's 25,000th

Joseph Yates, who decided he'd rather be an air traffic controller than a deputy sheriff, his former job, is shown during Academy training. Yates became the 25,000th air traffic control student (see *Horizons*, Aug 18) at the Academy and has been assigned to the Houston Center.

Oregon 'PUP' Program Boosting Aviation Safety

PORTLAND, Ore.—A Pilot Upgrade Program (PUP) is the happy dream-come-true of Doug Black, Oregon flight instructor, and Tom Taylor, FAA Operations Inspector at the Portland GADO.

The program, four years in the making, began at a chapter meeting of the Oregon Pilots Association in Hillsboro. During discussion of a safety project, FAA inspectors suggested a pilot proficiency check program to be performed voluntarily by local flight instructors. It took three years of "skull-work" for instructor Black and operations inspector Taylor to emerge with a usable flight check procedure or flight profile.

The flight profile is a check list containing 45 items, each carrying a maximum score. During the check, the inspector rates the pilot according to technique, with the highest possible score being 354. Twenty-six points go to those who pass the written test, 45 for dual and 20 for the two-hour solo flight.

In addition to the flight check items, points are awarded for the pilot's possession of a current medical certificate, log book, radio oper-

ator's license and airman's certificate—and for owners, evidence of current annual inspection on the aircraft and aircraft and engine log books used correctly.

In the spring of 1968, the first test was made of the new proficiency checklist. For three hours, Portland GADO operations inspectors briefed 10 flight instructors on using the flight profile. Proficiency checks were conducted for an entire day.

At a banquet that followed, Seattle Area Manager Robert Blanchard presented a plaque to the Oregon Pilots Association member with the highest proficiency score. The group decided that the flight profile check would continue as an annual affair.

The recently-completed 1969 program featured a written exam as well as the flight rating. Extra points were given pilots with two hours of dual and two of solo taken within a month of the flight test.

So far, 710 Oregon pilots have participated in the "PUP" program and have taken the check ride, all in the interest of aviation safety.

Airport Circular Published

WASHINGTON—A new advisory circular has been issued by the FAA to assist airport managers and operators in preparing long-range plans for expansion of airports and construction of new facilities to meet the demand forecast for their areas.

Entitled "Airport Capacity Criteria Used in Long-Range Planning" (AC 150/5060-3), the circular presents the method used by the agency to determine practical annual and hourly IFR (instrument flight rule) and VFR (visual flight rule) capacities of various runway configurations. Included in the publication is a table displaying 22 runway configurations, with four different aircraft groupings or "mixes" for each. The table is adaptable to almost any individual airport situation.

The circular deals with the airfield portion of airport capacity—the ability of the runway-taxiway system to handle aircraft at an acceptable level of delay. Airfield capacity in terms of aircraft operations may be determined from use of this new advisory circular. But capacity of other airport facilities—terminal buildings, automobile parking areas, and access roads, among others—are not included

and should be analyzed in an overall airport planning study.

The material in the new circular was developed from the procedures and methods established in "Airport Capacity Criteria Used in Preparing the National Airport Plan," a short-range planning document covering a five-year period.

'Frogtown' Tower Traffic Is Brisk At Jubilee Time

ANGELS CAMP, Calif.—Controllers from the Stockton Tower were kept jumping again this year while manning the temporary "Frogtown" tower at the fairgrounds here during the annual Calaveras County Fair and Jumping Frog Jubilee.

Hundreds flew in for the fair and for the frog jumping contest which is said to have been started by a legendary gold mining town gambler who bet his frog could jump farther than all others in the camp.

Today, frogs are shipped in from all over the world, including Africa and Europe, and pilots fly in from all over the country to attend.

The temporary tower operated for 12 hours a day for two days. During that time, controllers Carl Starnes, Don Bowles, Norman Harris, Norman Benedict and Chief Carl Estep handled 822 operations. Since the parking area is at the opposite end of the runway from the takeoff point and all planes must use the runway for a taxiway, this was a monumental task. The job was also complicated by the fact that some planes did not have radios.

This is the sixth year the FAA provided controllers for the fairgrounds airport which is seldom used except during the weekend of the fair. The tower, built by the county, is a wooden structure eight feet square and 15 feet high. Since it is open on all sides there is plenty of ventilation, controllers noted.



Temporary Duty

On duty at the "Frogtown" temporary tower at Angels Camp, Calif., during the annual Calaveras County Fair and Jumping Frog Jubilee is Don Bowles of the Stockton Tower.



Honors for Safety

The first honorary FAA accident prevention counselor certificate is accepted by James Rutherford (right), Director of the Illinois Department of Conservation, representing the Governor of Illinois. The certificate was presented in Peoria by John F. Wubbolding, Assistant Chicago Area Manager, as part of the Central Region's effort to reduce general aviation accidents. A press conference to acquaint the public with the program was held earlier.

Emergency Demonstrates DF's Usefulness, Accuracy

PRESCOTT, Ariz. — "Where's the airport? I'm low on fuel," the pilot of the Cessna 182 radioed to the Prescott FSS recently.

ATC Specialist Ralph Maddox gave the pilot a heading to the Prescott Airport.

"I don't think I can make it," the pilot replied. "The aircraft is sputtering . . . I'm 170 . . ." The transmission ended.

Prescott's Direction Finding (DF) equipment already had homed in on the plane's position. Station Chief Ray Shire and Dave Jones, Chief of the Salt Lake City Area Traffic Branch, who had been on an official visit to Prescott, were able to fly directly to the scene of the pilot's emergency landing,

reaching there within 15 minutes of the distress call. Though the plane's undercarriage brushed a fence just before touchdown, the pilot brought the plane in to a safe landing on a field and was not injured.

"The usefulness and accuracy of DF equipment in the hands of an alert controller was demonstrated once again," Shire said. "Without the aid of DF, a search similar to this could have been long and expensive, particularly where rough terrain is involved. In this instance, the pilot's landing spot was 50 miles south of the route he gave on his flight plan, and no previous calls from his aircraft had been received in the Prescott area."



