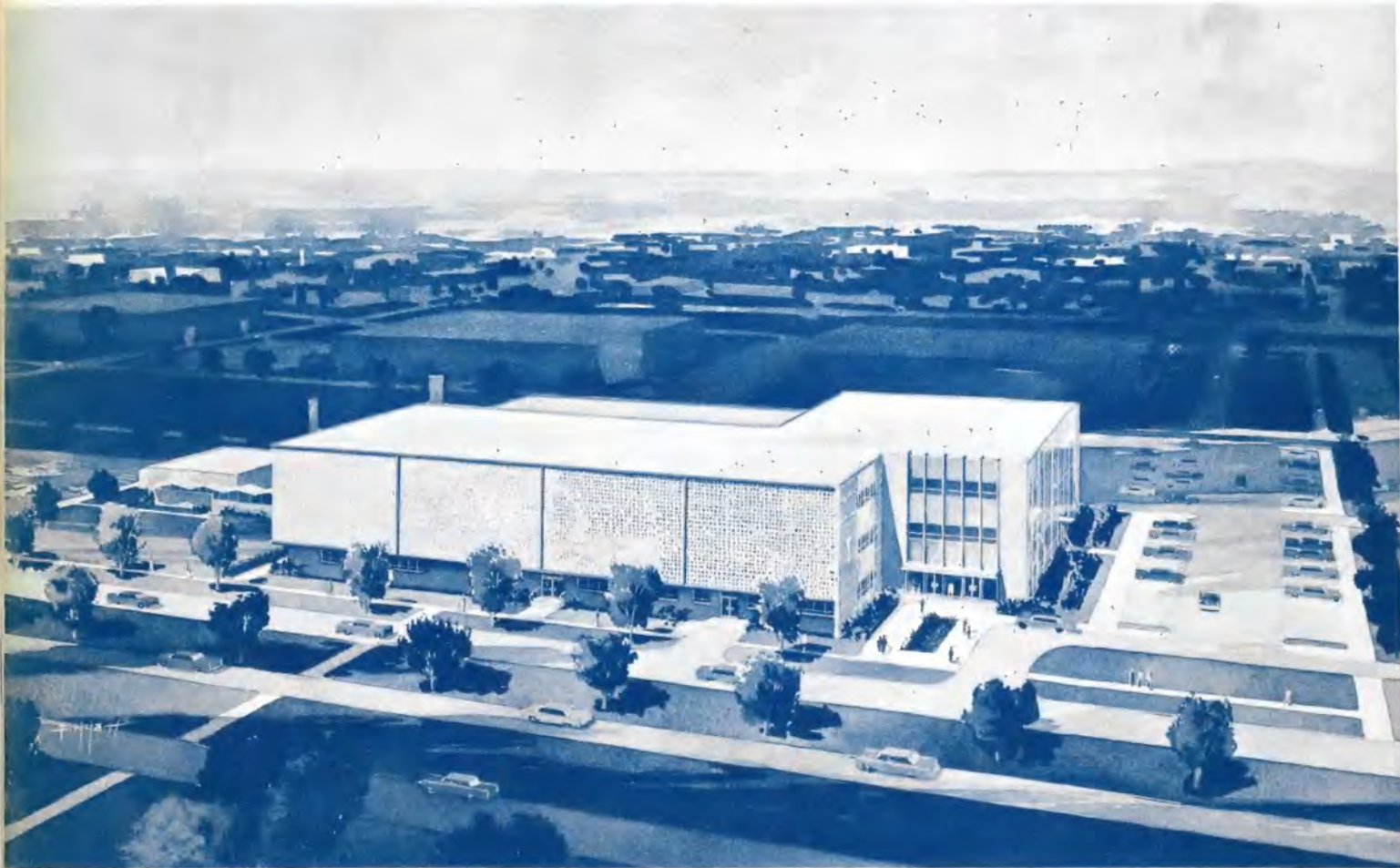


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Federal Aviation Agency  
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# BEACON

MARCH 1961



FEDERAL AVIATION AGENCY  
*Aeronautical Center*  
OKLAHOMA CITY



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Front picture is artist's conception of the new Civil Aeromedical Research Institute building. Line drawings around the picture indicate possible areas of activity for CARI in civil aviation.

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Outside back cover shows consoles used inside Nan-98—the new jet high altitude plane—to check ground navigational aids.

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Inside back cover shows Oklahoma City's metropolitan skyline.

## LOOKING AHEAD

The artist's conception of the new Civil Aeromedical Research Institute building looks ahead to the period—about two years from this date—when this 7 million dollar, three-story building is completed.

This is just part of the growth of this Aeronautical Center, home of CARI, the FAA School, F and M Depot and, soon to be, the location for Examination and Records Division.

The Beacon which, finally, has become a real magazine for Center personnel and others, will continue to bring you the news of the Center people and the news from Washington and the Regions. Remember . . . we need your stories to make this magazine the Center news source.



## POINT OF VIEW

*The important part the aviation industry has played in the development of Oklahoma City has shaped the thinking of its citizens to a remarkable degree and made it one of the most air-minded communities in the United States. The result of that growth in air-mindedness is seen in the triangulation of Tinker Field, the Federal Aviation Agency Aeronautical Center and private industry such as Aero Commander and other firms.*

*Oklahoma City can, indeed, look back with pride. But the challenge is to look ahead, or rather, to look up, with anticipation. Aviation is merging into space flight at a vertical rate of climb.*

*This rapid rate of change, however, has left the thinking of many individuals behind, still in the ox-cart age. We all need to catch up, both materially and spiritually, so as to grasp the implications of the tremendous advances in science and to be able to live effectively and feel at home in the new age.*

*The old adage "What was good for my Dad is good enough for me" is a crippling idea and has no place in the modern world.*

*Oklahoma is still a pioneer area—a pioneer now of the new frontiers. It will remain a pioneering leader only if it attains the vertical rate of climb needed for the new Jet-Space Age.*

*The challenge is to take a second look at many moves that are being made today. The first look can be completely erroneous, but a second look—directly, not as through a mirror, darkly—will show the vertical thinking that will assure a great future.*

*The FAA Aeronautical Center is one of the areas in a vertical climb. Oklahoma and Oklahoma City must keep it that way with vertical thinking. Remember old "Satch" Paige, the ageless baseball player, said, "Never look behind . . . something might be catching up!"*

STANLEY DRAPER, Director,  
 Oklahoma City Chamber of Commerce





FAA Administrator Najeeb E. Halaby with President Kennedy at the time of Halaby's appointment: (Picture courtesy of AP.)

### NEW FAA CHIEF NAMED

The Federal Aviation Agency's new administrator is a California lawyer-pilot-businessman.

Named by President Kennedy to the top post with the FAA, Najeeb E. Halaby is a native Texan—from Dallas. Halaby received an A.B. degree from Stanford University and is a graduate of the Yale law school. He has been admitted to practice before the Supreme Court, and he heads his own law firm in Los Angeles.

Halaby has been chief of the intelligence coordination division of the State Department and was foreign affairs adviser to the Secretary of Defense from 1948 to 1953; was deputy assistant secretary of defense for international security from 1952 to 1954. In 1953 Halaby received the Arthur Fleming award as the outstanding young man in the federal service.

A long time pilot—Halaby learned to fly at 17—the new FAA Administrator was a test pilot for Lockheed Aircraft from 1941 to 1943 and a Navy Test pilot from 1943 to 1946.

In 1945, piloting the Navy version of the Lockheed Shooting Star jet, he made the first transcontinental jet flight, from Muroc Lake in California to a Maryland naval base. The non-stop flight took four hours and 50 minutes.

As a founder and secretary-treasurer of the Aerospace Corporation he helped bring together a team of engineers, scientists, technicians and administrators in what he calls a "think plant" for the Air Force.

Aerospace is the principal technical adviser to the Air Force's ballistic missile and space programs, providing technical evaluations, planning and advice on space probes.

President Kennedy, in naming Halaby to his new post, referred to him as "the most competent man available for one of the most challenging jobs in the administration."

The 45-year-old Halaby, half-Syrian and half Scotch-Irish, is proud of his heritage. Often he has said when asked about his name: "I'm half Syrian, half Scotch-Irish and all Texan."

### FAA ADMINISTRATOR-DESIGNATE HALABY CALLS MEETING TO DISCUSS IDEAS ON AGENCY OPERATION

N. E. Halaby, Administrator-Designate of the Federal Aviation Agency, met in February with a small group of individuals with extensive high level experience in the administration of aviation programs to seek their ideas and suggestions of ways in which FAA can serve most effectively in the future.

The groups included seven former Administrators of FAA and its predecessor Agency, the Civil Aeronautics Administration, as well as others with experience in the Federal Government's aviation programs.

The meeting, called by Mr. Halaby, was held at FAA's Washington Headquarters. It included a short briefing by senior FAA staff officials followed by a "full and frank" review of the accomplishments of the FAA to date and suggestions for future programs.

Mr. Halaby said he is approaching the position of Administrator with an open mind; that he has very few preconceived opinions, and expects to gain considerable benefit from the many years of experience the group represents.

Former Administrators: T. P. Wright, Cornell Aeronautical Laboratory, Buffalo, N. Y.; Frederick B. Lee, Olin Mathieson Chemical Corp., Washington, D. C.; Delos W. Rentzel, Auto Transport, Inc., Oklahoma City, Okla.; Donald W. Nyrop, Northwest Airlines, Inc., St. Paul, Minn.; Charles F. Horne, Convair-Pomona Operations Division, Pomona, Calif.; E. R. Quesada, Washington; and James T. Pyle, Washington.

### NEW FAA PUBLICATION

Distribution has been made of AVIATION NEWS, FAA's new periodical. This four-page monthly is designed primarily to reach the general aviation public and is also of interest to FAA personnel wanting to be "in on the know" of what goes on within the Agency.

AVIATION NEWS is issued by the Office of Public Affairs in Washington and should be a real assist in helping to create an atmosphere of understanding concerning FAA's objectives.

Anyone needing additional copies should let AC-5 know. Your suggestions for items to include are also wanted.

### FAA SCHEDULES MARCH CONFERENCE ON NEED FOR DISTANCE MEASURING EQUIPMENT (DME)

The need for the requirement of distance measuring equipment on all high-speed aircraft operating in high traffic density areas, and at a later date, on all aircraft operating under IFR will be the subject of a conference called for March 22 in Washington.

