

BEACON

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Address: BEACON, FAA
Aeronautical Center
P.O. Box 1082
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POWERPLANT CHIEF IS CENTER'S SECOND 'OUTSTANDING EMPLOYEE'



W. L. Brown receives award plaque
from Director Lanter

THE SECOND EMPLOYEE to be selected at the Center for the "Outstanding Employee" Award is Mr. William L. Brown Chief of Powerplant Section, Aircraft Branch.

SELECTION OF THIS quarterly award is made by a committee of employees and the award plaque is furnished by the Aeronautical Center Employees Association.

MR. BROWN WAS recognized for his heroic efforts in rescuing a number of handicapped children from a fire which destroyed their nursing home at 5901 N.W. 52 Street last Thanksgiving Day. Bill's prompt and effective action in bringing order out of chaos and in personally risking his own life resulted in saving the lives of 17 children, 12 of whom he personally carried to safety.

AFTER WAR-TIME military duty, Mr. Brown was employed by the Bureau of Aeronautics of the Navy Department. He came to the Center in 1952.

ADDITION TO FLIGHT INSPECTION BUILDING IS COMPLETED

THE NEW TWO-STORY addition to the Air Navigation Facilities Flight Training Building is ready for August occupancy. It houses the expanded program of training for flight crews (pilots and airborne electronic technicians) for Flight Inspection aircraft and for ground-based electronic technicians who maintain and calibrate the precision equipment aboard Flight Inspection aircraft.

THE BUILDING INCORPORATES many conveniences for training activities. Such matters as classrooms arranged "back-to-back" with a projection room between them is nothing new at the Aeronautical Center but still is an important item in saving time for both instructors and students. Another handy and labor-saving "built-in" is the system of multiple sliding blackboards. These enable an instructor to run through a whole chain of complex equations without having to erase any portion. They also permit certain semi-permanent training aids and references to be drawn up in advance, thus saving classroom time.

A FOLDING AND comparatively soundproof door makes possible the division of one large classroom into two moderate-sized ones. Unfolded, it permits a large section of the student body to assemble for group activities. Closed, two classes may be conducted simultaneously with no mutual interference.

OFFICE SPACE IS provided in the new addition for instructor personnel, an item highly appreciated by instructors who take a dim view of hundred-yard dashes across the parking lot during rainstorms.

A SPACIOUS LABORATORY on the second floor supplements the two in the older section of the building. A total of nine class-

rooms are available, five on the first floor and four on the second. In addition to the receptionist's room, there are six rooms for instructor personnel, and four offices. The two student lounges are both on the first floor. A separate shop is provided for maintenance work on the electronic equipment used in the laboratories. For delicate instruments, one room is equipped with a double entry and filtered air.

FLIGHT INSPECTION TRAINING is conducted under the supervision of Mr. Robert S. Lee with the able assistance of eleven instructors in the FAA unit and ten instructors in the USAF unit.

MR. BOB M. PAYNE is Chief of the Avionics Training School; he directs a staff of twelve instructors.

THE ENTIRE AERONAUTICAL Center has ample reason to be proud of the Air Navigation Facilities Flight Inspection Training Building and the personnel who man it.

C. Drumeller

Front Cover: It's Vacation Time! Since golf is a favorite summertime recreation, Staff Photographer Bob Newkirk thought a scene on a golf course would be appropriate. We agreed and Mary Jo Barton, AC-90, and R. W. (Bob) Brown, Jr., AC-671, agreed to pose. We are not sure of Mary Jo's golfing skill but Bob is a topnotch linksman and, working through the Employees Association, has made it possible for groups here at the Center to receive lessons at reduced fees or have access to a private club's greens.

NEW LABS INSTALLED FOR ARTC TRAINING

IN ORDER TO keep abreast of the growing training requirements, five additional ARTC four-sector centers are being installed in the ATC laboratory building. These five centers will consist of four-sectors each, with assistant and controllers positions and with the necessary air-ground operating positions. Each center will also have a four position FLIDAP with appropriate model 28 ASR teletype machines. Each center will be equipped with appropriate landline communications. When completed, these simulated centers will be the most up-to-date in existence anywhere.

THESE LABORATORIES WILL accommodate 25 students each, together with four instructors and the senior instructor. The program to utilize this equipment is expected to begin with the class reporting for duty January 4, 1960. This one program will accommodate a daily student load of 300. We hope to bring you more information on this developmental work as it progresses.

GAIN IN '60 ANF TRAINING PROGRAM IS EXPECTED

AN INCREASE OF 25% in the over-all Air Navigation Facilities Branch training program is tentatively expected during the next fiscal year. Increases are planned primarily for training on Tacan, in Directed Study, and in the Communications Equipment School which anticipates creation of a separated teletype course.

INTRODUCTION OF training on ADIS (Automatic Data Interchange System) in Communications Equipment School appears probable for next February, having been up-dated by equipment developments.

TOTAL FOR THE FY60 programs, as planned is approximately 44,000 student weeks of training.

LARGE NUMBER TRAINED BY CENTER'S ATC BRANCH

THREE THOUSAND THREE hundred and fifty persons reported to the Aeronautical Center for resident training in Air Traffic Control procedures during the year ending June 30. The bulk of this group, 3014 to be exact, were personnel recently recruited for duty in Air Route Traffic Control centers throughout the country. This group was provided with six weeks of intensive training leading to basic certification and preparation for assuming duties in the "F" position at operational centers.

OF THIS TOTAL, 261 were key aviation personnel who do not work in the actual control of air traffic but who should know something of air traffic control in order to better accomplish the duties of their present assignment. This group was given a two week indoctrination course. The remaining 75 were nationals of other countries who received seventeen weeks of comprehensive training in air traffic control procedures and operating techniques under the auspices of the International Cooperation Administration. During the past seven years representatives from more than 40 countries have participated in this part of the program.

A cute little trick from St. Paul

Wore a newspaper dress to a ball.

The dress caught on fire

And burned her entire

Front page, sport section, and all.

'ROUND THE CLOCK' COVERAGE IN HANGARS

The Aircraft Standardization and Maintenance Division furnishes full 24 hour coverage 7 days a week in Hangar 8 and Hangar 10. While most people are watching the 'late show' on TV or getting 8 hours of beauty sleep, several crews of aircraft mechanics are busy preparing aircraft for its scheduled morning flights or performing standardization or periodic inspections on regional aircraft.



Hangar 10 - 11:00 PM (Shift Change Time). Before checking out, Jack Alley, A/C General Foreman confers with 3rd Shift Lead Mechanic Bob Dempsey regarding work to be accomplished.



2:30 AM - James Cavanaugh checks with Weather Bureau on thunderstorm echo. Storm damage could delay flight schedule, so hangars are packed with planes and remaining aircraft are securely tied down on ramps when there is a severe weather warning.



3:45 AM - Sheetmetal workers Jack Hill and Dot Ellison fabricate radar scope and hot cup brackets for DC3.



7:30 AM - It's Shift Change Time! Your plane is ready, Sir! Pilot Cyril Richards is about to make a scheduled early morning flight.

FILES CUSTODIANS ATTEND WORKSHOP ON RECORDS

"THE 24, 000, 000 CUBIC feet of records the Federal Government has in existence today require 4, 000, 000 filing cabinets and take up at least 20, 000, 000 square feet of space," Keith Jennings, Chief, Disposal Section, Federal Records Center, General Services Administration, Fort Worth, Texas, told a meeting of Center files custodians at a Records Disposition Workshop held July 23.

"THEY REQUIRE A LOT of people to put records or pieces of paper in them, to put them in the right place, to extract them, and then to replace them," he said.

CENTER FILE CUSTODIANS learned the Government is creating about 3, 000, 000 cubic feet of records each year. The bulk of these must be expected to be destroyed. If not, records are going to occupy more space, and it is going to take more and more people to maintain them, when most of them will serve no useful purpose.

"SOME RECORDS ARE really worth keeping," Jennings explained. "They have value for future generations and our nation certainly would be poorer in a cultural sense without having them available for use by scholars and the general public."

THE OBJECTIVES OF the Center's records disposition program were stated not only in terms of the problems - space, time, money, and the permanently valuable -- but also in terms of the solutions:

1. TO SAVE SPACE by removing from the office those records no longer necessary to daily operations; by removing from storage areas these records no longer necessary; and by maintaining a regular and controlled flow of the records from office to
- (Continued next column)

WASHINGTON MANAGEMENT OFFICIALS VISIT CENTER

HARRY E. PROBST, Chief of Management Standards Branch, and Lloyd E. Wolfe, Forms Management Office, FAA, Washington, D. C., arrived at the Center July 24 and held a brief meeting relative to the forms management program. They conferred with Paul H. Shively, Chief, Supply Division, and Loren C. Helm, Chief, Special Services Branch, and Charles Brill, Forms Management Officer.

THE FOLLOWING WEEK they were joined by John H. Gilbert, Deputy Chief, Special Services Branch, FAA, Washington, D. C., for a conference with officials of Operating Materials Division. Discussions were held with Howard E. Crane, Chief of OMD's Stock Control Branch, relative to the supply and distribution of field-use forms through OMD at the Center for all FAA regional offices and major field organizations.

RECORDS (continued)

storage to destruction.

2. TO SAVE TIME in finding records by clearing out unused records from office files; by maintaining a shelf list of the agency records in storage.
3. TO SAVE MONEY by preventing unreasonable purchases of filing equipment to store inactive records in office areas; by providing for inexpensive storage systems and equipment through destruction of unnecessary records.
4. TO IDENTIFY THE permanently valuable records so that they can be given the kind of good treatment they deserve.

IN VIEW OF these propositions, it must be decided what records need to be kept
(Continued on page 10)

EMPLOYEE RELATIONS OFFICER TRANSFERS TO WASHINGTON



Director Lanter says "Goodbye" for all of us to Harold Leeper who transferred to Washington as Chief, Personnel and Proficiency Development Branch.

IT WAS ADDRESS TO "Mr. W. M. Jackson and AC-90'ers" but the BEACON editor kibitzed over Margo's shoulder and read the first edition of Lines from Leeper. Harold L. isn't really starting competition to the Kiplinger Newsletter. He was just reporting to the "home folks" on his arrival in D.C. After two weeks in the Capitol City, he is convinced that Washington is here to stay, and judging from his reactions, he is willing to stay there with it.

ALTHOUGH HE SAYS there is still a "lot of pick and shovel work" to be done in the reorganization, Harold feels that the basic problems, which are always the hardest, have been mastered.

THE LEEPER FAMILY should by now be in the new home at 133 E. Rosemary Lane, Falls Church, Va. It's a "Cape Cod with full basement, carport, sun

BEST SPEAKER OF WEEK RECEIVES TOASTMASTERS' TRAVELING TROPHY



Monroe A. Ebner, Chief, Aircraft Maintenance Branch, AC-132, surrendering the cup for Best Speaker of the Week to Mr. R. H. Detwiler, Convair Technical Representative, AC-132, at the Toast Masters Club meeting, June 30, 1959.

Mr. Ebner was the proud possessor of the cup for the previous week. His topic was, "Should Churches Politic in Order to Keep the State Dry?" Mr. Detwiler's topic was, "Eight Keys to Creativity."

deck, 2 screened porches, 1/2 acre, and - get this - heavily wooded with trees 75-80 feet high! Boy, those trees are for us! It's 1 1/2 blocks from a Methodist Church, 1 1/2 blocks from a grade school (which includes grade 7 so both children will go there), and 2 1/2 blocks from a swimming pool! The pool is a membership deal with an annual fee of \$25.00 for the whole family - after 8/15 it will be a daily swim for papa after that hot drive from town."