Award from Army

Patriotic Civilian Service Award is pinned on James E. Welsh, FAA air traffic representative at Fort Sill, Okla., by post commander Maj. Gen. Charles P. Brown for Welsh's services at Fort Sill from September 1958 to March 1969 which "enhanced the U.S. Army mission immeasurably."



A Successful Career

Checking receipt of test equipment at Sacramento AFS is Betty Jo Johnson, a general supply specialist who began working for the agency as a controller in 1942.

Veteran Employee Recalls Early Era of ATC in West

SACRAMENTO—Back in 1942, Betty Jo Johnson recalls, the total complement on the midnight shift of the Oakland Center usually consisted of one controller and one assistant. Betty Jo, now a general supply specialist at the Airway Facilities Sector here, should know—she was often the assistant on the midnight watch.

The pioneer ATC employee was recently presented with a 25-year service emblem by Kenneth Willits, Assistant Chief, San Francisco AF Branch. Betty Jo is now responsible for the direct control of material contracts and leases for the AFS, having been promoted to this position after taking special training

at the Aeronautical Center and in the local area office.

She was assigned to the Oakland ARTC Center in 1942 shortly after her graduation from the University of California, where she majored in journalism. After two years at the center, she transferred to the FSS and then to the Oakland Tower.

Five years after coming to the agency, she qualified as journeyman controller and was assigned to the local municipal airport tower where she remained until selected for special training in January 1968. While here, she worked in all three towers built at Sacramento Municipal Airport.

FAAers Head Oldest Flying Club

By Thom Hook

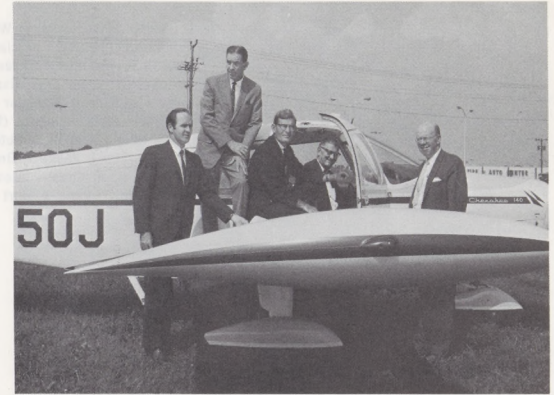
ALEXANDRIA, Va.—The American Flying Club, Inc.—in which a number of Headquarters' employees are actively involved—finds itself with a waiting list of prospective members.

Believed to be the oldest continuously active flying club in the country (it was operating during World War II, when many others were shut down), the club's officers are largely from the FAA, beginning with president Silas F. Clark, of Systems Maintenance Service. Ted Sanford of Flight Standards Service is vice president of maintenance and Paul B. Glassco, Chief of the Short Distance Navigation Branch of SRDS, is secretary.

Four other Headquarters employees belong to the 35-member club: Jerry A. Cosner of SRDS, Leon C. Daugherty of SM, Harold D. Hoekstra, of Aircraft Development Service and Isaac Ledbetter of SRDS. Hoekstra, Chief of the Engineering and Safety Division in DS, is the longest active member, having been the club's first president when it was chartered by the District of Columbia in 1941.

The club's new Cherokee 140B is based at Washington-Virginia Airport in Alexandria, a 15-minute drive from FAA Headquarters. The group also owns a higher-powered Cherokee 180, based at Dulles. Each plane is equipped with IFR panel and two VOR receivers, and both are used for instrument training.

Besides the FAAers who guide club activities, members include several physicians, lawyers, and contractors and employees of other Federal agencies—such as the AEC, NASA and the U. S. Navy. If the waiting list for membership expands further, the club will consider buying a third plane.



Some Must Wait

There's ample room for two adults and a rear seat for small children in the American Flying Club's newly-purchased plane based at Washington-Virginia Airport. Headquarters FAAers shown with their second modern low-wing aircraft are (from left, after Charles W. Smith, consultant and club treasurer): Isaac L. Ledbetter, Jr., SRDS; Eugene F. Mueller, NASPO; Silas F. Clark, SM, president, and Paul B. Glassco, SRDS, secretary.

—Photo by Thom Hook



Seaworthy Tower

Introduced at the Tampa, Fla., Aviation Exposition when other facilities proved unavailable at the Peter O'Knight Airport, this cruiser was equipped with communications gear to handle nearly 400 visiting aircraft during the two-day event. From left to right are: controller Robert Cikovic, flight service representative Wayne Brunet and FAA spotters Don Wright and George Clark.

—Photo by Ronald A. Billib, ATCS, Sarasota

New Guidelines Approved for Reports

WASHINGTON — Paperwork savings estimated at more than \$10 million annually are expected to be realized by the government ultimately as a result of a recently adopted suggestion submitted by an FAA employee in February 1966.

The suggestion, calling for consolidation and standardization of procedures for preparation of Federal scientific and technical reports, was submitted by John S. Nigro, Technical Publications Editor with the Program Analysis and Reports Branch, Systems Research and Development Service.

New standards adopted as a result of the suggestion include the following:

- Use of single-space typing in the body of reports and publications.
- Use of both sides of the paper in the duplicating process.
- Use of staples as binders instead of the commonly-used plastic binders.
- Standardization of the title page on reports and publications to present an orderly grouping of essential information, including an abstract of the report.

The latter feature is expected to provide a number of benefits for users such as librarians, information retrieval specialists and report preparers. The fact that a standardized page is "machinable"—lends itself to automation techniques—is considered particularly meaningful in terms of future



John S. Nigro

R&D information system capabilities.

The new standards have been endorsed by the Federal Council for Science and Technology and will be used in preparation of more than 100,000 federal scientific and technical reports annually, bringing substantial savings in man-hours, money and material. Each year, approximately 20 million copies of such reports will reflect the new standards.

"The new standardized report and publication guidelines are expected to eliminate confusion, remove inconsistencies and correct deficiencies in reporting by contractors, grantees and Federal agencies," said Jack W. Grewell, Chief of the Program Analysis and Reports Branch, SRDS. "A marked improvement in the quality of re-

ports is an expected by-product of the suggestion."

