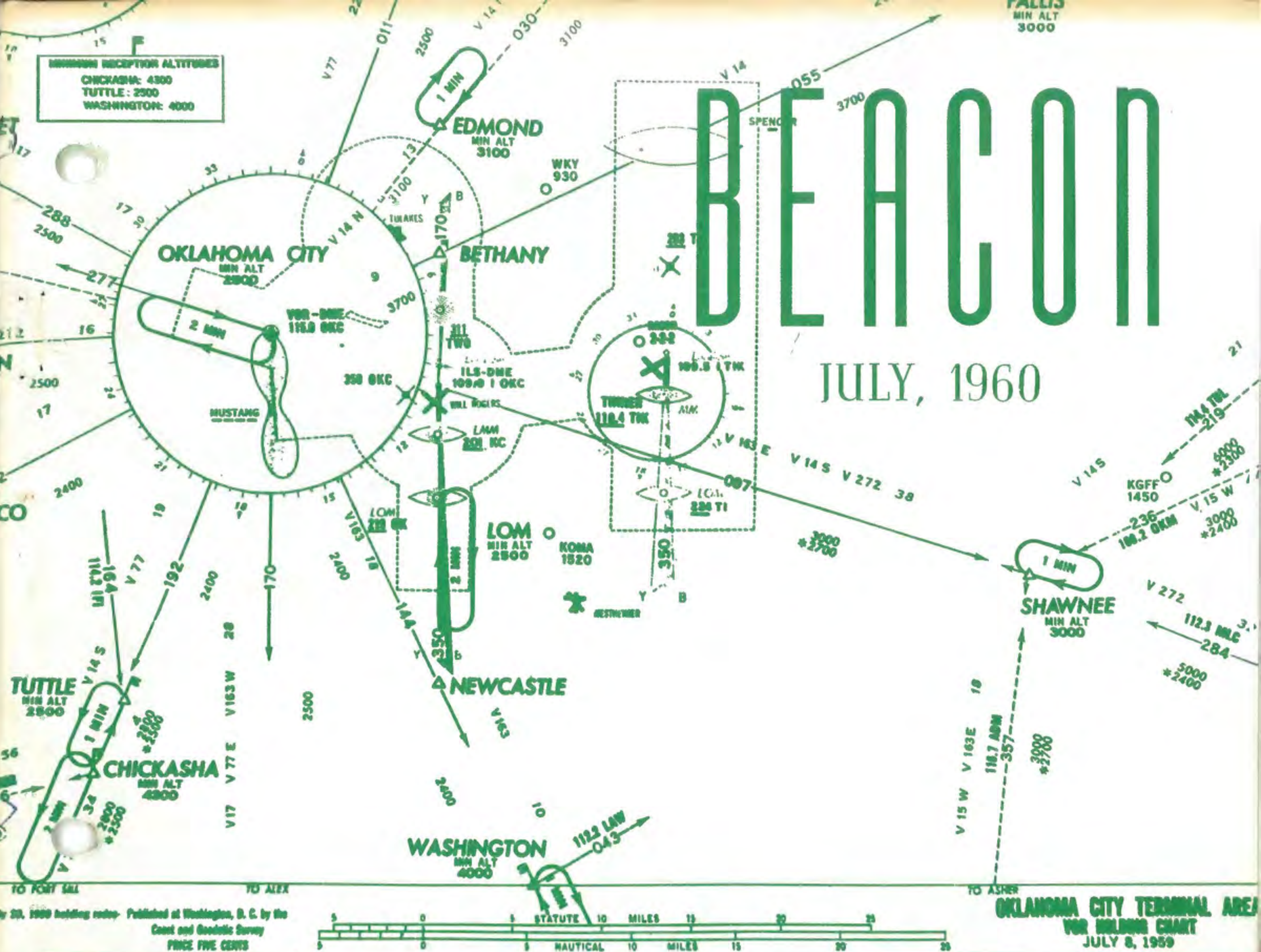
BEACON

JULY, 1960



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The BEACON Cover is a dual-purpose cover. It shows an Oklahoma City VOR terminal chart and air traffic as picked up on a radarscope.

The back cover of the magazine shows an FAA plane in flight. The shot was made by a Tinker pilot. Inside the back cover the BEACON has put a vacation map of the State of Oklahoma. This map was given the BEACON by the Oklahoma Planning and Resources Board.

Sponsored by:
FAA AERONAUTICAL CENTER
EMPLOYEES ASSOCIATION

LOOKING AHEAD

This July issue of the BEACON highlights the arrival in the Oklahoma City area of the new FAA KC-135. The August-September issue will carry a complete story on this high altitude inspection aircraft and its modification.

As you probably have noted, the BEACON has gone bi-monthly for the remainder of the summer months. With the Fall season, the BEACON will return to a monthly publication status.

Included in this issue are Oklahoma vacation spots, complete to facilities and quoted prices. We believe you will find Oklahoma has many, many fine places to spend your annual leave.

You probably have noted in this issue the increased number of stories dealing with people at the Center. There will be more in future issues.

The Editor

This frontispiece eulogy is a tribute to a man who was a pilot's pilot. Fred M. Lanter, Director of the Federal Aviation Agency Aeronautical Center, died June 29, 1960.

The pioneering spirit of this man lives on in the minds and hearts of the many, many friends he made through the years; exists solidly in the Aeronautical Center. You see, it was the vision of this man, Fred Lanter, that brought this focal point of civil aviation to its present position within the flying safety and service field.

Fred Lanter was more than an executive and "boss" to the employees at the Center. He was the man with the ready smile and the ability to reach quickly an understanding of the problems of others. He had the drive to do much, but he wasn't a "driver." Fred --- and all called him by his first name --- was a "leader."

Fred was a transplanted Oklahoma Citian, but was fiercely proud of the community and what it meant to his people at the Aeronautical Center.

Fred has left us --- and yet he has not. In every heart and memory there is a whole image of this man who was a whole man.

POINT OF VIEW

As all of us recognize, one of the most important tasks confronting the aviation world today is the development of a modern, efficient system for controlling the greatly increased air traffic over the United States. In recent years, excellent progress has been made by the Federal Aviation Agency and its predecessor organizations toward rebuilding the air traffic control system.

The Aeronautical Center has become renowned throughout the world for the key role it plays in the execution of this vital task. In some respects, the mission of the Oklahoma City Air Materiel Area and the various organizations at Tinker are concerned, just as you are, with training, communications, and logistic support.

Our most recent assignment in the logistic support area is one which is particularly gratifying, since it enables us to increase our direct support of your operations at the Center. This assignment involves the field and organizational maintenance, inspection and modification for the FAA's KC-135 aircraft, which is currently being reconfigured in the Tinker shops for the FAA high altitude flight inspection program.

The KC-135 support program is just one of the many projects on which Tinker and the Center are collaborating, in the interest of building a modern traffic control system. Because we are neighbors, we take unusual pride in supporting your operations, and, as in the past, we at Tinker stand ready to assist you in any manner possible.

T. P. GERRITY
Major General, USAF
Commander

Side view of KC-135

KC-135 being accepted from Air Force
by Morris A. "Sandy" McBride, FS-920

Huge Jet to be used by FAA

A 2 and a half-million dollar airplane will be used by the Federal Aviation Agency for high altitude flight inspection of air navigation facilities.

The giant KC-135 multi-engined jet arrived in Oklahoma City June 2.

Because facilities at Will Rogers Field are inadequate at the moment, the big jet will be based at Tinker Air Force Base. Two barracks at Tinker will be used for the plane's crew and for office space in connection with its operation.

The plane will undergo some modification during the next few weeks before its put into service.

Colonel Louis G. Thorup, chief of OCAMA's plans and management office formally presented the plane to Morris A. McBride, acting chief of the FAA's high altitude inspection section.

Reminder on Post Attack Registration of Employees

A deterrent force against aggression is a strong united America. These are the words of the President of the United States. Each of us, as citizens and Federal employees, must contribute to the strength of our Nation. One contribution is planning for any emergency. This pertains to the Government as well as the citizen . . . emergency planning in the event of an attack.

There is set up a post-attack registration system for all Federal employees. It serves as a means of locating and mobilizing the skilled services of those employees. If any emergency should arise out of an attack on this country, the Civil Service Commission will operate a registration system for employees in affected areas.

This is the procedure to follow. If you are prevented from going to your regular place of work because of an enemy attack—or prevented from reporting to an assigned emergency location—*go to the nearest Post Office, ask the Postmaster for a Federal employee registration card, fill it out and return it to him.* He will see that it is sent to the office of the Civil Service Commission which will maintain a registration file for this area. When your card is received by the CSC, the Federal Aviation Agency Aeronautical Center is notified. You, then, would be told when to report back to work. One other reason to file the registration card! This card will enable you to be kept on the roster of active employees and enables your office to forward your pay.

The registration card should be filed as soon after attack as possible. If you change your address after you have sent in a card, get a new one and send it in.

Remember . . . the FAA will need all its employees under wartime operating conditions. While your waiting for a place to report for work, help local civil defense authorities to meet the emergency caused by any attack.

For information on the Post-Attack Registration, read Agency Practice 3-1010.

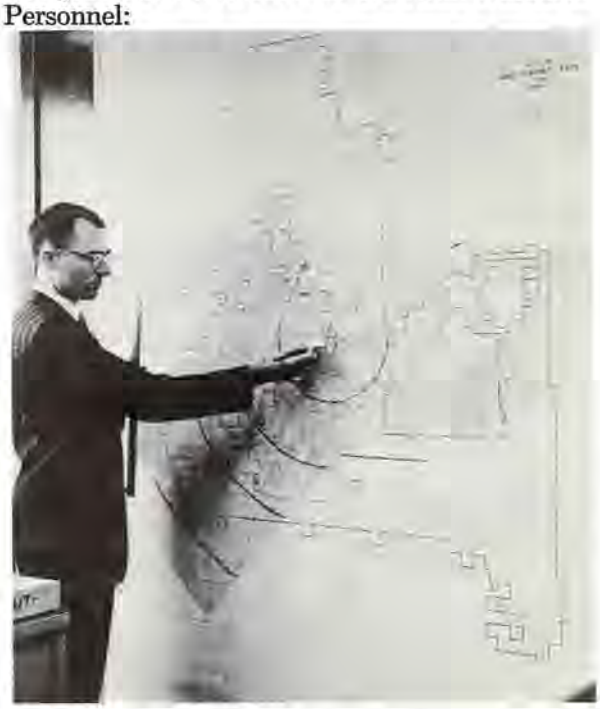
Evaluation of 1960 Operations Alert

This last May a National Emergency Exercise, dubbed OPAL-1960, took place on a national scale. This involved the FAA Aeronautical Center.

The history of Operation Opal involved a full-scale aerial attack on the Oklahoma City area. Both Tulsa and Oklahoma City were hit by a theoretical two megaton atom bomb.

Evaluation of the theoretical attack indicated that Oklahoma City and the Aeronautical Center suffered many casualties, 210-thousand casualties in the Oklahoma City area.

Operations Alert-1960 did prove valuable in developing the Aeronautical Center emergency plans. Here's how one of the workers involved in the operation saw the attack. He's Jim Walton of Personnel:



This picture shows damage rings around a simulated 4 megaton blast last Tuesday at the Capitol Building. We are in Ring D, which would give us an *over pressure* of about 1.8 psi. This would probably damage the aircraft pretty badly, knock out windows, crack plaster and burn some

of the wooden buildings that were exposed. There would be 3rd degree burns to personnel directly exposed to the heat, but those inside and behind walls would be spared much the same as if in the shade and protected from a sunburn. Fallout would be our greatest hazard after a blast of this size, but as long as our buildings are standing we have pretty good protection.

Of course we were not in Oklahoma City, because the Director released employees at 3:08 p.m. Tuesday and theoretically (Mine) CONELRAD was on the air warning us that a bomb was dropped on Altus and the fallout was headed this way. We should have been directed by CONELRAD to move out of the city to the South. By the time the fallout was down (5:20 p.m.) nearly everyone would be nearing the estimated borders of the fallout pattern and no one should have received a lethal dose of radiation. We would have spent two or three days around Sulphur or somewhere near waiting for a call (on CONELRAD again) to return to work. Also, when the bomb was dropped on the city at 10:20 p.m., there should have been no one here. However, Tom Brett, State Director of OCDM, doesn't think anyone would have left, so 178,000 people were killed. He is trying to stir Oklahoma City into a plan.

Calvin Davenport, Bill Bond, Volney Bradley and Jim Walton look over Fallout and Tornado Shelter on display in front of Headquarters Building

WASHINGTON NOTES

AIR TRAFFIC CONTROL ENVIRONMENT STUDY PLANNED BY FAA

Volunteers from among the Federal Aviation Agency's 17,000 air traffic control and communications personnel will participate in an extensive research program into the many and complex factors affecting employees working in an air traffic control environment.

The ultimate objective of one of the most challenging research programs undertaken to date by the FAA is to obtain clear cut medical data concerning the environmental stress factors relating to controllers working conditions. This data would provide a basis for establishing hours of work, including shifts and shift rotation, as well as retirement policies.

E. R. Quesada, Administrator, Federal Aviation Agency, said that the Agency has long been concerned with the exacting nature of the tasks and responsibilities confronting its air traffic control personnel, and, simultaneously, it has felt the need for greater attention to working conditions, hours of employment and information relevant to stress and fatigue.

The FAA Bureaus of Aviation Medicine, Air Traffic Management and the Office of Personnel and Training will provide the resources for carrying out the study.

Participants in the pioneering research project will be volunteers, carefully selected from among the approximately 17,000 Air Traffic Control Specialists to provide a statistical sample of the air traffic control population. The study will include personnel in Air Route Traffic Control Centers, Airport Traffic Control Towers and Flight Service Stations.

The projects will include: a study of the side effects of various commonly used drugs such as aspirin, antihistamines and tranquilizers on the mental acuity of the air traffic control personnel; a study of the effects of diet, stress and fatigue on energy output to provide better understanding of the basic needs of the controllers to pursue their particular tasks; a study to develop more accurate means to evaluate behaviour characteristics in successful and unsuccessful on-the-job performance of operating personnel; a study to investigate the effects of hours of work, work-rest ratio and shift rotation on job performance; a study to provide long range evaluation of effects of job induced stress resulting from physical and environmental conditions, aging and administrative policies. This particular project

would gather data to evaluate the necessity or desirability of earlier retirement for these personnl. This portion of the overall study is considered to be one of the most challenging medical research programs in the field today.

In line with the Washington story . . . air traffic control operators at Norman and Will Rogers Field soon will be "broadcasting" their heart beats and breathing rates to a medical-van-receiving station five to ten miles distant.

The Civil Aeromedical Research Institue plans to carry out these tension studies.

The control tower operators will wear a two-pound instrument strapped to their bodies. They will not be hampered with wires, and presumably will be able to forget the lightweight instrument recording their physical reactions. The signals received will give electrocardiograph pictures and respiratory responses.

Later, body temperatures, skin resistance factors, and possibly brain wave signals can be sent to the receiving station as more channels are added.

The Federal Aviation Agency has proposed an amendment to the air traffic rules, Part 60 of the Civil Air Regulations, which would provide pilots operating under visual flight rules (VFR) with additional uncontrolled airspace above obstructions and congested areas.

The proposed amendment would provide uncontrolled airspace in the vicinity of airports beyond the control zones from the surface to at least 1,200 feet above the surface. Additionally, the proposed amendment would provide at least 500 feet and uncontrolled airspace above obstructions underlying airways.

The current CAR Amendment 60-14 provides 700 feet of controlled airspace above the ground to the VFR pilot in the vicinity of airports, and 1,500 feet above the ground in the enroute areas. However, this fails to resolve some of the problems arising from flights conducted over congested areas and obstructions, since obstructions may be higher than 700 feet or even 1,500 feet. Current air traffic rules require that enroute flight be conducted at last 1,000 feet above congested areas. By establishing 1,200 feet of uncontrolled airspace over congested areas, the proposed amendment would provid an additional 500 feet of uncontrolled clearance for the use of VFR pilots when flying over congested areas.

The rules applicable to VFR operations within control zones would remain essentially unchanged. However, the size of control zones would be increased from approximately five to approximately nine miles in order to provide sufficient controlled airspace for arriving and departing aircraft operating under instrument flight rules.

The significance of the proposed amendment is that pilots flying VFR in uncontrolled airspace during periods when flight visibility is less than 3 miles are provided with more vertical airspace so that they may fly above all obstructions within the uncontrolled airspace. This is not the case under the present regulations.

The amendment would have no effect on VFR flights when flight visibility is more than 3 miles.

Effective June 15, 1960, the Federal Aviation Agency required all applicants for a student or private pilot (Class 3) medical certificate to take medical examinations solely from designated aviation medical examiners.

The regulations have required applicants for Airline Transport Pilot (Class 1) and Commercial Pilot (Class 2) medical certificates to be examined by designated medical examiners. The change reestablishes the previous practice which required applicants for all three classes of airman medical certificates to take their medical exams only from designated medical examiners.

Before adopting the change, FAA provided information about the proposal to interested parties for comment and held a public hearing. All comments were carefully evaluated. The American Medical Association, Aerospace Medical Association, the Flying Physicians Association, the Civil Aviation Medical Association and a majority of individual doctors who commented, supported the proposal. Opposition was registered by the Aircraft Owners and Pilots Association, other groups, some physicians and private individuals.

The regulation to require selected medical examiners to perform pilot medical examinations will enable the Agency to assure proper direction and maintain effective supervision of its aviation medical examiners. This was not possible under the existing procedure.

The problem of maintaining effective liaison with the entire body of physicians permitted to issue medical certificates for student and private pilot applicants was revealed in an Agency survey. It showed that of the airmen examined by non-designated examiners, 84 percent of those who did not meet the standards were nevertheless given certificates by the examining physicians.

The Louis Foree's with camping outfit on Belle Isle Lake Island

FMD's Robinson Crusoe Family—The Forees

How would you like to win a five day, expense paid vacation on an uninhabited island?

Imagine the relaxation . . . the peace and contentment . . . the cool breezes blowing in from out over rippling blue waters . . . the gentle rustle of shade trees as they responded to the caress of sun and wind.

Imagine the challenge of a do-it-yourself existence, completely away from the problems of civilization where you could prove your superiority over nature.

And now imagine how the Louis Foree family felt when they learned they had won just such a vacation from a local radio station contest.

So, on Thursday, June 2nd, at 2 p.m., Louis Foree, his wife, Aledamae, his daughter, Sandra 13, and son, Carter 11, were packed and anxiously awaiting transportation to their special carefree island.

They, too, had visions of cool breezes, rippling blue waters, and beautiful shade trees.

Of course the island turned out to be Belle Island in northwest Oklahoma City, the breezes were hot and humid, the rippling waters were muddy red, and the scrubby willow trees were likely to hold snakes.

Still, even with those difficulties, the problem of insufficient drinking water, and the dense vegetation, the Louis Forees managed to prove that man can hold his own in the wilderness (a good thing to know in these days filled with threats of a war which might take us back to primitive days).

Naturally, the Forees had help. All the food they could eat, $500 worth of modern camping equipment, a sufficient supply of cigars for Louis, plus a full case of bug bombs. They got to keep it all, too.

When we paddled over to the island we found Louis busy trying to construct tables and chairs from willow trees, and doing a very respectable job of it too.

The children were trying out their new fishing rods, and Aledamae was busy, doing the usual wifely things which can make a tent become a home.

Louis wore his new hatchet and hunting knife with a swagger and smoked his free cigars with a delighted grin.

All too soon it was time for us to leave this enchanted island. And as our boat sailed away into the sunset we heard that familiar cry of the natives:

"Aloha! Oloha!"

Center's 2,000th Employee To Vacate on 3-Year Vacation

Jo Ellen Holt who came to the Center in March, 1959, as the Center's 2,000th employee is leaving in July to join her husband, Eugene, in the Philippines.

