

# BEACON

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FEDERAL AVIATION AGENCY

*Aeronautical Center*

OKLAHOMA CITY

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Artwork on cover of BEACON this month pictures liaison between all phases of communications and flying for Safety. Art by Illustrator Betty Gatliff.

Inside back cover is Aeronautical Center Building area.

Back Cover shows Oklahoma Cowboy... symbol of early state history. This figure is on esplanade area of the state Capitol in Oklahoma City. Picture by Bob Newkirk.

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## LOOKING AHEAD

This month's BEACON heralds the entry of the belated Spring. As you could tell by the cover color, the vernal freshness of this season is highlighted in green.

The story on the Examination and Records Division, just removed from Washington, is not a detailed one. In future issues of the Beacon we will carry a more detailed look at this important area of operations.

This month's "Point of View" is from an old pro in the field of aviation. Maurice Marrs is the former Commanding General of the Oklahoma Air National Guard, now the manager of Oklahoma City's Tulakes Airport.

Since summer is almost upon us the May issue of the Beacon will start a summer vacation spot series -- strictly in Oklahoma, of course.

This was a suggestion from an Oklahoma FAA employee. Any time you as the reader, have a thought that could improve the Magazine, let the editor know.

The Editor





### POINT OF VIEW

I can remember when "cow pasture" flying was the rule of the day in aviation. I started flying in the piano-wire, open cockpit days when navigation was limited to compass and the "follow the railroad" procedures.

Today... "cow pasture" flying is as extinct as the dodo. The modern airman, be it private, commercial or carrier pilotage, must know instrument flying, air routes, electronic procedures and so on.

It is regrettable, in one respect, that in this day of the big boom in private and general aviation, many airports are still in the "cow pasture" category. And...there actually are fewer small air fields in the country today than there were two years ago. The big question, to my way of thinking---and I'm thinking now as an airport manager---revolves around the future of general aviation and "space" to hangar.

Oklahoma City is fortunate in having an aviation-minded city manager, city council and chamber of commerce. These men are aware of aviation needs...as witness two excellent airports, as well as Tinker Field and the FAA Aeronautical Center.

The rest of the nation should look to airport needs and save some of the areas now being turned into residential developments.

The sky is crowded. Let's keep a place on the ground for the non-carrier pilot.

*Maurice Marrs*

Maurice Marrs  
Brig. General (Ret.)



Examination and Records Division  
Chief Les Brooking



John Patterson, Chief, General  
Aviation Examination Branch



Ed Forbes, Chief, Records Branch



Arthur Elwell, Chief, Flight  
Engineering and Maintenance



Jack Kanost of Examination  
Services Staff



### EXAMINATION AND RECORDS DIVISION—A BIG JOB

Oklahoma City now has the virtual picture of civil aviation in its midst. Row after row of filing cabinets were moved into the Home State Life Building in March. Actually, it's row after row of pilots' certificates and aircraft registrations.

But, that's only one side of this tremendous business of keeping tabs on the pilots and planes. There's the other side. That is called Examination. In March the Federal Aviation Agency's Examination and Records Division moved out of Washington, files and all. It took more than 50 large moving vans to load the files in Washington. Now those records rest in part of an area on the second floor of the downtown office building. Examination and Records, according to Acting Chief of the Division, Les Brooking, are using 26-thousand square feet of floor space. The downtown building will be the home of the 112 people who work in that Division until such time as a new building can be constructed at the FAA Aeronautical Center. That may come within two years.

The Division was moved to Oklahoma City from Washington because the functions can be performed in the Oklahoma City with equal efficiency and at less cost.



Factual and beautifully designed booklets help the aspiring pilot. These are designed and written by the Examination and Records Division

The running of the Examination and Records Division is no small task. Look at some of the figures for a moment. Acting Chief Les Brooking ticked off the statistics in this fashion:

The Division handles 1-million, 750-thousand airmen records; something over 750-thousand of these are active — that is, in current status. This includes all airmen from the private pilot and student pilot up to the commercial jet and prop pilots who fly our airlines. This does not include, of course, the thousands of military pilots.

As for aircraft, says Brooking, there are 340-thousand registered aircraft carried in the files of the Division. 104-thousand of them are on the active list, that is, currently in flying status. This includes all such craft, ranging from the tiny single-seater "pea-popper" up to the giant jets of the commercial carriers.

One side-line facet of some interest: The letter N is used in this country to designate civil aircraft. All letters of the alphabet except for the "I" and the "O" are used. Those two are left out because they're too similar to numbers in appearance.



This is just one area where the records for literally hundreds of thousands of airmen are kept up-to-date

The Examination and Records Division is much more than just a huge statistical storage center. The Division falls under the Bureau of Flight Standards in Washington and is made up of five branches, covering all phases from writing examinations for pilots to the Records Branch.

Under Brooking's jurisdiction are: The Examination Services Staff which scores examinations and report results, the General Aviation Examination Branch, headed by John W. Patterson, which handles all pilot certification. The



Air Carrier Examination Branch, headed by James F. Reed, which handles transport pilot Certification, helicopter ratings, etc. The Flight Engineer and Maintenance Examination Branch, of which Arthur Elwell is chief, which has as areas of specialization the certification of flight engineers, mechanics, airframe, powerplant, ground instruction ratings, etc., and the Aircraft and Airmen Records Branch, headed by Ed Forbes.

Let's look a little more closely at each area. The General Aviation Examination Branch, says Chief John Patterson, certifies such ratings as airplane, glider, rotorcraft, lighter-than-air. In addition, this branch examines and gives certification to the air traffic control tower operators, ground instructors, who in turn, teach the embryo pilot, and—though there are not too many of them—free balloon pilot certification.

James F. Reed's area is the Air Carrier Examination Branch. It involves transport pilot certification, aircraft dispatcher certification, and covers such other areas as navigator, radio operator and flight simulator ratings.

The complexity of the Examinations and Rec-



This is the correspondence section in Examination and Records

ords Division is further seen in the area of certification of flight engineers, mechanics and parachute riggers. Arthur Ewell's branch, Flight Engineer and Maintenance Examinations, also oversees the examination for airframe and powerplant ratings.

Not only does this Examination and Records Staff carry out the examination and recording of airmen and aircraft certification, but also must work out the study pamphlets for the

examinations. For instance, looking to the private pilot area, books on navigation, meteorology, engines, theory of flight are written and illustrated by this Division. Each writer is an expert in the field of flying and each is himself a pilot. So the writing is not done in any vicarious manner, but from actual contact with the element of flight.



Mail, largely examinations and questions about airmen and aircraft licenses, flows into the Records Division

The examinations to be given for all ratings are prepared by the Division. The pilot in general aviation apparently appreciates the care given in writing these pamphlets and examinations. One of Les Brooking's proudest possessions is a letter file commending the Division for its efforts in the examination field. To quote just one: "I have seen many, many tests, but the private pilot's exam I took is one of the best prepared tests I have ever seen. Not only did it test my knowledge of flying, but considered the ability to think and plan in emergencies . . ."

It was a study carried out in an eastern school by Frank Jamison, a teacher in that area, that brought about the decision to give all student pilots a course in instrument training before they could be certified as private pilots. This does not mean the new pilot must know all about instrument flying, but must possess a knowledge of it. This new regulation goes into effect this Spring.

The books we mentioned a moment ago such as *Path of Flight*, *Realm of Flight*, *Facts of Flight* are almost in the "best-seller" category. The E and R Division counts the sales of these training guides to flight in the hundreds of thousands of copies.



Examinations given by the E and R staff during one month average more than eight-thousand and cover all categories from glider pilot to air traffic control tower operator. During the last year, ending December 28, 1959, the Division totted up a total of 105-thousand examinations. The greatest number is found in the private pilot area.

So, it's not merely an area of statistics, but a growing and hard-working area. It looks to the present, but has one eye turned to the future when the crowded sky will be even more crowded.



#### LAOTIAN PRINCE TOURS CENTER

International Liaison Officer Darwin Maurer points out the Aeronautical Center's location on the map while Prince Sisouphanouvong of Laos looks on. With the prince is his escort-interpreter, Robert Gueydan.

The director of civil aviation in Laos, Prince Sisouphanouvong, paid a visit to Oklahoma City and the FAA Aeronautical Center during March. The prince was given a complete briefing on the training program of the center. Some of the students in the past have been fellow countrymen. The prince also had a look at the central depot which is the logistics center for FAA aircraft, as well as the facilities used on the federal airway system and in many foreign countries.

While in the Oklahoma City area the Laotian was given an inspection tour of Will Rogers Airport and Tuskahoma Airport and a close look at the Aero Commander, the aircraft manufactured by Aero Design at Bethany.



International students at the FAA Aeronautical Center took part in another program of "Other Countries — Other Customs" over Oklahoma City's Educational Television Station, KETA-TV. Standing around the program director, Mrs. Guy Arnold, B. H. Sayed of Pakistan, Felipe Fratti from El Salvador, Francisco Gonzales of Spain, Nguyen Duc of Vietnam and Chieh Tanomsooth.

The program for this particular broadcast dealt with "Foods Around the World."



International students at the Aeronautical Center are getting a signal honor these days. These are the first of the foreign student graduates to receive the post of honorary colonel on the staff of Oklahoma's Governor, J. Howard Edmondson.

In a brief ceremony April 1st, Acting Director Enar B. Olson presented the certificates, on behalf of the Governor, to Chieh Tanomsooth of Thailand, B. H. Sayed of Pakistan, and Chow Watanachinda of Thailand.





Left to right: Robert de la Rosa, Raymond Hastings, Nafiz Karamete, Melih Ceviker, and Henry Shaw

Messrs. Ceviker and Karamete hold responsible positions with the Government of Turkey, and are ICA participants in the United States on a nine-month program studying Supply Management and Warehousing. They are visiting the Aeronautical Center in order to have an opportunity to study and observe all phases of warehousing and supply management in the Facilities Materiel Division and the Operating Materials Division.

They started their training at the Aeronautical Center in the Operations Section of Structural Materiel Branch, of which Mr. Shaw is the Section Chief. Messrs. de la Rosa and Hastings were responsible for their training in this Section.

After completion of their training at the Center, they will go to Seattle, Washington, to further their studies.

Behind the flight operations desk, where pilots with furrowed brows struggle with triplicate and quadruplicate forms concerning weather, cargo, passengers and aircraft conditions, hangs this sign: "When the weight of the paper work is equal to the cargo capacity of your aircraft, you are cleared for take-off."

#### MAESTRO WINS FAA THANKS

Among the special guests attending the closing concert of the Oklahoma City Symphony this season were the foreign students of the Aeronautical Center.

Previous to the final symphony appearance, representatives of 17 foreign countries gathered in the Center auditorium to present him with a large appreciation scroll.

From Juan Varano of Argentina to Nguyen Duc of Vietnam there were 72 names signed to it. This marked the second season the Oklahoma Symphony Society permitted the students to attend the subscription series.

International Liaison Officer at the Center, Darwin Maurer, estimates that some 200 visitors from 35 countries have heard the concerts during the last two years. In presenting Harrison with the scroll, Maurer said, "Some orchestras take music from the United States to other countries. We bring other countries to hear Oklahoma City music."

Countries represented by the FAA students at this final concert were Argentina, Bolivia, Brazil, Chile, Egypt, Ethiopia, El Salvador, Greece, Indonesia, Iran, Japan, Korea, Pakistan, Spain, Thailand, Turkey and Vietnam.



Among the FAA students who have attended every subscription concert of the Oklahoma City Symphony this season, are from left to right, Atef Ibrahim Abu-Lymoun of Cairo, Egypt; Francisco Gonzales of Seville, Spain; and Mehmet Bas-sarac, of Istanbul, Turkey. They are shown signing the scroll of appreciation presented to Guy Fraser Harrison





FAA Administrator E. R. "Pete" Quesada smiles at a question during a recent meeting of the General Aviation Advisory Committee at the Aeronautical Center. On his left is J. Gordon Bennett, recently resigned Special Assistant to the Administrator

## GENERAL AVIATION PROBLEMS DISCUSSED AT CENTER

Growth of general aviation in the United States and the resulting problems were discussed last month by FAA Administrator E. R. Quesada, and members of the General Aviation Advisory Committee. The committee meeting was held at the Aeronautical Center.

Quesada outlined one of the problems as reasonable regulation of the more than 70-thousand general aviation aircraft now in operation. He said the fleet is expected to grow to more than 85-thousand within the next five years.

Other problems include better flight training and safety standardization. Certification of both airmen and aircraft of the general aviation field also presents an increasing problem.

Quesada said, "One problem is that of communications. We don't want to penalize this largest segment of aviation with costly equipment, yet they must be able to operate within the framework of the air traffic control system being put into effect by the FAA."

The Administrator went on to say the mandatory retirement age for carrier pilots doesn't mean retirement.

"The older pilot can be used by the airlines as check pilots and in other jobs where the general public is not affected.

"We in the FAA are trying to hire some of the pilots who are effected. We can use their experience and knowhow."

On the question of general aviation pilots and jets . . . Quesada predicted the use of the jet simulators and other facilities at the Center by such pilots in the future. He said many general aviation pilots would be moving into jets soon.

The Administrator also said that work toward an airborne anti-collision device was not making much progress, but that the FAA was stepping ahead in radar control and air traffic management practices. He mentioned some two billion dollars worth of military radar being used now. He said millions of dollars in new radar is being added and all of this can be considered as anti-collision devices.

Members of the General Aviation Advisory Committee meeting with Quesada were Doctor Leslie Bryan, director of the Institute of Aviation, University of Illinois; Leighton Collins, Princeton, New Jersey, editor of "Air Facts" magazine; William M. Berry, airport manager at Stuttgart, Arkansas, and J. Turner Moore, president of Aerobee Corporation in Toledo, Ohio.

## WASHINGTON NOTES

The Federal Aviation Agency has proposed that all turbine powered air carrier aircraft—including turbo-props—be equipped with flight recorders.

The recorder is a machine connected to the aircraft's instruments which automatically records on a steel or aluminum tape the plane's air speed, altitude, vertical acceleration, heading and the time.

The purpose of flight recorders is to preserve information which will assist in determining the cause of in-flight aircraft incidents and accidents. The proposed rule would continue the provision of an existing rule that recorded information be retained by the air carriers for sixty days, or longer upon request.

The existing regulation requires that the recorders be installed on air carrier airplanes which are certificated for flight operations above 25,000 feet. This rule includes turbo-jet carriers, but does not cover the turbo-prop planes which are operating at lower altitudes.

The announcement proposes September 1, 1960 as the completion date for the installation of the recorders.

The Federal Aviation Agency has begun a management experiment to determine the feasibility of transferring operating responsibilities to lower echelon field offices of the Bureaus of Air Traffic Management and Facilities and Materiel. Further gains in effectiveness and simplicity of administration are anticipated.

The 90-day test started April 6 in the Cleveland Air Route Traffic Control Center area. The experiment was motivated by the expanding volume and growing complexities of activities which make it increasingly difficult for the FAA's Regional Office to maintain the desirable first-hand knowledge of field operations and problems.

The experiment is called Project Straight-Line, because of the organizational plan, which will provide more direct communications or straight lines of action to field employees. Among the many benefits anticipated from the test are improved operational and managerial capabilities, speedier resolution of problems through closer coordination, and a more manageable span of control in the Air Traffic Management and Facilities and Materiel Field Divisions. Supplementary benefits would include a reduction in the number of Maintenance Supervisory Offices in the field and improved technical specialization at field maintenance supervisory level.

Under the present organization, the field operating facilities and offices of the Bureau of Air Traffic Management (air route traffic control centers, airport traffic control towers and flight service stations) and the Bureau of Facilities and Materiel (Airways Technical District Offices and Airways Technical Field Offices), are supervised and given full operational direction from executives physically located in Regional headquarters offices.

The test will evaluate the effect on operations and efficiency made by transferring decision-making authority to a lower field echelon.

If the evaluation proves the test successful, and it meets with the Administrator's approval, an Area Office will be established for each air route traffic control center area within the contiguous 48 states except Pittsburgh, Norfolk and Spokane which are to become parts of Cleveland, Washington and Seattle center areas, respectively. There will be 26 such areas.

Proposed rule making which would require a uniform way of displaying identification marks on aircraft has been issued by the Federal Aviation Agency.

The new plan is being proposed to improve visual ground-to-air and air-to-air identification.

The rule making proposes: Identification marks not less than 12 inches high on each side of the fuselage and identification marks not less than 20 inches high on the left half of the lower surface of the wing structure.

The proposed rule would replace two existing regulations dealing with identification marks. Part I of the Civil Air Regulations calls for marks on the right upper and lower left wing surfaces and smaller marks on the tail. The second rule, Special Regulation 412B, in effect, permits the omission of wing marks if the smaller marks are increased in size and are displayed on the tail or on the side of the fuselage.

The change is being suggested because marks on the tail upper wing surface are not as useful for identification purposes as marks on the fuselage and lower wing surface.

The proposal would set the compliance date approximately one year from the time the rule is adopted. The interval would be granted to permit operators to change the current way of marking their aircraft.

The proposed rule making—which would apply to fixed wing aircraft — would rescind Special Civil Air Regulation No. SR-412B and simultaneously amend Part 1 of the Civil Air Regulations.

#### **J. GORDON BENNETT LEAVES FAA**

The month of March saw the resignation of J. Gordon Bennett, Special Assistant to Federal Aviation Agency Administrator E. R. "Pete" Quesada.

Bennett joined American Airlines on April 4th as Director of Advance Schedule Development.

In World War Two, Bennett served as a Naval aviator, as an instructor, a liaison officer for a Free French patrol squadron and later with the Naval Air Transport Service. He currently is a Lieutenant Commander in the Naval Reserve. After the war he was chief pilot and part-owner of a non-scheduled cargo airline.

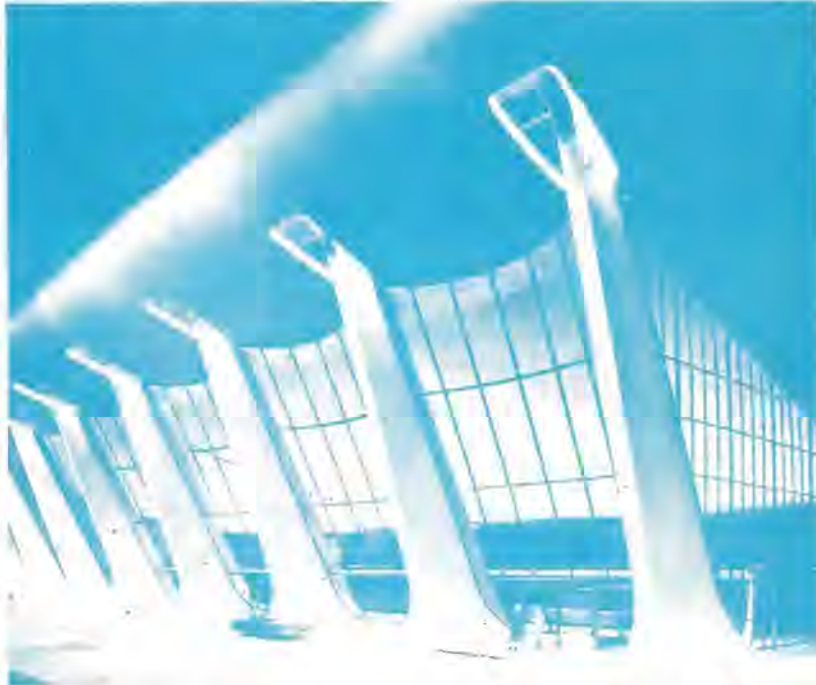


## Dulles International Terminal

Washington, D.C.—As plans for the completion of Dulles International Airport continue to unfold, it becomes increasingly apparent that it is being built for the convenience of the traveler. The Federal Aviation Agency is making certain that he will find here the same fine service he is accustomed to in the air. The recent "unveiling" of the terminal designs for Dulles emphasizes this to a degree.