Grewell estimates that a potential governmentwide reduction of about two million pounds annually in the weight of reports shipped through the mails could be realized as a result of the new guidelines. This amounts to a saving of approximately 285 million sheets.

The new "Guidelines to Format Standards for Scientific and Technical Reports Prepared by or for the Federal Government" was placed into effect by Department of Transportation Order 1700.18 on July 25, 1969.

Based on Four-Year Study

Nigro's suggestion, based on a four-year study of Federal reports and paperwork procedures, was submitted in February 1966 to W. Buri Barclay, Chief of the Coordination Branch of SRDS.

Barclay presented the suggestion to the inter-agency Committee on Scientific and Technical Information (COSATI), Federal Council for Science and Technology. Barclay is the agency's Science Information Officer and a representative on the committee.

COSATI appointed a working group to develop the guidelines. The working group was chaired by Grewell.

COSATI is composed of representatives from Federal agencies responsible for developing scientific and technical information programs.

3 Finish 128-Hour Course

LOS ANGELES—Certificates of accomplishment for completing a 128-classroom-hour course in management engineering philosophies, principles and techniques were recently presented to Gordon Edwards, David Millar and Calvin Cubberley of the Management Analysis Division.

The employees supplemented classroom work with off-the-job reading and on-the-job practice

under the guidance of Walter Moon, Chief of the Division and Lloyd Smith, Chief of the Management Engineering Group.

According to Smith, Moon and others who work in this field, persons with the necessary aptitudes, realistic interests and goals can, if provided with a systematic on-the-job opportunity, develop analytical skills more rapidly than traditionally supposed.

HORIZONS

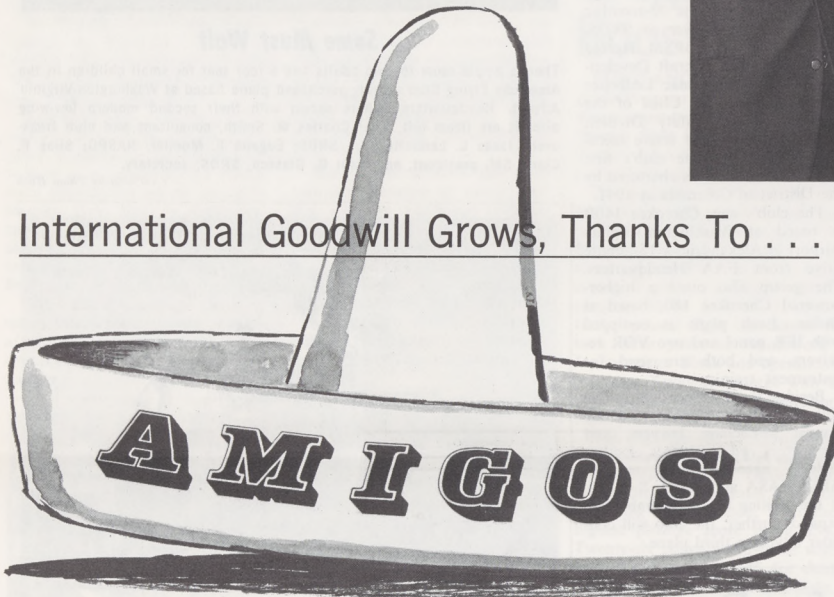
FAA HORIZONS, the official employee publication of the U.S. Department of Transportation, Federal Aviation Administration, is published biweekly by the Employee Information Division, Office of Public Affairs, FAA, 800 Independence Ave., Washington, D.C., 20590. Telephone: WO. 2-5575. Articles of general interest to employees should be submitted directly to Regional FAA Public Affairs Officers: George Fay, Alaskan Region; Robert Fulton, Eastern Region; Jack Barker, Southern Region; Joseph Frets, Central Region; K. K. Jones, Southwest Region; Eugene Kropp, Western Region; George Miyachi, Pacific Region; Edwin Shoop Jr., NAFEC; and Mark Weaver, Aeronautical Center.

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Following discussions at Western Region Headquarters, Mexican officials were taken on a tour of Los Angeles International Airport where they discussed airport problems with Airport Manager Clifton Moore (second from right). In photo (from left) are: Eliseo Garcia Araujo, Director of Tourism, Mexicali; Mario Pacheco Orozco, Mexicali Airport Commandant; Moore; and Jorge Areizaga Rojo, Tijuana Airport Commandant.



International Goodwill Grows, Thanks To . . .



By George Burlage

The meandering Rio Grande and about 10 miles of Mexican-American geography separates the Brownsville, Texas Combined Station-Tower and the tower at Matamores, Mexico. In terms of international goodwill, the distance has been virtually eliminated as the result of a good neighbor policy started several years ago by Art Ross, the chief of the Brownsville facility, and his Mexican counterpart, Tower Chief Mario Raldan.

Ross became fluent in Spanish so he could keep Raldan and others south of the border fully informed concerning the movement of international air traffic. Raldan reciprocated and now has a good command of English. The Raldan and Ross families got to know each other and exchanged social visits. The Matamores chief named his son Arturo, after his American friend. Both men have become godfathers to members of the other's family.

Building such bridges of goodwill and understanding between the two nations along the 2,000-mile Mexican-American border is taking place at points other than Brownsville.

Back in 1960, Richard A. Uruchurtu of the Imperial, Calif., Flight Service Station began a series of visits and conferences with Mexican aviation authorities at nearby Mexicali. Spanish-speaking Uruchurtu briefed his Mexican counterparts on pilot information and customs details that would help pilots in landing at Calexico, Calif., and other U.S. fields. He worked with Mexican general aviation and airline pilots and provided data on weather and radio frequencies.

Mexican pilots began to call him on the interphone for pilot briefings. Uruchurtu's command of Spanish air traffic phraseology helped him assist the pilot of a Mexican Air Force plane caught in a dust storm. The plane landed safely at Imperial.

