

# CAA AERO CENTER



## “BEACON”

*"Imparting knowledge is only lighting other men's candle at our lamp--  
without depriving ourselves of any flame" - Jane Porter*

June 20, 1951

OKLAHOMA CITY, OKLAHOMA

Vol. II, No. VI

### EISENBACH LEAVES FACILITIES POST FOR 7TH REGION RADAR POSITION

Marvin E. Eisenbach, for four and one-half years an instructor and for the past two and one-half years as Radar Aids Chief, has been selected for the position of Supervisory Electronic Engineer (Radio) in the 7th Region.

Effective date for the transfer is July 21. Mr. Eisenbach will supervise maintenance for Airport Surveillance and Precision Approach radars, as well as for Distance Measuring Equipment.

Before coming to the Aeronautical Center in December 1946 Mr. Eisenbach had been in the 7th Region as MTIC at Pendleton, Oregon, and at numerous other stations in the region. Upon arrival here he taught for a time at Facilities Branch ILS/VOR school, but later became Radar Aids Chief when radar classes were started.

Until the vacancy is filled, after Mr. Eisenbach's departure, Walter Hill will assume the duties of Radar Aids Chief. Richard Erwood will temporarily take Mr. Hill's place as head of the ASR-PAR training unit.

### ORIENTATION AND INDUCTION CLASS FOR FOR AVIATION SAFETY GRADUATED MAY 25

The first Aviation Safety Orientation and Induction class, since 1948, was completed May 25. This class consisted of new Agents for all branches of Aviation Safety and they have been assigned to all seven regions in the United States, as well as the Alaska and International Regions and the Washington Office. K. R. Aldrich and Harry B. Pickering of the Washington Office of Aviation Safety gave the first two weeks of the training and instruction personnel of the Aircraft and Safety Operations Branches at the Center gave the other four weeks training. Among the thirty-five members of this class were two native Oklahoma Cityans. One was Norman Salles, formerly employed as mechanic foreman under Monroe Ebner in the Aircraft Services Branch. The other was Bob Burke, who has been employed by Catlin-Hutchinson Flying Service and Wiley Post Airport as an A and E Mechanic for several years. He was also a Designated Aircraft Maintenance Inspector, assisting the CAA Maintenance Agent in the ASDO office here. Both men have been assigned to Region 8. The only encouragement they have been given in regard to the weather is that the wind doesn't blow so hard. On the other hand, Brrrrr---!





## BEHIND THE NEWS IN THIS ISSUE

On these hot, sultry days it's extremely hard for some to retain semblance of enthusiasm. That quality is a will-of-the-wisp in any case. It comes and goes, flashes bright and dies for a time like the lightning bug on a summer evening.

However, over in Airways Operations interest is high. You should read in this issue the feature on Air Traffic Control training and the reality the instructors have managed to simulate for rapid and enthusiastic learning.

On other pages you may read how new radar and other electronic equipment can stimulate the interest of students and instructors alike. The authors of features in the **BEACON** are the instructors or department heads themselves, anxious to show what they are trying to do and what they have to offer in the way of training and standardization.

Actually behind the news, not so often named in the **BEACON** are the men who direct the myriad operations at the Center. Their administrative tasks, albeit lacking in glamor, make possible the stories we hope you will read.

## AIN'T IT THE TRUTH

Getting out a paper is no picnic.

If we print jokes people say we are silly. If we don't they say we are too serious. If we clip things from other magazines, we are too lazy to write them ourselves. If we don't we are too fond of our own stuff.

If we don't print contributions, we don't appreciate true genius. If we do print them, the page is filled with junk.

Now, like as not, someone will say we swipped this from some other magazine.

We did.

*Reader's Review*

*Letter to the Editor from Bill Matthews*

## MATTHEWS BIDS PUBLIC FAREWELL

In case there is a small section available in one of the future **BEACONS**, you would be doing me a favor if you would permit me to use this medium to express my sincere thanks to all of the people at the Center for the many nice things they have done for me and our Section during my stay in Oklahoma City.

I am being recalled to duty with the Air Force on June 25th and as I will need most of the time between now and then to let out old uniforms, stock up on black eyed peas, etc.; for my journey north, I doubt if it will be possible for me to personally see each of the numerous people who have helped us, such as the people who set up the Standardization Project, the ones who got out personnel, our parts, our space, flight tested our airplanes, inspected our planes, treated our employees' injuries and did just everything nice people would do to help out. This help and cooperation has made my assignment at the Center one of the best I have ever had and I shall look forward to returning whenever the Air Force says the word. Until then, I wish the very best of everything to each of you.

Sincerely,

*Bill Matthews*

Bill Matthews

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Joe W. Bailey is our new Personnel Assistant, coming here in May from the Regional Office of the Veterans Administration in Oklahoma City, where he had served as Placement Officer since 1946. Prior to that time Mr. Bailey was in personnel management service for several years with National Reemployment Service and U. S. Employment Service. We are happy to welcome Mr. Bailey to the Aeronautical Center.

#### A YEAR AGO IN THE BEACON THE EDITOR FORGETS FRONT PAGE

It was a year ago this month that the editor forgot to save a couple of good news stories for the front page. The BEACON was ready for the press, all made up except the all-important 'frontispieces.' The whole base had already been ransacked for 'the latest'. Well, after twenty cigarettes and three cups of coffee he decided that now was a good time to change the publication date. Not a good story, but it had to do. Oh, it was a slightly stuffed all right. One headache gone - one more to go.

Then it was that he picked up a Chamber of Commerce folder and idly read a few lines. He sat upright. 'The CAA Aeronautical Center was established at Will Rogers Field in June 1946' ... Four Years This Month in Oklahoma City. That was the story!

Maybe this isn't a good story either - but now we've been FIVE YEARS this month in Oklahoma City.

#### THE FUNCTION OF AN EXECUTIVE

As nearly everyone knows, an executive has practically nothing to do except to decide what is to be done; to tell somebody to do it; to listen to reasons why it should not be done, why it should be done by someone else, or why it should be done in a different way; to follow up to see if the thing has been done; to discover that it has not; to inquire why; to listen to excuses from the person who should have done it; to follow up again to see if the thing has been done, only to discover that it has been done incorrectly; to point out how it should have been done; to conclude that as long as it has been done, it may as well be left where it is; to wonder if it is not time to get rid of a person who cannot do a thing right; to reflect that he probably has a wife and a large family, and that certainly any successor would be just as bad, and maybe worse; to consider how much simpler and better the thing would have been done if one had done it oneself in the first place; to reflect sadly that one could have done it right in twenty minutes, and as things turned out, one has had to spend two days to find out why it has taken three weeks for somebody else to do it wrong. --Exchange

Reprinted from INSPECTION NEWS

#### THE SECRETARY

A secretary is a person, usually female, whom the boss often tells everybody but her he couldn't do without. If the boss is a young bachelor, he has to be on his guard; if he is an old married man, she has to be on her guard.

Where the boss and callers are concerned, a secretary acts either as a go-between or a stay-between.

A secretary must know how to translate the boss' rambling dictation into statements which are crisp and straight forward and yet leave plenty of loop holes and side exits, so that he is pretty proud of himself when he reads what he thinks he dictated. If the boss doesn't know something he asks his secretary; if she doesn't know, she is dumb. The boss is not dumb for not knowing, on account of why does he have a secretary?

No man is a hero to his valet, and no boss is a hero to his secretary. While a secretary realizes that her boss wouldn't be worth \$15.00 per week without her, she has to console herself with the fact that she wouldn't be getting her \$35.00 per week without him.

(Continued Page 4) THE SECRETARY



## WASHINGTON TEAMS MAKE SURVEY OF CENTER'S SUPPLIES AND SERVICES

A. S. Heinford, Chief, Procurement Branch of the Washington Office, made a survey of the activities of the Supplies and Services Section during the week of May 14, 1951. He was joined later in the week by C. M. Estep, Chief, Supply Division of the Washington Office; and the Supplies and Services Section feel that they benefited greatly as a result of the visit of these two gentlemen. During the week of June 11, another survey team from the Washington Office visited the Aeronautical Center in connection with various field activities. This team was headed by Miss Mary Healy, Chief, Special Services Division, accompanied by Mrs. Jacqueline Fowler, L. Robert Jones, CAA Records Management Officer, and John H. Gilbert, Chief, Printing, Reproduction, and Distribution Branch.

