BEACON

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Assistant Editor ..... Hugh Scott

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Cover by Bill Flores. This is symbolic of the progress of aviation and aviation medicine from the days of the open cockpit, goggles and scarf up to today's Mach 2 jets.

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Point of View has been written by the Civil Air Surgeon, Doctor Hilliard D. Estes, one-time Director of CARI.

The picture on the inside back cover shows one of the many beautiful lakes that cover Oklahoma. Lake Tenkiller, in Eastern Oklahoma offers for the crisp, fall weekends in the Sooner state.

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Harry and the Co-Pilots, this issue highlights the advancements and the effects of aviation medicine on civil aviation.

LOOKING AHEAD

The issue this month is dedicated, for the most part, to the advances in civil aviation medicine. This month marks the dedication of the Civil Aeromedical Research Institute building at the Aeronautical Center.

In this building, during the ensuing months and years, researchers will ferret out the problems and the answers to many problems in today's jet-age medicine.

Perhaps more important will be the rapport between air-minded medics and their counterparts from every country in the Free World. This will be truly an international area of development.

EDITORS NOTE:

Due to a number of different activities, this edition of The Beacon will have material over a three months span. Future editions of the magizine will contain much more current material.

POINT OF VIEW

At last the day has come when your new neighbor, the Aviation Medical Service, is moving in down the street, During the past two years all personnel at the Aeronautical Center have been aware of the developing medical organization in its temporary quarters on the University North campus at Norman. Less well known to most Center employees was the simultaneous development in the Washington office of other major programs of the Aviation Medical Service. Most conspicious of all, of course, was the steady rise of a new and permanent home for these medical activities on MacArthur Boulevard during the past year. Still subject to growing pains, this dynamic and complex medical group, formed by blending elements from Washington and from Norman, has become a full-fledged member of the Aeronautical Center community.

Dedicated to the promotion of safety in aviation through consideration of the human element, the professional and technical personnel of this medical complex are well on their way toward establishing an outstanding national and international center of civil aviation medical activities. Of equal impartance will be the diverse and intriguing investigations of human factors in civil aviation, the monumental task of directing and conducting recurrent medical certification of all civil airmen throughout the nation, the challenging problem of utilizing automatic data processing techniques to refine medical standards for evaluating airmen, and the rewarding experience of providing first-class aviation and occupational medical support for our own FAA employees throughout the country. Unquestionably, some time must yet elapse before all these intricate programs can reach an optimum stable state but rest assured that the goals set down by the staff of the Aviation Medical Service will be attained.

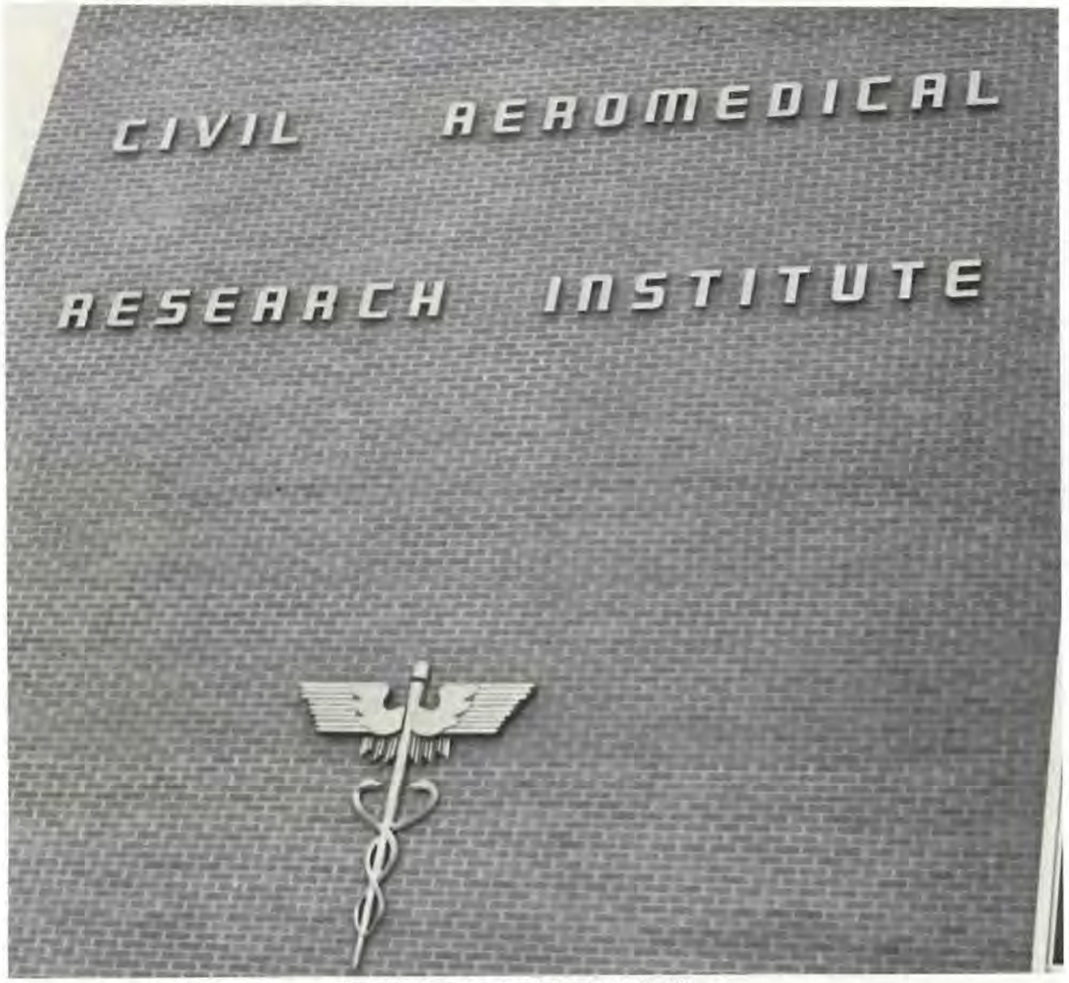
During the coming months and years, increasing numbers of nationally renowned medical scientists will visit the Aeronautical Center in association with medical symposia, conferences, and consultations. Many of these individuals will take the opportunity to tour other Agency facilities at the Center. On such occasions these medically oriented visitors cannot help but be enlightened and impressed by the intricate techniques employed in modern aviation and conducted as daily routines by Center personnel. Through these brief indoctrinations concerning selected operational problems in civil aviation, we can expect our expert medical associates to become more cognizant of all the key factors bearing on the human element in the system and to make better contributions to the field of aviation medicine as a result of that experience. Consequently, enthusiastic cooperation is solicited from any and all Center employees who have an opportunity to explain the complexities of some non-medical activity to members of the medical and allied professions.

The Aviation Medical Service has fought a long and hard battle to establish a permanent home at the Aeronautical Center and to develop an energetic and competent medical staff to attain our goals. Now that we have become an integral part of the Center community, I am sure that our relationships with other elements of the Aeronautical Center will develop into mutually rewarding experiences.

H. D. Estes, M.D.
Acting Civil Air Surgeon
Washington, D.C.

CENTER VISITED BY 25,000

AEROMEDICAL RESEARCH INSTITUTE BUILDING DEDICATED IN COLORFUL CEREMONIES



The attractive facade of the CARI building.

The multi-million dollar Civil Aeromedical Research Institute building of the FAA Aeronautical Center, was dedicated over the Oct. 19-21 week-end in three days of jam-packed activities.

The outstanding event of the dedication ceremonies was the Sunday afternoon events that featured a talk by FAA Administrator N. E. Halaby.

"With today's dedication," Halaby told a crowd of several thousand gathered in front of the CARI building, "the Aeronautical Center becomes FAA's largest single establishment—larger even than our Washington headquarters."

FAA Administrator N. E. Halaby speaking.

Halaby pointed out that the Aeronautical Center ranks second only to Tinker Field in this area as the largest industry. Some 3,800 employees work at the Center, with an annual $28 million payroll.

Approximately 10% of the entire FAA budget, mounting to some $767 million per year, is provided either at the Center or through it.