Uruchurtu and other Imperial personnel worked with Mexicali pilots in forming a flying club. During last year's Olympic Games at Mexico City, Uruchurtu

assisted the Houston Olympic Coordinating Group concerned with search and rescue for any pilot lost during the period of greatly increased trans-border traffic. An interphone link between the Houston Center and Mexico City was commissioned to permit prompt exchange of flight information and is still operating.

Mexican-American technical cooperation in support of international air traffic is common. Recently, for example, the El Paso TRACON experienced interference problems and Electronics Technician Raul Parra traced the trouble to the Juarez, Mexico VOR just across the border. Parra notified Mexican technicians, who promptly shut down the facility. Parra, along with Technicians A. G. Tijerina and William Stephenson, drove to Juarez to assist in repairing the transmitter which was causing the trouble.

Meets with Mexicans

C. L. McClain, Chief of the El Paso FSS, meets frequently with Mexican aviation officials to discuss communications. The El Paso FSS and Juarez Airport are only two of a number of border area facilities linked by international teletype.

More than 800 border crossings by general aviation aircraft are made each month and flight plan data is passed both ways on circuits linking the two countries. W. P. McCart, Chief of the Tucson FSS, reports that the foreign exchange line between Tucson and Nogales, Mexico, "benefits both of us in making possible rapid exchanges of customs data, weather reports, trans-border flight plans and even search action for overdue or missing aircraft."

Mrs. Marian Burke, operator of the Burke Flying School in San Antonio and a member of the Agency's Women's Advisory Committee on Aviation, has given a number of Mexican pilots advanced training and has encouraged them to participate in such FAA orientation programs as "Operation Raincheck." She said some Mexican pilots "are so enthusiastic about

There's No "Mañana" When It Comes to Good International Relations as Demonstrated Each Day by FAA Employees and Their Counterparts South of the Border

these FAA seminars that they tape record instructors' remarks so they can listen again at a later time."

Recently, Western Region officials met with Mexican aviation and tourism officials to plan a search and rescue communications network in Mexico's Baja Peninsula and to review changes in border crossing procedures. A delegation headed by Lee E. Warren, Western Region Deputy Director, met with Mexicali and Tijuana airport officials and the Baja Director of Tourism. The American Consuls at Calexico and Tijuana also participated, as did Ray Tucker, Chief of the Imperial FSS, and John Masiello, Chief of the San Diego FSS.

An annual meeting of top FAA and Mexican civil aviation officials is held alternately in Mexico and Arizona to discuss general aviation matters affecting both nations.

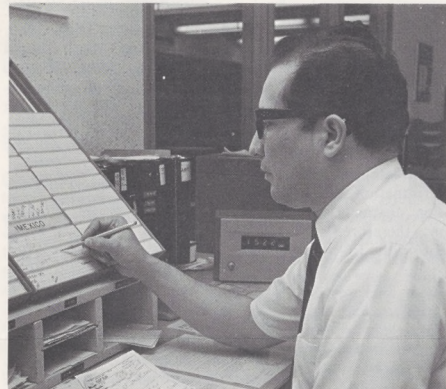
Cooperation takes place in non-technical fields as well, such as in the efforts to combat the use of aircraft for criminal and subversive activities. FAA Compliance and Security officers maintain a close and cordial liaison with representatives of Mexican intelligence agencies and law enforcement groups. Through INTERPOL (International Police Organization), Mexican authorities exchange information with Compliance and Security and other U.S. Federal authorities concerned with such problems.

Because its boundaries make up a major portion of the U.S.-Mexico border, the Southwest Region is officially responsible for contacts with Mexican officials on civil aviation matters. But the actual scope of cooperation is much broader and is promoted by the efforts of agency personnel in the Western Region and Washington headquarters as well.

Whether U.S.-Mexico goodwill is generated at "grassroots" border facilities or at the State Department level, both nations are benefiting from the resulting friendship and understanding and both are contributing toward a common objective: the improvement of international aviation and its environment.



Western Region contingent headed by Deputy Director Lee Warren (center), meets in Los Angeles with Mexican officials concerned with communications problems in Baja.



Pedro Tellez, El Paso FSS, checks on the progress of a flight into Mexico on flight plan filed there. His knowledge of Spanish has proved invaluable to U.S.-bound Mexican pilots.



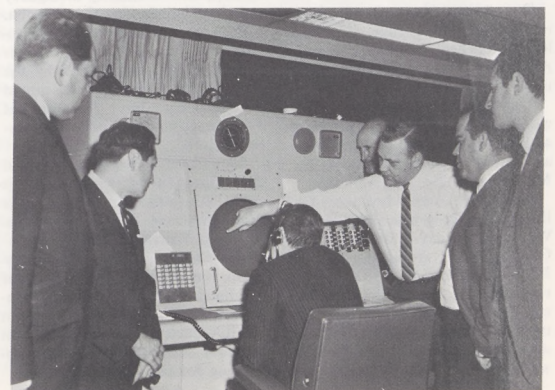
Four Mexican pilots are shown in top photo taken at a recent "Operation Raincheck" seminar held in San Antonio. Standing (from left), are Jaime J. Garza and Roberto M. Zubieta; Adrian Garza (fourth from left) and J. Antonio Hernandez. H. Miles Payne, San Antonio Tower, who served as instructor, is third from left. At right is Jack J. Jobe, San Antonio Tower Chief. Seated are Texas pilots Harry E. Williams, Evelyn Kerr and Guenther Krellwitz. In photo at left, Jobe presents "Operation Raincheck" certificate to Nicolas Ramirez of Monclova, Mexico. Mrs. Marion Burke, operator of a flying school, who encouraged a number of Mexican pilots to gain additional aviation knowledge, beams approval.



Mexican private pilots and aviation officials were in the audience at recent hangar session held in Los Angeles. Speaking is Arthur Feldman, American consul in Calexico.



In photo at left, visiting Mexican aviation officials are given a briefing on the operation of the New York Common IFR room by Crew Chief Herb Rausch (left). Attentive listeners (left to right), are Jesus Hernandez, Jesus Magana, Robert Kobeh and Fernando Molinar, Mexico's Director General of Civil Aviation. Next to Molinar is Ted Uebel, FAA International Liaison Officer. In photo at right, Rausch explains approach control operations to the same group.