In the Communications Section of the Special Services Branch, Jo is responsible for compiling the Center's telephone directories. Since a revised directory is in the process of preparation now, Jo would appreciate everyone seeing that the Employee Locator and Emergency Notice form (FAA-968) has current information for the directory.

She plans to drive to San Francisco with her son Jerry Eugene, 12, ship her automobile to Luzon, and fly to Hawaii in a MATS plane where she will have an 18-hour stopover before continuing on to the Philippine's largest island for a 3-year "vacation."

THINGS TO DO TODAY

(1) Get organized
(2) Talk to wife
(3) Get re-organized
(4) Talk to wife
(5) Abandon entire idea
(6) Talk to self

Attending the joint meeting of Aeronautical Center Forms Management Representatives and Files Custodians on May 27 were, 1 to r: Charles Brill, Don Winfrey, Margaret Bennett, Agnes Simmons, Willedra Beard, Leland Wilborn, Clarice Hunt, Becky Jones, Marjorie Goyer and John Freeman; seated: Francis Chase, Mary Wiley, Betty Mitchell, Lois Brasher, Christine Whitman and June Grayson. Representatives and Custodians not pictured are Bill Werner, Ed Schmidt, Neil Davis, Odessa Hughes, Ladine Garrett, Henry Bridges, June Donceel, Richard Wenzel, Burnis Wells, Muriel Lowe, Maurine Peaden and Aline Koch.

AERONAUTICAL CENTER FORMS CATALOG ISSUED AT MEETING

The first Aeronautial Center Forms Catalog was distributed at a joint meeting of the Center's Forms Management Representatives and Fils Custodians May 27, by Charles F. Brill, Forms Management Officer and Records Liaison Officer. Further distribution of the catalogs was made to key personnel at the Center, including those designated authority for requisitioning administrative supplies.

In the foreword of the catalog is a statement that Forms Management at the Center is explained in Aeronautical Center Order 7-3, and that requests for approval of forms or form letters should be submitted to the appropriate Representative listed below on Form FAA-1358, which is pictured on the back cover of the catalog:

AC-3.3	Bill B. Werner
AC-70	Margaret M. Bennett
AC-90	Mary F. Chase
AC-110.A	Neil S. Davis
AC-130	Clarice Hunt
AC-131	Odessa Hughes
AC-132	Leland Wilborn
AC-133	Ladine Garrett
AC-134	Becky Jones
AC-160	Betty Mitchell
AC-190	Marjorie Goyer
AC-200	June Donceel
AC-301	Mary Wiley
AC-670	John E. Freeman
AC-680	Agnes Simmons
AC-702	Richard Wenzel
FS-800	L. D. Winfrey
FM-900	Maurine Peaden
AM-902	Aline Koch
FS-940	Burnis Wells

During the meeting it was stressed that when the stock level of any AC form reaches the point where it is necessary to reprint it for stock replenishment if it is to be continued in use, each Representative should apply forms management techniques to revise or improve the form before authorizing its reprinting.

OUR DREAMS COME TRUE TRIP

by George and Evelyn Boal

For several years we have dreamed of a trip like the one we are planning to take this summer, but it was only about a year ago that we decided to make it become a reality. Some very dear friends of our, Dr. and Mrs. Ralph T. Cobb, of Sioux Falls, South Dakota had been to the Holy Land about four years ago, and are making the trip again this year, as leaders of the tour party of which we will be a part. George's mother, Mrs. Fern Boal, of Mt. Pleasant, Iowa, is accompanying us on the trip, much to our delight.

We leave from New York City on June 8th, in a Boeing 707, and land about 7½ hours later in Zurich, Switzerland. We will visit some of the old churches in Switzerland, and some watch factories. High point for Evelynn is a visit to the statue of Peter Zwingli, an early Swiss reformer, and from whom her father's family is descended.

High point of the trip will be the Passion Play in Oberammergau, Germany. This play is presented by the residents of the town of Oberammergau each 10 years and is world famous.

We tour through Italy, visiting Milan and Florence, Naples, and Pompeii. There will be gondola rides in the water streets of Venice and visits to the homes of Verdi and Toscanini. Several days will be spent in Rome with side tripe out of Rome to view historic wonders such as Mt. Vesuvius.

We will fly to Cairo, and while in Egypt will visit the pyramids and the sober old sphinx. We will cross the Suez Canal and will even ride camels to Mt. Sinai and have a boat ride on the Nile River.

In the Palestinian countries we will be visiting many places of religious significance in such cities as Beirut, Damascus, Jericho, Jerusalem, Bethlehem and Nazareth. We will see the River Jordan, the Dead Sea, and the Sea of Galilee, and also the Mount of Olives, the Garden of Gethsemane and ever so many of the places of familiar biblical happenings.

The last portion of the tour will be spent in the vicinity of Athens, from where we will leave for the flight home.

Our tour was arranged by Gretzinger World Tours of Pasadena, California, and is under the sponsorship of the South Dakota Baptist Convention. It lasts for 39 days which promise many thrills and much excitement—We just can't believe it is actually happening to us.

Editor's Footnote: George and Evelyn are now on that tour. Just for the record . . . this trip might be called George's swimming pool and Evelyn's T-Bird.

ATTITUDE SURVEY CALLED FOR FEDERAL SERVICE

We have just received word from our Personnel Officer in Washington that during the months of July and August, representatives of National Analysts, Inc., of Philadelphia, on behalf of the Brookings Institution will contact selected Federal officials throughout the United States for the purpose of interviewing them in connection with a study of attitudes of American people toward Federal public service. Any person contacted will receive a more detailed letter from National Analysts regarding the purpose of the survey and requesting cooperation.

The Civil Service Commission has requested that announcements be made that this is a desirable project, and if possible, individuals contacted should cooperate.

Norma Sharp at the Tape Card Printing Punch

WHO'S CONFUSED

Something NEW has been added in the Accounting Branch, Fiscal Division, Aeronautical Center, and at the moment the girls in the Records and Control Unit are not quite sure whether it is an asset or liability.

Recently, two Class 31 National Cash Register Bookkeeping Machines with Numeric Tape Recorders and an International Business Machine, 047 Tape Card Printing Punch, were purchased for the Aeronautical Center Accounting Branch. This equipment is being operated in the Records and Control Unit, which is also a new addition to the Branch. Personnel of this Unit include Mrs. Norma L. Sharp, Supervisor, Mrs. Ruth Duncan and Elzada Neeley, under the direction of Mr. W. M. Merrill, Chief, Budgetary Accounting Section.

The Accounting Branch is indeed fortunate to have readily available the broad knowledge and experience in machine processes possessed by both its Branch Chief, John K. Hall and his assistant, Mr. Decker, since this background has been a great help during the period of transition to the new system.

Mr. G. B. Mooney, Chief, General Accounting Section, has been appointed coordinator in establishing technical procedures for the system, with Mr. Merrill assisting. Mr. J. H. Crupper, Electronic Data Processing Branch, Operating Materials Division, has assigned Mr. Jerry W. Harbison, Tabulating Planner, to assist the Accounting Branch in implementing the new system. Great progress is being made in this phase of the system and thanks to their splendid work, we have been able to put it into effect.

The Mechanized System, which went into effect May 1, 1960, playd havoc among Branch personnel with all the new codes and procedures necessary for successful operation; however, we feel sure that the interest and enthusiasm shown by the staff assures us of great improvement in efficiency to maintain accurate records and control of the numerous documents processed by Accounting Branch personnel.

Elzada Neeley and Ruth Duncan at the NCR Bookkeeping Machine

FRED GERDES PASSES AWAY

Mr. Fred Gerdes of the ILS/VOR Section succumbed to complications following an abdominal operation in Baptist Memorial Hospital. He passed away on Thursday, June 2, 1960, a short while after the operation.

Mr. Gerdes came to the Center from Tucumcari, New Mexico on Oct. 5, 1958. He was an instructor in the Principles Unit of the ILS/VOR Section. Mr. Gerdes will be remembered by all for his pleasant smile and easy affability.

Perhaps the best epitaph for Fred was voiced by one of his students who, upon hearing of Fred being in the hospital, but not knowing the gravity of the situation, remarked to the substitute instructor that he had "never had an insructor who went to greater lengths than Mr. Gerdes to pass his knowledge and experience on to others." Nothing we can say can add to this.

Experimental terminal radar undergoing tests for possible use on the Federal Airways. Adoption could quadruple present airport radar coverage.

New Terminal Radar

Washington, D.C. — The experimental radar shown above, originally designed for the United States Air Force, is being tested by the Federal Aviation Agency for possible use in the Airways Modernization Program. It is a new system for handling air traffic in high density areas where closer than normal spacing is required. If the device proves to be practical for civilian operations it will extend airport radar coverage from the present 30 mile radius to more than 120 miles.

Control of air traffic within the terminal area is quite different from that of the transition and en route areas. More communications contact and position reports become necessary as the aircraft nears the terminal, and close separation is the rule. Also there may be several satellite airports under the control of one facility which makes the entire operation a very flexible one. Visual traffic and instrument traffic have to be integrated into the landing and takeoff sequences, and aircraft that miss their approaches have to be rerouted and brought back. All this must be done in orderly and split-second procedure.

The evaluation is being made by the FAA's Bureau of Research and Development.

Planning To Fish Tomorrow? Tune in on the FAA

Washington, D.C.—If your plans depend on weather, the Federal Aviation Agency can be your best friend.

Amateur gardeners, concrete-mixers and fishermen are beginning to discover what the professionals have known for some time—that the Airways Weather Service provides up-to-the-minute local weather every half hour from some 300 Flight Service Stations across the country. At 15 minutes *past* the hour weather within 80-100 miles of the station is broadcast. At 15 minutes *before* the hour the broadcasts include conditions at major airports several hundred miles in all directions. All include wind direction and velocity, visibility and barometric pressure. Special storm warnings are broadcast, gving location and density as well as direction and speed of movement.

Once this information was available only to pilots but the appearance of the low frequency (200-400kc) transistor radio put it within everyone's hearing.

Local frequency designations can be obtained from any airport tower, flight service station, or air route traffic control center. Maps showing the geographical positions of the Flight Service Stations (formerly known as Air Traffic Communications Stations), their frequencies and call

letters, may be purchased from the U. S. Coast and Geodetic Survey, Washington, D. C., for 25c a copy. Known as the "World Aeronautical Series," each is 22"x29" in size and covers an area 300 x 380 miles.

Over the next three years the present low-frequency network will be replaced with high powerd stations broadcasting in th same band on continuous tape which will be changed every hour. Each tape will run 5 to 8 minutes and then repeat, giving a general synopsis of weather developments and conditions, and an area picture which will be more complete than those now given. This program is already underway and operating in several locations.

Don G. Anderson, Director-General of Australia's Department of Civil Aviation, left, visits with Aeronautical Center Director Fred Lanter. On the right is Keith Leonard, Australian Civil Air Attache

Foreign VIPS Tour Center

Among the many who visit the Aeronautical Center were two outstanding foreign dignitaries during May and June.

One was Don G. Anderson, Director-General, Department of Civil Aviation in Australia. Anderson had been checking flying safety in this country, with the emphasis on the latest in navigational systems and aids used by civil aviation.

Anderson told Center Director Fred M. Lanter that Australian civil Aviation has a most enviable Record—no airline accidents since 1953, despite a growing flight schedule.

During his tour of the U-S Anderson had a look at the Washington FAA offices, checked through NAFEC at Atlantic City, and looked over facilities across the country.

Brig. General Pedro Q. Molina discusses aviation with E. B. Olson, Asst. Director.

Another visitor was Brigadier General Pedo Q. Molina, commanding General of the Philippine Air Force. General Molina, who is a member of SEATO and the Philippine CAB, was greatly impressed with the Aeronautical Center, not only from the FAA School standpoint, but also from maintenance and supply. Molina pointed out to Center officials that there are a great number of small islands in the Philippines group. This means that civil aviation will have to be the major form of quick transportation.

FMD's ROLE IN STUDENT TRAINING

Not only are materials and engineering services from FMD made available to all parts of the world, an even more important commodity is transmitted in the form of education. Although FMD has no official training courses set up for foreign students, many are sent here for "tooling up" on ways and means we have adopted to furnish these services.

FMD attempts to provide reasonable answers to the "where, what, when and why" questions concerning central supply and engineering operations by giving simple straightforward explanations of the concepts and techniques we have adopted. People interested in supply operations

F. M. Lanter, Michael Vartholomeos and R. W. Pulling

are given a complete resume of the systems used in furnishing stablishment and materials from a central source along with the allied phases of inventory activities, materials handling, protective packaging, and shipping. Others more interested in the technical aspects of establishing and maintaining a national airways system are shown our methods of supplementing commercial sources of material with the aid of government forces and operating a central repair system. Through briefings and familiarization by actual on-the-job training, they are given an insight into "how the other fellow is running his business."

Garry Costar, Melih Ceviker and R. W. Pulling

Some of the simple FMD "do's" and "don'ts" that have proven effective while training these people are:

Don't use slang expressions.

Don't overwork technical terms.

Don't use abbreviations (some students don't dig this Aeronautical jive.)

Don't throw up a smoke screen of numbers and gobbledygook.

Take a few more words to make a story clear.

Back up claims with "specifics."

Shown receiving "Certificates of Award" as a result of such training are Messrs. Melih Ceviker and Nafiz Karamete from Ankara, Turkey, and Mr. Michael Vartholomaios from Athens, Greece.

Messrs. Costar and Pulling with Nafix Karamete

STATE SUPREME COURT JUSTICE SPEAKS TO GRADUATING NATIONALS

Internationalism was the keynote of the graduating ceremonies for Class TF-29. The 22 air traffic control students represented some 7 countries.

The guest speaker for the graduation exercises was Associate justice N. B. Johnson of the Oklahoma Supreme Court. Justice Johnson, longtime jurist on the Oklahoma scene, is of Cherokee Indian descent. In his speech Justice Johnson mentioned the goodwill, justice and understanding between peopls as reflected in this graduating class. He pointed to his own Indian blood and remarked on the fight against communism. He called this foreign nationals training

Hassan Yousefi Tehrani, Iran, receives commission of Honorary Colonel on the Governor's Staff from Oklahoma Supreme Court Justice N. B. Johnson.

program "an excellent barricade against communism."

After the 22 graduates were given ther certificates, Justice Johnson presented each with an honorary colonel's commission on the staff of Governor J. Howard Edmondson. This marked the first time this had been done during a graduation ceremony.

One family is taking back a living momento of Oklahoma. The family of Siegfried Kattenbach of Brazil has a new addition . . . a child born in Oklahoma. Kattenbach said he was taking "an Okie to Brazil." The graduates, by countries, were: Wilson De Modeiros, Otto de Oliveira Frensel, Siegfried Kattenbach, Gilberto Martins from Brazil; Nguyen Tich Duc, Kieu Minh Luan from Vietnam; Roberto Falson, Jose M. Gabrielli, Enrique Martinez and Eric Romero from Argentina; Felipe Fratti and Roberto Parras Osorio from El Salvador; Masahire Goto, Takeshi Nakamaru, Eiichire Tamabayashi from Japan; Nurul Hason Hanafi, Agha Aslam Kahn, Basharat Hasan Sayed from Pakistan; Chieb Tanamsooth and Chow Watanachinda from Thailand, and Hassan Yousefi Tehrani from Iran.

POLITICAL ACTIVITY

Since this is a general election year, it is felt necessary to call the matter of political activities to the attention of all employees. The following list of questions and answers was furnished by the Civil Service Commission. They relate to the Hatch Act, which is the legislation governing political activities of Federal employees. As shown by the second question, penalties for violation of the Act are severe. Consequently, every employee should familiarize himself or herself with thse provisions. FOR IGNORANCE OF THE LAW EXCUSES NO ONE.

Q. What groups of employees are prohibited from active participation in politics by the Hatch Act?

A. In general, employees of the executive branch of the Federal Government and the Government of the District of Columbia, including temporary and part time employees. Also restricted is the political activity of certain employees of State, County, and Municipal Agencies that are Federally financed.

Q. What is the penalty for violation of the Hatch Act?

A. A. The most severe penalty for violation is removal. THE MINIMUM PENALTY IS SUSPENSION WITHOUT PAY FOR 90 DAYS.

Q. What agency enforces the Hatch Act?

A. The Civil Service Commission enforces it for the competitive civil service.

Q. I am an employee affected by the Hatch Act. Will you please explain my responsibilities and rights under the act?

A. You have the right to vote and to express your political opinions. BUT YOU ARE FORBIDDEN TO TAKE AN ACTIVE PART IN *PARTISAN* POLITICAL MANAGEMENT OR *PARTISAN* POLITICAL CAMPAIGNS. In connection with your right to vote, the Civil Service Commission emphasizes that political-activity restrictions do not relieve you of your obligation as a citizen to inform yourself of the issues and to register and vote. Your agency will give you any necessary time off without charge to leave in order to vote. Specifically, you may not run for office OR CAMPAIGN FOR A PARTY CANDIDATE. You can attend political rallies and join political clubs, but you cannot take an active part in the conduct of a rally or operation of a club. *AND YOU*

MAY NOT BE AN OFFICER OR COMMITTEE MEMBER IN THE CLUB. Other things you are prohibited from doing are using your automobile for the purpose of getting voters — other than members of your immediate family — to the polls, distributing campaign material, taking part in a political parade, and selling tickets or otherwise actively promoting such activities as political dinners.

Q. I want to write a letter to the editor of our local newspaper expressing my opinion on a partisan political issue. Am I allowed to do this?

A. Yes, but you must not solicit votes for or against any political party or candidate. If you solicit votes, it is a Hatch Act violation.

Q. May I make a campaign contribution to my party?

A. Yes, but you cannot be required to do so. The contribution cannot be made in a Federal building or to some other employee who is prohibited by Federal law from accepting contributions. Of course, as a Federal employee you cannot solicit political contributions.

Q. I have been asked to run for public office. Is this permissible under the Hatch Act?

A. No. Federal employees cannot be candidates for any National, State, County, or Municipal office filled in partisan elections. You may run for local office ON A NONPPARTISAN BASIS if names appear on the ballot without party designation and if the election and the preceding campaign are conducted in a completely nonpartisan manner.

Q. May I serve as an election official?

A. A Federal employee may serve as an election officer if he is appointed or paid by a State or political subdivision, provided he discharges the duties of the office in an impartial manner. He may not become a candidate for the office in a partisan election, nor may he, while serving as election officer, engage in, or become involved in, activities on behalf of a political party or candidate.

Q. I would like to wear a campaign button in the interests of one of my favorite candidates. Is this permissible?

A. Yes, BUT NOT WHILE ON DUTY CONDUCTING THE PUBLIC BUSINESS. You may also display a political sticker on your private automobile, PROVIDED THAT YOU DO NOT USE YOUR AUTOMOBILE FOR GOVERNMENT BUSINESS.

Q. I am a Government employee but my wife isn't. She wants to help a friend campaign for political office. Is that all right?

A. Yes. The act does not restrict the activities of an employee's wife or of other members of his family in any way unless they are engaging in politics on his behalf. For example, your wife has the right to campaign for her friend, but if she is really doing it for you because you can't do it personally, the act is violated and you will be held accountable for her actions.

Q. I am a Federal employee and have been a justice of the peace for two months. I have just been told that I am violating the Hatch Act. Is this correct?

A. No, providing you were APPOINTED to the position, OR ELECTED TO IT IN A NONPARTISAN ELECTION. Other positions which Federal employees are permitted to hold by appointment are positions on boards of education, school committees, boards of public libraries and religious or charitable institutions, as well as any other part time office. Service as a notary public is permissible, as well as unpaid service in a fire department. Permission to hold these offices must, however, be granted by the employing agency.

Q. What should I do if I don't know whether a certain action violates the Hatch Act?

A. Since ignorance of provisions of the law will not excuse you from penalties for violation, you should present the matter to your supervisor first. He may refer you to another supervisor, or to your Placement Advisor. If your Advisor doesn't know the answer, he will get it for you.