(Continued on page 20)

NEW DIRECTED STUDY SECTION COVERS LOGARITHMS IN DS-100

A SECTION ON logarithms for the Directed Study Course DS-100 with examples and practice exercises applied to problems in electronics, is now being printed and bound. The self-contained section requires no outside reference to the Andres textbook, "Basic Mathematics for Science and Engineering". It was written and prepared by Instructor A. R. Fillebrown.

THE NEW SECTION should be a definite help not only for those who find the commercial text somewhat incomplete in the study of logarithms but also for those who need a review of circuit problems on R, L and C circuits, RC transient calculations, transmission line equations and db problems.

PAUL WATKINS, NavAids Unit Chief in Directed Study, says it will not be possible to make a separate mailing of the new section to the 1870 men who are already enrolled in DS-100. However, copies will be mailed upon request to all enrollees who need or want the self-contained portion. No changes are contemplated in the examination associated with the Logarithms Chapter 2.

STUDENTS ENROLLED IN DS-100, also DS-90, are reminded that multiple-choice type examinations are available to all those who want them. The 12 exams of DS-90 and the 7 in DS-100 have all been converted and are presently supplied for all new enrollements. Results so far indicate that these new exams take less time for the student and yield slightly better scores by reducing arithmetic errors. Instructor time for servicing the exams is more effective in teaching correct problem methods.

- A. Schmitt

INTEREST IN HOME STUDY IS TREMENDOUS IN GAIN

ABOUT ONE-SIXTH of the entire FAA Agency is enrolled in Directed Study Courses! Figures for the fiscal year 1959 show 5487 enrollees. Field technicians are taking advantage of home study at a pace never before excelled in the maintenance training program.

ABOUT 75% of all field personnel in the 670 organization are enrolled in some phase of Directed Study. By far the highest participation of all is by Region 4 personnel with 87.6% of LA-670 personnel taking courses. However, of those who are enrolled, Region 1 has the highest percentage who are active in submitting home study assignments.

OF INTEREST, TOO, is the percentage taking preparatory courses as compared to those taking advanced or special courses. For example, 64.5% are enrolled in DS-90 and/or DS-100; 11.2% in the DS-200 series; 10% in the DS-30 series; about 7% in the Airways Series (DS-1 and DS-2); and 8% in the newly released special courses DS-401, DS-441 and DS-901.

THERE ARE 3,891 Maintenance Engineering Branch (670) people enrolled in DS, 432 from Establishment and 1,164 from miscellaneous organizations, such as: Washington and Regional offices, Aeronautical Center, Flight Operations and Airworthiness, Airways Operations, Weather Bureau and Office of International Cooperation.

FUNNY BUT TRUE - most men will eat or drink practically anything put before them, but insist on checking carefully the oil and gas they put in their cars.

FROM: W. H. HILL
ALL OF US

FORMER CHIEF OF Federal Airways
Standardization Division Harry Hill sends
the following "Thank You" from Washington.

"THE BEACON SEEMS the only practical
medium of telling all of you how much we
enjoyed and appreciated that surprising
send off upon our transfer to Washington.
The theory that a secret can't be kept by
any large number of people was certainly
proven false in this instance.

"THE SILVER PUNCH set is beautiful and
could not have reflected our personal tastes
better had we selected it. The beautifully
illuminated binder containing the signatures
of our friends that accompanied it was a
most thoughtful gift. Both will be treasured
as long as we live.

"AT SUCH TIME as I am assigned a perma-
nent office, the very handsome plaque re-
ceived from my friends and co-workers in
this division will be displayed with pride in
a most prominent place.

"WE ALSO RECEIVED a very warm welcome
upon our arrival in Washington--the temper-
ature being a dripping 100°.

"VELMA JOINS ME in best wishes and sin-
cere thanks to all. "

ASSOCIATION PROPOSED FOR ELECTRONICS GROUPS

A PROPOSAL TO establish an association
of FAA electronic engineers and techni-
cians has been made by J. B. Harriss,
formerly of Region 2, and recently Asst.
Manpower and Training Coordinator in
Region 6.

(WELL-WRITTEN 33-page document
(d next column)

77 GRADUATES RECEIVE FIRST AID CERTIFICATES

GRADUATION CERTIFICATES AND cards
were presented to the first 77 graduates of
the Center's new First Aid Course by Mr.
E. B. Olson, Deputy Director.

THIS FIRST AID Course was originally
started by AC-680.6 in Facilities Flight
Inspection Branch and is now Center wide.
It is being taught by Mr. Frank B. Falwell.
It will continue until all personnel at the
Center interested in attending have had the
opportunity.

IN CONNECTION WITH this First Aid
Course and the Center Safety Program,
Director F. M. Lanter has presented
Frank B. Falwell with a letter of com-
mendation for Mr. Falwell's part in
promoting safety at the Center, and the
manner in which he has conducted his
First Aid classes.

An Arab stood on a weighing machine

In the light of the lingering day

A counterfeit penny he dropped in the

slot ----

And silently stole a weigh..

A Good Cook is a Wife who serves as

meal she thawed out all by herself.

(ASSN. continued)

supports the proposal by reviewing the
excellent performance of such personnel
in the past and the wide range of present
responsibilities. The proposal is expected
to be published soon through voluntary
contributions and will be made available,
possibly through district offices.

RECORDS - (Continued from page 6)

They must be kept in the least expensive manner possible consistent with their use.

ON THE AVERAGE an agency spends about \$3.13 annually to maintain one cubic foot of files. But in the records center, the cost is only about 63 cents. There is an annual saving of about \$2.50 per cu. ft.

"THE TIME HAS long passed since records are kept merely because one day someone may want to look at them", Jennings said. "Obviously this is not only costly but it is unrealistic. Therefore, we calculate a risk with respect to our Federal records: we set periods for the retention of these records consistent with rather firm forecasts on our part as to their potential uses for the future. In this way we keep what needs to be kept and we throw away periodically what does not need to be kept."

ALL FILES CUSTODIANS reported the cubic feet of records now in their files, as follows:

AC-1	June Grayson	7.
AC-70	Margaret Bennett	28.
AC-80	Edward Schmidt	239.
AC-90	Frances Chase	217.5
AC-110	R. H. Will	666.
AC-130	Willedra Beard	34.5
AC-131	Odessa Hughes	48.
AC-132	Christine Whitman	51.
AC-133	Ladine Garrett	42.
AC-134	Becky Jones	178.
AC-160	Charles Brill	182.
AC-200	June Donceel	38.25
AC-300	Muriel Lowe	821.6
AC-700	R. A. Wenzel	591.

MR. JENNINGS WAS introduced by Charles Brill who took up half of his half-minute allotted time (15 seconds of silence) to tell the assembled group all

NEW ANF BUILDING TO HAVE "LIVE" RADAR DISPLAY

A "LIVE" RADAR display in the main-floor lobby will be a distinctive feature of the new Air Navigation Classroom Building (ANF #2) when it is ready for use late this fall. Actually, inputs from both the ASR-3 and ARSR-1 will be piped through Scan Conversion equipment to two separate TV-type display monitors placed in the lobby. The arrangement is possible, of course, without usurping equipment or student experiment time.

AN ENLARGED student lounge with a big picture window is included on the first floor, and is partitioned to provide a small cafeteria.

THE AIR-CONDITIONING is regulated to give good air circulation. Classrooms are large enough for 40 desk-tables or 60 armchair seats. Conference rooms are placed next to classrooms, with a window between, to give semi-privacy for student instructor consultations.

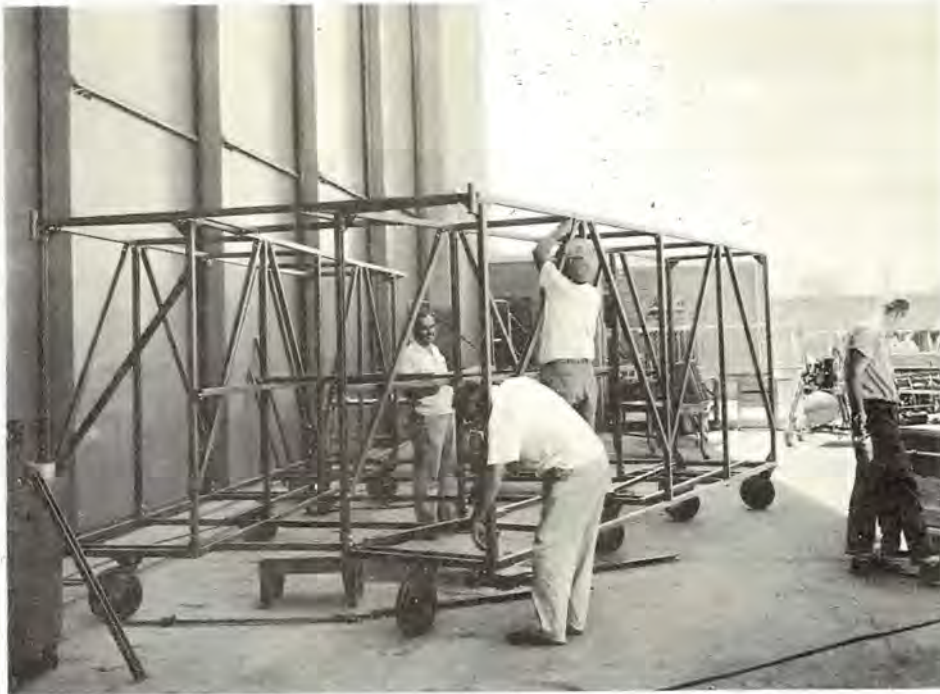
PROJECTION ROOMS AND visual aid facilities are improved and arranged to permit setting up equipment without disturbing class sessions. All instructor offices have outside windows (to eliminate some types of phobias).

(Records - contd)

he knew about records disposition up to meeting time.

IN ADDITION TO officially designated Files Custodians, others in attendance were: Mary Wiley, AC-300; Betty Jennings for Becky Jones, AC-134; Henry Bridges, AC-180 and Loren Helm, AC-195.

OUTDOOR ERECTOR WILL BE AID TO MECHANICS



THE AIRCRAFT MECHANICS at AC-132 figure they will be in "hog heaven" or "high cotton" as soon as they start using the outdoor erector instead of crawling on a narrow ladder to reach the top of rudder on the Convairs.

ASSEMBLING OF THIS tail work dock for the Convairs is done between inspections, as the time will permit. A heavy work load due to vacations and shortage of personnel has slowed the work down somewhat, but the big smile shows that a Great Day is Coming.

BUILDING

A careful man I ought to be;
A little fellow follows me;
I do not dare to go astray
For fear he'll go the self-same way.

I cannot once escape his eyes,
whate'er he sees me do, he tries;
Like me, he says, he's going to be,
The little chap who follows me.

He thinks that I am good and fine,
Believes in every word of mine

The base in me he must not see,
The little chap who follows me.

I must remember as I go,
Through summer's sun and winter's
snow,
I'm building for the years to be,
The little chap who follows me.

T. W. (Tom) Collin, AC-746, found this poem and liked it well enough to send to the Beacon for publication.

BLOOD BANK MOBILE UNIT IS SET UP AT CENTER

A BLOOD DONATION program, launched by the Employees Associations during the week of February 9-13, 1959, has benefited a number of families at the Center. However, the reserve in the Oklahoma City Blood Bank had reached a low ebb of two pints in July.

SINCE IT WAS not always convenient for the donors to go to the Bank, the Bank came to the donors. On July 30 a mobile unit of the Community Blood Bank came to the Center. Results were quite pleasing, in that some 120 employees volunteered to give blood to build up the reserve. The net result was 70 pints added to our account.

ALTHOUGH SOME WHO volunteered were not called upon to give this time, nevertheless, they as well as the actual donors deserve a warm word of thanks.