Auxiliary Launching Study Under Contract

By Alex F. Garvis

WILMINGTON, Del.—A \$49,583 contract has been awarded to All American Engineering Company here for an eight-month laboratory research study to determine whether auxiliary launch systems could be used effectively during takeoffs to lessen aircraft noise in the vicinity of airports.

In addition to identifying potential noise benefits, the contractor will seek to determine whether the use of such devices would compromise the safety of commercial operations. The company also will attempt to determine whether such auxiliary launch devices could be manufactured inexpensively and operated at a reasonable cost by

commercial transport aircraft.

Other factors to be studied are the flight paths of aircraft equipped with auxiliary launch devices and whether auxiliary launch flight paths would be comfortable for passengers.

Use of launch devices for future aircraft—such as STOL transports, supersonic transports, and 1½ million pound cargo aircraft—will be considered in the study, as well as jet transports now in use or under development.

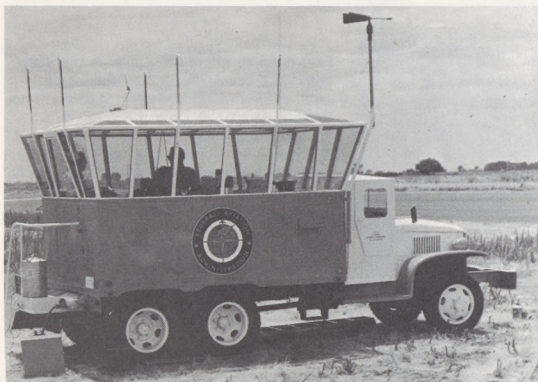
Presently, attachable auxiliary power-assist launch systems are used only on military aircraft.

Copies of the study will be available to the public after the study is completed in mid-1970.



New Post

Being sworn in as Director of FAA's National Airspace System Program Office (NASPO) by Administrator John H. Shaffer, is Brig. Gen. Gustav E. Lundquist, who recently retired from the U. S. Air Force after 29 years service. A World War II combat veteran, peacetime test pilot and Thompson Trophy winner, he now heads management of automation systems being installed in domestic ARTC Centers.



Beautifully Restored

Resplendent in her new colors, the Western Region's antique, mobile, temporary tower saw service at several fly-ins this summer including the recent 12th Annual Merced (Calif.) Antique Fly-in.

Ancient Tower Refurbished—Now It's Mobile, Portable

MERCED, Calif.—What may be the oldest operating tower in the country attracted almost as much interest as the antique aircraft assembled at the recent 12th Annual Merced Antique Fly-in.

The tower, one of the most beautiful examples of restoration at the show, was both on duty and on display. Set on a flat bed truck, it was the hub of air traffic control activity during the fly-in.

The tower cab was apparently deactivated and put into storage shortly after World War II. It was forgotten until the former airport manager, Joe Crotti, California State Director of Aeronautics, acquired it for use at annual antique fly-ins.

Due to problems involved in rehabilitating the structure, it was left untouched until O. B. Cox, AF Sector Chief at Fresno, came upon it in the storage area.

Local citizens, including FAA employees, refurbished the tower and it is now available for fly-ins and other aviation events in the Merced area.

Among FAAers who assisted in this year's Fly-in was Gene Kropf, Western Region Public Affairs Officer, who arranged for the FAA display and assisted on public relations. Temporary tower technical support was provided by Electronics Technicians Larry Bowen and Joe Gilkison. Air traffic personnel who assisted were Ron

Rawlings, Albert Blue and Marlon Burks of the Fresno Tower; J. B. Whalen of Chandler Tower and John Kaiser and Charles Woodruff of the Fresno FSS.

Art Cazares, Merced ATREP, was the Air Show Monitor. O. B. Cox, local coordinator and AF Sector Chief, helped coordinate various details of the event.

Advanced Study Authorized for 2

SAN FRANCISCO—Two members of the San Francisco Area Office have recently been selected for advanced training by the agency and the Civil Service Commission.

William E. Cress, a civil engineer with the Airway Facilities Division, has been selected by the Civil Service Commission to attend the Massachusetts Institute of Technology for training in systematic analysis.

John Reed, previously Chief of the Airway Facilities Branch, is being sent to the Industrial College of the Armed Forces in Washington for advanced training.

Cress was selected under a program aimed at encouraging career engineers to make significant contributions to systematic analysis in their agencies. He will study at MIT's Center of Advanced Engineering for one academic year.

Smoke Emission Levels Are Set Forth in Proposal

By Irv Rippes

WASHINGTON—To improve the crashworthiness of transport airplanes, the agency has issued an advance notice of proposed rule-making soliciting comments on establishment of smoke emission standards for compartment interior materials of aircraft.

Current FAA rules require that aircraft seat upholstery, wall linings, ceilings, carpeting and other interior materials pass certain flammability tests, but do not provide specifically for practical maximum smoke emission levels for such materials.

The agency had previously deferred action in this area, because it felt not enough was known about smoke emission characteristics of available cabin interior materials to form a basis for rule making. In recent years, however, valuable technical information concerning these characteristics have been developed as a result of FAA and industry research programs, and the agency now believes the state of the art has progressed to a point where smoke emission standards can be established.

Before initiating formal rule-making action, however, the FAA is seeking to consolidate all available technical information related to smoke emission characteristics. Interested persons, therefore, were asked to comment on the following questions:

- Are there now available aircraft interior materials that meet FAA flame resistance standards but emit appreciably less smoke than currently used materials?
- Are there test methods that can correctly and consistently measure the smoke emission characteristics of aircraft interior materials?
- Would it be feasible to standardize on one of these test methods to determine compliance with a specified smoke emission standard?
- Using this standard test method, what level of smoke emission performance should be specified?

The aviation public is being advised that comments on the advance notice (Docket 9611, Notice 69-30) should be submitted before October 29, 1969 to FAA Rules Docket, GC-24 at Headquarters.