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## THE SECRETARY (Continued from Page 3)

If secretaries didn't need their jobs, half the bosses in the country would be washed up. If secretaries published their bosses' confidential memos, the other half would be locked up.

A secretary must know where her boss is every minute, so she can tell the right people the wrong place.

A secretary must know how to keep the boss' wife secure in the feeling that she not only wears the pants in the boss' family but the skirts also. Otherwise, the secretary must know how to hunt another job.

The secretary who takes her work seriously and shows an honest interest in the business and really makes a career of her job is the secretary who, twenty-five years later, is still a secretary, only with dyed hair and typewriter spread.

An office boy starts at the bottom and works up. A secretary starts as a secretary and works.

Anon.

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## DIRECTOR ATTENDS CONFERENCE

F. M. Lanter, Director of the Center, departed Oklahoma City on Sunday, June 17, for Washington, D. C., to attend the semi-annual Regional Administrators' Meeting, which is being held from June 18 - 22.

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## AIRCRAFT BRANCH INSTRUCTORS ATTEND MARTIN 404 SCHOOL

Ray Matthews and Emil Bjorkman are attending classes on maintenance of the new Martin 404 at Baltimore, Maryland. This is a new version of the Martin 202, with several added features. Pressurization has been added to increase passenger comfort, the fuselage has been lengthened to give greater capacity, etc. Ray was at the school for general maintenance from May 21 - June 8. Emil is attending an electrical and electronic maintenance course from June 11 - 22. These should be extremely interesting, as the Martin 404 is one of the very latest types of high speed, twin-engine transports. The Glen M. Martin factory is located on Chesapeake Bay.

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## AIRMEN, IT'S LATER THAN YOU THINK!!!!

The following notice is included in this issue of the **BEACON** at the suggestion of Bob Royal, Aviation Safety Agent assigned to the Oklahoma City Aviation Safety District Office.

"Any airman exercising the privileges of his certificate after September 1, 1951, without an Airman Identification Card, will be in violation of Civil Air Regulations. This applies to mechanics, ground instructors, control tower operators, etc., as well as pilots."

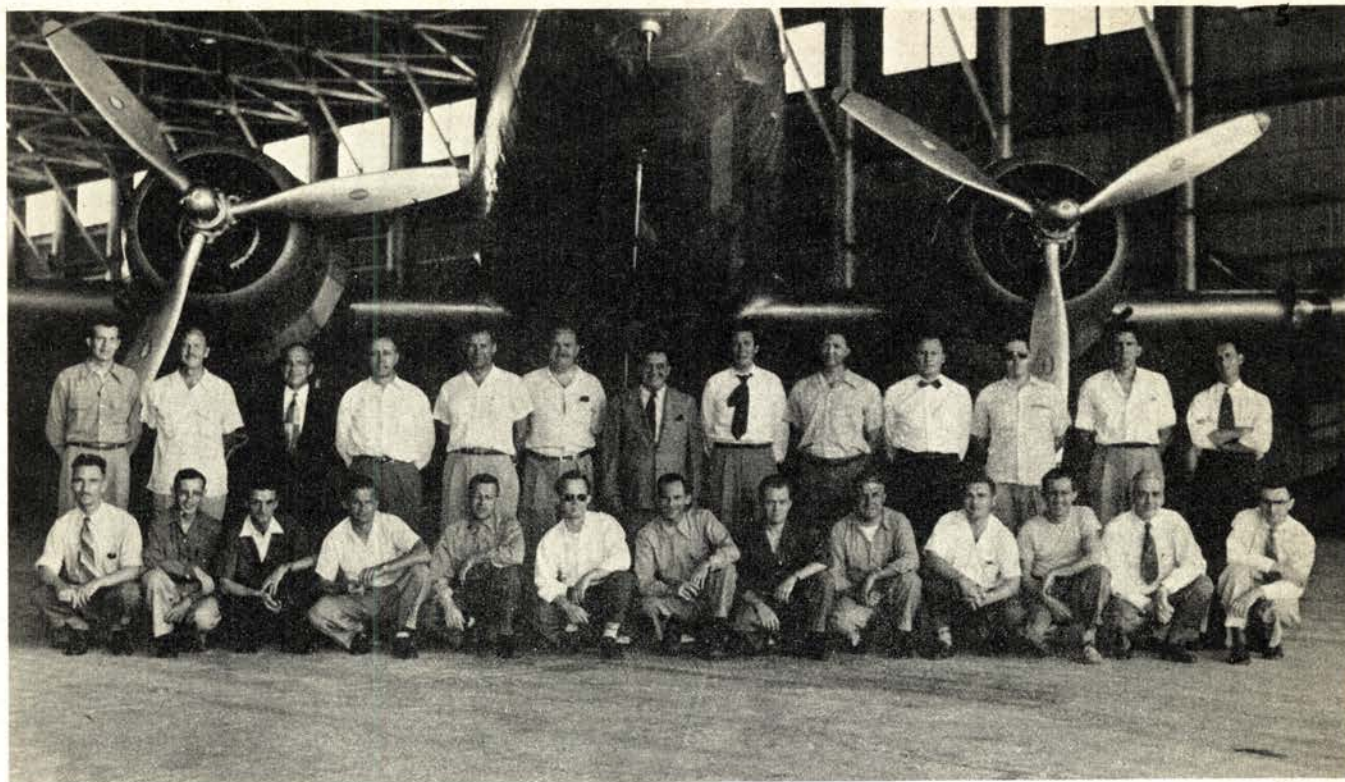
The requirements for the Airman Identification Card are as follows:

1. Two identical photographs, approximately 1"x1" size, full face, head only, taken within the 12 months preceding date of application.
2. Proof of identification, such as licenses, or combinations of identification cards and documents which will identify the applicant.
3. Proof of citizenship, place and date of birth, such as birth certificate, baptismal certificate, passport, or an airman identification card issued by CAA during World War II.
4. His airman certificate.

Applicants who have lost their World War II CAA Identification card may write the Chief, Airman Records Branch, CAA, Washington 25, D. C., and request a letter verifying that such a card was issued to them. This letter will meet the citizenship and place and date of birth requirements for obtaining one of the new identification cards.

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#### FLIGHT TEST ENGINEERS ATTEND TWO WEEK CONFERENCE

The A-11 Flight Test Engineering Course, scheduled for a two-weeks period commencing May 21, was converted to a conference of all Engineering Flight Test Branch Chiefs from the various regions. The meeting was conducted by R. B. Maloy, Chief, Engineering Flight Test Branch in Washington assisted by M. R. Disler, John A. Carran and R. W. Meyersburg.

George W. Haldeman, Chief, Aircraft Division, Washington, attended a portion of the course as did the following regional Aircraft Division Chiefs: W. H. Weeks, Region 5; C. W. VonRosenberg, Region 4; Herb Toomey, Region 1. During the second week of the two weeks conference the Flight Analysts from the various regional offices joined the Branch Chiefs for a five-day meeting. During this meeting the certification of transport category aircraft was discussed and practical application of various procedures was accomplished during the flight phases of the conference.

The Aviation Safety Division was very pleased that this conference, normally held in Washington, was conducted at the Aeronautical Center and our personnel, as well as regional personnel, felt that considerable good was derived from the meeting. The Center participants were D. L. Baker, Chief, Engineering Flight Test

Section, and N. H. Rudasill, Engineering Flight Test Instructor.

Pictured above are the representatives. Standing (left to right): L. E. Schainost, Region 5; D. L. Baker, Aeronautical Center; F. M. Lanter, Director, Aeronautical Center; Herb H. Toomey, Region 1; C. W. VonRosenberg, Region 4; W. H. Weeks, Region 5; George Haldeman, Washington; W. F. Norton, Region 3; R. B. Maloy, Washington; W. H. McKee, Region 2; R. W. Meyersburg, Washington; H. C. Faller, Region 4; J. J. Ross, Region 6.

Front Row (left to right): D. D. Murphy, Canada; W. M. Frei, Region 3; M. E. Gaydos, Region 1; R. E. Boak, Region 4; J. R. Allison, Region 7; D. B. Stevenson, Washington; M. J. Brown, Region 6; J. D. Ludwig, Region 5; R. E. Peterson, Region 7; R. M. Gross, Region 2; Walt Haldeman, Region 1; M. R. Disler, Washington; S. H. Hinton, Region 5.