UNLUCKY FRIDAY THE 13TH ? ?

Spencer F. Houghton, Air Traffic Control Instructor in AC-520, highlighted 20 years of golfing with a "hole in one" May 13, while vacationing in New Orleans. To add to the vast odds of it ever happening, he did it on the 13th hole on Friday the 13th. The site of this feat was the City Park Golf course in New Orleans. Houghton who considers himself a weekend golfer actually possesses a very good game, playing near par golf most of the time, and occasionally equalling or bettering par for 18 holes.

Houghton, who has been at the Aeronautical Center since September, 1959 came here from the Oakland, California Air Route Traffic Control Center. He, his wife Dru and two children reside at 3217 SW 62nd.

Martin Caidin, Jim Yarnell and Beechcraft Debonair

Writer-Photographer Team to Fly Plane 65,000 Miles Collecting Book Material

A noted writer and his cameraman this summer will fly a single-engine plane more than 1,000 miles a day during a two-month period to collect facts and photos for two new books scheduled for publication next spring.

Before the trip ends, author Martin Caidin of New York City and photographer James Yarnell of Wichita, Kansas, will have visited each of the 48 continental United States. Caidin, one of the nation's foremost writers of civil aviation, military science and astronautics, will turn out nearly 150,000 words of prose while Yarnell snaps several thousand pictures in order to select the best 350.

"That's why we have an autopilot," said Caidin. "To cover the entire country, make notes and take photos, all in 60 days, we need help flying."

The first book, titled *This Is My Land*, will be published by Random House, Inc. It will contain some 70,000 words and 200 photographs. Text and pictures will portray the "face of America as seen from a magic carpet"—the "magic carpet" in this case being a star-spangled Beechcraft Model 33 Debonair.

"It will be sort of a love letter to my country as viewed from the highest mountain—looking across the myriad panorama of this great land in which we live," said Caidin. "The airplane will serve as my mountaintop."

Both writer and photographer are licensed pilots. Their trip started June 1 at Beech Field in Wichita. All told, they will fly approximately 65,000 miles, beginning in the northeast quarter of the nation. From there they planned to tour the northwest quarter, then the southwest and finally the southeast.

Nothing like *This Is My Land* has ever been attempted before. Random House, a renowned publisher of quality books, will produce the work in an outsized format to present the scenic, the historic and the physical wonders of America as vividly, attractively and impressively as possible.

Caidin and Yarnell will visit hundreds of places of historical significance, as well as majestic sites of natural and material splendor. They will fly over the hallowed battlegrounds, pioneer trails, awesome mountain ranges, giant industrial complexes, famous resort areas, and the fabulous canyons, lakes and deserts.

"This tour will also point up the flexible mobility, outstanding economy and versatile utility of modern single-engine business airplanes," said Caidin.

Federal Aviation Agency officials have arranged a coordinated assistance program that will enable Caidin to relate a detailed, behind-the-scenes account of the vast electronic and mechanical network of communication and navigation systems that span the U. S. for the benefit of all users of the airspace. Both the U. S. Air Force and U. S. Navy also are participating closely with the author.

"No other organization in the world comes close to matching FAA's recognition and support of private, business and commercial aviation," said Caidin. He added that FAA's services and facilities will be graphically told in the second book.

Caidin, some time this summer, will visit the Aeronautical Center in Oklahoma City. He wants a look and this means pictures from photographer Yarnell at the instructional methods used in the FAA School, the work done in the Depot and other areas. These will be incorporated in his new book.

Caidin's second book, as yet untitled but under contract to E. P. Dutton, will also be 70,000 words in length and will feature approximately 150 photographs and illustrations. It will deal primarily with the cross-country flight itself, which Caidin describes as a practical demonstration of precision private flying by a non-professional pilot.

Following one week of calibrations, the final run of the Acceptance inspection was conducted on May 27, 1960 by groups representing the Department of Flight Standards, the Permanent Board, and Burton Rodgers Inc., Cincinnati, Ohio, the manufacturer of the trainer. Participants in the final run are shown in the accompanying photograph. Seated, rear row—left to right, William L. Brown, Chief, Powerplant Section; Herman Cleaton, Contract Specialist; Howard Ates, Administrative Assistant; Edwin Hill, Burton Rodgers; Robert Jung, Electronic Technician; standing at left of jet transport fuel system trainer, Warren W. Smith, Head, Department of Flight Standards; seated at instructor's console (left center) Hope Biggers, Airworthiness Specialist; Front, Dean S. Anderson, Acting Assistant Chief, Procurement Branch; at pilot's cockpit station, right rear, (standing) L. E. Shedenhelm, Chief, Aircraft Branch; (seated) Frank Fuhrer, Equipment Specialist; John Hutchings, Burton Rodgers; at flight engineer's station (right foreground) Arthur Douthit, Air Carrier Maintenance Specialist.

The sectionalized display panel between the pilot's and flight engineer's stations (right center) faithfully depicts the internal reactions of the Pratt & Whitney JT3 and JT4 to various normal and malfunctioning conditions. The parameters affecting the instrument indications of the two engines are changed by inserting the proper circuit "card" in a slot in the computer rack.

The airplane instruments, including the Static Air Temperature, Altitude, Air Speed and Mach Indicator are mounted in the "box" above the display panel. The jet engine instruments are mounted at the top of the internal engine display panel of the engine including Ram Pressure, Temperature, Low and High Compressor RPM, Fuel Flow, Burner Pressure, Engine Pressure Ratio and Exhaust Gas Temperature. In text materials and on charts these are identified as Pt2, Tt2, N1, N2, FF, PB, EPR and EGT, which are new and quite confusing to those familiar only with piston engine instrumentation. The sensing areas in the engine are connected to the respective instruments by white lines which enables ready visualization of the sensing area, engine station, full name and symbol of

the instrument reading, each time it is read or observed. This arrangement was designed by personnel of the Aircraft Branch to expedite and improve the quality of training. It will eliminate confusion created by other engine trainers which have all the airplane and engine instruments arranged in one row along the top of the display panel, with no apparent relationship with the sensing areas.

The engine-cockpit trainer is a true representation of the UAL version of the Douglas DC-8 jet transport. The aircraft-engine instrument operational relationships are sufficiently accurate to permit "Prayer Wheel" (Jepperson Circular Computer) practice on various operational performance characteristics of the DC-8 airplane-engine combinations. The trainer is designed to be utilized in engineering, maintenance, flight operations and various other specialized courses.

Bill pictured in his office, affectionately named by his employees the "Eagles Nest." The view is of the flight line and Municipal Airport.

MEET BILL MATTHEWS

Versatility is the middle name for the Chief of the Aircraft Standardization and Maintenance Division at the Aeronautical Center.

Bill Matthews is a well-traveled man, starting at an early age. He literally went from Post to Post. You see, Bill's father was an Army officer.

In 1931 Bill went to work for American Airlines and spent the next ten years gaining experience in traffic, aircraft maintenance and supply work. In 1941 Bill accepted a position with the CAA. As he phrases it, "After graduating from the Capitol Wallpaper CAA Inspectors' School" . . . Bill was assigned to old Region Two in Atlanta, Georgia as CAA General Aircraft Maintenance Inspector.

Then came World War Two. Bill Matthews became an officer with the U. S. Air Transport Command. One of his first major responsibilities was to help in setting up the "Brass Hat" Group at Bolling AFB, D.C., later Washington National Airport. He was responsible for the operation and maintenance of the aircraft assigned to flying the top government officials. Two of these, by the way, were Generals Marshall and Arnold.

The most important project assignment given Bill Matthews in the Brass Hat Group duties was to assist with the procurement and building of a four-engine Douglas C-54 for the President of the United States. This was the first time any flying was considered by one of our presidents. There was a great deal of mixed feeling. This plane was for President Roosevelt, a paralytic. Such innovations as an elevator to permit loading a wheel chair passenger, tracks to permit a chair's travel inside the plane were involved. The plane was named "The Sacred Cow" by one of the enlisted men and that name stuck.

During his long military career Matthews flew all over North Africa, the Far East, South America. In 1956 Bill Matthews received his promotion to full Colonel in the Air Force Reserve.

After WW2 Bill served briefly with the CAA again, then in 1946 worked in private industry as a consultant to airlines, most of them located in the Caribbean and South America area.

In 1950 he returned to the CAA and reported to the Aeronautical Center as Chief of the Aircraft Standardization Division. He's been here since that time—except for a brief return to Air Force Duty in 1951 when he served with MATS.

As for his present job . . .

Matthews assumes with self assurance the responsibility for complete overhaul, rehabilitation, modification, standardization, major maintenance and repair of the large fleet of aircraft and engines operated at the Aeronautical Center. These aircraft consist of plans ranging in scope and size from small single-engine through twin-engine and four-engine Douglas; from single-engine jet fighters and trainers through multi-engine jet bombers; and also include the flying laboratory Convairs. The present trend in FAA requires not only a greater number of aircraft, but aircraft of a larger and more complex type.

With the introduction of jet aircraft for use by FAA employees, Bill has eagerly assumed the responsibility of pioneering the "Civilian Jet Aviation Program". He started from scratch to develop an entirely new maintenance system never used before in civilian aviation. From a basic aircraft frame he produces a well-finished plane—suitable for use as a flying laboratory by the Facilities Flight Inspection Branch in performing correctly the many functions which are so necessary to the "life line" of American commercial, military and private aviation.

Aircraft used for special functions of training and proficiency work require an individual type installation in each plane. Special consideration must be given the aircraft being modified and standardized for executive transportation or for logistic operations in such places as Northern Alaska where extremely cold temperatures are experienced. Aircraft must also be modified to operate within the Continental Limits of the United States, so the plan can be transferred as required from one region to another.

Matthews has developed an extremely intricate process for evaluating and estimating the cost of contractural services. The accuracy of these estimates is very important because in many instances they become firm quotations for work performed for other agencies and foreign countries. (The work must be of *extremely* high quality and *completely* accurate as it represents an example to industry and is used as such.)

"Bill," as he is called by most of the personnel under his supervision, is a most versatile supervisor. He thoroughly understands budgeting, personnel management, purchasing and engineering. He uses foresight and an open mind concerning new methods for bringing about more efficient performance of work among the personnel of the Division, which has grown from 76 employees to 596 since he became Division Chief in 1954. He gives credit to all his employees for any commendation given to him and expresses appreciation and thanks for meeting work schedules. This has spurred the activity which has made ahead-of-schedule deliveries possible many times.

Two years ago the FFA needed Douglas DC-6 type aircraft for use in checking Federal Airyays facilities in Hawaii but it was impossible to purchase new aircraft at that time. Matthews pointed out to the Washington office that the Navy had two Lockheed Constellations stored at its Litchfield Park, Arizona, Air Facility and proposed that we secure these planes and overhaul them instead of spending approximately a million dollars apiece for the two new Douglas DC-6 aircraft. As a result, two Constellations, N-119 and N-120, were overhauled by Lockheed and are now being used for flight training in Region Six. This work was accomplished for one-third the cost of new aircraft, saving the Government thousands of dollars and at the same time giving FAA the type of aircraft which will adequately take care of its needs.

When plans were started for building new Hangar 9, Bill took advantage of purchasing from Government Surplus many aircraft maintenance items of equipment which are now installed and being used. In this one instance Mr. Matthews' foresight saved the Government over $150,000.0.0

Bill is a family man. He lives in Midwest City with his wife and 13 year old Jeanne. He says it's one of the few places where he can own a city-type home and still have a horse, pony, Bantam chicken, ducks and a dog.

Bill is a member of the Oklahoma City Chamber of Commerce, the Elks, Air Force Association, Reserve Officers Association and Tinker AFB Officers' Club.

U H F IN TECHNICOLOR

Two grammar school budies, Howard Baker, UHF instructor, and Bill Barnes of Technical Services, after more than thirty years of separation got together finally here at the Aeronautical Center in the fabrication of a training aid for UHF. It seems that Howard and Bill learned their arithmetic to the tune of the same hickory stick down in Crossett Ark. with Miss Carrie Calhoun wielding the hickory. Both men insist

that it is still a good method of instruction, but for some reason the Center frowns upon the proper application of the technique.

The model shown is for the portraying the sequential action of switches and relays in the frequency selector in UHF transmitters and receivers thru the medium of a series of 35 millimeter color slides. Each switch and relay of the model moves and positions and circuits are emphasized by various colored tapes. Such animated circuitry has been found most useful to accompany lectures on some of our more complicated electro-mechanical devices.

Fred M. Lanter, along with other 25 and 30 year service personnel received his 30 year FAA Service Pin from his secretary, Doris Nichols. The ceremony, honoring the pin recipients, was held in the Headquarters Building Auditorium at the Aeronautical Center.

405 Aeronautical Center employeees received the new pin during the month of June. There were 317-15 year pins given to employees and 73 received pins marking 20 years service.

Along with Aeronautical Center Director Lanter, R. C. De La Rosa, Reese G. Vail, Claude E. Gardner, Howard W. McKinley, and Fred J. Uridil are now wearing pins signifying 30 years service.

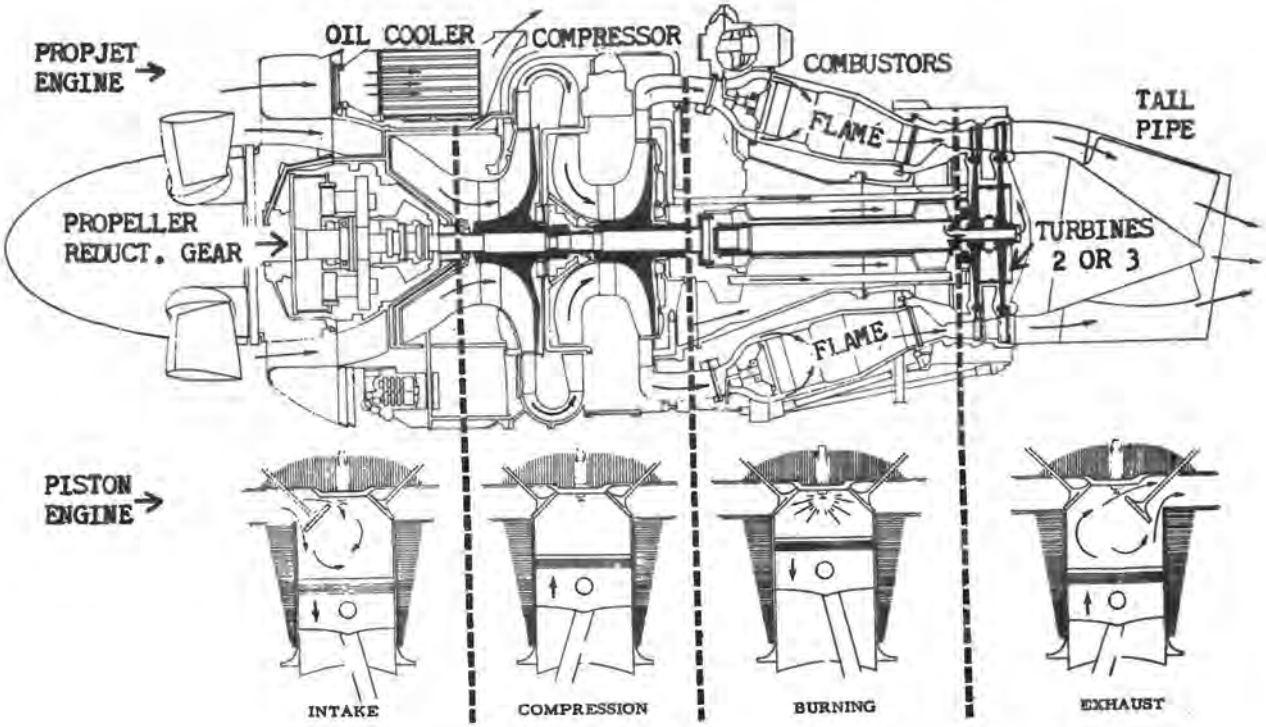
25-year-service pins went to Alfred K. Whitacre, James R. Ryan, George W. Palmer, John R. Walker, Forrest W. Boseker, Chester M. Fuller, John W. Southern, and Mildred H. Garrett.

FAA Maintenance Engineers And Engineers Form Association

An association of FAA engineers and technicians was born on May 7, 1960, under the name of the Electronic Maintenance Engineering Association. A board of directors, representing some 2000 members located throughout the six reggional areas of the FAA, met during the week of May 2 at Oklahoma City, the home of the FAA Aeronautical Center, to finalize the constitution and by-laws which will govern and provide for fulfilling the objects and policy of the association. The membership roll is expected to reach 4000 or more by June of 1961 if the present rate of increase continues. E. R. Quesada, FAA Administrator has received with satisfaction the proposal for organizing a professional society of electronic maintenance technicians and engineers and has extended his best wishes for success in this venture. A quarterly slick-cover journal will be published containing items of mutual technical interest to the members and, in addition, it is expected that a monthly bulletin will be published primarily for the dissemination of association news. Mr. Jim Lennox of Tulsa, Oklahoma has been elected as the first president of the new association and Leonard Haggard of Oklahoma City as the secretary-treasurer. A full-time paid editor is yet to be selected.

It is well known that modern aircraft navigate in an environment of electronic systems. The rapidly growing number of airborne vehicles and their increasing speeds combine to progressively reduce the tolerable error in the systems of this electronic environment, driving the demand for system accuracy and reliability to the extreme. Electronic system accuracy and reliability are not exclusively the product of the builder. After design and manufacture, the accuracy and dependability of the system is the product of maintenance, and the extreme limit of reliability must be reached through maintenance. Thus it is not enough to be prepared for the usual situation but for the unusual as well. The last small fraction between the adequate and the excellent must be achieved by the maintenance engineers and technicians themselves in a final thrust above required performance. To further this end the association is dedicated to enhance still more the unexcelled record of safety and economy of air transportation through contributing significantly to the improvement of electronic maintenance standards and procedures.

COMPARISON OF CONTINUOUS PROPJET AND FOUR STROKE CYCLES



JET GEMS

The accompanying schematic of the propjet or turboprop engine represents the Rolls Royce Dart engine which powers the Fairchild F-27 Grumman Gulfstream and Viscount airplanes. After hearing the weird whine of Dart in comparison to the throaty roar of a piston engine in a similar size aircraft, you may have wondered how they compare as to design, configuration and operational characteristics.

Observation of the vertical dashed lines on the schematic will disclose a similarity in the intake, compression, burning and exhaust functions in both engines. The main difference is that combustion is a continuous process in the Dart and occurs only once in two revolutions of the crankshaft or four strokes of the piston, in the piston engine.

Observing the arrows in the cylinders in the attached sketch of the piston engine cylinders (bottom), we see that the air fuel mixture is drawn from the carburetor (not shown) into the first cylinder (left) on the downward (intake) stroke of the piston; then brought to a high pressure (both valves closed) on the next upward or compression stroke of the piston. A few degrees of crankshaft travel before top center the ignition system fires the charge through the spark plug and the charge is burned and expanded under tremendous temperature and pressure on the next downward or power stroke of the piston. A few degrees of crankshaft travel before bottom center, the exhaust valve opens and the burned charge flows out of the cylinder into the exhaust pipe on the next upward or exhaust stroke of the piston. Supplementing the airflow through the carburetor where it is mixed with fuel, we must have a controlled (through cowling and baffles))airflow through the fins around the cylinder head for cooling purposes. Since we have only one tremendous kick or power stroke out of each four strokes of the piston in the cylinder, we must add cylinders

to obtain an even flow of power. For instance, your car may have four, six or eight cylinders and an aircraft engine may have five, seven, nine, eighteen or twenty-eight cylinders. The point is, that we reached the limit in numbers of cylinders on piston engines to meet the great demand for power on a high speed jet transport.