The dedication was under a beautiful, warm Oklahoma sun, with the University of Oklahoma Band and FAA Choralaires taking part in the program.

Another feature was the "Parade of Nations" when students of the FAA Academy carried flags of 22 different nations, each representing his own country, before the speakers stand and placed in stands as part of a colorful ceremony.

William J. Schulte, Deputy Administrator for Aviation Affairs, Sen. Mike Monroney and Stanley Draper, Managing Director, Oklahoma City Chamber of Commerce.

Halaby was introduced by Sen. Mike Monroney, who pointed out Halaby's long devotion to aviation, and in particular the light plane pilot, the main subject of the FAA's project "Little Guy".

Halaby pointed out to the crowd the intended location of the new Aviation Records building and also said early next year the FAA will complete it's base maintenance facility.

Recently Congress specifically charged the FAA with maintaining and improving air safety, pointing up the important responsibility of CARI.

"The kind of research we are doing aims at eliminating accidents caused or contributed to preventable human factors," Halaby added. "It also keeps in touch with changing aviation equipment and flight conditions which bear upon human factors."

FAA Academy students from 22 nations took part in the "Parade of Nations" event during the dedication.

Halaby pointed out that CARI scientists are going into which drugs are safe for pilot use, and an idea of top interest, at what point a pilot becomes functionally too old to fly a jet airliner or commercial aircraft.

"Aviation is not inherently dangerous," the Administrator commented, "but even more than the sea, is terribly unforgiving of any carelessness, neglect or incompetence.

"We have a great opportunity as we face the fall of the 60's. No one can stand here in the very center of America and not be proud with desire to work for the future."

Halaby pointed to the men and women of the Center as being the keys to the success of Center operation.

This is the FAA Medical Advisory Group who attended the CARI Dedication.

Lt. Col. James C. Beyer (U.S. Army)
Dr. Earl T. Carter (Mayo Clinic)
Dr. R. H. Flocks (Univ. of Iowa)
Dr. Samuel Greenhouse (Ntl. Inst. of Mental Health)
Dr. Lowell Kelly (Univ. of Michigan)
Capt. J. P. Pollard (U.S. Navy)
Lt. Col Hugh Randel (USAF)
Dr. Robert F. Snowden (Psychological Consultant)
Prof. Geo. A. Steiner (Univ. of Calif.)
Mr. Fred E. Welck (Piper Aircraft)
Mr. T. F. Walkowicz (New York City)

Sen. Mike Monroney speaks during the program.

THERE WERE 22 FOREIGN FLAGS REPRESENTED

FAA Academy students from 22 nations took part in the CARI building dedication events.

The students, and country they represented were:

Mohammad Zarif, Afghanistan; Victor Sly, Argentina; Flying Officer J. E. Boland, Australia; Sydney Wallace, Bahamas; Oscar Moscoso, Bolivia; Jose Campos, Brazil; Leyland Harry, British Guiana; R. A. Dion, Canada; Jia-Lin Su, China; Noshi Takia, Egypt; Edison Tardan, Indonesia; Salim Mushtaq, Iraq; Ji Won Park, Korea; Wagih Karam, Lebanon; Rasheed Ahmad, Pakistan; Ricardo Chung, Panama; Abdullah Mahdi, Saudi-Arabia; Albert McDonald, Surinam; Lek Boonsriroj, Thailand; Emrullah Volkan, Turkey; Nguyen Long, Vietnam.

As the "Parade of Nations" flags were being presented, during the dedication of the new CARI building, Australian Flying Officer J. E. Boland winced slightly when his title was read, as "Flight Officer J. E. Boland."

Commented the man from down-under, "Please use the title 'Flying Officer', for you see 'Flight Officer' is used for a woman, and I certainly don't want to be whistled at."

Edison Tardan, Indonesia, Lek Boonsrirej, Thailand, and Rasheed Ahmad, Pakistan, individually greet Administrator Halaby.

New Chief, Aircraft Services Base Named

Robert L. Sicard is the new Chief, Aircraft Services Base at the FAA Aeronautical Center.

Before coming to Oklahoma City, he served as Assistant Vice-President, Technical Services for Northeast Airlines in Boston, Mass. Long recognized for his many talents, Bob has held such positions as: Superintendent of Maintenance for Pan American African Orient Airways; Director of Engineering and Maintainance for Pioneer Airlines; and Vice President in Charge of Engineering and Maintenance for Capitol Airways.

During World War II, Lt. Colonel Sicard was an aircraft maintenance and engineering officer in the Air Transport Command, U.S. Air Force. He served in Cairo, Egypt and at various bases in this country.

New Personnel Chief Named

Kent W. Fendler has been appointed new Personnel Director at the Federal Aviation Agency Aeronautical Center.

Fendler most recently served as Chief of the Executive Personnel Branch of the FAA, in Washington, D.C. In that position he was concerned primarily with recruitment of Agency executive personnel.

Fendler joined the old Civil Aeronautical Administration in 1950 as a Placement Assistant in the Washington Headquarters of the FAA.

A Cornell University graduate, Fendler served in the armed forces during World War II in England, France and Germany.

The new personnel director lives at 3124 N.W. 61st St. He is married and has three children.

The National Shelter Program

The Federal Government has long recognized that the survivability of a nation's civilian population represented a significant military deterrance factor. Should deterrance fail, we must be prepared to mobilize civilian industrial resources for the final prosecution of warfare. It was demonstrated during World War II that complete neutralization of a nation's industry and people could not be accomplished with conventional weapons. Nations which succeeded in retaining a vigorous and strong civilian and industrial potential could properly be granted a decisive advantage.

The use of nuclear weapons, however, makes possible the neutralization of large areas outside the areas of destruction. The effects of radiation can result in a national civilian lethargy wherein a nation's surviving population lacks the will to effectively resist. The inability to man a nation's industry during a critical period can contribute to its downfall just as surely as the defeat of its military forces.

Recognizing this, the Federal government has undertaken a national program for shelter against radiation. The program will permit the civilian non combatant population to enter designated shelters for the critical 48 hour period following an attack during which radiation levels will decrease by 98%.

Two major shelter capabilities are planned. First, the home shelter program is expected to provide for an estimated 60,000,000 people. Next, the use of existing shelter features in all buildings within the nation is expected to provide for another 150,000,000 people. Future construction policies for the Government will encourage and provide for the construction of additional shelters. The total program is expected to provide some 233,000,000 shelter spaces by 1970 — more than enough for our total population.

National surveys have already been completed which have been identified potential shelter areas. Another phase of the survey confirms that an actual shelter does exist. This second phase has also been completed. Yet to be accomplished is the marking and stockage of these shelters which shelter supplies. These supplies consist of food, water, medical, sanitation and radiation equipment sufficient to provide for the needs of shelter occupants for a 2 weeks period.

Presently, shelters exist in basement areas of Aeronautical Center buildings for approximately 5,000 people. In the very near future we will receive shelter supplies to be actually placed in the various shelter areas. These shelter areas will be reserved primarily for FAA personnel who have responsibilities under the Agency's Emergency Operations Plan. To the extent that the areas are not required for FAA operational purposes they will be available for public use in accordance with the National Shelter Program.

An important aspect of community shelter living involves the problems of large numbers of people living in small confines. Even though the situation may exist only for a few days many factors must be considered. There must be established in each shelter a shelter management organization which constitutes an extension of local authority or government. Individual rights must be protected. Conversely individuals must contribute to the total shelter needs. It has been determined that legal status must exist for the shelter management authority. The National Program thus considers that police powers of local government should properly extend into the community shelter.

Throughout the nation today the Federal Government is engaged in training shelter management personnel. These trained people will organize shelter occupants in accordance with legal authority and local plans. Their objectives, of course, are to assure an orderly productive shelter experience by all occupants.

Some of the most important items to be considered in shelter living are: Sociopsychological implications of problems created by shelter stress and behavior patterns; group dynamics — the use of group processes for common needs; physical activities, and the establishment of service functions such as food, sanitation, water and medical matters.