Architect Eero Saarinen has conceived a

Artist's drawings reveal a compact structure on two levels. The upper level comprises the main concourse, a clear expanse 150 feet wide and 600 feet long, without a single post or stanchion to mar its symmetry. An automobile ramp permits the passenger to unload before the door of the airline he is patronizing. Immediately inside the door, space has been designated for ticketing and baggage counters. Beyond this division, and facing the flying field,



Architect Eero Saarinen has combined beauty and drama in his design for the terminal at Dulles International Airport. A radical departure from the conventional airport terminal which sprouts "fingers" when expansion becomes necessary, this building may be doubled in length by simple extensions at each end.

breathhtakingly beautiful building, at once functional and in keeping with the dignity and importance of the Nation's capital. Blown-up photographs of scale models show a spectacular use of concrete and glass. Sixteen massive pillars, spaced 40 feet apart, flare to a height of 65 feet on the automobile approach side, to support the roof deck and form a sheltering marquee over the ramp. The roof itself, a series of sloping concrete panels fitted between suspension-bridge cables, sweeps dramatically upward at its edges, creating an impression of soaring flight. Inside the building the roof's reverse curvature works to good effect acoustically, discourages echoes that so often confuse the public address announcements.

blueprints show the news stands, shops, and restaurants. Along the rear wall the Mobile Lounges are lined up in docks ready to transport passengers to waiting aircraft, protected from weather, noise, fumes, and blast.

Arriving passengers will be brought into the terminal on this level and will descend by escalator to the lower level to pick up baggage. Provision has been made here for extra telephones, hotel accommodation booths, rent-a-car services, and other concessions. From here also a succession of ramps lead to buses, taxis, automobile pick-up stations and the parking lot. A final convenience for parking lot users is the planning that enables them to go and come without ever crossing a traffic artery.

## CIVIL AIR SURGEON VISITS CENTER

Doctor James L. Goddard, Director of the Bureau of Aviation Medicine and Civil Air Surgeon for the Federal Aviation Agency, inspected the Civil Aero Medical Research Institute at the Center this last month.

Doctor Goddard and Allen Dean, Assistant Administrator for Management Services inspected two sites at Norman for the temporary quarters for CARI. Goddard said the North Base site at Norman probably would be taken for the Research Institute; added that 19-thousand square feet of floor space is needed.

Goddard also explained the new Bureau of Aviation Medicine. It will be made up of the Civil Air Surgeon's Office and these four Divisions: Research Requirements, Medical Standards, Medical Certification and Environmental Health. Each division is charged with carrying out a part of a medical program which is con-

cerned with every phase of aviation. The overall functions of the Bureau of Aviation Medicine include responsibility to promote safety; by developing standards and regulations concerning the mental and physical fitness of airmen as well as all others whose health affects safety in flight.

Another major area is responsibility for providing the medical standards or approval for those design elements of aircraft, aircraft components and operational procedures which involve medical considerations.

Doctor Goddard explained that the Aeronautical Center, personnel-wise, was ideally equipped for the research work of CARI and it cuts administration costs considerably. However, it will be about two years before CARI is permanently located at the Aeronautical Center.

## OPERATIONS ALERT—1960

The Federal Government's annual Emergency Readiness exercise will be conducted during May 3-4-5 throughout the nation. The exercise is conducted in order that federal agencies, state and local governments may test their emergency plans.

There will be tests of the two national warnings. The "ALERT" warning signifies that an attack is probable; the "TAKE COVER" warning advises that an attack is imminent. During this phase of the exercise there will probably be tests of the CONELRAD Plan under which all commercial radio transmissions are shut down except those on 640 KC or 1240 KC. It is over these frequencies that all emergency announcements will be made. The National SCATER Plan will also be tested. This plan should not be confused with CONELRAD, however. Both affect radio communications but SCATER is related to air traffic and aeronautical communications.

The Oklahoma State Government will participate by testing the State Emergency Operations Plan. The State's primary initial role will be in dissemination of the "ALERT" and "TAKE COVER" warnings statewide. This is accomplished by the Oklahoma State Highway Patrol. They receive the first warning from the National Warning Center at Colorado Springs, Colorado. The Patrol immediately broadcasts the warning to each mobile patrol unit, each of

the nine patrol district offices and each county sheriff's office. The patrol also alerts key state officials. The State Civil Defense Officer implements the State Plan which is designated to maintain the seat of government and to provide emergency services throughout the state.

It is only at the local community level that lives can be saved by adequate plans and shelters. State and National plans are limited to broad guidance for the development of local plans and beyond this are of greatest value in recovering from the attack. Well developed local plans are usually indicative of a strong local government or a demanding citizenry.

The Aeronautical Center will participate in Operations Alert by having a representative at the State Civil Defense Office who will relay warning and attack information to the Center. Center Emergency Readiness Officers and selected emergency team members will evaluate the information received and make determinations regarding the Center's ability to continue operations. Through our participation we hope to develop adequate Center emergency plans for the protection of our personnel and material resources.

There will be considerable national and local publicity regarding Operation Alert—1960. You are encouraged to follow the exercise with particular attention toward the emergency plans of your home community.





## **TULSA CHAPTER, AMERICAN SOCIETY OF TRAINING DIRECTORS VISITS FLIGHT OPERATIONS AND AIR WORTHINESS DIVISION TECHNICAL LABORATORIES**

On March 10, upon request of the Tulsa Chapter, American Society of Training Directors, L. E. Shedenhelm, Chief, Aircraft Branch, spoke briefly at their monthly meeting on jet aircraft technical training developments at the Aeronautical Center. Officials of the Chapter requested the opportunity to visit the Flight Operations and Airworthiness Laboratories on their next meeting night. On the night of April 14, 1960, 34 members and guests arrived by bus at 8:00 p.m., and departed at 10:00 p.m. In view of the comparatively short time of two hours, they requested that the presentation be limited to the application of animated backlighting training aids similar to those in the background of the

accompanying photograph. While aviation interests were represented by major oil companies, Douglas Aircraft, American Airlines and Burton Rodgers, a large percentage of the group was made up of industrial and municipal representatives having automatic control systems personnel conversion training problems. Although the jet engine and systems simulators are new, according to a letter of appreciation from the President of the ASTD Chapter, the tour and demonstrations were very ably conducted by William Brown, Arthur Douthit, Oscar Bryant, Frank Fuhrer, Bob Hightower, Hope Biggers, Reedy Rogers, Clarence Supplee and L. E. Shedenhelm.

### JET GEMS

High-speed aircraft are usually operated at predetermined mach numbers instead of specific airspeeds. Mach number is the ratio of flight speed to the speed of sound (mach 1.0). Sonic velocity and mach number vary with air temperature. Therefore, at standard day conditions, the airspeed which corresponds to a given mach number will vary with the air temperature as altitude is gained. Airspeed is measured in knots which are nautical miles per hour. (1.0 knot equals 1.15 statute miles per hour).

Below is a table giving mach numbers, altitudes, miles per hour and knots for handy reference in connection with printed matter discussing jet transport operations:

STANDARD AIR MACH

ALT.	.70	.75	.80	.85	.9	.95	1.
MPH	532	570	609	646	685	722	760
SL KTS	462	487	528	560	595	629	660
5,000	523	560	598	635	672	710	747
	454	486	519	551	584	616	648
10,000	514	550	588	624	660	698	734
	446	477	510	540	572	605	638
15,000	505	541	578	614	650	685	721
	438	470	501	534	564	594	626
20,000	494	530	565	601	636	671	707
	429	460	490	522	552	583	612
25,000	484	519	554	588	622	657	692
	420	450	480	510	540	569	601
30,000	474	508	542	576	610	644	678
	411	441	470	500	529	560	589
35,000	464	497	530	564	596	630	663
	403	432	460	489	517	546	576
40,000	463	496	529	563	596	629	661
	402	431	459	488	517	546	574

MACH 2 AT 40,000FT=1,322 MPH OR 1150KTS  
MACH 3 AT 40,000FT=1,983 MPH OR 1723KTS

### AC-132 STILL PLAYING SANTA CLAUS

The mechanics of AC-132 are so enthusiastic over the results of their Christmas project of delivering toys to the Children's Convalescent Home that they are continuing to go to the hospital on Saturdays to make repairs on the hospital's toy train and tracks. The Christmas spirit of this branch is staying active throughout the year.

The project originated as a result of an accident which happened approximately four years ago. One of the mechanics complained of having to address so many Christmas cards. It was suggested that cards be brought out and each person pick his own from the group and address it to himself. The next year it was decided that the price of the cards could be put to a worthier use, and the idea of the Christmas project as accomplished this year grew from that.

(The nurse at the hospital said that the tricycles contributed by this group had taken one child, a little boy about 7 or 8 years old, from the critical stage by giving him the will power and desire to get on the tricycle.)

Considerable interest is being exhibited in the proposed classes to be held under the supervision of Oklahoma State University. The temporary committee has held one meeting at which it was decided to distribute copies of the tentative agreement with OSU so that changes desired by the prospective students might be submitted to the committee. These are to be evaluated, and it is hoped that a preliminary meeting with OSU representatives can be held in the very near future.

The desire for self improvement is evident among several Center groups. About fifteen men meet twice weekly during the lunch period to study Plane Trigonometry in Room 209 of the ANF #1 building under the guidance of Bill Morton, UHF instructor. Another group of about the same size meets on two of the remaining workdays to concentrate on Physics under the direction of John Stanley, Receivers instructor, who has taught the subject in college. Plans are presently being formulated to hold similar sessions in other subjects, especially Transistors. Which reminds us that a roomful of instructors in ANF #2 is already hard at work learning more about these interesting devices under the tutelage of Al Kuehne during the lunch period.





Seated left to right: Mrs. Eric Romero and Mrs. Jose Gabrielli of Argentina; standing: Humberto Cortez of Cuba and Mayor and Mrs. James Norick

#### LET'S PLAY BINGO . . .

It might have been "Housie" or "Lotto" or "Bingo" . . . the game's the same, tho the name is different . . . but it served as a common denominator for Argentina, Bolivia, Brazil, Chile, Egypt, Ethiopia, El Salvador, Greece, Indonesia, Iran, Japan, Korea, Pakistan, Spain, Thailand, Turkey, Vietnam and the U.S. (specifically Oklahoma) at a "welcome" party for some 25 new international students and their families at FAA center . . . as well as some 50 additional visitors from overseas, already "residents" of Oklahoma by virtue of a few weeks' stay at the Aeronautical center.

Some 400 Oklahoma City people . . . men women and children . . . defied the threat of a storm to participate in the game and to meet and visit the new friends from overseas who were guests for the evening. Many of our foreign friends carried away mementoes of the occasion . . . some in "prize money," and a few can proudly add to their "going home" pack a bit of Oklahoma merchandise, which they won as draw prizes. Host families were well represented when the prizes were given out, too.

Electronics and Air Traffic Control classes at FAA expanded their curricula by the simple expedient of a diagrammatic study of the intricacies of the American game of "Bingo" in preparation for the evening's entertainment.

Hosts . . . hostesses, rather . . . for the occasion were members of the Women's Civic Clubs Council of Oklahoma City. The Council is composed of eleven national and international service clubs for women; viz., Altrusa; Business

and Professional Women—of Capitol Hill and Oklahoma City; National Secretaries; Pilot of Capitol Hill, Midwest City and Oklahoma City; Quota, Soroptimist and Zonata . . . and hosts and guests alike attest to the success of the evening's entertainment.

This is just one of the functions sponsored by the Women's Civic Clubs Council since the International Visitors Program started in Oklahoma City more than a year ago.



#### T-29C TECHNICAL ORDER REVISION PROJECT COMPLETED

The Facilities and Material Depot recently completed for the USAF, the 10th conversion of T-29C Navigator-Bombardier Trainers to AC-131A Flight Inspection configuration.

These aircraft are being used by the USAF as flying laboratories to flight inspect its radio aids to navigation. The design of the avionics installation was accomplished in the Facilities Flight Inspection Branch's Engineering Section.

In addition to the 10 aircraft modifications, the FAA-USAF agreement included the provision of information necessary to revise 7 T-29C technical orders, 14 T-29C maintenance manuals, and the preparation of a Console Operational and Maintenance Manual.

Avionics Engineering personnel associated with the T-29C project are (L to R) Cleve Hale, Paul Taylor, Bob Ashby, Jim Hicks, Jim Harvey, and Glidewell Grammar.

Bob Ashby, Sr. Project Engineer, who is shown contrasting the manual with a schematic diagram of one system, did an excellent job of coordinating the efforts of newly assigned personnel toward rewriting the material, which is partly shown at right. His efforts were rewarded when the manuals and T. O. revision information were delivered on schedule.

THE EYE





Pictured above is the FAA Aeronautical Center exhibit set up during last month's Oklahoma University Engineering "Open House." The Center exhibit placed third in the rating of a considerable number of out-of-state exhibits.

Used in the exhibit: The display and demonstration of teletype communications in the FAA, furnished by ANF and demonstrated by Walter Zuhn, Ralph Ford, Bill Starr and James Childers, a large, static display of Oklahoma Airways, showing low and high frequency ranges; Air Traffic Control was demonstrated by Charles Pratt, who explained the workings of a Traffic Control Center and demonstrated instrument approach procedures; Homer F. Cones and Louis C. Forsee explained and demonstrated a transcribed weather broadcaster.

Also used in the exhibit were pictorial billboards showing the lay-out of the Aeronautical Center, possibilities for employment, and the geographical boundaries and facilities in Region Two.

#### **NEW CONCEPT DC-3 OPERATIONAL AND MAINTENANCE MANUAL COMPLETED**

Recognizing the Electronic Technicians and Operators' needs for a manual of this type, it was programmed as a project for the Facilities Flight Inspection Branch's Engineering Section.

The New Concept DC-3 (Type II) is a flying laboratory used for flight inspecting all radio aids to navigation. Its complex electronics installation, which is precisely calibrated, requires a high level of maintenance technicians and operators to support approximately 60 of these aircraft which are presently in use.

The personnel associated with this project manual are Everett Porterfield, Sr. Project Engineer, Beryl Green, Project Control Engi-

neer, Jim Hicks, Technical Writer, and Don Precure, Project Engineer.

Beryl Green, who also has the Type II DC-3 and Retrofit Avionics standardization program, advises that 125 manuals have been shipped to the Washington office for disposition and hopes that personnel associated with the New Concept DC-3 aircraft will take advantage of the information contained in the manual.

— THE EYE —



#### **'THE SQUEEZE IS ON'**

The Facilities Flight Inspection Branch's Engineering Section is in the final stages of the prototype electronics modification of the TV-2 (Navy designation of T-33) jet aircraft. Presently a total of six aircraft are scheduled for modification.

Joe Shelton, Project Control Engineer, is shown pointing to the compact installation, with Sr. Project Engineer Johnny Beck and Project Engineer Don Watson wondering how they had accomplished the assignment of squeezing all of the electronic equipment into the limited area. It can be summed up in the words "excellent planning."

The electronics installation consisted of 14 separate systems ranging from dual VOR and dual glide slope, to a J-2 compass system. To expedite the installation, they designed the systems so that as much as practical could be fabricated outside the aircraft.

According to the plan, these aircraft will be used by Flight Operations and Airworthiness Division, The Bureau of Facilities and Materiel, and The Bureau of Air Traffic Management for training and for solving problems associated with radar and air traffic control at jet speeds and altitudes.

— THE EYE —



## PERSONNEL-LY SPEAKING

### Information Please?

"How do I find out about—well, about almost anything having to do with my job?" This question, when asked by employees, is one most government organization managers worry about a great deal. It gets framed in fancy words, "How good are communications in our organization?" But what we really want to be sure of is that people can find out what they need to know to "know where they stand" and be able to go ahead with their job.

Every sizeable organization in the country, in and out of government, spends lots of money trying to "communicate" with the employee. These efforts range from fancy "Annual Employee Dinners" to elaborate publications to highly organized discussion groups and staff meetings at all levels. All these things are useful, but the best "communications" system we can devise must still leave an important place for the individual person to ask a question and get a reliable answer reasonably fast.

At the Aeronautical Center we put out a lot of "general communications" material. We distribute material that is funneled in from outside the Center, such as the Civil Service Retirement Certificates and Government Employees' Life Insurance Policies. We maintain manuals like the Agency Practice Manual, and we have a battery of local publications like Administrative Orders, Depot Orders, Division Bulletins and Administrative Notices and the Beacon. All these are primarily to get information to the people who need it. In a general way they try to anticipate what individuals will want to know about a subject and provide the answers. This brings us to a first principle when you have a question.

The first place to go when you have a question is to the official publication on the subject and see if your question can be answered there.

One of the more significant reasons we have supervisors is that they are expected to be Mr.

Answer Man. Now, let's not kid anyone, no supervisor can know all about everything so he can recite the full context of every applicable regulation or policy. This is a plain physical impossibility. What he is expected to know is where to go to get the answer. This brings us to principle number two of "How to get Answers."

If you don't find the answer in publications on the subject, ask your supervisor.

Now, let us suppose that you and your supervisor can't dig out an answer that seems to be dependable, or perhaps it is not really satisfactory. Then what do you do? In most cases the supervisor will refer your question to his Branch Chief, or other people in the organization who are more expertly versed in the subject and who will work with him in getting your answer.

Finally, you may call the Personnel Service Branch that provides personnel service for the organization in which you work. You may come to the Personnel office if you believe a visit to be necessary, but remember that your supervisor is responsible for knowing where you are and when you'll be back and for seeing that you are on the job when you're needed. So, any time you leave your regular work, be sure you have your supervisor's permission and that he knows where you are going and when you'll return.

Keeping everyone up-to-date on all the things that they need to know about in the Federal Aviation Agency and the Federal Government and at the Center is a big job. Using supervisory channels to get answers to questions will help spread information around better than if each employee goes directly to an information source individually. We urge you to go first to the publications, secondly, to your supervisor and let him get the answer for you. In this way more people will get more information and make it easier for other people to keep informed.

W. M. Jackson AC-90

## OKLAHOMA CITY TO HOST AVIATION SHOW

For two days in May the nation's center for business aviation will be Oklahoma City. The occasion is a two-day aviation show to commemorate the first fifty years of flight in the Sooner state and to introduce the newly-completed facilities at one of the most modern secondary municipal airports in the nation.

The dates are May 21-22. On the agenda are displays, demonstrations, dinners, dances and dedications. Nearly all the manufacturers of aircraft for the private pilot and the business pilot will be displayed and demonstrated.

On Sunday morning, May 22, over 700 planes are expected to fly in for breakfast before the show begins. Provisions will be made to park up to 1,000 aircraft. Pilots are requested to bring their own tie-down equipment.

On the previous day, May 21, ceremonies will honor Col. Charles S. Willard, who made the first flight in Oklahoma in 1910. An aviation dinner will climax the day's activities.

Operation of the new FAA tower at Tulakes

will be launched with the Fly-In, May 22. The tower will then be open every day from 7 a.m. to 11 p.m.

The Tulakes' tower is housed in a modernistic terminal building that was recently completed. A restaurant and the FAA divisional safety office are also located in the new terminal building.

Tulakes has completed aircraft, engine and electronics servicing facilities. It is also the location of the factory that produces Aero Commanders. The field is home base for 179 aircraft.

Longest runway is the 4,650-foot NW-SE runway. The 4,350-foot North-South runway is scheduled to be extended to 5,800 in the near future. Last month saw the completion of a resurfacing project for all runways and taxiways.

With 13 hangars on Tulakes, the field has more than adequate storage facilities. There is also a fire station on the field.

## SOME ANSWERS TO THE HEALTH BENEFIT PROGRAM

The time to pick and choose your health benefit plan to reject it if you so desire, is close upon all Government employees.

Here at the Aeronautical Center, as well as in other areas, each employee will be asked to fill out an insurance form. The employee will receive counseling as to the types of plans offered. Already the training of these counselors is underway. You, as the employee, will be kept advised about the progress of the Health Benefit Program.