THE EMPLOYEES WHO volunteered are:

AC-3.3a

J. C. Monroe

AC-85

Calvin Davanport

AC-90

W. M. Jackson

AC-91

Elwyn Carpenter

AC-114

Robert Jackson

AC-116

Glenn Hightower

Betty Trotter

Norma Williams

AC-130

Margaret Moody

Audry Stevens

AC-132

Allan Adkisson

Herbert Blanchard

Ivan Cullen

Jack B. Jones

F. R. May

Glynn Parsons

H. J. Schmith

T. A. Thompson

Evelyn Wiginton

Tex Wilborn

AC-133

Eldon Blehm

Richard Brewer

Weldon Burnett

James Clark

Sara Deakins

Henry Hardee

Marion Honeycutt

Charles Lattimore

Kenneth McCasland

A. F. McNally

W. G. Norris

Robert Seger

Bartley Williams

AC-134

James Crouse

Jack Ligon

Cecil Werner

M. C. McKessick

Joe Motley

AC-160

Evelyn Olson

AC-170

Pat Jones

AC-190

J. W. Gregory

Ralph McLain

AC-195

L. C. Helm

Carol Kiser

AC-197

Bob Haney

Jerry Self

AC-240

Roy Speakes

(Contd. next page)



LARGE GROUP OF EMPLOYEES VOLUNTEERS

-260
James Gammon R. B. Rogers, Jr.

AC-266
J. D. Garner Wm. Reed
E. B. McFadden John J. Swearingen

AC-520
Wm. J. Berkley G. W. Vidlock

AC-670
Minnie E. Bell Thom McDonald
Charles Biberatine J. C. Mallett
Lloyd Blackmore C. W. Mueller
Gerald Cook R. D. Moore
Robt. C. Floch Bob M. Payne
Helen Heffner Roy Pickett
Wayne G. Harris Paul Ratliff
R. J. Jensen Donald R. Sawyer
J. D. Kinard Wm. Shoumaker
Geo. Knight Paul H. Story
Albert Kuehne W. J. Welling
Bill Leaming John Wichels

AC-671
Walter E. Berklund Texalee Lawson
Homer Cook Paul Podelec
Sam Elliott John Snowberger

AC-672
W. R. Hudgins R. P. Miller
Max H. Jackson Philiar G. Rice
Charles Maupin Paul E. Watkins

AC-680
Danny Gregory J. O'Neal
Marcus Herron Eddie Routh
Luther Horton Charles A. Sobetsky
C. M. McGugin Russell Snyder
Don M. Morris Ronald R. Templin
Francis Threadgill

FIFO-H
Roy Johnson

AC-711
Romona L. Fizer

AC-745
T. W. Collin



AC-746
Jimmy D. Boyd Wayne Ledinski
Lewis Jackson C. L. McGuffee
Wm. F. Jones Jack Neil
Tom Lackey W. B. Rounsville
Pete Simms

AC-757
Lonnie Arthur Jim Ogle

AC-756
Wallace Beery J. L. Helton
A. A. Cagigal Bohn Huff
M. C. Capps James Norman
Homer Cones Leroy Powell
W. M. Crosby Samuel J. White

THESE DONATIONS ARE reserved at the Community Blood Bank for the Center's employees and their immediate families who may need blood in an emergency.

ANYONE WHO DID not donate at this time, but who would like to, can go to the Blood Bank at 527 N. W. 9 Street. The telephone is CE 6-0768.

SGT. TAYLOR HEADS NEW CENTER POLICE DETAIL



Back row, l. to r.: Don P. Bennett, Larry H. Bachoffer, Wm. J. Cochran, and Andre R. Schopfer. Front row, l. to r. Bill H. Stough, Sgt. Taylor, & Bob O. Coe

A NEW DETAIL of the Oklahoma City Police Department is now assigned to the Aeronautical Center for security, parking and traffic duty. They are under the supervision of Sergeant Howard T. Taylor.

THREE 8-HOUR shifts insure 24-hour protection at the Center. Schopfer, Cochran and Bennett currently handle the three shifts: 6:30 a.m. to 2:30 p.m.; 2:30 p.m. to 10:30 p.m.; and 10:30 p.m. to 6:30 a.m. with Coe as relief. Bachoffer and Stough also are available for relief duty.

THE ADT BURGLAR alarm system installed in various buildings at the Center has a centralized control in the Communications Section in Headquarters Building. This system will be activated during non-regular working hours, week-ends and holidays. If a door to any building or gate (Contd. next column)

(Police - contd)

is opened when the ADT system is activated, an alarm will ring. The panel board in the Communications Section will light up, indicating the door involved. When this happens, the telephone operator on duty will call the Police Officer by radio to investigate.

CLEARANCE PROCEDURES for admittance to buildings during other than regular working hours, 8 a.m. to 4:30 p.m. Monday through Friday, are also part of the security program in which the police detail participates.

WITH THE departures of the ATC instructors shown on page 15, Perry Bolyard, ATC Branch Chief, became reminiscent and came up with the following facts and figures:

Of the 118 Air-Traffic Control people who have had a tour of duty at the Aeronautical Center from 1951 to the present time:

1. Thirty are either at the Washington Office or at NAFEC.
2. Ten are in Regional Offices.
3. One is the International Liaison Officer at the Aeronautical Center.
4. Six are on OIC missions.
5. Six are in AACS positions.
6. Twenty one are at operational ATC facilities or in Resident Inspector positions at military bases.
7. Forty four are still at AC-520.

ATC INSTRUCTORS TRANSFER TO DISTANT PLACES



SEVERAL INSTRUCTORS IN the ATC
said their "good byes" in July as
they departed for posts around the world.

* * *

Don Bergquist has been selected by the Air Force for an assignment with the Director of Flight Facilities, AACS, South Ruislip (Eastcoate) England. Don and Mary, with their three children will spend some time in Minneapolis before departing via military plane on August 6 for London.

* * *

Raymond R. Cybulski is transferring to the Field Operations Division in Washington. "C", Sylvia and their four children made a rather hurried departure. He was selected and gone before word got around to all that a transfer was forthcoming.

* * *

WHEN A GIRL marries she exchanges the attentions of many men for the inattentions of one.

Pat Carley, the "old-pro" of Barber Shop Singing, has also gone to Washington, having been selected for a position in the Air Space Utilization Division. Pat, Sue and their three children departed on schedule July 13.

* * *

Joe Britton returned to his former facility, Anchorage tower. Joe and Emily, with their younger son Maddox, were very anxious to join another member of the family, Wayne, who has remained in Anchorage attending college.

* * *

The Aeronautical Center and particularly the Air Traffic Control personnel are going to miss these four very much. The coined expression, "parting is such sweet sorrow", can be applied as these four instructors leave AC-520. It has been a pleasure working with them, and to each we wish the best of luck and success in his new position.



Johnnie Shook serves Douglas Michaels, Jr. a slice of cake at her going away party.

RECENTLY THE FEDERAL Materials Division Electronics Shop honored Johnnie Shook with a going away party and presented her with a gift. Johnnie is one of the six women hired by F.M.D. as electronics equipment builder helpers.

JOHNNIE'S HUSBAND IS a career man with the Air Force and was recently reassigned to the Far Eastern Air Force. They are to be stationed in Japan. Although she has enjoyed electronic equipment fabrication work here at the Center, Johnnie does not deny looking forward to her forthcoming visit in Japan.

AMONG THE PROJECTS Johnnie has worked on at the Center are the portable flight progress boards, transcribed weather broadcast system, satellite panels and PPI Adapter Units. We will certainly miss her in the F.M.D. Electronics Shops but extend to her our regards for a pleasant voyage and an enjoyable tour in Japan.

- J. Halliburton

TRANSFERS FROM ANF TO WASHINGTON, D.C.

Mervyn Martin, Chief of the Communications Equipment School, transferred August 10 to a position in the Bureau of Facilities Communications Engineering Section. Martin came to the Center from Tulsa in July 1955.

Ed O'Brien, A chief Instructor in the D.A. School, transferred June 15 for a project engineer position and is assigned to a contractor in Rochester, N.Y. Ed came to the Branch as DME Instructor in July 1956 from the Third Region.

Leo Morrow, Radar Instructor, was reassigned out of Washington to be Resident Engineer at Culver City, California, where Radar Beacon equipment is being manufactured. Morrow came to the Center from the Fourth Region in August 1958.

Bob Penland, a Radar Instructor, transferred into a position in Systems Maintenance Division and is assigned to the computers field.

HOME STUDY PAYS OFF - SURVEY SHOWS

A CORRELATION study of records for 381 students of advanced resident classes shows that adequate home study gives almost complete assurance of success. For examples, a portion of the survey shows:

- 89.7% completing DS-90 passed resident courses.
- 89.5% completing the first 3 lessons of DS-100 passed resident courses
- 95.6% completing DS-100 passed resident courses.

Resident classes studied for the period of the survey were 9 regular courses in ILS/VOR, Radar, Tacan and DME, plus 2 Pre-Radar classes.

AC-132 EMPLOYEES ENJOY 'SHIFT-CHANGE' DINNER



WHILE OCCUPYING HANGAR #10 some months ago, the employees of Aircraft Maintenance Branch, AC-132, initiated a custom of having a covered dish dinner, prepared by their wives, to celebrate coming from the graveyard shift back to the day shift.

THIS HAPPY CUSTOM was revived for the first time since moving to the new Hangar #8 on July 9, 1959. Forty-five employees were present. The invocation was given by

Claude C. Mathews. Guests were Monroe A. Ebner, Branch Chief; Arthur E. Holmberg, Assistant Branch Chief, and Herbert G. Blanchard, General Foreman.

IN ORDER TO have a few extra minutes for discussion of problems and improvements, break periods are eliminated for that particular evening. The picture is evidence of the friendliness and cordial feeling among the employees.

- E. Wiginton

A WEDDING is the ceremony before which a man yearns for a woman, and after which the Y is silent.



Let Him Alone, George! Maybe He Knows More About It Than You Do.



Attached to bowling is Hector Hall. Caught his thumb in a bowling ball

OKLAHOMA DOES TOO HAVE REAL INDIANS



"WHERE ARE ALL THE INDIANS?" is a question frequently asked by students when they first arrive at the Aeronautical Center. Here is a brief summary about Indians and Indian Pow-wows in Oklahoma, the home of more Indians than any other state in the nation.

ALTHOUGH THERE ARE no more "wild" Indians within its borders, there still are many of the older generations who cling to their native tongues, still wear their hair in long braids, prefer gaudy blankets and moccasins to modern clothing, occupy brush arbors in the summertime in preference to their modern homes.

MOST OF THESE are in the vicinity of Cache and Indianola in southwestern Oklahoma; Watonga and Canton in west central Oklahoma; other scattered areas in western Oklahoma, and various portions of Northeastern Oklahoma in the vicinity of Bartlesville.

MEMBERS OF THE "Five Civilized Tribes", Cherokees, Creeks, Choctaws, Chickasaws and Seminoles, for the most part had abandoned their native customs generations ago. Most of these reside in eastern Oklahoma.

(Continued)

(Continued)from

YOUNGER GENERATIONS OF the Cheyennes, Arapahoes, Apaches, Kiowas, Comanches, Wichitas, Caddoes, Pawnees, Osages and Otoes are determined to perpetuate the traditions and customs of their forefathers by gathering at various places in Oklahoma during the summer months to stage colorful and spectacular "pow-wows." Each generally lasts three to five days. Whole families move into the "pow-wow" grounds, bringing their tepees, or build brush shelters, and camp after the fashion of their forebears.

THE AMERICAN INDIAN Exposition at Indian City, U.S.A., two miles southeast of Anadarko in southwestern Oklahoma is held every August.