All interested parties have been invited to express their views on possible need for such a requirement. According to FAA statistics, 344 VOR's are now equipped with DME and the schedule calls for equipping of 883 VOR stations with DME by 1966. In addition, 236 military TACAN stations—which also give distance information—are in operation today.

### FAA ESTABLISHES UNIFORM STANDARDS FOR AIRCRAFT MARKING

Uniform standards for identification marks on fixed wing aircraft have been issued as an amendment to the CAR by the FAA.

Amendment 1-4 of the CAR adopted to facilitate aircraft identification, requires markings at least 12 inches high on the fuselage, or at the option of the aircraft owner, on the vertical tail. According to the FAA, use of such 120-inch side markings will aid in the control of air traffic, by facilitating identification for air traffic controllers.

The amended regulation, issued December 30, 1960, provides a 5-year period until January 1, 1966, for compliance with the new regulation, except that all aircraft on or after January 1, 1962, which are newly marked or completely remarked, must conform to the new standards.

### OPENING DATE OF DULLES INTERNATIONAL AIRPORT NOW SET FOR APRIL-JULY, 1962

Dulles International Airport, which is being built by the FAA to serve the nation's capitol, is now scheduled for opening during the period April 1 to July 1, 1962.

Earlier in the construction program it was expected that Dulles International Airport, located in Chantilly, Virginia, and 27 miles west of Washington, could open about July 1, 1961. Winter weather conditions last year delayed earth-moving operations and with the project nearly 50% completed at present, the new target dates have been established.



## FAA AWARDS CONTRACT FOR SAFETY TAIL ON JETLINER

The Federal Aviation Agency's Bureau of Research and Development has announced the award of a \$61,000 contract to All American Engineering Company of Wilmington, Delaware, to design, install and test a safety tailhook on a KC-135 aircraft—the military version of the Boeing 707 jetliner.

This is the second phase of an 18-month-old FAA program designed to eliminate transport aircraft accidents due to aborted takeoffs and overshot landings, according to Bureau Director James L. Anast.

The KC-135 tailhook, which will be an AAE-Shaeffer lightweight spring type, will accommodate the huge jetliner through its entire weight range.

The FAA completed the initial phase of its runway safety program last year when a tailhook equipped, twin-engine Convair transport was arrested in a series of tests at All American's facility at Sussex County Airport in Delaware.

## VFR UNCONTROLLED AIRSPACE INCREASED

Additional uncontrolled airspace will be available to pilots operating under visual flight rules (VFR) when the flight visibility is less than three miles as a result of an amendment to Part 60 of the CAR adopted by the FAA.

What this meant to Mr. Private Pilot is that the floor of controlled areas (airways) is raised from the existing 700 feet above the surface to at least 1,200 feet above the surface, thus providing an important 500 feet or more of uncontrolled airspace.

There's more to the new ruling and pilots interested should get acquainted with the amendment 60-21 which becomes effective on February 21, 1961. This amendment, by the way, was proposed as rule making by the FAA in Draft Release 6018 on May 7, 1960. In addition to written comments, a public hearing was held on the proposal on August 10, 1960. The result is as reported above.

## FAA INVITES DISCUSSION OF NEED FOR FLIGHT RECORDERS

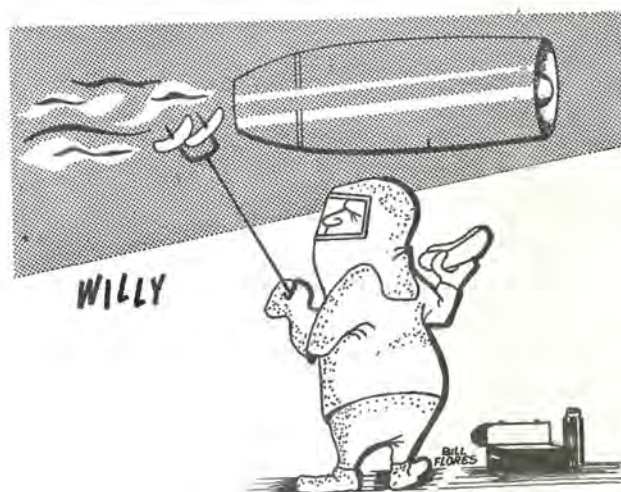
The need for all large airplanes to carry flight recorders will be the subject of a conference March 7 and 8 between the industry

and the Federal Aviation Agency. Discussion will cover the present requirements for airborne recorders, the current status and developments in the recorder field, the need for possible regulatory actions requiring additional parameters to be recorded, and the need for required recorders on all large airplanes of more than 12,500 pounds take-off weight.

Recorders are now required by the FAA only on all large turbine-powered airplanes and on all large air carrier planes certificated to be operated at altitudes above 25,000 feet record only airspeed, altitude, heading, vertical acceleration and time.

## NINE LONG RANGE RADARS TO BE ADDED TO FAA TRAFFIC SYSTEM

Nine additional long range radars have been ordered by the FAA to increase the capability of its air traffic control system for handling heavy en route air traffic. The \$5.2 million contract was awarded to the Raytheon Company, Waltham, Mass. Delivery of the first radars under the new contract is scheduled for January 1962. Joseph H. Tippetts, Director of the Bureau of Facilities and Materiel said that when installed, the new radars will bring the total of FAA long range radars to 52. In addition, FAA uses radar information from 12 military long range radar installations for air traffic control. Locations of the radars and the Air Route Traffic Control Centers to be served are still under study.



Shown with Raymond B. Maloy, Chief, Office of International Coordination, FAA, are, left to right, Talat Boyacioglu, Turkey, Takumi Nishihata, Japan, Maloy, Ramchuan Nabhitabhata, Thailand, Darwin Maurer, International Liaison Officer, Aeronautical Center, and Aubrey M. Alexander, British Guiana.

## GRADUATION OF INTERNATIONAL STUDENTS

Friday, February 17, 1961 marked the end of the formal training of 24 International participants in the Air Traffic Control course at the Aeronautical Center. Students of Class TF-31, representing 9 nations, completed 17 weeks of intensive training in all phases of Air Traffic Control and following their graduation, each student departed for an assigned facility to complete the "on-the-job" training phase of this program.

Graduation ceremonies were held in the auditorium which was filled with "host" families, friends, and FAA students in the DATMT school. Mr. Raymond B. Maloy, Chief, Office of International Coordination and Mr. Roy Stewart of the Daily Oklahoman newspaper staff were guest speakers.

Graduation of these International Participants in the DATMT's seventeen week program is always an eventful day for it represents a day that marks not only the completion of an intensive training program wherein these students are better able to understand and cope

with the many complexities of Air Traffic Control, but it also represents the end of seventeen weeks of close friendships; friendships which were made possible through the sincere understanding of the many "host" families in Oklahoma City and the thoughtful consideration of our International Liaison Officer, Darwin Maurer and his able assistant, June Grayson. During their stay in Oklahoma City, these students, each one an "ambassador" of goodwill, have enjoyed the hospitality of these Oklahoma City families, and through these friendships have gained a truer understanding of the American way of life.

Many distinguished visitors from Washington flew down to attend these ceremonies and to personally wish these men every success in their days ahead. Among these visitors were, Mr. John DuBois, ICA, Mr. C. L. Schmid, OIC, and a guest of Mr. Schmid's, Mr. Robert Bell, Deputy Director, Technical Assistance Division, Pan American Airways.





Sami Ali Hassan talks to Nan Sheets at the Oklahoma Art Center.

### FAA SCHOOL FOREIGN STUDENT HOLDS ONE-MAN ART SHOW

An exhibition of watercolor and tempera paintings by Sami Ali Hassan of the United Arab Republic, Cairo, Egypt, was held at the Oklahoma Art Center this last month.

Hassan is in the FAA School at the Aeronautical Center. Currently he is in the ILS-VOR Class. Hassan is Chief, Navigation Aids at the Cairo Airport; will return home sometime this next summer.

Hassan received his education at Gaza University, Cairo, with later instruction at the Faculty of Art in the same city. The artist says his interest in art dates back to his childhood,



Examples of Hassan's art shown during his one-man art show.

and that he has studied and painted whenever the opportunity presented itself. He has held several one-man shows in Cairo, but this was his first exhibition in this country.

In considering the art of Hassan we find a strong nationalistic tendency in all that he produces. It shows an extraordinary imaginative quality, a fine sense of design, color harmony and meticulous attention to detail—qualities found in all the arts of his country.

### DATMT INTERNATIONAL STUDENT ACTIVITY

Finishing their seventeen weeks of intensive training in Air Traffic Control procedures, the International Students of TF-31 have been enjoying a brief rest from their training activities the past few weeks and have had an opportunity to visit and participate in a few of the many activities in the Oklahoma City area. Amongst the interesting places they have visited in the past two weeks are, Tulakes Airport which included a tour of the Aero Commander plant, a tour of the new control tower, and a talk by General Mars.

State Supreme Court Justice Jackson and his wife hosted the class on a visit of the State Capitol where they were able to observe the proceedings of the Legislature. Justice Jackson showed them the Supreme Court Chambers and explained the judicial procedures of Oklahoma.

One of the highlights of their visit to the Capitol was having their picture taken with Lt. Gov. George Nigh, and visiting with him. During their last week in Oklahoma City these students spent a day at N. W. Glassen High School for a full day of events planned especially for them by the Student Council. This is always one of the most impressive sights our International friends have an opportunity to see and participate in.

Thursday February 16, the day before graduation, the class had a wonderful party at the Hillcrest Country Club attended by our distinguished visitors from the Office of International Coordination and I. C. S. in Washington, Mr. Darwin Maurer, June Grayson, Mr. George Waller, Head, Department of Air Traffic Management Training, and the instructors who worked for seventeen long weeks to provide them with a firmer knowledge of Air Traffic Control.

### ATM TRAINING CONFERENCE

George Waller, Head, Department of ATM Training accompanied by Keith Lanter, procedures and Testing Supervisor, PT-930, attended the Joint Training Division/Bureau of ATM Training Conference held in Washington the week of February 13, 1961. Messrs. Waller and Lanter joined with representatives of the Bureau of Air Traffic Management, Office of Personnel and Training, ATC Regional Training personnel, and Regional Training Offices in discussions on the development of training to meet the changing operational needs of Air Traffic Management.

