



New Pants Look

For years women shunned slacks because of alleged unfeminine implications. Now designers are making the "pants look" appropriate for work. Psychology Technician Carol Cannon (seated) tells registered nurses at the Washington, D.C., Headquarters Medical Clinic Diane Fontaine (left) and Sheila Lewis they look so attractive she feels better already.

Construction Is Underway On West's Center Annexes

By Barbara Abels

LOS ANGELES—A \$3 million expansion program shared by the Denver and Seattle ARTC Centers was launched recently with groundbreaking ceremonies at Longmont, Colo., and Auburn, Wash., sites of the two facilities.

State and local dignitaries gathered together with FAA regional officials over gold-plated shovels to get the three-phase construction programs underway. Western Regional Director Arvin Basnight, assisted by a comely "Miss Longmont," led the ceremonies in Denver, while Deputy Director Lee Warren and Senator Henry M. Jackson of the state of Washington

donned hard hats and wielded shovels at the Seattle Center.

The two construction contracts, each for \$1.5 million, are part of the agency's continuing program to expand and modernize the nation's air route traffic control centers. New wings will be added to each facility to house a central computer complex, a medical clinic and additional training space. The Penner Construction Company of Denver and the Sellen Construction Company of Auburn started excavation immediately after the ceremonies at each of the sites.

Denver Center controls more than 280,000 square miles of do-
(Continued on Page 7)



Centers Expanding

Western Region ground-breaking ceremonies at Longmont, Colo., symbolized million dollar-plus expansion of the Denver and Seattle Centers. Handling the golden shovels to get improvements underway were (from left): Western Region Director Arvin Basnight; "Miss Longmont;" Chamber of Commerce president William Bender; Controller Lou Lombard in charge of public affairs for the Center; and Mayor Al Zlatan (in background).

Use of Navaid Satellites Is Studied

WASHINGTON—The FAA is studying the possible use of aeronautical satellites to improve the reliability of oceanic air navigation. In his recent speech at the joint FAA-Coast Guard Search and Rescue Seminar in New York City, Administrator John H. Shaffer outlined a number of steps planned by the agency to enhance aviation safety, including possible use of satellites.

(As outlined in a recent issue of *FAA Horizons*, satellites are presently being used in the agency's trans-oceanic communications network. They are not, however, being used in navigation.)

The Administrator told his audience that the agency supports a "hybrid aeronautical satellite system" incorporating very high frequency (VHF) and ultra high frequency (UHF) capabilities.

VHF, UHF Planned

"The hybrid system would provide VHF for early operational use and UHF for experimentation and comparative evaluation," Shaffer said. "This would be a logical evolutionary step toward development of a global operational system."

Because of controversy surrounding satellite communications in the North Atlantic, the Administrator said it would be proposed that the first general system be deployed in the North Pacific, where the FAA has primary responsibility for air traffic control.

"To achieve an early launch of the system, we support an arrangement whereby the government and the user airlines would lease satellite communications capability," the Administrator stated.

Economy Measure

"Such an arrangement would be consistent with the government's policy of using commercial communications facilities whenever possible and minimize the impact on the Federal budget. Under this plan, we estimate a hybrid satellite system could be available during 1973," he said.

Shaffer pointed out that the FAA is now evaluating an oceanic air traffic graphic display at the Oakland Center.

"This system would permit oceanic controllers to view an aircraft's position on a pictorial grid display as it travels from San Francisco to Honolulu," he said. "Our controllers have been receiving digital position data from aircraft inertial navigation systems direct to the display for about half the distance to Hawaii. This compares to today's radar capability of approximately 200 miles. With the use of a satellite, the oceanic graphic display would be able to cover the entire route between San Francisco and Hawaii."

Other points touched on by the Administrator in his talk included:

Developments Cited

- The amended rules currently under preparation relating to crashworthiness requirements for transport aircraft. The rules provide passengers and crew with added protection against impact forces and potential fire hazards resulting from a crash. They set new standards for cabin interiors, emergency lighting, exits and escape systems, seats and seat attachments, fire prevention
(Continued on Page 7)



To Improve Health

Introducing the 1970 Christmas Seals to "FAA Horizons" readers. Sen. Edward W. Brooke (Mass.) reminds us that contributions to the traditional fund finance work in the fight against tuberculosis, other respiratory diseases and air pollution. Answer your letter today, he urges, and use Christmas seals.

Contract Is Let To Establish Testbed for Display Systems

SUDBURY, Mass.—In order to thoroughly test alpha numeric type display systems before the equipment is finally delivered, a \$1.5 million contract has been awarded by the FAA to the Raytheon Company to establish and operate a testbed facility for display systems for the nation's automated air traffic control network.

DOT Secretary John A. Volpe characterized the award as "another vital step in putting together components for an automated air traffic control system to accommodate air transportation growth of the 1970s. The display system being designed and produced by Raytheon for FAA will provide controllers with a complete and current radar picture of the traffic under their control with the added capability of displaying such vital flight information as aircraft identity and altitude directly on the face of the radar scope."

Under the contract, Raytheon will establish a display test facility in its Sudbury plant and operate it for 18 months. The testbed will be used to check and refine the computer programs necessary to operate the display systems and correct

design problems in the production of assembly-line units.

Raytheon has a previous contract with FAA to produce 16 complete Computer Display Channel systems, which are a key element in the automated system now being implemented in air route traffic control centers in the domestic United States.

The basic function of the Computer Display Channel is to process information on individual flights stored in the Central Computer Complex and present it to the controller. This data is electronically-written on the scope and moves automatically with the associated aircraft target or "blip." The controller will be able to select the type and amount of information displayed for each flight, call up special information from the computer and will be provided with special emergency signals. Information which can be displayed on the scope include the aircraft's flight number or transponder code, the current altitude of the aircraft, the assigned altitude and whether the plane is maintaining that altitude or climbing or descending.



Above, winner Jim McElreath leads the roaring Indianapolis-type racers to the finish after averaging 160 miles per hour over the 500 mile course in the California speed classic. At right, the blimp "Columbia" serves as a camera platform for closed-circuit television filming. The blimp also made a gag "commercial" on the spot that night, flashing "Burbank Airlines" for a Laugh-In explanation of who supplies the cast with travel arrangements.