#### SHIVELY VISITS ALAMO

Paul H. Shively, Chief, Supplies and Services Section, made a hurried trip to various activities of the U. S. Atomic Energy Commission at Los Alamos, Albuquerque and Santa Fe, New Mexico, during the latter part of May.



## AIRWAYS OPERATIONS REPORTS NEW CLASSES FOR 8TH AND 9TH REGION COMMUNICATORS

Two classes totaling 32 communicators are now training at the Aeronautical Center for eventual duty in the CAA's Eighth Region. Instructors for these classes are Herbert B. Bridges and Eugene L. Mars.

On May 21 the first class of aircraft communicators to be recruited and trained for the Ninth Region were entered on duty. The class consists of 12 trainees. An additional class of Ninth Region communicators is expected to begin in the near future. The instructor is J. R. Kennedy who is on detail to the Aeronautical Center from the Ninth Region.

## GREEK REPRESENTATIVES COMPLETE AIR TRAFFIC CONTROL TRAINING

Three representatives of the Greek State Civil Aviation Service, Messrs. Costas Choliamentos, Paul Gombos, and Evanelos Tsoufakis, who were assigned to the Aeronautical Center for a special course in Air Traffic Control, completed training on June 1 and proceeded to Kansas City, Missouri, for extended on-the-job training. Before departing, they presented the Aeronautical Center with a framed plaque containing a flag of the Greek State Civil Aviation Service, which is now displayed in the hallway of Airways Operations training building.

## DIRECTED STUDY COURSE III AWAITS ENGINEER RECRUITMENT AT FACILITIES

The Center has sent out the announcement of a GS-11 Airways Engineering position. When a qualified applicant for this position is selected work will get under way in the preparation of Course III. This course is the directed study course that is to be prepared for the Airways Maintenance Technicians and Inspectors. This course will cover the following subjects: optics, mechanics, electrical fundamentals and powerplants. All regional offices will be notified when this course is available for distribution and an article will appear in some future issue of the BEACON announcing that fact when the first sets of lessons will be completed and ready for mailing.

## BILL MATTHEWS IS CALLED TO MILITARY DUTY BUT SAYS 'I'LL BE BACK'

W. M. (Bill) Matthews, who as division chief for the past year has sparked the huge Aircraft Standardization project, leaves for military duty with the U. S. Air Forces on June 25.

He'll be missed by a great many people here at the Center, but Bill is quick to emphasize, 'I'll be back.' (Please see page 2 for letter)

Taking over as temporary chief of Aircraft Standardization will be Harry D. Estey who has been Mr. Matthews' assistant.

## NEW INSTRUCTOR AT AIRWAYS OPERATIONS

John L. Sullivan (no relation to the original) reported to the Aeronautical Center on June 11, 1951, to begin temporary detail as air traffic control instructor. Mr. Sullivan has been assigned to the Aero Center from the Atlanta, Georgia, Air Route Traffic Control Center.

## SALLES LEAVES-HOLMBERG PROMOTED

Arthur Holmberg has been promoted to the position in Aircraft Services formerly held by Norman Salles, who has transferred to Alaska. Salles completed a training course at the Aircraft Branch and he and his family left for Juneau. We wish both Salles and Holmberg the very best of luck, in their new undertaking.

## NEW INSTRUCTOR AT FACILITIES

Robert W. Brown entered the employ of the Aeronautical Center on June 10 as radar instructor at Facilities Branch in a transfer from the 4th Region.

Mr. Brown has had considerable experience in radar in the Canal Zone with the Signal Corps, U. S. Navy, and the CAA. For a short period he was stationed at Dallas before entering as a student in the present ASR-PAR class. On July 9, after completing the radar class, he will join the radar staff as instructor.

Mrs. Lyla B. Fisher, formerly with the Medical Branch, is now assigned to Airways Operations Branch as clerk-stenographer. Mrs. Fisher replaces Mrs. Mary Jo Trexler, who resigned to attend the summer session at A&M College, Stillwater, Oklahoma.



### THREE ILS/VOR CLASSES AT FACILITIES BEGIN ADMINISTRATIVE TRAINING JUNE 25

A week of Administrative Training begins next Monday for three ILS/VOR classes currently in session at Facilities Branch.

Through arrangements made by C. E. Gardner, Branch Chief, two representatives from Washington will address the student group during the week.

William King of the Office of Federal Airways is scheduled to speak at 10:50 AM Tuesday and Frank A. Petrie, Washington Chief of Training Division will present a series of talks throughout the week.

The program for the week includes informational talks by Center officials. Among them are Hope Biggers and Robert Spear of the Aircraft Branch; L. E. Shedenhelm of the Technical Assistance Division; William Jackson, Personnel Officer; Joe W. Bailey, Personnel Assistant. Director Fred Lanter will give the final address on Friday afternoon.

### NINTH REGION ENGINEER VISITS CENTER

Ralph Swearingen, Radio Engineer of the Ninth Region visited the Center for several days last week. During his visit he secured information relative particularly to the ASR-PAR radar installation at Facilities, the combined INSAC Tower of Airways Operations, and the standardization of CAA aircraft at Facilities Flight Inspection.

### SHIMP ASSUMES PERMANENT POST AS FLIGHT INSPECTION BRANCH CHIEF

J. Chester Shimp, who had been on temporary assignment from the 5th Region as Facilities Flight Inspection Branch Chief, assumed the position on permanent status on May 13.

Mr. Shimp and family moved into a new 6-room brick home last weekend at 1908 N. Warren in the Grady-Musgrave addition.

### BEECHCRAFTS READIED

The Beechcrafts assigned to the Aircraft Services Branch are being readied for the air again. Major repair work has been done on the wing attach fittings. Three of the DC-3's are now undergoing landing gear reinforcement work.

### STANDARDIZATION OF CAA AIRCRAFT CONTINUES; MORE PLANES DELIVERED

The project of standardizing CAA Flight Inspection aircraft continues at Aircraft Standardization Division and Flight Inspection Branch with Douglas DC-3's being equipped with DME interrogators for use in checking new DME facilities along airways in the east.

The first Distance Measuring Equipment interrogator was installed last week in N-20, a DC-3 which may be assigned for training purposes to Flight Inspection at the Aero Center.

Another DC-3, N-21, is expected to be ready for delivery to the Third Region in about two weeks. It, too, will be equipped with DME interrogator for checking facilities along the New York-Chicago airways. An additional interrogator was shipped to Region 1 for installation in N-16, which was delivered last month. All DC-3's are equipped with harness and racks for easy installation of the new distance equipment as it becomes available and necessary for checking newly installed ground facilities.

As for Beechcraft standardization, N-48 was delivered to Washington last week and N-51 will be ready some time this week with Region 2 being its destination.