In this issue of the Beacon are a few answers to some of the many questions on the new plan:

You can enroll in the health program in early July and retire on an immediate annuity on August first, or thereafter, and retain your policy. Your cost, as a retiree, would be the same as the active rates. The cost will be deducted from your monthly annuity check.

If you decide not to participate in the program which will be effective the first pay period in July, you'll have to wait until October 1, 1961, to enroll in it.

An employee who is in a non-pay status at the start of the program, such as on leave without pay, isn't eligible for coverage under the program.

In the case of Blue Cross-Blue Shield, Federal employees will be offered only one policy with the high and low options. Present policies will be converted to the Government-wide program or canceled.

Any regular full-time employee is eligible to take part in the program regardless of his health. The program is voluntary.

A man and his wife who both work for Uncle Sam may both buy their own individual policies.

Employees who already have retired or who will retire prior to the starting date of the program aren't eligible for it. However, a bill is pending in the Senate Post Office and Civil Service Committee to set up a health program for retirees and survivors.

No waiting period is required to draw benefits in maternity cases.

Those are just a few answers to anticipated questions you may have about the program.

As for the benefits and how they work . . . the chart on the opposite page will give you an idea. Bear in mind the chart is informational only and does not set the official costs or benefits. That information will be made available later.



## Official Civil Service Commission Charts

KINDS OF EXPENSES		HIGH OPTION			LOW OPTION			
Hospital Room and Board	PLAN PAYS				PLAN PAYS			
	First \$1,000 each calendar year 80% of any charge over that amount				First \$250 each calendar year 75% of any charge over that amount			
	YOU PAY				YOU PAY			
	20% of any charge over \$1,000				25% of any charge over \$250			
Other Hospital, Surgical, and Medical	PLAN PAYS				PLAN PAYS			
	80% of charges over first \$50				75% of charges over first \$50			
	YOU PAY				YOU PAY			
	First \$50 each calendar year (the Deductible) 20% of Remainder				First \$50 each calendar year (the Deductible) 25% of Remainder			
Maternity	PLAN PAYS				PLAN PAYS			
	Hospital--up to \$15 a day for 10 days Obstetrician--up to \$90 for normal delivery, \$150 for Caesarean, \$50 for miscarriage Anesthetist--up to \$18 for normal delivery, \$30 for Caesarean, \$12 for miscarriage				Hospital--up to \$10 a day for 10 days Obstetrician--up to \$60 for normal delivery, \$100 for Caesarean, \$40 for miscarriage Anesthetist--up to \$12 for normal delivery, \$20 for Caesarean, \$8 for miscarriage			
	YOU PAY				YOU PAY			
	The Remainder				The Remainder			
Maximum Benefit		\$30,000			\$10,000			
Monthly Rates		Govt.	Emp.	Total		Govt.	Emp.	Total
	Self Only	\$ 2.82	\$ 3.94	\$ 6.76	.....	\$ 2.82	\$ 2.82	\$ 5.64
	Family	6.76	10.70	17.46	.....	6.76	6.76	13.52
	Female with non-dependent husband	3.94	13.52	17.46	.....	3.94	9.58	13.52

## SERVICE BENEFIT PLAN

		HIGH OPTION				LOW OPTION		
KINDS OF EXPENSES	BASIC BENEFITS		DEDUCTIBLE	SUPPLEMENTAL	BASIC BENEFITS		DEDUCTIBLE	SUPPLEMENTAL
HOSPITAL ROOM AND BOARD	Up to 120 Days Per Admission in				Same as for High Option			
	Member Hospital	Non-Member Hospital			but up to 30 days		YOU	PLAN
	PLAN PAYS • in full	• \$12.00 a day	YOU	PLAN				
	YOU PAY • nothing	• remainder	PAY	PAYS			PAY	PAYS
OTHER HOSPITAL SERVICES	PLAN PAYS • in full	• 90% of actual charges	\$100	80%	Same as for High Option		\$200	75%
	YOU PAY • nothing	• remainder		of	but up to 30 days			of
			D	ADDI-			D	ADDI-
			E	TIONAL			E	TIONAL
SURGICAL and MEDICAL	PLAN PAYS		D	ALLOW-	PLAN PAYS		D	ALLOW-
	• amount set by fee schedule		U	ABLE	• amount set by fee schedule		U	ABLE
	YOU PAY		C	EXPENSES	YOU PAY		C	EXPENSES
	• any remainder		T		• the remainder		T	
MATERNITY	PLAN PAYS		I		PLAN PAYS		B	
	• up to \$100 hospital expenses		B	up to	• \$10 a day hospital expenses		L	up to
	plus		L	\$20,000	up to 10 days		E	\$5,000
	• amounts set by fee schedule for obstetrician & anesthesiologist		Z	MAXIMUM SUPPLEMENTAL BENEFIT	plus			MAXIMUM SUPPLEMENTAL BENEFIT
	YOU PAY				• amounts set by fee schedule for doctor & anesthesiologist			
	• the remainder				YOU PAY			
					• the remainder			
MONTHLY RATES		Govt.	Emp.	Total		Govt.	Emp.	Total
	Self Only . . . . .	\$ 2.82	\$ 4.57	7.39	. . . . .	\$ 2.82	\$ 2.82	\$ 5.64
	Family . . . . .	6.76	12.61	19.37	. . . . .	6.76	7.45	14.21
	Female with non-dependent husband	3.94	15.43	19.37	. . . . .	3.94	10.27	14.21



**C. F. VanThullenar**

#### **WEATHER HUNTERS AT FAA CENTER**

The cause and effect of severe local storms will be studied during the next three Springs by government agencies.

Eight agencies, plus the United States Weather Bureau, have joined with the Federal Aviation Agency in a study of storms that develop in the Southwest's "tornado alley." These storms will be studied carefully from April 1st of this year until the end of May. The next two years will see the study run—time-wise—from the last half of March until the first week in June.

Involved in this weather study: The Air Force, Wright Air Development Division, Geophysical Research Division, the Weather Bureau, Air Defense Command, the National Aeronautics and Space Administration, and the FAA.

The FAA Aeronautical Center is handling space, the communications set-up, and has assigned an air traffic controller to the project. A number of aircraft will be used in this research program. The Air Force has supplied three jet craft, a T-33, F-102 and F-106; the Navy has supplied the weather hunters with an A-3-D; the weather bureau is using two DC-sixes, a B-57 and a P-38. These aircraft are currently being instrumented at Langley, Wright Field, Cheyenne, and at Chicago.

One of the major fields of study will be the effect of the turbulence on air travel preceding and just after a severe local storm. The aircraft will fly ahead of these local storms to check the changes that produce the heavy weather.

The man who handles this research, C. F. Van Thullenar, Director Severe Local Storms Research Project for the Weather Bureau, says the three-season study should bring out much new information as to turbulence and general flying conditions in and near these storm centers. Some of the aircraft will actually penetrate the storm centers during this research.



#### **NEW SHOP EQUIPMENT DEMONSTRATION**

A group composed of FAA representatives of several Aeronautical Center segments watches a factory representative demonstrate the versatility of the new Strippit Sheetmetal Fabricator recently purchased for the Structural Shop of the Facilities Materiel Division.

This equipment permits a variety of sheet metal operations which were not previously possible without extensive hand labor and time-consuming methods. Openings of almost any size and shape can be formed in metal plates of varying thicknesses and materials with a minimum of operating time. The work can be performed on an individual basis, or when a number of similar items are required, duplicating from a pattern is accomplished in a matter of seconds.

Equipment of this kind improves the Depot shop capability for economical and expeditious fabrication and repair assignments.



### TERMINAL AIR TRAFFIC CONTROL COURSE

Expansion continues in the ATC School. While our new 8-week Enroute Air Traffic Control Course is rolling along smoothly and effectively, we are now deep in planning for the forthcoming Terminal Air Traffic Control Course to begin July 5, 1960.

The Terminal Air Traffic Control Course is aimed at providing entrance-level BATM personnel with training which will qualify them for the Air Traffic Control Specialist Certificate and training in assistant controller duties sufficient to enable them to accomplish productive work at their assigned operation facility at the earliest possible date. This course will include training in more responsible duties designed to serve as the first step in the development of controller ability. This course will also permit the instructors to establish an estimate of the students' potential ability as an air traffic controller.

Terminal Air Traffic Control encompasses two of the most vital functions of our Air Traffic Control system. The first of these functions is the Airport Traffic Control Service provided from the tower cab to aircraft operating on and in the vicinity of the airport. The control tower is thus the "nerve center" of the airport. The men controlling traffic from these towers are responsible for the safety of life and property and everything that moves on the airport surface or in the surrounding airspace must be under their control.

Airport Traffic Control is the oldest of the air traffic control services; its history dating back to the late 1920's when men "controlled" traffic by waving their arms or waving flags from a prominent place on the airport. Today our towers are a maze of radio and electronic equipment. The men who man these facilities must be alert, quick thinking men dedicated to providing the flying public with the safest and most expeditious service. To fully appreciate the unique qualities of the Airport Traffic Controller, read the article entitled, "VFR Control-manship" in this issue of the Beacon.

The second and equally important phase of Terminal Air Traffic Control is the service known as Approach Control. This is a service designed to provide the safe and expeditious movement of Instrument Flight Rule traffic into and out of terminal areas. Working hand in hand with the Enroute controller, the Approach controller through the use of mechanical and electronic aids, makes it possible for the increasing

number of aircraft operating under IFR procedures to move swiftly and safely.

Effective training is a prerequisite to this work, and we feel that through this new Terminal Air Traffic Control Course we will satisfy this prerequisite and furnish the field facilities with personnel who will be able to assume the responsibilities of the work in a minimum of time.

Training will include academic subjects necessary to the field of Air Traffic Control and comprehensive training in the laboratories designed to effectively simulate standard operational facilities. Carefully planned control problems will require the student to demonstrate his ability to apply the many procedures learned in the classroom. In Terminal Air Traffic Control training, just as in any Air Traffic Control training, demonstration of an acquired knowledge of air traffic control procedure is one of the most important aspects of the program.

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### PERSONNEL CHANGES

The Air Traffic Control Branch is happy to welcome into its folds the following new instructor personnel:

Ethel B. Callahan who transferred to us from the Honolulu Tower. Thomas M. Lane from the Billings (Montana) Tower. Sidney Reiser from the Washington, D.C., Air Route Traffic Control Center. Otto A. Warren from the Boston Tower.

It is always a pleasure to welcome new blood into an organization, and this is particularly true of ours. The experience represented by these will be invaluable to our present and future programs.

Having outstanding people in an organization often has its disadvantages; someone else always takes them away from you. We in the Air Traffic Control Branch are more than aware of this fact. During the past month, we lost the services of five of our people, namely:

Willard O. Bethel, who joined the staff at NAFEC. Sterling R. Campbell, who transferred to the Washington Office. Hobert L. Carter transferred to the Reno Tower, Reno, Nevada. Paul Herriot transferred to the Hamilton Air Force Base in Sunny California. Paul Wilson transferred to that land of sunshine also, Long Beach Tower, Long Beach, California.

Our loss is someone else's gain, and we feel that these facilities have gained the services of some mighty fine men. We wish them every success in the years ahead.

*A veteran controller, himself a qualified pilot, takes a look at*

## **VFR CONTROLMANSHIP**

*(This article is reprinted from the July, 1959 issue of the Journal of Air Traffic Control through the courtesy of the Air Traffic Control Association. Distribution is in accordance with instructions from Av-1 and PT-30.)*

By Charles A. Kite  
Denver Tower

An airport traffic controller occupies a unique position, perched high in the tower overlooking the runways. From this vantage point, he is daily witness to a solid eight hours of flying—by all types of pilots in every kind of airplane—in good weather and bad. He can tell you with absolute certainty that civil airplanes have won their place in the minds of men as fast, safe and economical method of transportation. In no other part of the industry does the impact of the airplane on our society stir the imagination so much.

Nearly all pilots are familiar with VFR (Visual Flight Rule) flying in and around the airport when the weather is good. The controller who handles such traffic is the VFR, or local controller. Unfortunately, many pilots—and some of our own management in the FAA—tend to overlook this phase of traffic control. The tendency is to place emphasis on IFR (Instrument Flight Rule) traffic, in spite of the fact that VFR operations exceed IFR traffic by a considerable margin. VFR traffic poses many problems that promise to become worse with time.

Describing control work is a great deal like trying to explain combat. Until you discover that someone is earnestly and sincerely trying to put a bullet in your own skull, you cannot really appreciate someone else's description. That's the way it is with control work. You have to face the pattern, mike in hand, with speakers full of voices and the sky loaded with birds, before you are impressed. And when you reach that point in ATC, no words are necessary.

With thousands of airplanes in the sky every day, regimentation is inevitable, just as it is on our highways and city streets. Laws or separation standards govern the controller for both IFR and VFR traffic. A controller cannot ignore, modify or change these standards, which were established by the combined efforts of the industry as a whole. His Bible is the *ANC Manual, Procedures for the Control of Air Traffic*. It is quite simple and short, consisting of some 67 pages; but trying to achieve and main-

tain its standards can often tax a controller into fantastic traffic tangles—not to mention the maneuvers an airplane is expected to make as a part of this achievement!

Control work has been compared to chess, and I support there is a parallel between the two, but only if it is thoroughly understood that the aircraft making the moves are hustling about the sky at speeds from 60 to as high as 500 miles an hour. None of them can stop or retreat without plenty of room. In air traffic control, no one ever meditates on the next move. There just isn't time.

To a pilot in the pattern, concerned with just one airplane and how it will fit in with other airplanes already in the pattern, local VFR control may sound relatively simple. If all pilots entered the pattern from one direction at a specified point and distance, at the same altitude, and using only one runway or direction of landing, this would be almost true; but it rarely, if ever, works that way. There are 360 directions, many different cruising speeds, runway combinations that are absurd in their limitations, pilots who are limited in experience and ability to fly patterns with any degree of consistency, airplanes requesting straight-in approaches, and impatient departures panting to be up and away—all this from a concrete contractor's delight known as an airport. It is neither simple nor easy.

A student controller soon realizes that his profession requires raw courage. Controllers never mention it, or discuss it, but they are all aware of that silent, little understood barrier to the faint of heart. With 15 airplanes approaching from all directions, and voices calling constantly on the speakers, it is easy to get the feeling that you are surrounded by an utterly impossible situation. Air traffic control can consume a new man quickly and efficiently, making him half afraid of himself. The results of a wrong instruction issued to an airplane are no small burden to bear. It is not surprising that, with the rise in traffic count, the toll among controllers becomes higher each year.

Early in the game, a controller must develop resistance to "expediting" beyond the bounds of safety and reason. This is a perpetual trap awaiting the student as he masters the fundamentals and becomes confident of his ability. Sometimes resistance develops rapidly, after he has scared the wits out of himself, raised a few eyebrows in the pattern, and brought several fellow controllers in the tower to their feet.



The ability to visualize a 15 to 30-mile area is another prime requisite. The local (VFR) controller has no "posting board" or display of his traffic except the one in his mind, and it must be ready for instant use when needed. Reporting points, for example, are as varied and different as the people who fly airplanes. The local patterns must be fixed in his mind like iron stakes driven into rock. He must know the radio aids used for approaches; minimum altitudes; airways; departure routes; holding patterns and their location; proximity to other airports and so on. It takes study—and plenty of it—to memorize a complicated high-density control zone.

An unerring sense of timing is, perhaps, the controller's most difficult achievement—and it is this ability that provides pilots with the very best control. Consider the number of airplanes flying today—from jets to Cubs—with speed ranges that vary like a busy Yo-yo. An iron sense of timing is essential for alerting a heavy airplane for a possible go-around as far in advance as is humanly possible.

Light plane pilots may wonder at this; and it is worthy of an answer. A heavy airplane grossing 90,000 to 100,000 lbs., or over, involves considerably more than just pushing throttles to pull upon final. Any alerting a controller can give the crew will gear their thinking to a go-around before it becomes necessary. A heavy airplane requires several knobs, switches and sundry other items to be snapped and turned, pushed and pulled, before there is any response whatsoever. Any one of these items could, conceivably, spoil the captain's whole trip, the passengers' enthusiasm for flying, the airline's future, the fire crew's meal, and the controller's day.

A sense of timing further advances a controller's thinking in terms of how an airplane will fit in with his present traffic. It helps him to formulate, subconsciously, any action necessary when the airplane does show up. He never knows with any degree of certainty how his traffic will be spaced at a given time; and there is always the possibility of a previously unreported airplane suddenly calling in from a position which requires complete reshuffling of the traffic sequence. At such times, a controller must know instantly what to say and how to say it. His instructions must be clear and definite, so that other airplanes in the area will be alerted to the stranger's presence and intentions.

If you watch a skilled controller work an airplane reporting from 2 miles away, you can see proof of his sense of timing: He will invari-

ably start to watch the sky at the precise point where the airplane will appear, seconds before it becomes visible.

Every suspicious move on the part of an airplane is cause for immediate alarm. An airplane turns toward a runway other than the one in use, without saying a word. The pilot makes no response to questions directed to him by the controller. Trouble? The controller has no way of knowing, but in his mind he is immediately readying the go-arounds; reaching for the crash 'phone; checking the departures who may have their backs to the wayward airplane.

The controller knows that a pilot in difficulty has no time to announce the next move. He must *make* the next move. And the controller stands in need of prayer at such a time, so that his own next move may not be the wrong one. When he acts, the controller must act with calmness and complete confidence.

Often pilots do not realize how heavily these crises weigh upon the VFR controller. The position is a trying one, demanding intense concentration. It's a waiting game, and tension mounts as the traffic volume increases. The controller must keep every airplane number straight and in its proper order, at the same time watching every move of every airplane in sight. Nearly all towers attempt to limit the time on the VFR position to one hour, for after that length of time the controller has passed his peak of efficiency.

A VFR controller must learn to tune himself up, so to speak, to match the pace of the traffic. He must have an instant reply to each call, for if he hesitates, he may lose control of the situation. Unless he develops a sharp, concise delivery, all is lost amidst a jumble of voices, none of which make sense, if he allows himself to get behind in his thinking or planning. He must develop his auditory senses, too, until he acquires the elusive "tone talent" that tells him, when he hears the pilot's voice, just how much help or watching the pilot will need.

Of all the lessons of the sky, a controller soon learns that pilot cooperation is the one dominating factor in all control work. Without the pilots' backing and understanding, control can become harrowing and exasperating beyond description. Pilots are probably the finest group of people in the world to work with, bar none, and this fact is one of the principal reasons for controllers' dedication to their work. Unfortunately, a controller often finds himself between two mighty powers—the pilots, and the rules and procedures under which ATC must operate.

The squeeze play can become difficult, causing a pressure on the controller that is lively in its existence, yet difficult to define.

The hundreds of controllers I have met in the past 16 years all share a common virtue. Each and every one is dedicated to doing his level best to provide the aviation industry with the best possible controlmanship, within the bounds of confinement in which he often finds himself. The controller understands the reasons for these bounds, and tries to stay within them, but sometimes they cause misunderstandings with the pilots we work with every day.

**EDITOR'S NOTE** *Mr. Kite was a controller at Denver Tower at the time this article was written. We are proud to say he is now a member of our instructor staff here at AC-520. This article has been recognized the world over as a true picture of the VFR Air Traffic Controller. Mr. Kite wrote another article entitled, "IFR Controlmanship" which will be reprinted in a later issue.*

#### **OLD AIRWAYS OPERATIONS BUILDING STILL ACTIVE (RADIOACTIVE)**

The old Airways Operations building across the street may appear to have settled down to a long earned rest. On Thursday, March 31, however, it was once again the scene of bustling activity of unusually high intensity. The Facilities and Material Depot spent the day in a practical exercise of their Radiological Defense team and the old Airways Operations Building was a natural for an active (Radio) test site.