FAAers Coordinate Air-Ground Traffic . . .

Clear Skies for California 500

By Bob Huber

Averaging a tire-sizzling 160 miles per hour for the 200 laps of the two-and-a-half mile Ontario, Calif. Motor Speedway, Texan Jim McElreath zoomed in first to win the first big "California 500" handily.

With a mild Santa Ana wind sweeping the east end of the greater Los Angeles Basin, the weather was perfect for racing. It was also great for the many air-minded race *aficionados* who landed at nearby airports in fixed-wing planes or brought their helicopters right to the track's own helipad.

The good weather was a big help to FAA men on the scene: Roy Outczen and Bob Phelps from the Ontario GADO, air traffic specialist Don Sperry from the March AFB RAPCON, Jim Shimek and Al Dunn from Riverside Tower and Greg Macy from Los Angeles Tower.

Their presence culminated coordination begun in early spring, when Bill Zauche and his March AFB staff at Radar Approach Control started preparations for the flight activity.

In May, Ontario Motor Speedway personnel hosted a meeting of local airport managers, transportation company officials and FAA representatives to discuss the over-all transportation problem at the speedway on race day. Zauche and his staff worked closely with Lynn Hink, Paul McAfee and Jack Cutter of the Western Region Air Traffic Division in establishing special air traffic procedures for the event. The March RAPCON staff prepared maps and outlined procedures which were subsequently printed in the Airman's Information Manual to alert incoming pilots. The Western Region Public Affairs office summarized this information in a release distributed to news media in the nine western states to apprise pilots of services and procedures available at Ontario.

Personnel at Ontario Flight Service Station prepared a ten-page booklet containing traffic patterns and

other useful information for all airports in the speedway area. Some 2,000 issues of this booklet were distributed to pilot groups, general aviation district offices and flight service stations. A map was prepared and distributed depicting helipad location with ingress and egress routes and check points for separation purposes in the event of reduced visibility.

This advance work and subsequent pilot briefing paid off. Special briefings were given to pilots of the Goodyear blimp and to pilots flying emergency ambulance and security helicopters, as well as to the Highway Patrol and local police helicopters. This action minimized air traffic problems in the area.

More than 180,000 spectators came to what eastern sports writers quickly labeled the "mink-lined Indy" because of its plush layout. This was the inaugural run at the new \$25 million oval, located 40 miles east of the Los Angeles Civic Center and rising grandly from the western San Bernardino vineyards country. All the pre-planning paid off as nearby Ontario Tower doubled its normal daily traffic count with a peak hour registering 136 operations.

Due to traffic congestion, some 26 pilots took advantage of less traffic at nearby Chino Airport, terminating there rather than wait for a landing sequence.

A temporary tower established at the raceway itself handled the steady flow of helicopters arriving and departing the track. Located on the grandstand roof overlooking the helipad, the temporary tower handled 284 operations.

With the help of the mild Santa Ana wind gently sweeping across the area, visibility was excellent. With VFR weather, coordination requirements between Speedway Tower personnel and the myriad of adjacent air traffic facilities was reduced. A beautiful day for the California 500—and FAAers did their part to make it safe and enjoyable for all who attended.



Checking temporary tower operations during the busy auto race weekend were (from left): Greg Macy, L. A. Tower; Alfred Dunn, Riverside Tower; Don Sperry, March AFB RAPCON, and Jim Shimek of Riverside Tower. Below, controllers Macy, Dunn and Shimek scan the busy helipad on race day at Ontario, Calif.





How They Worked

Intricate workings of an antique "bug" (radio key) were explained recently by aviation consultant Robert Daniel to a trio visiting the display he showed FAA employees in Los Angeles. Enthralled are (left to right): Art Johnson, retired FAAer; Lee Warren, Western Region Deputy Director; Daniel; and Arvin Basnight, Regional Director.

Unique Display Highlights 'Yesteryears' of Aviation

LOS ANGELES—A basic display and exhibit that could provide ideas for anyone wishing to present historical matter in interesting fashion was employed by aviation consultant Robert Daniel to portray the 50th Anniversary of Flight Service Stations as well as 40 years of aeronautical radio.

The display was set up on tables in the Western Region Headquarters cafeteria. It was made up of objects actually used and still in working order. The display background showed pictures, newspaper clippings, and pertinent emblems, insignia and forms. The exhibit, covering several areas of aviation history, included early equipment

used in both ground and airborne communications and historical pictures tracing several major airlines from their early entry into the transportation field.

Equipment on display included an early typewriter used in telegraphic work, an RCA AVR-7, the popular general purpose receiver of the 1930 era; and an RCA AVR-8, a modification of the AVR-7 for radio compass usage.

The display also showed early flight schedules of various now famous airlines and actual flight schedules of hourly shuttle service between New York, Washington and Philadelphia dating back to 1931.

Mountaintop Site Draws Crowd for 'Open House'

By Roy B. Luebbers
Chief, Paso Robles Radar Unit

PASO ROBLES, Calif.—"If the hill won't come to Mahomet, Mahomet will go to the hill" is a quotation that had to be in the minds of those that planned the recent tenth Anniversary Open House for the mountaintop radar facility here.

Despite the fact that driving to the site includes negotiating the seven-and-a-half mile, single-lane Black Mountain road, numerous media representatives and more than 250 people came from as far away as 100 miles to tour the remotely located FAA radar facility. Among the interested persons that gladly negotiated the circuitous road to the peak were engineering students from California State College in San Luis Obispo. Another group from the same city comprised the Naval Reserve Electronics Unit, which brought its full complement of 36 enlisted men and officers.

Much of the success of the open house is attributed to excellent advance publicity. The San Luis Obispo *Telegram-Tribune* and Paso Robles *News Press* each ran articles and the *Atascadero News* ran two separate articles in separate issues on the planned affair.

Local radio and TV stations also cooperated in giving the open house mention. Radio Station KPRL at Paso Robles sent news director Phil Dirk to the radar site, where he

taped a tour through the facility. This was aired several times on two 15-minute programs.