Evidences of this tremendous and vital national program will become more apparent in the near future. You may best contribute to the program by recognizing that shelter living is a critical but temporary necessity during a national crisis. It also represents the only means to survival, a sustained national vitality and victory.

FAA POLICY AGAINST DISCRIMINATION

To assure that we in the Federal Aviation Agency uphold the Constitution, laws, policies and regulations of the United States, the following Agency policy has been prescribed:

"The highest possible standards of democracy are to be maintained in all official acts with equality of treatment and employment opportunity for all."

Any Federal Aviation Agency employee, U. S. citizen, group, or organization of citizens who allege that unfavorable personnel action has been taken by FAA against them because of race, color, religion, or national origin may submit a complaint to an Employment Policy Officer of FAA. Applicants for employment who, failing appointment, allege discrimination because of race, color, religion, or national origin may also file a complaint.

Any employee contemplating the filing of a complaint is urged to seek informal adjustment with his immediate supervisor and personnel officer before submitting the complaint for formal consideration. Supervisors shall investigate any such complaint promptly and effect whatever adjustment is warranted by the facts. The supervisor shall advise the employee of his decision within 10 work days and make a written reply if the complaint was submitted in writing.

If satisfactory informal adjustment cannot be made, the supervisor shall advise the employee of his right to submit a formal complaint in writing to the Assistant Employment Policy Officer, Mr. W. M. Jackson, Room 332, Headquarters Building, Aeronautical Center, the FAA Employment Policy Officer, or to the President's Committee on Government Employment Policy.

A letter of complaint addressed to any of the foregoing should contain the following:

(1) Basis for the complaint, (race, color, religion, or national origin);

(2) Identification of the specific personnel action or personnel matter (failure of appointment, failure of promotion, discharge, etc.);

(3) Organizational unit or office in which the personnel action was taken;

(4) Identity of official responsible for the action, if known;

(5) The approximate date of the action;

(6) All other factual information which the complainant may have to support the allegation of discrimination, such as incidents, occurrences, circumstances, dates, and names of individuals involved;

(7) Remedies sought; and

(8) Signature of the complainant.

In addidtion to the foregoing, a complaint involving a disciplinary action must set forth sufficient facts or circumstances to form a substantial basis to support the specific allegations of discrimination as opposed to the complainant's denial of a "letter of charges" on which the disciplinary action was based.

TRAINING TOPICS

Aeronautical Center personnel have been busy in the Training field during the past fiscal year. To give you an idea of the scope of training accomplished, check the statistics for FY-62, and keep in mind that this does not include FAA Academy training, except in the Management and General Training area performed for. Training within our Agency accounted for the major participation. A total of 5,972 employees participated in **some type** of in-service training for a total of 16,360 manhours. The instruction varied in length from 100 hours to one half hour.

We had 70 employees attend courses with other Government agencies for a total of 3,458 manhours.

We had 26 employees involved in a total of 3,194 manhours of Formal on-the-job training. This does not include the informal type of OJT which is not reported.

656 of our people participated in Out-of-Agency training for a total of 41,684 manhours. The variety of training in this area makes Heinz 57 looks like a piker.

All types of training involve 7,537 Aeronautical Center employees and total 72,572 hours.

FAA POLICY ON OFFICIAL CONDUCT

To assure the integrity of Agency operations, to promote compliance with applicable laws, policies, and regulations, to avoid even the appearance of impropriety, and to safeguard public confidence in the FAA the following policy has been prescribed:

"The highest possible standards of integrity and ethics in official conduct are to be promoted and maintained by all employees and representatives of the Federal Aviation Agency."

Implementation of this policy is the responsibility of every Agency official and supervisor. All violations should be reported promptly to the Compliance and Inspection Officer, Mr. W. M. Jackson, Room 332, Headquarters Building, Aeronautical Center.

An employee may not engage in any activity outside his official hours of duty, if such activity in any manner interferes with the proper and effective performance of the duties of his position, or if it is reasonable to anticipate that such activity may subject the FAA to public criticism or embarrassment.

No employee or representative shall receive compensation or anything of monetary value, other than that to which he is duly entitled, for the performance of any activity during his services as such official and within the scope of his official responsibilities.

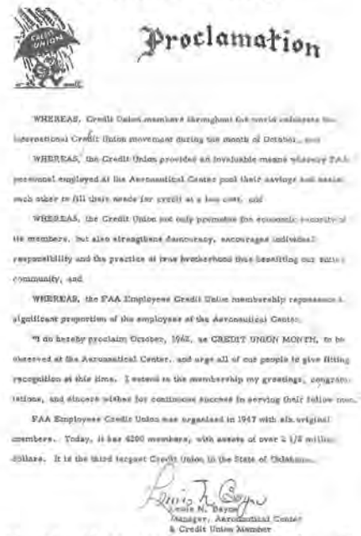
No employee or representative shall receive compensation or anything of monetary value for any consultation, lecture, discussion, writing, or appearance, the subject matter of which (a) is devoted substantially to the responsibilities, programs, or operations of the Agency, or (b) draws substantially upon official data or ideas which have not become part of the body of public information.

* * *

Did you know . . . .

The new CARI building has a facility to lower the temperature in one area to −60 degrees F to 160 degrees F?

Local Credit Union Joins National Group



Proclamation

WHEREAS, Credit Union members throughout the world celebrate the International Credit Union movement during the month of October, and

WHEREAS, the Credit Union provides an invaluable means whereby FAA personnel employed at the Aeronautical Center pool their savings and assist each other to fill their needs for credit at a low cost, and

WHEREAS, the Credit Union not only promotes the economic security of its members, but also strengthens democracy, encourages individual responsibility and the practice of true brotherhood thus benefiting our entire community, and

WHEREAS, the FAA Employees Credit Union membership represents a significant proportion of the employees of the Aeronautical Center.

"I do hereby proclaim October, 1962, as CREDIT UNION MONTH, to be observed at the Aeronautical Center, and urge all of our people to give fitting recognition at this time. I extend to the membership my greetings, congratulations, and sincere wishes for continuous success in serving their fellow men.

FAA Employees Credit Union was organized in 1947 with six original members. Today, it has 6200 members, with assets of over 2 1/2 million dollars. It is the third largest Credit Union in the State of Oklahoma.

Lewis N. Bayne
Manager, Aeronautical Center
& Credit Union Member

Rex P. Merilatt, President of the Board of Directors of the FAA Employees Credit Union receives a proclamation from Lewis N. Bayne in connection with the FAA Credit Union joining the International Organization of Credit Unions.

October was Credit Union Month. Internationally, October 18 was proclaimed Credit Union Day.

In observing the special benefits of the Federal Employees FAA Credit Union, Lewis N. Bayne, Manager of the Aeronautical Center, signed the following proclamation:

JET GEMS
KEEP IT CLEAN!

Figure 1. 1927 OX-5 powered Waco 9 — 80-mph mail plane operated by Pennsylvania Airlines. Note extra wing, propeller, interplane struts, "streamlined" wires, radiator, landing gear and tail wheel amounting to a built-in "headwind." Due to the "design drag," cleanliness had little effect on speed.

Figure 2. Modern turbojet powered 600-mph jetliner. Cleanliness is imperative in order to obtain maximum cruising speed and economy in operation.

Modern jetliners are sleek airplanes built to an aerodynamic form that minimizes parasitic drag. However, surface roughness or air leaks may develop in service to increase the airplane's total drag. Proper care taken in maintenance will avoid the penalty of drag build-up and eliminate the need for extra thrust to maintain operating speeds.

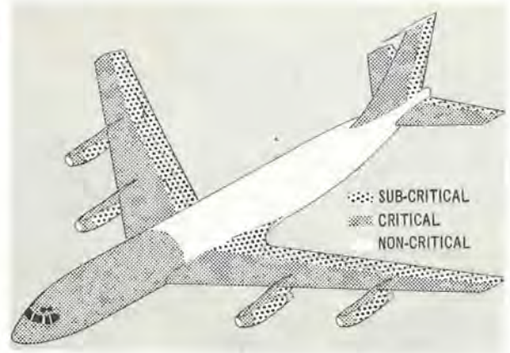


Figure 3. Cross-hatched portions of the wings and fuselage where surface smoothness and cleanliness are mandatory are designated critical areas. Dotted areas indicate locations where smoothness and cleanliness are desirable.