In a more serious vein Mr. Tom Collins, AC-746, the Center Radiation Protection Officer, concealed several radioactive sources of Cobalt-60 in the building. Emergency teams of the depot were called and advised of the general area where the radioactivity was suspected. They were requested to survey the several areas, locate those that were hazardous and so mark them. Each of the four depot teams, operating at different times, was completely successful in locating the radioactive areas promptly. This exercise represents a firm capability for the protection of the Center under conditions that may be expected during a national emergency or a nuclear accident.

Depot teams were under the supervision of Gaylord Younghein, AC-755; Ray Bryan, AC-756; Hubbard E. Taylor, AC-756; Robert D. Jackson, AC-114; and Jack Mitchell, AC-130.

Other exercises of our radiological defense teams are planned periodically.

#### **OKAY BOSS**

For months now we've been getting tips on how to be a Secretary (with a capital "S"), how to be a Better Secretary—and we've even been told the Secretary's "success secret" is nagging!

You didn't know this was happening? And in your own organization!!! Huh uh—the newspapers and magazines have been full of it. And National Secretaries Association has set up a program identified as CPS (certified professional secretary) which requires passing a 3-day examination we'd put in competition with the American Bar Association exam most any day. And from all of these we've gained some mighty valuable tips.

One thing is definite—you have to *act* like a Secretary, and *look* like a Secretary (with a capital "S"). You must mince around and look as if you know things you can't tell. And there's one little trick reserved for those times when you're called for dictation—pick up a few pencils and say, "These are quite blunt, I'll sharpen them." If they aren't blunt, pick them up by the points and break them off in the palm of your hand. This way they are blunt! This gives you a little time advantage, and also points out that you want to do a good job—which you can't do with blunt pencils.

Another day, empty an ashtray, or pick up the wadded paper that missed the wastebasket. If the boss never misses, plant your own wad of paper. Spread these activities out over a period of time—don't hurl yourself into a sudden surge of housekeeping. The boss may think you are a Nervous Type—and Secretaries (with a capital "S") can't afford nerves.

Now about this Nagging! ! ! You have to learn to nag painlessly. How? Well, you first learn to think the way the boss does—this is so you can anticipate moods and wishes and do things his way. (This usually takes years of special observation and a good supply of feminine intuition.) You have to learn when to press a point and when not to, because let's face it—men are sometimes balky. You can usually tell what kind of day it's going to be by the way they say good morning—by a lack of sparkle in the eye and flash in the smile. On days like these—lie low, give them lots of attention and consideration—but avoid flattery. Remember one very important point: As a Secretary (with a capital "S") you can't show your own moods or reveal irritability.

(And now, Boss, we've taken the Senior Secretarial Development Course, so you haven't a



chance but to do a good job!)

Don't misunderstand. We know there's a requirement for certain technical skills and know-how, too. Like typing and shorthand—and knowing how to spell. You may get a boss who doesn't know what he wants to say or how to say it. But most bosses would be hard to convince that what they sign as a finished letter and what they said when they were dictating are not the same!!! So this is where the Secretary can rescue the whole project.

Now if we didn't think the Bosses were pretty swell people, then we probably would have given up being secretaries long ago, and from the Senior Secretarial Development course we got seven rules that we should keep before us—whether we be “senior secretaries” or just starting out in this business.

1. Find out what the responsibilities and efforts of others in the organization are.
2. Get to know your office members personally.
3. Don't push always on a business sense. (Stop occasionally to socialize a few minutes).
4. Try to find the point of authority in the matter you are trying to coordinate.
5. Be reasonable in assessing the delays of other components that “never” occur in your own office.
6. Keep your bosses coordinated.
7. Be a good listener.

And remember—it takes the want-to, the know-how, and stick-to-it-iveness to be a Secretary with a capital “S”.

#### THIS IS YOUR EMPLOYEES' ASSOCIATION REPORTING . . .

How does the Employees' Association serve its members? Read this column each month . . . we will keep you informed of all entertainment, sports activities, clubs, and an unlimited number of benefits, made possible through the Association.

Bowling seems to be one of the most talked-about activities at the Center, probably because there are more Association members participating in bowling than anything else. . . . 144 bowlers meet each week. Bowling was also one of the first organizations to be sponsored by the Employees' Association, the first League dates back to 1949. And even with the small number of employees at the Center, at that time, the League bowled two years before disbanding. There must have been some of the bowling enthusiasts left in 1954 because at that time one of our present Leagues was formed. . . . an 8-Team League. As the Center has grown so has

the interest in bowling. . . . in 1958 a second 8-Team League was added. This year the winter bowling season started with three 8-Team Leagues.

League No. 1 (the Center's original League) now bowls at the 66 Bowl. League No. 2, representing the South section of Oklahoma City, bowls at the Capitol Hill Sports Center. The latest addition, League No. 3, bowls at Bowl-arena.



Standing left to right Philip M. Wilcox, Donald R. Miers, Charles R. Caywood. Seated Edward A. Schmidt and Kenneth E. Baker. Also on the team but not in the picture was Howard Crane

This sport goes all through the year. . . . there are both summer and winter Leagues. If you think there is not a lot of good, clean competitive fun in bowling you should drop in on any of the three Leagues sometime.

All trophies and other prizes connected with bowling are bought by the Employees' Association. Some of these trophies are on display in the lobby of Headquarters Building.

In October a team, made up of bowlers from each League, was sponsored in the Oklahoma City Bowling Tournament. All entry fees were paid by the Association. Thanks to this team for representing the Aeronautical Center.

A poll has already been made and the number of interested bowlers for next year doubles that of the present number. We predict that by the 1960 winter bowling season there will be an Aeronautical Center League bowling in just about every Section of Oklahoma City.



## SECRETARY REPORTS ON A TOUR OF THE STRUCTURAL SHOPS

Enjunneer Statser gettun tired of seeing squaw mouth fly open with vacant stare when him dictate letters about Flight Progress Boards, Torque Dynamometer, Magnetic Amplifier, Keyers, and Generators. Him takum on tour of Shops in electric car with bell ringum all time. Pullum cord for door to open and pullum cord for door to close. Fifteen acres in one wigwam pretty dawgone big!

Firsum stop at Production Supumvisor office but no find David Chappel with feet propum on desk, instead him out in shop with sleeve rollum up to learnum all about new Sheet Metal Fabricator. Costum lota money and punchum holes in sheet metal for workmen in shop. Fabricatum all kinds of equipment for air installations throughout world. Machine about sizum (refrigerator-stove-automatic washer altogeth-er.) Workers usum one sheet (Template) for pattern and machine punchum duplicate on clean sheet of metal, sometimes aluminum, sometimes steel. Green paint and lights makum fabricator lookum like oughta walk around real stiff like Frankenstein. Designum for heavy industrial use. Very accurate, yet not delicate. Watchum fingers to keep from smashum flat. Before machine arrivum, workmen have to punch small hole then file larger area by hand. Various sizes of punches are changed, according to directions furnished in decimal equivalent by enjunneers. Old time blacksmith hammer around all day and no punchum even one hole like machine punch in one second. Savum manhours.

Stopum place where copper wiring coilum around spool. All sizes from little finger to wash tub. Havum pot of stinkum compound for cleanum, washum process. Pottin' and depottin', it called, when motor sealed in oil havum to be cleaned and workmen can not repairum if fingers get all gummed up in the gooeey works.

Electro Mechanical Shop havum test cells (small room for testing before sendum out to field stations.) They talkum about running torque dynamometer, cathode-ray oscillograph, stator, rotor, frequency and such. Me no understand. Workmen makum large generator converter (with red war paint on) to be shippum to Ireland.

Seeum large vats for bathum metal. Heap big fan draw out paint fumes and water squirtum down side of wall in paint shop. Me understand that all kinds metal painted here. Office furniture come out lookum new again.

Seeum Identification Keyer which helpum pilot get bearings when him don't know whether coming or going. Also lookum over transcribed weather broadcast system. Weather information is pre-taped and set in electronic machine. Pilof tunum in at any hour day or night for latest weather.

Tour takum only one squawhour. Edjuncational over-all picture of the way material is receivum, processum, storum, controllum, fabricatum, modifium, packagum, and shippum out in heap big quantities to many nations. Me gettum idea that FAA play very important part in destiny of world-wide air navumgation.

## FLIGHT SERVICE SPECIALIST COURSE

The Air Traffic Control School will enter into a new type of training program in July. Some 420 journeymen Flight Service Specialists (formerly known as Communicators) will participate in a training program which will provide them with a better understanding of Pilot Briefing, Aviation Weather Service and Flight Assistance Service.

These people will return to their headquarters facilities to train and update the personnel at these facilities. Included in this training will be a thorough indoctrination into the VFR Flight Following Service soon to be put into effect by the FAA, thus enlarging the important duties of these people manning our Flight Service Stations across the country.

Transfer of the Administrative Services Division Office from Room 120, Headquarters Building, to Room 338 was accomplished in April. Paul H. Shively, Acting Division Chief, and Secretary, Virginia Holcomb, were accompanied in their move by the transfer of the Special Services Branch, including Forms and Records Management and Plant Security. That portion of the Property Management Branch whose functions will remain part of the Office of the Director now occupy Room 324. With the exception of the Office of Division Chief which now is 376, telephone extensions remain the same.





#### SCHOOL DAYS FOR 'GIRL-FRIDAYS'

Twenty-seven Aeronautical Center secretaries participated in the training course, Senior Secretarial Development, given here March 28-April 1, and April 4-8.

Senior Secretarial Development is a new course designed for FAA's experienced secretaries to enable them to reappraise their secretarial techniques and seek ways to improve them. Specific goals of the course are:

- (1) To increase awareness of the importance of the Secretary's role in FAA and to aviation in general.
- (2) To improve understanding of communications and to improve communication skills.
- (3) To increase skills in relationships with others.

The class is conducted informally, using case study, group discussion and film interpretation methods, and covering such topics as working with people, communicating, training, and orientation.

Senior Secretarial Development has been given in Washington to all secretaries of Bureau and Office Chiefs and is currently being given for the Division Chief's secretaries. This is the first time the course has been presented in the Field. The secretaries who took the course are shown in the two photographs. Miss Elaine Strawser, PT-38, who conducted the course, is shown in both photographs.

Standing, left to right, Edna Clabby, Frances Chase, Ann Wade, Marie Davis, Johnafee Peak, June Grayson and Patti Chapman. Seated, June Donceel, Wanda Shipley, Margaret Russell, Elaine Strawser, Helen Tully and Virginia Holcomb



Back row, left to right, Rae Fisico, Darlene Steele, Irene Cowden and Peggy Bennett. Middle row, Lois Brasher, Eva Leach, Maurine Peaden and Martha Brill. Front row, Lee Kelly, Helen Hefner, Willedra Beard, Elaine Strawser (Washington) and Doris Nichols



Communications Section. Standing, left to right Myron Magathan, Bill Motley, Howard Ridgway, Sam Gover, William Darvin, Roy Lansdowne. Kneeling, Andy Cole, George Ruffin, Budy Yarnell and Herman Moore.

UHF and Inspection Sections, standing Bernard Waddell, Louis Foree, Douglas Michaels, Albert Parker, Ray Parish, Ed Wilson. Kneeling, Osman Beaudoin, Herman Sturgell, Curtis Merley, Bentley Hedges and Joe Nagnquet



Test Equipment Section. Standing, left to right, Joe Mugg, Wes Chesnut, Glenn Little, Truman Frisby (office staff). Kneeling, George Woody, Jim Hall, Jim Wear and Leroy Powell





Instrument, Crystal and Office Staff. Standing, left to right, Bill Rogers, Larry Wynns, Mary Ann Johnson, Joan Leonardt, William Alcorn, Truman Frisby. Kneeling, Gordon Nall, Carl Chastain, M. O. Saunders, and Warren Osborne

Transmitter Section, standing, left to right, Bill Jones, Buddy Crase, Don Eagle, Mitchell Tucker, Junior Helton. Kneeling, Alfred Ray, Sidney Blailock and Ellison White



## 'SEND IT TO FMD'

by  
Wesley L. Chesnut

In Alaska, a transmitter stops working properly. "Send it to FMD," the Chief says.

In California, coffee (with sugar) is accidentally spilled into a transmitter control panel. Again the words come, "Send it to FMD."

In Puerto Rico, a communications receiver burns out a transformer. "Send it to FMD."

And, to those electronic technicians all over the world, FMD is the Facilities Materials Division's Electronic Modernization and Repair Shop located here at the Aeronautical Center. And the shop (AC-756.60) is a part of the Facilities Materials Depot in Washington, D.C.

If the FMD shop had a motto it would probably be, "If We Can't Fix It—It's Junk!" But the shop doesn't have a motto, just a job,

and the modernized equipment they return to the field is often in better condition than new equipment.

As an organization, the shop is under William Alcorn's supervision. It is then subdivided into a number of smaller sections.

Transmitter Section under Ellison White, Test Equipment Section under Jim Hall, Communication Section under Myron Magathan, U.H.F. Section under Douglas Michaels, Inspection Section under Louis Foree, Instrument Section under Warren Osborne, and Crystal Section under M. O. Saunders.

Next Month will begin a series of articles on these FMD shop Section Leaders.





At the Oklahoma City YMCA Mrs. Rosalie Melton of Personnel receives instruction in SCUBA Diving from Instructor "Chick" Mason, Center Film Librarian

#### CENTER SCUBA DIVERS

The sport of Skin and SCUBA Diving has taken the interest of many Aeronautical Center Employees.

About seven years ago SCUBA diving was introduced to Oklahomans. Almost everywhere in the state—where there are lakes—Skin and Scuba Diving is the rage. The one thing to remember is this . . . diving is a safe sport as long as you know what you're doing. Owning diving equipment doesn't make you an expert-diver. And remember—Skin Diving is governed by natural laws. SCUBA Diving depends on mechanical help.

The lungs hold approximately 10 pints of air at full inspiration and there is a residual amount of air, three pints, after full expiration. When you dive without the aid of a breathing apparatus the gases in the body's air cavities (lungs, sinuses, inner ear) are compressed. When it is compressed below the residual point a vacuum is formed. Nature takes steps to fill that vacuum with something. The area surrounding the air cavities sometimes break, filling the cavities with blood. Remember, the pressure at the surface is 14.7 per square inch; at 33 feet below the surface the total pressure is 29.4 per square inch.

Skin diving is a safe sport; know your limitations.

SCUBA Diving is a different story. The air you breath is maintained at a constant pressure. If you hold your breath, for instance, while under water and using apparatus, you over-priorize as you ascend. This permits air bubbles to enter the blood stream, causing embolism—blockage of the flow of blood to the brain. These hazards of skin or SCUBA diving make it mandatory to get instructions from a qualified SCUBA instructor.

The Aeronautical Center has such an instructor. Lewis A. "Chick" Mason, Center Film Librarian, is President of the Bluegill Diving Club, Inc., of Oklahoma City. This club has received national recognition; has been mentioned in national publications and on television. It also is a part of the Civil Defense Disaster Rescue Service. The club sponsors spearfishing derbies each year at Lake Tenkiller.

In the last eighteen months, "Chick" has taught 245 people the safe way to dive. Currently he is introducing Rosalie Melton to the sport of SCUBA Diving. Other Center employees taught by "Chick" include: G. A. "Pete" Simms, Sylvester Reinke and Reinke's son, Pat.

It was recently brought to our attention that a few of our co-workers have children that fall into the "gifted student" class. Karen Slack, daughter of Cliff Slack, Planning Supervisor, AC-520 and Michael Smith, son of Warren W. Smith, Chief, Flight Operations and Airworthiness Division, were among 29 students selected from the entire Oklahoma City area high schools, to participate in the Joe Berg Foundation's Science Seminar. This is a program that is being established to provide extra-curricular training for selected gifted students. This educational program will offer students of exceptionally high ability, instruction in scientific concepts, methods and applications. Instructions will be much more advanced, rigorous and individualized than any which could be offered under the regular school curriculum.

Mr. Charles W. Mueller, Chief, Air Navigation Facilities Branch, and several of his staff will serve as a segment of the industrial advisors for the group. The different segments of advisors fill lead discussions and experiments in phases of electronics, chemistry, geology, mathematics, physics, medicine and allied subjects.

We know that Cliff and Warren are mighty proud of this achievement and we extend our heartiest congratulations to these two outstanding students. We wish you the best of luck and much success in your Seminar program.





Dispatcher Bill McGowen prepares to alert a Fork Lift Operator in FMD warehouse



FMD Warehouseman Robert Grigsby and Lift Operator Willis Williams receive instructions from Dispatcher

#### A WAREHOUSEMAN'S HELPER

Have you visited the warehouse located just south of the Administration Building here at the Aeronautical Center? It contains some fifteen acres of floor space—just about enough for a fair size Texas garden. The building is jointly occupied by FMD and OMD. Many interesting things are stored there. During a short tour, one might see galvanized milk buckets, step ladders, snake bite kits, aircraft engine jugs, snow shoes and dictaphone belts in OMD. In FMD there are transmitters, teletype equipment, receivers, buckhorn antennas, ramhorn antennas, banjo detectors, "teepee" antenna shelters and strippers—wire type. There are rows, columns and bins of such items.

FMD has a labyrinth formed by tiers of equipment. This equipment is stacked by employees with Fork Lifts. In a busy day a Lift Operator may fill several outgoing requisitions by moving the necessary equipment to a staging area, move old stock to make way for new equipment, then move in the new equipment. In so doing, he may have worked in some fifteen or twenty different areas. During the day, there might be several occasions when it is necessary to move some equipment to or from the Electronics Shop. The problem then is to locate a given Fork Lift with a minimum of effort in this maze of equipment. The problem was overcome by the installation of a Transmitter-Receiver Set on a Dispatch Desk and a similar unit on four lifts, one tug and two electric cars. A Lift Operator may now be alerted immediately for a hot project or he may relate pertinent information back to the Dispatcher.

Mr. Billy Vawter, Chief Warehouseman in the FMD Electronics Branch Operations Section points out that the new system makes for a much more efficient operation. It permits the employees to spend more time performing warehouse duties and less time acting as couriers.

The next time you are in the FMD warehouse and hear a crackling voice coming from a speaker on a vehicle, you need not fear that you have stepped onto a television stage set—you are in the vicinity of some busy men helping perform the mission of FAA.

# **A WELCOME HOLLIDAY HAS COME TO THE SPECIAL SERVICES BRANCH**

A Welcome Holliday has come to the Special Services Branch!

The mail room landed a bass and a fox.

Welcome Holliday is really the name of Branch Chief Loren C. Helm's new secretary. And Mr. Bass and Mr. Fox work side by side in the mail room. These are some of the 18 new employees who have recently joined the Special Services Branch.

There is some very involved reasoning (?) about how Mrs. Holliday acquired the nickname, "Thirsty" when she took over her new duties having to do with the Indian name for holiday being "Nowata."

Oh, well, here are brief sketches of the newcomers, supplementing those carried in previous issues of The Beacon several months ago to help you get acquainted with Special Services personnel.

Welcome Holliday, clerk-stenographer, Special Services Branch, came to the Center in February, 1960. She was previously at Scott AFB, Illinois, with Hq. Air Training Command, and then with Hq. Military Air Transport Service. She lives in Oklahoma City with her husband, Gerald, and a daughter, Cynthia.

Betty J. Mitchell, Forms and Records Management clerk-typist, transferred to the Center in March, 1960 from Tinker AFB where she had 3½ years service. Prior to that she had 3 years service with Dept. of the Army, Hq. Oklahoma Military District. Betty lives at Blanchard with her husband and 2 boys.

Violet Hill, secretary, Plant Security, transferred to the Center in November, 1959 from Tinker AFB. She was previously with Anadarko Area Office of the Indian Service from 1950 to March 1959. Violet lives in Norman with her husband, Buford. They have two sons, a daughter and a grandson.

Nettie M. (Jeanne) Coxsey, telephone operator, came to the Center in December, 1959. She began government service in February 1953 with NATTC, Norman, then transferred to Dept. of the Army, Hq. Oklahoma Military District, and U.S. Army Recruiting Main Station. She lives in Oklahoma City with her husband, Abner, and two children, Robert, 18 and Vicki, 10.