The schematic at the top of the accompanying drawing represents the Rolls Royce Dart Propjet engine which is installed in the Fairchild F-27, Grumman Gulfstream and Viscount aircraft used in Airline and Corporation operations. Observing the internal arrows, we note that the ambient air flows into the inlet slot around the front end of the engine, just behind the propeller. The propeller has little to do with it since the inward shanks of the blade are round. High speed of the airplane does create some ram effect which helps increase the mass airflow through the engine. The air flows from the intake area into a two stage centrifugal compressor. The first one steps the airflow from standard ambient pressure of 14.7 psi to approximately 35 psi and the second stage to approximately 75 psi, at 15,000 rpm of the compressor-turbine shaft (through the center of the engine). Since the 15,000 rpm of the turbine shaft is too fast for the propeller to get a good "bite" on the outside air, the engine is equipped with what the "slip stick artists" call a double epicyclic (planetary) reduction gear (cluster just behind the stub propeller blades at front of engine) which drives the propeller at approximately 1500 rpm. (High speed aviation piston engines are also equipped with prop reduction gears to reduce propeller slippage.)

The air from the diffuser (chamber around the outside of compressor) at 75 psi flows into the seven combustors. About 25% of the air flows through holes in the inner chambers where fuel is sprayed into it from the seven spray nozzles (front end) supplied at 1200 psi from the fuel controller (not shown). Since the flame temperature is approximately 2000°C, the remaining 75% of the airflow is utilized in diluting the hot air to a temperature of about 875°C, in about 18" (of flow) to avoid burning the nozzle guide vanes (ahead of the turbines) and the turbine blades, which drive the compressors and the propeller reduction gears.

Since you three readers are yawning and watching the clock as though you had joined the bored of education, we will quickly list the important points arising from this comparison of piston and gas turbine engines:

1. The turbine engine burns kerosene in a continuous straight-through manner at high temperatures and comparatively low pressures.
2. It is equipped with a high energy ignition system firing only two igniter plugs in #2 and #5 combustors, which are connected to the other five combustors by connector tubes (to aid in spreading the flame). The ignition system is used only for starting.
3. The turbine engine can burn Avgas in an emergency, but would not develop full power of range and the tetra-ethyl lead would eventually deteriorate the turbine blades.
4. The piston engine must have volatile high octane (anti-knock) Avgas for starting and to avoid detonation at extremely high temperatures and pressures in "closed end" cylinders.
5. The 13 hp electric starter of the Dart propjet engine requires an initial electrical power supply of 1800 amperes at 28 volts to quickly eccelerate the turbine-propeller shaft to about 15% of maximum speed (15,000 rpm) to avoid a "hot start." This quick rise in speed is necessary to obtain sufficient airflow to properly match the fuel flow through the nozzles in the combustors to properly "light-off" and attain idle speed about 5,000-6,000 rpm depending on ambient conditions). This engine generally requires a high amperage starting "cart."
6. The 5 hp back-geared electric starter on the large piston engine erquires an initial power supply of about 300 amperes at 26 volts. Since about 10% of the Avgas is quite volatile, and will readily vaporize in cold cylinders, the spark plugs firing in all cylinders will help to quickly accelerate the engine to idle speed (500 rpm). The piston engine will light off at about 1% of its maximum speed (2500-300 rpm). This engine can be started from aircraft batteries or a battery cart.
7. Operators of turbine engines in commercial aircraft do not use JP-4 (used by the military services) because it contains about 40% motor gasoline, some of which is above 50 octane (anti-knock) and subject to a final tax of two cents per gallon. Kerosene is widely available, costs a few cents less per gallon (depending on handling) costs and should give better range.
8. Essentially, the gas turbine is a mass air-

flow engine, therefore is extremely sensitive and looses considerable performance under high temperatures and at high airport elevations. It must have excess thrust or use methanol (water alcohol) or water injection to cool the air and increase mass airflow to obtain required takeoff power. The latter creates a black smoke from some large turbojet transports during takeoff, due to the water vapor solidifying carbon particles.

9. Some piston engines use methanol injection to obtain increased power for take-off. The increased power is not wholly due to increased mass airflow into the cylinders—it allows the use of best power mixture.
10. Propjet engines are rated in Equivalent Shaft Horsepower which is shaft horsepower plus jet thrust. Aircraft piston engines are rated in brakehorsepower on a dynamometer. Incidentally, the engine in your Belch-Fire "forked eight" automobile is rated in "talkin horsepower" and you are lucky to get half of it at the rear wheels!

Frequency Converter ready for shipment to Northern Ireland.

FMD Promotes International Good Will

Work comes to FMD from all over the world and as yet there has been no job too big to undertake. Shannon Airport of Northern Ireland recently purchased ILS equipment from FAA which required special equipment to convert the 50 cycle "Irish power" to the 60 cycle "American variety" in order for the ILS to function. Also, as economy was of prime importance, the use of components from dismantled airways equipment was suggested.

Electrical Engineer, Ralph Stolhand, of the Structural Material Branch, was assigned the task of meeting these requirements which began immediately upon receipt of a work order. Certain usable parts from a 12.5 KVA Engine Generator and an 18.75 KVA Engine Generator were salvaged as a basis for the converter. A synchronous motor was made from the 18.75 KVA Generator to drive the 12.5 KVA Generator which has to continue serving as a generator. Many of the controls from the surplus equipment were used as a means of economically acquiring fully automatic operation. A special gear box was procured to drive the generator at the proper speed. The framework base and control panel were fabricated here in the FMD shops.

Within the allotted time, a nice little 5,000 pound package was assembled, tested under full rated load, painted fire-engine red, and shipped to Ireland. There was a certain amount of kidding for our red-haired Irish Engineer, as fellow workers referred to his engineering feat as a "little red monster." Having watched over this "baby" during conception, incubation, and final delivery, Ralph was always ready to defend his special efforts as being directed toward a very worthy cause—international good will.

WOW! WHAT A CATCH!

Lewis Mason, ATC Branch Film Librarian, needed two friends to assist him in holding this string of Carp. The total weight came to 57 pounds. "Chick" tells us that these were "caught" while they were spear fishing at Bull Shoals, April 24th. Chick was attending the Annual Midwest Diving Council Convention where he was elected to the Board of Directors. Congratulations, Chick!

The plaque reads:

"Claude E. Gardner—In Grateful Appreciation of Devoted Service, The FAA Employees Credit Union 1946 - 1960."

Most people at the Aeronautical Center are aware of the efforts which Mr. Claude Gardner put forth for the FAA Employees Credit Union. He helped organize and incorporate the Credit Union in 1946, and served on various committees or on the Board of Directors until 1960. The last office he held was that of President.

Claude was extremely successful in collecting delinquent accounts—he had the knack of taking just the right approach in each case to collect the accounts, or get a schedule of payments to liquidate the loan.

In order to express the appreciation of all Credit Union members to Claude, the Board of Directors, the Supervisory Committee, and the Credit Committee met on May 11, for a luncheon in his honor. Invited guests were F. M. Lanter, Director, Aeronautical Center; R. W. Pulling, Acting Manager, Facilities & Material Depot; J. B. Mitchell, Acting Superintendent of FAA School, and Dr. Robert T. Clark, Acting Director, Civil Aeromedical Research Institute.

Claude was pleasantly surprised when President R. W. Wenzel told the purpose of the luncheon. Mr. Lanter made the presentation of the plaque to Claude on behalf of all the members of the FAA Employees Credit Union

AMATEUR RADIO CLUB EXPANDS STATION EQUIPMENT

The Center's amateur radio stations, W5PAA, already equipped with the most modern and most powerful amateur equipment available, has purchased additional units. A DX-100-B transmiter and a SX-100 receiver were bought early in May as "back-up" equipment. The main transmitter will continue to be the Collins KWS-1, but for those operators who have never learned to appreciate the advantages of modern techniques of communication, the DX-100-B provides a good old "horse and buggy" type of transmitter.

The radio club now has three radio stations operating under one license and one call. One is a Very High Frequency station, using the 50 Mc and the 144 Mc amateur bands. These two bands are available for use by operators holding Novice and Technicians grade licenses, as well as by those holding the more advanced types of amateur licenses. The other two stations both operate in the High Frequency range, covering the amateur 3.5 Mc, 7 Mc, 14 Mc, 21 Mc, and 28 Mc bands. One, using Collins equipment of maximum legal power, is adapted primarily for single sideband radiotelephony. The other, operating at moderate power, is limited to the old-fashioned amplitude modulated radiotelephony, which still is used to some extent.

Students and visitors at the Center are the principal users of W5PAA. It is a powerful morale factor in that it enables students to maintain a close contact with home while at the Center. Operating privileges may be obtained by contacting the Aeronautical Center Amateur Radio Club thought its president, Ray K. Bryan, Ext. 374; or its secretary-treasurer, Carl C. Drumeller, Ext. 308.

CENTER'S PRINTSHOP UNDERGOING $200,000 EXPANSION PROGRAM

A two hundred thousand dollar expansion of the printshop of the Administrative Services Division is in process at the Aeronautical Center. New facilities are being added to handle the anticipated heavier workload occasioned principally by accelerated programs of the Federal Aviation Agency School.

Procurement requests have been initiated for the additional equipment needed. Included are 2 17"x22" Harris offset presses, 2 linotype machines, power-cutter, trimmer, collator, protographic and plate-making equipment, and miscellaneous other offset and printing supplies and equipment.

Space required for the installation of the new equipment in the south basement of Hearquarters Building necessitated moving the Air Traffic Control Film Library and the Office Services Section of the Special Services branch which stocks administrative supplies and forms to the old OMD warehouse, Building 246.

John Smith and R. F. Skufka with Instructor Bereman.

Bill Buckingham and Ed McCarter of HNL Center

Air Traffic Control Branch Introduces No. 300 Switching System to BATM Regional Field Personnel

On Monday, April 25, the Air Traffic Control Branch of the Aeronautical Center scored another FAA first in introducing the first field representatives of the Bureau of Air Traffic Management to the new No. 300 Switching System. A class of twelve Air Traffic Controllers and Regional Office personnel from 4 Air Route Traffic Control Centers and 2 Regional Offices convened in the Air Traffic Control building for the first class on this new telephone equipment to be taught by FAA personnel. Previously, two classes were held for FAA experimental and instructors in Atlantic City by the Bell Telephone Company when the equipment was introduced to the FAA.

The No. 300 Switching System is a new telephone switching system designed specifically for the FAA Air Route Traffic Control centers by the Bell Company. This system incorporates many new features not previously available on the older switching systems. One of the most outstanding features of interest to persons outside Air Traffic Control, is the push button dialing. This "dial" has push buttons similar to modern adding machines and replaces the old circular dial of the everyday telephone. It is capable of accepting signals as rapidly as the buttons can

R. Bereman with William Barr and Richard Durdin, both of Z T L

Otis Meeks and Ward Taylor with Instructor Bereman

be depressed and time is not lost while the dial unit is returning to the start position as on the present models. Other features include a positive indication of telephone line status through a new pilot lamp system, giving the controller a complete display of the status of all telephone lines within the system; a method of connecting a position to any telephone line within the system even though the line may not terminate at the immediate position concerned.

L to R: R. M. Patterson, ZOA, R. Bereman and W. J. Davis, ZOA

This new system is designed to occupy considerable less space at the operating position in the control room where for many years space has been at a premium. It will add to the controllers efficiency in time saving on the hundreds of telephone calls to and from the positions daily, while at the same time giving the controller a greater overall advantage in segregating the more important calls to the position.

As mentioned earlier this system was designed especially for Air Traffic Control operations and in its entirety would offer little to private industry or home. However certain features of it will be and are being used in the newer telephone equipment being manufactured for private use. The push button dialing is being used currently by most central offices of the larger telephone exchanges. This speeds up the handling of the long distance calls placed daily through the operators. As most of the public is probably aware of the operators seldom go through adjoining cities operators to place long distance calls. These calls are dialed direct to the number being called. In this connection a recent addition to telephone equipment called Cross-Bar is utilized to reduce the size and amount of equipment necessary to dial these distant points.

The members of this first class in the No. 300 Switching System will be instructing in the use of this equipment to field personnel who will be using the system being installed in new Air Traffic Control Centers throughout the U. S. The first installations are being made in Honolulu T.H., and Oakland, Calif. Next year will see the systems installed at Jacksonville, Fla., Atlanta, Ga., and Cleveland, Ohio. Eventually all centers will be equipped with the No. 300 System.

Phil Davis, FTW Regional Office and John Pavel, LAX Regional Office

To demonstrate the functions and uses of the system, the Bell Company fabricated a portable model of the position equipment complete with simulated terminations. Accompanying this unit was an instructor's console equipped with the mechanisms to activate incoming calls simulation to the model unit. Through the use of this portable equipment it is possible to completely demonstrate the operation of the system and enable students to practice receiving and initiating specific calls to the various type facilities and positions connected with air traffic control. Six additional units of this training equipment have been manufactured by the Bell Company for FAA and wll be shipped to the centers being equipped with No. 300 Switching System, for training all personnel in the use of the system.

The third FAA Executive School was held at the Aeronautical Center May 8 through May 10, 1960.

As with the previous two classes, top management personnel of the Federal Aviation Agency attended this session.

Class No. 3 was under the direction of E. A. Woody of the Training Division, Washington, D.C. Dr. E. E. Olson, Dean Emeritus of the University of Southern California, again acted as consultant to the school.

Shown in the picture are a few who took part in the school, and the twenty-four participants of the class: William B. Barnes, Joseph D. Conerly, Arthur E. Jenks, Joseph W. Johnson, Roland E. Sturtevant and John V. Tighe, all of Washington; Robert S. Nicklesberg, Anton Schanz and Lloyd N. Young, of Region 1; Michael J. Haile, Jr., Floyd T. Melton and William E. Peterson of Region 2; Kenneth D. MacKenzie, E. J. Thomas and Jack H. Coffey of Region 3; Merton W. Claar, Charles M. Demaree and John G. Melville of Region 4; Richard R. Stryker and A. M. Tibbs of Region 5; Edgar B. Franklin and Raymond C. Woodward of Region 6; and Norman R. Hodkinson and Robert C. McKissick of the Aeronautical Center.

M. O. "Sandy" Saunders

FMD SECTION LEADERS

This article begins a biographical sketch series on FMD Leadmen.

The little town of Hannibal, Missouri is well known, for it was the home of Mark Twain as well as the birth place of M. O. "Sandy" Saunders, FMD Crystal Lab Leadman.

Though Sandy's childhood was spent near the Mississippi River, unlike Mark Twain, Sandy turned not to writing but to more scientific persuits.

In high school during the first days of radio Sandy found himself interested in such technical devices as *Arlington Loose Couplers, Varicouplers,* and *Reflex Circuits.*

Back in the 1920s radio listeners built their own radios from 5 and 10 store parts and operated them from acid-type storage batteries. One of Sandy's first homebuilt radio receivers was just such a set. The loudspeaker was a milk bucket nailed to the wall—earphones were placed in the bucket, then the whole family would gather quietly around and listen to the marvel of wireless.

They listened until the battery fell through the floor . . . after that Sandy was more careful with acid storage batteries.

During the late 1920s Sandy moved to Houston, Texas with his parents and there he worked in a radio repair shop. For his 15 hours a day Sandy received the magnificent sum of $18 a week.

In 1929, with a friend, Sandy opened his own repair shop. It was called, quite honestly, the "Pals of the Air" radio shop.

Feeling the call of home again, Sandy moved back to Hannibal in the 30s where he remained until he met the girl he later married.

During the 30s he stuck with the radio trade and in 1940 he joined the radio supply firm of Burstein-Applebee, Kansas City, Missouri.

Sandy spent the war years with the Civil Service at Tinker Field, then for over ten years he was employed by the John A. Brown Oklahoma City firm as radio service manager.

In 1958 he felt the call of Civil Service again and joined the CAA as an electronics technician. During his years of gaining experience in radio and electronics Sandy has attended no less than ten electronic schools, including courses in radar and advanced radar.

Sandy's prime hobby interest during these years was Amateur Radio. Feeling that the Amateur Radio hobby offered him an unparalleled opportunity for public service Sandy was active in the 1955 organization of the Oklahoma Storm Warning Net. He supports this public service quite vigorously even today.

The booming voice of Sandy's radio station, W5AZO, is instantly recognized by those hundreds of Amateur Radio operators who participate in the Oklahoma Storm Warning Net.

So urgent is this calling to Sandy that he has contributed a radio transmitter (operated by many net members) to the U. S. Weather Bureau here at Will Rogers Field. This transmitter is used during tornado alerts to gather weather information of vital interest to the Weather Bureau.

We cannot help but feel that this kind of public service must be immensely satisfying. At least Sandy Saunders has found it so.

Mary had a little cash,
She kept it in her hose,
And everywhere that Mary went,
Her friends all said,
"It shows!"
So Mary took it to the bank,
And there she wisely hid it,
Which brought her far more interest,
. . . or did it? . . .

Training Corner

The occasion was an Agency Wide Training Conference held at the Washington Headquarters from April 18 through April 29, 1960.

The picture including a large portion of the Washington training staff and representatives from all Regions and the Aeronautical Center. Representing the Aeronautical Center are Mr. Olsen, Mr. Fox, Mr. Werner, and Mr. Myers.

The purpose in broad terms was to familiarize this group with the increased emphasis on training and provide them with an over-view of the scope and objectives of the current training program.

A number of presentations were made which generally set the stage for discussion and future planning.

Mr. Rose, Management Training and Training Development Branch, who presided as Conference Chairman, called on his own staff and on Mr. Sweeney, Technological Training Branch, to present their organization and functions as they are now operating and their plans for the future.

Mr. Luikart, Assistant Administrator for Personnel and Training; General Hutton, Chief Training Division; and Mr. Hill, Assistant Chief Training Division, contributed to the overall effectiveness by talking to the group and answering questions.

Of special interest to us at the Aeronautical Center, Mr. Olsen presented the organization and functions of the Federal Aviation Agency School and Mr. Fox discussed the role of instructor training in FAA.

Considerable time and effort was given to the discussion of the Agency wide "Management for Supervisors" course which has been given a high priority in the general field of training.

Another highlight involved a discussion of the use of occupational analysis as a means of developing instructional courses within the Federal Aviation Agency framework.

The pace was fast and the hours were long but the conference brought together a group of men from throughout the Agency who are concerned with doing a job of training. We think sharing their problems and plans is a darned good idea.

ANF DIRECTED STUDY TRANSISTOR COURSE EXPERIMENT KITS ARE DISPLAYED

Two students of the ANF Resident School at the Aeronautical Center, John Adamek (left) and Phil Gallagher (right), both of Region 1, examine the Directed Study transistor course display board. Included on the board are Kits I and II assembled with all the circuit components, and the course material for DR-441. One of the oscillators in Kit I is connected so that it will function when the key is pressed.

Students attending Resident classes are invited to inspect the display in Rm. 352 on third floor, north wing of Headquarters Building.

HOME STUDY METHODS EXAMINED AT CONFERENCE

The annual conference of the National Home Study Council held in Chicago, May 9-11, was attended by ANF Directed Study Section Chief A. W. Schmitt and Technical Assistant Roy N. Pickett.

During the conference the instructional methods, study materials, and student services employed by nationally recognized correspondence schools were studied for any improvements which could be incorporated in FAA's Directed Study program.

The National Home Study Council has more than sixty members all of whom have been accredited by a special home study commission that is recognized and approved by the U. S. Office of Education. Member schools of the Council include such large correspondence institutions as The American School, LaSalle Extension University, International Correspondence Schools (I.C.S.), DeVay Technical Institute, Cleveland Institute of Radio Electronics, and R.C.A. Institutes.

Examination of new, specifically defined standards used by the accrediting commission reveals that the Directed Study program conforms closely in methods and results to those of accredited institutions.

While in Chicago, Messrs. Schmitt and Pickett visited the American School and LaSalle Extension University to observe economical methods of keeping training records and providing student services.

DIRECTED STUDY HAS TEST AND RESEARCH LABORATORY

Instructor Tom Moore is shown in the Directed Study Lab checking out a transistor Kit that has been returned by one of the students of DS-441, Semi-conductors and Transistor Circuits. The lab is used continuously by DS-441 instructors; however, it is used by other Directed Study Instructors to test circuits that are to be included in course material.