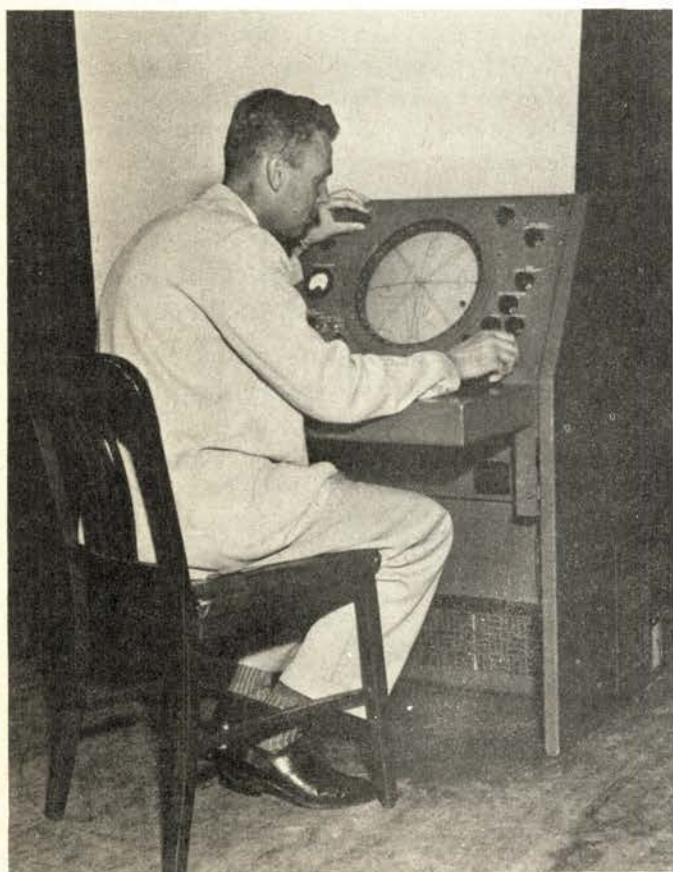
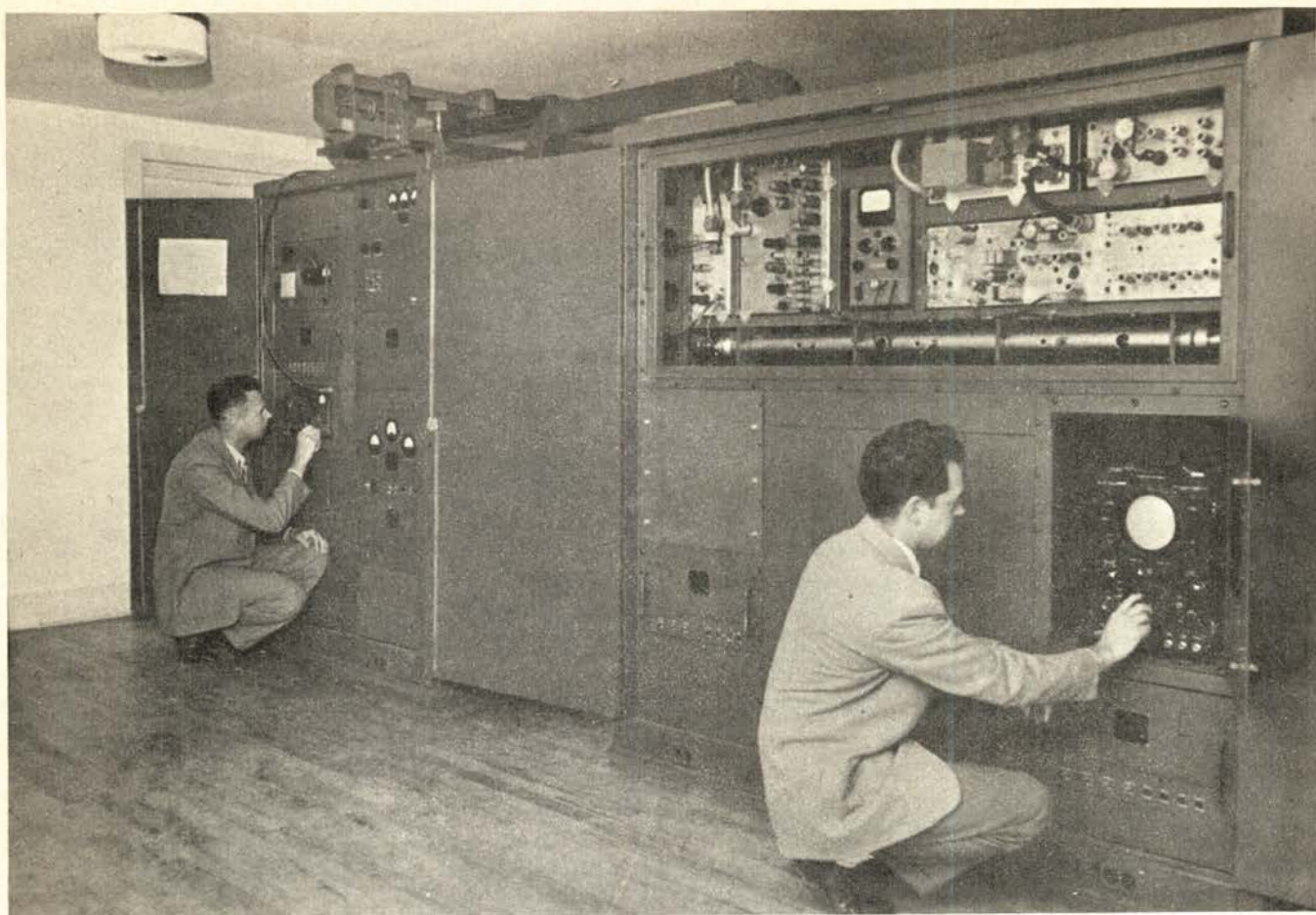
Ralph Swearingen, 9th Region Radio Engineer, while visiting at Flight Inspection was furnished photos, blueprints and information for modifying 9th Region planes to conform with standardized electronic installations. It is planned to furnish the 9th Region with prefabricated panels, equipment racks and consoles for these modifications.

### DOUBLE-DECK AND H-TYPE BUILDINGS ARE ADDED AT EXPANDING FACILITIES BRANCH

Training in the Facilities Branch is being greatly expanded and two buildings which were moved in are being remodeled. The DME training will have a two story building to house classrooms, laboratories and offices. It is located west of the present Indoctrination Training building. Indoctrination training is getting a remodeled 'H' type building for its expanded program. This is a one story building with two wings and a connecting passageway. It is located west of the new DME building mentioned above.

Shortly after the beginning of the fiscal year, the Indoctrination training classes will be expanded to 40 trainees for each class. Complete implementation of the program hinges upon the procurement of some critical equipment and also some equally short-supply instructors, but progress is being made on both items.







## NEW SURVEILLANCE RADAR IN OPERATION AT FACILITIES IS PICTURED AND EXPLAINED

The installation of the Airport Surveillance Radar has been completed at the Facilities Branch Engineering School and is now in full operation. This equipment was manufactured by the Gilfillan Co. of Los Angeles, California. This is the first Airport Surveillance Radar designed specifically for the CAA and carries a model number of ASR-1. The installation was made by Fourth Region installation personnel, Facilities Branch Radar Aids Section personnel, and a Gilfillan factory representative. The equipment will be used for training technicians in the circuit theory and the field performance of ASR-1 equipment as part of an intensive fourteen week radar training course.

In a field installation the ASR-1 has various uses. It is primarily used in airport traffic control towers for control of the flight pattern around an airport. Where installed with precision approach radar the two equipments form a complete approach system. The surveillance equipment may be used to orient an aircraft for an instrument landing system (ILS) approach and to monitor the ILS approach to assure that no interfering traffic will enter the approach path. The equipment may be used for directing a Plan Position Indicator (PPI) approach by which a pilot is 'talked in' until he is over the runway and can make a visual landing. This type of approach is used when the precision radar or ILS systems are not available, or if the plane is not equipped to use the ILS system.