Mr. D. D. Thomas, Director, BATM, reviewed the present state of Air Traffic Control and the planning relative to its growth with American aviation. The role of the Training Division in BATM training was presented by Mr. F. W. Luikart, Assistant Administrator for Personnel and Training.

Many important items pertinent to the requirements of BATM training were discussed through the medium of lectures with principle discussions revolving around the problem areas existing in the facility level training conducted by BATM. Suggestions were presented that will assist Regional personnel at the forthcoming Regional Training Conference in developing implementing procedures for the utilization and application of ATC Training Materials at the facility level.

It is felt that much stands to be gained from conferences such as this and from such a conference, Air Traffic Control facilities may realize greater dividends in the form of more adequately trained personnel.

### AC INSTRUCTORS ATTEND RESEARCH AND DEVELOPMENT FAA SYMPOSIUM

Two instructors in the Air Traffic Management Training Department of the Federal Aviation Agency School attended a special research and development symposium at NAFEC February 14th through the 16th. The two were Joseph Basham and Ronald Bereman.

The FAA unveiled too more than 450 top FAA field operating officials the Data Processing Central now under test at Atlantic City.

The object of the three day meeting, according to James L. Anast, Director of the

Bureau, was to give the operating officials first hand information on the Data Processing Central—a new semi-automatic air traffic control system. The first Data Processing Central will go into operation in the Boston Air Route Traffic Control Center next year.

In addition to these discussions, the entire research and development program of the FAA, including air traffic control displays, 3-dimensional radar, automatic communications, navigation, airway configuration, flight procedures and airborne anti-collision devices, was reviewed and demonstrated.

### BUEN VIAJE Y HASTA LUEGO—SUS AMIGOS

That is our sincere wish to our two DATMT instructors who left us this month to accept assignments "South of the Border." Lee Hansley, who has been an instructor in the Department of Air Traffic Management Training for the past two and one-half years, has left to accept an assignment in Tegucigalpa, Honduras (how's that for a tongue twister?). Lee will represent the FAA in Air Traffic Control problems arising in that country.

Dave Erling, another of our esteemed colleagues for the past two and one-half years has accepted an assignment to Rio de Janeiro, Brazil (How's about that!). Needless to say that both Dave and Lee are very happy about their new assignments and we certainly want to wish both of these fellows the very best of luck and we know that both Brazil and Honduras will profit from our loss. And with mixed emotions we say to these men, "Buen Viaje Hasta Leugo a sus amigos. Vaya Con Dios y Buena Suerte!"

Other PT-930 losses include Paul Arnold, the wild Texan, who is leaving us for greener pastures in Washington, D. C. Paul has been with us for over two years and feels that the time has come for him to carry out his father's decree. Paul says that when he was a little fellow deep in the heart of Texas, his daddy said to him one day, "Son, the day will come when you will have to leave Texas and go forth and spread the gospel about Texas."

So Paul feels that he has completed his mission here in Oklahoma and is now going to Washington to assist LBJ in spreading the gospel there. Good luck, Paul!

Then on the other hand, there are Texans



who just have to get back to their Lone Star State. Joe Byrd whose able performance PT-930 has enjoyed for the past year, has accepted an assignment in Houston, Texas. This is one time that Texas gets the best of Oklahoma.

Jim Ray, another of PT-930's illustrious staff of instructors, is leaving us to accept a position in the largest of our states. Jim is going back to Anchorage, Alaska. Jim says he can't stand these cold winters in Oklahoma. You know what? He may be right!

We wish all these fellows every bit of success and while we are always happy to see our people advance to bigger and better jobs, we hate to lose them. Each has contributed much to the success of our department.



Earl and Kay Shaum (Earl PT-930 and Kay AC-80)

The above photo was not received in time to make the last issue so we thought we would submit it for this one. Earl and Kay are comfortably settled in their new apartment and the latest report is that Kay is learning to be a good cook. At least Earl doesn't look like he is starving. Earl and Kay Shaum were married December 10, 1960 and spent their honeymoon in New Orleans and Tampa.

#### PT-930 GAINS

Balancing out our losses, PT-930 is happy to welcome into their fold the following instructors. In keeping with our long standing policy, these men represent key traffic control facilities throughout the United States.

William Bradford, from Washington, D. C.; John P. Carlson, from Minneapolis, Minn.; Earl D. Craig, from Atlanta, Georgia; David P. Graham, from Tacoma, Washington; Dale R. Green, from Los Angeles, Calif.; Winston F. Hatch, from Boston, Mass.; William J. O'Connor, from New York, N. Y.; Angelo E. Viselli from Sacramento, Calif.; and John H. Lanius who is joining our instructor staff following a tour of duty with the Office of International Coordination in Tokyo, Japan. John also served as Airport Administrator in Munich, Germany, where he assisted in the establishment of an Air Traffic Control system in the Munich area. We also wish to welcome the following additions to our clerical staff: Nancy Moore, Frances Fahey, and George Crofoot. George is our new Property and Statistics Assistant.

We feel sure that all of these people will enjoy their new assignments and know that they will be a valuable asset to our growing organization.

#### JONES, FAA SCHOOL TEST PILOT AND INSTRUCTOR VISITS ALASKA

Pilots and airmen in Alaska FAA were interested in the arrival of John Paul Jones, a veteran aircraft and engineering test pilot and chief of the engineering flight test training branch at the Federal Aviation Agency Aeronautical school in Oklahoma City. He arrived in Anchorage February 20 and plans to spend ten days here and in Fairbanks appearing on TV shows and speaking before meetings.

On Tuesday, February 21 he will appear on KTVA-TV show "Town Topics" at 5:30 p.m. when he will be interviewed by Peter Herford, program director, on the subject on his vocation, "Aviation."

Sponsored by the Experimental Aircraft Association of Alaska, Jones has been invited to speak before their meeting being held Thursday, February 23 at 8:00 p.m. at the Inlet View School (multipurpose room) to discuss safety standards and aircraft engineering of small aircraft. Bill Fike, president of the EAA, invites all pilots and others interested in their area to attend.

Jones has been in demand for these presentations by all types of pilot groups from the student pilot through the professional type business pilot. He presents his information in a manner that is not only educational but

entertaining and informal. No one will be bored. He will be able to answer questions on construction, performance, etc., which is sometimes misunderstood or overlooked by many of us who don't understand why we can't modify an airplane to include all of the desired features of power, load, speed, etc. Following his presentation there will be an informal question and answer period where all may participate.

Jones began his flying career in 1932, and during World War II, instructed acrobatic and instrument flying prior to entering the flight test field. He has been with CAA (now FAA) since joining them in 1944 and is both a test pilot and an aeronautical engineer.

#### AIR CRAFT DIVISION

Monroe Ebner, FM-957 says that he has a crew of inventive geniuses working on the jet line.



Test bed



Specially designed instrument panel designed by FM-957

In the past, when there was a TV-2 or T-33 engine to run-up, adjust, or check out before it was installed in the aircraft, it was necessary to load it on a truck and transport it and men to Tinker Field to use their test cells to check it out. The crew put their inventive genius to work to construct a mobile test bed from a salvaged TV-2. This mobile unit has everything that is essential to checking out the J-33 jet engine complete before installing in aircraft.



Jet cowl

This represents a considerable savings in cost and man-hours. It is simplified for maximum efficiency, day or night, requires a minimum amount of maintenance and has safety features to protect personnel and equipment. Their next project is to upgrade this test bed to run thrust measurement tests.

FM-957 extends a hearty welcome to Factory Representatives Mr. W. E. Saul, Allison Company; and Mr. E. L. Corbeil, Lockheed Aircraft, who have recently arrived to join other Representatives, Mr. Charles K. Gaughan, Martin Company; and Mr. Robert H. Detwiler, Convair. The assistance given by Mr. Gaughan and Mr. Detwiler during their three years service with the Aircraft Division has been invaluable. In addition to the assistance they have given in receiving new aircraft into the Division, they have held a number of refresher classes for mechanics.

Mr. Saul is currently conducting a class on the Allison Turbo prop engine for the Lockheed Electra and Convair 440.





JOHN P. LEAVERTON

Since coming to work for the Line Maintenance Branch in April, 1960, Mr. John M. Leaverton has conducted a very successful school for mechanics which was arranged by Monroe A. Ebner for the purpose of maintaining the capabilities of FAA maintenance personnel at a high level of proficiency. The objectives of the course were threefold: (1) The upgrading of mechanical skills of FAA mechanic employees; (2) to assist men already qualified in time and experience in mastering the more abstract portions of the A and P curriculum, and (3) to help replace turnover due to personnel leaving for higher paid positions.

Mr. Leaverton is a licensed A and P instructor with ten years of formal teaching experience in aircraft technical schools. He was Chairman of the approved Aircraft Maintenance School at Oklahoma City University for two and one-half years. Since attending the school conducted by Mr. Leaverton, six men have passed the FAA tests for Airframe or Powerplant Mechanic's Licenses, or both. A number of other employees are in the process of taking the examinations. The value of such on-the-job training cannot be over emphasized.

Many letters of appreciation have been received by Mr. Leaverton from the men who attended his classes.

#### FAMOUS PEOPLE OF THE AIRCRAFT DIVISION

MR. CARL DRUMELLER, FM-930

One of our most intelligent and affable gentlemen and amateur radio hams has written (received remuneration for-already yet) an article for Amateur Radio Publishing, Inc., which will probably appear in the next issue

of their Magazine "73". Title of the article is: "Antenna Protection and Switching Unit."

Mr. Drumeller is no novice at writing articles for magazine publishers. Several of his articles have been featured in "CQ Magazine." The two most recent contributions by Mr. Drumeller appeared in August 1960 titled "Efficiency Types of Modulation"; and in September 1959 titled "ABC's of Amplifiers."



#### EXECUTIVE AIRCRAFT GETS NEW LUSTER

The Grumman "Gulfstream," N-702G, has a shiny new appearance, thanks to the attentions of the Aircraft Division personnel. The newest of FAA's executive aircraft, N-702G, was brought into the Facilities and Materiel Depot on January 27th. By February 7th it had all its old paint removed, a zinc chromate primer applied, and a glossy white top coat smoothed on. In addition, the distinctive red Day-Glo markings were applied, as well as stenciling and FAA lettering. As a final artistic touch, its engine nacelles were buffed and polished to a mirror-like surface.