A SUPPLY OF the new illustrated highway maps of Oklahoma is available in the Center's stockroom in the basement of Headquarters Building. Routes to these tourist spots are clearly shown on these maps.



Air Scouts David Rogers and Charles Powell paint sign on Squadron boat at Ft. Gibson Lake.

AIR SCOUTS HAVE CAMP-OUT AT CAMP JIM DARBY



Air Explorers at Ft. Gibson are Irvine Scott, Marvin Beatty, Charles Powell, David Rogers, Johnny Coppage, David Frame and John Shipley.



Stockade in front of buildings at Ft. Gibson catch Air Explorers Charles Powell, John Williams and David Rogers.



Explorers with guests, Senior High Girl Scouts from G. S. Camp.



It's "Chow Time" at Base Camp Jim Darby.

YOU OUGHT TO BE IN
PICTURES ?????

DEARIE, DO YOU remember when
you first EOD'd (entered on duty) at the
Aeronautical Center?

What were your first impressions?

What instructions and training did you
receive?

What guidance would have helped you
when you first began work?

Chances are, unless you are a fairly
recent employee, your impressions
are a little vague.

Plans are now in being for the development
and production of an indoctrination type
movie on the Aeronautical Center. The
movie will include considerable material
on the functions performed by the operat-
ing offices.

Perhaps, you, yourself, were bewildered
by aeronautical terms and abbreviations
thrown at you .. ATC, VFR, RAPCON,
TACAN, VORTAC. Or the building names
and nicknames .. FLOP-AIR, ANF, ATC,
Building K, or L, Hangar 8, etc.

Or the confusion (to you) of the various
numbers cropping up in daily conversation
such as "clear through AC-90" or "So-and-
so transferred to AC-520, etc.

Recently, organizational charts have been
useful in indoctrinating new employees.
Aviation Terminology Abbreviations lists
are now available. The Center's tele-
phone book helps in becoming familiar
with numbers, extension, reference, room.
And the cross-index directory with an
airview of the Center's buildings is helpful.

If you have any ideas that may prove an
aid in developing the indoctrination

aid in developing the indoctrination
movie, please pass them onto the
following representatives who have
been selected to work on this project:

J. B. Mitchell	AC-3
(In charge of project)	
A. K. Whitacre	AC-70
Russell A. Myers	AC-90
R. H. Will	AC-110
Ted DeWitte	AC-130
Charles Brill	AC-160
L. E. Shedenhelm	AC-200
Clifford Slack	AC-520
A. W. Schmitt	AC-670
Carl Drumeller	AC-680
Rex Merilatt	AC-700
E. H. Malone	AC-3
J. J. Swearingen	CAMRL

LEEPER (continued from page 7)

HAROLD ADMITS THAT he misses his
friends of years' standing but is still in
a group of Center alumni. He has been
in a car pool with Pat Carley and Harry
Hill has been neighborly to allow him to
use his parking permit for the present
time.

ALTHOUGH HE IS enjoying meeting new
friends and working with them, Harold
says he will "always have fond remem-
brances of the times at the Center we
worked and 'perspired' together.

"BYE FOR NOW, and thanks again for
the slick attache case - it's rained here
frequently and I'm saving it for dryer
weather and bigger lunches.

Regards

Harold."

THE BEACON PRESENTS OPERATING MATERIALS DIVISION

OPERATING MATERIALS Division (OMD) provides centralized logistic support for the maintenance and operation of Federal Airways and maintenance of aircraft. In performing this service, the Division provides four major supply functions on a centralized basis: (1) Warehousing, (2) Purchasing, (3) Stock Control, and (4) Traffic Management.

OMD SHARES THE HUGE 15-acre Warehouse with Federal Materials Division. Each organization has its own shipping and receiving facility, complete with railroad spur for rail shipments. Four large warehouse doors permitting entrance for largest type motor freight vehicle may be electrically operated from one push button raised or lowered by electric hydraulic



Entrance to Operating Materials Div.



OMD WAREHOUSES LARGE QUANTITY & VARIETY

devices to accommodate various heights of trucks and trailers to facilitate loading and receiving shipments.

THE CENTRALIZED warehouse service is available 24 hours daily including Sundays, holidays and Christmas to provide supplies when needed by the men in the field responsible for Federal Aviation Agency's control of air traffic, maintenance of aids to air navigation, and emergency repair of aircraft.

PENUMATIC TUBE system between OMD and the Aero Center Communication Center expedites the handling of dispatches. Requisitions by dispatch or by telephone for supplies to satisfy an emergency condition in the field is given special handling. As the boss says, "Use all available means to satisfy the emergency condition and take care of the paper work later". On occasion, OMD has provided faster service than the local merchants could provide. This is evident in a letter received from Chief, Airways Technical Field Office in Alabama, quoted below:

"On June 24, 1959 at 10:00 p.m., a priority I requisition for a receiver part was dispatched. The postoffice employees on the field were alerted to look for the package. At 10:00 a.m., twelve hours later, the package was delivered into our hands. I think this is faster service than we could have obtained if we had waited for the stores to open and gone to town for it. Please express our thanks to all concerned."

TO PROVIDE SUPPLY support for the several aircraft hangars and thousands of facilities on a centralized basis, OMD must warehouse a large variety and quantity of operating supplies which vary from paper clips to a 9-ton ARSR antenna or aircraft wing assembly. There are 55 active classes of aircraft parts and approximately 75 active general classes purchased, received, stored and issued by OMD. This involves approximately 60,000 individual line items of supplies



Bulk Storage Accessible to
Shelf Stock

and equipment. During fiscal year 1959 approximately 670,000 line items of general stock were invoiced to the 5,500 facilities and approximately 75,000 line items of aircraft stock were invoiced to the 16 aircraft locations in FAA.



ACTURED ABOVE IS a part of OMD's bulk storage where the backup stock is readily available to replenish shelf stocks. Also large items that cannot be stored as shelf stock, because of size, are stored in this area. Height can be used to an advantage for storage with the aid of mechanically operated fork lifts.

ALL WAREHOUSE material handling equipment is electric, battery powered which eliminates dangerous fumes and reduces noise fatigue.

IT WOULD APPEAR from the "Rheingold" cartons that substance may also be included in the centralized supply service. In addition to its use for toting nasty beer, the empty cartons are very useful for storing electronic spare parts and other components.

AS A MATTER OF fact, these "Rheingold" cartons caused near consternation last year when warehouse stocks packed in the cartons arrived from Region 4. Imagine the disappointment when OMD employees frantically unpacked the cartons to find electronic gear instead of that .. "cool refreshing -----"!

THE MYSTERY OF THE "Rheingold" cartons was finally solved when a representative from Region 4, Danny Sites, reported that he was the culprit responsible. The empty cartons were purchased from a distributor going out of business. Buying the cartons that way made a savings to the Government. The cartons cost far less than new corrugated shipping containers and proved to be much more satisfactory.



SHOWN ABOVE ARE Calvin Adams and Dale Marsh selecting stock from shelf storage for shipment to one of the field facilities. To facilitate the selection of stock, each bin is labeled with the catalog number and description of the item stored in the bin. The items



DC-3 wing and aileron assemblies. This is a good example of warehouse storage problems and space utilization.

selected along with the Invoice concerned are moved to the packing area where a final check is made to assure that the items selected agree with the description and quantity shown on the invoice.

A VERY IMPORTANT function in a supply operation is the packing of supplies for safe shipment to their destination. Electron tubes and other fragile items are given special packing care to avoid possible damage in transit. The urgency of need dictates the method of transportation, such as, air freight, air express, motor freight, etc., to move the supplies to its place of need with minimum delay. Constant study is given to latest packing and packaging methods to improve the efficiency and speed of OMD's shipping and traffic management.

THE VOLUME OF shipments approaches 2,000 daily with 15 to 25 motor freight vehicles delivering or receiving shipments at OMD.

SPECIAL PACKING IS USED FOR MANY ITEMS



A FEW OF OMD's employees in the processing of packing supplies for shipment are: Lloyd Adams, Burl Shafer, Million Shelton and A. E. Denny.

THIS PICTURE SHOWS a card punch operator preparing issue transaction cards from a Schedule of Allowance Form, FAA-2440. These cards are then processed through various auxiliary machines, such as Type 082 Sorter, to arrange them in the proper stock number order for determination of availability and update the stock records. The operator is Julia Campbell who left OMD for a date with the stork.



Type 024 Card Punch Machine



This is a view of the Electronic Accounting Machine installed in OMD. One of the many uses of this equipment is to maintain a perpetual inventory stock accounting system and to prepare

documents involved for the issuance from stock. The equipment also provides various statistical data for use in the supply management process, such as stock status reports.



THIS MACHINE IS the Type 082 Sorter, and, as the name implies, sorts punched cards in various desired sequences. The machine is capable of sorting 650 punched cards per minute. It is similar to the machine used on the once famous \$64,000 Question TV program.

TRANSACTION CARDS are then run through the Type 407 Accounting Machine to print an Invoice Form, FAA-2441 which serves as the issue and shipping document. This machine is capable of printing 150 complete lines of information per minute or a maximum potential of 18,000 alphabetic or numeric characters per mt.

Type 082 Sorter



Type 407 Alphabetical Accounting Machine

THE ALPHABETICAL Accounting Machine is under control of a wired control panel, visible on right side of the machine, which is custom-wired to meet the specification of each desired project. The control panel is considered to be the "Brain" of the machine.

THIS EQUIPMENT IS also used for preparing projects for Divisions other than OMD at the Aeronautical Center. Some of the major applications are (1) Aeronautical Center basic payroll information, (2) FMD punched card Stock Control Records, (3) Aircraft Standardization Time and distribution reports, etc.

THANKS TO R. W. Will for preparing this article on OMD and getting the pictures for us.

FIFTY YEARS MAKES A DIFFERENCE

IN 1911, daring aviation enthusiasts received the following rules for use of Aeronautical Apparatus:

"1. The aeronaut should seat himself in the apparatus, and secure himself firmly to the chair by means of the strap provided. On the attendant crying 'Contact' the aeronaut should close the switch which supplies electrical current to the motor, thus enabling the attendant to set the same in motion.

"2. Opening the control valve of the motor, the aeronaut should at the same time firmly grasp the vertical stick or control pole which is to be found directly before the chair. The power from the motor will cause the device to roll gently forward, and the aeronaut should govern its direction of motion by use of the rudder bars.

"3. When the mechanism is facing into the wind, the aeronaut should open the control valve of the motor to its fullest extent, at the same time pulling the control pole gently toward his (the aeronaut's) middle anatomy.

"4. When sufficient speed has been attained, the device will leave the ground and assume the position of aeronautical ascent.

"5. Should the aeronaut decide to return to terra firma, he should close the control valve of the motor. This will cause the apparatus to assume what is known as the 'gliding position', except in the case of those flying machines which are inherently unstable. These latter will assume the position known as "involuntary spin" and will return to earth without further action on the part of the aeronaut.

"6. On approaching closely to the chosen field or terrain, the aeronaut should move

the control pole gently toward himself, thus causing the mechanism to alight more or less gently on terra firma."

... (these were the instructions issued with the 1911 Glen Curtis "Pusher.")...

.....FIFTY YEARS LATER.....

The "aeronaut" may possibly be pushed aside by the "astronaut," and no longer is the aeronaut's "middle anatomy" merely the target toward which the aircraft's control stick is pulled, but rather the problem is how to get a glass of water, or articles of food into that "middle anatomy" while participating in High Altitude Flight.

The following facts were presented to the Federal Safety Council in Oklahoma City recently by J. J. Swearingen, Chief, Medical Research Laboratory Branch.

"Since the dawn of his existence man has been conquering his environment whether it be land, sea, or air.