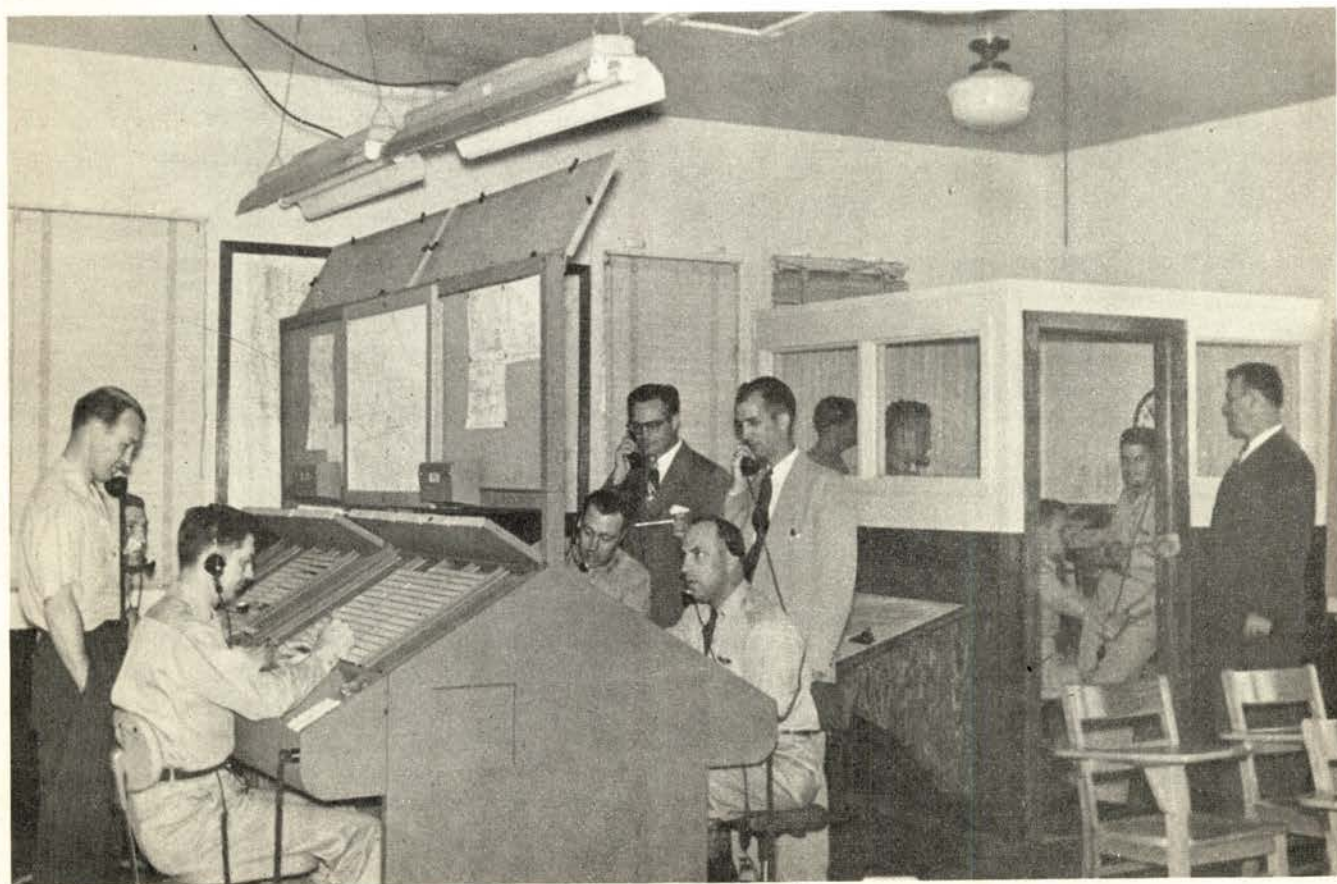
The ASR-1 transmits energy in pulses at intervals of 1000 microseconds, each pulse having a time duration of one-half microsecond. The frequency of the system is 3000 megacycles, which corresponds to a wavelength of 10 centimeters. The pulses are generated by the use of a magnetron and have a peak power of more than 200 kilowatts. The transmitting and receiving equipment, with associated power supplies and test equipment is located in the racks shown on the left of the top photograph on the adjacent page. M. E. Risenbach, Chief, Radar Aids Section, is shown measuring the magnetron power output on test equipment furnished for this purpose. The transmitted signal is guided through rectangular pipe, known as wave guide, to a position in front of a parabolic reflector, which forms the energy into a sharp beam. This reflector can be seen mounted on a steel tower in the photograph above, and the wave guide can be seen coming out the top of the transmitter rack on the top picture on the adjacent page. The parabolic reflector works exactly



like the parabolic reflectors used with automobile headlights, except it is specially shaped to give the required beam shape needed.

The equipment contains circuits which make it possible to eliminate stationary targets at will from the indicator presentation, allowing any desired combination of stationary and moving targets to be presented. A special receiver is used which gives an output proportional to the relative phase of the returning echo and an oscillator in the receiver. This output will be constant for stationary targets, and will vary for moving targets. The output from each pulse is saved and compared with the output of the succeeding pulse, allowing the constant output of the stationary targets to be cancelled. This system makes it mandatory that the interval between transmitted pulses match the delay in a mercury delay line to less than 1/100 of one millionth of a second, making it necessary to use special circuits to control the pulse repetition frequency. It is also necessary to assure extreme frequency stability of the receiver oscillators. The equipment used for removing or controlling the indications of the stationary targets is shown in the Moving Target







## UNUSUAL REALISM INJECTED INTO TRAFFIC CONTROL TRAINING BY PROGRESSIVE AND IMAGINATIVE INSTRUCTORS AS AIR FORCE TRAINING EXPANDS

Sounds of carpenters, telephone installation men, and contractors at work can be heard by those passing near Building 25 at the Aeronautical Center. The remodeling in progress is due to an expansion program in the Air Traffic Control Training facilities. The need for additional class rooms and installations to simulate Air Route and Airport Traffic Control facilities is a result of the CAA's participation in a program designed to train Air Force personnel for Air Traffic Control. Completion of these new quarters will provide three Tower and three Center Laboratories, each capable of accommodating eight students. In addition, lecture rooms and offices for the instructional staff will be provided. The new facilities will be used to train Air Force Officers in Air Traffic Control procedures in classes of eight weeks duration. The requirements of Foreign National Students assigned to the Aeronautical Center for Air Traffic Control will also be met.

This training for the Air Force is a part of the present effort to achieve an integrated Air Traffic Control system as visualized by the Air Coordinating Committee\*. Training emphasis with the Air Force students is on common-system procedures, which will be used in their work as Radar Controllers. During this training each man 'works' every position of operation employed in CAA Towers and Centers, thereby receiving first hand knowledge of 'Who does - What - When' in CAA traffic control facilities. Upon assuming their duties at Air Force Traffic Control stations the coordination procedures in effect between their control rooms and the CAA towers and centers concerned should be appreciably improved. The course is further designed to prepare the student to qualify for the CAA Air Traffic Control Tower Operator Certificate (with Junior Rating), and the CAA Air Route Traffic Controller Certificate.

A major portion of the time available is devoted to the Practical Application classes. Full size mock-ups of Air Route Traffic Control Centers and Airport Traffic Control Tower cabs are used for this practical training. The 'center' room now in use is a replica of the

\*Air Traffic Control and the National Security by the Air Coordinating Committee, Air Traffic Control and Navigation Panel Group.

Fort Worth, Texas, Center, except for the number of sectors. This equipment is similar in appearance and operation to an actual Center and all of the basic air route traffic control functions are effectively simulated. Trainees are stationed at flight progress boards and handle traffic problems set up in advance by the instructors. Other trainees, assigned to a remote room, channel appropriate communications to the Center via interphone. Problems become progressively more difficult as the course continues, and are designed to further realization of the procedures and duties of an air route traffic controller.

For practical instruction in Airport and Approach Control procedures, model airports are used. The 'Tower' is a replica of a standard CAA tower cab, containing the equipment normally used by controllers. On a table in front of the cab is a scale model of Oklahoma City's Will Rogers Field, equipped with airport lighting and tetrahedron, remotely controlled. The group of Air Force students shown at top of the opposite page is simulating Approach Control at Will Rogers Field. Those around the model airport (Will Rogers Field, that is) represent pilots. The students seated in the tower cab occupy control positions in Will Rogers Tower. In operation, several trainees are stationed in the Tower to act as controllers, while others, assigned to stations around the airport table, act as pilots flying in the vicinity of the airport. By using appropriate intercommunication systems and prearranged problems it is possible to simulate basic airport and approach control functions. The room can be darkened to simulate night-time conditions. Instructors monitor the problems closely.

An interesting and highly successful training situation has recently been introduced in the practical application courses by coordinating the activities of the Center and Tower training. The problems used in these coordinated exercises are designed in such a manner that the Center students clear aircraft enroute to Oklahoma City to holding fixes in the Approach Control area with instructions to contact Oklahoma City approach control at an

(Continued Page 14) **AIR TRAFFIC CONTROL**





### NEW DISTANCE MEASURING EQUIPMENT IS IN OPERATION AT FACILITIES BRANCH

The model DTA Transponder shown above, a unit of DME equipment, has been temporarily installed in the laboratory at present shared by the Facilities DME and Radar schools. The equipment will ultimately be installed in Building 192 when the DME course is streamlined into three sections of three weeks each. This streamlining of the DME course will allow it to be more closely integrated with the other schools of the Facilities Branch.

At present a dummy antenna is used due to the temporary nature of the installation, but the equipment is in full operation for instructional purposes.

The DTA is one of three models of Transponders being taught in the DME course. The DME course is designed to teach pulse techniques to Electronic Technicians of the CAA in addition to giving thorough coverage of the DME ground and air equipments presently used and new models contracted for by the CAA. The coverage of pulse techniques in addition to furnishing information essential for the study of DME will

be excellent background as these techniques become more prevalent in the communications and electronic air navigation field.