#### RADIO CLUB VALENTINE PARTY

Getting an early start on St. Valentine's Day activities, over 120 members of the Aeronautical Center Amateur Radio Club gathered at the American Legion Post 12 Hut for a Family Night party. In addition to the usual "party" aspects, a serious note was sounded by the El Reno Emergency Rescue Team. This team gave a demonstration of rescue techniques, tying it into the emergency communications theme which has been one of the dominant policies of the club.

#### JET GEMS

##### The Turbojet Transport Noise Problem



Representative Turbojet Engine  
Noise Suppressor  
(Tubes at rear of Engine)

By the end of 1961 the transcontinental race by three major trunk airline systems operating almost 200 turbojet transports may become a screeching economic "Donnybrook" resulting in serious public reactions. Some sage has said "Noise means power—power is progress." He should have added that turbojet noise is extremely expensive.

The airline operators now operating 170 jet transports throughout the United States are said to be shelling out almost two million dollars per month for sound suppressors. A recent report states that one airline operating 25 jets (4 suppressors per airplane) is paying \$182,000 extra for cruising flight, \$29,500 for climb conditions, \$23,600 in payload loss (approximately 13 coach passengers), due to the weight of the suppressors, \$4,200 in loss of payload because of extra fuel weight and \$2,000 as a result of extra maintenance costs of the suppressors. The jet transport aircraft manufacturers and the airlines knew the noise problem was coming and around 50 million dollars has been spent in the development of sound suppressors to at least partially suppress the noise of the 44,000 thrust HP engines required to carry 100+ passengers and several tons of cargo at 600 MPH.

Recently the FAA Airports Division released a planning guide to help Federal and Local Agencies to discourage construction of residential subdivisions, hospitals, churches, schools, etc., near large airports. Early last year Aerospace Industries, the Air Transport and Airline Pilots Association established the National Aircraft Noise Abatement Council "NANAC" as a joint effort with a budget of \$77,000. The council is headed by Jack R. Cram as president. He has a reputation for getting things done and if he attacks the noise problem as he sparked the Civilian Pilot Training Program and bombing the Japs in World War II (with improvised oil drum bombs) much will be done with this cantankerous problem.



NANAC, as it is called, has produced a manual designed for cities having noise problems. It is noted that these manuals have been forwarded to 32 cities now getting jet service and 8 other cities anticipating the service soon. The NANAC determined that intensive jet training operations created major complaints at Idlewild, San Francisco, Seattle and Los Angeles airports and persuaded the airlines to move as much of their training activities as possible to outlying airports. They did so even though they had to pay takeoff and landing fees. The FAA has been active in alleviating the problem by requiring noise-reducing climb out patterns for jet transports.

What is all this noise about? It seems that jet aircraft have two kinds of noise, a high frequency whine and a throaty low frequency roar. The sound suppressors tend to alleviate the low frequency roar but do not help the high pitch whine as much as desired. Increased power makes the whine situation more critical. Considerable brain power and costly experimental work is being conducted on compressors and turbine blades, nozzle guide vanes, compressor inlet design, pressure ratio and other high frequency sound producing factors. Recent papers by recognized authorities do not indicate much hope for a real solution. Probably other steps such as discussed above will have to be taken on the ground.

Timber !!!

Hi Speed

#### EXAMINATION AND RECORDS DIVISION REVISES TERRAIN FLYING

Terrain Flying, a little book for the average private pilot that may some day save his life, has been issued in a revised second printing by the Federal Aviation Agency.

Originated in the middle Forties as a pocket-sized compendium of practical hints—and do's and don'ts on flying over the various type of terrain in the United States, the new booklet—still pocket sized—retains all the solid airman's lore, with interesting, new and additional illustrations. It sells for 40 cents at the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

"Any pilot who does not have this book in his library—better still in his pocket—is missing an opportunity to benefit from the experience of aviation veterans," according to Oscar Bakke, Director of the FAA's Bureau of Flight Standards. "This is a distillation of the experience of thousands of pilots. The lessons a pilot can learn from this little book would take him many months in school to learn, and any flight he may take over strange terrain will be safer just for reading the pertinent chapter. This book can save pilots' lives and it should top the best seller list for pilots for years to come."

Features of the second edition include strip maps of the best routes over many terrain features of this country; more illustrations in a light vein to impress the hurried reader; down-to-earth pilot language of unmistakable meaning; and special chapters headed "Flying In Alaska" and "Flying In Mexico."

The hero of the book is the SLP, or Senior Local Pilot who, the copy says, can be found everywhere. He is experienced in the problems of flying in his mountainous, desert or Arctic locale, and is always a willing lecturer on nearby terrain. The SLP in Denver, for instance, is the finest man in the world for the Indiana-trained pilot to meet and listen to as he flies to the West Coast. The SLP at Northway, Alaska—to cite another example—is the visiting airman's best friend and insurance policy for a safe tour in his region. The book presents SLPs from every part of the country, all full of wise advice and modern instances.

Typical examples of advice in Terrain Flying include:

Pennsylvania turnpike tunnels frequently do not come out where you expect them, and the ground above them is always high.

There is no safe way to fly over swamps—at least the big ones. The real hazard is survival and rescue.

Lost in Florida? Fly due east or west. In one hour you reach a coast.

In desert areas, birds ride for sport on small twisters of winds. Don't you try it.

The best way to find an airport if you get lost in Alaska, is to fly downstream.

"Note well that there is no advice in this booklet against flying in any particular section of the United States," says Terrain Flying. "If you can fly, you can go almost anywhere. It's wonderful to be able to fly over mountains, swamps, deserts, and to see and to behold. Moreover, it is safe, if you do it right. What this booklet wants to say is that you are welcome anywhere in your airplane when you have the appropriate know-how and equipment; and you are safe if you take the good advice of those who have flown before where you are flying now."

The revision was under the editorial direction of L. E. Brooking, Finis L. Barrow, and John W. Patterson of the FAA's Examination and Records Division.



The display you see above is the recent sale of 27 each R-2000 and 21 each R-985 aircraft engines. Bids were received from New York to Miami to Los Angeles. Total recovery amounted to \$27,750.00 representing 5% of acquisition cost. The surplus property section reading from left to right are Msrs. Tom Dawson, Kent McAfee, Don James, Hal C. McVey, and Louis Blanchard. The surplus procurement clerk, Mrs. Jimmie McLane, was absent the day the photo was taken.

#### COWBOY HALL OF FAME RECEIVES FRED M. LANTER MEMORIAL

Aeronautical Center representative to the Cowboy Hall of Fame Committee, J. Fred Reed, FS-830, announces that as a result of action taken by the Board of Directors of the FAA Employees' Association, a \$550 memorial fund has been donated to the Cowboy Hall of Fame and Western Heritage Center in honor of the late Fred M. Lanter, for many years Director of the Aeronautical Center.

Headed by Gaylord Younghein, FM-910, it was felt by members of the Employees' Association Planning Committee that the civic interest of the members of the association should be recognized by donating to the Hall of Fame, inasmuch as the same civic interest had been exhibited by the leaders of the community in the fulfilling of Mr. Lanter's dreams for the building of the Aeronautical Center to its present status in the community and nation. There will be a bronze tablet with Mr. Lanter's likeness permanently displayed on the walls of the Founders' Hall, and photograph and biography will be in the files of the Founders' Hall, available to the public.

The Cowboy Hall of Fame and Western Heritage Center, located in Oklahoma City, will house the following centers of national and territorial interest: Hall of Western Actors and Dramatic Art; Rodeo Hall of Fame; Museum of Western History; Library of Western Americana; Museum of Western Agriculture Commerce and Industry; Institute of Western Music; and the Western Flora Gardens.

The Aeronautical Center Employees Association has moved to further honor the memory of Fred M. Lanter by subscribing to a Patron Membership in the National Cowboy Hall of Fame and Western Heritage Center located in Oklahoma City.

A Bronze plaque bearing his likeness with an inscription will be permanently enshrined in the Founders' Hall where the other great pioneers and leaders of the West in ranching, commerce and industry will be honored by future generations.

The Association took this action in grateful appreciation to the leadership of Fred Lanter and also in recognition of our responsibility to the community and to its leaders whose leadership and pioneering spirit made the Aeronautical Center a reality.





### NEW PAR BUILDING

During recent months, a building with a striking checkerboard design has taken shape at the southwest part of the air field. This is known as the PAR-2 Building. It has been constructed at the request of the schools by the Plant Engineering Division, who developed the design in conjunction with the schools and arranged for construction to be accomplished by the Tankersley Construction Company. PAR means Precision Approach Radar. Precision Approach Radar is used to guide aircraft to safe and successful landings in adverse weather. By use of radar beams continually swinging across the runway and up and down, the position of the aircraft is "painted" on the radar screen. An operator, reading information from the screen, "talks" to the pilot of the aircraft by ordinary radio constantly advising him of his position relative to the runway and tells him, for example, if he is on the beam, left or right, or high or low. By this process, the aircraft is guided down the proper glide angle and over the centerline of the runway. The building will house the precision approach radar system used for training maintenance engineers in this complex electronic aid to air navigation—one of the many for which they are responsible.

This building will permit the schools to give instruction in the theory and operation of such equipment. The \$86,386.79 facility carries the checkerboard theme throughout, in outside walls, inside floors, ceilings, and even the rest rooms. This is rather appropriate since checkers are a puzzle and it is certainly a puzzle in bad weather to use radar in getting the airplanes down safely. The checkerboard pattern walls incorporate a new exterior

surface material—a thin layer of colored vinyl bonded to pressed board, which should withstand limitless exposure to the Oklahoma outdoors without need for painting.

Many years ago (prior to World War II), the site of the PAR-2 Building was a pond. As Will Rogers Field developed, this area was gradually filled in some twelve feet deep; however, an additional 6' layer of fill dirt was required prior to construction of the building to furnish a suitable base and to raise the proposed radar antennas to the necessary elevation. These antennas must be installed with an accuracy tolerance of 4½ inches in relation to the N-S runway surface average elevation.

This building contains tremendous circuits for incoming electrical power and will contain precision approach radar equipment which was originally installed at LaGuardia Airport. This equipment, is now being repaired by the Facilities and Materiel Depot and when installed, will perhaps be the only radar installation in Oklahoma with a Brooklyn accent.