The total aerodynamic drag on the airplane stems from various causes. Induced drag is that retarding vector of aerodynamic force due to the production of lift by an aerodynamic surface, usually a wing. Parasitic drag is the retarding force on any part of the airplane that does not contribute useful lift. The parasitic drag of a wing is usually referred to as "profile" drag and the parasitic drag on the fuselage, nacelles, tail and attachments is called "structural" drag. Pressure (or form) drag and skin friction produce most of the parasitic drag on jetliners. Compressibility drag is due to a separation of the flow lines, which is a high speed phenomena.

Pressurization leaks create an obstruction to the smooth flow of air much the same as a protruding flat plate (Fig. 4A). Additionally, energy is lost because the cabin air is supplied from engine power. Extra air bled from the engines to operate the turbocompressors to make up this loss penalizes performance and increases fuel consumption.

During the design of the jet transport great care was exercised in properly contouring areas where skin or structure necessitated a change in the stream line of an aerodynamic shape. Gouges, dents, or waves will cause deflections in the air stream and produce parasitic drag (Fig. 4). Also, air streams passing across the depression at incompletely smoothed filler joints create a low pressure area causing the air stream to deflect (Fig. 4C). A dirty airplane performs similarly.

Cleanliness is important on high speed jet transports because total drag is a function of velocity squared. One domestic airline schedules airplane exterior cleaning every four or five days. In addition a temporary wash to remove exhaust deposits is accomplished at each flight termination when a 4-hour layover results. Special attention is given to the removal of runway dirt from the landing gear, wings, and flaps.

Consider the case of gouges, dents, or protruding rivets around the engine nose cowl. These local changes in contour cause drag and additionally restrict or chock the air flow into the engine (Fig. 4). Fuel consumption increases due to a less efficient air supply to the engine.

Every maintenance man should think in terms of drag and perform his duties with consideration for the penalties he can impose through carelessness. Engine mechanices, in particular, must exercise care in removing and installing engine cowling to avoid damaging it in any way. When properly handled, cowling does not require excessive force to open or secure the latches. Ground service equipment accidents which leave dents destroy the design contour, resulting in disturbed air flow and drag.

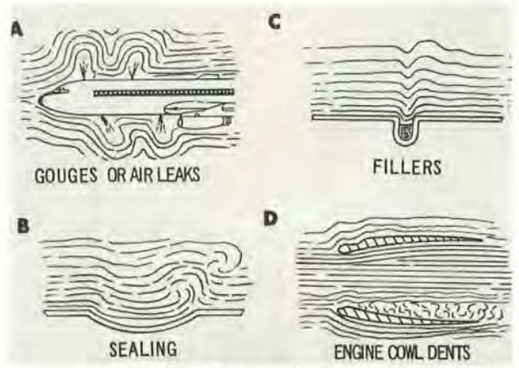


Figure 4. Air stream drag develops from surface roughness, discontinuities, and faulty seals.

Access doors in which a misalignment exists will protrude into the airstream and will allow cross-flow as the air enters the cavity at the forward edge slows to lose energy and exhausts along the aft opening.

The drag increase items described above are much more critical if located along the forward portion of the fuselage, wings, or engine nacelles as defined in Fig. 3. Aft portions of the fuselage are less critical drag producing areas due to the influence of boundary layer conditions.

Pressurization seals are of primary importance. Specifically on seals, it should be remembered that airtight closures must be provided if drag is not to be increased. Entry and cargo door seals prevent the escape of high pressure air which, apart from possibly causing an annoying noise, materially increases drag by disturbing the air flow.

While maintaining level and constant speed flight, such as during cruise, the engine thrust required is exactly equal to drag. An increase in the coefficient of drag due to leaky seals and poorly fitting doors will surely increase the thrust required to maintain the same speed. When added thrust is required to maintain the same speed, fuel consumption increases and, therefore, the range capability of the airplane is reduced (Fig. 5).

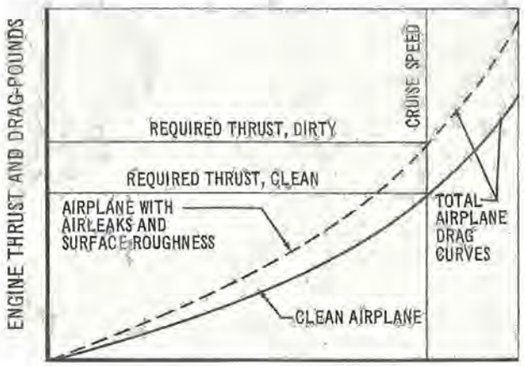


Figure 5. Thrust required during cruise compared for a clean jet-liner (LOW DRAG) with an airplane that has developed air leaks and surface roughness (DRAG BUILD-UP).

If aerodynamic cleanliness is ignored during scheduled operation and maintenance, the total effect of drag increase may require added thrust and additional fuel consumption on the order of 1½ pounds of extra fuel per nautical air mile. Translated into airline operations; this means that on a particular flight segment of 2,500 miles nearly two tons of additional fuel must be carried!

Veteran Telephone Operator Retires

Ruby Lynn, the telephone operator with a "gay voice and vibrant personality" retired from the FAA on September 1. She began her career as an operator in 1921 and had worked in the Headquarters Building since it was built. Coworkers of Administrative Services Division and friends gathered with Division Chief Vincent Burton in the Manager's Conference Room to reminisce with Ruby, present her with a punch bowl, and say "happy retirement." Burton shared a brief resume of her 201 file which revealed many interesting things.

She was born in Matador, Texas; graduated from Plainview Highschool, and attended Baylor College for Women. Like most telephone operators she received her earliest experience with Southwestern Bell Telephone Company, worked with O.G.&E. for 17 years and Veteran's Administration 11 years before joining the FAA in 1958.

In June of that year the present 3-position switchboard was installed and Ruby became one of the five operators staffing the board until 11:00 P. M. When 24-hour operation began in 1959 the staff increased to 8 and upon completion of the additional 2-position switchboard a total of 10 operators will be on duty. Records show that originally an average of 35 outgoing calls were made daily in comparison to the present 3,000 local incoming calls, 200 outgoing long distance, and 200 incoming long distance.

Ruby was an active participant in Y.M.C.A. and various Social Clubs. She served as president of Business Women's League.

Mrs. Ali Ersen Guvenoz and Husband

Shown above in her wedding dress is the former Suzanne Bayne, daughter of Aeronautical Center Manager Lewis N. Bayne. Suzanne, who worked at the Center in the FAA Academy for some months, left for Ankara, Turkey this last Spring. She became Mrs. Ali Ersen Guvenoz on June 29th. Suzanne met Ali when he was a student at the Federal Aviation Academy in 1961.

Suzanne works for the Tumpane Company in Ankara. The company administers the basic maintenance contract for the U.S. Air Force.

In a recent letter to her parents, Suzanne described how life is for a new bride in Turkey:

"A typical day starts at 6:30 in the morning. I have to use nice, cold water and water hours are from 6 to 9 in the morning, 12 Noon to 3 P.M. and 6 to 9 at night.

"Breakfast consists of Cay (tea) eternally, white cheese, or honey, unsalted butter and ekmek, bread). Tea brewing is quite a ritual. There are no tea bags here.

"Baba (Ali's father) drives me to work. Some of the meals I've fixed sound like the stories about new brides. Everything with regard to food—preparation, eating and serving is so different. Shopping is a riot. Carrots here are a foot long, so one is enough for an entire meal. Peppers, tomatoes, squash and egg plant stuffed with rice, meat, onion, tomato and parsley smothered with yogurt are our favorite dishes. Another delicacy is water buffalo cream with strawberry jam on ekmek.