"The vertical frontier now stands with an open door and beckons us to the outer reaches of our planet's atmosphere and space.

"The very thought of space has long occupied man's imagination yet still has produced an awesome mental picture of a black cold, hostile area of nothingness far out on the vertical frontier.

"We are concerned with the hazards that this hostile environment presents for our space pilots of the future.

"In present-day aviation medicine, our concern has not been limited to the lower atmospheric shells but has encompassed brief exposures to the upper borders of the stratosphere by Kincheloe 126,000 ft. and Simons 136,000 feet. Thus, aviation medicine has already been confronted with "space" flight problems and needs only to expand its interest further vertically to cope with

the problems of true space flight.

In this brief discussion I will first attempt to define space as an environment for man and discuss briefly some of the physiological problems.

"Since the launching into orbit of the Russian satellite SPUTNIK I (Oct. 4., 1957) the possibility of space flight has reached adult consciousness and I understand fathers are now telling their children about space flight - a complete reversal of the former trend. People are speaking glibly of space flight - outer space - and onward to the stars.

"Let us look at the vastness of space.

"First, we must realize that our earth is one of a small number of planets rotating around a single star - our sun - and that this star of ours along with the thousands of other stars we see at night form the galaxy in which we live.

Far, far out in space, there are thousands of other galaxies each as large as our own. If man can achieve the velocity of light, 186,000 mi/sec., as compared with present day escape velocities of 25,000 mi/hr, in one year he can travel 6 million, million miles.

"At this velocity - 186,000 mi/sec - he can reach the outer borders of his own galaxy in 100,000 years.

"To reach the nearest of our neighbor galaxies would require 20 million centuries. Thus we see that the greatest physiological problem to space travel and for which there is no foreseeable solution is the punitive life span of man. Thus with a life span of some 60 to 70 years we must recognize the futility of this type of space travel today and return to the relative short-term flights about our own star, and our neighbor planets.

"Perhaps in some future generation a re-orientation in, or a totally new theory of - relativity will permit true space exploration to other areas within our own milky way galaxy. Some say, but I cannot conceive it, that control of matter and energy by the human mind, ultimately will make life limitless in space and time. At the speed of light we can reach the sun in 8.3 minutes or the planet Pluto in 5-1/2 hours

"At our present supersonic velocities (25,000 mi/hr) we can reach Pluto in 50 years, our moon in one day, Venus in 44 days, Mars in 58 days.

"Though we speak glibly of space travel we are referring only to further extensions of height, duration, and speed that have always been the goals of man's increasing penetration of the atmosphere. The parameters of space flight can be categorized as propulsion, speed, time, the correlates of altitude, the presence or absence of the gravity vector, types of lift and finally the temperature parameter.

"The atmosphere of the earth can be considered for all functional purposes to extend 120 miles with 99% of its mass within the first 20 miles (100,000 feet). Man lives at the bottom of this ocean of air under a tremendous pressure of 15 pounds per square inch. Roughly, 3 pounds of O_2 and 12 Nitrogen. Thus, an O_2 pressure of 3 lbs/sq. inch in the lungs pushes enough O_2 into the blood to saturate it and sustain man in his native environment.

"As we leave the earth's surface, even though the proportional relationship of the gases remain constant - 1/5 O_2 and 4/5 Nitrogen, --the molecules become farther apart and exert less and less pressure. This reduction of pressure on the body with ascent to altitude has been the primary cause of most of man's physiological problems.

"Roughly, the pressure is halved for each 18,000 feet ascent. At 10,000 feet the total pressure is only 10 lbs./sq. inch and the O_2 pressure in the lungs is only 2 lbs/sq. in.

"By wearing an O_2 mask and breathing 100% O_2 , O_2 pressure in the lungs will equal pressure outside the body minus water vapor and CO_2 pressure in lungs and will take him to 38,000 feet.

"By breathing O_2 under pressure he can go to 50,000 feet. At 50,000 feet water vapor pressure and CO_2 pressure in the lungs equals the air pressure outside the body and even though he breathes 100% O_2 he cannot absorb any of it, and will become unconscious in 5 to 10 seconds.

"Complete lack of oxygen is called anoxia.

"The second most serious problem related to reduction in pressure is called dysbarism, aeroembolism, or bends.

"Large quantities of nitrogen are forced into solution in the body liquids and tissues by the 12 pounds/sq. inch pressure of this gas exerted on man at sea level. As man ascends to altitude the reduction in pressure on his body allows nitrogen to escape in the form of bubbles in the blood and tissues, just as CO_2 escapes from a bottle of soda pop when the lid is removed.

"At altitudes as low as 38,000 feet, these bubbles can cause chokes and bends and circulatory collapse followed by death.

"Still another problem is known as embullism.

"Everyone is familiar with the fact that water boils at a lower temperature on a mountain than at sea level. In fact, on some mountains the pressure is low enough to allow water to boil at such a low temperature that eggs cannot be cooked.

"At 60,000 feet pressure is only 1 pound/sq. inch and water boils at 98° F. which, as you know, is body temperature. Thus, at 60,000 feet man's blood vessels would be filled with steam producing almost instant death from embullism.

"To prevent anoxia, dysbarism, and embullism man has equipped present day aircraft with compressors which gather up the widely spaced molecules of the atmosphere and push them close together in the cabin. Hence, man has created a pressurized cabin, or in effect taken a section of his sea level environment with him.

"Above 80,000 feet where total pressure drops to less than 1/3 of a pound/sq. inch, the molecules become so scarce that use of compressors is no longer possible and man must resort to a sealed capsule.

"Within limits and for short periods man creates a satisfactory environment in the sealed capsule by releasing O_2 and nitrogen from bottles, absorbing CO_2 by chemicals and regulating temperature and humidity by air conditioning.

"However, when we contemplate a round-trip to Venus or Mars of something over four months even for one man, the weight and bulk of food, water, oxygen bottles, CO_2 absorbent, to say nothing of storage of urine and fecal materials would require a rocket of tremendous proportions. Man is a voracious animal who consumes one and one-half tons of food, oxygen and water per year.

"Research for a trip of this nature has been directed toward a sealed capsule similar to a balanced aquarium. Plants, probably an algae, would absorb CO_2 exhaled by man and give off O_2 . All human waste materials would be reconstituted and reused. Every drop of water, even invisible perspiration would

be conserved and recycled. Thus, we see that the sealed capsule or a section of his sea level environment taken into space, solves many of the physiological problems. However, as most man-made devices the cabin may not be completely trustworthy and may rupture, or be punctured by meteors.

"Above 400,000 feet man will encounter meteors ranging in size from dust particles to many tons. For this reason, space pilots will probably wear a secondary sealed capsule known as a pressure suit which will also serve as protection for any explorations outside the cabin.

"Studies on the human centrifuge have shown that man can be accelerated to 25,000 miles/hour by a series of 10g accelerations similar to those produced in a multistage rocket. 10g is the maximum man can tolerate and must be applied from chest to back.

The successful flight of the two monkeys, Able and Baker, along with their re-entry has shown that acceleration per se is not an insurmountable problem.

"Having attained his maximum velocity man will find himself floating in his cabin without gravity, perhaps for long periods of time.

"Gravity free tests of about 40 second duration have been conducted in aircraft by means of parabolic flight. Subjects on these flights reported a feeling of exhilaration while floating in space.

"A slight motion such as raising the hand to the face caused the body to spin and produced nausea.

"Subjects were asked to drink a glass of water. As they raised the glass to the face and stopped, the water had enough momentum to leave the glass in an amoeboid mass and engulfed the face. If he

raised the glass very carefully and very slowly he could keep the water in the glass, but when he tipped it the water would not run into his mouth.

"Some tried to slop it out of the glass and catch some in the mouth, but this proved messy and most of them strangled. Drinking with a straw is no better since bubbles in the water will not rise and subjects drank more air than water.

"Squirting water into the mouth with plastic squeeze bottles proved very successful.

"Eating was found to be difficult as everything had to be pushed down by peristaltic action. There was a tendency for small particles of food to float up into the nose and sinuses. And having eaten, since there is no gravity to hold the food down, any slight pressure - such as by the seat belt - on the stomach produced vomiting and nausea in that order.

"The last physiological problem to be discussed is one of exposure to radiation.

"Measurements made with detectors in Explorer satellites and Pioneer III moon shot show the existence of high intensity radiation fields at altitudes greater than 500 miles.

"The fields are confined to two rings around the earth by the earth's magnetic field. The first ring extends from approximately 1,400 to 3,400 miles above the earth, roughly in line with the equator. The second, about 4,000 miles thick, apparently begins at an altitude of about 8,000 miles.

"The amounts of radiation that man can tolerate and not exceed a specific acceptable risk are known. More research is needed to determine the intensity and
(Continued on page 36)

ILS Class #146

Arquias, Rodrigo
Avila, Jose S.
Berube, Robert H.
Carmena, Felipe D.
Desautels, Edmond J.
Earle, William E.
Rundley, Harry L. Jr.
Okamoto, Tadashi
Passay, Russell
Richard, Joseph O.
Ritter, Glenn L.
Rojas, Carlos S.
Rosenow, Arnold W.
Starowolsky, Josef
Tokki, Masaru
Twyefort, John P.
Warden, Roland R.
Widmayer, Lloyd B.
Williams, Frederick W.
Sasaki, Yutaka

ILS Class #147

Gillam, George S.
Oust, John H.
Kylton, William A.
Jedlicka, Stanley
Kouchakdjian, Jacques S.
Norris, Richard L.
Shaw, A. V. Jr.
Tri, Delbert V.
Vail, Dexter R.
Wallace, Eldon
White, Phil F.
Soregga, Don L.

VOR Class #148

Flanagan, Patrick J.
Graff, Jerry F.
Leedom, James E.
McKay, Joseph F.
Miesel, Charles J.
Moore, Frederic G.
Sharp, Robert G.
Shupe, Richard D.
Wilson, George D.
Jackson, James H.
Ranke, Robert A.

Certificates Issued for June 1959

ILS Class #149

Bolden, Robert B.
Holznagel, Harold J.
Johnston, Howard V.
Klein, Frank H.
Nunes, Leslie A.
Paschen, William P. Jr.
Perlenstein, Norman L.
Walker, Kenneth G.
Rogers, Vartia O.

ILS Class #150

Doyle, Francis J.
Edmonson, Lionel J.
Freeman, James R.
Glaszow, Kolbeinn
Linster, John J. Jr.
Mecall, William J.
Mauville, Eleftherios J.
Montgomery, William D.
O'Leary, Thomas D.
Willie, Kenneth V.
Wilson, Carlos G.
Dunn, Arthur D.
Leary, James R.
McAndrew, Ralph B.
Vogel, Alvin H.

VOR Class #151

Borecky, Lester J.
Boyd, Robert S.
Jennings, Jackie H.
Larsen, Herbert H.
Reid, William J.
Zubillaga, Alfred
Holt, Lloyd E.
Marula, Joseph J.
Patterson, Ernest M.

VOR Class #152

Donaldson, Harry B.
Forester, Jake E.
Goin, Kenneth L.
Howard, Morris S.
Johnston, Richard M.
McKay, Douglas W.
Mitsch, Raymond L.
Reeves, Edwin L.
Wilson, Bruce B.
Baker, Ben
Stapf, Wayne C.

VOR Class #149

Gradio, Raymond E.
Bryner, Billy D.
Fink, Stanley W.
Harrison, Ivan D.
Ruh, Joseph
Zoch, H. James
Kuntz, Donald E.
Linn, Chas. Oh.
Phillips, Richard
Raffa, Raymond L.
Royer, Meddie J.
Miggins, Willard M.