Alaska's Top RAPCON

As the best Alaskan Region facility of its type in 1968, the Elmendorf AFB RAPCON was awarded the region's "Best of Type Award" by Director Lyle K. Brown (second from right). Accepting on behalf of the RAPCON is the facility's chief, Raymond Van Vuren, at Brown's left. Other facility personnel at ceremony (from left), included: Floyd Watts, Richard Geisenheyner, Mike Pannone, John Groeneveld and Karl Kelhofer. During the year, 5,519 man-hours of training paid safety dividends for the controllers who handled 94,654 instrument operations and 10,981 VFR advisories, a 30 per cent increase over 1967.

REPORTS and PAPERS

(Unless otherwise noted, the source for each of the following reports and papers is TAD-484.3)

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Evaluation of Prototype Doppler VOR Sideband Antenna Monitor, Willey, Virgil E. Final Report No. NA-69-19 (RD-69-27), prepared for SRDS. NAFEC, Atlantic City, June 1969.

An Evaluation of the VOR/DMA Omnitrac IA Area Navigation System, Dinerman, Bernhart V. Final Report No. NA-69-29 (RD-69-30), prepared for SRDS. NAFEC, Atlantic City, June 1969.

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Operational Development of Techniques for Computing Airport Capacity, Hooton, E. N., H. Burns and M. A. Warkow. SRDS contract Final Report No. RD-68-20, prepared by Airborne Instruments Laboratory, Deer Park, June 1969.

Airport Capacity Handbook, Second Edition. SRDS contract Final Report No. RD-68-14, prepared by Airborne Instruments Laboratory, Deer Park, June 1969.


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Evaluation of a Pictorial Navigation Display as an Instrument Pilot Training Aid, Skelton, Gerald E. Final Report No. NA-69-3 (DS-69-4), May 1969.

Investigation of Modified Turbine Fuels for Reduction of Crash Fire Hazard, Russell, Ralph A. Project Engineer. Research Division, The Western Company. Final Report No. NA-69-10 (DS-69-1), May 1969.

DIRECT LINE



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



A recent *Horizons* article on the appointment of Quentin Taylor as the director of the Equal Opportunity program stated that assistance will be provided to all levels of FAA management to create a larger measure of success in minority employment. It also was noted that FAA was concerned about an employee's upward mobility and his opportunity to move forward as fast as his ability permits. In regard to this article, I have three questions on equal opportunity.

Question: Is there a "Status of Women" program administered by the U.S. Civil Service Commission?

Answer: Yes.

Question: Who in FAA administers this program?

Answer: Primary responsibility for all civil rights and equal opportunity programs, both internal and external, rests with Mr. Taylor, whose new title is Director of Civil Rights. The Office of Personnel has the principal responsibility for administering internal FAA equal opportunity programs, including the Federal Women's Program.

Question: Will the same steps that FAA takes to achieve equality and opportunity for minorities apply also to the women's program?

Answer: Goals for both programs are identical to assure each citizen the maximum opportunity for FAA employment and to assure each employee the opportunity to progress to the limit of her or his abilities. Steps necessary may vary, but affirmative actions are continuing to eliminate any vestiges of discrimination, whether based on race, color, religion, sex or national origin.

Question: In the April 28 Direct Line a question concerning the authority for telephone availability was answered. My question is: for income tax purposes is it permissible to deduct fifty percent of my telephone bill on the grounds that having a telephone is a requirement of my job.

Answer: This would depend upon individual circumstances. For an official ruling on your individual case, you should contact the local office of the Internal Revenue Service, giving them the facts.

Question: The April 28 issue of *Horizons* stated that all Wage Grade employees in the same geographic areas receive the same pay. The Veterans Administration only five miles from our office pays five cents per hour more for the same grade. The FAA in Phoenix, a short distance away, pays 36 cents per hour more for the same grade. Why?

Answer: The Direct Line column of April 28 referred to all Wage Grade employees under the Coordinated Federal Wage System (CFWS). Your particular geographic area has not, as yet, been converted to this system. Under the CFWS, several key Federal

agencies have the responsibility for developing wage schedules for the many pay areas located throughout the United States. The Department of Defense has the responsibility for the Prescott area and will issue wage schedules soon. When this happens, FAA employees in Prescott and Phoenix will receive the same pay for the same grade. If the VA employees you mentioned are in Yavapi County, they will also receive the same money.

Question: Do you have any idea when Wage Grade employees will all get the same wage for the same rating no matter where they work?

Answer: Wage grade employees would get the same pay throughout the United States for the same rating only if Congress were to pass a law changing the present system.

Question: I have received only \$1.07 per hour raise in the last nine years. Where is the incentive?

Answer: Your best bet is to qualify yourself for other FAA jobs paying more money. Ask your supervisor or personnel officer about the kind of jobs to shoot for, and how to go about getting them. Check Handbook 3450.7A for information on incentive awards.

Question: I wish to inquire about the intent of Change 9 to the Travel Handbook (1500.12 CHG 9). Paragraph 2a, sentence 2 states: "Authorization for use of privately owned vehicle as advantageous to the Government is based upon course length at the Academy as opposed to the arrival and departure dates which are used for computing per diem." Paragraph 3 states: "These procedures become effective for travel performed by trainees to attend a course of instruction which begins on or after March 1, 1969." Paragraph 2a removes the arrival date as a restriction. Paragraph 3 restores the arrival date as a restriction. In effect, para. 3 seems to cancel paragraph 2a. Is this correct?

Answer: No. Paragraph 2a is a general statement relating to travel which is advantageous to the Government when a privately owned vehicle is used to and from the Academy. It is considered advantageous to the Government if the employee travels alone by privately owned vehicle and the elapsed time at the Academy between the beginning and ending dates of instruction is 31 days or more. Additional conditions and details are outlined in paragraph 452 of the same handbook. Previously, if an employee used a privately owned vehicle and traveled alone, it was considered the employee's personal preference and travel allowances were reduced. Paragraph 3 of Change 9 sets a March 1, 1969 effective date for the revised procedures and applies to courses beginning on or after that date. If a cut-off date had not been specified, courses beginning before March 1, 1969 would have generated amended travel orders and unfunded obligations.