NEW MEMBERS OF THE PERSONNEL DIVISION INTRODUCED

STEPHEN A. WOOD, is assigned to the Classification Branch as Position Classification Specialist. Steve attended Georgia Tech at Atlanta for two years and received his BBA degree from Atlanta Division-University of Georgia in 1951. His major fields of study were in Accounting and Economics.

Prior to joining our staff in June, Steve was engaged in Classification work with the U. S. Department of Agriculture in the Agricultural Research Service, New Orleans, Louisana where he had been empolyed since 1958. Before going with USDA he was an Investigator for the Civil Service Commission.

Steve and his wife Bettie have two daughters, Mary Frances, age nine and Lynne, age six.

HERBERT L. SEAY is serving in the Materiel Service Branch as Personnel Management Specialist. Herb, as he is usually called, is a graduate of the University of Arkansas having completed the work on his B.S. degree in Business Administration in 1954 majoring in Personnel Administration and Industrial Relations.

After graduation Herb accepted employment in private industry where he worked in the fields of Personnel Management and Industrial Relations until 1961. Since that time he had been employed as Personnel Management Specialist for the U.S. Air Force Systems Command, Wichita, Kansas until joining our staff in September.

Herb and his wife Sue have two sons, Mark, and Randy. Mark will soon be eight years old, Randy is five.

"We went to Istanbul for our wedding trip. It was fabulous. We swam in Bosphorous; drove across the Golden Horn; drank tea overlooking the Bosphorous at Emergan and shopped at the Closed Bazaar. We also had a private tour of the Emperor's Palace where Ataturk died.

"I really miss the FAA. Everyone has been wonderful to me, however. I do get homesick, but life here is pleasant and exciting."

FAA ACADEMY DEDICATED

Tom Finney, Administrative Assistant to Sen. Mike Monroney, was the key speaker during the FAA Academy dedication.

This is part of the crowd on hand for the dedication of the Academy Building.

Dedication ceremonies of the new FAA Academy building was held Sept. 29, with Tom Finney, Administrative Assistant to Sen. Mike Monroney the principal speaker.

Before several hundred people, on a windy day, the dedication added another building to the vast FAA center that has taken a major post in aviation, not only in Oklahoma, but across the nation and around the world as well.

Finney served, in an excellent manner, a pinch-hitting roll during the ceremonies, for Sen. Mike Monroney. The Senator was scheduled to give the major address, but Congressional duties in Washington prevented his being here.

Finney told of the excellent way the FAA Center has continued to grow and take its place with the major facilities of the governmental picture.

Dr. Jack S. Wilkes, Oklahoma City University President, gave the Invocation.

Serving as Master of Ceremonies, Enar B. Olson, Director of the Academy, introduced the distinguished guests.

The "Key Ceremony" concluded the program, with Philip Rhoads, of the Oklahoma City Airport Trust, Finney and Olson all taking part in this phase of the program.

An Open House was held at the Academy after the program.

Enar B. Olson, Director of the Academy, served as Master of Ceremonies.

The key ceremony, with the cutting of the ribbon, officially opened the building for operations.

PEOPLE OF CARI HAVE THEIR OWN HOBBIES

The medical people of the Civil Aeromedical Research Institute are like a good many other Oklahomans as far as hobbies are concerned.

Let's take a look at some of them.

Bill Flores, a Medical Illustrator for CARI, is one of Oklahoma's well known Indian artists. Flores is a full-blooded Cherokee from Anadarko and specializes in water color portrayals of the lighter side of Indian life. He exhibits two or three times a year in Tulsa, Oklahoma City, and other cities. His pictures may be found in many public places from Coast to Coast.

Jack Earley, Chief of the Crash Dynamics Section of CARI, is a very active abstract artist, who captures the beauty of nature in color. When not painting in his off-duty hours, Earley is to be often found working on his T-6 Texan airplane he keep at Westheimer Field at Norman.

There are a number of other hobbies among the CARI people including Mike Lategola's trodding the boards with various civic acting groups. The Chief of CARI's Respiratory Physiology Section, was recently in the Mummer's presentation of The Boyfriend, where his part called for a great deal of banjo playing.

Dr. Paul Smith, CARI's Pharmacology-Biochemistry Branch Chief, started a career early in life on the theater road. His singing ability is of professional quality. Recently he carried a leading part in a large scale production of Ave-Maria.

Miss Nicki Graham, Nurse and Medical Technician with CARI, spends a goodly portion of her off-duty hours, in warm weather, taking part in SCUBA diving activities. She is very sharp at the sport, and applies her professional knowledge of oxygen and breathing requirements to her hobby.

Howard Hasbrook, Chief of CARI's Crash Safety Section, might be called an Oklahoma Cowboy on his off-hours from work, and would like the title very much. He currently has five fine show horses, which he and his wife Virginia are training for horse show events.

Dr. Dick Snyder, Chief of CARI's Physical Anthropology Section, formerly an intercollegiate aerobatic champion (while at Yale), carries on his hobby of flying through personal ownership and operation of one of World War II's best fighter planes, the North American P-51. Dr. Snyder has had a second seat installed for people who want to go with him on his 400 mile an hour cross-country flights. He has had tear-drop wing tip tanks installed.

Center Does Large Part In Hiring The Handicapped

The Aeronautical Center is very conscious of the program to Hire the Handicapped.

According to current figures, issued by William Shelton, AC-114, the Center hired 23 physically handicapped employees from October 1, 1961 through September 30, 1962.

Considering the fact that some 849 persons were hired at the Center in that same span, it is easy to see the remarkable strides the Aeronautical Center is making in it's share of the project of Hiring the Handicapped.

Shelton said that the Aeronautical Center currently employs some 150 physically handicapped persons in the over all total of 3,881 employed at the time of this writing.

As a part of the annual essay contest sponsored by the Governor's Committee on Employment of the Handicapped, the Aeronautical Center Employees Association gives a $100 U.S. Savings Bond, as one of the prizes.

Shelton is Coordinator for employment of the physically handicapped at the Aeronautical Center and among his many duties in this capacity includes the responsibility for monitoring and rendering constructive advice in regard to inital employment, reassignment or transfer of the physically handicapped within the scope of the Center.

When a referral or certification of a handicapped applicant is made by the Civil Service Commission, the Coordinator should arrange for the consideration of the applicant for any vacant position for which he is qualified.

The four steps normally employed in effective placement of a handicapped person are:

1. Analysis of the exact requirements of the position;
2. Evaluation of the person's capacities to perform the duties of the position;
3. Matching of the capacities of the person with the demands of the job, with special attention to the degree to which the person has compensated for his limitations; and
4. Follow-up to check on the adequacy of the placement.

William Shelton, AC-114, looks over the display board that was in the lobby of the headquarters building during Hire the Handicapped Week.

Coordinators should be continuously alert to render every possible assistance to the handicapped already on the rolls with respect to protecting their job security. This applies especially to employees whose impairments have resulted from government job-incurred injuries —whether on or off the rolls. Every legitimate effort should be exerted to forestall disability retirement when continued employment is feasible and not detrimental to either the employee or the government.

It is imperative that coordinators see to it that accessions of handicapped persons are reported to the Civil Service Commission. The definition of handicapped includes mental and emotional as well as physical handicaps. Executive Order Number 10994 eliminated the word "physically" as a prefix to "handicapped" in the designation of the President's Committee on Employment of the Handicapped to provide for equal employment consideration for those candidates who have overcome serious mental or emotional impairments, or who can perform their work satisfactorily while undergoing treatment.

AVIATION FACILITIES TRAINING FY-47 THRU 9-30-62:

32,512	Students Entered Training
11,713	Different Students (Bodies)
2.78	Classes Per Student
1,605	Classes Conducted
81	Different Courses Taught

It would require 252 weeks of continuous training to complete the 45 different courses taught by the Aviation Facilities Training Division in FY-63.

Practice Safety—It Pays Many Ways

Edgar Bergen was driving calmly along a peaceful road one day when a woman driver came weaving down the road behind him. She tooted her horn once and rammed him with a crushing impact. While they were trying to untangle bumpers, the lady said breezily, "Well, I'm afraid this was all my fault."