The interview was given a prominent place on Friday night's news program, just prior to open house. Both radio stations KPRL in Paso Robles and KVEC of San Luis Obispo included announcements in their newscasts and community calendars on the days just preceding the open house.

Tours of the facility were preceded by short discussions on the mission of the site and how it fits into the air traffic control picture. A map with lights showing locations of other navigational aids was used to depict local services provided by the FAA. The tour proceeded through the engine generator room with an explanation of its purpose and action, followed by discussion of the operation of the ARSR, with the cabinets of the standby channel open for display purposes.

An explanation of the microwave link system and how it ties this facility to the ARTCC was followed by a demonstration of the master console Planned Position Indicator (PPI) Presentation.

One thing many visitors noted as they departed the radar equipment building was the display of rattlesnake rattlers posted on the bulletin board. These were killed by the radar crew in the past five years.

The visitors also toured living quarters where refreshments were served by the radar staff.

Realism Added to Evacuation Tests

OKLAHOMA CITY—Getting 38 persons out of a simulated crashed airliner in less than 35 seconds is no easy task in itself. But add a heavy downpour to the scene and tilt the airliner's fuselage sharply by using an airplane attitude positioner and the problems are compounded.

Recent evacuation tests at the

Contract Covers Radar Shipment To 13 Airports

DALLAS—A \$489,229 contract modification has been awarded by the FAA to Texas Instruments, Inc. for shipment, installation and check out of new and better radar systems at 13 major airports throughout the country.

The cost of manufacturing the radars was included under the basic contract, which now totals approximately \$7 million.

"With such features as solid state components, integrated circuit design and modular construction," Administrator John H. Shaffer said, "the new equipment will be much more reliable and require much less maintenance than airport surveillance radar (ASR) equipment presently in service."

Locations Listed

Designated as the ASR-7, the new equipment will be installed at the following locations: Atlanta, Boston Logan, Chicago Midway, Chicago O'Hare, Dallas Love Field, Huntsville (Ala.), Los Angeles International, Mobile, Newark, New York's JFK International, Oakland, South Bend and Washington National.

A 14th system will be installed at Webb AFB in Texas.

Installation and check out of this equipment at all 14 locations is scheduled to be completed a year from now.

A special training program for technicians is planned in connection with the new radar system.

Among the many advantages of the ASR-7 is its great flexibility in equipment location, made possible by installation of equipment for each radar channel in a separate, transportable van. This can be shipped over the highway to the radar site on a flat-bed truck. Each van has its own heating and air conditioning unit.

Come in Tandem

Two of the radar vans are bolted together at the site to provide the normal two-channel radar facility. In the event the radar has to be relocated for any reason, each channel can be moved individually and independently to the new location, permitting relocation to be accomplished without disruption of service.

The ASR-7 also features modular construction for easier maintenance. Any assembly may be removed independently and all units are accessible from the front of each cabinet.

This makes for greater convenience and cuts the "down time" for any specific unit because of much greater reliability.

(Details on the progress of the program for installation of new radars at new locations will be carried in forthcoming issues of *INTERCOM* and in *FAA Horizons*.)

The program is part of the continuing modernization and facility improvement being carried out by the agency.

Aeronautical Center using a C-124 fuselage and the Civil Aeromedical Institute's new positioner were almost too real, according to the Institute's J. D. Garner, who hadn't counted on the added realism of heavy rains.

Tests went off as scheduled despite the steady downpour. Passengers-for-a-day successfully evacuated the C-124 fuselage three times, with a different pitch of the fuselage each time. The evacuations were completed in 37.5, 33.5 and 31.3 seconds respectively for the three tests, with an average of 34 seconds. Variations in time for the tests were attributed to differences in fuselage pitch for each test.

The steady rain pouring down

during the tests was advantageous in one respect: it lubricated the slides and tended to speed up the evacuation. However, the downpour hampered personnel charged with recording and getting details on all aspects of the tests.

The hired "passengers," plus a former American Airlines stewardess who was the last to leave the tilted fuselage, jumped into the slick chutes on cue. Passengers ranged in ages from the elderly to youngsters carried in the arms of their parents in an effort to duplicate the normal passenger complement of an airliner.

Further tests are planned after data from these evacuations has been studied and evaluated.



Now Hear This . . .

Instructions are given by J. D. Garner (back to camera) to 38 "passengers-for-a-day" in a C-124 fuselage during recent evacuation tests utilizing the Civil Aeromedical Institute's aircraft attitude positioner. Children in test are not all visible.



Slippery Chute

Three "passengers" slide down the slick escape chute simultaneously during one of the Aeronautical Center tests in which the attitude positioner had rolled the C-124 fuselage 15 degrees to the right. The 38 passengers aboard were evacuated in 35 seconds—in less than a second apiece.



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Key Washington personnel are briefed on the study and FY 1972 staffing estimates which have resulted from application of the interim staffing standards.

Pictured (from left) are: Frank Thomas, Chief, Management Analysis Division, OMS; Seymour E. Blum, Director, Office of Management Systems; Glen D. Tigner, Assistant Chief, ATC System Programs Division, ATS; John Moundalexis (standing), Task Force Manager, OMS; Ellen S. Wormser, Special Assistant, PT Coordination with Air Traffic Controller Career (Corson) Committee; Jesse L. Wilson, Chief, Air Traffic Programs Branch and Edward Forbes, Chief, Program Analysis Division of the Office of Budget.



Ever feel you've got too much to do—too little time? It might not be just your imagination. That sense of being overburdened can spring from too much workload for too few hands. The reverse, of course, is also possible.

Currently, the agency is engaged in a concerted effort to do something about assuring that the work-time equation is kept in reasonable balance.

Specialized agency teams are searching out realistic answers to this question: how much work can an FAA employee reasonably be expected to do in a given job while working under average conditions at a normal level of effort?

Making sure that sufficient hands are available to cope with the agency's workload must be based on some form of measurement. These yardsticks for work capacity—the key to an equitable, well-distributed FAA workload—are known as staffing standards.

The need for staffing standards extends from the individual employee who wants to know how much work he is expected to do in a day, through the ranks of supervisors and top management who must determine the staffing required for various jobs.