Lois Redpath, telephone operator, came to the Center in November, 1959. She had 1½ years government service with the Navy at Corpus Christi, Texas, and 6 years with South-

western Bell Telephone at Muskogee and Norman. Lois lives in Norman with her husband, Ed, and three children, Charles, Cynthia, and Melinda.

Vera Burand, teletypist, came to the Center in December, 1959. She has approximately 8 years experience as teletypist, previously working at Brookley AFB and Tinker AFB. She lives with her husband, Dale, and two children, Barbara, 2, and Don, 10.

Ed Pritchett, teletypist trainee, came to the Center in November, 1959. His previous government service was as mail carrier. Other work includes Public Relations for Encyclopedia Americana and Chevrolet in Van Nuys, Calif. Ed lives in Oklahoma City with his wife, Deborah, and daughter, 5 months.

Jack L. Bass, mail clerk, began work at the Center in January, 1960. He is married and has four children. He has eleven years former service with the Oklahoma City Post Office.

Gene Fox, mail clerk, began work at the Center in March, 1960. He and his wife Evelyn have three children, Tommy, Joe and Patti. He has four years former service with the Post Office in Norman.

James A. Gardner, mail clerk at the Examination and Records division, began work at the Center in February, 1960. Prior Government service was with the Norman Naval Base, Tinker Air Force Base and a short period of service with the Navy as a Radar Operator.

Walter Keith Bussing, mail clerk, began work at the Center in March, 1960. He has three years former Government service at Tinker Air Force Base. He is single and lives in Oklahoma City.

Berry B. Witt, offset press operator, came to the Center in December, 1959 from Arnett where he was employed by the Ellis County Capitol, a weekly newspaper and job shop.

Claude Ernest Brashears, offset press operator, came to the Center in December, 1959. He was formerly employed at Winfred Printing Co., Oklahoma City.

J. E. Bishop, offset press operator, transferred to the Center in March, 1960 from Tinker AFB where he had been employed for 6 years. He is married, has 2 children and lives in Oklahoma City.

Clarence Finchum, Diazo machine operator, came to the Center in March, 1960. He was previously employed by the American First Title & Trust Company. He is married and lives in Oklahoma City.





HOLLIDAY, AC-195



MITCHELL, AC-195



HILL, AC-195



COXSEY, AC-196



REDPATH, AC-196



BURAND, AC-196



PRITCHETT, AC-196



BASS, AC-196



FOX, AC-196



GARDNER, AC-196



BUSSING, AC-196



WITT, AC-197



BRASHEARS, AC-197



BISHOP, AC-197



LEWIS, AC-197



FINCHUM, AC-197



MYERS, AC-198



PAULK, AC-199

Noah Lewis, Zerox Camera operator, came to the Center in December, 1959. He is married, has one child, and lives in Oklahoma City.

George F. Myers, photographer, came to the Center in February, 1960. He and his wife, Dorothy Jean, live in Oklahoma City with their two daughters, Cynthia Ann, 10, and Georgene Elise, 3. George's previous government experience was as mail clerk at the Oklahoma City postoffice. He formerly operated his own photo

business for 3 years in Oklahoma City.

Edward D. Paulk began working in the Office Services Section in March, 1960. He and his wife, Gladys have lived in Oklahoma City for the past 15 years and they have one son, Deral, Jr., 4 years old. Paulk previously worked at Tinker AFB for 8 years and also for Douglas Aircraft at Tulsa and Boeing in Wichita, Kansas.

### TRAINING CORNER

Quite often we receive tips that are worthwhile and should be passed on. A recent one concerns "telephone talking. The Southwestern Bell Telephone Company has prepared a pamphlet titled "How to Make Friends by Telephone." The tips they include have been made into a test by our neighbors in Region 3 and we think you might like to see where you stand on this business of using your telephone properly. No fair cheating.

*What's your telephone score.*

Place a check ( ) in the appropriate column. For "Yes"—5 points; "Sometimes"—2 points; "No"—No score.

Yes Sometimes No

1. Answer promptly.
2. Greet the caller pleasantly.
3. Identify yourself properly.
4. Explain waits.
5. Leave word where you are going.
6. Ask questions tactfully.
7. Take the message.
8. Signal the operator slowly.
9. Know the number.
10. Allow time to answer.
11. Ask if convenient to talk.
12. Speak in natural tone.
13. Visualize the person.
14. Say "thank you" and "you're welcome."
15. Listen attentively.
16. Use the other person's name.
17. Speak directly into transmitter.
18. Apologize for mistakes.
19. End the call promptly.
20. Replace receiver gently.

No matter what your score, I hope you'll agree that these points are well taken and hang on to them—you never know when the phone rings just who is on the other end of the line.

Russ Myers



so you  
think you'd  
prefer the  
GOOD  
OLD DAYS

Consider the following office rules, posted in this country in 1872.

1. Office employees will daily sweep the floors, dust the furniture, shelves and showcases.
2. Each clerk will bring in a bucket of water and a scuttle of coal for the day's business.
3. Clerks will each day fill lamps, clean chimneys, trim wicks. Wash the windows once a week.
4. Make your pens carefully. You may whittle nibs to your individual taste.
5. This office will open at 7 a.m. and close at 8 p.m. daily, except on the Sabbath, on which day it will remain closed.
6. Men employees will be given an evening off each week for courting purposes, or two evenings a week if they go regularly to church.
7. Any employee who smokes Spanish cigars, uses liquor in any form, gets shaved at a barber shop, or frequents pool or public halls, will give me good reason to suspect his worth, intentions, integrity, and honesty.
8. The employee who has performed his labors faithfully and without fault for a period of five years in my service and who has been thrifty and attentive to his religious duties, is looked upon by his fellowmen as a substantial and law abiding citizen, will be given an increase of five cents per day in his pay, providing a just return in profits from the business permits it.



#### PUBLIC SERVICE AWARDS GRANTED

William Crosby, Frank Krosley, Milton Saunders and Ellison White have received spontaneous Public Service Awards from the American Radio Relay League. These members of the Facilities Materiel Division donated their services and Radio Amateur equipment to assist the Oklahoma Weather Bureau in a time of emergency.

Last September exceedingly heavy rainfall in the Oklahoma City area disrupted telephone and telegraph service at Will Rogers Field. Ellison White used his mobile rig to transmit pertinent weather data from the Weather Bureau Station at Will Rogers to Milton Saunders' home station. Mr. Saunders "phone patched" the information into Kansas City and other surrounding cities and relayed weather information back through Mr. White. Thus the Oklahoma Weather Bureau was able to keep in contact with surrounding areas and perform their vital functions.

This emergency service was maintained for about fourteen hours while the disabled communication lines were repaired. Mr. Saunders and Mr. White were relieved during this period of intense traffic handling by Mr. Crosby and Mr. Krosley.

The award was announced in the March, 1960, issue of QST Magazine on page 95.

#### RADIO STATION W5PAA GETS PUBLIC SERVICE CERTIFICATE

Every since its installation in 1948, students at the Aeronautical Center have been using station W5PAA for keeping in touch with their homes. Now the situation has taken on a new twist; W5PAA is on the receiving end. As attested by a handsome certificate from the Sandrestromfjord, Greenland, Amateur Radio Club, W5PAA has been used by United States military personnel stationed there as the American end of a radio circuit for enabling the servicemen to keep in touch with their families.

Its primary purpose is not being neglected, however. Every noon a group of students may be found in the "Radio Shack" in the H & I building. A glance at the log shows a generous amount of use during evenings and over weekends, too.

W5PAA is owned by the Aeronautical Center Amateur Radio Club, Inc., one of the several organizations organized under the sponsorship of the FAA Employees Association. Membership in the Club is available to any FAA employee or member of an employee's family. Further information on the Club may be secured from its President, Ray K. Bryan, Ext. 374.



The Aeronautical Center Amateur Radio Club held its April Family Night get-together in the American Legion Hut at 50th and MacArthur on the first day of the month.

Among the guests present was Ewing Canady, an Amateur Radio Operator of long-standing. Ewing is a former news broadcaster and now works in the Extension division at Oklahoma State University.

With Ewing Canady in the picture, left to right, vice president of the Center Club, Kermit Kruger, President Ray K. Bryan, Canady, and Carl Drumeller, secretary-treasurer of the Center Radio Club.

#### SMOKE SIGNAL!

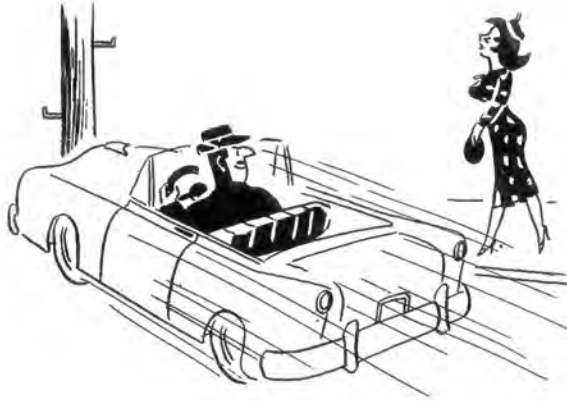
Aeromaids invitum all Squaws, Chiefs, Princesses, and Braves to heap, big dinner-style show at Branding Iron Supper Club, May 19.

Hostesses promisum latest styles will be modeled. (Chiefs may get glimpse of black lace, boudoir garments unless Squaw coverum eyes with blinders.)

All Club facilities will be open before and after if tribe wish to celumbrate occasion.

Turnum in resumvation soon to Jane Fanning, ext. 348, or Shirley Pfrehm, ext. 331.





## CHORAL AIRES OFFICERS

The FAA Aeronautical Center Singing group is making plans for a bigger and better choir next year, and numerous public appearances under direction of Edwin Karhu, Minister of Music at the Oklahoma City First Methodist Church, who is training them in a novelty of numbers for future performances.

The Choral Aires and families will gather for a picnic May 23. Membership is open to Center employees, and officers welcome your inquiries if interested. They emphasize you do not need to be an accomplished vocalist to participate in these activities.



-8-



Roy Speakes, President; Shirley Pfrehm, Vice Pres.; Jane Fanning, Sec.-Treas., and Troy Campbell, Librarian



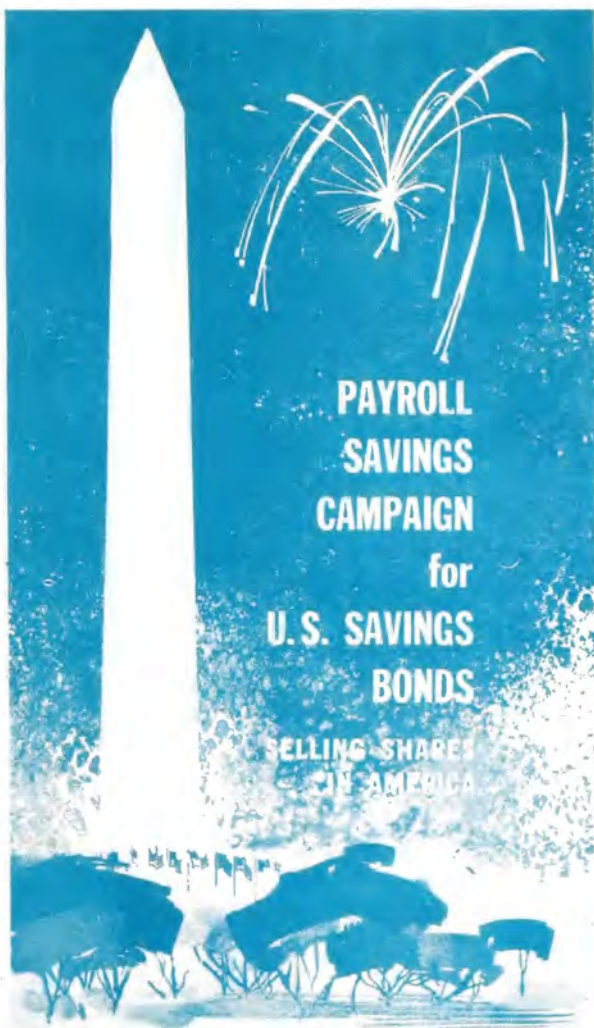
The man with the braids is the Aeronautical Center's 25th-hundredth employee. An Otoe Indian, born on the Red Rock Oklahoma Reservation before statehood, Corbett White reported for work at the Aeronautical Center March 2, 1960. White is a chief in the Otoe tribe. There are some 15-hundred in the Oklahoma-Kansas area.

Otoes, for the most part, stay on the reservation. Corbett wants them to get out and take jobs in this "white man's world."

The 66-year old Indian worked at Vance Air Force Base in Enid before reporting to the Aeronautical Center.

White, being shown an FAA jet by one of the pilots, says the Indian must get out and work with the white man in this jet age or live forever in the past.





# VOLUNTEER CANVASSER'S GUIDE

The above is a reminder that United States Savings Bonds are available for your future savings. The month of May has been designated as Savings Bond Drive Month at the FAA Aeronautical Center. When asked to take part in the Bond Drive---do so. Let's make it 100 percent this year!!

## YOUR IMPORTANT ASSIGNMENT

Millions of Americans since 1941 have been buying U. S. Savings Bonds regularly because a volunteer like yourself asked each one to join the Payroll Savings Plan.

They joined because they *wanted* to save (most of us do) and this way it's easy, safe and sure. But it took someone like you, *asking them personally to sign up*, to get them started.

That's why we have these campaigns: to take the IF out of THRIFT by making the saving *automatic*.

### FOR EXAMPLE: SAVE EACH WEEK

	And You Will Have		
	In 3 Years	In 5 Years	In 7 years 9 months
\$ 3.75	\$ 607	\$1,055	\$1,728
\$ 5.00	810	1,408	2,304
\$ 6.25	1,013	1,759	2,882
\$ 7.50	1,215	2,112	3,458
\$12.50	2,026	3,520	5,766
\$18.75	3,040	5,282	8,651

Bond savings, tens of billions of dollars worth, have already been used by millions of Americans to help finance a new home, modernize an old one, provide better equipment for living and making a living, to educate youngsters for a more useful and gainful life, provide more security and pleasure when working years are over, and meanwhile to have an ample reserve for emergencies.

Beyond this, bond savings are dollars you lend to your Government and get back with interest. And *there's more to be saved than money these days*. Life, liberty and the pursuit of happiness in our American way all depend on how well we meet the challenges of today's world. We all know that.

When you buy and hold Savings Bonds and sign up others to buy them, you are helping in a patriotic way to keep our country strong and free, keep it growing and prospering, keep Americans working and earning and enjoying life. For, just as the mighty monument on the front cover rests on solid rock, so does the American way of life rest upon a foundation of the people's savings.

What more important job could you do?

## GERMAN-ENGLISH GLOSSARY OF MISSILE TERMS

Guided Missile	- Das skientifiker gezchutenwerkes firenkrakker
Rocket Engine	- Firenschpitter mit schmoken und schnorten
Liquid Rocket	- Das skwirten juchenkind firenschpitter
Solid Rocket	- Das Schtick kindlikercigaretten firenschpitter
Guidance System	- Das schteerenwerke
Celestial Guidance	- Das schruballische schtargazen peepenglasser mit komputenrattracten schteerenwerke
Pre-set Guidance	- Das senden offen mit ein pattenbacker und finger gekrossen schteerenwerke
Computing System	- Das schmardtallwerke mit schruballische elektronikrattracten und alles gekinden tubenkrap
Control System	- Das pullen-und-schoven werke
Warhead	- Das laudenboomer
Nuclear Warhead	- Das eargeschplitten laudenboomer
Hydrogen Device	- Das eargeschplitten laudenboomer mit ein grosse hollengraund und alles kaput
Sectionalization	- Machtanze mit der pullenoudt und schovento-gedder mit ein grosse schpeede
Reliability	- Machtanze sodat alles mekanische parten nicht ben schtoppen und gepfleinspardten
Air to Surface	- Fromische uppenschautes geschuten daunondekker bullzei

### Departments:

Management	- Das ulzurenbalden grupe
Project Engineer	- Das schwettenoudter
Drafting	- Das raundsolders und reddischeiz grupe
Electronics	- Das tubenkrap grupe
Wind tunnel	- Das huffenpuffen grupe
Production	- Das schoppen bunche
Contract Administration	- Das tabelgepaunden grupe
Preliminary Design	- Das uppen-das-klauden grupe
Support Equipment	- Das garterbelten grupe





## MAY 1960

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
<b>1</b> 122	<b>2</b> 123	<b>3</b> 124	<b>4</b> 125	<b>5</b> 126	<b>6</b> 127	<b>7</b> 128
<b>8</b> 129	<b>9</b> 130	<b>10</b> 131	<b>11</b> 132	<b>12</b> 133	<b>13</b> 134	<b>14</b> 135
<b>15</b> 136	<b>16</b> 137	<b>17</b> 138	<b>18</b> 139	<b>19</b> 140	<b>20</b> 141	<b>21</b> 142
<b>22</b> 143	<b>23</b> 144	<b>24</b> 145	<b>25</b> 146	<b>26</b> 147	<b>27</b> 148	<b>28</b> 149
<b>29</b> 150	<b>30</b> 151	<b>31</b> 152				





# MARCH GRADUATES IN DIRECTED STUDY COURSE 1

NAME	REG	STATION	NAME	REG	STATION
Bunn, William E.	AC	Okla. City, Okla.	Michaels, George	AC	Okla. City, Okla.
Goodgame, Edgar P.	2	Birmingham, Ala.	Painter, Joe R.	AC	Okla. City, Okla.
Klison, Lewis E.	AC	Okla. City, Okla.	Young, Donald C.	AC	Okla. City, Okla.
Matthews, Eliot V.	WB	Boston, Mass.			