"Don't be silly," Bergen said gallantly, "The blame is entirely mine. I saw you fully three blocks away, and had plenty of time to duck down a side street."

In regard to safety in the work shop, the alert supervisor and worker are constantly aware of an imminent safety violation which could cause an accident. At that moment there is still time to duck down a side street and avoid the mishap.

The Technical Services Division of the Federal Aviation Agency in Oklahoma City, under the leadership of Mr. C. E. Gardner, believes that being safe or unsafe is a way of life. The enviable record in accident prevention established during the past nine years is proof positive, that he and his co-workers, not only preach safety, but they also practice it.

The statistics tell the whole story, briefly and vividly. No lost time accidents in 9 years, which adds up to 585 man years.

Supervisors in the organization have been carefully trained to analyze every operation in the shops and thereby discover all potential hazards involving the three M's – Men, Material and Machinery.

Worker and supervisor alike are constantly reminded that safety can prevent some wife from losing her husband and some kids from losing their folks. This can be truly important, especially if they happen to be your wife and your kids.

Conscientious supervisors in the Division are always aware of his duty to keep the employees under his direction from harm and injury.

As in all industrial plants, the supervisors know that most injuries stem from one of two causes; an unsafe physical condition or an unsafe act.

Probably one of the most effective training devices used in the Division is the training film. Safety films are shown periodically and personnel interest and attendance reflect the enthusiasm with which they are received.

Since proper supervision is the key to a sound, effective safety program, the responsibility on supervision cannot be over emphasized. For you see, in a sense the supervisor has two families. In other words, care for your worker as you would care for your people at home.

The Division Chief has stressed the foregoing practices and philosophies in safety for the personal protection of the individual worker. However, there is the dollar cost that staggers the imagination.

On dollar costs for example, the Federal Aviation Agency alone, for the year 1960, the last year figures were available, amounted to $1,002,002. The annual wage loss to industrial workers in 1960 was approximately one and one-fourth billion dollars.

The Technical Services Division is concerned first with the personal injury to the worker, and second the money costs.

Accidents cost money! Preventing accidents saves money.

Center Archers Always Enjoy The Hunt Of Deer

In the hush of pre-dawn darkness two figures move stealthily down a forest trail. They make no sound but barely audible gasps as the sharp air of late fall cuts into their lungs. A breeze whips autumns leaves about their feet, causing them to pause in anxious anticipation. Their progress is slow, with every movement carefully calculated, for even the slightest brush of clothing against a bush could betray their presence.

Then one figure emits a low groan as his foot snaps a fallen twig on the path. Both stop, for the sound seems like a pistol shot echoing through eternity. They strain their ears toward the breeze, listening intently. The answer is short in coming, for they hear repeated snorts from upwind; then the crash of lithe bodies through underbrush. They stand with bated breath and clenched weapons, realizing that the first round is lost. Soon they move on, stopping frequently to sample an awakening forest.

Dawn will probably find these two hunters at a pre-selected destination; perhaps in a tree, beside a boulder or crouched in a ravine. They dare not stride cross-country, as hunters with high powered rifles might do, striking out at all within range. They know their target and they have studied his habits. They must hunt him as ancient man did, ever aware of sign, wind direction, forest sounds and every other essence of being.

Hunters they might be, but woodsmen they must be. They probably have even learned to walk again, that is, walk as an Indian would. Not heel to toe, but rather with a roll.

They have learned to estimate distances accurately, not only in flat country, but uphill, downhill, and over rough terrain. In short, these hunters have learned the futility of fighting nature. They must join her—and on her own terms.

One might think it impossible to stalk a herd of deer within only a few yards, yet this is done season after season by men who have grown tired of rifle and shotgun hunting. These men are just a few of a comparatively new breed that are experiencing an exhilerating fresh approach to hunting. They are called Bowhunters.

The Bowhunter of today has a long advantage over his forebears, for his equipment encompasses not only all of the basic rudiments of archery but also all the scientific advances that have been made available by modern-day engineering.

Where the bow of even twenty years ago was hewn from a solid piece of lemonwood, hickory or Bois D'Arc, today's bow is a composite of selected wood and fiberglass laminations.

Each bow is crafted to a specific need accorded by its length, some for tournament target work (64″ – 78″), others for field shooting (60″ – 68″), and the deadly little bow used for hunting (52″ – 64″).

Just as shells are loaded for a specific caliber of gun, so are arrows constructed for a given draw weight of bow. The goal is the same, consistent accuracy.

Arrows for any type of shooting are available to the modern archer; target, field, broadhead, fish, bird, and even arrows that perform exactly as a shotgun.

A Bowman at "full-draw" is a sight to behold.

LAW ENFORCEMENT PLUS

Most Aeronautical Center employees take for granted the service given the Center by five law enforcement officers who keep a 7-day a week 24-hour vigil over the Center. This group, headed by Sgt. Howard Taylor, has done an excellent job for us and The Beacon wants to recognize one of these outstanding men.

Officer Elmer Carter has applied a "plus" effort in protection of all employees, not only of our property, but also our protection in traffic safety.

Carter presently resides at 1001 Dean Place and is married to the former Helen Randolph of Oklahoma City. They have two children: Elmer Lewis, 16, and Evelyn Deloris, 20. Mrs. Carter graduated from Fisk University, Nashville, Tenn., and received her Masters Degree from Western Reserve University in Cleveland.

Officer Carter attended Xavier University in New Orleans on an athletic scholarship prior to his military service during World War II. After the war he worked for Congressman John Jarman in Washington, and imediately after that he started a ten year career with Tinker Air Force Base.

He has been with the Oklahoma City Police Department for 10 months and has been assigned during this period to service FAA.

APULS-R/T UNIT USES ENLARGED PROGRAMMING BOARD FOR STUDENT TRAINING

The growth of the teletype communications network and the continued demands for expanded and faster communications have caused a corresponding increase in the complexity of Data Handling and Processing Systems. The net result is better communications service and almost instant weather information but the system has grown until automatic programming has become an essential.

To meet training requirements the Communications Equipment Branch of the Aviation Facilities Training Division offers a four week course on the Automatic Program Unit, Low Speed - Reperforator Transmitter (APULS-R/T). This course is actually designed around the two major equipments, the Automatic Program Unit, Low Speed (APULS) and the M-28 Reperforator Transmitter, (R/T).

The R/T equipment operates at 100 WPM and is utilized with Service "B" to relay administrative traffic from one facility to another throughout the United States. This service is composed of twenty-four individual service areas; each area is connected to each adjacent area through relay facilities. The main equipment at the relay stations is the M-28 Reperforator Transmitter equipment.

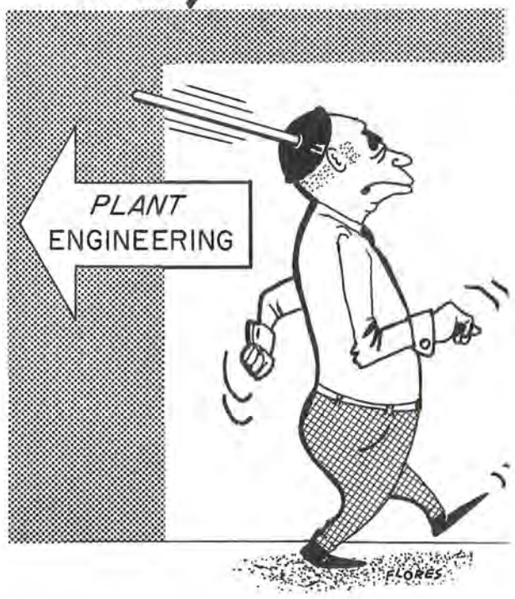
Each area has its own control station whose function is to control the operation of all teletypewriter equipment within the boundaries of the area. This control is exercised by the selective scanning of all transmitters within the jurisdiction of the control station; this includes those transmitters being used at the relay stations for the transmission of traffic from adjacent areas.