Responsibility Assigned

Personnel of the Management Analysis Division of the Office of Management Systems have been assigned the responsibility for establishing staffing standards throughout the agency and their present effort relates to the air traffic area, which represents the largest segment of the agency's work force.

Staffing standards are determined in various ways. In some instances, the length of time required to do a particular piece of work is measured. In others, certain activities are observed at random times. Observations of these "work samples" are analyzed and conclusions drawn about time and effort required for specific tasks.

A case in point is the recent development of interim staffing standards for air traffic control positions. These positions were selected because they are so directly related to the agency's primary responsibility for the safety of the flying public. They were also picked because of the growing awareness among agency officials that a new look should be taken at the whole traffic control situation in view of the steadily increasing traffic volume.

Development of interim air traffic control staffing standards began back in December 1968. At that time, a joint FAA-OST-BOB steering committee, under the leadership of Alan Dean, OST Assistant Administrator for Administration, set up a task force to study the whole question of how air traffic controller staffing was being determined. The findings and recommendations of this task force, headed by John Moundalexis, Assistant Chief of the Management Analysis Division, Office of Management Systems, were subsequently presented to Secretary Volpe. He approved the recommendations and called for useable staffing standards to be made available for determining Fiscal 1972 controller staffing needs.

Task Force Formed

With this support from Secretary Volpe, Administrator Shaffer promptly set up a steering committee chaired by Clarke Harper, Associate Administrator for

Key to a Fair Workload:

Staffing Standards

By Nicholas L. Soldo

Management Analysis Division
Office of Management Systems

Administration, with other Associate Administrators as members. A new FAA task force was formed, again under the direction of Moundalexis. Its members represented every pertinent office and service in Washington Headquarters as well as air traffic control and management analysis areas of the regions. The first step in this effort to develop realistic staffing standards was the organization of multi-disciplined study teams to visit facilities throughout the country for "on the spot" observation of working conditions.

Upon visiting a facility the staffing standards team's first action was to brief facility personnel on the nature of the project. The study team then observed activity at the facility for varying periods of time. At a typical busy tower, more than a week was spent.

Observations were made of actual aircraft operations and the number and type of pilot-to-controller communication contacts required during a given period. The facility's traffic history was analyzed over a sufficient period of time to indicate typical workload trends.

Briefings Given

Upon completion of the study at a specific facility, the team again met with the facility chief and his staff and provided a briefing on study data.

In the process of analyzing facility data and formulating a staffing standard, adequate time allowances are provided for annual and sick leave, training and other necessary aspects of the job. In addition, through a program of advance recruitment, it is anticipated that a sufficient number of qualified controllers will be available as future needs develop.

"No one knows air traffic control stresses better than the controllers themselves," said Moundalexis. "For that reason, controller participation was essential if our study was to accomplish its purpose. Standards developed had to be realistic and objective and had to incorporate the controller's point of view."

In accordance with this guiding principle, air traffic controllers were made an integral part of the study teams. Team participants ranged, as a matter of fact, from facility level controllers to deputy division chiefs at Washington Headquarters.

Information gathered during these field visits was used in developing interim staffing standards on which formulation of the budget for Fiscal 1972 was based. The new standards were applied only to computing controller requirements for general facility types. The studies had not been refined sufficiently to be used in determining specific staffing needs at individual facilities. Such refinement is part of the

next phase of the study, now underway. In this phase, standards are being developed for determining staffing requirements for individual facilities.

To date, an outstanding aspect of the study has been its wholehearted acceptance by all involved at Headquarters and in the field. As the study progressed, participants recognized that the agency is aware of and genuinely interested in air traffic controller problems and is, through this kind of study, attempting to solve these problems.

Cooperation Excellent

As a result, the level of cooperation among controllers, staffing standards specialists, budget analysts, personnel specialists and others has been extremely high.

So far, more than 50 agency employees from facilities, area and regional offices and from Headquarters have participated in the staffing standards study. Twenty employees participated full-time and the remainder part-time. So far, 21 agency facilities have been visited—14 terminals, five centers and two stations.

Field visits to more facilities are currently underway. Particularly gratifying was the success of the team effort. Intentionally joining together working level personnel from several agency organizations, from the field to the Headquarters level, has proven to be a great asset as all worked together for the cooperative solution of the problem at hand.

These studies represent merely one step in a long-range effort aimed at resolving workload and staffing problems throughout the agency. Staffing studies of this type have been made in the past and will, undoubtedly, be undertaken in other key agency areas as a part of this ongoing program. The ultimate goal is the development or updating of standards to cover all of the agency's diverse activities, to provide, insofar as possible, properly trained personnel in sufficient numbers to do the jobs which need to be done.

If the question asked by the employee concerning staffing standards is: what's in it for me?—the answer is: plenty! Properly arrived at staffing standards will help management assure that workload is evenly distributed, so far as possible. They will give employees the assurance that they will have enough people to do the job. The equitable workload that stems from adequate staffing certainly should pay off in terms of better service, better morale and fewer job pressures for all concerned—employees, the agency and the flying public.



A member of the joint team studying Kansas City ARTC Center, Jerry Bender (left foreground) observes fellow controllers on-the-job. Pictured are (from left) Jack Hughey; Bender; Frank Lawson; Ed Simpson, a FAM/Trainee; and Mike Swortwood.



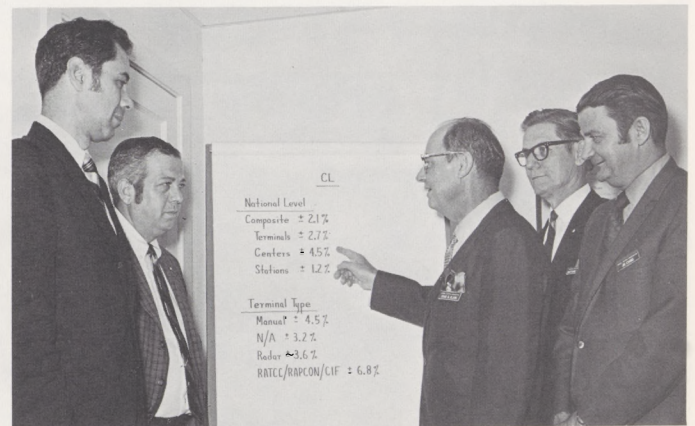
Discussing latest developments in flight service station staffing standards at Eastern Region headquarters are (from left): Louis Horvath, Chief, New York FSS; Stanley Baldinger, Management Analysis; and Charles Wychakinas, Air Traffic.