During the recent move of the ANF Directed Study Section the laboratory was relocated to the instruction area in Room 354, Headquarters Building.

DIRECTED STUDY GOES BERSERK

By the month of May most people becomes more absorbed in recreation than in educational pursuits.

Not so the electronics personnel in our Agency! Studying at night on Directed Study courses they submitted nearly 3,000 examinations during the month of May, which means a yearly rate of 36,000 examinations being handled in ANF Directed Study Section.

Secretary Violet Owens, AC-745, Chaperones Senior Class on Trip to Washington, D.C.

Squaw makum trip to Washumton with 70 seniors and see many beautiful sights. While ridum through Virginia, train conductor pointum out tomb of plantation owner who requestum to be buried standing up. This was done in order that slaves would thinkum still standum up to watch them at work. (chiefs, take note.)

No can visitum White House on Monday. Guide say it closed so Mamie can hangum wet laundry all over place on wash day. Instead, we lookum over Mt. Vernon. George no havum electric blanket but havum old-fashioned bed warmer. Squaw try to visualize servants filling long handle skillet with hot coals from fireplace before warming icy sheets in upstairs bedroom when along came senior with remark, "Dig those crazy popcorn poppers!"

That evening we cruisum down Potomac in pleasure canoe which holdum 2400 people. Just before we dockum at midnight, two of our senior boys jumpum from 4th deck. Boat captain soundem disaster whistle which bringum half of Washumton police, firetrucks, and rescue squads. Cops takum boys to station where Lieutenant have to gettum out of bed for lecture. Him no takum time to comb hair; just yell, wavum arms, and tellum lucky not to break damnex swimmin' in the sewer. Story makum front page of newspapers and NBC television news. Embarrasum daylights out of sponsors, however, local people there laugh it off as boyish prank.

Stayum at hotel where house detective say 50,000 seniors were in city at that time and 200,000 expected in few weeks. Him get braced for each new onslaught of youngums and expectum most anything to happen. Him tellum about seniors from Georgia settum fire to mattresses, rugs, and furniture. Fire department get called so often they no wait to ask "Where's the fire?" Makum bee-line to hotel. Him say Massachusetts seniors droppum sacks of water from hotel window on people below. Him hassle around with seniors day and night until lose patience. Me hear him yell, "gettum —— —— heads out of shaft before elevator rippum off shoulders." Once him askum, "Which way did little ——— go?" Me no answer because never hear of state in union by that name.

Two senior boys tellum me confidentially about finding cave on side of hill leading from Mt. Vernon down to Potomac. Remove bars and belly crawl along tunnel in dark. One in lead suddenly fall and friend just barely savum by collar. After haulum in, strike match and seeum old abandoned well. Addum few more grey hairs to squaw head!

Seeum Smithsonian Institute, Washington Cathedral, Embassy Row, Capitol Building, and Bureau of Engraving where paintum faces on money. Guide tellum that life of dollar bill is approximately 13 months. No lastum that long around our teepee. Art institute havum many pictures of squaws and papooses without clothes on. Me wishum for extra Indian blanket to keepum warm.

At Arlington National Cemetery, we seeum marker set apart from the rest at top of a hill, yet exactly like the thousands lying in rows as far as the eye can see. Gen. Pershing requestum his monmument to be no greater than lowest in rank of army. Even though we visitum tomb of Unknown Soldier, Lincoln Memorial, and Jefferson Memorial, none were so unforgettable as this in its simplicity.

Senator Kerr takum whole bunch to lunch and no try to outfumble anyone for $97.00 lunch tab. Also takum group pictures and ridum subway car on tour of Senate Office Building. Senator Monroney say he no havum most elaborate office but certainly most beautiful view of Washington from office window. Him telephone havum 18 buttons which lightum up like Christmas tree. Him only dial one number to get Jane, Jim, or John in other offices by intercom but me no figure out how to say HOW! eighteen times at once.

Squaw would recommendum this trip to anyone as an individual, family, or tribal vacation. All arrangements such as reservations and tours are made by railway representative and costum less than $100. This amount includum train fare, very good meals, hotel accommodations, boat rides, tours, and visit to Washington night club where princesses puttum on show in a lot less than Indian Blanket and kickum legs higher than head.

CENTER CONDUCTS SUCCESSFUL BOND DRIVE

Employees of the Aeronautical Center joined the rest of the nation's citizens during the month of May in the 1960 Savings Bond Campaign.

At month's end 92.2 percent of the 27-hundred employees had taken out Savings Bonds under the Payroll Plan. Several divisions reflected 100 percent figures. Among those were the Director's Office, Personnel Division, Flight Operations and Airworthiness Division, Technical Services Branch, and Air Traffic Control Branch. The Office of Superintendent of the FAA School turned in 99 percent for participation.

TAKE ME OUT TO THE BALL GAME

Speaking of sports, one of the most exciting summer-time sports is back again, and in full swing. Meaning, of course, Softball.

The Aeronautical Center is ably represented by the FAA Softball team, by twenty of the Center's best, we think. They are currently in first place, even though two games have been lost to date in league play. These two were both real heart-breakers. One was lost by one run, and the other was an extremely hard played game.

The big sticks, as they are known, are: Dave Reed, first baseman; John Steele, catcher; Carl Wilson, third baseman; Frank Stobbe, left fielder; Jack Hastings, sub-catcher; Monte Miller, left fielder; Weldon Dyer, center fielder Bill Prather, right fielder. Currently Dave Reed holds th highest batting average of .425, with Steele crowding him with .393.

The only thing we are short of—you guessed it. Rooters and field spectators. This is the necessary evil which spurs a good team on and gives them drive. These fellows go all out for FAA on the field. Bill Gresham gave up a trip to Florida because the team needed him. Incidentally, Gresham, along with Ryder Thorn and Leonard Trim, have carried the pitching end of the game and have done a remarkable job. Bill Corbill serves as assistant manager, and "bat boy" duties are ably fulfilled by Billy Beery and Jack Steele.

So what say you fellow workers—and gals. Let's get out to the game and support this really fine team. They need *you*. The Wiretap carries a complete schedule of the games, times and places of play—lt's go FAA.

—Wallace V. Beery, Mgr.

MEET THE CHAMPS

After a spirited bowling season involving three separate bowling leagues of 8 teams each, the "Pennywatchers" copped the coveted FAA Aeronautical Center bowling laurels in a special playoff match with the Screwballs on Monday, May 23, 1960, at the Capitol Lanes Bowling Center. The Pennywatchers earned the right to play in the final playoff by trouncing the Satellites, winners of the Capitol Hill loop. They have added their name to the "roaming" trophy, below that of the Woodpeckers, last years winners, and the trophy is on display in the Headquarters Trophy Case.

Winners of the respective leagues were as follows: Pennywatchers, Northside League No. 1, bowling at 66 Lanes; Screwballs, Northside League No. 2, bowling at Bowlarena; and Satellites, Southside League, bowling at Capitol Hill Lanes.

Members of the Pennywatchers are shown, left to right: Frank Duha, Fern Hughes, Ed Schmidt, Shirley Pfrehm and Ronald Nelson.

Association Dance

Aeronautical Center employees and guests report a "good time had by all" by the 450 who attended the dance in Moose Hall, Saturday night, June 4. Since this was to be the last dance at this location by the Association, the decorating committee went all-out in sprucing up the Hall. In the early afternoon, Glendeen Hollis, AC-520, in charge of making arrangements for the Association Dances the past year, and Jane Fanning, AC-745, attempted the decorating job alone, but such things as wobbly ladders made them call for help. Their pleas were answered

by Dr. Hollis, the Dick Wenzels, and Bernard Miley. Stacks of crepe paper were cut into streamers and the girls kept the men on ladders tacking and stapling for several hours.

Only after all decorations were in place were the men allowed to descend from ladders and join in the "girl talk" about Glendeen's previous decorating experiences. Reminiscence brought out the story of Glendeen falling in the lake while gathering cattails, staying up all night to spray the plantlife, catching a very bad cold but keeping going for the pre-dance decoration project. Later husband Hollis discovered that Glendeen had sprayed his boat gold and red while spraying the cattails. He said both boat and hall looked pretty.

On another occasion, the Hollis home and office were cluttered for weeks prior to the dance with everyone available making paper roses. It took quite a group before the dance to get all the roses tacked up. The big rose centerpiece in the middle of Moose Hall ceiling was something to behold, but Glendeen saw all their work go to pot when early in the evening, a visiting couple tore the whole thing down just for one paper rose. Frinds at the Hollis table might have heard the doctor muttering about "paper roses sticking out his ears for nothing". However, in spite of all the troubles connected with decorating, association members have expressed gratitude to Glendeen and all her assistants for creating a festive atmosphere for the dances, and those decorating have always had much fun.

Before the dance, Jane Fanning invited friends to her house for hors d'oeuvres. Some of those who "dropped in" were clans of McBride, Wenzel, Schur, Taylor, Davis, Miley, Owens, Betts and Cox. Everyone made themselves at home by stirring in kitchen, sipping in living room, sitting on floor, playing with Chihauhuas "Pita and Taco" spreading hors d'oeuvres, renewing old acquaintances, talking about tornado damage and INSURANCE ADJUSTORS.

Everyone went to the dance and were joined by clans Affleck and Rae, and took turns jitter bugging, waltzing, and various other dances throughout the evening. A special number, Anniversary Waltz, was played for the 12th anniversary of the Gene Taylors. After the band played "good-night," Glendeen invited friends over to the country home near the lake for after dance "whoopee". Evryone was able to follow directions to the Hollis dwelling except Jane who took the long way home by way of Yukon.

The Association planning committee has announced that the next event will be a family picnic on August 13th.

MEXICO CALLS

For William "Ed" Bell, AC-380.3, Mexico has a powerful allure. Beacon readers will recall that Ed was one of the group from the Center who went to Mexico some months ago to assist on the XDAC program. The XDAC is the Beechcraft Bonanza flight inspection aircraft built in Mexico to plans designed by AC-680.3 engineers. Now Ed is returning to Mexico to help further with the XDAC. He is taking a six-month Leave Without Pay from the FAA to become an employee of RAMSA, the Mexican company that will maintain XDAC.

The electronic equipment on XDAC is the brainchild of Philip M. Wilcox, Charles E. Carter, and Alfonso Arambula, all of AC-680.3.

"Look Gloria! — no hands!"

Tornado

by

WESLEY L. CHESNUT

There was already that ominous black look in the southwest sky when Bill Crosby, Chief of FMD's Electronic Fabrication Section, made his way out to his automobile.

It had been dark when he received the call from the Center — they needed assistance in shipping a rush piece of equipment.

The motor roared into life quickly and he pulled out of his drive, switching on the headlights. There had been tornado warnings on the radio earlier but he had paid little attention . . . there were always tornado alerts in Oklahoma.

A few miles later he tried his amateur radio receiver but the roar of static bursts was too much—he switched it off.

He concentrated on the task of driving against the wind. A few drops of rain splattered against the windshield and the lightning seemed to be increasing in the southwest, but still he gave it only a casual glance.

Once at the Center the work went quickly. Soon he was ready to go back home.

The storm picked that moment to strike with all the fury of an enraged wildcat. The wind screamed and howled, and golfball-size hail pounded at the ground. The air grew abruptly chilling.

At last it stopped hailing and Crosby made a dash for his car. Ice cold rain lashed out at his back as he darted inside.

Putting the car into motion he found it almost impossible to drive—the rain blinked the headlights and the wind tugged and pulled at the wheels.

In hazy blackness he fought his way out onto 59th street, feeling a great relief—he had missed the unmarked turn.

After what seemed like hours he made another turn only to find himself surrounded by National Guard hangars—the wrong road!

As he wheeled around, the wind broke in on the car and almost whipped it into the ditch. He worked his way back to 59th street and turned east again.

His nerves were approaching the breaking point when he saw the nightmare . . . the southwest section of Oklahoma City was one vast sprawling wreckage. Power poles had been shoved over at crazy angles. Wires dangled and spat high voltage. Blue arcs of minature lightning danced from the broken tips. Streets were littered with an assortment of debris that defied description.

Instinctively he knew—only a tornado could do such damage. And immediately his fears arose —what of those he had left at home?

He drove now with a tension that forced him to find a way around the blocked streets, a tension that whitened his knuckles on the steering wheel and made his hands ache.

At one point he raced through a flooded underpass of foaming water that threatened to flow up over the car hood.

Then, abruptly, he was home. The howling wind pushed him out of the car, up the sidewalk, and on inside.

It was the relief of finding everybody safe and his home relatively undamaged that left him really frightened . . . that and the knowledge that he had left home in the first place to ship a WIND SPEED INDICATOR!

Two Transfer from Tornado-Alley To Tropical Tidal-Wave Territory

Two Aeronautical Center employees, Buford O. Hill and his wife, Violet, are pulling up stakes in Oklahoma and headin' for FAA region 6 in Honolulu, Hawaii. Buford transfered from the Production Section of Facilities Flight Inspection Branch and is now attending Nav Aids School at the Center. He will maintain electronic equipment on FAA planes in the 6th Region.

Violet, Secretary of the Plant Protection Branch, Administrative Services Division, has applied for transfer to the 6th Region, too. Accompanied by their children, Marcia, 14, and Mark, 10, they will leave by jet on June 26 at 4:35 p.m., scheduled to arrive in Honolulu at 11:59 p.m.

Thank God every morning when you get up that you have something to do that day which must be done, whether you like it or not. Being forced to work, and forced to do your best, will breed in you temperance and self-control, diligence and strength of will, cheerfulness and content, and a hundred virtues which the idle never know ...Charles Kingsley

Jo McGuffin, AC-680

Aeromaid Style Show

"A huge success" was the style showing presented by the Aeromaids at the Branding Iron on May 19. Even a terrific storm did not keep the 105 guests away. Styles were shown by Little's Fashion Theatre and Little's Ready to Wear. A variety of costumes, ranging from swimming suits to cocktail dresses, were modeled by:

Millie Banister, AC-745
Jeanie Betts, AC-755
Mary Ann Mullens, AC-671
Jo McGuffin, AC-680
Betty Van Sandt, AC-116
Fran Short, AC-745
Harriet Wilson, AC-84
Peggy Burnett, AC-70
Becky Jones, AC-134
Harriet Marshall, AC-197
Donna Hardage, AC-85

Although the girls had no instructions prior to the show, they were radiant in their costumes, many of which brought whistles from the audience. Of the 105 guests, many were males who took advantage of seeing the office gals "dolled up."* Each girl modeled four or more different outfits and the dressing room was a scene of confusion with each model hurriedly changing for another appearance. Cooperation was much in evidence as the girls fastened, snapped, and zipped each other's garments. It is doubtful that professional models could have been more efficient or had more fun.

A delight to the audience was Miss Pita Fanning, tiny white Chihuahua belonging to Jane Fanning, modeling a red plaid hooded raincoat with white fur trimmed boots.

Not getting any whistles but plenty of laughter was Miss Edwina Callihan, modeling a beach outfit from Guatemala, a hemp hat from Havana, Cuba, and a beach bag from Kelly's Limited, a liquor store in Nassau in the Bahamas. Miss Edwina was Mr. Ed Callihan, an instructor from AC-671, and the necessary curves were added by balloons.

As promised by the Smoke Signal in the last issue, Chiefs caught a glimpse of a black lace boudoir garment, appropriately covered by a blue negligee, model unknown.

Hostesses for the style show were Shirley Pfrehm, AC-84, and Jane Fanning, AC-745, assisted by Ed Callihan, AC-671, who handled details of music and microphone.

All female employees who are not Aeromaid members are urged to join immediately and enjoy the fun. A calendar of summer events sounds exciting. For more information about joining, call Jean Betts, President—Ext. 371, Millie Banister, Secretary—Ext. 348, and Ladine Garrett, Treasurer—Ext. 336.

*When Millie Banister and Jeanie Betts appeared in bathing suits, the whistles were noticeably louder from the FMD section.

Donna Hardage, AC-85

Becky Jones, AC-134

Millie Banister, AC-745

Personnel-ly Speaking

New Job Jitters!

I've said before in this column that I believe the Aeronautical Center has a good reputation as a place to work. What convinces me of this is the fact that so many people come from so many places to apply for our jobs and I believe jobs are not so difficult to get that applicants come to us in desperation.

Many things contribute to whatever reputation we have as a place to work. This month I'd like to remind you of one phase that is very important. This is the reception a new employee gets when he reports for work.

Adecision to take a new job is really a big move for nearly everyone. Very few people report for a new job without a lot of qualms about how they'll make out. It's amazing how deep an impression the first few minutes or hours on the job can make. Just think a few minutes about the times you've changed jobs. I'll bet you can recall quite vividly a lot of what happened the first day on every job you've started. That first day is mighty important to all of us.

I read recently a report of an employee who quit a new job after three days. He said that the morning he reported for work his supervisor greeted him with "I'm busy now. Just sit over there and I'll get to you as soon as I can." After the third day of "sitting over there" the employee quit. This man said, "I had plenty of time to think and I figured out after awhile that if the job I was going to do really needed to be done, they couldn't afford to leave me just sitting there hour after hour. I'm going somewhere that I know I'll be needed."

Ridiculous, isn't it! Some other things just as silly go on. Years ago I started a new job in a foundry and spent a half a day being shuttled from one employee to another searching for the "sky-hooks." At lunch time the old timers had a good laugh about my ridiculous search. It was a long time before I got over being so emphatically shown how stupid I was.

On the other hand, the way people respond to a warm greeting, a friendly atmosphere and a genuine interest in helping them "get off on the right foot" and learn their way around, probably contributes more to helping them become a part of the team than anything else. And there isn't a thing that "management" can do.

Sure . . . we have an "orientation" program and Mister Myers does all he can to help new employees get acquainted with FAA and the Aero-

nautical Center. We have an "Employee Handbook" to furnish a reference source about policies and practices an employee needs to know. We have a suggested job introduction check-list to help supervisors plan for receiving new employees and get them started. But . . . even if we do the best possible job with all these things, it will fall short. The really important thing to the new employee is the reception he finds with his new supervisor and fellow employees.

I think the "fellow-employees" part of the reception may be the most important. The supervisor sort of "sets the scene." However, if you look around a little, the "happy" working teams are nearly always those in which the members of the team take a real interest in each other. When a new member is added to the team, they all pitch in to see that he's made to feel at home; help him learn his way around, and check him out in his work. When a new member believes his co-workers are really putting him on the team . . . well, it goes a long way toward easing the strain of those "new job jitters."

All of this simply means that here's another place where all of us have a real responsibility if the Aeronautical Center is to keep on being a good place to work. Don't wait for "George to do it." How about stepping over to that new guy or girl right now? Introduce yourself . . . "I'm Jim or Jane and I'm sure glad you're here. I'll be happy to help you anyway I can to get acquainted. By the way, we'll have a coffee break about the middle of the afternoon and I'd like to introduce you to some of the folks."

Kinda corny? Well, maybe . . . but remember how good you felt that first day on the job when someone walked up and said something like that to you—or—did the whole crowd get up, walk out and just leave you sitting there alone . . .?

W. M. Jackson
AC-90

The expanding ATC Branch is pleased to welcome into the fold these new personnel:

Leo Gmerek—from the New York Air Route Traffic Control Center
Joseph Harrell—from the Oakland Air Route Traffic Control Center
Robert Kerr—from Cleveland Air Route Traffic Control Center
Jack Kilmer—from Albuquerque Tower
Conrad Lucas—from Sacramenta RAPCON
Robert Smith—from Los Angeles Air Route Traffic Control Center

Joining the Clerical Staff of the ATC Branch are:

Betty Corbin
Bobbie Hood
Key McNeal
Joan Upton

The ATC Branch lost the services of the following people who transfered from this this area:

Herman Fletcher
George Palya
June Tevault

SOONER FLYING CLUB READY TO FLY

The Sooner Flying Club, composed of FAA Aeronautical Center employees, was ready to take to the air the 20th of June.