The APULS is an electronic device that controls the circuit by the electronic transmission of coded groups of alphabetical and nonprinting characters which are detected by character sequence detectors at facilities remote from the control station. The remote facilities then perform such functions as reperforating specific messages into tape for later transmission to an adjacent area, to transmit local traffic to the area, or to transmit information relayed from other areas. The tape may be coded so that only those stations for whom it is intended will print the messages.

The switching and transmission function of the APULS are accomplished by electronic circuits containing 228 semiconductors, 67 transistors, and 161 diodes. The scan sequences are programmed into the unit by electrically connecting specific terminals on a program board. The program board has provisions for programming as many as 50 groups of characters with each group containing from 2 to 10 characters.

Programming is an essential part of the course and since the units were not designed for frequent changing of connections a substitute was necessary. The training aid used is an enlarged replica of the APULS program board with spring loaded connectors instead of terminals. This arrangement provides easy removal of the training aid so that it can be placed on a work bench, programmed and reconnected to the APULS unit to check the accuracy of the programming. With this system several training boards can be used with each installed APULS unit since use of the APULS is only required for testing the results of the practice program.

Willy



FAA FLOAT SEEN TWICE BY OKLAHOMANS

The Aeronautical Center Employees Association sponsored a float on two recent occasions, that was seen by thousands of Oklahomans.

The first appearance was the 44th annual state American Legion Convention in downtown Oklahoma City in a night parade.

The second was in a parade honoring Midwest City's 20th Birthday on October 6th.

Key words of the float were "Crossroads of the World in Promoting Air Safety in the Jet Age."

Oklahoma was highlighted in the replica which measured 8 feet in diameter. In harmony with the blue, white and gold colors of the Official Agency Seal, the float was over 33 feet long and nine feet wide. It was designed and built by FAA employees and placed emphasis on World Unity and Strength through Aviation.

FAA employees taking part in the project were:

Chairman: Jane Fanning, IM-972; Assisting in original plans were, Louis D. Snively, PT-937 and Raymond A. Dyson, A-197. Snively did the art work. The cabinet work was done in Technical Services Division Shop, PT-920.

Others assisting in final assembly of the float were: E. D. Rowland, IM-972; Tomi Jo Stefanos, IM-972; Roy J. Lansdowne, IM-974; Mr. and Mrs. Howard Barnett, IM-970, President of the Employee's Assn.; Richard Gober, PT-954, Vice-President of the Employee's Assn., and Roy Ledden, PT-955.

Have you noticed the wind measuring instruments on top of the Air Traffic Training Building? Or the white thermometer shelter located on the lawn between the AT and ANF Buildings? Or the weather balloons that occasionally float by the windows at the Center? U. S. Weather Bureau personnel use these instruments in training Flight Service personnel in weather observing techniques while they are attending the Basic 8-Week Air Traffic Training Courses at the Academy. About half of the surface weather reports used in air operations in the United States are made by Flight Service Specialists at about 230 stations. The weather observing course taught by the Weather Bureau people became part of the flight service curriculum at the Academy when the first class of station trainees reported in July 1961.

Four meteorologists, headed by Jeter Pruett, are stationed at the Academy and in addition to teaching weather to Flight Service Specialists, they develop weather training materials both for resident and field training programs of the Air Traffic Training Division. The mission of the Weather Bureau group includes consultation service on weather matters to other FAA organizations at the Aeronautical Center and any required liaison and coordination with the Weather Bureau's Central Office in Washington. Meteorologists assisting Mr. Pruett in the weather work at the Center are Edward W. Oscarson, Clifton W. Green, and Allen D. Cummings.

Weather Bureau personnel were assigned to the Academy in 1960 to spearhead an accelerated meterological training program for Flight Service personnel. The requirement for the help of meteorologists came about when the role of Flight Service Stations was expanded to place more emphasis on weather aspects of flight assistance service in pre-flight general aviation briefing and in flight following for pilots. During 1960 and 1961, through on-station training each journeyman FSS Specialist completed a Pilot Weather Briefer's Course developed by meteorologists at the Academy. During the early stage of this program one Specialist from each FSS Station attended a resident weather training course at the Academy and then returned to act as Training Officer at his station. Similar meteorological training, climaxed by each Specialist receiving from the Weather Bureau a formal Certificate of Authority to brief pilots, is now part of the requirement for journeyman FSS status.

O.U. PLANS TO INCREASE SERVICES

What can the University of Oklahoma do to serve your educational needs better? This is a question posed by Dr. George Cross, University of Oklahoma president.

The occasion was a meeting held recently at the University with representatives from the Aeronautical Center, OCAMA, Western Electric, and General Electric. FAA Center Manager Lewis N. Bayne and R. A. Myers attended the meeting and were impressed with some of the ideas for improving educational opportunities for the working adult.

The discussion centered around such topics as: resident requirements, transfer of credits, variety of courses needed, certainty of courses needed being offered, availability of faculty, etc.

To follows up on this initial effort, a committee has been appointed to make a study of the problems involved and to carry it to the point of recommendations to the original group. Myers has been appointed to represent the Aeronautical Center on this committee.

All in attendance agreed that a joint effort such as this can and should lead to significant innovations to make it easier not only for the adult worker to take job related college courses but to be able to work toward the degree of their choice.

* * *

Did you know . . . .

The FAA Academy, the building you first see, when you drive South on MacArthur into the Aeronautical Center, is one of the world's largest basic training areas for aviation skills?

RESEARCH IN AIR TRAFFIC CONTROL

GEORGE R. STEINKAMP, M.D.
Deputy Civil Air Surgeon for Research and Operations

Before I give my presentation, I think it is wise to describe to you a small drama that took place several years ago. As any good drama, it has several scenes. The action begins on a day in Texas. The scene is set in summer, on the end of a jet take-off runway on a military field. The Dramatis Personnae in view are a pilot and a military flight surgeon. As the action opens, a flight plan has just been filed, attesting to the the fact that this was an experimental flight. The plane was a modified F-100 and was to proceed—at once— to an area designated for experimentation of a highly specialized type of a nature designed to give impetus to our nation's space program.

The plane was to be cleared to an altitude of over 50,000 feet and then the flight would be patterned to fly by parabolic maneuver to about 8,000 feet and accomplish the mission of determining certain aspects of human factors in space flight—specifically—weightlessness. In the development of just this much of the drama, the audience has already had the benefit of knowing that the experimental problem was an urgent one and is concerned with our race into space. Experiments, utilizing critical time elements, are at a premium, because one must consider many factors—time—machine performance, —human tolerances— and the design of the experiment. All of these factors add up to money —the cost of aircraft hours and fuel—the cost of manpower—measured in time of design of experimentation— and the cost of the personnel involved.

The drama switches back now to the people involved—a highly trained experimental test pilot—of which there are few—a flight surgeon —of the experimentalist variety—of which there are few—and a traffic controller. Three people. Temperature on the end of the runway was about 110 degrees. The weather was clear. The pilot and the doctor arrived at the end of the runway—sweat dripping down them into their oxygen masks, flight suits and along the edges of their helmets. The personal situation, at best is slightly damnable and awfully uncomfortable.

Minutes tick by. Clearance was expected for the flight at least by the time are aircraft arrived at the end of the runway. Because of the design of the experiment, each minute was a critical one.

The pilot, upon the urging of the doctor, called air traffic control to job them a bit on his clearance. The non-committal voice of air traffic control advises to hold. Then silence. Time is already running out for the experimental design. The pilot calls again and is advised that another delay must be allowed for.

By this time, the intercom between the pilot and the doctor is slightly "blue." The subject of the "blueness" is the air traffic control system. At this point I would like your own imagination to supply the text of the conversation.

By this time a total of twenty minutes has passed. Suddenly there is no more time left because of critical gas loads and other critical elements of the design of the experiment. The experiment is shot. The experiment is shot completely and two months of preparation have just gone down the drain and have been left on the end of the runway.