Results of the recent study of the Burbank, Calif., Tower are discussed by (from left): Tower Chief Ro Lemmer; Walter Moon, Chief Management Analysis Division; and Edward Balsis, Evaluation and Proficiency Development Specialist, all of the Western Region.



Task force participants from the Southern Region and Headquarters review results of their analysis of data from the Ft. Lauderdale Tower in Washington, D.C. Concentrating on the Controller Environment-Workload Design portion of the study are (from left): Perry Gibson, Air Traffic, and Del Jernigan, Management Analysis, both of the Southern Region; Peter Kovalick (the project principal) and Rich Hakkarinen, Washington Management Analysis; and Meredith Clarke, Southern Region Management Analysis.



Southwest Region Executive Officer Enar B. Olson points to a chart while asking a question of Nick Soldo (second from left) of Management Analysis, and Jim Loebach (left) from ATS System Programs Division, both visiting from Washington Headquarters. Looking on behind Olson are (from left) Antone P. Kreticos, chief of Management Analysis, and James H. Evans, Jr., Manpower, Training and Statistical Officer. Both Kreticos and Evans are from the Southwest Region of the FAA.

Facility Chiefs Attend Pacific Region Meeting

HONOLULU—Director Phillip M. Swatek delivered the keynote address at the opening session of the first Pacific Region conference for facility chiefs held here recently.

The conference brought together some 40 PC facility chiefs from San Francisco, Manila, Saigon, Tokyo, Kwajalein, Guam, Wake, Samoa and the Hawaiian Islands. Each came prepared to participate actively by exchanging ideas and discussing problem areas, questions and suggestions for improvement.

The agenda included a P&T round table and a discussion panel consisting of Director Swatek, Deputy Director John H. Hilton, Executive Officer Charles E. Aldrich, and Division Chiefs John M. Cyrocki, Flight Standards; Norman Thompson, Airway Facilities; and Donald H. Long, Air Traffic.

Washington Headquarters was represented by Lawrence M. Bott, Chief, Education-Training Methods-Technique Analysis, Manpower and Planning Staff. Bott, who served as an observer, described the Administrator's efforts to improve the agency's communications-work environment.

Theme of the conference was "Concerned, Cooperative Confrontation."

Deputy Director Hilton, who served as chairman, called the conference a success, adding that the facility chiefs came away rededicated to doing their share of management-to-the-field communicating more effectively.

Vice President's Visit 'Christens' New GADO Office

CASPER, Wyo.—Following their move into new quarters at the Casper Airport Sept. 1, members of the local General Aviation District Office were honored recently when the new office was selected for designation as the official VIP assembly area on the occasion of Vice President Agnew's visit to Casper.

Advance preparations included installation of a direct phone to the White House for use by the Vice President during his stay.

On hand in addition to FAA employees at Casper were various state and city officials.

FAA GADO personnel feel proud that their new quarters were officially "christened" by the Vice President's visit.



Faces And Places

Four students from Indonesia receive instructions on use of a recorder to make "voice visits" with their family overseas. Providing the assistance is June Grayson, International Liaison Office Assistant at the FAA Aeronautical Center where the students attend classes. Miss Grayson, in addition to her Aeronautical Center position, is a 20-year veteran volunteer for the Oklahoma County Red Cross chapter.

Foreign Students Treated To Overseas 'Voice Visits'

OKLAHOMA CITY—"Voice visits" to loved ones who are thousands of miles away are being made regularly by international students at the Aeronautical Center. Through a program inaugurated by the Center's Liaison Office, the students make sound recordings that can be mailed anywhere for a fraction of the cost and trouble of calling long-distance half-way around the world.

To produce the records during their lunch hour, the students use a dictating machine, a practice that has been going on over the past ten years. From 1960 until 1967 Oklahoma County Red Cross volunteers came to the Aeronautical Center once a year and conducted a one-day recording session. That program was a part of the Red Cross annual holiday "voice visits."

Since classes change only two or three times a year, when FAA international students can make best use of this service, the Oklahoma City Red Cross office has, since 1967, made available to the center's International Liaison Office a re-

recorder, discs and mailing envelopes for the use of international students. Since the program began ten years ago, approximately 400 students from 70 countries made recordings for "voice visits" with their families.

The program in the International Liaison Office is handled by June Grayson, assistant to International Liaison Officer Darwin T. Maurer. Miss Grayson recently received a 20-year pin for her volunteer activities with the Oklahoma County Red Cross chapter. Her volunteer service began during the Korean War with duties at the Veterans Hospital, which at that time occupied space near the present site of the Aeronautical Center Headquarters Building. Currently, she is co-chairman of the Red Cross Military Lounge at Will Rogers Airport and is a member of the "Services to Military Families" advisory committee for the Oklahoma County Red Cross chapter. She says she began her volunteer effort, when two younger brothers entered military service.

Removal of Aviation Menace Hailed by GADO Specialist

NO. RICHLAND HILLS, Tex.—"One of the greatest single contributions to safety at a general aviation airport" has been accomplished at Mangham Airport near this Tarrant County town, according to an FAA accident prevention specialist.

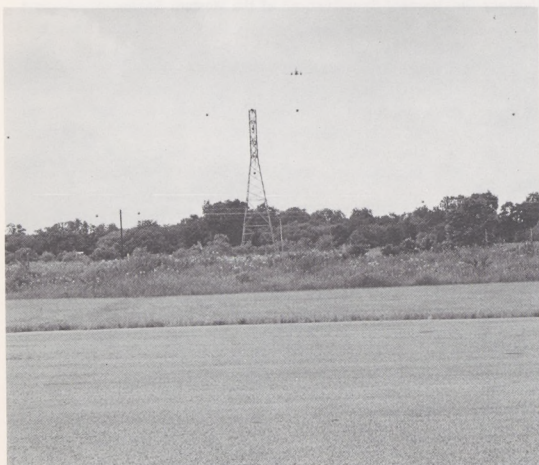
Three 105-foot-high towers and power lines which menaced air traffic at the south end of the airport runway for 15 years have been replaced. The new power line, strung on tree-top level posts, is marked with colored balls and lights to warn pilots on takeoff and landing.