### Navigational Aid

Distance Measuring Equipment will furnish the pilot continuous accurate information of the distance and rate of approach to a selected omni-range, or the touchdown point of an instrument landing system (ILS). Used with a VOR, bearing and range information are constantly available giving a constant and accurate navigational fix. Used with the R-O navigational aid (electronic computer) and VOR the pilot will be able to fly any desired heading on a straight line course between his point of departure and destination without deviating to pass over range stations, fan markers, etc. This will make possible more complete use of the air space, safer and more accurate air traffic control.

The DTA is the first service model DME Transponder and is manufactured by the Federal Telecommunications Laboratories of Nutley, N. J., Fifteen of such units have been procured and are installed or being installed at VOR sites on the New York-Chicago and New York-Washington airways. The DME Transponder is installed in the VOR building with its antenna being mounted on top of the plastic hemispherical VOR antenna shelter.

### Transponder Assembly Identified

The DTA is a Dual Transponder with a common monitor, control unit and antenna. In the photograph, Kenneth Jenkins, DME Laboratory Instructor, is making an adjustment to the Automatic Sensitivity Control circuit of the DTA receiver. The center rack contains, from top to bottom, the antenna relay, the control unit, and the relay power supply. The racks on either side contain identical units, from top to bottom, Automatic Frequency Control (AFC) unit, Transmitter, Modulator, Video unit, Receiver and High Voltage Power Supply.

### DME System Explained

The Airborne DME Interrogator transmits a pair of pulses of radio frequency energy each 33,000 microseconds. The pulses of a pair are spaced 14 microseconds apart or 14 microseconds plus a multiple of seven microseconds up to a maximum of 77 microseconds. This gives a total of 10 different pulse spacing modes. These ten different pulse spacing modes associated with 10 radio frequency channels in the vicinity of 1200 megacycles give a total of 100 individual DME channels available. The pair of pulses

(Continued Page 14) DME EQUIPMENT



## NEW CAA ENGINEERS WILL BEGIN TRAINING AT FACILITIES BRANCH ON JULY 2

The Washington Office of Federal Airways has recently hired a number of new electrical engineers who will be assigned to the regions and to the Washington Office upon completion of their training. The first step in the training of these men will be enrollment in the Facilities Branch Indoctrination Training school. The group will report to the Facilities Branch on July 2 for a technical and orientation course which will be essentially the same as that given to maintenance technicians who are new to CAA. Upon completion of the 12-week training course here, they will go on to other training courses so that they will be well grounded in all phases of CAA activity by the time their entire training period is completed.

## SURVEILLANCE RADAR *(Continued from Page 9)*

Indicator (MTI) rack on the right of the top picture on a previous page. The mercury line used to delay the signals for the interval between pulses can be seen extending the length of the rack under the chassis of the MTI components. This line is supported in a four inch pipe to insure exact alignment. The components which very accurately control the pulse repetition frequency, compare the signals and remove the stationary targets, and which then mix the stationary and moving targets as desired by the operator, allowing him to have complete control over the presentation of the stationary targets, is shown in the top of the right hand rack in the top picture. L. Thompson, instructor for the Radar Aids Section, is shown checking the stationary target cancellation on a synchroscope.

The signals, mixed as desired by the operator in the tower, are then remoted over coaxial cables to the tower equipment room. Mr. Thompson is shown checking the voltages in the remoting equipment which would normally be located in the tower equipment room, possibly one or two floors below the Indicator which would be located in the tower. For convenience all units have been installed in one building at this installation, although in a field installation the Transmitter and MTI racks shown in the top picture may be located as much as two miles from the Equipment Rack shown in the lower right hand picture.

From the equipment rack the signals are taken to the indicator. The indicator is a cathode ray tube on which the indications appear as bright spots. While there are many technical differences, this indicator may be likened to the picture tube of a television receiver.

## FACILITIES INSTRUCTOR RECEIVES ACCLAIM IN NATIONAL TECHNICAL MAGAZINE

The June issue of 'Proceedings of the Institute of Radio Engineers' carries a lengthy article featuring the description and evaluation of the CAA's Distance Measuring Equipment and credits an important investigation to three CAA engineers one of whom, Emory C. Williams, is now a DME instructor at Facilities Branch. (Please see another page for related feature on DME equipment). Mr. Williams came to the Aeronautical Center last September from the Technical Development and Evaluation Center at Indianapolis where the evaluation tests on two different types of DME equipment were made. At Indianapolis Mr. Williams was assigned as project engineer in the Radar Branch.

## LOCAL CAA AMATEUR NEWS

Featured and pictured in last Sunday's Oklahoman and Times were Carl C. Drumeller, W5EHC and Louis Clements, W5SLC, both instructors at Facilities Branch. Subject of the article was the activities of the AREC (Amateur Radio Emergency Corps) of which Drumeller is Okla. County Coordinator. C. E. Gardner, Facilities Branch Branch Chief is State Coordinator.

Pictured was Drumeller at controls of his home station while Clements was shown operating his mobile rig installed in his car. The local group of amateurs is active in preparation for possible emergencies or civil defense work.

CAA Stations contacted during June by WSPAA, the Aero Center Amateur Radio Club are: W5GRJ-James D. Moss, Natchitoches, La. W9EHC-Paul F. McEvoy, Broadview, Ill. W8UPB-Dana E. Cartwright, Jr., Cincinnati, Ohio. W0ZXX-Wesley R. Johnson, Butler, Mo.

All the equipment shown in the other photographs may be controlled by the tower operator from the indicator console. Mr. Eisenbach is shown adjusting the controls on the indicator in the left hand photograph.

The ASR-1 has 4 ranges available-6, 10, 20 and 30 mile ranges. Also by the use of the off-centering control, the maximum range may be extended to approximately 50 miles. The equipment was designed to be accurate to 1° in azimuth, and to 3% of true range. For instance the range of a plane at one mile can be determined accurately to less than 158 feet and its azimuth to less than 92 feet.



## DME EQUIPMENT (Continued from Page 12)

transmitted by the airborne Interrogator are received by the Transponder which checks their spacing and radio frequency. If they are correct the Transponder waits 115 microseconds and then sends back a pair of pulses of specific pulse spacing and radio frequency. These pulses are received by the airborne Interrogator which checks their radio frequency and pulse spacing and if they are correct converts the elapsed time between the time of the interrogation and the time of the receipt of the reply into a distance indication in miles on a direct reading meter, as well as indicating the rate of change of distance on a separate meter.

The DTA can furnish information to fifty aircraft simultaneously. If the number of aircraft seeking this information becomes excessive, the equipment has a circuit that will reduce the receiver gain until only the nearest fifty aircraft will be answered. The frequency of the receiver is crystal controlled assuring maximum frequency stability. The frequency of the transmitter is constantly compared with a crystal controlled oscillator in the Automatic Frequency Control unit (AFC) and should it tend to drift from its assigned frequency the AFC will supply a voltage to a transmitter tuning motor which will tune the transmitter to the correct frequency.

### Monitor Operation

The monitor might be considered intellectual compared to the rest of the equipment for as has been so aptly said the Transponder only understands one question and only knows one answer while the monitor must be able to handle efficiently a number of questions. The monitor makes a continuous check of the Receiver sensitivity, the Receiver frequency, the artificial delay, the reply pulse spacing, the Transmitter frequency and the strength of the transmitted reply pulses. If any of the above become out of tolerance, the monitor will give it ten seconds to correct itself and then if the out of tolerance condition still exists it will shut down the operating transponder and turn on the standby transponder. It will then wait 100 microseconds and check the standby equipment. If the standby equipment is within tolerance well and good, but if not, it will wait ten seconds and then if the condition still exists, the monitor will shut down the standby equipment and notify the communicator on duty at the associated Airway Communications Station.