The 3503 sq. ft. PAR-1 Building and the 1590 sq. yd. of paved road and parking are visible evidence of one of the many responsibilities of the Plant Engineering Division, since it represents the extent of engineering design and construction accomplished by Plant Engineering.

To the layman, the Plant Engineering Division exists to insure that lights, heating and air conditioning are supplied, that the floors are swept and that the grass is mowed. However, the smoothly functioning organization has duties at the Aeronautical Center comparable to the various elements of government which operate a city, since the Plant Engineering Division is responsible for coordinating the long range planning and future development of Center facilities. These soon will result in other tangible evidence such as the School Headquarters Building, the Civil Aeromedical Research Institute Building, etc. The Plant Engineering Division has specialists in all fields of plant maintenance and engineering and is one the most vital support activities at the Aeronautical Center. As you see new construction taking place, or as you use an elevator, a hangar door, or a piece of equipment operated by electricity, you may think for an instant of the multitude of services that are furnished day and night, year in and year out by the Plant Engineering Division.

### CENTER GETS 3,000th EMPLOYEE



Manager L. N. Bayne, left, Clayton Anderson, right, look over Chamber membership with new employee Wickett.

A former Tulsa teacher, 31-year-old William F. Wickett became the 3,000th employee to go to work in the environs of the Aeronautical Center. Wickett, electronics-engineer instructor, is a former associate engineer for Douglas Aircraft, an observer in the Air Force.

He was welcomed to the Center population by Manager Lewis N. Bayne and to Oklahoma City by Clayton Anderson, director of public relations for the Oklahoma City Chamber of Commerce. Anderson presented Wickett with membership in the Chamber.

### DYNAMIC CIVIL SERVICE PLEDGED BY PRESIDENT

The Editor of the Beacon felt that all employees in the Federal Aviation Agency would appreciate the statement made by President John F. Kennedy during his State of the Union Message to Congress on January 31, 1961. According to the Washington Evening Star:

"President Kennedy, in his state-of-the-union message, pledged that initiative, ability and energy will be recognized and rewarded among Government civil service employees.

"Let the public service be a proud and lively career," Mr. Kennedy declared.

"Discussing the Government's executive branch, Mr. Kennedy told Congress:

"We have found it full of honest and useful public servants, but their capacity

to act decisively at the exact time action is needed has too often been muffled in the morass of committees, timidities, and fictitious theories which have created a growing gap between decision and execution, between planning and reality. In a time of rapidly deteriorating situations at home and especially abroad, this is bad for the public service, particularly bad for the country, and we mean to make a change.

"I here pledge myself and my colleagues in the cabinet to a continuous encouragement of initiative, responsibility and energy in serving the public interest. Let every public servant know, whether his post is high or low, that a man's rank and reputation in this administration will be determined by the size of the job he does, and not by the size of his staff, his office or his budget. Let it be clear that this administration recognizes the value of daring and dissent—that we greet healthy controversy as the hallmark of healthy change.

"Let the public service be a proud and lively service. And let every man and woman who works in any area of our national Government, in any branch, at any level, be able to say with pride and honor in future years: "I served the United States Government in that hour of our Nation's need"."

### HEALTH BENEFITS PROGRAM

The Civil Service Commission has started intensive evaluation of the Federal Employees' Health Benefits Program. This is a part of their continuing long-range program to ensure effective administration of the program and to make or recommend changes to improve it.

This evaluation will also be used in the renegotiation of contracts with carriers of plans participating in the program. Present contracts run until Oct., 1961, renegotiation for the second contract period begins next spring.

The evaluation will have two primary goals: (1) to determine how smoothly the program is operating, and (2) to obtain a valid cross section of employee opinion concerning possible changes. Employee opinion will be sought in such matters as the adequacy of health benefits coverage offered, service received under the plans, and benefits to be added to or deleted from the several plans.



## INCENTIVE AWARDS FOR FAA SCHOOL EMPLOYEES

Friday, February 10, was AWARD DAY for 12 employees of the Federal Aviation Agency School. Suggestions for increasing proficiency while reducing costs paid off in the form of a Certificate of Award with a check for 8 members of the School staff, and sustained superior performance records earned cash awards for 4 others. The photos below show presentation ceremonies conducted by Superintendent of the Federal Aviation Agency School, Mr. Enar B. Olson.



Receiving Awards for suggestions are, left to right standing: John R. Angier, Dept. of ATM Trng., Charles Biberstine, Dept. of ANF Trng., Harold N. Rainey, Technical Services Div. Left to right seated are: Ronald V. Rudolph and Franklin Stobbe both of Dept. of ANF Trng., Kenneth J. Shay, Technical Services Div., and Franklin Wise, Dept. of ANF Trng. Also receiving an award with check was Mrs. Della McWhirter, Dept. of ANF Trng.



Receiving Awards for sustained superior performance are, left to right: Warren D. Reynolds, Charles W. Mabbott, Robert D. Shepherd and James C. Gibson, all of the Department of ANF Training.

## TRAINING CORNER

This Agency, as well as all other agencies of the Federal Government, is very much concerned with the problem of good management. During the past year a letter to the Heads of Executive Departments and Agencies from the Office of the President emphasized the need for effective action in the matter of selecting and training good managers. Excerpts from this memorandum from the Office of the President, we believe are of interest to all of us.

"Our government faces the possible loss of two-thirds of its top career managers over the next ten years. A survey of 751 career officials in grades GS-16, 17 and 18, indicates that two out of every three will be eligible for retirement during the next decade. Further, two out of every five will be eligible for retirement by 1963. In addition, of course, there will be certain losses because of death, disability and resignation. This situation emphatically and clearly points to the importance of instituting a positive program which will assure the filling of the anticipated vacancies with persons of outstanding leadership ability, creative imagination and sound judgement."

"Upon each of us rests the responsibility for seeing to it that the critically important functions of the top career management positions continue to be carried out by persons of the highest competence.

"To properly discharge this responsibility, careful planning will be needed in each agency and on a government-wide scale. Employees with executive potential in positions below the top career levels must be identified, trained and developed over a period of time to increase their capacity to perform the complex functions of career managers. The success or failure of our efforts to identify, select and develop competent career managers will determine the future effectiveness of government operations, both here and abroad."

"In the last analysis, however, the results of the quest for topnotch administrators in the career service will depend on the steps each agency takes to find persons of executive potential and to train and develop them for the responsibilities that lie ahead."

## WHAT IS NATIONAL DEFENSE

Currently there is a growing public awareness and support of the proposition that National Defense consists of two inseparable and equal elements—Military and Civil Defense. The proposition further recognizes that a deficiency in either of the two elements necessarily results in an inadequate National Defense. The Department of Defense is charged with the military defense of our nation. The Office of Civil and Defense Mobilization is charged with Civil Defense. The following extract from an article by Mr. Edwin B. George of the Office of Civil and Defense Mobilization is indicative of the relative emphasis now being accorded each of these elements and provides a basis for individual evaluations as to the adequacy of our National Defense;

### MILITARY AND NON-MILITARY PREPAREDNESS MUST BE SYNCHRONIZED

EDWIN B. GEORGE *Chairman, Program Advisory Committee,*  
*Office of Civil and Defense Mobilization*

When the Soviets build sputniks, rockets, ICBM's, and other means of destroying or fascinating the world, we react sharply. We accelerate our own space, aeronautical, and weapons programs. But when the Soviets practice high-speed conversion from cold to hot war functions, plan the use of resources under nuclear attack conditions, build shelters, and train their people systematically in escape and reconstruction, we react sluggishly.

The effect is to expand considerably the destructive potential of the enemy's bombs per megaton on our unprotected targets and reduce that of our own on their sheltered, dispersed targets. We do this to ourselves for a per annum "saving" on civil protection measures ranging from five to ten percent of our military appropriations.

The balance between military and non-military has always been unstable and is usually forced only by crisis. In World War I Bernard Baruch achieved fame by bringing industrial mobilization abreast of military mobilization. Yet in World War II over a year was required to secure full recognition for the fact that each step in the fabricating chain from farm or mine or dock to a bomber, howitzer, or tank was as important as the last one, and to develop systems of allocation that gave it practical effect. How would our imagination be graded in a third test? We are ready enough to duplicate the non-military mechanisms of World War II. We have improved our timing by recognizing in advance the radical changes in industrial and civilian

responsibilities that an atomic strike would impose. We have set up a civilian protection and industrial recovery agency in OCDM that by trial, error, persistence and devotion has laid out a design within which private and public agencies and citizens over the country can build methodically. Not nearly all of the social, economic, and management problems that would beset a stricken nation have been solved—some have not even been approached; there are no shelters; all questions of authority and of civilian relations with the military have not been settled. A large book could and should be written on what is still to be done. But neither has the Congress supplied funds with which to fill out a national design.

Military action has historic symbols. Non-military measures mean mostly an annoying interference with personal, everyday affairs. Moreover, they are aimed at the protection of life and resources from nuclear destruction that, in the popular concept, is so incredible that it can't happen. Yet wars between well-matched rivals will not be effectively prosecuted today until military and non-military preparedness are fairly well synchronized.

We can manage it in a few years at moderate cost if we wish. Our lag behind Russia in non-military defense is in good tradition, and it is aggravated by disbelief in horrors that are probably credible to the Kremlin. But even if we are competing in postures, it weakens our bargaining position. One political observer put the question: "How much handicap, for heaven's sake, can we give these people in the



still fanatical stage of a revolution, and still survive ourselves?" We have already conceded to the dictatorship a much heavier concentration of resources in science, heavy industry, and arms; more flexible decision-making than is possible for democracies; the initiative of an aggressor; and a lead in space and rocketry skills. We are now in the process of bestowing, voluntarily, a lead in immunity to counter-attack as well.

Even if the sum total of our defense policy held nothing more subtle than a threat of massive retaliation for aggression anywhere, under present circumstances few would respect a defense policy that did not at least include the capacity to retaliate massively. Logically this concept would have to embrace both the ability to inflict great damage on the enemy and to minimize it at home. In fact, it does not do that. This is because we have neglected home protection, particularly a shelter program.