VOR Class #149

Coleman, Calvin D.
Gould, LeRoy T.
Kearns, John A.
Leavell, Donald E.
Fruitt, Earl D.
Steward, Maurice L.
Takenaka, Hideo
Wasolowsky, Alexander
Hutchinson, Carl A.
Brooks, Terry J.
Gaugl, Edward M.
Hawer, Edwin G.
Pemberton, Jack J.
Woodbridge, George H.
Tearley, Alan R.

VOR Class #150

Bray, Alfred L.
Coates, Thomas M.
Fujiwara, Tanotou
Golombeski, Joseph M.
Holland, Garland L.
Hutson, Bernice L.
Lovelace, Rylan V.
Miller, Norman L.
Voss, Roger E.

Establishment Class #2

Bevil, Larry H.
Coroit, Raymond E.
Hightower, Ronald O.
Morrill, Bruce W.
Valenzuela, Manuel
Waldmann, Melvin M.
Wines, William G.

Certificates Issued for July 1959

ILS Class #151

Adomaitis, William B.
Edwards, Sidney D.
Furukawa, Susumu
Hansen, Duane A.
High, Roy J.
Isaac, William O.
Kristensen, Milton O.
Latimer, John L.
Lautenschlager, Lyle R.
Morris, Raymond L.
Thompson, Eugene C.

VOR Class #153

Bagley, Paul
Batman, Wilbur D.
Bertha, Albert J.
Bauer, Arthur C.
Jarvi, Terho A.
Murray, Richard D.
Thurber, James C.
Ward, Donald W.
Jones, Houston C.

Establishment Class #3

Beach, Howard F.
Brammer, Richard G.
Driver, W. B.
Jenkins, Leon L.
Jorgensen, Ronald P.
McKittick, Thomas E.
Middlebrook, Don
Vick, LeRoy A.

D + T Class #2

Bruesimmer, John W.
Bryant, Calvin S.
Collins, Charles W.
Dunning, Donald A.
Fulstone, Lawrence S.
Juenemann, Robert G.
Stanley, Haywood A.
Stansbury, Richard D.
Vea, Arthur P.

VOR Class #149

Arriza, Joseph E.
Clark, Noah G.
Earhart, Lee D.
Feller, Lee R.
Guinn, Robert W.
Hosler, Virgil I.
Huss, Joseph F.
Jordan, Charles W.
Kielhorn, Elwood D.
Lake, Robert J.
Mickelson, Gordon A.
Mann, Herbert D.
Messier, Thomas P.
Price, Joseph R.
Pettit, Arthur G.
Prochaska, William T.
Stevenson, Norman H.

STUDENTS RECEIVING

Tacan Class #9

Bunn, William E.
Desautels, Edmond J.
McFarridge, Charles B.
McLaughlin, William J.
Minter, George W.
Rooney, Paul R.
Twyefort, John P.

Short Tacan Class #10

Aker, Lloyd E.
Blair, Robert E.
Borgelt, Karl G.
Brooks, Harold G.
Cimmetry, Vern C.

Electro-Mechanics Class #7

Estep, John H.
Helland, Wayne M.
Kohs, Frank B.
Parsons, Leonard E.
Reed, David A.
Stewart, Joel J.
Virchow, Robert R.
Joseph C. Devine
Walter J. VanLoon

Radar 130

Addins, Harry S., Jr.
Anderson, Russell D.
Babetski, Albert R.
Beyersdorf, Daniel F.
Broderick, Richard A.
Brown, James D.
Bruce, James I.
Bunch, Bobby H.
Carter, Charles E.
Deckert, Orville L.
Delaney, Richard H.
Denman, Jack E.
Deshaies, Richard R.
Ennis, Vern H.
Frisbee, William L., Jr.
Gunther, Louis J.
Hilde, Donald P.
Hixson, Kenneth H.
Hohlbauch, Robert E.
Hollenback, Hansell G.
Itoh, Yoshinobu
Johnson, Frank W.
Jordan, Max A.
Kanazawa, Ryo
Knudson, Robert L.
Kouns, David C., Jr.
Kozlowski, John
Laird, Robert R.
Landers, Tom J., Jr.
LaPrade, Paul P.
Lynn, Russell K.
Majors, Ivan E.
Malone, George L.
Moell, Warren J.
Rasmussen, Oscar J.
Schenk, Charles W.
Smith, Edward E.
Speraw, Robert A.
Stephens, William E.
Taylor, Francis P.
Thomas, James A.
Wenzel, Clarence W.
Williams, James M.
Worley, James H.
Kitson, Lewis E.
Kuklish, Steve
McKeehan, James E.

Short Tacan Class #10 cont.

Coleman, Calvin D.
Cottle, Elmer C.
Fischer, George J.
Guokas, Vytautas S.
Heckman, Norman M.
Hulbert, George E.
Jacobson, John W.
Johnson, Eugene G.
Jones, George R.
Jones, James D.
Kester, Henry A.
Langer, William A.
McCarthy, George E.
McPherson, Duane F.
Marques, Joe F.
Martin, Donald D.
Morgan, Guy F.
Patterson, James R., Jr.
Richey, William L.
Smith, Laurence B.
Thompson, Charles A.
Toney, James M.
Turner, William W.
Weber, Donald C.

Electro-Mechanics Class #6

Guyton, Lance
Morin, Donald M.
Palmquist, Douglas D.
Brown, Russell R.
Lloyd, Oliver G.
Osborne, John C.
Townsend, Robert L.
Babb, Rufus H.
Downs, Norman R.
Edalat-Parsi, Afatoon
Ho, George C. C.
Horrocks, Harold D.
McBreyer, William E.
Neville, Thomas, Jr.
Powell, William F.
Taleh, Parviz
Simmons, Lee
Brown, Ardell R.
Johnson, John H.
Sutton, Harold A.

Radar 131

Beaver, Charles R.
Bierch, Richard J.
Booker, James L.
Bradley, Robert A.
Burbridge, William R.
Dealing, Robert E.
DeLema, Joaquim G.
DuBose, Roger A.
Dunn, Leonard R.
Elwirth, Harold M., Jr.
Estes, Jimmie W.
Fong, Richard W.
Gilden, Larry J.
Gruber, Walter W., Jr.
Harder, Willis D.
Hayden, Chester M.
Johnson, John E.
Kohl, Charles J.
Krech, Clarence B.
Kuroiwa, Kenneth K.
Laping, Berino
Leising, William C.
Long, Jerry Z.
Mallet, Andeal J.
McKeehan, James E.
Moreira, Walder
Mortensen, Ronald J.
O'Brien, Robert T.
Powell, Herbert G.
Rice, Jack C.
Rich, Leland C.
Seabrook, Harvey E.
Seger, Robert F.
Smith, Ernest D.
Smith, Frank G.
Tighe, Matthew J.
Turcotte, Roland G.
Welch, Stanley E.
Western, James R.
Whitehouse, Warren M.
Wilson, Perry L.
Wolf, Robert E.
Yee, Charles S. Y.
Pierson, Robert A.

Radar #12

Allen, Robert L.
 Anglin, Horace L.
 Balding, Russell E.
 Bankhead, Paul L.
 Bauer, Byron L.
 Berry, Henry C.
 Brown, Curtis E.
 Burich, Robert R.
 Clement, Arlen M.
 Crook, Ralph E.
 Deitmaring, Ordvin L.
 Douglas, Aurelius W., Jr.
 Elliott, Robert W.
 Federico, Arturo, Jr.
 Fredette, Joseph B.
 Galpin, Robert A.
 Hayton, Richard J.
 Hershberger, Glen
 Hicks, Elmer S.
 Jackson, Cecil L.
 Johnson, John E.
 Karnes, Chalmers G.
 Kelley, Francis J.
 Kincaid, Jerry L.
 Mandell, Arthur A.
 Moreira, Walder
 Neiner, Duane C.
 Nicol, Fred A.
 Niven, James E.
 Obori, Makoto E.
 Ostrom, Melvin L.
 Parker, Joseph D.
 Reynolds, Harold L.
 Richter, Robert J.
 Rowe, John E.
 Ruggiero, Anthony
 Schnabel, Charles F.
 Scurlock, Herbert A.
 Sloan, Lester E.
 Stutman, Robert J.
 Sweeten, Donald L.
 Thompson, Augustus L.
 Vallie, Frank L.
 VeZolles, Elwood M.
 Vierthaler, Eugene F.
 Waller, William J.
 Wilson, Kenneth W.
 Dalton, Fred B.
 Wildenberger, John F.

RMI REPEATER #2

Akins, Willard C.
 Calvert, Ronald M.
 Craig, Ralph C.
 Dinwiddie, Ralph B.
 Essary, William M.
 Farthing, Deau A.
 Fowler, James R.
 Keys, Carlton A.
 Matthews, Byron W.
 Moss, Henry P.
 Myers, Clare H.
 Schmidt, Eugene S.
 Schroeder, Russell C.
 Swainson, Norman T.
 Travis, John H.

RMI Repeater #3

Begley, Robert E.
 Boremski, Robert
 Charland, Henry E.
 Cochran, Virgil E., Jr.
 Duncan, Joel G.
 Koch, H. James
 Lawson, Delbert W.
 McCausland, Raymond W.
 McMullen, William A.
 Phillips, Raymond J.
 Reyes, Alfred J.
 Ritter, Glenn L.
 Shamblin, Pat
 Simonson, Richard M.
 Swanseen, Robert W.
 Wiley, Robert W.
 Witherspoon, Gene A.

Special Region #2 Air Conditioning Class #3

Barnum, Dale E.
 Berch, Robert B.
 Coleman, William A.
 Curry, Bobby E.
 Davenport, William A.
 Fisher, Gail B.
 Forbes, Robert A.
 Ludwick, Arville J.
 McCormick, Donald V.
 Robinson, Roy B.
 Ciarracca, Amilcare J.
 Desselle, Ector P.
 Duncan, Richard M.
 Leibert, Robert R.
 Van Trump, David K.
 Waldo, Frederick E.
 Weber, William A.

Certificates Issued to Graduating Students (Continued)CE Class # 123 - May 15, 1959

Mario D. S. Almeida
 Richard S. Baker
 Phillip W. Barbre
 James E. Bowles
 Carlos F. D. Carneiro
 Matthew B. Cartwright
 Miyasak Chu-kes
 Claire M. Cooper
 Leonard E. Dennis
 Garnett B. Hill
 Clyde O. Lindley
 John H. Miller
 Ralph A. Moulton, Jr.
 Hector Carbone
 Manuel S. Dames

Donald A. Nagles
 Anthony A. Previte
 Frederick H. Ricker
 Melvin R. Robert
 William A. Ross, Jr.
 Carlos F. Rowles
 John M. Sherwood
 Richard A. Sprague
 Richard Vordran
 Stephen B. Washington
 Howard L. Willson
 Henry P. Witthohn
 William Woodrum
 Thomas W. Zindars

CE Class # 124 - May 29, 1959

Donald L. Fraley
 Joe D. Gilkison
 Lionel E. Gleason
 Donald J. Gross
 Chester Gross, Jr.
 Albert J. Hagan
 Eddie R. Harcastle
 Frank J. Hobbs
 Robert L. Hopkins
 Edwin L. Jansen
 Yoshimitsu Kubo
 James L. Lemm
 John K. Nakanishi
 Juan Garcia
 Andrew H. Lessenden

Joe L. Lynn
 Mario P. Pantoja
 Delvin Perez
 Robert F. Pospichal
 Jack R. Sandford
 Raymundo R. dos Santos
 Bobbie G. Tillman
 Marshall M. Malcom
 Richard J. Vondrasek
 Matthew Van Randwyk
 Arthur E. Westlund
 Larry D. Wilbur
 Verle G. Willis
 William C. Wilson