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## AIR TRAFFIC CONTROL (Continued from Page 11)

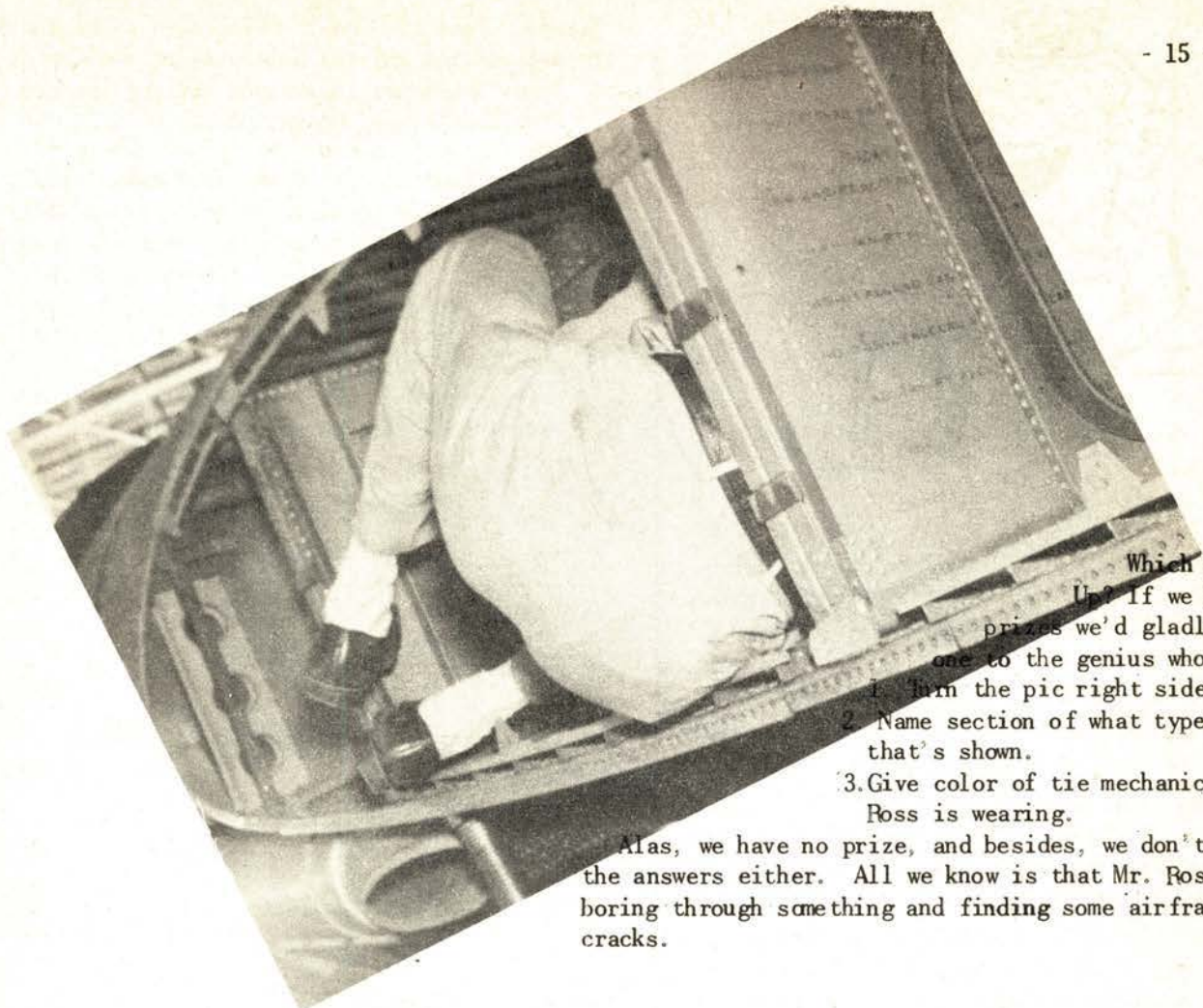
appropriate point for further clearance. Estimates on these flights are given Approach Control in accordance with standard CAA operating practice. During approach control problems trainees acting as pilots are assigned aircraft for which they will initiate communications contacts at the correct times as required, and comply with control instructions as issued by the student controllers in the tower cab. The student controllers in the Tower cab are responsible for providing standard separation between such inbound flights and departures under their jurisdiction. The operations of the Fort Worth Air Traffic Control Center are being simulated by the group of Air Force students shown on Page 10. All coordination required in standard CAA practice between Tower and Center controllers are carried out by means of interphone connecting the two installations concerned.

For example, a trainee at the airport table will pick up a microphone, request taxi instructions and ATC clearance to depart Will Rogers Airport on an IFR flight to Tulsa. The controller in the tower cab responsible for ground traffic will issue taxi instructions to the 'pilot'. Another controller in the cab responsible for interphone operation calls 'Fort Worth Control' on the proper interphone circuit and requests a departure clearance for the flight, advising the Center of any restrictions being initiated by approach control to separate the flight from traffic under approach control jurisdiction.

The Center controller studies his flight progress board to determine whether the altitude and route the pilot desires can be approved with respect to traffic in the Fort Worth Center area. In this instance he must also obtain approval from the St. Louis Center for the flight prior to issuing clearance. The coordination between the Fort Worth Center Controller and St. Louis control is actually an interphone conversation between the student controller in the Center laboratory and a student in the remote room. These duties observed, the Center controller issues an ATC clearance to Will Rogers Tower. This clearance, combined with any restrictions deemed necessary by Approach Control, is now broadcast to the pilot initiating the request by the Approach Controller in the Tower cab. The pilot requests take-off clearance and later requests clearance to leave Tower frequency. Upon departure the Tower advises the Center of the departure time and the flight is posted on the Fort Worth Center flight progress boards at the necessary fixes.

(Continued Page 18) AIR TRAFFIC CONTROL





- Which Way is Up? If we had some prizes we'd gladly give one to the genius who could:
1. Turn the pic right side up.
  2. Name section of what type plane that's shown.
  3. Give color of tie mechanic Geo. Ross is wearing.

Alas, we have no prize, and besides, we don't know the answers either. All we know is that Mr. Ross is boring through something and finding some airframe cracks.



#### 7TH REGION SECRETARIES TOUR BASE

A candid camera was on hand when, about the middle of May, three secretaries of the 7th Regional Office spent a few days in Oklahoma City and visited the Center. Left to right are Amelia Boss, Secretary to Chief, Air Route Traffic Control Center; Betty White, Secretary in Federal Airways; Helen Swift, Secretary to Executive Assistant; and Dean Anderson of the Center's Supplies & Services Section, who aided in a tour of the Center.



#### UNDER THE HOOD

Popular, ever-helpful, and always busy, 'Murph' Shedenhelm finally had his own picture 'took' while under the hood. Although he uses a camera with the sure hand of a master of the art he is camera shy and we suspect that George Hudson, who snapped the photo above, got it the candid way while Murph was absorbed in focusing on the damaged piston on the bench at Aircraft Services.





### VISITORS

Monday, May 14 - J. P. Morris, Frank Davis, and Ken Hazlett arrived from the Washington Office in connection with the pick-up of N-3.

Tuesday, May 15 - A. S. Reinford, of the Washington Procurement Office spent several days on duty at the Headquarters Building.

Wednesday, May 16 - C. M. Estep, S. F. Clark, and R. T. Alpher, of the Washington Office, visited various offices at the Center over a two-day period.

Thursday, May 17 - Lyle Ditzler, of the Federal Airways Air Traffic Control Division in Washington, visited the Airways Operations Branch for several days.

Monday, May 21 - K. R. Aldrich and H. B. Pickering of the Aviation Safety Office in Washington arrived to conduct the first two weeks training for the new Aviation Safety Induction Class No. 12.

Monday, May 28 - E. S. Hensley of the Washington Office of Aviation Safety visited our Aviation Safety Standardization Division. On this trip Mr. Hensley spoke at a meeting of the new Aviation Safety induction trainees.

Monday, May 28 - J. P. Morris, Chief, Aircraft Control Division, Washington Office, visited several offices at the Center.

Tuesday, May 29 - Fred Reed of Region 4 was a Center visitor during the day.

Monday, June 11 - J. H. Gilbert, L. R. Jones, Mrs. Jacqueline Fowler and Miss Mary Healy, all of the Washington Office, arrived to conduct a survey of office service functions and records management activities during the week of June 11-15.

Monday, June 11 - Sid Stanton of the Washington Office spent a few days at the Center in connection with examinations for Air Force Traffic control trainees.

Tuesday, June 12 - Ralph Swearingen of Region 9 arrived for several days stay at the Center, spent in Facilities Branch, Flight Inspection and Airways Operations.

Thursday, June 14 - Visitors from USAF Training Command Headquarters, Scott Field, Illinois: Joseph Hamilton, Jr., Asst. Director Training Analysis & Development, DCS/O; John O. Mings, Chief, Proficiency Measurements & Testing Div.; James G. McIlroy, Jr., Major USAF, Chief, Training Materials & Curriculum Div.; R. A. VanMater, Capt. USAF Directorate for Operations, DCS/O.