Quite understandably, Congress itself has been moving uncertainly. The Office of Civil and Defense Mobilization has tried to improve both economy and efficiency by delegating to other agencies and departments such parts of the over-all program as lay within their normal jurisdictions. For fiscal 1959, the Congress denied appropriations to participating units on the reasonable ground that all non-military defense costs should be consolidated in the OCDM budget. When this was done for fiscal 1960, the Congress granted only a small fraction of the resulting OCDM request because of the disproportionate increase in their budget although only a few million dollars was involved.

In a recent letter to the writer, Professor Melvin Anshen of the Carnegie Institute of Technology, called the problem of matching military programs and non-military supporting programs "the greatest balancing problem of all," citing as incongruous to any sensible person (a) the present spread between \$40 billion for military readiness and \$47 million for readying the civil population to receive attack; and (b) a policy of accepting the first blow and then doing nothing to protect against its effects.

The fault is not merely that of the Administration, nor of the Congress, but of everybody. This is a cultural question. There are

some things to which a busy and hitherto sheltered democracy has chronic difficulty in adapting. One of them is the rise in importance, feasibility, and totality of defense behind the same qualities in attack. Even the most pessimistic authorities hope that we are engaging in a battle of postures only, and that this necessitates providing maximum deterrence to attack by minimizing the prospects of enemy success. Within this strategy, ability to contain damage is of the same order as ability to inflict it.

#### "POP" JENSEN RETIRES... AGAIN



Paul Lane, Chief, Electronic Lab, presents watch to retiring "Pop" Jensen.

The man who has been most handy with cabinet making has retired from his work at the Aeronautical Center.

Conrad P. Jensen, who was born in Copenhagen, Denmark, in 1887, has decided to take it easy for a while. This is the second time around for "Pop"—no one ever used his name of Conrad. He retired the first time after fifteen years service with Tinker Air Force Base, Hawaiian Air Depot, Honolulu, Hawaii, Veteran's Administration and the Federal Aviation Agency.

Pop came back to work as a reemployed annuitant on temporary appointment in October of 1958 after a year and three months of taking it easy. Pop's work in the Technical Services Division was always of the best. He received two awards for Outstanding Performance, one before his first retirement and the other this last year.



#### NO SEATING PROBLEM HERE... THIS CLASSROOM HOLDS THOUSANDS!

A Monday morning visitor to the Headquarters Building at Aeronautical Center could hardly find a busier locus of activity than the mail room of the Department of Publications and Non-Resident Instruction.

The accompanying photo shows some of the Student Services staff opening and sorting mail on a recent, typical Monday morning. The number of examinations received from the active student body will add up to over 3,400 in the course of a month.

As a matter of fact, from 8,600 enrollments, representing a student body of 7,651 persons, Directed Study received a record total of 32,733 examinations in 1960.

Participating in the program are personnel from the Bureau of Facilities and Materiel, Bureau of Air Traffic Management, Bureau of Flight Standards, Bureau of Research and Development, Office of International Coordination, U. S. Weather Bureau and other miscellaneous organizations.

Directed Study maintains contact with students located all over the globe, not only in our own states and territories, but also in foreign countries such as Egypt, Greece, Afghani-

stan, Japan, India, Pakistan, Iran and many countries of South and Central America.

From a modest beginning in 1945, with one full-time instructor grading exams and writing course material, Directed Study now offers 25 separate courses covering a wide variety of subjects ranging from Foundation to Advanced Mathematics and from Fundamental Electronics through Moving Target Indicators, with non-technical courses, such as Management and Supervision, available to the potential leaders of the Agency.

In coming months, the Department hopes to be able to offer additional courses such as Engineering Reports, Scan Conversion, Transformers and Servomechanisms, Digital Computers, Microwave Data Transmission and Single Sideband Communications.

Another course, which should be available approximately April 1, is Fundamentals of Flight Check, designed for Flight Inspection personnel. This course will contain chapters on Navigation Computers, the Slide Rule, Applied Mathematics, Electronic Principles, Navigational Aids, Radio and Radar Propagations, Altimetry and Airspeed, Theodolite and Facility Data Sheets.



## ELECTRONICS MATERIEL OPERATIONS UNIT HAS ANNUAL DINNER

Recently the Electronic Materiel Organizations Unit held its annual dinner. This is the third such affair and guests were Mr. Rex P. Merilatt, Chief of the Program Materiel Branch and Mr. Ralph W. Rea, Assistant Chief of the same organization.

Mr. Morris Fowler, Chief of the Operations Unit, pointed out that their responsibility was to coordinate, schedule and provide the necessary guidance to efficiently handle electronic material. This includes receiving, inspection, cataloging, inventory, in-transit storage, components, accessories and installation materials used by the Federal Aviation Agency. Mr. Fowler further stated that during the first six months of Fiscal Year 1961, they handled 10,440 shipments composed of 23,703 line items. These shipments weighed a total of 4,055,087 pounds and were valued at \$16,043,688.73.

This unit operates with a busy hum and one is impressed with their good morale. Not only do the employees operate efficiently and cheerfully, but they throw a very fine annual dinner. It's certainly worth the effort to get yourself invited to their "get together."

The attached photo shows the Electronics Material Operation Unit being addressed by Mr. Morris Fowler.

## AN ACCOUNTING OUTING

Recently, male personnel of the Accounting Division, Aeronautical Center, had a most enjoyable week-end on a fishing trip to Lake Murray, just east of Ardmore, Oklahoma. It took a total of 5 cars to haul the 13 of 14 "eligible" members and their gear to this fishing spot. The participation would have been 100% had not Dennis Rodgers missed the bridge south of Moore. Dennis is still having a difficult time explaining why he missed the bridge, injured himself to the extent that six stitches were taken in his forehead, but had no damage to his car. The truth is that Dennis was injured while playing a friendly game of catch waiting for the rest of the entourage to arrive. Seriously, we did miss Dennis on the trip and are sorry that he did not get to attend.

The rest of the group arrived safely at Lake Murray Friday evening and happily set about to make camp, tell lies, set the trotlines, tell lies, prepare the evening meal and tell lies. As you can see, this was a group of lied-in-the-

wool fishermen. After those 1" x 1½-lb. charcoal broiled T-bones, cooked to a turn by Master Chef Paul Dawson, four boatloads of happy, full fishermen journeyed south on Lake Murray to a supposedly fabulous crappie bed, where everyone began to catch white bass and crappie with abandon. Everyone, that is, with the exception of the chief fisherman of them all, John K. Hall, Division Chief, who was completely skunked. After 49 of the slippery rascals had been jerked into the boats the men all decided it was time to run the trotlines and drink some coffee. Having had no exceptional amount of luck with the trotlines, it was decided that everyone should get a full night's sleep and begin the operation all over again the next morning.

So, at 3:00 a.m. we hit the sack where Mr. Gilbert Mooney promptly began to make imitations of a busy sawmill. At approximately 5:30 a.m. the other members of this fishing party decided that they couldn't sleep anyway so they might as well wake Gil Mooney up and have breakfast. Breakfast was prepared, using 4 dozen eggs, 4 pounds of bacon and 5 pounds of potatoes. Howard, Ates, Paul Dawson and Ed Schmidt still feel that one rotten egg in four dozen ruins the whole bunch; however, the rest of the crew had no objections.

After a brief attempt at cleaning up camp the fishermen happily made their way out on the lake again with visions of 7-pound bass swimming merrily in their heads. The equipment was the same, the men were the same, but the fish were not biting. Some of the die-hards continued in their vain attempts but Mr. Mooney, Carrol Rodgers and Cal Davenport decided since there just happened to be a pair of skis along, that if the fish didn't want to cooperate, skiing was much better anyway. There were some remarks made about the fact that John Hall couldn't catch fish if they *were* biting, and since they were not, he should take a turn on the skis.

After several hours of general horseplay, telling lies, skiing, and telling lies by all, it was decided that the time had arrived to bring this glorious trip to an end so the happy campers began that arduous task of packing all that gear, in those 5 little tiny cars, and it seems that no one ended up with the same things they took to the lake.

## FOR YOUR INFORMATION

### BETWEEN COVERS

New pamphlet, SOUNDS OF THE TWENTIETH CENTURY, came off press. This illustrated 16-page pamphlet, for use in educational campaign, candidly examines the question of aircraft noise and what FAA is trying to do to solve the problem. Pamphlet will be sold to the public for 15 cents from the Superintendent of Documents, Government Printing Office.

### THE MAGAZINE RACK

A READER'S DIGEST staff writer is researching a story on FAA's training program and the role that the Aeronautical Center plays as the "World University of the Air."

February 10 LIFE ran a 12-page picture story in color on the air safety story.

Bob Serling, author of "The Probable Cause" and UPI's aviation editor, is planning a SATURDAY EVENING POST story on Dulles International Airport . . . Author Martin Caiden recently toured FAA facilities to gather material for magazine articles.

### THE AIRWAVES

CBS is taping a story on the Aeronautical readying a two-hour live radio program dealing with FAA and air safety . . . CBS New York-Armstrong Circle Theater-(9:00 to 10:00 p.m. Oklahoma time live every other Wednesday) is planning an educational program around FAA.

An educational film based on the FAA is being prepared by a New York movie agency for classroom showing over a closed circuit. . . Public Affairs is working with a Virginia radio station on a possible serialization of FAA-General Aviation stories.

### OVERSEAS

A reporter from The Netherlands newspaper, De Telegraf of Amsterdam, interviewed Oscar Bakke on flying safety . . . A United Nations team shot hundreds of feet of film at the New York Center and NAFEC for a 30 minute TV program for international distribution.

### WHAT'S NEW?

Some 400 New Jersey school teachers in Plainview, N. J. saw a sneak preview of the color film FLIGHT . . . reaction was excellent. So was the response to the first issue of AVIATION NEWS. Second issue is in preparation.

A poster series is underway to show general aviation pilots some of the things FAA is doing to help them.

Public Affairs, working with Flight Standards, is developing a brochure to be given every fledgling pilot along with his certificate.

### PROJECT AIR-SHARE

Public Affairs is coordinating plans with Flight Standards for a series of regional general aviation conferences to be held this spring at some ten points across the country under the name "Air-Share"—"Air your views; share the benefit." The Bureau plans to brief business and private flyers on safety problems in general aviation and offer support in finding solutions.

Public Affairs is preparing:

1. A 16-page pamphlet on aids to airmen.
2. An Air-Share notebook with topic headings and blank space for participants to make notes to facilitate taking the story home to share with aviation people in each community.
3. Basic press release which can be adopted for local use.