# MARCH GRADUATES IN DIRECTED STUDY COURSE 2

Harris, Bill V.	AC	King Salmon, Alaska	King, Charles E., Jr.	2	Charlotte, N. C.
Jackson, James H.	2	Huntsville, Ala.	Koen, Clarence A.	2	Waco, Texas

# MARCH GRADUATES IN DIRECTED STUDY COURSE 90

NAME	REG	STATION	NAME	REG	STATION
Adams, Raymond V.	2	Tulsa, Okla.	Mann, Worden	5	Anchorage, Alaska
Ballard, J. F.	Spec	Gustavus, Alaska	Marshall, Thomas W.	1	Pittsburg, Pa.
Barto, James	AC	Okla. City, Okla.	Maslak, Peter	1	Astoria, L.I. N.Y.
Beighley, Warren L.	3	Rochester, Minn.	Maxwell, Ray	AC	Okla. City, Okla.
Ball, James D.	2	Pt. Worth, Texas	McDonald, James V.	1	Vandalia, Ohio
Bower, Robert H.	3	North Platte, Nebr.	Millem, George F.	3	Wichita, Kans.
Brooks, Terry J.	2	Lafayette, La.	Miller, Leroy C.	AC	Okla. City, Okla.
Caruso, Joseph L.	1	Brooklyn, N.Y.	Miller, Marvin H.	2	Dalhart, Texas
Chambers, Donald W.	4	Seattle, Wash.	Mohon, Billy G.	2	Mobile, Alabama
Collins, Wm. R.	2	Valdosta, Ga.	Moore, Herman W.	AC	Okla. City, Okla.
Conway, Ewell E.	3	Deslago, Mo.	Murphy, Allen G.	4	Hayward, Calif.
Cordle, Jack L.	3	Olathe, Kansas	Oleza, Charles	1	Beaver, Pa.
Crooks, Robt. E.	1	Pittsburg, Pa.	Otte, Robt. R.	AC	Midwest City, Okla.
Debele, Walter P.	4	Anaheim, Calif.	Paladin, James	1	Buffalo, N.Y.
DeMarco, Thomas	1	Astoria, L.I. N.Y.	Parlati, Paul	1	Astoria, N.Y.
Diller, Robert L.	4	San Leandro, Calif.	Parsons, Sankey E.	1	Erlanger, Kentucky
Dunn, Jas. Legan, Jr.	2	San Antonio, Tex.	Patterson, Jas. T.	2	Memphis, Tenn.
Emmerick, Floyd B.	1	Bradford, Pa.	Payne, Robt. T.	4	Seattle, Wash.
Fabryka, John L.	1	Wilmington, Del.	Pearson, Edgar	AC	Honolulu, Hawaii
Figures, Theo	AC	Okla. City, Okla.	Prewitt, Wm D.	2	Midwest City, Okla.
Fike, Wm. S.	1	Fairborn, Ohio	Porch, N.K. (Mrs.)	Spec	Okla. City, Okla.
Frye, Willard A.	3	Dearborn, Mich.	Reinhardt, John W.	2	Myrtle Beach, S.C.
Fuller, Howard C.	1	Dorchester, Mass.	Richmond, Jas. E.	2	Balboa, C. Z.
Gibbs, Dennis H.	1	Lynchburg, Va.	Rowden, Theodore	AC	Edmond, Okla.
Givry, Gerard J.	3	Hill City, Kans.	Sanford, Raymond P.	3	Taylor, Mich.
Glast, Oscar R.	4	Great Falls, Mont.	Sanzangella, A. J.	1	Norfolk, Va.
Gray, Vero H.	4	Courtland, Va.	Schuerger, Albert L.	3	Wayne, Mich.
Gregory, Danny	AC	Crescent, Okla.	Sharp, Thomas J.	2	Miami, Florida
Haase, Thomas E.	2	Okla. City, Okla.	Shrouf, Eugene F.	4	Albuquerque, N.M.
Harn, James H.	2	Savannah, Ga.	Siregar, Soleiman	OIG	Eden, Indonesia
Hassfield, Gerald F.	2	Waco, Texas	Stanley, Harvey Baxter	2	Tyler, Texas
Hendricks, William	4	Daggett, Calif.	Strobridge, Raymond K.	AC	Okla. City, Okla.
Hesterwerth, Burdette	4	Oceanside, Calif.	Sweat, Irvin T.	4	Great Falls, Mont.
Holtzclaw, A. E.	2	College Park, Ga.	Teall, Robt. A.	3	North Platte, Nebr.
Hones, Pedro	OIG	Okla. City, Okla.	Thompson, Keith R.	4	Salt Lake City, Utah
Johnson, Browder L. Jr.	2	Okla. City, Okla.	Threagill, F. E.	AC	Okla. City, Okla.
Kachela, Walter K.	4	San Diego, Calif.	Towsey, Frank D.	AC	Okla. City, Okla.
King, Urcel A.	2	Pt. Worth, Texas	Townsend, R. L.	2	Pearland, Texas
Kirschmer, D. J.	4	Lakewood, Calif.	Travis, Kenneth E.	3	Wichita, Kans.
Kovovik, George L.	4	San Jose, Calif.	Turner, Chas. G.	1	Wesleyville, Pa.
Kuyath, Duane C.	4	St. Johns, Ariz.	Warren, James E.	4	Pendleton, Ore.
Kvasnok, George	1	Cleveland, Ohio	Weber, Kenneth	1	Coraopolis, Pa.
Langhear, Chas. A.	1	Waterloo, N.Y.	Western, James R.	4	Phoenix, Ariz.
Leabo, Loei F.	4	San Francisco, Cal.	Witherspoon, Gene A.	2	Ahlens, Texas
Lesenden, Andrew	4	Laramie, Wyo.	Williams, Howard W.	2	Atlanta, Ga.
Lockwood, Clyde F.	3	North Platte, Neb.	Williamson, Jack C.	1	Rochester, N.Y.
Longway, Donald C.	GSD	Okla. City, Okla.	Young, Donald C.	AC	Okla. City, Okla.
Mancini, Frank	1	Jamaica, L.I. N.Y.	Zverich, Rudolph H.	4	Great Falls, Mont.

# MARCH GRADUATES IN DIRECTED STUDY COURSE 100

NAME	REG	STATION	NAME	REG	STATION
Ball, Edward J.	4	Phoenix, Ariz.	Murillo, Anthony D.	4	Daggett, Calif.
Boat, Ellis R.	2	Montgomery, Ala.	Nichols, Adrian E.	4	Great Falls, Mont.
Butler, John P.	2	Florence, S. C.	Pemberton, Jack J.	AC	Bethany, Okla.
Cochran, Virgil E.	2	Houston, Texas	Peters, Wm. C., Jr.	1	Pittsburg, Pa.
Craig, Ralph C.	1	Jefferson, Ohio	Phillips, Richard	1	Vandalia, Ohio
Crounlich, Robt. M.	3	Goshen, Ind.	Schwarz, Carl R.	4	Los Angeles, Calif.
Daigle, Walter	4	Medford, Ore.	Stanley, Chas. K.	AC	Okla. City, Okla.
Dean, Blair	2	Miami, Florida	Sylvia, Antone F.	1	Nantucket, Mass.
Fong, Richard W.	4	Oakland, Calif.	Thorn, R. D.	AC	Okla. City, Okla.
Freeman, Merle D.	AC	Okla. City, Okla.	Turman, Alfred G.	4	Albuquerque, N.M.
Harvey, Dudley	4	Battle Mt. Nev.	Walker, L. F., Jr.	AC	Okla. City, Okla.
Kearns, Wm. B.	4	Battle Mt. Nev.	Walp, Richard A.	1	Phillipsburg, Pa.
Keller, Arnold M.	2	Lake Charles, La.	Wilson, Keith E.	4	Aurora, Colo.
McNeill, James H.	AC	Okla. City, Okla.			

# MARCH GRADUATES IN DIRECTED STUDY COURSE 401

Emis, Russell	1	Coventry, R.I.	Pasemore, C. H.	2	Decatur, Ga.
Frakes, Richard F.	WO	Fairfax, Va.	Peterson, Ramon W.	3	Battle Creek, Mich.
Longman, Chester L.	AC	Okla. City, Okla.	Scrivner, Loren E.	3	Omaha, Nebr.
Mandler, Emanuel S.	1	Brooklyn, N.Y.	Sunden, Walter G.	1	Berea, Ohio
Mason, L. D.	4	Seattle, Wash.	Tocci, Dominic P.	NY	Jamaica, L.I. N.Y.
Myers, C. H.	1	Syracuse, N.Y.	Wilkinson, D. E.	2	Atlanta, Ga.

# MARCH GRADUATES IN DIRECTED STUDY COURSE 441

Chapman, Clifford	AC	Okla. City, Okla.	Pattabiraman, J.	OIG	Jamaica, L.I. N.Y.
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# MARCH GRADUATES IN DIRECTED STUDY COURSE 901

Garrison, Walter H.	4	Oakland, Calif.	Owen, Joseph H.	2	Jacksonville, Fla.
Johnson, Charles T.	4	Pacific, Calif.			

# MARCH GRADUATES IN DIRECTED STUDY COURSES IN 200 SERIES

NAME	REG	STATION	NAME	REG	STATION
DS-201					
Daniel, Henry M.	2	Anderson, S. C.	Moore, B. G.	2	Pensacola, Fla.
Holt, Richard W.	3	N. Platte, Neb.	Parvi, Martin W.	4	Great Falls, Mont.
McNulty, Chas. F.	4	Albuquerque, N.M.	Snoddy, James E.	2	Terminal, Texas

# DS-202

Barnum, Robert E.	4	Medford, Ore.	Mihalopoulos, A.	OIG	Greece
Cushman, Howard J.	4	Red Bluff, Calif.	Patrick, Howard R.	4	Spokane, Wash.
Gotay, Jose M.	2	San Juan, P. R.	Prater, Ernest L.	AC	Del City, Okla.
Kling, Richard W.	3	Chicago, Ill.	Walker, Leander F.	AC	Okla. City, Okla.

# DS-203

Cox, Luther W.	GSD	Ft. Worth, Tex.	Mihalopoulos, A.	OIG	Greece
Daniel, Henry M.	2	Anderson, S. C.	Price, Stanley P. E.	5	Anchorage, Alaska
Gerrits, James	3	Madison, Wisc.	Tonkin, Jerome L.	4	Belmont, Calif.
Higa, James	6	Honolulu, T.H.	VonHartman, Vadim	4	Kailua, Oahu, Hawaii
Jones, Dalton E.	AC	Norman, Okla.			

# DS-204

Aiu, Clarence L.	6	Agana, Guam	Oak, Francis F.	6	Wake Island
Daniel, Henry M.	2	Anderson, S. C.	Ralph, Richard H.	1	Jamaica, N.Y.
Gonzales, Jorge L.	2	Tampa, Florida	Tagawa, Shizuo	4	Flagstaff, Ariz.
Kirkley, Ben	2	Augusta, Ga.	Tankersley, Ben	AC	Okla. City, Okla.
Morgan, Merritt C.	3	Sergeant Bluff, Ia.			

# DS-206

Carr, James A.	4	Niles, Calif.	Murphy, Kenneth W.	1	Rochester, N.Y.
Infelco, Ronald H.	6	Agana, Guam	Townsend, Harry A.	5	Anchorage, Alaska
Kling, Richard W.	3	Chicago, Ill.			

# MARCH GRADUATES IN DIRECTED STUDY COURSES IN 300 SERIES

NAME	REG	STATION	NAME	REG	STATION
DS-301					
Bischoff, Dale H.	3	Minneapolis, Minn.	Maynard, Charles E.	1	Columbus, Ohio
Cloud, Gerald W.	AC	Okla. City, Okla.	Morris, Edward S.	4	Los Angeles, Cal.
Gonzales, Jorge L.	2	San Juan, Puerto Rico	Smith, Edward E.	2	Houston, Texas
Hirata, Yoshio	6	Aiea, Oahu, Hawaii	Walker, James W.	1	Gordonsville, Va.
DS-302					
Coelho, Joseph D.	1	Watervliet, N.Y.	Ninke, C. O.	3	Wichita, Kans.
Cooke, Samuel E. Jr.	2	Hollywood, Fla.	Perry, Martin L. Jr.	1	Norfolk, Va.
Hoth, Edward R.	4	Tucson, Ariz.	Ryan, John G.	1	Old Town, Maine
Kerschner, Walter J.	AC	Norman, Okla.	Seitz, John H.	2	Jacksonville, Fla.
Klein, Frank Howard	4	Medford, Ore.			
DS-303					
Boyd, Robert S.	4	Butler, Missouri	McKay, Carl R.	4	Kearns, Utah
Cook, Robert L.	AC	Okla. City, Okla.	Pickavet, George	4	Santa Barbara
Grillo, Phillip R.	1	Glen Falls, N.Y.	Raymond, Garold E.	4	Los Angeles, Cal.
Kawagoe, Roy	6	Wahiawa, Oahu, Hawaii	Stevenson, L. E.	3	Taylor, Mich.
Kimball, Reginald G.	1	Millinocket, Maine	Williams, Fred M.	4	Denver, Colo.
DS-304					
Boyd, Robert S.	3	Butler, Missouri	McKeehan, James E.	4	Great Falls, Mont.
DS-305					
Carson, Robert G.	AC	Okla. City, Okla.	Leabo, Don C.	3	Fargo, N. D.
Craig, Ralph C.	1	Jefferson, Ohio	Steel, John L.	AC	Okla. City, Okla.

## TACAN CLASS 20 CONVENED MARCH 7 TO MAY 27, 1960

NAME	REG	STATION	NAME	REG	STATION
Baird, Melvin R.	4	Santa Fe, N.M.	Guthrie, H.R., Jr.	4	Imperial, Calif.
Belcher, Billy A.	1	Bowling Green, Ky.	Keefe, James E.	6	Honolulu, Hawaii
Best, Gilbert L.	3	Ottumwa, Iowa	Larson, Melvin R.	4	Wilcox, Arizona
Borecky, L. J.	4	Akron, Colo.	Lilly, Marvin E.	1	Morgantown, W.Va
Carter, H. E.	4	Bakersfield, Calif.	Linsler, John T., Jr.	3	Dickinson, N.D.
Daniel, Henry M.	2	Anderson, S.C.	Roberson, Floyd E.	5	Anchorage, Alaska
Davis, Robt E.	2	Atlanta, Georgia	Teagarden, Harry L.	3	St. Joseph, Mo.
Foster, R. H.	4	Ft. Bridger, Wyo.	White, Richard A.	1	Akron, Ohio

## ESTABLISHMENT CLASS 7 CONVENED FEBRUARY 8, 1960 TO MARCH 4, 1960

Dolan, E. C., Jr.	6	Honolulu, Hawaii	Ricciardielli, R. S.	4	Los Angeles, Cal.
Foley, T. A.	1	Jamaica, N. Y.	Thompson, D. A.	2	Ft. Worth, Texas
Isaacs, L. W.	2	Ft. Worth, Texas	Weaver, J. S.	2	Ft. Worth, Texas
O'Brien, L. J.	1	Jamaica, N. Y.			

## DME AND TACAN CLASS 8 CONVENED FEBRUARY 8, 1960 TO MAY 27, 1960

Anderson, T. E.	2	Ft. Worth, Texas	Mitchell, R. D.	2	Waco, Texas
Brownlie, G. D., Jr.	2	Key West, Fla.	Passey, R.	4	Salt Lake City, Ut.
Catrett, J. L.	3	Detroit, Mich.	Pavlakos, J. M.	3	St. Louis, Mo.
Eastlund, P. C.	3	Fargo, N. Dak.	Puzo, C. F., Jr.	1	Worcester, Mass.
Faul, J. A.	3	St. Louis, Mo.	Quintal, G.	2	Orlando, Fla.
Haynes, R. B.	2	Centerville, Tenn.	Robinson, R. N.	3	Wichita, Kans.
Jones, D. L.	4	Portland, Ore.	Rubendunst, E. G.	1	Providence, R. I.
Mallory, Ray L.	3	Salina, Kans.			

## RADAR CLASS 144 CONVENED FEBRUARY 8, TO APRIL 22, 1960

Abbott, E. F.	4	Gt. Falls, Mont.	MacQueen, J. G.	2	Austin, Texas
Abu-Lymoun, A. I.	OIC	Cairo, Egypt	Markey, G. J.	1	New York, N. Y.
Bailou, D. A.	3	Mpls., Minn.	Mauerman, R. H.	1	Rochester, N. Y.
Bayless, L. F.	2	Hobart, Okla.	Maxvold, D. L.	5	Anchorage, Alaska
Berrigan, D. F.	5	Anderson AFB	Miller, Spencer III	3	Olathe, Kansas
Blades, W. M.	1	Montgomery, Ala.	Misell, H. B., Jr.	2	Schriber Spgs., Tex.
Campbell, A. F.	1	Boston, Mass.	Newman, R. S.	3	Chicago, Ill.
Christensen, W. M.	3	Omaha, Nebr.	Nutt, Samuel J.	3	Olathe, Kansas
Clepper, B. E.	3	Kansas City, Kans.	Perkins, J. C.	4	L. A., Calif.
Cliffe, B. B.	1	Idelwild, N. Y.	Pope, W. G.	2	Wilmington, N. C.
Coburn, Charles H.	2	Waco, Texas	Ridlon, E. R.	4	Rosewell, N. M.
Cole, Claude L.	2	Jackson, Miss.	Robinson, E. L.	2	Tallahassee, Fla.
Coleman, J. E.	2	New Orleans, La.	Russell, T. B.	3	Lincoln, Nebr.
Donahue, W. B.	3	Sioux Falls, S. D.	Sandford, J. R.	2	Anderson, S. C.
Easary, W. M.	3	Kansas City, Mo.	Schwabe, H. L.	2	Savannah, Ga.
Finn, M. W., Jr.	3	Boston, Mass.	Snider, C. E.	2	Oklahoma City, Okla.
Frierson, W. S.	2	Montgomery, Ala.	Singleton, R. D.	2	Ft. Worth, Texas
Garrett, J. R.	2	Corpus Christi, Tex.	Talbot, J. R. L.	1	Boston, Mass.
Gudlauskis, E. J.	1	Griffiss AFB	VonHoie, G. E.	2	Orlando, Fla.
Harris, James C.	2	Montgomery, Ala.	Waggoner, W. L.	1	Boston, Mass.
Hazlett, M. B.	2	Houston, Texas	Wherrall, N. D.	2	Orlando, Fla.
Hill, Lakin B.	1	Buffalo, N. Y.	Winter, Jess S.	2	Nashville, Tenn.
Macht, Kenneth R.	1	Wright-Patt AFB, O.			

## RADAR CLASS 145-A CONVENED MARCH 7 TO MAY 20, 1960

NAME	REG	STATION	NAME	REG	STATION
Akin, Joseph B.	2	Atlanta, Ga.	Currier, John B.	1	Cleveland, Ohio
Amos, Edgar T.	5	Anchorage, Alaska	Davis, Cecil C.	3	Wichita, Kansas
Bailey, Judson T.	2	Valdosta, Ga.	Dawson, Billy E.	1	Cleveland, Ohio
Baker, Raymond B.	4	Albuquerque, N. M.	Donahue, Wilmer B.	3	Sioux Falls, S. D.
Bateman, William E.	4	Medford, Ore.	Drake, Robert J.	4	Salt Lake City, Utah
Bell, Wesley E.	4	Oakland, Calif.	Engelroy, Wm. N.	2	Houston, Texas
Blakemore, Wm. S.	2	Arlene, Texas	Fitzroy, James R.	1	Idelwild Airport, N.Y.
Carney, Delmar J.	2	Mobile, Ala.	Garrett, James R.	2	Corpus Christi, Tex.
Carpenter, Richard L.	4	Seattle, Wash.	Grant, Donald J.	1	Pittsburgh, Pa.
Casciano, Carmine B.	1	Falmouth, Mass.	Harter, Donald A.	1	Rome, N. Y.
Cook, Claude F.	2	Charleston, S. C.	Hollander, Alfred I.	4	Albuquerque, N. M.
Crouch, Leonard A.	WO	Washington, D. C.	Reed, Dallas, Jr.	2	Sherman, Texas

## RADAR CLASS 145-B CONVENED MARCH 7 TO MAY 20, 1960

Hicks, Ernest L.	4	San Francisco, Calif.	Salahi, Abbas	3	Indianapolis, Ind.
Horne, Eugene S.	2	Texarkana, Ark.	Sato, Takeo	6	Honolulu, Hawaii
Huffman, Jack V.	5	Fairbanks, Alaska	Smith, Leonard E.	3	Omaha, Nebraska
Johns, Edward D.	2	Lake Charles, La.	Terry, Charles F.	3	Springfield, Ill.
Kappler, Ray G.	1	Pittsburgh, Pa.	Tindill, Frank M.	3	Chicago, Ill.
McCurdy, Harry A.	1	Pittsburgh, Pa.	Towery, William A.	3	Omaha, Nebraska
Medeiros, Arthur C.	6	Honolulu, Hawaii	Tryon, Boyd E. Jr.	3	Milwaukee, Wisc.
Murray, Richard R.	3	Omaha, Nebr.	Waggy, Norman C.	1	Charleston, W. Va.
Naylor, George R.	2	Amarillo, Texas	Weathers, Thomas W.	2	Ashville, N. C.
O'Donnell, Neil	1	Pittsburgh, Pa.	Weber, Joseph M.	1	Washington, D. C.
Passey, Raco L.	4	Phoenix, Ariz.	Wilson, Alfred L.	3	Lincoln, Nebr.
Rifkin, Jerome	2	Miami, Florida	Zwelling, Ronald E.	3	Lincoln, Nebr.