Hurricane

(Continued from Page 1)

leans International was out six hours and Lakefront Tower was closed two hours. Tides were so high that water swamped the lower sections of some airport structures.

For several days, the only direct communication with Gulfport was via the interphone at the Houston Center.

Even so, FAA and airport crews were able to restore operations at Gulfport Airport within sixteen hours after it closed.

Within 48 hours of the hurricane, a portable VOR was on its way to Gulfport from Fulton Airport at Atlanta. It was loaded aboard a truck driven by Electronics Technician Bernard Schwind, who helped install it. IFR service was resumed at Gulfport Airport on the following week.

With roads cut, VFR air traffic at Gulfport was heavy after the hurricane passed over, according to Lee Moorehead, Operations Officer at the Houston Center.

FSM Men Stay on Duty

At Mobile, two Flight Service Station personnel—Gene Vaughn and James Miller—remained on duty during the mid-shift as the edge of the hurricane passed over the city.

When the hurricane forced closure of the RAPCON at Brookley AFB near Mobile, three controllers transferred to Bates Tower at the city's municipal airport and continued to provide approach control service. The three are W. W. Burleson, Odell Lane and Dave Gues.

In Mobile, even before the storm struck, FAA crews worked around the clock to "batten down the hatches" in preparation for the onslaught. Working under the direction of Airway Facilities Sector Chief Claude Price, Mobile RAPCON electronics and electro-mechanical technicians began removing antennas and boarding up structures while the hurricane was still out in the Gulf. Assisted by Airway Facilities personnel from Bates Field, the crews worked until late Sunday evening when they had to take cover. The next day they returned to assess damage and begin facility restoration.

Memphis Area Airway Facilities personnel dispatched to Gulfport to assist in restoring facilities there included: J. G. Bryant, Supervisory Engineer in the Airway Facilities Branch; Electronics Technicians Buck Robinson and Jack Hancock and civil engineer Wayne Caldwell.

Two Memphis Airway Facilities field working specialists, J. W. Dunn and V. W. Galloway, also were sent to Gulfport to help out.

Hurricane's Eye on Radar

Radarscopes at the Houston Center provided excellent "pictures" of the hurricane's "eye" as it moved in from the Gulf toward the coastline. The center of the hurricane swept almost directly over the Slidell, La., radar antenna site serving the Houston Center. Winds exceeding 100 miles per hour lashed the site but the radar continued to operate normally although some water entered the building.

The Southern Region Communications Control Center served as a nerve center for alerting Federal agencies and others as the hurricane approached the Southern Coast. As Regional Emergency Transportation Coordinator for Region Three of the Office of Emergency Preparedness, Gordon A.



Honorary Citizen

Deputy Administrator D. D. Thomas (left), receives certificate from Mayor Eugene Morin making Thomas an "honorary citizen" of Kenai, Alaska, after presentation of "Air Traffic Facility of the Year Award" to Kenai FSS.

Traffic Record Set at Dulles

WASHINGTON—Air traffic at Dulles International Airport set an all-time record during the recent National Air Show.

Tower Chief Robert P. Logan reported that controllers handled more than 1,100 operations at the peak of air show activity on the last day. Normal daily operations at the airport average about 600.

"We added only three extra controllers to take care of the show plus our regular traffic. It took a lot of coordination and precision, and our people did a magnificent job," Logan said.

Except for a half hour period when the Navy's Blue Angel precision formation jets were performing, the normal flow of air carrier and general aviation traffic continued without interruption.

Besides the numerous aerobatic and other aircraft taking part in the show, air traffic service had to be provided for about 250 planes flown into Dulles by spectators.

When the last stunt flier had landed and the last of the Army's Golden Knights parachutists was down, the 23 military planes that had been on display added to the traffic by staging a fly-away. Among the military planes cleared by Dulles controllers were the Brit-

Williams, Jr., Southern Region Deputy Director, played a major role in this effort.

On the basis of advisories from the National Hurricane Center in Miami, Williams ordered a 24-hour point of contact alert among key Federal agencies and kept them fully advised at all times.

Other agency personnel who went "all out" in the hurricane emergency but were not previously mentioned included the following:

Airway Facilities Sector, Mobile RAPCON: Electronic Technicians Sydney Robinson, Joseph Lucia, William Kimmel and John Sabat; Electromechanical Technicians Perry Gambrell and Richard Gaines.

Airway Facilities Sector, Bates Field: Supervisory Electronic Technician Roy Rowell and the following electronic and electromechanical technicians—William Moore, Kenneth Willis, Roy McClellan, Wayman Wyers, Robert Shelly, Curtis Tubb, Billy Stone, Howard Rowland and Ron Crawford.

Airway Facilities Sector, Hattiesburg, Miss.: Supervisory Technician in Charge Richard Lawrence and Electronic Technicians Robert Thomas and Vernon Drewa.

ish Vulcan bat-wing bomber and the huge Lockheed C5-A.



Taking a Look

Climbing up the ladder to the top deck of the huge C5-A is Administrator John H. Shaffer, who inspected the "world's largest plane" during the recent National Air Show at Dulles Airport.

'Diplomat'

(Continued from Page 1)

en route to Texas, having a difficult time attempting to communicate in Spanish with an FAA controller. Tellez was able to contact the pilot and ease the situation.

"I'd like to see greater liaison with Mexico, including an interchange of personnel along the border," Tellez said. "This would permit each country's controllers to learn about the other's methods of operation."

Tellez works closely with air traffic personnel in Juarez, Mexico, just across the border from El Paso. He also visits Juarez frequently in his capacity as an interpreter. His Spanish vocabulary takes in a wide range of aviation and weather terminology.

Of Mexican descent, Tellez comes naturally by his fluency in Spanish. He acquired his knowledge of German while serving with the Air Force and has used the language in briefing German pilots who airlift West German soldiers to El Paso for training at nearby Fort Bliss.