The club, with 22 members, is asking for new members, flyers or non-flyers with a yet to take to the "wild blue yonder." A number of Club members are qualified instructors and give instruction for no additional cost other than the gas and a set fee for each hour the aircraft is used.

The Club aircraft is a completely equipped Cessna 170. Initial cost of joining the Sooner Flying Club is 50 dollars . . . and this can be paid out in easy installment bits.

Quoting club president Lee Peery, "This is a good way to keep up your flying or learn to fly. The cost is about as near zero — roughly 2 dollars an hour — as you can get."

So, if you feel the urge to fly and would like to do it at a minimum cost to you, contact Lee Peery or Don Burnworth at the Center.

A little old woman sat next to the window peering out at the blinking wing-tip light. Finally she rang for the stewardess. "I'm sorry to bother you," she said, "but I think you ought to tell the pilot that he's left his turn indicator on."

Overheard in a travel bureau - a clerk trying to convince a nervous woman of the safety of air travel. She remained unconvinced until he threw in the clincher: "Madam, if it wasn't safe, would we be using the 'fly-now-pay-later' plan?"

FREE PICNICKING & CAMPING IN OKLAHOMA STATE PARKS

BOILING SPRINGS: 149 Mi. NW of Oklahoma City. 8 Mi. N Eof Woodward on banks of North Canadian river. Park Area: 800-ac. Lake: 4-ac. Swimming pool fed by springs, 87 picnic tables, 41 grills, 7 shelters, 4 shower/latrine buildings, 2 playgrounds, Group camp. Springs flow 300 gallons per minute. 4 cottage units. Superintendent, Box 641, Woodward, Okla. Phone: ALphine 4-4664.

GREAT SALT PLAINS: 120 Mi. NW from Oklahoma City. North-central Oklahoma. By way of Jet. Park Area: 720-ac. Lake: 10,700-ac. 53 picnic tables, 19 grills, 3 shelters, 2 shower/latrine buildings, 2 boat ramps, 1 ski jump, playground. Drinking water. Superintendent, Jet, Okla. Phone: 14.

GREENLEAF LAKE: 165 Mi. east from Oklahoma City. East-central Oklahoma. Muskogee Co. PPark Area: 1495-ac. Lake: 920-ac. 40 picnic tables, 23 grills, shower/latrine building, boat ramp, enclosed fishing dock, 2 playgrounds. Group camp. Cafe. Marina. Cottages. Beech and bathhouse. Superintendent, Braggs, Okla. Phone: HUdson 7-5196.

LAKE MURRAY: 115 Mi. south from Oklahoma City. 4 Mi. SE of Ardmore. Park Area: 21,000-ac. Lake: 6,000-ac. 151 picnic tables, 84 grills, 3 shelters, 6 shower/latrine bldgs., 13 boat ramps, 20 ski docks, 3 ski jumps, enclosed fishing dock, 6 playgrounds, beach-bathhouse, cafe, swim pool, riding stable, fishing pier, marina, gas, grocery, tennis courts, Group camps, Lodge and cottages. Superintendent, Box 419, Ardmore, Okla. Phone: CApital 3-4044.

OSAGE HILLS: 160 Mi. NE from Oklahoma City. 16 Mi. from Pawhuska, 12 Mi. from Bartlesville. Park Area: 1005-ac. Lake Lookout: 18-ac. Fishing in Sand Creek. 50 picnic tables, 50 grills, shelter, shower/latrine building, swim pool/bathhouse, playground, boats, 8 electric hookups, Group camp, Cabins. Superintendent, Pawhuska, Okla. Phone: FEderal 6-0781 thru Bartlesville.

QUARTZ MOUNTAIN: 135 Mi. SW from Oklahoma City. 5 Mi. from Lone Wolf, Oklahoma to park. Park Area: 6791-ac. Lake: 6810-ac. 117 picnic tables, 49 grills, 2 shelters, swim pool and bathhouse, 1 shower/latrine building, enclosed fishing dock, 3 boat ramps, 1 ski dock, 1 ski jump, 2 playgrounds, swim beach, 3 electric hook-ups, golf course, grocery, cafe, aqua cars, marina, Group camp. Lodge and cottages. Superintendent, Lone Wolf, Oklahoma. Phone: LOcust 3-2493 thru Blair, Okla.

ROBBERS CAVE: 162 Mi. SE from Oklahoma City. 4 Mi. north of Wilburton. Park Area: 8,452-ac. Lake Carlton: 52-ac. 47 picnic tables, 25 grills, 3 shelters, 2 shower/latrine buildings, playground, 12 electric hookups, cafe, grocery, ice dock, fishing boats, paddle boats, kayaks, miniature golf. Group camp. Cottages. Superintendent, Box 666, Wilburton. Phone: HOward 5-2562.

ROMAN NOSE: 78 Mi. NW from Oklahoma City. 6 Mi. north of Watonga. Park Area: 560-ac. 127 picnic tables, 59 grills, 2 shelters, boat ramp, 2 shower/latrine buildings, 2 playgrounds, 1 electric hook-up, horses, golf, fishing, boats, cafe, cold drink stand. Large swim pool and bathhouse. Lodge and cabins. Superintendent, Box 227, Watonga. Phone: 36-F-11.

SEQUOYAH: 169 Mi. NE from Oklahoma City. 13 Mi. east of Wagoner. 25 Mi. NE of Muskogee. Park Area: 3,180-ac. Lake: 19,100-ac. 250 picnic tables, 110 grills, 3 picnic shelters, 5 shower/latrine buildings, 4 boat ramps, ski dock, enclosed fishing dock, 3 playgrounds, 2 tennis courts, softball diamonds, horse-shoe courts, shuffleboard, archery range, golf, riding stables, miniature race cars, cruise boat, air strip, stage coach rides, beach and bathhouse, Marina, deer and buffalo. Lodge and cottages. Superintendent, Hulbert, Oklahoma. Phone: GLendale 6-3921 thru Tahlequah, Okla.

TENKILLER: 172 Mi. east from Oklahoma City. 6 Mi. NE of Gore. Cherokee-Sequoyah Counties. Park Area: 1,180-ac. Lake: 12,500-ac. 183 picnic tables, 61 grills, 3 picnic shelters, 6 shower/latrine buildings, 3 boat ramps, 4 ski docks, 1 enclosed fishing dock, playground, Marina, 10 electric hook-ups, 4 ski docks, beach, cafe, grocery, Cottages. Superintendent, Vian, Oklahoma. Phone: HUdson 9-2355 thru Gore, Okla.

TEXOMA: 147 Mi. south from Oklahoma City. 5 Mi. east of Kingston. Park Area: 1,884-ac. Lake: 93,000-ac. 198 picnic tables, 104 grills, 7 shelters, 4 shower/latrine buildings, 3 boat ramps, enclosed fishing dock, playground, 2 tennis courts, golf course, air strip, shuffleboard, trap shoot, riding horses, beach and bathhouse, pool, grocery, cafe, marina, excursion boat, ski tow service, water bikes, Lodge-cottages. Superintendent, Kingston, Okla. Phone: JOrdan 4-2566 thru Blair, Okla.

Trailers can be parked in all state parks. Sequoyah State park has 26 trailer spaces connected with sewer and electricity and paved patio, also, 10 spaces that are connected with electricity only.

COMMUNICATIONS EQUIPMENT CLASS 152 CONVENED MAR. 21 TO JUNE 24, 1960

NAME	REG.	STATION	NAME	Reg.	STATION
Avara, James A.	2	Jackson, Miss.	Hoff, Edward J.	3	NorthPlatte, Nebr.
Azevedo, James D.	4	Oakland, Calif.	Horlacher, C. E.	4	Globe, Ariz.
Basnett, Lloyd W.	4	San Diego, Calif.	Iwen, Milton F.	1	Boston, Mass.
Butner, Norman L.	6	Honolulu, Hawaii	Jasway, W. A.	2	SanAntonio, Tex.
Calvert, Samuel R.	1	Louisville, Ky.	Maples, Eugene L.	2	Okla. City, Okla.
Corbett, Chas. T.	2	OklahomaCity, Okla.	Meane, Paul L., Jr.	1	Syracuse, N. Y.
Craven, Robert	5	McGrath, Alaska	Mendoza, Luis	OIC	LaPaz, Bolivia
Dalton, Clyde A.	4	Casper, Wyo.	Morrison, J. W.	2	Birmingham, Ala.
DeLong, K. R.	2	Atlanta, Ga.	Nester, Lee N.	4	Bakersfield, Cal.
Gallegos, Nick S.	4	Albuquerque, N.M.	Noyes, Chas. R.	3	Kirksville, Mo.
Gault, Wm. C.	2	Austin, Tex.	Rahman, Ubaidur	OIC	Karachi, Pakistan
Gehrke, D. E.	3	KansasCity, Mo.	Schmadeke, Melvin	3	Fargo, NDak.
George, Bill G.	2	Austin, Tex.	Virga, Sebastiano O.	1	Idlewild, N. Y.
Goryl, Francis J.	1	Harrisburg, Pa.	Whitlow, Walter B.	3	Lincoln, Nebr.
Mahakanta, Sumrarn	OIC	Bangkok, Thailand	Williams, E. L.	1	WindsorLocks, Conn.
Paseepol, Kasien	OIC	Bangkok, Thailand	Wrenach, Donald B.	2	Jackson, Miss.
Hasa, Peyton H.	1	Roanoke, Va.			

COMMUNICATIONS EQUIPMENT CLASS 153 CONVENED APRIL 4 TO JULY 8, 1960

Beckett, George P.	4	Ellensburg, Wash.	Lindsey, Wm. L.	4	Albuquerque, N.M.
Bisaccia, Vincent J.	1	Idlewild Arpt, N.Y.	McNichols, L. M.	4	Julian, Cal.
Brown, Leonard M.	2	SulphurSpgs, Tex.	Myers, Billy J.	3	KanCity, Mo.
Buls, Robert B.	2	FtSmith, Ark.	Plunk, Jack B.	2	Houston, Tex.
Daril, Raymond E.	2	PineBluff, Ark.	Richter, Gerald E.	3	Indianapolis, Ind.
Dempster, Edwin A.	3	Waterloo, Iowa	Roberson, Grover K.	2	Atlanta, Ga.
Fiquet, Paul G.	4	Albuquerque, N.M.	Sauerwin, Eugene R.	2	Shreveport, La.
Flaherty, Thomas E.	1	Boston, Mass.	Schauer, Floyd F.	3	GrandForks, N. D.
Harding, Edward B.	3	Lafayette, Ind.	Smith, Luke J., Jr.	2	Syracuse, N. Y.
Hill, Creighton R.	3	Quincy, Ill.	Streiff, Carleton H.	1	Utica, N. Y.
Johnson, John D.	2	LittleRock, Ark.	TeSelle, Paul E.	3	Lincoln, Nebr.
Joyce, Paul W.	1	Toledo, Ohio	Tew, Wallace G.	1	Dayton, Ohio
Kelly, Meredith, Y.	2	LittleRock, Ark.	Thomasson, Kenneth	2	Tulsa, Okla.
Kirkconnell, Wm.	4	LosAngeles, Cal.	Thompson, Albert F.	4	LasVegas, Nev.
Kuck, Arnold H.	3	FtWayne, Ind.	Tolbert, Lloyd G.	5	Anchorage, Alaska
LaFianza, E. P.	1	Pittsburgh, Pa.			

VOR CLASS 175 CONVENED MARCH 21, 1960 TO JUNE 10, 1960

Anderson, W. H.	1	Norfolk, Va.	Pommis, David A.	1	Idlewild, N. Y.
Baker, Richard S.	4	Billings, Mont.	Savlowitz, A. H.	1	WhitePlains, N.Y.
Coffey, Darrell K.	4	Seattle, Wash.	Schulze, Cyril H.	1	New York, N. Y.
Conyers, W. I.	5	Anchorage, Alaska	Waters, Robert E.	6	Hilo, Hawaii
Ellis, Kanuel M.	3	Milwaukee, Wisc.	Wiley, Robert W.	4	Seattle, Wash.
Goode, W. R., Jr.	2	SanAntonio, Tex.	Williamson, J. C.	1	Rochester, N. Y.
Haley, George W.	2	WichitaFalls, Tex.	Zack, Donald E.	4	GreatFalls, Mont.
Hood, George P.	3	Saginaw, Mich.	Zaidi, Aziz	OIC	Pakistan
Nodine, Harvey	3	Moline, Ill.			

VOR CLASS 175-B CONVENED MARCH 21, 1960 TO MAY 13, 1960

Adams, Edwin A.	4	Gila Bend, Ariz.	Imes, Eugene R.	1	Columbus, Ohio
Aites, A. R., Jr.	1	Pittsburgh, Pa.	Jenks, Wiley M.	2	Okla. City
Allen, Weldon T.	2	Raleigh, N. C.	Kendzior, G. A.	3	Wausau, Wisc.
Elkins, E. H.	2	St. ThomasVirIs.	Patrick, D. A.	3	Champaign, Ill.
Fahrenthold, W. H.	2	Lometa, Tex.	Sandt, Calvin A.	1	Allentown, Pa.
Hansen, Raymond W.	4	Elko, Nev.	Schofield, Jerome P.	1	Philadelphia, Pa.
Harris, J. D., Jr.	2	Jackson, Tenn.	Shirley, Jimmie C.	2	WalnutRidge, Ark.
Hazzard, Vernon H.	3	Hobart, Ind.	Tomchik, T. A.	1	Philadelphia, Pa.
Holland, Luther	1	WhitePlains, NY	Wilbur, Larry D.	3	Imperial, Nebr.
Hunter, C. E.	AC	Okla. City	Woodrum, W.	2	Hickory, N. C.

VOR CLASS 176-A CONVENED APRIL 4, 1960, TO MAY 27, 1960

Bauer, W. D.	4	Portland, Ore.	Norwood, R. M.	2	Jackson, Miss.
Eaton, W. B.	4	TheDalles, Ore.	Sabella, Charles	1	Brooklyn, N. Y.
Gisi, Paul W.	4	Manteca, Calif.	Schroeder, R. C.	3	CouncilBluffs, Ia.
Guthrie, D. C.	4	Spokane, Wash.	Seztterh, J. M.	3	Omaha, Nebr.
Hammer, Julius	1	Brooklyn, N. Y.	Terrill, R. W.	3	Pekin, Ill.
Hilscher, Leroy	4	Oakland, Cal.	Timberlake, F. R.	3	Corydon, Ind.
Holder, Raymond D.	2	Austin, Tex.	Wilson, Keith E.	4	Denver, Colo.
Mantley, F. E.	4	Spokane, Wash.			

VOR CLASS 176-B CONVENED APRIL 4, 1960, TO MAY 27, 1960

Champagne, K. J.	4	SanRafael, Cal.	Krch, L. J.	4	Moffett RATCC
Dumas, A. E.	2	Dallas, Texas	Koons, Melvin L.	3	Goodland, Kans.
Fraley, B. J.	3	Vichy, Mo.	Lamont, C. C.	3	SouthBend, Ind.
France, K. G.	4	Lewistown, Mont	Little, T. D.	3	LaPlata, Mo.
Gehrig, Karl C.	5	KingSalmon, Alas	Richardson, S. J.	4	Neah Bay, Wash.
Green, C. D.	2	MuscleShoals, Ala.	Schoppe, C. A.	2	Lufkin, Texas
Heffern, W. J., Jr.	1	Coraopolis, Pa.	Umbaugh	1	Erie, Pa.

TACAN CLASS 21 CONVENED APRIL 4 TO JUNE 24, 1960

Argueso, Eduardo	OIC	Madrid, Spain	Hren, Anton J.	3	Rochester, Minn.
Beers, George V.	1	Teterboro, N. J.	Johnson, John P.	4	SanFrancisco, Cal.
Benjamin, L. A.	1	NewYork, N. Y.	Kifer, Francis L.	3	Scottsbluff, Nebr.
Boyd, Robert S.	3	Butler, Mo.	McCrum, David F.	1	Milleville, N. J.
Breuessel, Aaron	6	Honolulu, Hawaii	Morris, Robert E.	2	Beaumont, Tex.
Carlile, Victor L.	1	Baltimore, Md.	Morrison, Robert J.	5	Anchorage, Alaska
Carvajal, Alexander	2	WichitaFalls, Tex.	Paul, John I.	1	Harrisburg, Pa
Clark, James M.	1	Albany, N. Y.	Perry, Martin L. Jr.	1	Norfolk, Va.
Cornwell, Wm. Jr.	3	TerreHaute, Ind.	Petrisin, Andrew M.	2	Montgomery, Ala.
Darlington, Thomas W.	3	Chadron, Nebr.	Sanders, Robert L.	2	McComb, Miss.
Downing, Wellington	4	Fresno, Calif.	Schroeder, Neil J.	3	Burlington, Iowa
Doyle, Francis J.	1	Allentown, Pa.	Schwertfeger, A. W.	3	Butchinson, Kans.
Gilmartin, Roy E.	1	NewYork, N. Y.	Toth, Edward W.	3	Romulus, Mich.
Goforth, Vernon E.	2	Spartanburg, S. C.	Ulp, William E.	1	Williamsport, Pa.
Goin, Kenneth L.	4	LasVegas, Nev.	Vegh, Joseph	4	Colo. Spgs, Colo.
Grenlie, Lloyd K.	3	Greenbay, Wisc.	Yates, Kenneth E.	2	SanAntonio, Tex.
Haines, Charles D.	1	Pittsburgh, Pa.	Zywokarte, M. D.	1	NewYork, N. Y.
Hess, James H.	4	Cheyenne, Wyo.			

ESTABLISHMENT CLASS 8 CONVENED APRIL 4, 1960 TO APRIL 29, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Beltt, Charles H.	1	Englewood, N. J.	Nelson, James M.	4	WestChester
Johnson, Carol R.	2	Mutual, Okla.	Ryan, James H.	1	LakeCharles
Mazziotti, Thomas	1	Brooklyn, N.Y.	Standridge, H. H.	2	Mona, Ark.
McCarthy, Joseph W.	1	Roslindale, Mass.			

DME AND TACAN CLASS 9 CONVENED APRIL 4 TO JULY 22, 1960

Cann, Thomas F.	3	Joliet, Ill.	Nicolai, Edwin G. Jr.	4	Wenatchee, Wash.
Cooke, Samuel E.	2	Miami, Fla.	Paladin, James	1	Buffalo, N. Y.
Engwell, Quentin R.	3	Salina, Kans.	Perkins, John L.	4	Winnemucca, Nev.
Freeman, James R.	4	Spokane, Wash.	Porter, Sidney R.	4	Roswell, N. M.
Lewis, Howard W.	3	Evansville, Ind.	Robertson, Joseph W.	2	Charleston, S. C.
McCarty, Linn E.	3	Farmington, Mo.	Stell, James E.	2	Waco, Tex.
Moss, Henry P.	2	Brunswick, Ga.	Swift, Robert E.	3	Indianapolis, Ind.

RADAR CLASS 146-A CONVENED APRIL 4 TO JUNE 17, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Aksamit, Gerald D.	3	KansasCity, Mo.	Gonzalez, F. C.	OIC	Spain
Asnoe, Edgar T.	5	Anchorage, Alaska	Hager, Charles W.	2	Memphis, Tenn.
Baggett, Morris E.	2	SanAntonio, Tex.	Harter, Donald A.	1	Rome, N. Y.
Beaver, Wm. J.	1	Philadelphia, Pa.	Haydell, Walter C.	2	Longview, Tex.
Brown, Allan L.	1	N. Y. RO	Hirata, Yoshio	6	Honolulu, Hawaii
Carr, James S.	1	Cleveland, Ohio	Hopkins, Charles W.	2	SanAntonio, Tex.
Coyle, John J.	4	Albuquerque, N. M.	Jenkins, Leon I.	2	Austin, Tex.
Dailey, George H.	1	Boston Logan Arpt.	Jimenes, Pedro	OIC	Sevilla (Spain)
Diaz, Noe	2	Austin, Tex.	Johns, Edward D.	2	LakeCharles, La.
DuCote, James D.	2	FtWorth, Tex.	Jones, James D.	2	Houston, Tex.
Ferril, James E.	2	Tulsa, Okla.	Salahi, Abbas	3	Indianapolis, Ind.
Finger, Frank A.	2	Miami, Flo.			