### CENTERS OF INTEREST

Public Affairs cooperated with the local press and with city and county officials at the ground breaking ceremonies for the new ARTCC to be built just outside Leesburg, Virginia. . . Similar work was done in connection with the opening of the Oberlin (Cleveland), Ohio Center . . . Acting Administrator Pyle was the principal speaker on both occasions . . . Plans are being made with Region 6 for the dedication of the new Honolulu ARTCC and automatic switching communications set-up. In cooperation with Western Union, there will be a tie-in ceremony when an inaugural message will be sent from Washington.

### EXHIBITS

The Smithsonian has requested a permanent exhibit for its National Air Museum—details are now being worked out . . . The Librascope Division of General Precision Inc. will have a \$30,000 exhibit featuring air traffic control . . . An FAA exhibit featuring aviation medicine will be on display at the joint meeting of the Aerospace Medical and Civil Aviation Medical Associations in Chicago, April 24-27.



## COMMISSIONER LAWTON'S VIEWS ON POSITION CLASSIFICATION

A major ingredient in up-to-date, effective administration of a position-classification program is a high degree of management participation. We're moving away—and the quicker the better—from the anomalous situation in which line supervisors had very little to do with the classification process itself, even though job evaluation was being advertised as a tool of management.

This Institute is a part of a continuing Commission drive to strengthen the line manager's role in the Federal classification system.

This morning I should like to discuss four fundamentals of the current situation:

*First*—An orderly system of grouping jobs is essential in any large organization today, for pay administration, for personnel management, and for general administration. In large business and industrial organizations, as well as government, it is a standard practice.

It is essential to salary control because it permits decentralization of authority to set pay in individual cases while overall control is maintained by top management through a salary schedule. This can be accomplished by a salary committee of top corporation officers; or, in Federal systems, by Congress or department top management.

Some such system is essential to personnel management and especially to merit system personnel management. For example, all like positions are identified and can be made subject to appropriate tests of fitness. And in a merit system, it assures like tests for like positions. Further, identification of positions by kind and level permits establishing career ladders and merit promotion programs.

It is essential to general management because it makes possible job inventories, forecasting future personnel needs, and establishing or reviewing staffing patterns.

*This is the opening address by Commissioner Frederick J. Lawton at the Commission's Second Classification Institute for Managers held October 20, 1960.*

This is a time of bigness, a bigness in business, in government, in practically all phases of human activity, and bigness means system. Like it or not, the days when each case was decided by the boss—who kept all the records in his back pocket—are gone forever.

*Second*—The underlying principle of the Classification Act system and the *classification plan* itself are basically sound. I am not wedded to position classification as the one and only, but it is one approach widely accepted today by enlightened management. It has been criticized very little in various studies of Federal pay systems. Where classification has been criticized, such criticism generally is directed at its administration or at its inflexible pay structure.

I find it difficult to take exception to the general proposition of equal pay for substantially equal work. This concept is eminently fair and thoroughly workable where applied as a general rule with suitable exceptions. Furthermore, it is in keeping with our political and economic philosophy.

The *classification plan* is a reasonable one. The Classification Act itself merely establishes 18 levels for grouping positions, according to difficulty, responsibility, and qualification requirements of the work. The Civil Service Commission establishes occupational divisions, called series, for these groups of positions.

Similar plans are being used today by many, probably most, large corporations.

The *classification plan* is not perfect in all specifics. For example, eighteen may not be the optimum number of grades. The numerical limitation on positions in the top three grades is completely contradictory to the sound basic principle of the classification plan, it is damaging to morale, and it is an obstacle to good management. It seems absurd to set apart these top three grades and tag them with the ridiculous term "supergrade."

*Third*—the *pay plan* of the Classification Act is outmoded; the pay structure is defective and its application is governed by rigid statutory rules which severely handicap management. Federal salaries may be substantially out of line with those in private enterprise at some grade levels. The results of the Bureau of Labor Statistics survey of white-collar pay in private industry will provide us with specific information in this important area. The salary structure is internally deficient. Differentials between grades are neither consistent nor logical; within-grade increases do not follow a logical pattern, and rigid statutory provisions severely restrict use of within-grade rates.

We must have a *pay plan* that is reasonably responsive to the forces constantly at work in the national economy, with a structure that will provide effective incentives for performance on the job and preparing for advancement, and with sufficient flexibility to meet problem situations as they develop. Rigidities of the present pay plan have thrown burdens on the position-classification process that it was not designed to bear, such as pressure to raise grades of positions to bring salaries up to industry level.

*And Fourth*—The Federal *position-classification plan* (as opposed to the *pay plan*) is as good as its administration by the Civil Service Commission and the operating agencies. The Classification Act permits wide discretion, in establishing occupational divisions; in placing classes of positions in grade levels; in methods of job evaluation; in job description and other procedures; and in method of treating various situations, for example, details, positions with duties of two or more grade levels, positions involving a series of different assignments, or positions on the border-line between grades. The Commission, by revising standards, adjusts occupational divisions and grades of different types of positions to keep pace in: technology, recruiting practices, professional patterns, and organization structures. Departments have substantial discretion in classification methods, techniques, and procedures.

In summary, these are the four factors that stand out to me as I contemplate the Classification Act system:

*First*—the Federal Service must have an orderly system of grouping jobs.

*Second*—the underlying principle of the Classification Act system and the *classification plan* itself are reasonably sound.

*Third*—the rigidities of the Classification Act *pay plan* severely handicap Federal management. The *pay plan* must be revised to provide the flexibility essential in pay administration under present-day conditions.

*And finally*—the effectiveness of the existing classification plan depends in the way it is administered by the Commission and the operating agencies.

The Commission's present program of Classification Act administration has two major objectives: Continuing improvement of the

system, and the best possible operation of the system as it exists at any given time.

We're seeking to place more weight on:

Results obtained from classification rather than uniformity of methods.

A class structure that is realistic and that will help place the right people in the right jobs.

Some of our more specific activities include:

Encouraging all to recognize the effect of the man on the job—that exceptional performance can effect job classification when the impact of the man on the job actually makes the job materially different.

Emphasizing that maximum effectiveness in administration of standards can be attained only when operating officials become familiar with the standards for those occupations which constitute the core of their organization and make a contribution to the actual interpretation and application of standards to the jobs and employees for which they are responsible.

Inspecting agency classification programs not to second guess their decisions but to determine whether agencies are carrying out their responsibilities under the law.

And we are trying to eliminate such foolishness as long, incomprehensible job description.

We and the personnel offices can go only so far. You are the people that can contribute most toward effective classification, through your participation in day-to-day classification processes, and by observing intelligently how the system is operating and letting us know promptly where and how it is not meeting needs of good management.

It is for this reason that I am happy to see you all here today. Some of my remarks have impinged on topics your committees will later be dealing with. But I know you well enough—for it hasn't been so long since I was one of you—not to fear that anything I have said will inhibit your discussions.

I hope that at four forty-five you will consider the day well and profitably spent. For our part we are looking forward with keen interest to your conclusions on topics to be discussed and are confident that whatever we learn from you today will be good for us and will help us move together toward the kind of Federal service this country must have.





MR. TOM STURDIVANT  
(Oklahoma City Businessman)



TOM "The Pitcher"  
(Washington Senators)

and

To be host to a famous athlete is a pleasant experience, but to be host to one who is a member of our "well-liked" former boss' baseball club is an event to remember a long time.

Recently the Center was honored by the visit of a handsome young man, known to most athletic enthusiasts as Tom Sturdivant. This young man's stalwart masculinity can easily be construed as being that of a professional baseball player. Tom's desire to visit the Center and tour the hangars to view the big jets, and to admire the graceful TV-2 baby jets, was augmented by the fact that he is now under contract to General E. R. "Pete" Quesada, former Federal Aviation Agency Administrator, and now the new owner of the Washington Senators Baseball Club. Tom felt that meeting some of the people who knew General Quesada and who worked in the same field would give him a good insight to the General's personality.

Tom received a very cordial welcome to the Center by Bill Matthews, Chief of the Aircraft Division, who escorted him to the Headquarters Building where they visited with Mr. Pulling, FAA Depot Manager, and other FAA personnel. Tom was greatly impressed with the operations of the Center; commenting on the magnitude of responsibility for the successful operation of the Aircraft Division by Mr. Matthews; and complimenting Mr. Pulling on being such a young manager of our Depot.

After hearing the very favorable comments of Mr. Matthews and Mr. Pulling regarding the likeable and imposing personality of General Quesada, Tom feels sure he and his

new boss will make a good team for they have the same fighting spirit for greater accomplishments. The achievements of General Quesada are known and enjoyed by all FAA employees, and the achievements of Mr. Sturdivant are evidenced in the condensed resume of his professional baseball career.

He started in 1948 with the 3-I League of Quincy, Illinois. Played every infield position with that Club during 1948, 1949 and 1950. Even though the manager of that club realized Tom had all the potentialities of a very good baseball player, he didn't develop into anything more than average for the infield.

Tom played for the next two years, 1951 through 1952, while serving with the Air Force at Sumpter, Carolina. The manager started him as a pitcher and was rewarded with an outstanding performance by a young player with plenty of initiative and drive. Tom had found the slot he liked and settled down to serious concentration and soon developed a very effective style of pitching. Played with Birmingham, Alabama in 1953, and with Kansas City in 1954; making noticeable improvement each season.

Casey Stengel was impressed with the performances of this young pitcher that seemed to improve with each game, and the reports from his scout made him certain that Tom would be a valuable player to add to his Yankee Roster. Casey hired him in 1955, renewing the contract in 1956, 1957, 1958 and 1959. I'm sure he was very pleased and proud of this newly added talent in the 1956 World Series game with Brooklyn. It was the fourth

of a seven-game series and Tom had pitched a very exciting game with the Yankees leading by a 6 to 2 score in the 9th inning. When Brooklyn came to bat the bases became loaded with no outs. Casey must have known his pitcher was tiring, he made three trips out to the mound (Tom thinks he meant to take him out) to talk to Tom, asking him how he felt, what plan he intended to use to keep Brooklyn from scoring, etc. Tom had pitched a good game to that 9th inning and wanted to finish. He asked Casey to leave him in, and was relieved to have Casey turn and walk slowly back to the dugout. Brooklyn sent in two pinch hitters, both were struck out, the third man to bat hit a pop-up fly for the third out, retiring the side and ending the fourth game of the 1956 World Series with a 6 to 2 score win for the Yankees. Yankee Stadium held 69,594 enthusiastic and noisy baseball fans that day.