"Most German pilots, we brief at El Paso are proficient in English but I talk to them in German anyway, just to be sociable and polite—and to give me a chance to stay in practice," Tellez said. "Many of them are surprised to find anyone here who can speak German."

In 1958, Tellez joined the FAA and was assigned to the El Paso FSS.

An FAA Boost for BOMEX

In a 151,000 square mile area of the Atlantic Ocean east of the island of Barbados, West Indies, one of the most ambitious oceanic data-gathering projects ever attempted by scientists has just been completed—with an important assist from the FAA.

Known as BOMEX (Barbados Oceanographic and Meteorological Experiment) and coordinated by ESSA, the three-month data collection project concluded on July 28. This brief phase of the long-range scientific effort required the services of 1,500 persons, 24 aircraft, 10 ships, thousands of weather balloons, weather satellites and a complex array of sophisticated oceanographic, meteorological and communications equipment.

The aim of BOMEX was to study exhaustively the process by which heat is carried from the surface of the warm equatorial seas into the upper atmosphere to result in the release of the tremendous energy which touches off the earth's storms. Benefits expected from BOMEX include improvements in long-range weather forecasting and anti-submarine warfare capability. New data also will be provided in such diverse fields as fishing, water pollution, radiation by-product fallout and search and rescue.

FAA's contribution to BOMEX was in the form of assistance on air traffic control. With a dozen or more planes traversing the vast research area simultaneously by day and by night, operating in many flight patterns at many altitudes, expert air traffic control was vital.

To train and assist the six Barbadian controllers, the Air Traffic Service assigned Stanley Ratomsky of the Foreign and Overseas Staff to the BOMEX control center. Prior to BOMEX, operations at Barbados averaged 50 a day.

"We had some unique problems,"

Ratomsky said. "In calling the attention of BOMEX pilots to other traffic, we often gave them the positions and headings not only of other aircraft but also of BOMEX ships. This was because the ships often flew instrumented balloons which hovered aloft at about 1,000 feet."

A precise fix on the location of all planes at all times was important. As information came in by radio from pilots, aircraft positions were carefully charted and scientists kept informed. Special safety procedures had to be worked out to compensate for the lack of radar coverage. Airborne navigation systems—including inertial and doppler radar and Omega—were fully utilized.

After setting up procedures during early phases of the experiment, Ratomsky reported back to Washington briefly and the job of coordinating air traffic aspects of BOMEX was taken over by Norman Wills, Facility Operations Officer at the San Juan ARTCC. For the last phase of the experiment, Ratomsky returned to Barbados.

FAA training had a spinoff which helped pilots who normally use the Seawell approach control at Barbados. Several pilots who fly to the island regularly reported that approach control procedures there had improved noticeably.

ESSA's administrator, Dr. Robert White, was pleased with the high degree of cooperation shown by Federal agencies participating in BOMEX. "We consider BOMEX an excellent example of the way in which various agencies can come together to establish a meaningful program of great potential benefit," Dr. White said.

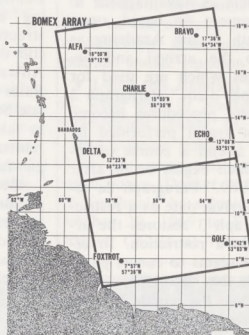
One of the chief ultimate beneficiaries of BOMEX—particularly with regard to the promise of better weather forecasting—is the FAA.



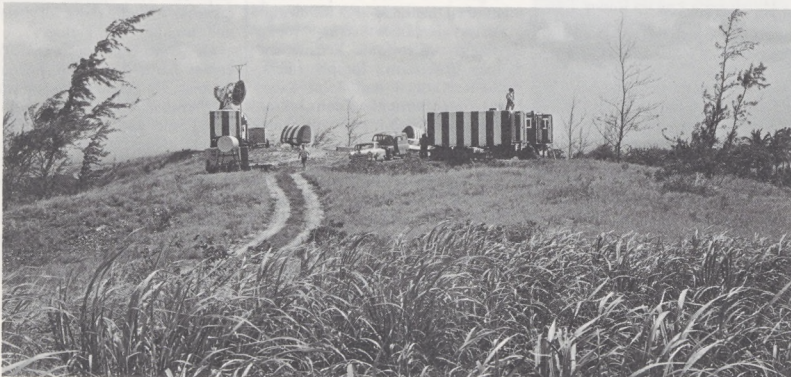
Checking the position of aircraft via radio is Reynold Allman of the Seawell, Barbados ATC, while Stanley Ratomsky of Air Traffic Services plots position and altitude on a map of the BOMEX area.



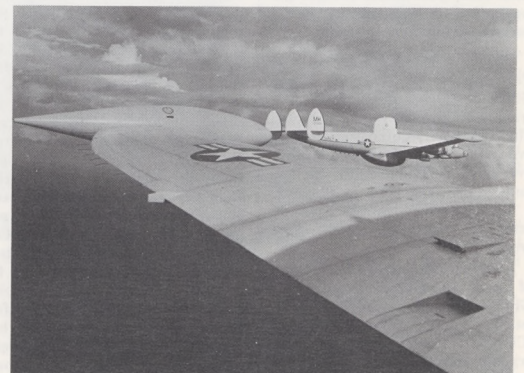
Smiling after having been made an honorary member of the Barbados ATC Association is Stanley Ratomsky (third from right), Foreign and Overseas Staff, Air Traffic Service. The all-members meeting was held in the Seawell Airport Tower.



Planning for the next day's operations takes place in a Barbados restaurant. Stanley Ratomsky (second from left), Air Traffic Service, looks over data sheets with Dr. Joachim P. Kuetner of ESSA, BOMEX director. (Left): chart of the area shows the location of various ships participating in the exercise.



Satellite weather photos used during operation BOMEX were supplemented by radar weather pictures from this Air Force radar. In the foreground grows sugar cane, Barbados Island's principal crop.



Navy hurricane hunter planes participating in operation BOMEX fly formation to check airborne navigation systems.