RADAR CLASS 146-B CONVENED APRIL 4 TO JUNE 17, 1960

Kremin, Norman W.	3	Minneapolis, Minn.	Robbins, Carlisle H.	2	Charlotte, N. C.
Lanning, Richard E.	3	Lincoln, Nebr.	Rynees, Walter E.	5	Anchorage, Alaska
McKibben, Wm. J.	2	Savannah, Ga.	Santrock, Cecil H.	1	Newark, N. J.
McMullen, Dennis C.	1	Washn, Natl Arpt	Sgroi, John E.	1	Boston, Mass.
Mickel, Eugene P.	2	San Juan, P. R.	Sherwood, Wm. H.	4	Davis-Monthan AFB, Ariz.
Moisan, Ido B.	3	Chicago, Ill.			
Patrick, Wm. W.	4	Albuquerque, N.M.	Smith, Willard D.	2	LakeCharles, La.
Patterson, Henry G.	4	Dallas, Ore.	Snowdeal, Lloyd W.	1	Cleveland, Ohio
Polanski, Joseph S.	3	Chicago, Ill	Towery, Wm. A.	3	Omaha, Nebr.
Porter, Charles H.	2	SanAntonio, Tex.	Wade, Roy F.	3	Omaha, Nebr
Powell, David	1	LaGuardia, N. Y.	Ware, Murrel P.	1	Louisville, Ky.
Powell, Reuben	4	Oakland Arpt	Warren, Waldo W.	2	Okla. City, Okla.
			Yerkes, Chas. F.	4	Seattle, Wash.

RML/REPEATERS CLASS 9 CONVENED MARCH 28, 1960 TO APRIL 15, 1960

Brown, Paul	2	Houston, Texas	Sekach, F. J.	3	Jackson, Miss.
Caviness, George	2	Montgomery, Ala	Stickles, G. M.	4	Fresno, Calif.
Johnson, Webb	2	Brunswick, Ga.	Swan, Jerry M.	2	Houston, Tex.
Pettit, Arthur G.	4	Portland, Ore.	Townsend, J. L.	4	Bellingham, Wash.
Ramey, W. J.	2	Savannah, Ga.	Weber, Donald C.	2	Jacksonville, Fla.

MAINTENANCE SUPERVISION CLASS 30 CONVENED MARCH 3, 1960 TO MAR. 25, 1960

Applebury, J. L.	4	Lovelock, Nev.	Jacobsen, G. D.	4	Portland, Ore.
Cann, Thomas F.	3	Joilet, Ill.	Kifer, Francis L.	3	Scottsbluff, Neb.
Ericson, Wilbur G.	2	Okla. City	Martin, F. A.	1	Bedford, Mass.
Field, J. A.	2	Miami, Fla.	Miley, Ronald E.	3	Ypsilanti, Mich.
Gassaway, H. P.	1	Washington	Ricketts	6	Wake Island
Guinn, R. W.	3	TerreHaute, Ind.	Robbins, H. A.	4	Fresno, Calif.
Hill, William J.	3	CedarRapids, Ia.			

MAINTENANCE SUPERVISION CLASS 32 CONVENED APRIL 18, 1960 TO APRIL 22, 1960

Bauer, Robert V.	3	Jackson, Mich.	Pearson, C. W.	WO	Washington
Evans, Stanley	2	Houston, Texas	Pearson, H. J.	3	Goodland, Kans.
Krenk, Antone J.	3	Lincoln, Nebr.	Stickles, George	4	Fresno, Calif.
Loper, Godfrey C.	AC	Okla. City	Townsend, J.	4	Bellingham, Wash.
Miller, Donald C.	3	Emporia, Kans.	Wilson, Charles	2	Ft. Worth, Tex.

ROS-143 - GPX-9 CONVENED MARCH 28 TO APRIL 8, 1960

Backlund, Kurt E.	5	Anchorage, Alaska	James, Robert U.	4	ColoradoSpgs, Colo.
Crane, Forest E.	4	March AFB, Calif.	Murphy, Paul F.	1	Otis AFB, Mass.
Earl, Harry D.	5	Anchorage, Alaska	Spofford, Earl A.	4	McChord AFB, Mass.
Jackson, Ronald	1	Otis AFB, Mass.			

ELECTRO-MECHANICS CLASS 13 (TELETYPE PHASE) APRIL 11, 1960-MAY 6, 1960

Hall, Julian C.	4	Tonapah, Nev.	Stanton, C. M., Jr.	3	KansasCity, Mo.
Kastle, A. P.	1	Columbus, Ohio	Tacke, H. A.	2	New Orleans, La.
Martin, F. A.	1	Bedford, Mass.	Wise, F. N.	4	Pendleton, Ore.
Perlenfein, N. L.	3	Omaha, Nebr.	Younkin, H. E.	3	Lafayette, Ind.

ELECTRO-MECHANICS CLASS 13 (AIR CONDITIONING PHASE) MAR. 28 TO APRIL 8, 1960

Anderson, E. A.	3	Minneapolis, Minn	Schneider, R. A.	3	Detroit, Mich.
Burnham, Albert	5	Sitka, Alaska	Shepard, J. W.	AC	Okla. City
Fisher, James E.	4	Eugene, Ore.	Tacke, H. A.	2	New Orleans, La.
Gagnepain, E. J.	3	Indianapolis, Ind.	Wall, Roy L.	5	Anchorage,
Kastle, A. P.	1	Columbus, Ohio	Wise, F. N.	4	Pendleton,
Martin, F. A.	1	Bedford, Mass.	Younkin, Harry E.	3	Lafayette, In
Michelsen, S. P.	3	Kansas City, Mo.			

JULY 1960

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THE F.A.A. AERONAUTICAL CENTER EMPLOYEE'S ASSOCIATION

143 - RML(T/R) CONVENED MARCH 28 TO APRIL 22, 1960

NAME	REG.	STATION	NAME	REG.	STATION
Alexander, James L.	2	Nashville, Tenn.	LeBleu, Julian	2	Houston, Tex.
Baker, Richard T.	4	LosAngeles, Calif.	McKee, Donald J.	1	Idlewild, N.Y.
Brizendine, E.E.	2	Nashville, Tenn.	Muse, Kermit M.	2	McComb, Miss.
Burton, R. B.	2	Nashville, Tenn.	Neal, Thomas B.	3	Indianapolis, Ind.
Ehrhart, Terry M.	3	KansasCity, Mo.	Pearson, R. R.	4	LosAngeles, Calif.
Elliott, Adams E.	2	Memphis, Tenn	Reilly, Grant A.	4	SanDiego, Calif.
Fairbanks, Harold M.	3	GrandRapids,Mich.	Rhoades, John K.	2	Hutchinson, Kans
Gallagher, Paul W.	2	Nashville, Tenn.	Ridge, Lowell H.	4	Dallas, Ore.
Gerten, Dale E.	3	Hutchinson, Kans.	Risinger, Elbert L.	2	ElPaso, Tex
Goodrich, Robert G.	2	Jackson, Miss.	Smith, Jack H.	2	Rawleigh, N.C.
Hankins, James C.	2	NewOrleans, La.	Steed, Melvin L.	3	LaGrange, Ind.
Harder, Willis D.	3	Hutchinson, Kans.	Stevens, Albert T.	2	Memphis, Tenn.
Hatcher, Ross M.	2	ElPaso, Tex.	Tarbell, David W.	3	KansasCity, Mo.
Hudson, Julius R.	2	Nashville, Tenn.	Teas, George W.	2	CorpusChristi, Tex.
Johnson, Lambert E.	2	Jacksonville, Fla.	Wendt, Walter D.	2	Midland, Tex.
LaGrassa, W. W.	4	SaltLakeCity, Utah.	Wolter, Charles W.	3	Minneapolis, Minn.
Landers, Harry E.	4	Albuquerque, N.M.			

ROS 143 - ARSR-1 CONVENED MARCH 28 TO APRIL 15, 1960

Bukowsky, Arnold S.	2	Shreveport, La.	Lenox, James M.	2	Tulsa, Okla.
Cerrito, Thomas J.	1	QuonsetPt., R.I.	Morgan, W. G.	2	CorpusChristi, Tex.
Cottle, Elmer C.	3	Malden, Mo.	Powell, J. L. Jr.	1	Jamaica, N.Y.
Giangiordano, R. A.	1	Youngstown, Ohio	Smith, Carman H.	5	Anchorage, Alaska
Goo, Harry W. G.	6	Honolulu, T.H.	Yanke, Daneil J.	1	Cleveland, Ohio
Hardcastle, Eddie R.	2	Flippin, Ark.	Zoelzer, Vernon A.	3	Indianapolis, Ind.
Krempasky, Carl P.	1	Washington, D.C.			

ROS 143 - ASR-3 CONVENED MARCH 28 TO APRIL 15, 1960

Ames, E. E. Jr.	4	SanFrancisco, Cal.	Knighten, W. W. Jr.	5	Anchorage, Alaska
Cartier, Robert N.	1	Burlington, Va.	Larson, Robert C.	3	Lincoln, Nebr.
Dorony, George J.	1	Cleveland, Ohio	Moulton, Ralph A.	2	Tampa, Fla.
Dozier, Don W.	5	Fairbanks, Alaska	Parks, J.D. Jr.	2	LittleRock, Ark.
Hewitt, Robert S.	3	Moline, Ill.	Schroeder, Richard	1	LongIsland, N.Y.
Jacobs, James B.	2	Knoxville, Tenn.			

APRIL GRADUATES IN DIRECTED STUDY COURSE 90

NAME	REG	STATION	NAME	REG	STATION
Adams, Paul L.	4	Grand Junct, Colo.	Kelso, Jos. Wm. Jr.	2	Memphis, Tenn.
Ainsworth, Wm. E.	4	Winnemucca, Nev.	Ketner, James Carl	AC	Okla. City, Okla.
Alleman, F. J.	2	Kenner, La.	Kling, Otto C.	AC	Okla. City, Okla.
Allm, Hal K.	4	SantaBarbara,Calif.	LaBounty, J. B.	1	Taunton, Mass.
Antimisiaris, Geo.	1	Wheeling, W. Va.	Ledbetter, Clarence	AC	Okla. City, Okla.
Barina, Paul J.	4	LasVegas, Nev.	Lewis, Edward E.	2	Okla. City, Okla.
Bates, James L.	2	Meridian, Miss.	Liffrig, Cyril S.	2	Charlotte, N.C.
Beckett, Carl W.	3	Champaign, Ill.	Linquist, Arnold S.	4	Oakland, Calif.
Bell, Finner, F.	2	Dallas, Texas	Longo, Edward L.	1	Scranton, Penn.
Bellinger, Frank, Jr.	1	Sherrill, N.Y.	Magin, Wilson	1	Wayland, N.Y.
Benavieca, R. A.	AC	Okla. City, Okla.	Martinez, Miguel	OIC	Tegucigalpa, Hondur
Brewer, Ed R., Jr.	AC	Okla. City, Okla.	McOmber, Forrest	4	MilesCity, Montana
Bridges, Herbert	AC	Moore, Okla.	Metcalf, Maynard, Jr.	1	LittleNeck, L.I.
Brown, Eugene W.	4	Burbank, Calif.	Moriarty, Brendan M.	4	Eugene, Oregon
Brown, Sonny B.	1	NewAlbany, Ind.	Murphy, Clinton A.	2	ElPaso, Texas
Burroughs, Howard A.	4	SanMateo, Calif.	Noe, Albert E., Jr.	4	Cyeyenne, Wyo.
Campbell, Troy T.	AC	Okla. City, Okla.	Olivera, Donald R.	4	Pacifica, Calif.
Coletta, Vincent G.	1	W. Warwick, R.I.	Olson, Ralph, L.	5	Anchorage, Alaska
Creel, Gavin G.	2	Tuscaloose, Ala.	Patton, Wm. E.	4	Colo. Springs, Colo.
Cuadra, Luis E.	4	Albuquerque, N.M.	Ponds, Jesse M.	2	NewOrleans, La.
Daniels, Robert Lee	2	W. Hollywood, Fla.	Poston, Wm. T., Jr.	2	Ft. Worth, Texas
Dayton, James E.	1	Wilmington, Del.	Prohaska, Donald	4	Cheyenne, Wyo.
DeChristofano, D. W.	1	Providence, R.I.	Ramey, Warren J.	2	Savannah, Ga.
DeVeny, Cecil C.	4	RockSprings, Wyo.	Reasoner, James D.	2	Ardmore, Okla.
Doyle, Francis J.	1	Allentown, Pa.	Redman, Earl L.	2	Waco, Texas
England, Irvin H.	AC	Okla. City, Okla.	Render, Zane L.	AC	Okla. City, Okla.
Fenison, Chas. W.	4	Phoenix, Ariz.	Robinson R. E.	3	Scottsbluff, Nebr.
Fitzgerald, L. C.	1	Washington, DC	Rogers, Earl E.	AC	Okla. City, Okla.
Gallagher, Phil, Jr.	1	IslandHeights, N.J.	Rugen, Herbert E.	3	LaCrouse, Wisc.
Gallegos, Nick	4	Albuquerque, N.M.	Sanders, Stanley	AC	Okla. City, Okla.
Garcia, Hector	2	Houston, Texas	Scott, Francis E.	AC	Roanoke, Va.
Griesen, Richard J.	4	Portland, Oreg.	Shafer, James K.	4	Albuquerque, N.M.
Hagan, Albert J.	2	McAlester, Okla.	Shingleton, Edwin D.	4	RockSprings, Wyo.
Hall, Sterling G.	4	BuenaPark, Calif.	Simpson, Richard R.	4	ManhattanBeach, Calif.
Hanlon, J. W., Jr.	2	Beaumont, Texas	Smith, J. A.	2	Stockton, Calif.
Haxlewood, Norman	AC	Norman, Okla.	Snellen, Harold L.	AC	Okla. City, Okla.
Hejna, J. J., Jr.	4	RockSprings, Wyo.	Sober, Colonel V.	AC	Okla. City, Okla.
Heraly, Henry R.	3	Eau Claire, Wisc.	Suskin, Irving	3	Jamaica, N.Y.
Higa, Kenneth K.	6	Wake Island	Trivigno, CarmineF.	4	St.Petersburg, Fla.
Hippo, Kenneth D.	2	Molile, Ala.	Turner, Wm. C.	1	Sandston, Va.
Hite, Henry A.	4	N.Hollywood, Calif.	Vaughn, Lloyd	AC	Okla. City, Okla.
Hoff, Edward F.	3	N. Platte, Nebr.	Watson, Don	AC	Okla. City, Okla.
Hofferber, Robert W.	4	Tacoma, Wash.	Way, Joseph D.	4	Montague, Calif.
Holt, Orval R.	3	Kansas City, Mo.	West, Sam N.	2	PoncaCity, Okla.
Hopkins, Charles W.	2	SanAntonio, Tex.	White, Lester L.	AC	Okla. City, Okla.
Howe, Maynard T.	3	KansasCity, Mo.	Wiebe, Marvin E.	4	Pioche, Nevada
Hreah, Michael J., Jr.	1	Syracuse, N.Y.	Wilson, Alfred, Jr.	1	London, Kentucky
Jelinski, Loren N.	3	Milwaukee, Wisc.	Wingate, Thomas A.	4	LasVegas, Nev.
Joseph, Jno., Jr.	1	Lexington, Ky.	Wray, Robert W.	1	ClevelandHts, Ohio
Joyal, Hubert W.	4	GreatFalls, Mont.	Wusnack, Otto A.	2	ElPaso, Texas
[illegible]ic, Stephen	1	WhitehouseSta, N.J.	Zolman, Peter C	AC	Scottsbluff, Nebr.

APRIL GRADUATES IN DIRECTED STUDY COURSE 100

NAME	REG.	STATION	NAME	REG.	STATION
Kling, R. W.	3	Chicago, Ill.	Mack, R. C.	1	Nantucket, Mass.
Mahoney, J. F.	1	Rochester, N.Y.	Mastin, D. E.	2	Okla. City, Okla.
Saunders, F. C.	ATC	Battle Mt., Nev.	Siebert, R. O.	3	Ottumwa, Ia.
Steele, J. L.	ANF	SanFrancisco, Cal	Stovall, R. K.	1	Warren, Ohio
Taylor, Bill	2	El Paso, Tex.	Utterback, C. E.	1	Youngstown, Ohio
Vancil, K. T.	4	Oakland, Cal.	Vick, Chas. R.	2	El Paso, Tex.
Voss, Roger E.	3	Chadron, Nebr.	Wasley, Frank J.	4	Fresno, Calif.

APRIL GRADUATES IN DIRECTED STUDY COURSE 201

Jemison, Philip E.	4	Drummond, Mont.	Johnson, David L.	4	Seattle, Wash.
Magula, Jos. J.	1	Reading, Pa.	Pan, William	4	CastroValley, Cal.
Perry, Harris L.	4	Gr. Junction, Colo	Smallwood, M. I.	2	Okla. City, Okla.

APRIL GRADUATES IN DIRECTED STUDY COURSE 202

Boudreau, D. J.	3	Evansville, Ind.	Johnston, R. M.	1	Morgantown, W. Va.
Loo, Edmund W. T.	6	Wake Island	Orton, Glenn C.	ANF	Okla. City, Okla.
Stopp, Richard E.	4	SanLeandro, Cal.	Thompson, C. R.	4	Butte, Mont.
Wilkerson, W. F.	1	Beverly, W. Va.			

APRIL GRADUATES IN DIRECTED STUDY COURSE 203

Bendall, Ray A.	2	Memphis, Tenn.	Newman, Robt. S.	3	Chicago, Ill.
Tankersley, Ben	2	Okla. City, Okla.	Treichel, D. C.	5	Aniak, Alaska

APRIL GRADUATES IN DIRECTED STUDY COURSE 204

Bruemmer, J. W.	2	San Antonio, Tex.	Gaugl, E. M.	4	Eugene, Ore.
Reid, Daniel M.	3	Kansas City, Kans.			

APRIL GRADUATES IN DIRECTED STUDY COURSE 208

Lombard, R. G.	4	Man. Beach, Calif	Walker, J. W.	1	Gordonsville, Va.

APRIL GRADUATES IN DIRECTED STUDY COURSE 301

Boyde, Edward	1	StatenIsland, N.Y.	Knapcik, Charles	3	DesPlaines, Ill.
Brenessel, Archie	6	Kailua, T.H.	Piper, Geo. D.	3	St. Charles, Mo.
Heathcot, Joe H.	3	RedwoodFalls, Minn	Polsinelli, Vincent	1	Newark, N.J.

APRIL GRADUATES IN DIRECTED STUDY COURSE 302

Hansen, Duane A.	4	SaltLakeCity, Utah

APRIL GRADUATES IN DIRECTED STUDY COURSE 303

Krohn, Bill G.	1	NewGardens, N.Y.	Tipton, Wm. W.	4	Seattle, Wash.

APRIL GRADUATES IN DIRECTED STUDY COURSE 304

Christie, Duman E.	2	Savannah, Ga.

APRIL GRADUATES IN DIRECTED STUDY COURSE 305

Berry, Henry C.	2	Atlanta, Ga.