## RML REPEATER CLASS 8 CONVENED FEBRUARY 29, 1960 TO MARCH 18, 1960

Akers, Gerald A.	4	Elko, Nevada	Johnson, James A.	4	Salina, Calif.
Applebury, James L.	4	Lovelock, Nevada	Laurents, Van T.	2	Eagle Lake, Texas
Demory, Emil L.	3	Jackson, Miss.	Moore, Frederic C.	4	Medford, Oregon
Haker, William P.	4	Los Angeles, Calif.	Robbins, H. Allen	4	Fresno, Calif.
Hartell, Clyde E.	4	Los Angeles, Calif.	Turner, Ronald H.	4	Denver, Colo.
Jacobson, Gene D.	4	Portland, Oregon			

## MAINTENANCE SUPERVISION CLASS 29 CONVENED MARCH 7, TO MARCH 11, 1960

Aho, Karl	5	Anchorage, Alaska	Hunt, R. H.	WO	Washington, D. C.
Baker, Harry A.	4	Great Falls, Mont.	Kite, Charles A.	AC	Oklahoma City, Okla.
Barfield, W. D.	2	Miami, Florida	Morin, D. M.	1	Portland, Maine
Beckelman, Ray K.	WO	Washington, D. C.	Ross, William A.	1	Pittsburg, Penna.
Bluesener, F. C.	3	Sault Ste. Marie, Mich.	Schmidt, L. J.	3	Torrey House, Ind.
Cummins, F. B.	1	Rome, N. Y.	Wells, E. J.	2	Nashville, Tenn.
Hinson, Frederic S.	1	Morgantown, W. Va.	Westlund, A. E.	3	Lamoni, Iowa

## ROS 141-2 - TI-440 CLASS CONVENED FEBRUARY 22, 1960 TO MARCH 4, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Adkins, Harry S., Jr.	3	St. Louis, Mo.	Rosenbaum, E. M.	1	Idelwild, N. Y.
Bruescke, R. W.	3	St. Louis, Mo.	Scott, W. W.	3	Kansas City, Mo.
Evanson, R. E.	1	Cleveland, Ohio	Sullivan, B. E.	3	Indianapolis, Ind.
Goldstein, Irving	1	New York	Turquet, C. N.	5	Chicago, Ill.
Kelley, Jack L.	3	Kansas City, Mo.	Vavruska, G. A.	1	Cleveland, Ohio
McWilliams, R. D.	3	Kansas City, Mo.	Watts, E. W., Jr.	3	Indianapolis, Ind.
Phalp, H. E.	3	Kansas City, Mo.			

## RADAR OPTION SPECIALTY CLASS 141 CONVENED FEBRUARY 22 TO FEBRUARY 26, 1960

Aitken, Donald G.	3	Wichita, Kansas	Lyons, David A.	4	Tucson, Arizona
Arnold, Fred W.	1	W.-Lotts, Conn.	McKenzie, Roderick	2	Mobile, Ala.
Barnett, J. C.	2	Ponca City, Okla.	Miller, Quentin M.	1	Manassas, Ohio
Caldwell, Harold E.	2	Perrin, Texas	Pitts, Charles L.	5	Anchorage, Alaska
Foster, Keith G.	2	Hunter AFB, Tex.	Slavik, Franklin D.	5	Anchorage, Alaska
Halderson, Olaf A.	4	Malmstrom AFB	Tenny, Robert D.	4	Hill AFB
Kuklish, Steve	4	McChord, Wash.	Welch, Leonard E.	3	Lincoln, Nebr.

## RADAR OPTION SPECIALTY CLASS 142 CONVENED FEBRUARY 29 TO MARCH 11, 1960

Aitken, Donald G.	3	Wichita, Kansas	Lyons, David A.	4	Tucson, Arizona
Barnett, J. C.	2	Ponca City, Okla.	McKenzie, Roderick	2	Mobile, Ala.
Caldwell, Harold E.	2	Perrin, Texas	Pitts, Charles L.	5	Anchorage, Alaska
Foster, Keith G.	2	Hunter AFB, Ga.	Slavik, Frank D.	5	Anchorage, Alaska
Halderson, Olaf A.	4	Malmstrom AFB	Tenny, Robert D.	4	Hill AFB
Kuklish, Steve	4	McChord, Wash.	Welch, Leonard E.	3	Lincoln, Nebr.

## ROS 142 - ARS-3 CONVENED FEBRUARY 29, 1960 TO MARCH 18, 1960

NAME	REG	STATION	NAME	REG	STATION
Backlund, Kurt E.	5	Anchorage, Alaska	Murphy, Paul F.	1	Otis AFB
Earl, Harry D.	5	Anchorage, Alaska	O'Mara, Russell J.	1	Fairborn, Ohio
Jackson, Ronald	1	Otis AFB, Mass.	Oshiro, Herbert T.	6	Honolulu, Hawaii
James, Robert U.	4	Colo. Springs, Colo.	Powell, J. L., Jr.	1	Jamaica, N. Y.
Morris, Raymond L.	2	Charlotte, N. C.	Schindler, Wm. A.	1	Berea, Ohio

## ROS 142 - PAR-2 CONVENED FEBRUARY 29, 1960 TO MARCH 11, 1960

Briggs, Sherwin L.	3	Muncie, Kansas	Mitchell, Wm. G.	3	Ypsilanti, Mich.
Cammarata, Wm.	1	Pittsburgh, Pa.	Reina, Joseph A.	1	Pittsburgh, Pa.
DeMerritt, Lorin G.	4	Portland, Ore.	Todd, James A.	3	Minneapolis, Minn.
Frederick, Ronald E.	3	Indianapolis, Ind.			

## ROS 142-A - ARSR - 1 - CONVENED FEBRUARY 29, 1960 TO MARCH 18, 1960

Avant, Vernon E.	2	Atlanta, Georgia	Field, John A.	2	Miami, Florida
Batchelor, Earl A.	4	Great Falls, Mont.	Fultz, Ronald G.	3	Hutchinson, Kans.
Brisendine, E. E.	2	Nashville, Tenn.	Gallegos, Nick	4	Albuquerque, N. M.
Chang, Dia Chin	5	Honolulu, Hawaii	Hankins, James C.	2	New Orleans, La.
Cox, Clarence E.	AC	Oklahoma City, Okla.	Harrington, J. E.	2	Montgomery, Ala.
Davis, Alfred L.	2	Charleston, S. C.	Hatcher, Rose M.	2	El Paso, Texas
Duggan, William F.	2	Atlanta, Georgia	Ridge, Lowell H.	4	Dallas, Oregon
Edwards, James F.	2	Shreveport, La.			

## ROS 142-B - ARSR - 1 - CONVENED FEBRUARY 29, 1960 TO MARCH 18, 1960

Johnson, Lambert E.	2	College Sta., Tex.	Reilly, Grant A.	4	Los Angeles, Calif.
Kralich, Rudolph J.	2	Shreveport, La.	Rhoades, John K.	3	Hutchinson, Kansas
LaGrassa, Wm. W.	4	Salt Lake City, Utah	Rohde, Charles E.	4	Albuquerque, N. M.
LeBlau, Julien	2	Houston, Texas	Smith, Jack H.	2	Raleigh, N. C.
Lee, Kenneth L.	3	Olathe, Kansas	Stevens, Albert T.	2	Memphis, Tenn.
McKee, Donald J.	1	Idelwild Airport	Tears, George W.	2	Ft. Worth, Texas
Muse, Kermit M.	2	McComb, Miss.	Wendt, Walter D.	2	Midland, Texas

## ELECTRO-MECHANICS CLASS 12 (AIR CONDITIONING PHASE) FEB. 23 TO MAR. 4, 1960

AHO, Karl E.	5	Anchorage, Alaska	Orrick, Edwin G.	1	Washington, D. C.
Anderson, J. L.	4	Fresno, Calif.	Ponikvar, John J.	4	Great Falls, Mont.
Bolen, L. A., Sr.	2	Memphis, Tenn.	Snyder, Roy W.	5	Nome, Alaska
Cogrove, D. E.	1	Louisville, Ky.	Stapp, Wm. J.	1	Ft. Worth, Tex.
Dulin, Bedford	2	Wichita Falls, Tex.	Viet, Max S.	AC	Oklahoma City, Okla.
Gabriel, Lloyd R.	3	Battle Creek, Mich.	Waldrup, E. E.	4	Billings, Mont.
Morin, Donald M.	1	Portland, Maine	Wichita, James B.	3	Topeka, Kans.

## ELECTRO-MECHANICS CLASS 12 (TELETYPE PHASE) MARCH 7 TO APRIL 1, 1960

BOLEN, L. A., Sr.	2	Memphis, Tenn.	Ponikvar, John J.	4	Great Falls, Mont.
Genger, S. S.	6	Omaha, Nebr.	Wichita, James B.	3	Topeka, Kans.

## ELECTRO-MECHANICS CLASS 13 (ENGINES PHASE) MAR. 7 TO MAR. 25, 1960

Anderson, E. A.	3	Minneapolis, Minn.	Montayre, Alfred	6	Wake Island
Burnham, Albert	5	Sitka, Alaska	Schneider, Robt. A.	3	Detroit, Mich.
Curry, Bobby E.	2	Amarillo, Tex.	Stapp, Wm. J., Jr.	1	Ft. Worth, Tex.
Fisher, James E.	4	Eugene, Oregon	Tacke, Hilton A.	2	New Orleans, La.
Kastle, Andrew P.	1	Columbus, Ohio	Wall, Roy L.	5	Anchorage, Alaska
McCormick, James D.	2	Houston, Tex.	Wise, Franklin N.	4	Pendleton, Oregon



# AIR CARRIER OPERATIONS BRANCH

Class ACO-J1-19 - JET FLIGHT INDOCTRINATION - February 1 - February 26, 1960

Boyle, M. D. Washington  
Elliott, J. W. NAPEC

Class ACO-16-2 - FLIGHT TESTING OF AIRCRAFT SIMULATORS - March 7 - March 18, 1960

Mitchell, H. W. Region 2  
May, Russell G. Region 3  
Sheridan, Geo. J. Region 4

Class ACO-6-36 - TYPE RATING ON FOUR-ENGINE TRANSPORT CATEGORY - March 21 - April 1, 1960

Crider, K. M. (Comdr.) Washington  
Harrison, J. B. Region 2

Class ACO-15-4 - TYPE RATING REFRESHER (DC-4) - April 4 - April 15, 1960

Kreiger, Wm. R. Washington  
Young, Paul E. Aeronautical Center  
Goryphalakia, N. M., Observer Civil Aviation Service, Greece  
Woide-Mariam, A., Observer Dept. of Civil Aviation, Ethiopia

Class ACO-J1-20 - JET FLIGHT INDOCTRINATION - April 25 - May 20, 1960

Bernard, Barry Washington  
Mundy, E. M. Region 3

## FLIGHT TEST BRANCH

Class ACO-12-12 - OPERATIONAL APPLICATION OF TRANSPORT CATEGORY REQUIREMENTS - March 11 - March 25, 1960

Arnholdt, Eric Oklahoma City, Oklahoma  
Broiles, Mirm Rome, Italy Monaco, F. J. Tokyo, Japan  
Ole, Lewis O. Kansas City, Missouri

Class GO-11-26 & -27 - AIRCRAFT CHARACTERISTICS & PERFORMANCE (GENERAL) (BELOW 12,500 LBS.) April 25 - May 6, 1960

Blaisdell, L. M. Washington, D.C. Riviere, John P. Miami, Florida  
Metzger, L. G. Denver, Colorado Scholtz, R. F. Tulsa, Okla.  
Pearson, G. W. Columbus, Ohio Stagner, T. A. Rapid City, S.D.  
Peterson, L. M. (Capt.) Ft. Rucker, Alabama Young, Alfred K. Anchorage, Alaska  
OBSERVERS  
Chapman, G. C. - Worthington, Ohio Johnson, A. J. - Toronto, Ontario  
Young, Harold D. - Oklahoma City, Oklahoma

## COMMUNICATIONS EQUIPMENT CLASS 150 CONVENED FEB. 23, 1960 TO MAY 27, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Barrett, Sidney H.	4	Pescadero, Calif.	Kamisaku, R.	OIC	Japan
Chenkin, Seymour	1	White Plains, N. Y.	Nakasawa, S.	OIC	Japan
Chomik, Udson	OIC	Chokok, Thailand	Peevin, Jacob	1	Idelwild, N. Y.
Cooper, Bill B.	2	Atlanta, Ga.	Potte, David D.	AC	F.A.A. Okla. City
Corderman, R. R.	2	Okla. City, Okla.	Raid, Kermit D.	2	Atlanta, Ga.
Davis, Roosevelt	5	Anchorage, Alaska	Rogers, Nova C.	2	Ft. Worth, Texas
DeCaigny, Jack U.	3	Kansas City, Mo.	Rue, Robert R.	4	Dubois, Idaho
Dunlap, Robert J.	5	Fairbanks, Alaska	Scheffler, Stewart	1	Idelwild, N. Y.
Ghobrial, Ramsy S.	OIC	Cairo, Egypt	Sewell, Lyndal D.	2	Waco, Texas
Hill, John J.	2	Spartanburg, S. C.	Soule, Anthony J.	3	Inkster, Mich.
Kebbe, Harry S.	3	LaCrosse, Wisc.	Southard, Royal J.	4	Crescent City, Cal.
Langlois, V. J.	3	Romulus, Mich.	Trowbridge, C. G.	1	Albany, N. Y.
McMorris, R. R.	2	Pensacola, Fla.	Turner, Nolan M. Jr.	4	Yakima, Wash.
Miller, W. E.	4	Los Angeles, Calif.	Walker, J. O.	3	Duluth, Minn.
Mills, Marshall B.	4	Albuquerque, N. M.	Walker, Robert L.	1	Philadelphia, Pa.
Orme, David W.	2	Jacksonville, Fla.	Willard, Billy G.	2	Memphis, Tenn.
Palmer, Charles R.	4	Idaho Falls, Ida.	Yamamoto, H.	OIC	Japan
Siregar, E. S.	OIC	Djakarta, Indonesia	Zvarich, R. H.	4	Gr. Falls, Mont.

## COMMUNICATIONS EQUIPMENT CLASS 151 CONVENED MAR. 7, 1960 TO JUNE 10, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Angell, Gene D.	3	Minot, N. Dakota	Papadimas, Geo. G.	OIC	Athens, Greece
Arnold, Ernest J.	3	Gr. Forks, N. Dak.	Plummer, E. W.	4	Phoenix, Ariz.
Cadman, C. D.	4	Ogden, Utah	Puckett, V. D.	3	Pawnee City, Nebr.
Colucci, Dominic F.	1	Jamaica, N. Y.	Quiram, L. L.	2	Dallas, Texas
Copeland, D. L.	4	Albuquerque, N. M.	Ray, Robert L.	2	Will Rogers, OKC.
Dudek, Frank V.	1	Newark, N. J.	Richards, W. H.	1	Pittsburgh, Pa.
Grob, Louis W.	5	Anchorage, Alaska	Rose, R. J.	1	Louisville, Ky.
Halverson, Carl F.	3	Mason City, Ia.	Ryder, John H.	1	Cleveland, Ohio
Hagdricks, W. G.	4	Daggett, Calif.	Saito, Edward S.	5	Nome, Alaska
Hill, George K.	2	Montgomery, Ala.	Silvia, Robert P.	1	E. Boston, Mass.
Hill, Sherman A.	4	Gr. Falls, Mont.	Thompson, W. P.	2	Ft. Worth, Texas
Hreha, M. J. Jr.	1	Syracuse, N. Y.	Towery, F. D.	AC	Okla. City, Okla.
Isaacs, L. W.	2	Ft. Worth, Texas	Verran, R. P.	2	Dallas, Texas
Louwai, R. J.	6	Honolulu, Hawaii	Walling, J. M.	3	Mason City, Ia.
Martin, Delvin L.	1	Huntington, W. Va.	Walton, D. Jay	4	Salt Lake City, Ut.
Ott, Louis W.	4	Portland, Ore.	White, V. E.	4	Oakland, Calif.

## VOR CLASS 172-A CONVENED FEBRUARY 8, 1960 TO APRIL 29, 1960

Boudreau, Donald J.	3	Evansville, Ind.	Ormerod, Mavin L.	1	Louisville, Ky.
Carlile, John L.	2	Midland, Texas	Ricker, F. H.	1	Worcester, Mass.
Dart, W. L.	3	Moline, Ill.	Ryberg, Jon C.	1	Erie, Pa.
Ewing, T. F.	1	Portland, Me.	Shafer, B. S.	3	Goshen, Ind.
Hoyle, William J.	1	N. Bedford, Mass.	Shultsbarger, D.M.	3	S. Bend, Ind.
Hudgins, M. R.	2	Shreveport, La.	Simmons, J. J.	1	Boston, Mass.
Nastek, Robert S.	3	Park Ridge, Ill.	Toolan, J. D.	1	Litica, N. Y.

## VOR CLASS 172-B CONVENED FEBRUARY 8, 1960 TO APRIL 1, 1960

Allen, Richard P.	6	Honolulu, Hawaii	Morrison, R. J.	5	Anchorage, Alaska
Crowther, H. W.	2	Daytona Beach, Fla.	Nagata, Tokiwo	6	Canton Is., S. P.
Darlington, T. W.	3	Chadron, Nebr.	Sanderson, G. R.	4	Gr. Junction, Colo.
Hewitt, L. D.	3	Garden City, Kane.	Siata, C. J.	4	Arcata, Calif.
Hwang, Jae Won	OIC	Seoul, Korea	Stockton, J. W.	4	Thermopolis, Wyo.
Kim, Dong Han	OIC	Seoul, Korea	Thompson, L. G.	2	Wilmington, N. C.
Logan, Paul S.	1	Horseheads, N. Y.	Ulevog, T. S. L.	4	Pueblo, Colo.

## VOR CLASS 173-A CONVENED FEBRUARY 23, 1960 TO MAY 13, 1960

Bakarya, O. M.	OIC	Turkey	Lacy, Fred D.	1	Cleveland, Ohio
Bayasli, Sukru K.	OIC	Turkey	Mahoney, J. F.	1	Rochester, N. Y.
Crookshank, R. D.	4	Los Angeles, Calif.	Onsgard, C. P.	3	Green Bay, Wisc.
Delaini, J. J.	4	Santa Barbara, Cal.	Ronco, P. D.	4	Pocatello, Ida.
Ellie, Bruce B.	3	Huron, S. Dak.	Rudliff, L. E.	2	Savannah, Ga.
Feeley, W. J., Jr.	6	Honolulu, Hawaii	Sany, Donald A.	3	Springfield, Ill.
Hembold, L. D.	3	Indianapolis, Ind.	Stapleton, R. P.	1	Covington, Ky.
Hunter, Roger G.	1	Columbus, Ohio	Turken, I. Z.	OIC	Turkey
Kieh, Phillip J.	1	Cleveland, Ohio			

## VOR CLASS 173-B CONVENED FEBRUARY 23, 1960 TO APRIL 15, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Barnum, R. E.	4	Medford, Ore.	Pearson, H. J.	3	Goodland, Kans.
Borgelt, Karl G.	1	Toledo, Ohio	Rhesume, A. F.	4	Malad City, Ida.
Culbertson, W. S.	2	Junction, Tex.	Walters, J. E.	4	Las Vegas, N. M.
Farthing, Dean A.	3	Richmond, Ind.	Wells, M. E.	4	Redwood City, Cal.
Granger, W. J.	2	Tallahassee, Fla.	White, David M.	1	Columbus, Ohio
King, R. E. G.	1	Pittsburgh, Pa.	White, Max D.	3	Chanute, Kans.
Pearson, G. C.	4	Monticello, Ut.			

## VOR CLASS 174-A CONVENED MARCH 7, 1960 TO MAY 27, 1960

Balkas, Sabri D.	OIC	Turkey	Hatcher, M. D.	4	Albuquerque, N. M.
Basarac, M. I.	OIC	Turkey	Henderson, C. R.	2	New Orleans, La.
Bauer, W. D.	4	Portland, Ore.	Lake, R. J.	2	W. Palm Beach, Fla.
Boydston, J. A.	4	Los Angeles, Cal.	Lenard, Dean E.	3	Topeka, Kans.
Galatayud, A.	OIC	Bolivia	McGinty, John	1	Washington, D. C.
Dumont, Emile J.	3	Kansas City, Mo.	Mihalopoulos, A.	OIC	Greece
Dunn, G. F.	1	Dayton, Ohio	Mollard, R. G.	4	Pueblo, Colo.
Eller, Eugene D.	2	Raleigh, N. C.	Morrison, R. D.	3	Kansas City, Mo.
Fulton, James W.	1	Wheeling, Ohio	Parsons, W. B., Jr.	2	Tulsa, Okla.