Airport owner James H. (Stormy) Mangham, encouraged by the success of the FAA's aviation accident prevention program, worked out the arrangement with a cooperative Texas Electric Service Co. He

shared the several-thousand-dollar cost of lowering the wires with the utility company.

Ham Gowin, FAA's accident prevention specialist in the Fort Worth district, commended Mangham and the power company officials, pointing out that removal of the hazard was in support of the accident prevention effort. Gowin is seeking similar cooperative agreements at other airports where utility lines are considered a hazard to the safety of aircraft operations.

The original towers and wires were installed in 1955, which was about the same time that Mangham and his son acquired the field and started to build up the facility. Today, there are more than 100 aircraft based at the airport.



Airport Hazard

On its climb-out from Mangham Field, North Richland, Tex., this multi-engine aircraft keeps a respectful distance above the power line tower at the end of the runway. The tower has since been removed.



Hazard Removed

Airport manager James H. (Stormy) Mangham (left) and FAA Accident Prevention Specialist Ham Gowin discuss improved safety after end of runway was improved by removal of tower and lowering of wires.

REPORTS and PAPERS

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

Development of the Initial Maintenance Program for the Boeing 747, Dougherty, James E., Jr. Presented at the American Institute of Aeronautics and Astronautics, 2nd Aircraft Design and Operations Meeting, Los Angeles, July 20-22, 1970. Source: FS-301.

A Comparison of Natural Lightning and the Long Laboratory Spark With Application to Lightning Testing, Roman M. Spangler, Jr., Project Engineer, Westinghouse Electric Company. Final Report No. FAA-NA-69-27 (FAA-DS-69-16), Aug. 1970.

Simulation of a Continuous Runway Centerline Marking, Guy Brown and Richard L. Sulzer, Project Engineers, Interim Report No. FAA-NA-70-21 (FAA-RD-70-40), Aug. 1970.

Altimetry—A Literature Review and Bibliography (Phase I), Jack J. Shrager, Project Engineer, Final Report No. FAA-NA-70-19 (FAA-RD-70-52), Sept. 1970.

Characteristics of Fire in Large Cargo Aircraft (Phase II), Julius J. Gassmann, Project Engineer, Final Report No. FAA-NA-70-16 (FAA-RD-70-42), Sept. 1970.

Experimentation with the Terminal-Configured Radar Video Data Processor, Chapman, Clifford. Technical Final Report RD-70-33, prepared by NAFEC, July 1970.

Weather Effects on Approach and Landing Systems, Samson, C. A., B. A. Hart and R. E. Kerjanec. Technical Final Report RD-70-47, prepared for SRDS by Institute for Telecommunication Sciences, ESSA, Boulder, Colo., July 1970.

Beacon Video Digitizer (BVD) Static Test Results, Holtz, Martin H. Technical Final Report RD-70-32, prepared for SRDS by NAFEC, July 1970.

Rain Attenuation Study for 15 GHz Relay Design, Kerjanec, R. E. and C. A. Samson. Technical Final Report prepared for SRDS by Institute for Telecommunication Sciences, ESSA, Boulder, Colo., May 1970.

Visual Illusion Problems, Rowland, George E. and Joseph F. Snyder. Technical Final Report NA-69-42 (RD-69-49) prepared for NAFEC by Rowland and Co., Inc., Haddonfield, N.J., Sept. 1970.


Runway Marking Studies, Horning, Don O. and Karl Mellander. Technical Final Report FAA-RD-70-27 prepared for SRDS by the Institute of Transportation and Traffic Engineering, Univ. of California, Berkeley, Calif., Aug. 1970.


Loran-C Computer Evaluation, Quinn, George H. Technical Final Report FAA-RD-70-23, prepared for SRDS by NAFEC, Atlantic City, July 1970.

Simulation Study of Two Sites for a Third Chicago Metropolitan Airport, Rossiter, Sidney B. Technical Final Report FA-RD-70-25 prepared for SRDS by NAFEC, Atlantic City, July 1970.

Study and Experimentation of RF Pulse Generating and Amplifying Techniques for Improving Radar Emission Characteristics, Ward, H. R., R. F. Guba and A. C. Parris. Report FAA-RD-70-41, prepared for SRDS by Raytheon Company, Weyland, Mass., June 1970.

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: The Associate Administrator for Manpower, Direct Line, FAA, 800 Independence Avenue, S.W., Washington, D. C., 20590. Ground Rules: • All questions must be signed. • This column should not be used to supplant formal grievance and appeals procedures. • Questions should concern personnel and training policies, programs and procedures, not operational or technical matters. What's your question?

Question: Why is there a two-grade difference between air traffic controller (station option) journeymen with less than 100,000 flight services annually and stations that exceed 100,000 flight services annually?

Answer: First, let's clarify facility level classifications. A Level I facility has less than 100,000 flight services annually. A Level II facility has at least 100,000 but less than 400,000 flight services annually. A Level III facility has 400,000 or more flight services annually. Based on the information contained in your letter, your facility falls into Level I. The facility level corresponding to the "two grade difference" you mention would be a Level III facility. Normally, there is a relationship between the workload of a station (number of flight services) and the complexity of the work performed. This is because increased activity normally results in conditions which place greater demands on the work of individual specialists. Therefore, the volume (number of flight services) is translated into "work situations." Work situations, in turn, are classified into three broad categories differentiated by the number of flights, the kinds of aircraft, and the scope and intensity of knowledge and skills required. Pilots briefed in Work Situation I typically plan relatively short flights and operate short-range, low-speed aircraft. This situation requires station specialists to possess and apply a knowledge of the airports, terrain features, navigational aids and weather in a relatively small area. Work Situation I is characterized by "light to medium" volume of activity. Civil Service Commission narrative volume ranges (light to medium) correspond to FAA established numerical volume ranges so that a facility with less than 100,000 flight services annually (a Level I facility) calls for a GS-9 full performance grade level. In contrast to Work Situation 1, Work Situation 3 is distinguished by the regular and recurring requirement for briefing pilots before and during very long flights. This requires continuing application of knowledge of the airways system throughout the country. Work Situation 3 is characterized by sustained periods of extremely heavy volumes of activity. Civil Service Commission narrative volume ranges (sustained periods of extremely heavy) correspond to FAA numerical volume ranges so that a facility with 400,000 or more flight services annually, (a Level III facility) calls for a GS-11 full performance grade level. However, even in such stations only those positions justify classification in grade GS-11 that include, on a regular and recurring basis, work involving the difficulties and complexities of that level.