CE Class # 125 - June 12, 1959

Gerald A. Akers
 Joseph B. Alcin
 Clarence W. Bryant
 Gene T. Crabtree
 Herman H. Dohaan
 Ramon R. Figueroa
 George F. Frost, Jr.
 Robert D. Gray, Jr.
 Curtis E. Harris
 William J. Hill, Jr.
 James A. Johnson
 Francis L. Kifer
 Nguyen Van Lam
 James N. McAlister
 Nguyen Thuyen

Miles W. Barham
 Warren J. Nancey
 Pramote Kilanattat
 Leander P. Rademacher
 Carl A. Rosetti
 Theodore Samuels
 Juan J. Santiago
 Theodore A. Schuermans
 Irving P. Schreier
 David M. Shultsberger
 Donald L. Starckweather
 Robert L. Stubblefield
 William Talley, III
 Robert A. Teall
 James F. Trace

Certificates Issued to Graduating StudentsCE Class # 125 (Special Teletype) May 1, 1959

Robert N. Hubbard
 Joseph D. Perry
 James N. Vickers
 Albert J. Wankowicz

CE Class # 127 (Special Teletype) May 29, 1959

William R. Berhost
 Albert J. Durante
 Robert F. French
 James R. Ingels

CE Class # 129 (Special Teletype) June 26, 1959

Billy A. Belcher
 John E. Early
 Joseph L. Land

CE Class # 131 (Special Teletype) July 24, 1959

Richard M. Johnston
 Melvin G. Wells

CE Class # 122 - May 1, 1959

Stephen Boroski
 Odos M. Brown
 Stanley P. Brudney
 Barrell K. Coffey
 Claude L. Cole, Jr.
 Donald G. Coomes
 Max W. Duncan
 James L. Dunn, Jr.
 Claude A. Eaker
 Kotol Gans
 Bob D. Ganes
 Donald T. Kam
 Donald E. Kent
 Willy M. Knighten, Jr.
 Clayton Muller
 Raymond J. Phillips

CE Class # 126 (Special Teletype) May 15, 1959

Albert M. Austin
 Jack C. Barton
 William L. Good
 Delbert I. Kinney

CE Class # 128 (Special Teletype) June 12, 1959

Edward L. DeFord
 Fred L. Keller, Jr.
 Dexter R. Vail

CE Class # 130 (Special Teletype) July 10, 1959

Harold R. Climes
 Gilbert H. Stranghoener

Edward T. Watts
 Joe D. Brown

Arthur L. Chamberlin
 Tien Fan Lee
 Ko Ching Ling
 Robert W. Logan
 Teh Ling Ko
 Edward F. McCloskey, Jr.
 Charles A. Oleza
 Harold J. Pearson
 Charles E. Poer
 Charles E. Shell
 Leslie C. Torguson
 Francis J. Frost
 Charles E. Utterback
 John T. Wharam, Jr.
 Paul R. Wolford

Certificates Issued to Graduating Students (Continued)CE Class # 126 - June 26, 1959

Lyle L. Adams
 Fairington J. Allenan
 George N. Antimisiaris
 Jack E. Brasseur
 Robert J. Courson
 George Y. H. Do
 Robert F. Eiggins
 Johnny R. Etheridge
 Donald R. Fellows
 William S. Pike
 Norman E. Gibat
 Vester I. Greer
 George P. Hood
 Ronald P. Jorgensen

Melvin R. Larsen
 Robert D. Morrison
 Charles W. Nelson
 Robert L. Patterson
 William F. Peugh, Jr.
 Charles Raddi
 Mansour Refghi
 Eugene A. Sires
 Cecil F. Strange, Jr.
 James R. Teylor
 Robert E. Wanless
 James R. Watson
 James W. Hancock
 Raymond Landiak

CE Class # 127 - July 10, 1959

Conner R. Armstrong
 Roy L. Barger
 Herman B. Bereece
 George D. Brownlie, Jr.
 Paul Brubaker
 James J. Coyle
 Charles L. Cummins
 Jon R. de Flon
 Cecil C. DeVeny
 James R. Dooley
 Richard Duffin
 Virgil G. Haasper
 Leonard M. Hinkle
 Elden L. Ice
 Theodore D. Little
 David E. Smith

Robert G. Dilfield
 Howard C. Fuller
 Irving L. Jones
 George C. Keiss
 Joseph W. Kelso, Jr.
 Gerald A. Kemdzior
 Crawford W. Lee
 Anthony D. Marillo
 Ronald W. Paulson
 Jon C. Ryberg
 Eugene F. Shrouf
 Johnnie W. Stockton
 Curtis L. Sylvester
 Quentin S. Taylor
 Ralph A. Thomas
 Robert L. Tonkum

CE Class # 128 - July 24, 1959

Michael R. Auranadt
 Wesley C. Beane
 Finmer F. Bell
 Leon C. Callaway
 Raymond Cardona
 Harold E. Deislinger
 Jackson H. Fowler
 Dennis H. Gibbs
 William J. Heffern, Jr.
 James L. Helms
 Loren M. Jellinski
 John P. Jones
 James W. Jonbert
 Chester K. Kriner
 Mark K. Lee
 Paul C. Lee, Jr.

Walter W. Lee
 Jose A. Lliteras
 Earl L. Lord
 Vernon A. Lundberg
 Richard Mateo
 Donald C. Milles
 Harlan E. Newman
 John J. Noles
 Archie C. Palmer
 Billy R. Simpkins
 Ted L. Shroyer
 Howard H. Smith, Jr.
 William E. Smith, Jr.
 Harvey D. Stanley
 Raymond G. S. Wong

TE - 116

TE - 112

Donald R. Allen
 Ernest L. Bailey
 John C. Blankinship
 John P. Brown
 Melvin D. Burnett
 Eugene A. Case
 Leslie L. Dodson
 James O. Duvant
 William J. Getzinger, Jr.
 John F. Gohdett
 Doulphus A. Harrison
 Gene D. Johnson
 Harold E. Lampton
 William R. McClasky
 Irvin A. Nicholson
 Donald E. Parker
 Roy D. Peck
 Donald E. Pierce
 L. D. Rankin
 Ellis Schneider, Jr.
 Claude L. Walls

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 Miami Center
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 Ft. Worth Center
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 Jacksonville Center
 San Antonio Center
 San Antonio Center
 San Antonio Center
 El Paso Center
 San Antonio Center

Charles W. Caid
 James L. Crain
 Donald A. Enders
 Alfred J. Hanks
 Grayle D. Harris
 Bruce K. Henschel
 Robert A. Hughes
 Robert L. Johnson
 Robert G. Keim
 Kenneth R. Knoben
 Frank W. Kratter
 Gerald V. Lambert
 Ira H. Lipscomb, Jr.
 Harold D. MacLennan, Jr.
 Adam G. Quandt, Jr.
 Harold M. Reichelt
 Roger C. Rydell
 Lee A. Walker
 Richard J. Wolfe
 Milton E. Wood
 Peter Zaleski

Los Angeles Center
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TE - 113

Melvin Ackley, Jr.
 Robert R. Badansk
 Donald W. Bagley
 O. Lee Baldridge
 Angelo J. Barro
 Robert L. Bramble
 Dale E. Brichen
 James H. Cain
 John E. Clark
 Donald E. Clendenin
 Thomas G. Coles
 Arthur R. Doud
 Edward L. Drysdale
 Bernard E. Forcht
 Francis J. Frantz
 Robert A. Garrett
 Donald J. Green
 James L. Gerard
 Richard A. Hemingway
 Bobbie G. Hill
 Kenneth L. Hodges
 Jay L. Small
 John F. Stevens

Indianapolis Center
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 St. Louis Center
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Joseph D. Baker, Jr.
 Vernon W. Bates
 Sylvester T. Burns
 Willis E. Cagle
 Roy E. Chapman
 William I. Cheney
 Toby Cooper
 George E. Dacon
 Robert W. Dillard
 Joe T. Floyd
 Edward L. Garrett
 Perry L. Gibson
 James F. Godwin
 Glen G. Haley
 James A. Harden
 Frank R. Kastner
 Larry G. Kes
 Robert W. Leggett
 Jose F. Martinez
 William R. Massey
 Donald E. Motrison
 Owen E. Ogden
 Robert G. Sael
 Clarence R. Thomas, Jr.
 Joe A. Trapnell
 Grier S. Yoder

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 Jacksonville Center
 El Paso Center
 Atlanta Center
 New Orleans Center
 Ft. Worth Center
 San Antonio Center
 San Antonio Center
 Ft. Worth Center
 El Paso Center

TE - 114

George W. Humphries
 Oscar J. Kantmann
 Edward C. Kayser
 Walter E. Lewandowski
 Curtis R. Logan
 Roy T. McIntire
 Richard R. Mohr
 Marshall D. Munro
 Sterling E. Osum
 Joseph F. Palazzola
 Bill J. Porter
 Carl E. Sandbothe
 Claude J. Schuldt
 Edward G. Shokowski
 Monty L. Slaybaugh
 Robert L. Southwick
 Arnold K. Storm
 William R. Stuart
 Anacito Tandel
 Gaylord E. Vandervel
 Donald L. Vennertloh
 Edward E. Whalen

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TE - 115

Philip C. Austin
 Harold A. Baraga
 John J. Butler
 John M. Carley
 Emil Chovan
 James D. Gaunt
 William Gerrick
 Howard R. Goodson
 John F. Greenwalt
 Howard H. Harrigan
 Samuel E. Harvey
 James J. Kelly
 Gerald LaSieg
 Elvin E. Main
 Donald E. Mandel
 Donald G. Mechler
 Carl A. Oakland
 John D. Richards
 Reuben Streepser
 James L. Thompson
 Harrell C. Vanis
 Frank R. Whitman
 David G. Whitney

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 New York Center
 Washington Center
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 Boston Center
 Cleveland Center
 Pittsburgh Center
 Cleveland Center

TE - 118

Richard D. Arner
 Michael Chabra, Jr.
 Joe Chavez
 Ernest M. Demaray
 Lowell S. Dygert
 Nolan B. Evans
 Lon L. Everly
 Charles A. Ferguson
 Clarence E. Hagberg
 Harold D. Holden
 Frederick L. Kopke
 John E. Lloyd
 Marjorie E. Lyles
 Paul B. Moser
 Harold P. Quill
 William W. Reed
 Jack E. Roark
 Stephen A. Sassanick
 John S. Sellers
 Eddie W. Shirley, Jr.
 John E. Shomars
 Key S. Springer
 Otis L. Tucker
 Darrell D. Vialle
 Marvin E. Ware
 Orestes R. Yonkos

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 Kansas City Center
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TE - 119

Chester D. Anderson
 Dempsey D. Archer
 Kenneth J. Ball
 James W. Burghardt
 Gilbert J. Carlsen
 Stanley S. Crawford
 Ernest F. Delman
 Kendall S. Dodd
 Ronald L. Erickson
 Ellery W. Johnson
 John T. Lazarek
 Earl B. Levitt
 John K. Ludwig
 Grant L. Mitchell
 Robert E. Noble
 Edward M. O'Kelley
 Theodore C. Paulos
 Winfree A. Sordellect
 Forrest E. Troubridge
 Charles B. Webb

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TE - 120

James R. Aukey
Guy J. Bakons
Norman Guettler
Thomas E. Cote
Desmond H. Hempton
Laurence C. Brown
William F. Morsey
Eugene B. Hutchison
Harry J. Johnson, III
George R. Kmet
Thomas M. King
Billery M. McClair, Jr.
Allan MacDonald
Harry L. May
Edward L. Moffit
Ralph N. Palmer, Jr.
Salvatore Scallie
Anthony S. Serlino
John Smith
Robert A. Viera