## VOR CLASS 174-B CONVENED MARCH 7, 1960 TO MAY 27, 1960

Anderson, John R.	1	N. Cumberland, Pa.	Keim, George G.	2	Austin, Texas
Campbell, Leslie G.	2	Okla. City, Okla.	Morgan, J. M.	2	Savannah, Ga.
Carekand, R. S.	1	Cleveland, Ohio	Nealey, B. D.	2	Okla. City, Okla.
Jacoby, R. J.	3	Spring Green, Wisc.	Pike, Edwin E.	1	Bridgeport, Conn.
Johnson, Don R.	1	Dayton, Ohio	Piper, B. F., Jr.	3	Pierre, S. Dak.
Johnson, K. B.	1	Jefferson, Ohio	Rentfrow, E. C.	5	Anchorage, Alaska
Jordan, C. W.	2	Ft. Worth, Texas	Rogge, W. D.	3	Watertown, S. Dak.
Juergens, Paul H.	4	Roswell, N. M.	Steele, John W.	3	Houghton, Mich.

## COMMUNICATIONS EQUIPMENT CLASS 149 CONVENED FEB. 1, 1960 TO MAY 13, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Adams, Paul L.	4	Gr. Junction, Colo.	Jackson, C. W.	4	Flagstaff, Ariz.
Adams, Raymond V.	2	Tulsa, Okla.	Joe, Robert	2	Atlanta, Ga.
Alexander, R. E., Jr.	5	Anchorage, Alaska	Johnson, J. R.	1	Albuquerque, N. M.
Auer, George	3	Stockton, Calif.	Johnston, M. G.	4	Honolulu, Hawaii
Berry, Amos R.	3	Farmington, N. M.	Kawai, A. K.	6	Japan
Bockoven, A. G.	2	Graham, Tenn.	Kitasawa, Fujihiko	OIC	Japan
Buckley, G. N.	4	Zuni, New Mex.	Munroe, Philip A.	1	Jamaica, N. Y.
Cawthon, Horace L.	2	Miami, Florida	Nemmo, Edward H.	4	Columbus, N. M.
Dagulo, G. N.	6	Honolulu, Hawaii	Okamoto, Soji	OIC	Japan
Deuso, Robert A.	1	Oldtown, Maine	Samuolis, A. J.	1	N. Y. (Idelwild)
Diaz Remeu, G.	2	Ft. Worth, Texas	Sander, G.	1	Pittsburgh, Pa.
Dixon, Dallas R.	4	Fairchild AFB, Wa.	Smith, Randolph	3	Gr. Rapids, Mich.
Fletcher, J. B.	3	Kansas City, Mo.	Snapp, Kenneth M.	4	Alamosa, Colo.
Garsa, G. G.	2	Houston, Texas	Toth, John J.	1	Boston, Mass.
Haag, Raymond A.	2	Eagle, Colo.	Vandergrift, C. K.	1	Norfolk, Va.
Hebert, Warren C.	2	Ft. Worth, Texas	Vitka, Frank J.	2	Miami, Fla.
Hogue, Donald R.	4	Gila Bend, Ariz.			

EE-2(15) Transport Aircraft Electrical Systems Course  
3/7 thru 3/18/60

Name	Region	Station
Hefner, Dwight D.	3	Typlanti, Mich.
Heglas, Rudolph W.	Wash	Washington, D. C.
Hofmann, Hugo Richard	Wash	Miami, Florida
Holder, Alton E.	4	Seattle, Wash.
Owen, Sam P.	2	Miami, Florida
Russell, Harry E.	4	San Francisco, Calif.
Thomas, Robert E.	AC-262, 1	Aeronautical Center
Weymouth, Walter I.	1	Vandalla, Ohio

GM-5(2) Modern Business Aircraft Instrument and Automatic Flight Control Systems 3/7 thru 3/18/60

Name	Region	Station
Centrell, L. E.	3	Cedar Rapids, Iowa
Miley, B. E.	2	Oklahoma City, Okla.
Newman, H.	1	LaGuardia Field, N. Y.
Patterson, W. C.	AC-680.5	Aeronautical Center
Robinetto, F. W.	4	Long Beach, Calif.
Smith, T. J.	4	Seattle, Washington
Turvy, R.	2	Raleigh, N. C.
Vandewark, W. O.	4	Denver, Colorado
Whittemore, R. J.	3	Kansas City, Missouri
Whoolery, J. H.	3	Kansas City, Missouri

PP-3(40) Gas Turbine Engine Development  
3/7 thru 3/18/60

Name	Region	Station
Binion, Thomas H.	2	Miami, Florida
Bushnell, William D.	2	Fort Worth, Texas
Gassaway, H. P.	2	Nashville, Tennessee
Mamick, H. E.	1	Hagerstown, Missouri
Marshall, Donald R.	4	Los Angeles, Calif.
Metula, S. C.	Wash	Washington, D. C.
Pontecorvo, Joseph A.	1	Washington, D. C.
Schroeder, G. H.	AC-262.2	Aeronautical Center
Tepper, L. F.	3	Minneapolis, Minn.

AE-1(6) Airframe and Equipment General Operations  
4/4 thru 4/15/60

Name	Region	Station
Backstrom, A. A.	2	Fort Worth, Tex.
Cassel, F. E.	1	New York, N. Y.
Husic, W. J.	Wash	Washington, D. C.
Spencer, R. R.	3	Kansas City, Missouri

EE-3(12) Basic Jet Transport AC Electrical  
4/11 thru 4/29/60

Name	Region	Station
Gammon, J. A.	AC-261	Aeronautical Center
Johnson, J. F.	3	Minneapolis, Minn.
Steward, J. L.	2	Miami, Florida
Young, A. V.	4	Los Angeles, Calif.
Artam, K.	Observer	Ankara, Turkey

PP-3 (41) Gas Turbine Engine Development  
4/18 thru 4/29/60

Name	Region	Station
Casey, Martin C.	AC-261.2	Aeronautical Center
Jett, E. Lee	Wash	Idlawild, New York
Jones, Thomas R.	Wash	Washington, D. C.
Kalusche, Louis C.	2	Atlanta, Georgia
Knobler, Chas H.	Wash	Rio de Janeiro, Brazil
Morris, Everett W.	2	Ft. Worth, Texas
Rogers, Stanley J.	3	Kansas City, Kansas

EE-4(6) Basic Jet Transport Electronics Specialist  
A. C. Systems & Controls 3/14 thru 4/1/60

Name	Region	Station
Baldwin, Mark E.	3	Kansas City, Mo.
Cowles, R. G.	1	Washington, D. C.
Davis, E. H.	4	Los Angeles, Calif.
Magness, Scott A.	Wash	Miami, Florida
Miller, William R.	3	Indianapolis, Ind.
Miltholland, C. V.	4	Los Angeles, Calif.
Phillips, E. H. J.	2	Houston, Texas
Baretta, Patrick	AC-261.1	Aeronautical Center

GM-3(17) Helicopters - Principles, Construction and Maintenance 3/21 thru 4/1/60

Name	Region	Station
Allen, D. D.	4	Fresno, California
Bolsenga, R. M.	2	Ft. Worth, Texas
Grasser, W. H.	6	Honolulu, Hawaii
Hightower, B. J.	AC-262	Aeronautical Center
Laskman, R. O.	3	Milwaukee, Wisconsin
Sage, V. E.	Wash	Washington, D. C.
Schroeder, G. H.	AC-262.2	Aeronautical Center
Webb, F. W.	3	St. Louis, Missouri
Wicklund, E. J.	3	Kansas City, Missouri
May, B. J.	Observer	Ft. Worth, Texas

EE-1(15) Light Aircraft Electrical Systems  
3/28 thru 4/8/60

Name	Region	Station
Cummins, P. W.	1	Cleveland, Ohio
Daech, C. H.	1	Allentown, Pa.
Kimmer, G. B.	2	St. Petersburg, Fla.
Oosta, Martin J.	3	Dodge City, Kansas
Richardson, R. E.	2	Fort Worth, Texas
Straubinger, D. L.	Observer	Chillicothe, Ohio
Wells, B. F.	4	Ontario, California

GENERAL OPERATIONS BRANCH GRADUATES

GO-14-12 Pilot Flight Testing Procedures 3/7 thru 3/18/60

Name	Region	Station
Hornaday, J. C.	2	Columbia, South Carolina
Hubbell, H. S.	3	St. Louis, Missouri
Northrup, J. R.	1	Westfield, Massachusetts
Thomas, Ralph W.	4	Ontario, California
Velde-Marian, A.	Observer	Ethiopia

Special Flight Instructor's Training 3/21 thru 3/25/60

Name	Region	Station
Forster, H. S.	2	Oklahoma City, Oklahoma
Houghton, D.	4	Salt Lake City, Utah
Shaw, Edwin P.	2	Fort Worth, Texas

GO-14-13 & 14 Pilot Flight Testing Procedures 3/28 thru 4/8/60

Name	Region	Station
Banks, Sam P.	2	Charlotte, North Carolina
Geier, B. A.	4	Billings, Montana
Hall, Charles F.	1	Pittsburgh, Pennsylvania
Hartley, H. C.	3	Cedar Rapids, Iowa
Johnston, J. V.	2	North Platte, Nebraska
Kay, R. L.	4	Redford, Oregon
Karvonen, O. E.	2	Nashville, Tennessee
Masterson, G. H.	AC-250	Oklahoma City, Oklahoma

GO-13-11 Executive Aircraft Operation - Instrument and Performance Refresher 4/1 thru 4/22/60

Name	Region	Station
Doyle, H. L.	Wash	Washington, D. C.
Ganes, Gomer W.	1	Albany, New York
Levis, Robert H.	Wash	Washington, D. C.
Nelson, David H.	3	West Chicago, Illinois

GO-14-15 Pilot Flight Testing Procedures 4/18 thru 4/29/60

Name	Region	Station
Hall, Charles F.	1	Pittsburgh, Pennsylvania
Hanson, M. E.	4	Boise, Idaho
Smith, James L.	2	Miami, Florida
Watson, J. T.	2	St. Petersburg, Florida
Garyphalakis, N. K.	Observer	Greece

Indoctrination Class 60-1 4/25 thru 5/27/60

Name	Region	Station
Ray, George C.	3	Detroit, Michigan
Johnson, H. W.	1	Cleveland, Ohio
Jones, Roger R.	2	Fort Worth, Texas
Seaburg, G. W.	2	Oklahoma City, Oklahoma
Schaefer, Robert E.	3	Milwaukee, Wisconsin
Thompson, N. A.	2	San Antonio, Texas



AIR TRAFFIC CONTROL BRANCH GRADUATES

TG - 1

Emil G. Barth, Jr.  
Alan R. Brown  
Bernhard H. Coughlin, Jr.  
Clay M. Dent  
Herold A. Ecks  
Joe W. Faucher  
James A. Koopman  
Charles C. Pearl  
Ocie C. Perkins, Jr.  
Warren B. Sellers  
Arthur F. Stueck  
Waverly Chesson  
Garcell C. Hatfield  
Everett W. Holland  
Ashley P. Hurt  
Stephen H. Kary, Jr.  
Christopher Lenard  
John A. McLeod  
Charles S. Portwood  
Sam C. Sears  
Walter D. Sikes  
Frank J. Sutton  
Phillip S. Taylor  
Ray E. King

Pt. Worth Center  
Pt. Worth Center  
Chicago Center  
Pt. Worth Center  
San Antonio Center  
Pt. Worth Center  
Chicago Center  
Pt. Worth Center  
Pt. Worth Center  
Atlanta Center  
Pt. Worth Center  
Jacksonville Center  
Kansas City Center  
Jacksonville Center  
Atlanta Center  
Chicago Center  
Jacksonville Center  
Jacksonville Center  
Kansas City Center  
Jacksonville Center  
Jacksonville Center  
Jacksonville Center  
Atlanta Center

TG - 2

Douglas C. Abel  
Frank L. Allen  
William J. Barbanes  
Anthony A. Bellu  
Thomas J. Bock  
Joseph L. Burns  
Harry P. Cahill  
Herbert P. Cannon  
Kenneth C. Collins  
Gerald A. Dickson  
John F. Dodson, Jr.  
George O. Hartman  
Robert R. St. Martin  
John B. Adams  
Frank S. Hibbard  
Richard H. Holzhauser  
Gerald J. Jorgensen  
Harold W. Nothdurft  
Edward F. O'Donnell, Jr.  
Carroll W. Park  
Dwayne L. Petersen  
Eugene M. Rizzolo  
William Tavares

Oakland Center  
Atlanta Center  
Oakland Center  
Oakland Center  
Chicago Center  
Oakland Center  
Oakland Center  
Oakland Center  
Oakland Center  
Oakland Center  
Atlanta Center  
Chicago Center  
Chicago Center  
Oakland Center  
Oakland Center  
Chicago Center  
Oakland Center  
Oakland Center  
Oakland Center  
Oakland Center  
Oakland Center

TG - 4

James O. Buntan  
Ray V. Bush  
Burgess G. Cantrell  
Richard L. Congdon  
Arthur B. Copeland  
Richard L. Deas  
Stephen J. Dobso, Jr.

Miami Center  
New Orleans Center  
New Orleans Center  
Miami Center  
Miami Center  
New Orleans Center  
Miami Center

Hugh P. Ellison  
William R. Hudaley  
Wilfred G. Gallardo  
Robert E. Gibson  
Alfred Godfrey  
David S. Granger  
Edward B. Hayes  
Kenneth C. Kinman  
Willard C. Lemmond, II  
John C. Magee  
Blakelee A. Smith  
Robert L. Sayth  
Robert E. Taskins  
Bobby M. Tatam  
Calvin K. Templeton

Miami Center  
New Orleans Center  
New Orleans Center  
Miami Center  
Miami Center  
Miami Center  
New Orleans Center  
Miami Center  
Miami Center  
New Orleans Center  
Miami Center  
Miami Center  
Miami Center  
Memphis Center  
Miami Center

TG - 3

Lawrence D. Aldrich  
David C. Caesar  
Charles H. Dunphy  
Thomas A. Duplessie  
Rex Eyselaizer, Jr.  
Richard B. Frick  
Stanley L. Hale  
Irvin W. Kemp  
Ronald H. Knope  
Jay L. Larise  
Dick A. Markle  
Malachy McCann  
James C. Pearson  
Earl P. Peicher  
John P. Roebuck  
Stanley I. Swidersky  
Paul J. Timmermann  
Robert E. Turek  
James G. Windish

Detroit Center  
Pittsburgh Center  
Detroit Center  
Detroit Center  
Pittsburgh Center  
Pittsburgh Center  
Pittsburgh Center  
Norfolk Center  
Pittsburgh Center  
Detroit Center  
Detroit Center  
Pittsburgh Center  
Detroit Center  
Pittsburgh Center  
Detroit Center  
Detroit Center  
Detroit Center  
Detroit Center  
Pittsburgh Center

TG - 6

William R. Brouse  
Andrew R. Caldwell  
James J. Contos  
Ray E. Cook  
Fred G. Eflaw  
John A. Elliot  
Kenneth D. Foreman  
Donald V. Hart  
James A. Horn  
Walter W. Kiever  
Daniel F. Loucks  
Kenneth G. Moss  
Louis E. Potvin  
Donald J. Rozzano  
Jerome W. Schons  
Jesse F. Shera, Jr.  
Robert C. Tickner  
Glen H. Witt

Seattle Center  
Seattle Center  
Albuquerque Center  
Albuquerque Center  
Seattle Center  
Seattle Center  
Seattle Center  
Albuquerque Center  
Seattle Center  
Albuquerque Center  
Albuquerque Center  
Albuquerque Center  
Albuquerque Center  
Albuquerque Center  
Seattle Center  
Albuquerque Center

TG - 7

George F. Ambrose  
Edward L. Battocclotti  
Charles R. Casey  
Warren H. Gathje  
Sidney G. Gomon  
Robert Griskenas  
James M. Herald  
John W. Hough, Jr.  
William A. Howard  
Joseph C. Lepers  
Robert A. Kiposky  
Haines M. Morton  
Kenneth R. Mosholder  
Edward A. Myers  
Thomas B. Nielson  
Charles W. Niemann  
George C. Park  
Albert L. Shallenberger  
Lee J. Sloan  
Warren Stoddard

Cleveland Center  
Cleveland Center  
Chicago Center  
Norfolk Center  
Chicago Center  
Chicago Center  
Pittsburgh Center  
Washington Center  
Cleveland Center  
Cleveland Center  
Chicago Center  
Pittsburgh Center  
Cleveland Center  
Chicago Center  
Cleveland Center  
Cleveland Center  
Pittsburgh Center  
Cleveland Center  
Cleveland Center

TG - 8

Lacey J. Bagley  
Edmund G. Barryk  
Clairborne T. Baye  
Dalton C. Briley  
Roy R. Foster  
Jerry M. Garner  
Weslie L. Goheen  
Coit L. Harris  
Robert A. Hasty  
John M. Hatchett  
Billy M. Head  
Billy D. Henagan  
James C. Kelley  
Russell A. Lincoln  
Luis J. Lopez  
Donald W. McCann  
Theodore J. Olin  
George F. Sizemore  
James B. Spake  
Basil R. Thornton  
Leroy C. Trepanier  
William B. Urdak  
Alfredo Valladares

El Paso Center  
Jacksonville Center  
New Orleans Center  
Pt. Worth Center  
Jacksonville Center  
San Antonio Center  
Pt. Worth Center  
Atlanta Center  
Pt. Worth Center  
El Paso Center  
Atlanta Center  
El Paso Center  
San Antonio Center  
Detroit Center  
New Orleans Center  
Pt. Worth Center  
Miami Center  
Jacksonville Center  
Pt. Worth Center  
Jacksonville Center  
Jacksonville Center  
Memphis Center  
Memphis Center

TG - 9

Renold L. Bowden  
James L. Cronin  
Harold C. Duke  
Gerald L. East  
John P. Fitzgerald  
Wilbur G. Friend  
Keith K. Fussell  
Ralston G. Heath  
Eoss H. Ingram  
Robert E. Keene  
Alfred J. McAllister  
Gerald E. Mitchell  
Lynn J. Nielsen  
Floyd K. Owston  
Billie L. Schmitz  
George A. Seyfang  
Robert C. Stover  
William K. Trail  
Charles F. Weber  
Douglas H. Wezniak  
Frank M. Wilson

Salt Lake City Center  
Salt Lake City Center  
Salt Lake City Center  
Salt Lake City Center  
Denver Center  
Denver Center  
Denver Center  
Salt Lake City Center  
Denver Center  
Salt Lake City Center  
Salt Lake City Center  
Salt Lake City Center  
Denver Center  
Chicago Center  
Denver Center  
Denver Center  
Chicago Center  
Chicago Center  
Chicago Center  
Chicago Center







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|-----------------------------------|---------------------------------|----------------------------------|
| 1. Hangar #8                      | 6. Aircraft Simulator Building  | 11. OM & FM Dist. Center         |
| 2. Hangar #9                      | 7. Flight Inspection Buildings  | 12. Facilities Training Bldg.    |
| 3. Hangar #10                     | 8. Air Nav. Facilities Bldg. #1 | 13. Air Nav. Facilities Bldg. #2 |
| 4. Radar Antenna Laboratory       | 9. Air Traffic Control Building | 14. Radar Building               |
| 5. Flight Oper. & Airworth. Bldg. | 10. Headquarters Building       | 15. Electro-Mechanical Building  |