Tom will be an Oklahoma City businessman when he retires from baseball. Last year Tom played for the Boston Red Sox. His lovely wife, Reba, and young sons, Tommy and Paul, live with Tom at 2109 S.W. 68th Street.

Baseball is not the only athletic accomplishment of Mr. Sturdivant. He plays a very good game of golf. Joel Chennault, an employee of the Aircraft Division here at the Center, found out just how good he can play after losing strokes on most every hole. Even though, Joe thinks he is a better than fair player, he is practicing to improve and wishes to challenge Tom to another game next fall after the baseball season, hoping to give more competition.

Tom will not meet General Quesada personally until he reaches spring training quarters at Pompano Beach, Florida; however, he will not be entirely a stranger to members of the newly formed ball club. He has had close friendly relations with Mickey Vernon (the new manager of the Senators) for a number of years. (Many baseball fans and personal friends in Oklahoma City will be watching with personal interest and best wishes for successful results from the efforts of such a well qualified combination of Quesada, Vernon, and Sturdivant.)

—FAA—

The FAA Golf Club 1960 Fall Tournament was held at Lincoln Golf Course late in November. Participants were Aeronautical Center employees and students. Shown with

trophies are "B" Flight winners C. E. Hunter and L. I. Kearby; Chester W. Wells, Assistant Manager of the Aeronautical Center who presented the trophies; and R. W. Brown, Jr., winner in the Championship Flight. Winners not pictured were Ed Deases, Championship Flight; A. Cagigal and Rey Sosa, "A" Flight, and R. Goff and R. E. Mack, students, winners of "C" Flight. The Spring 1961 Tournament will be held in early April. Anyone interested in participating may get details from Temo Cagigal, X-202.



"B" Flight winners C. E. Hunter and L. I. Kearby; Chester W. Wells, Assistant Manager of the Aeronautical Center; and R. W. Brown, Jr., winner in the Championship Flight receive trophies. Winners not pictured were Ed. Deases, Championship Flight; A. Cagigal and Rey Sosa, "A" Flight and R. Goff and R. E. Mack, students, winner of "C" Flight.







FAA's OWN ELECTRA—First prop-jet transport in the Federal Aviation Agency fleet, this Electra will help FAA inspectors enforce capability standards for pilots and flight engineers operating 127 Lockheed planes for 7 U. S. airlines. Capable of normal 400-plus-m. p. h. cruise speeds, the FAA Electra will be assigned to the Federal Aviation Agency School at Oklahoma City's Aeronautical Center. Equipment includes weather radar, navigation and communications installations—plus a flight recorder. Because of its special mission requirements, the FAA Electra carries but 12 passenger seats, all in the in the aft compartment. Orange, high-visibility paint, recommended as a safety feature, is used liberally on exterior.

### AC MAN IN CAP

Recently named to the Staff of Oklahoma City Composite Squadron Number One, Civil Air Patrol was Lieutenant John R. Kanost, Jr.

According to Major John W. Cary, Jr., Squadron Commander, Lt. Kanost was appointed Executive Officer of the Squadron.

Lt. Kanost is Chief, Examination Services Staff, Examination and Records Division, Bureau Flight Standards, FAA.

Before coming to Oklahoma City Lt. Kanost was Information Officer of the Virginia Group, National Capitol Wing, Civil Air Patrol, Washington, D. C.

### OFFICE OF THE MANAGER ROUTING SYMBOLS CHANGE

In conformance with Agency Practice 1-8, revised February 7, 1961, the routing symbols of the organization units of the Office of the Manager have been changed by Aeronautical

Center Practice No. 1-1 issued February 24, 1961. Detailed breakdown showing the new symbols are contained in an attachment to the Center Practice within the following basic framework:

- AC- 1—Office of the Manager.
- AC-110—Personnel Division.
- AC-120—Accounting Division.
- AC-130—Budget Division.
- AC-140—Administrative Services Division.
- AC-190—Plant Engineering Division.

### LAMENT OF A STAFF MAN

I'm not allowed to run the train  
or see how fast t'will go.  
I ain't allowed to let off steam  
or make the whistle blow.  
I cannot exercise control  
or even ring the bell.  
But let the damn thing jump the track  
and see who catches hell.



Officers of the Aeronautical Centers Employees Association: Harry Donceel, Outgoing President; Richard A. Wenzel, Incoming President; Margaret (Peggy) Bennett, Secretary; Warren Brakebill, Vice-President, and Paul Dawson, Treasurer.

The new officers and representatives of the Employees Association were installed during the January meeting. Dick Wenzel, the new President, immediately proceeded to appoint members to the various committees in order that these committees may proceed with tasks either already assigned by the outgoing administration or those which Mr. Wenzel plans to assign in the near future.

At the present time, he indicates that he has two priority projects which he is pushing. One is a complete revision of the Constitution and By-Laws. The Association has never revised its Constitution since its date of inception. In view of the growth of the Center, Mr. Wenzel feels that we should consider a revision to make that document consistent with our modernized and expanded Center. The second project is the maintenance of the Center Blood Bank. Mrs. Jean Betts, who is serving as

Chairman of this committee, held the first meeting on February 23. Various points and means whereby the level of the Bank may be maintained including such factors as what to do if blood is needed, provisions for transportation to Blood Bank, and increased participation were discussed.

Other recent activities of the Association included the Mardi Gras dance held February 24 which will be written up in the next issue of the Beacon; and the purchase of a Patron Membership in the National Cowboy Hall of Fame in honor of Mr. Fred M. Lanter. Employees also are now aware of another innovation. Mr. Wenzel decided that a general distribution of minutes of the Board of Director's meetings will help create member interest in the accomplishments of the Association. Minutes of the February meeting were recently distributed to all employees.



# GREATER OKLAHOMA CITY

TELEPHONE  
DIRECTORY  
APRIL, 1961



SOUTHWESTERN BELL  
TELEPHONE COMPANY

This is the black and white version of the new cover for the Greater Oklahoma City Telephone Directory. Featuring the FAA Aeronautical Center Headquarters Building in full color, more than 300-thousand of these will be distributed.

## ORDER NOW . . .

### Your Beautiful FAA RING

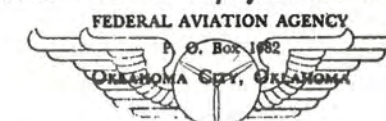
Wherever men in your profession gather, at the conference table, in the field or at any gathering whether large or small, each man's ring gains for him the same, quiet recognition that your ring will win for you.

- ★ Made in beautiful 10K gold.
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*Aeronautical Center Employees Association, Inc.*



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\$5.00 deposit on order.  
Balance due on delivery.

Year _____	Stones
Finger Size _____	Synthetic Ruby <input type="checkbox"/>
10K Yellow _____	Blue Spinel <input type="checkbox"/>
10K White _____	Black Onyx <input type="checkbox"/>
(White Gold \$5.00 more)	Green Tourmaline <input type="checkbox"/>
	Amethyst <input type="checkbox"/>

Smooth top stones will be used unless facet top is specified.

Customer's Signature \_\_\_\_\_





### **Publishing and Graphics Branch** **FAA Aeronautical Center**

The responsibilities of this branch encompass the printing, binding, reproduction and photographic services required by the various programs extant at the Aeronautical Center. These include:

*The Federal Aviation Agency School, Office of Personnel and Training, The Facilities and Materiel Depot, Bureau of Facilities and Materiel, Civil Aeromedical Research Institute, Bureau of Aviation Medicine, Examination and Records Division, Bureau of Flight Standards, Office of the Manager, Aeronautical Center.*

The Publishing and Graphics Branch is divided into two organized sections. These are the Reproduction and Distribution Section and the Photographic Section. Units are indicated on the organizational chart.



### Publishing and Graphics Branch

A year ago, February, 1960, a comprehensive survey of the printing plant was conducted jointly by the JCP Staff and the Washington Office Personnel with local participation. Purpose—expansion of the printing, binding and photographic services at the Aeronautical Center.

In the past the Federal Aviation Agency School, for example, had put its material together on the typewriter, varifax and by other methods. Future material from the FAA School will be linotyped.

The FAA School currently is instructing in 250 different courses. These in the future will be expanded to include any number of new courses. Naturally, these courses, insofar as the instructional text is concerned, are subject to constant revision. This necessitates constant reprints in the Publishing and Graphics Branch.

Far more exacting in the publishing field are the requirements of the Examination and Records Division. This material, consisting, in part, of examinations to be given airmen, requires strict security regulations. The Examination and Records material averages about 4-million impressions annually.

During Calendar Year 1960 the printing plant turned out 36,094,835 printing impres-

sions at a cost of \$3.66 per thousand. In addition to this, the plant supervised \$51,779 worth of commercial printing done by firms outside the government field. This commercial work was made up primarily of large schematics, negatives and plastic binding services. Of the above amount \$13,802 was for plastic bindery work.

During Calendar Year 1961 it is estimated printing requirements at the Aeronautical Center will exceed 60-million printing impressions.

Savings involved not only reflect a savings in time, but in the use of paper. The first training manual composed in the new printing shop was forty pages in length compared to the previous eighty pages.

The new printing plant now includes: Two Intertype machines, a Process Camera with auxiliary equipment, two 17×22-inch Harris offset presses, a 16-station collator with attachments, a 35½-inch paper cutter, a 22×28-inch folder, paper trimmer, and other auxiliary equipment.

The above-mentioned equipment supplements an AB Dick Model 350 Press, three Model 1250 Presses, two Model 1275 Presses, three Model 650 Accra-Feed collators, and a Model Number 4 Xerox Camera.



New 24-inch Chemco Roll-Film Process Camera



New Photo-Lithography Unit Equipment



Publishing and Graphics Branch Office





New Bindery Equipment



Photographic Laboratory in the Photographic Section



Press Room With Two 17x22 Harris Offset Presses in Background



The Film Darkroom and Equipment in the Photographic Section



Two New Intertype Line Casting Machines



Diazo Reproduction Unit