Question: Why are journeymen at stations under 100,000 Flight Services annually penalized (graded-wise) when their total annual flight

services per man equal and sometimes exceed the per man flight services performed at Flight Service Stations with more than 100,000 flight services?

Answer: As stated in the answer above, the number of flight services performed by an air traffic control specialist does not establish the grade level of the work performed. For example: a station specialist could brief pilots of light, short-range, low-speed aircraft who plan to fly within a relatively small area (up to 400 miles from his station) for eight hours a day. This work is characteristic of the GS-9 level. On the other hand, another ATCS could brief pilots of high-performance aircraft for very extensive flight, evaluating weather conditions thousands of miles away and alternate routes and landing points for four hours a day. The latter work is characteristic of the GS-11 level. It is the level of difficulty and complexity of the work performed for a significant period of time that determines the grade level of position.

Question: I have been working for the FAA for more than seven years. When I started work I was given credit for time spent with the New Jersey National Guard for summer training. This time was credited to my Service Computation Date. Approximately three months ago I was informed that personnel had made an error at the time I was hired. They informed me that National Guard time was not creditable. Because of this error made over seven years ago, my Service Computation Date was changed to the day I actually started work. I also lost 20 hours of annual leave due to this error. Can this be done?

Answer: Yes. Your personnel office has the obligation to correct any prior errors on your service record. As a general rule, National Guard service is creditable for leave and tenure only during periods when the organization (or a unit thereof) is actually mustered into or activated in the United States Army or Air Force. Accordingly, members of the National Guard of the United States or the Air National Guard receive credit only when called into active duty with the United States Army or Air Force. There is one exception to this general rule. Before January 1, 1969 National Guard civilian technicians, except technicians of the District of Columbia National Guard, were State employees. Effective Jan. 1, 1969 Public Law 90-486 authorized State adjutants general to appoint National Guard technicians as employees of the Army or the Air Force. Therefore, service as a National Guard technician performed before Jan. 1, 1969 is creditable provided the person serves as a National Guard technician on or after Jan. 1, 1969. Of course, National Guard technician service after Jan. 1, 1969 is also creditable as Federal service.

Satellites

(Continued from Page 1)

and stowage compartments.

- Plans for development of standards for a combined slide-raft for use in evacuating airliners which operate over water. The agency is working with both the airlines and the manufacturers and hopes to have slide-rafts in service within six months.

- A new plan that would increase the number of traffic lanes in the North Atlantic airspace and provide at least 50 per cent increase in system capacity over this route. The new system, recommended by the International Civil Aviation Organization (ICAO) planning group, is a new concept of separation known as composit separation. The system would use one-half the vertical and one-half of the lateral separation standards in a staggered configuration to increase the number of traffic lanes. The concept has been subjected to mathematical analysis and shown to be acceptable and safe. It is planned to implement the new system when additional radars have been installed along North American and European coastal areas. The radars are needed to allow precise positioning of aircraft before starting the ocean crossing.

- Plans for issuance in the near future of an FAA proposed technical standard order covering four types of crash locator beacons for use in general aviation aircraft. The types are: a hand-held personnel type to be manually activated, an automatic fixed type installed in the aircraft with the antenna out and activated by impact, an automatic deployable type ejected from the aircraft in the event of a crash in water or on land and a survival type for use on water.

Expansion

(Continued from Page 1)

mestic airspace, while Seattle covers 127,000 square miles. The larger center as measured by area coverage employs 500 people, including controllers, electronics engineers and technicians, supervisory and administrative personnel. Seattle Center operates with 75 fewer people. Modernization of the centers is expected to be completed by January 1972.

In keeping with current, high priority attention being given ecology, the agency has gone to great lengths to insure that the new wings and associated equipment meet Federal, state and local ecological standards.



At L.A. Tower

With television camera recording the event, new personnel make their first visit to the control tower cab high atop the administration building at International Airport in Los Angeles.



Found: a Better Way

A savings bank specimen check symbolizing a cost reduction of \$402,600 was presented recently by Associate Administrator for Operations George S. Moore (left) to James F. Rudolph, Director, Flight Standards Service. Flight Standards led all Washington offices and services in the Fiscal Year 1970 Cost Management Program. Cited as "particularly noteworthy" was the service's revised concept of flight inspection project.

Combined Displays Big Hit

HANFORD, Calif.—Supervisor Will Cope and Controller Harold Cannon of the Lemoore Radar Air Traffic Control Center here combined their talents to scoop the recent Kings County Fair by tying together "Flight on Earth" with "Flight to the Moon." Through their efforts in a search for something new and different, they found a real winner.

Working through the governor's office, they obtained for the FAA display a sample of moon dust,

brought to earth by Neil Armstrong and the crew of Apollo 11. Sharing booth space with the moon dust was the mini-model high intensity approach light system, designed and built by Manuel Angel, airway facilities sub-sector at Stockton, and the FAA Pan-L-Yue display telling the FAA story.

The five-day fair shattered all previous attendance records and many visitors stopped by to chat and discuss the aviation industry with men at the FAA display.



FSS Procedures Committee

Participants in the recent ten days of work at Washington Headquarters to improve flight service station procedures and operation were (front row, left): Troy R. Davis, Raleigh, N. C.; Ralph L. Fitch, Ukiah, Calif.; chairman, Goldman C. Bandy, Big Delta, Alas.; Sun Choy Lam, Honolulu; William B. Holton, College Station, Tex.; Ronald C. Shimeld, Salisbury, Md. (Back row, from left): Billy C. Riley, Dyersburg, Tenn.; Howard E. Clement, San Diego, Calif.; Edward F. Quinn, North Philadelphia, Pa.; Albert H. Rohlfing, Kansas City, Mo.; John F. Adams, Chicago; George R. Cooper, Jr., Dallas, Tex.