### NEW EMPLOYEES (5/13-6/11)

#### AIRCRAFT SERVICES BRANCH

Lindon M. Loudermilk

#### AIRWAYS OPERATIONS BRANCH

Charles Myers

#### FACILITIES FLIGHT INSPECTION BRANCH

Roy Caldwell J. Chester Shimp

#### AIRWAYS OPERATIONS BRANCH

Donald D. Hilterbran Walter Foster

#### AIRCRAFT MATERIEL

Cleo E. Sanders Billy J. Scholes  
Leon J. Tyson

#### PERSONNEL SECTION

Letha I. Dugger Pocohontas Ellis

#### GENERAL SERVICES BRANCH

Nolan W. Riley

#### FACILITIES BRANCH

Robert W. Brown

### SEPARATIONS AND TRANSFERS

#### AIRCRAFT STANDARDIZATION DIVISION

Ira L. Cravens

#### AIRCRAFT BRANCH

Helen Elliston Helen Hefner

#### AIRWAYS OPERATIONS BRANCH

Mary J. Trexler

#### AVIATION SAFETY STANDARDIZATION

Virgil Holden

#### BUDGET AND ACCOUNTS

Frank S. Deane

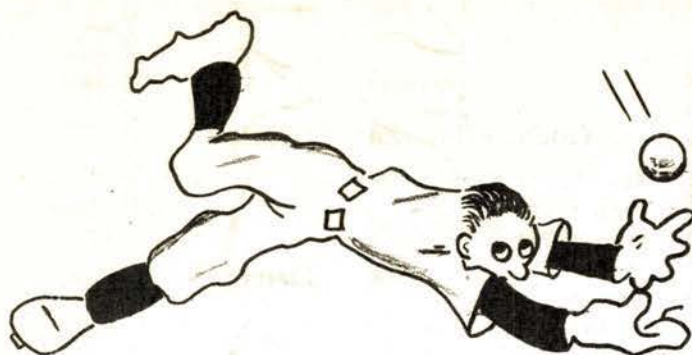
#### PROJECT MATERIALS DIVISION

David Moore Ray Humphreys

#### SUPPLIES AND SERVICES

Carol J. Winn





## BASEBALL NEWS

May 29, 1951

R.O. Brownies vs. CAA Transporters

Final score - Transporters 16 - Brownies 1  
Hansen was the losing pitcher, dishing out 21 hits, while Murphy, the winning pitcher, dished out only 3 hits. Dykes slammed a homer in the 5th inning with 2 on base.

May 16, 1951

CAA Transporters vs. VA Indians

Final Score - Transporters 9 - Indians 6  
Iron was the losing pitcher, allowing 9 hits. Murphy was the winning pitcher, allowing 8 hits. Randall slammed a homer in the 4th inning with one man on base.

The Transporters have not lost a game to date and lead the league with the record of four 'wins' and no 'losses'.

We need relief pitchers. So, if anyone is interested, come on out.

Score for CAA Transporters vs. CAA Hedgehoppers:  
Transporters 10; Hedgehoppers 9.

Bill Matthews, who has been one of our star players and 1st baseman, has been called to duty with the Air Force. Filling his place will be Mr. DeLong.

Due to the rain the scheduling of games has been quite a problem. Most of the time the baseball diamond has been under water, within the last three weeks, that is.

## SOFT FACILITIES MEN KNOCK THEMSELVES OUT AT SOFTBALL ON ANNUAL PICNIC

It was Sat., June 9 and the Facilities picnic staged by the Japonica Club was in full swing. Some 20 or more men were stretching muscles at softball, muscles that for several days caused many a sigh and groan. But it was fun while it lasted...the homerun by Chapman...the score didn't matter.

What did matter was the picnic meal pooled from baskets and boxes along the big table at Will

## DONCEELS RETURN

We have received word that Harry Donceel will be home for three weeks leave after completing a special training course June 15. He expressed hope that we have one of our CAA dances while he is here. Can't we do something about that?

(Editor's Note: We did)

## ANOTHER WANDERER

George Bell has just returned from a vacation in New Mexico. He visited Carlsbad Caverns and brought back literature for us poor unfortunates who can't go 'no place'. George's real purpose for his visit to New Mexico was in search of his mother's grave. He is convinced now that vacations at home aren't nearly as much fun as traveling and is already planning a trip for next year. George is in Aircraft Services.

## THE FISHERMEN

It seems General Services Branch boasts quite a number of fishermen. Roy, Smitty, and Elmer Peterman have fished in spite of the rains. Ann Martin and her husband departed June 9 on their annual fishing trip. Wonder how they survived the rains. We'll soon find out.

## TRANSFER TO ALASKA

Helen Elliston has deserted the Aircraft Branch for the Eskimo country. She transferred to the Eighth Regional Office at Anchorage. Lots of luck, Helen!

Ted DeWitte of General Services Branch is sporting a new Chevrolet.

E. Ray Tice, General Services Branch, has moved into his new home located in the new addition on N. W 20th.

Rogers Park pavilion. The annual affair was a huge success (Thanks Butch) and it was dark before the last reluctant family drove away. And it didn't rain for the whole 7 hours! Strained expressions on faces of instructors on Monday made convincing remarks that 'it's a good thing we do that only once a year.'



## AIR TRAFFIC CONTROL (Continued from Page 14)

The realism with which actual operations are simulated has been quite gratifying to the instructional staff. The situations created in these training laboratories have been successful in that even the same nervous reactions are observed in the students that are experienced in tower and center controllers during similar conditions of traffic and weather. The Air Traffic Control staff at the Aeronautical Center extends an invitation to everyone interested in Air Traffic Control to visit these laboratories which are normally in operation daily between the hours of 8:00 AM and 4:00 PM.

Specific courses being presented for Air Force personnel total 280 hours and are as follows:

- Introduction to CAA & the Federal Airways System
- Air Traffic Rules
- Air Navigational Aids and Radio Procedures
- Communications Facilities and Procedures
- Air Route Traffic Control Procedures
- Air Traffic Control Procedures
- Approach Control Procedures
- Weather Reports and Forecasts
- Practical Application of Air Route Traffic Control Procedures
- Practical Application of Airport and Approach Control Procedures

## CAMERON MAKES TOUR OF ALASKA

Loren D. Cameron, Placement Officer, recruiting Aircraft Communicator and Maintenance Technician personnel for employment in the territories of Hawaii, Alaska, and Pacific Islands returned to the Center recently from a familiarization tour of Alaska.

## SUPPLIES & SERVICES

That good-natured fellow in Supplies & Services whom you observed placing CAA identification on various articles of non-expendable property is Hal McVey. Hal says he would appreciate folks keeping him advised of the numbers obliterated during refinishing and painting. 'Lost' numbers are getting to be quite a problem.

## CAROL WINN LEAVES CENTER

Mrs. Carol Winn of the Contracts and Order Unit resigned during June to join her husband in establishing a new home in Florida. Sergeant Winn, who was engaged in the Atomic Weapons Research at Entiwetok was returned to a base near Pensacola, Florida, and all the good wishes of the Section go with them. Carol's place is being filled for the time being by Miss Evelyn Walton, who was recently transferred from the Aircraft Standardization Division.

## THE BEE MERCHANT

Ed Frame, 'Bee Merchant', was called home recently when his bees swarmed. Anyone wanting information on bees (and birds) can see Ed.

## IDLE THOUGHTS OF A STUDENT SCRUBBLED AMONG 'DOODLES'

The 'ASID' test is not the acid test but merely a test on the automatic station identification device!

So whay do eye feal sew blew awl deigh llongue  
an knott steigh att hogme two bee calld at  
all bye somewun thatt dusn't care aye hoot  
wherever eye dew ore dusn't due!

## RETURN FROM ANNUAL LEAVE

Returning from annual leave at Facilities recently were William J. Rosenberry from Grand Lake after two weeks of fishing and fun... Norma Trogdon from a tour at Roswell, N. M.... Nan Jenkins from a week visit with her sister in Amarillo.... Sybil Andes from two weeks in Tennessee and Washington, D. C.... J. R. McCown, R. W. Swinney, and John Straiton, a few days each for reasons unknown.... A. D. Edgerton from a week spent in painting his home.... Walter H. Fricks from a visit with relatives in Texas.

## NASH ON SICK LEAVE

O. A. Nash, Indoctrination instructor at Facilities was taken ill last weekend with a case of flu, but is expecting to return to work by midweek.