APRIL GRADUATES IN DIRECTED STUDY COURSE 401

Bell, Wm. E.	WO	Springfield, Va.	Magin, John J.	1	Jamaica, LI, N.Y.
Catalano, Dominic	1	Brooklyn, N.Y.	Peterson, Herman L.	1	Jamaica, LI, N.Y.
Daugherty, Leon C.	WO	Vienna, Va.	Ross, Herbert	1	Jamaica, LI, N.Y.
Gayle, Ernest L.	1	Massapequa, LI, N.Y.	Watine, Malvin N.	ANF	Jamaica, LI, N.Y.
Jordon, Bob	AC	OklahomaCity, Okla.			

APRIL GRADUATES IN DIRECTED STUDY COURSE 441

Zajic, John R.	3	Olathe, Kans

APRIL GRADUATES IN DIRECTED STUDY COURSE 1

NAME	REG.	STATION	NAME	REG.	STATION
McRae, R. D.	2	Meridian, Miss.	Robbins, Albert	1	Jamaica, L. I.

APRIL GRADUATES IN DIRECTED STUDY COURSE 2

Harvey, Jas. T., Jr.	2	Hialeah, Fla.	Holmes, H. Wm.	ATC	Belleville, Mich.
Pickenpaugh, C. H.	2	Rodman, C. Z.	Wagner, W. L.	ATC	Findlay, Ohio
Warr, Wm. S.	4	Stockton, Calif.			

AIR TRAFFIC CONTROL BRANCH GRADUATES

TG - 10

Frank E. Alexander	Norfolk Center
Clayton D. Boring	Pittsburgh Center
Joseph L. Buscher	El Paso Center
George R. Cook	Washington Center
Charles M. Feix	Cleveland Center
Jesse G. Podero	Washington Center
Paul A. Goodridge	Washington Center
Aarne Hartikka	Washington Center
Dwight M. Hendrix	Cleveland Center
Gerald L. Hood	Norfolk Center
Robert A. Howell	Norfolk Center
Michael E. Jengo, Jr.	Cleveland Center
Wayne D. Kiebler	Pittsburgh Center
John G. Kelly	El Paso Center
Edward J. McAllister	Norfolk Center
Richard W. McCabe	Norfolk Center
John C. McManus	Cleveland Center
Clinton M. Mowry	Washington Center
Bennie E. Nichols	Washington Center
Percy E. Sudsbury	Pittsburgh Center
Charles S. Tuberville	El Paso Center
Werner O. Wiberg	Los Angeles Center

TG - 11

Aldor R. Beauregard	Miami Center
Bruce G. Bichan	Memphis Center
Robert V. Bonfoey	Atlanta Center
Johnnie R. Dykes	Memphis Center
Bennie W. Evans, Jr.	Ft. Worth Center
Herman N. Ferguson	Memphis Center
William K. Greer	Memphis Center
Louis F. Jiran	Jacksonville Center
Jack D. Lee	San Antonio Center
Richard C. Lee	San Antonio Center
Ray Long	New Orleans Center
John A. Magoulas	Jacksonville Center
Frederick W. Nolte	Memphis Center
William L. Pollock, Jr.	Memphis Center
Johnie G. P'Pool	San Antonio Center
Gail L. Quanz	Ft. Worth Center
Jesse P. Read	Ft. Worth Center
Norman C. Skipworth	Ft. Worth Center
Carleton H. Steins	Ft. Worth Center
Larry A. Taylor	Cleveland Center
Harvey J. Yost	San Antonio Center

TG - 12

Ronald L. Alverson	Los Angeles Center
Frank Boone, Jr.	Los Angeles Center
George A. Breen	Los Angeles Center
John D. Charles	Los Angeles Center
William C. Clevenger	Los Angeles Center
John J. Coyle	Cleveland Center
Robert E. Drewlo	Los Angeles Center
Lee A. DeGraffenried, Jr.	Los Angeles Center
Garrett J. Garner	Los Angeles Center
Gerald D. Gibson	Los Angeles Center
Max H. Hall	Los Angeles Center
George W. Harvey	Los Angeles Center
Charles G. Hurley	Los Angeles Center
Richard A. Hutson	Los Angeles Center
Kenneth R. Kruel	Los Angeles Center
Thomas J. McGuire	Los Angeles Center
Dale E. Moritz	Los Angeles Center
Roger Nichols	Los Angeles Center
Sten I. Nordstrom	Los Angeles Center
Norman C. Norton	Los Angeles Center
Delbert B. Pettyjohn	Los Angeles Center
Tommie Tallon	Los Angeles Center
Richard D. Troy	Los Angeles Center

TG - 13

James H. Allen	Ft. Worth Center
Fred Brothers, Jr.	Memphis Center
Robert M. Brown	El Paso Center
Ronald G. Cavender	Ft. Worth Center
Earl B. Cox, Jr.	Atlanta Center
Alfred M. Dail	Atlanta Center
Max Finley	Ft. Worth Center
Arthur L. Furley	Ft. Worth Center
Louis R. Goodman	Ft. Worth Center
Stanley E. Guthrie	Memphis Center
Warren H. Hightower	El Paso Center
Charles H. Jenkins	El Paso Center
James R. Jernigan	Atlanta Center
Jack L. Jobe	San Antonio Center
Jimmy L. Kanetzky	Ft. Worth Center
Victor B. Kleinhenz	Memphis Center
Henry S. Loezer	Memphis Center
John E. Mahan	San Antonio Center
James M. Orr	Memphis Center
Donald G. Price	Memphis Center
Nelson E. Queen	Atlanta Center
Don J. Schodts	San Antonio Center
Douglas L. Scott	Memphis Center
Kelly F. Sirgusay	Miami Center

TG - 14

Bruce Baker	Washington Center
George A. Brenner	Cleveland Center
Robert L. Ceramenico	Cleveland Center
James J. Consagra	Washington Center
Carl E. Cowgill	Cleveland Center
Cleve J. Francoeur	Indianapolis Center
William K. Gale	Cleveland Center
Mark L. Griffin	Indianapolis Center
Robert O. Guadagni	Cleveland Center
Wallace E. Hamel	Norfolk Center
Marvin L. Lawson	Cleveland Center
Constantine B. Limber	Cleveland Center
Melvin E. Madding	Indianapolis Center
Lawrence Martin	Washington Center
James A. Matt	Indianapolis Center
Phillip K. Poe	Indianapolis Center
William F. Rivette	Cleveland Center
Herbert J. Roasell, Jr.	Washington Center
Ronald M. Sloan	Cleveland Center
Richard G. Stevens	Norfolk Center
George R. Storch	Cleveland Center
Peter A. Strange	Indianapolis Center

TG - 15

Gerald L. Aldridge	Seattle Center
Michael A. Boehm	Oakland Center
David B. Casner	Indianapolis Center
Gerald J. Cloutier	Seattle Center
Ian H. Crinklaw	Oakland Center
Levine R. Garcia	Oakland Center
Carroll L. Dupre1	Oakland Center
Peter M. Fenton	Indianapolis Center
Carl L. Fields	Indianapolis Center
Arthur H. Gee	Seattle Center
George P. Griffith	Seattle Center
Willie M. Lassiter	Oakland Center
Hugh N. McMillan	New Orleans Center
Robert E. Olson	Seattle Center
Frederick N. Read	Oakland Center
James R. Schenk	Oakland Center
Thomas A. Shultz	Oakland Center
Leon C. Warner	Seattle Center

TG - 16

John Bacon	Norfolk Center
Alfred J. Bogen	Washington Center
Thomas W. Cody	Memphis Center
Joseph L. Cooper	Norfolk Center
Harvey G. Gibson	Chicago Center
Joseph W. Goggin	Chicago Center
Donald D. Haig	Chicago Center
Byron K. Hawkins	Memphis Center
Charles C. Laskowski	Chicago Center
William J. McCumiskey, Jr.	Cleveland Center
Harold O. Minnix	Norfolk Center
Louis W. Perkins	Chicago Center
Billy M. Riley	Memphis Center
Franklin Secrest	Chicago Center
Paul P. Spanko	Pittsburgh Center
Lawrence R. Tremblay	Washington Center
Stanley R. Walus	Chicago Center
Gerald L. Waters	Chicago Center
Clarence H. Welch, III	Norfolk Center
Willard B. Wertenberger, Jr.	Cleveland Center
George K. Wilmoth	Pittsburgh Center
Forrest G. Zeal	Chicago Center

TG - 17

William A. Carlisle	Ft. Worth Center
Barry E. Cheatham	New Orleans Center
Thomas B. Dunn	New Orleans Center
Jimmy D. Feltman	New Orleans Center
Delbert L. Honic	Jacksonville Center
Donald R. Johnston	New Orleans Center
Kenneth L. Koger	New Orleans Center
Frank J. Kurtz	Jacksonville Center
James E. Landers	New Orleans Center
John D. Lyons	New Orleans Center
Gerald L. Marshall	Ft. Worth Center
Keith C. McCall	Jacksonville Center
John W. McDowell	Ft. Worth Center
Ronald V. McHenry	New Orleans Center
Patrick C. McNamara	San Antonio Center
George W. Moon, III	Ft. Worth Center
Dale C. Proctor	Ft. Worth Center
Herbert T. Rollins	Atlanta Center
Lowell A. Switzer	New Orleans Center
Rex G. Turner	New Orleans Center
Gerald R. Tuso	Atlanta Center

TG - 18

Jane C. Bailey	New York Center
LaMoyne H. Beckner	Los Angeles Center
John W. Brown	Los Angeles Center
Carl T. Browne	New York Center
Donald F. Chaffee	Los Angeles Center
James V. Crites	Los Angeles Center
David R. Hernandez	Los Angeles Center
James R. Joyce	Los Angeles Center
Dan W. Mapes	Los Angeles Center
John J. Marciano	New York Center
Richard L. Michelini	New York Center
Stephen J. Moylan	New York Center
Raymond W. Nowlin	Los Angeles Center
Samuel T. Price	Los Angeles Center
Dennis D. Putnam	Los Angeles Center
Adolph H. Rutkiewicz	New York Center
Robert L. Schenk	Los Angeles Center
Lawrence R. Woosley	Los Angeles Center

Flight Inspection Training

Procedures Basic - FB-60-10
Completed April 1, 1960

BOEGEL, Wm. T	New York, N. Y.
COAKLEY, Ted	Honolulu, Hawaii
CONNICK, Arden D.	Los Angeles, Calif.
HALDEMAN, Paul J.	Bedford, Mass.
LINDEN, Byron N.	Salt Lake City, Utah
McBRIDE, M. A.	Okla. City, Okla.
NICOLAI, Fred M.	Battle Creek, Mich.
O'DEA, Stephen F., Jr.	East Rivardale, Md.
RAINEY, Paul, Jr.	Santa Monica, Calif.
ROSS, Everett	Atlanta, Ga.
STONE, Robert S.	Atlanta Ga.
UNTERSEE, Paul F.	Kansas City, Mo.

Procedures Basic - FB-60-11
Completed May 13, 1960

ALEXANDER, J. B.	Atlanta, Ga.
BANESTON, Edward	Richmond, Va.
BROWN, Robert W.	St. Paul, Minn.
GIBSON, G. E.	Phoenix, Ariz.
HLATT, George W.	Battle Creek, Mich.
KARI, George M.	Salt Lake City, Utah
KENNEDY, Harold L.	Bedford, Mass.
LANING, B. A.	Kansas City, Kansas
McGAHEY, Thomas W.	Okla. City, Okla.
VAN DE RIET, Jack W.	Spokane, Wash.
WARREN, Robert F.	Atlanta Ga.
WOLF, Kenneth E.	Columbus, Ohio
YOUNG, Stanley W.	Ft. Worth, Texas

USAF FLIGHT INSPECTION TRAINING
(Refresher Course)

CLASS #28030

Date of completion: April 8, 1960

Major Lawrence L. Browne, Jr.	Randolph AFB, Texas
Capt. Robert B. Cowan	Randolph AFB, Texas
Capt. Elmer E. Craig, Jr.	Robins AFB, Georgia
Capt. Lynwood W. Cumbie	Chanute AFB, Illinois
Capt. Leo B. Edwards	Randolph AFB, Texas
Capt. Alfred F. Endler	Hamilton AFB, California
Capt. Charles R. Ford	Tinker AFB, Oklahoma
1/Lt. James S. McMahon	Mitchel AFB, New York
Major Joseph F. Mika	Chanute AFB, Illinois
Capt. Billy G. Young	Hamilton AFB, California
T/Sgt. Edward M. Herkheimer	Mitchel AFB, New York
S/Sgt. Charles C. Huber	Robins AFB, Georgia
T/Sgt. Jimmie H. Key	Robins AFB, Georgia
T/Sgt. Joe E. McKendrick	Mitchel AFB, New York
M/Sgt. Joseph L. Millar	Randolph AFB, Texas
M/Sgt. Clarence J. Nibblett, Jr.	Randolph AFB, Texas
T/Sgt. John T. Strine	Tinker AFB, Oklahoma
S/Sgt. Charles M. Whitt	Mitchel AFB, New York

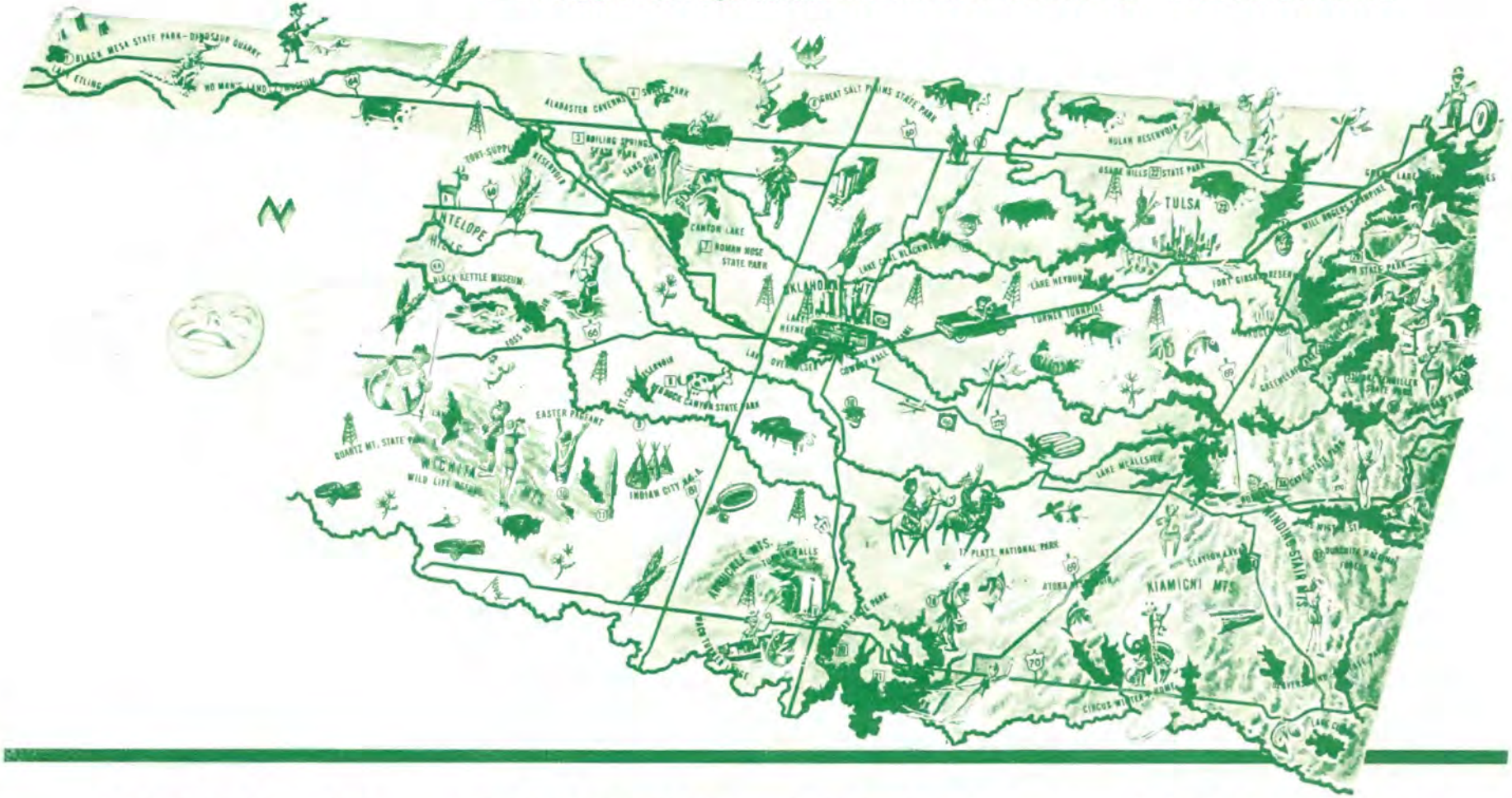
Flight Inspection Indoctrination Training Course

I-60-3

Completed Class 3-25-60

Bell, Dudley	Oklahoma City, Oklahoma
Chambers, Bunnie J.	Wahiawa, Hawaii
Chesley, Ray D.	Kansas City, Missouri
Chestnutt, Bryant M.	Richmond, Virginia
Conklin, Wayne A.	Los Alamitos, California
Coughlen, James F.	Battle Creek, Michigan
Geiger, Donald W.	Oklahoma City, Oklahoma
Hall, Alvin W.	Orlando, Florida
Hess, Emmett C., Jr.	Hurst, Texas
Hughes, Harry J.	Salt Lake City, Utah
Lee, Donald E.	Austell, Georgia
McDonald, Jack B.	Austell, Georgia
McGranahan, Maurice R.	East Point, Georgia
McLaughlin, Robert W.	Westwood, New Jersey
Powell, Harry S.	Compton, California
Ray, Louis D.	Arlington, Virginia
Seymore, James W.	Richmond, Virginia
Terranova, Julius J.	Kailua, Hawaii
Williams, Jimmye O.	Oklahoma City, Oklahoma
Winston, Edward B.	Chatsworth, California

Oklahoma.....America's Newest Vacationland



1. Black Mesa State Park ..... Kenton
2. No Man's Land Museum ..... Goodwell
3. Boiling Springs State Park ..... Woodward
4. Alabaster Caverns State Park . Freedom
4A. Black Kettle Museum ..... Cheyenne
5. Quartz Mountain State Park ..... Hobart, Altus, Mangum Area
6. Great Salt Plains State Park ... Cherokee
7. Roman Nose State Park ..... Watonga
8. Red Rock Canyon State Park ... South of Hinton
9. Indian City—U.S.A. ..... Anadarko
10. Wichita Mountains Wild Life Refuge Lawton
11. Fort Sill Army Artillery School Fort Sill
12. Pioneer Woman Statue & Museum Ponca City
13. Oklahoma State University . Stillwater
14. State Capitol and Oil Wells Oklahoma City
15. Oklahoma Historical Society Oklahoma City
16. University of Oklahoma . Norman
17. Platt National Park, Artesian Well Sulphur
18. Turner Falls, Arbuckle Mountains Davis
19. Devil's Den Park North of Tishomingo
20. Lake Murray State Park .. Ardmore
21. Lake Texoma State Park .... Between Madill and Durant
22. Osage Hills State Park N.E. of Pawhuska
23. Woolaroc Museum S..W. of Bartlesville
24. Will Rogers Memorial & Tomb .Claremore
25. Gilcrease Art Museum ..... Tulsa
26. Philbrook Art Center ..... Tulsa
27. Grand River Dam and Lake .. Northeast Oklahoma
28. Sequoyah State Park, Fort Gibson Reservoir Between Wagoner-Tahlequah
29. Historic Murrell Mansion ..... South of Tahlequah
30. Fort Gibson Stockade .. Fort Gibson
31. Becone Indian Museum ..... Muskogee
32. Greenleaf Lake State Park ..... S. E. of Muskogee
33. Lake Tenkiller State Park ..... Near Gore
34. Home of Sequoyah ..... North of Sallisaw
35. Robber's Cave State Park Wilburton
36. Lake Wister State Park .... Near Poteau
37. Ouachita National Forest Between Heavener - Talihina
38. Lake Clayton Recreation Area South of Clayton
39. Beavers Bend State Park North of Broken Bow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