7 GS-5 Trainees Start Tower Jobs

LOS ANGELES—During a precedent making ceremony, seven GS-5 trainees recently entered on duty at Los Angeles International's tower. The trainees, all members of minority groups, were entering on duty under a new policy which permits them to receive training at high activity terminals such as Los Angeles International Airport.

Following approximately nine months on-the-job training, these young men will be evaluated and assigned to formal training at the Academy in whatever option their performance indicates would be most appropriate.

Included in the group are: Theodore Bernez, Marquette Bradley, Frank Butler, Raymond Sandoval, John Carroll, William Haley and Samuel Sanders.



This pair of Principal Operations Inspectors from the General Aviation District Office at West Chicago didn't know it back 25 years ago, but they shared similar work even then—as glider pilots. Theo Moore (left) has 30 years of Federal service, 20 of them as an Army pilot before coming to the FAA. Dwayne Nickerson, standing with Moore in front of an agency Beech Model 90 King Air, was in general aviation operations before joining the FAA in 1963.

Flight Officer Theo Moore climbed aboard his World War II troop-carrying glider, loaded for this mission with supplies bound from England to the invasion forces in France.

Methodically, he checked his seat belt and the simple panel of the big wooden bird. He looked up as a resounding tug from the big C-47 in front started him rumbling for takeoff. Soon he and his CG-4A glider were airborne, winging silently over the British coast and heading east toward the mainland.

He liked the glider command and its mission of landing troops with all their equipment intact. He felt it was an improvement over dropping parachutists, who had to assemble and put together their weapons before they could be operational.

Departing Liverpool for his European destination, Moore settled back to adjusting his headset so he could hear the tow plane. Moore was glad his early flight training with the other glider volunteers had called for numerous spot landings, made in a light plane with power off. Now this experience would pay off on another combat mission.

Out over Liverpool Bay, Moore suddenly felt a jarring jolt. He noted the airspeed had dropped suddenly. Looking up and out at his tow aircraft, he gulped. Up ahead, the 350-foot rope was coming at him. His tow had snapped! To further complicate the emergency, the heavy line then wrapped itself around the glider's stabilizer. Moore struggled to control the now sagging, heavily-laden glider. Fortunately, Lady Luck was on the side of the Irish that day, and Moore was able to force the stricken glider around and fly it—still entwined with the tow rope—to the coast in a steep approach to a safe landing.

That was a quarter of a century ago, and just one of the glider missions Moore and a fellow FAA Inspector, Dwayne Nickerson, participated in separately in the same theater. Yet they never met or compared notes until both happened to land jobs at the same General Aviation District Office in West Chicago, Ill.

In between glider missions, according to former



◀ Mighty important to mission success was this tow line Flight Officer Theo Moore holds in this picture taken 27 years ago in England. The line connected his troop-carrying glider to the C-47 (background), and when one snapped over Liverpool Bay, it gave him an anxious moment.

A slightly damaged glider waits in Holland after unloading its troops. A crew salvaged usable parts to keep other gliders flying. ▶



Flying in formation, two glider-towing C-47s are seen from the glider pilot's seat, with the vital tow line seen in the right of the picture.

Flight Officer Nickerson, he ferried many an L-4 artillery spotter plane across the channel. Like Moore, he had qualified for glider training by having flying experience before getting into uniform. When not training for a glider mission—many of which were scrubbed as the battle situation cancelled the initial need—he flew co-pilot in C-47s.

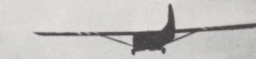
On his very first C-47 mission in the right seat, Nickerson had a healthy apprehension for the full load of 750 five-gallon cans of gasoline destined for General George Patton's gas-guzzling, German-routing tanks. It was March 1945, and the allies were driving into Germany. Gliders were a key to successfully crossing the Rhine for a final plunge at the enemy's heart.

The fuel-loaded C-47 came in low over the intended landing field at Frankfurt, Germany, dodging a barrage of fire from artillery and small arms. Nickerson, remembering that he was supposed to wear the mandatory helmet and flack suit, got up automatically and rushed back in the cabin to don the protective gear. When he returned, he found the pilot needed him ur-

Combat Pilots Meet as GADO Inspectors. . . .

Their Gliders Were EXPENDABLE

By Thom Hook



gently for the approach to call off the airspeed and altimeter. Nickerson was put right to work for the final approach into the field covered with eight inches of thick, slimy mud. Small arms fire punctuated their path as they slid through the silt. Somehow they stopped safely, dumped the supplies for truck pick-up and got out as quickly as they could. On subsequent C-47 missions, Nickerson always wore the helmet and flack suit before they got to the destination field.

Gliders Effective

The American gliders were turned out by companies experienced in woodworking in a concerted effort to supply the needs for an aerial vehicle that weighed 3,500 pounds empty and could lift an equal amount gross. Waco, Chase and St. Louis Aircraft companies, Wurlitzer Piano, and Ford Willow Run joined small woodworking shops and coffin makers to turn out the gliders for about \$18,000 apiece. The cost was nothing compared to the value of being able to approach slow and silently, land in the length of a football field and have the armed men go immediately into action. Cargo of the CG-4A glider Nickerson flew was either a complement of 15 men, or a jeep and five men, or a 75mm howitzer and three-man crew, or 600 gallons of gasoline or a load of ammunition. Moore also flew the big British Horsa glider, which carried as many as 30 troops.

Many missions were scheduled to supply fuel for Patton, but he got rolling so fast that the General over-shot numerous planned landing places and the glider flights had to be cancelled. Moore flew with the 441st Troop Carrier Group; Nickerson with the 435th. Their combat missions took them across the channel to either France, Holland or Germany.

Now, as GADO Inspectors, they certificate aircraft and airmen and see that flying school and air taxi operations are up to FAA standards. It seems a long time, too, since both were pursuing Patton with cargoes of gasoline or troops during the Third Army's rapid advance into a collapsing Germany and the end of World War II.