Greater Pittsburgh Center
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Cleveland Center
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Washington Center
Cleveland Center
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Pittsburgh Center
Cleveland Center
Boston Center
Boston Center
Boston Center

TE - 121

Alfred N. Anderson
Clair M. Billington
Herbert E. Caldwell
Paul R. Cecil
Warren G. Comer
Leo P. Cournoyer
Charles A. Cox, Jr.
Eric G. Crampton
Floyd E. Foster
Joseph O. Gaul
William T. Giff
Thomas A. Griffin
Jerry L. Hagen
David R. Hall
Robert L. Kingery
Opie A. McBroom
Guy L. McConnell
William B. McCormack
Kenneth D. Meyer
Gilbert D. Mitchell
Edward G. Pavlick
Valdean J. Puzler
Robert D. Reed
Richard E. Reeves
Lee R. Riddough

Kansas City Center
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TE - 122

Kenneth E. Anderson
Stephen D. Rodman
Donald M. Burke
Leonardo Cano
Carl W. Clark
Fred E. Collier
Edward Condon
Daniel L. DeFrates
John D. Dodson
Myron E. Dover
Dale V. Dresher
Jack E. Foster
Adolpho H. Garcia
Wesley A. Hagedorn
Donald G. Heath
Francis J. Herman
Patrick N. Herrigan
Martin J. Loeblain
Kenneth L. McKee
Edward V. Niece
John P. Nelson
Eugene E. Runk
James W. Shelton
Richard G. Taylor
Wesley W. Walker

Seattle Center
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Great Falls Center
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Phoenix Center
Great Falls Center
Great Falls Center
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Great Falls Center
Great Falls Center
Great Falls Center
Phoenix Center

TE - 123

John R. Baldwin
John P. Boney
Adolph Carson, Jr.
Maple Collins
Robert G. Condit
Hubert Eatep
Alvin R. Fletcher
Charles W. Franks
Harold L. Hoff, Jr.
Kenneth W. Hosen
Carl L. Hudnell
James D. Jones
Jerry R. Kraft
Charles B. Leonard
Robert D. McElroy
William C. McIver, Jr.
William T. Moore, Jr.
William F. Nichols
Wendel E. Ogletree
James J. Quinn
Robert D. Raymond
Thomas E. Smith, Jr.
Louis P. Spinnaza
Richard F. Tacy
Laurence P. Terrill, Jr.
Robert L. Weikart

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Atlanta Center
Atlanta Center
Jacksonville Center
Memphis Center
Atlanta Center
Miami Center
Memphis Center
Jacksonville Center
Seattle Center
Miami Center
El Paso Center
Miami Center

TE - 124

Fred Adams
Glenn Crawford
Donald F. Daly
Robert D. Dean
William L. Doonan
James T. Ervin, III
Stanley J. Gromelski
Raymond J. Harnelung
David I. Hart
Jack R. Harnley
Robert E. Hughes
Peter M. Jennings
Gordon B. Jividen
Raymond Koeff
Jimmy G. Midkiff
Fred Mitchell
Donald L. Musser
Edward J. O'Connor, Jr.
John S. Roth, Jr.
Rudolph W. Rudd
Harold L. Smith
Paul M. Surface
Maurice E. Taylor, Jr.
Eugene B. Thomas
George L. Thornton
Emmett L. Turner

Cleveland Center
Cleveland Center
Boston Center
Pittsburgh Center
Washington Center
Cleveland Center
Norfolk Center
Cleveland Center
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Boston Center
Cleveland Center
Cleveland Center
Norfolk Center
Detroit Center
Washington Center
Seattle Center
Washington Center
Cleveland Center
Norfolk Center
Norfolk Center
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Cleveland Center
Cleveland Center
Seattle Center

TE - 125

Charles S. Alter
John L. Blake
Clarence Combs
Fred P. Cowin
Norman T. Crawford, Jr.
Donald A. Dunn
James W. Ewert
Ralph H. Flak
William K. Fryer
Wesley S. Greene
Tommie Hollifield
William A. Lloyd
George E. Manthey
Dean C. Moore
John A. Pignolo
Kenneth W. Pavlovics
Marvin A. Rovner
Frederick L. Seyfried
Lealie S. Tutty
Harvey E. Wick, Jr.

Detroit Center
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Spokane Center
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Detroit Center
Seattle Center
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Spokane Center
Spokane Center
Detroit Center
Detroit Center
Detroit Center
Detroit Center
Detroit Center
Spokane Center

TE - 126

Howard L. Allen
Luther G. Armstrong
George R. Caldwell
James H. Duncan
Ralph L. Ennis
Edgar C. Evans
Seymour Immerblum
Robert H. Martin
Robert L. Neal
Laurel E. Patterson
Robert E. Patterson
William L. Redifer
Ronald R. Senyak
Harold E. Shenefelt
John E. Sherlock
Kenneth E. Stout
Ostle C. Stowell, Jr.
Warren C. Taylor
Charles O. Tucker
Johannes A. Visker
Myron C. Wolford
Donald J. Woodward

Norfolk Center
Norfolk Center
Denver Center
Denver Center
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Cleveland Center
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Cleveland Center
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Indianapolis Center
Denver Center
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Indianapolis Center
Indianapolis Center
Indianapolis Center

TE - 127

Robert H. Andersen
Mac S. Brockmeyer
Richard D. Carter
Franklin C. Cohermour
Bellmore D. Cottrill
Darrell W. DeWitt
George A. Fields
Fred W. Fisher, Jr.
Ronald L. Fudge
Delbert F. Gleason
Donald K. Hoefert
Owen D. Iorabaker
Craig L. Jensen
Richard H. Korman
William J. Lorentz
Robert A. Meyers
Charles P. Myers
Minford A. S. Nessel
Dwayne D. Olson
John R. Powers

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TE - 128

Donald L. Bartholomew
Allan M. Chamberlain, Jr.
Kenneth R. Emery
Robert W. Fitzsimmons
Gilean R. Foraness, Jr.
John P. Gualandri, Jr.
Earl Harbison
Richard F. Leclair
Leonard L. Little, Jr.
Charles R. McDonald
William F. McRoberts
Jim Murphy, Jr.
John L. Sachko
Harvey E. Schrop
Karl I. Snyder
John R. Swanson
Terrence P. Trudel
Anthony E. Valanas
Gerald N. Van Ness
Don E. Wynd

Los Angeles Center
Los Angeles Center
Denver Center
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Los Angeles Center
Los Angeles Center

TE - 129

Joseph T. Andrus
Richard Craner
Theodore B. Fagan
Anthony J. Glustra
Morton M. Goldstein
Loggins J. Gruber, Jr.
Donald B. Hall
Eugene F. Hannon
Floyd H. Jenkins
Joseph Mahoney
Samuel R. Newman
Walter V. Nowotny
Donald Ritzmann
Francis J. Ryniker
Joseph F. Schettino
Samuel T. Simmons, Jr.
Francis J. Wagner
Kenneth J. White

New York Center
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New York Center
New York Center
New York Center
Boston Center
New York Center

TE - 130

J. P. Ball
Jackie D. Bryant
James L. Bull
Clement D. Caffey
Richard W. Eater
Romja Garrish
Levin D. Gunter
Everett D. Hamby
Warren E. Henschel
Bobby L. Hurt
Robert N. McDaniel
Carl M. Milam, Jr.
William R. Nolen
James L. Parker
Hugh P. Pellegrin
Glenn H. Pipes
William L. Rogers
Richard J. Snyder
Rex C. Swedenburg
Charles H. Tenney
Archie E. Whitaker

El Paso Center
Fort Worth Center
San Antonio Center
El Paso Center
San Antonio Center
San Antonio Center
Indianapolis Center
San Antonio Center
Indianapolis Center
San Antonio Center
Memphis Center
El Paso Center
San Antonio Center
Atlanta Center
New Orleans Center
San Antonio Center
Miami Center
Miami Center
Atlanta Center
Jacksonville Center
Denver Center

TE - 131

Robert R. Bein
Walter O. Carlin, Jr.
Robert A. Cramer
August L. Gardner
Phillip H. Haller
Charles R. Hayes
Robert F. Jackson
Simon Lebowitz
Chayles E. Lott
Thomas W. McGee
Felton D. Mitchell
Frederick W. Peterson
John F. Pfeiffer
William H. Polite, Jr.
Robert D. Reason
Marion L. Rolison, Jr.
Robert M. Sayers
Garry R. Schoening
Edward W. Schmermund
Edward J. Stinwell
Marvin D. Spiller

St. Louis Center
St. Louis Center
Indianapolis Center
St. Louis Center
St. Louis Center
St. Louis Center
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St. Louis Center
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characteristics of these radiation fields.

"In manned space flights exposures beyond acceptable levels of risk will have to be avoided.

"Avoidance may consist of rapid transversal of high intensity radiation fields, exit by way of polar regions, or provisions of shielding in space capsule design.

"The problems presented by space as an environment are many but I have great faith in man's adaptability, the engineer's ingenuity, and the flight surgeon's ability to meet and solve the problems of maintaining man in all environments and thereby at last conquer the vertical frontier."

CENTER BASEBALL TEAM WINS LEAGUE TROPHY



ictured above are Billy M. "Whitey" Thompson, manager; and Bill Corbitt, assistant manager, presenting to F. M. Lanter the Trophy won by the FAA Softball Team.

Oklahoma City has two Divisions in the Closed Commercial League -- the White Division and the Red Division. The FAA team was the champion of the White Division, ending the season with 22 games won and 8 games lost. (Only 2 of the 8 games lost were league games.)

Firstbaseman Cecil Skidmore, a left-hander, holds the team's highest individual batting average with a .515 mark. The Club average is about .303.

Dave Reid, with a batting average of .510, and a rightfielder, was chosen to play in the All Star game between the two divisions.

The Aeronautical Center Employees Association has sponsored a Softball team for 2 years, and everyone at the Center is proud of the team for coming out on top. We hope they can repeat this next year.

The players on the team are: Weldon Dyer, utility infield; Leonard Trim, pitcher; Leo Gatlin, catcher & pitcher; Monty Miller, left field; Ernie Frick, 2nd base; H. L. Spracklin, 2nd base; Tony Reyes, 3rd base; Bill Gresham, 2nd & rightfield; Hershall Burns, center field; J. J. Wellmaker, pitcher; Jack Hastings, catcher; C. R. Skidmore, 1st base; Don Harris, short stop; Bob Reynolds, catcher; Dave Reid, right field; Jerry Horn, center field; Billy M. Thompson, manager; and Bill Corbitt, assistant manager.

ASSOCIATION'S "LAS VEGAS" FUN NIGHT BRINGS OUT VARIETY OF COSTUMES



Salute to Hawaii!



Hiya Podner!



Shades of Wells Fargo!



Prize Winners



Bat Masterson & ???? ?



The Aeronautical Center said goodbye to Iola McElderry on Friday, September 4.

Iola has been at the Aeronautical Center over 7 years, working first in the Personnel Office, then transferring to ATC.

In February 1955, she transferred to the Aircraft Branch, Flight Operations and Airworthiness Division, remaining there until she resigned.

A coffee and cake party was held on September 4, at which she was presented gifts from the Division, the Aeromaids, and James Gammon, President of the FAA Employees Association, presented her with a letter of commendation and a check in appreciation



for her efforts on behalf of the Beacon.

Iola has been editor of the Beacon for several years and has done a splendid job. She will be greatly missed by the Beacon staff.

The picture on the left above shows presentation of the letter of commendation by Jim Gammon, and the picture on the right Iola receiving the gifts from the Flight Operations & Airworthiness Division. Mr. L. E. Shedenhelm, Chief of the Aircraft Branch, is doing the honors.

Good luck, Iola. We'll miss you.

VACATION TIME - AERONAUTICAL CENTER - USA