The time of the drama now switches to a scene dated a couple of years later. The scene is now an Air Traffic Control Center of the FAA. This Center is headed by one of your more intrepid compatriots. At this point in history the Flight Surgeon had been reassigned to the job of being Chief of the Environmental Health Division of the Aviation Medical Service of the FAA—namely me. I was on my first major swing through the Agency's facilities to gain some first-hand knowledge of just what our basic problems in environmental welfare were. Until that specific day I literally had never been in a control center and had only the vaguest notion of the internal machinations that went into the control of air traffic. I had often—and not lightly—told my Air Force pilots that when they took me on board for a flight they were to recognize one important thing—the minute I stepped aboard an aircraft they must recognize that they were then carrying the most important and precious life in the world aboard—and I expected them to comport themselves in the proper manner. Until the day that I spent in that particular center I really did not quite understand that I should have been saying this, probably, to my many friends within the air

traffic control system. The revelation was a startling one to me. At the end of the day, the Center Chief drove me back to my hotel. I went into my room, took a tranquilizer, placed an ice cap on my head and went to bed!

Immediately upon my return to the office. I approached the Civil Air Surgeon and was loquacious enough that I sold him the program that we would have to do much, much more about the lot of the controller. He agreed and the program at our research institute was born.

You might be interested as a corollary of my drama that one extra scene was played and quite dramatically. Within the year of my assignment to this Agency—and months after the drama I have recounted to you—a certain pilot, and you can guess who he was—came up to Washington on a cross-country weekend flight as my personal guest. I took him to the Washington National Center and it happened to be a day of IFR conditions. We spent several hours in the Center and Tower. I can truly say to you that you have another evangelist who sings your praises and recognizes fully the responsible and dedicated attitude of the Air Traffic Controller. It has become quite a point of honor between us to have deep respect for them. Just very recently I had a delightful letter from him and his concluding remarks were: "Doc, so help me, I haven't cussed an Air Traffic Controller in 3 years"!

You all are well aware that many problems still exist for you as individuals and as a service group. As individuals, however, I personally feel that you do a heroic job and you do it well. When the Aviation Medical Service began its search for solutions to your problems, many people identified themselves to give us the advantage of their special skills in the Air Traffic Control System.

Starting with the Director of your service, Mr. David Thomas, we could name a myriad of people who have been of special help. While I cannot take the time to name them all, I do want to single out two of your group who have been exceptionally helpful, generous of their time and thoughtfully understanding. Their advice and wholehearted support have opened doors for us, have given direction to many of our efforts and have helped solve many problems that could have caused delays. These men are Mr. Robert Schwerzel, from the Washington office, and Mr. William Berkeley of the FAA Academy.

The principal substance of my report to you can be regarded as an updating or extension of the report made by Dr. Trites, of our staff, last year at your convention. At that time he discussed some of the major projects initiated and in addition other areas of investigation awaiting adequate staffing. Our accomplishments to date have not been spectacular nor have they begun to resolve all the critically relevant problems. A patient with a 30 year history of varied systematology is not necessarily cured following 2-1/2 years of diagnosis and therapy.

However, with the resources available to us we have achieved somewhat significant accomplishment. Let me indicate the progress of two major projects mentioned by Dr. Trites last year. First, the longitudinal biomedical assessment of Air Traffic Control trainees—to date, we have examined with a multidisciplinary array of techniques approximately 1,400 Air Traffic Control trainees. This provides us with a base population—a representative sample of Air Traffic Controllers from which we have obtained baseline data. Against these data we will compare the results of periodic examinations given to samples drawn from this base population. From these periodic comparisons, conducted over a span of years, we will derive information critically relevant to the following questions (1) Just what are the effects of your jobs upon your health and proficiency—at what point in years of experience or age do these effects show up—to what extent? (2) Just what aptitudes, skills, etc., determined prior to entry on duty, insure and/or contribute to the sucessful Air Traffic Controller? (3) Finally, on the basis of such information, what predictive and preventive techniques can be employed to sustain health and performance?

In a very real sense, we are taking a longitudinal look at the reciprocal processes of a man-machine system. And since this is the first such look into the ATC system, we feel that the aforementioned information will enhance the efficiency of the system and the health of its human components.

The second major project pertains to shift rotation; more specifically, the frequency with which shifts are rotated. Very briefly, six terminal and six enroute centers were selected on

the basis of high IFR traffic handled and frequency of shift rotation. From these twelve facilities a total of 300 volunteer subjects were selected to participate in the study and were instructed on their duties as subjects. The duties, while simply started, entailed a great deal of work and for their willingness to cooperate as they did, we are most grateful. The duties, in brief, consisted of filling out a deck of data cards immediately prior and following a work shift for a period of 90 days. In the main, these data fell into three general categories of information: physiological information, psychosomatic symptomatology, and subjective states of proficiency, adequacy, etc. Up to now, we have been encoding these data which in itself has been a fairly sizeable job because approximately 400,000 IBM cards will have to be generated for machine analysis. We expect to begin running the required analyses soon and from these we will obtain information pertinent to these questions:

(1) In general, what are the effects, if any, of shift rotation frequency upon the health and well-being of Air Traffic Controllers?

(2) How are these effects manifested as a function of experience, that is, the assistant controller vs. the journeyman?

(3) What are the daily living habits of Air Traffic Controllers, that is, habits relevant to health and well-being?

So much for what has been on the books. Now I would like to mention briefly some of the work that has just been entered on our books.

In response to requests for our consultative service, we have been engaged with the problem of near-mid-air collisions. Our recommendations have been summarized and reported as an adjunct to the report of the near-mid-air collision study group headed by Mr. Charles Carmody. Of these recommendations, one deserves specific mention here. A careful study of the present manner of reporting such incidents reveals that while the present form may be adequate for the adjudication of error responsibility, it is not adequate for determining the cause or etiology of the incident concerned. If the etiology of such incidents cannot be fully and accurately determined, then attempts to reduce the occurrence or probability of such incidents will achieve considerably less than complete success. Consequently, through the cooperation of Mr. Enar "Bud" Olson, Director of the FAA Academy, a Panel of instructors having considerable ATC experience has been formed. These specialists:

Mr. J. H. Lanius
Mr. William Berkley
Mr. Perry Bolyard
Mr. John King
Mr. G. J. Fulkerson
Mr. Frederick N. Fairweather
Mr. Robert Kerr

are assisting us in the development of a prototype incident reporting form. This form phrased in human-function terminology will be designed to delineate the conditions precipitating the incident, the full nature of the incident or type of error, and what actions could have averted the error. For purposes of feasibility, it should also be pointed out that the other design criteria for this incident reporting system consist of ease and simplicity of reporting, elimination of ambiguous information, and convenient and rapid methods of analysis.

Another project has to do with the basic work characteristics of radar monitoring and/or control of traffic. A system is presently being developed which will provide automatic programming of dynamic target displays. With such a system we will be able to appraise, under carefully controlled conditions, proficiency and reliability as a function of workload, work duration, work-rest ratios, anxillary aids, impinging environmental factors, procedures, and display characteristics. This latter actually represents a major project in its own right because this concerns the problem of second-order visual displays. By second-order is simply meant the representation of actual objects and events by indirect means—or—in your case, instead of actually seeing planes and their relative spatial positions in a holding pattern, you "see" flight strips—a two dimensional substitution, and you must readily admit a most niggardly substitution. The objectives to which we have addressed ourselves are to determine the inherent inaccuracies and limitations of "seeing" which occur with representational visual information. Also, what models and equations can be developed which will *predict* limitations and inaccuracies and, equally important, which will indicate how displays may achieve optimal or more faithful representation. This, especially, represents a job where you, the ATC specialist, the engineer, and the biomedical scientist must integrate their respective talents. Further, this problem we believe to be particularly acute because of what is to come in the near future. I refer here to the plans for updating equipment and procedures reported by the System Design Team of the Systems Research and Development Service.

Finally, one other example of our present work is one concerned with speech communication. Given the fact that the entire auditory system—the ear (the sensor) and the central nervous system (the integrator) represents an unbelievable level of sophistication. The public generally wonders why further research is required. The simple reason, I think, is two-fold: Firstly, from the standpoint of sound our language represents a hodge-podge of ambiguity owing to the ways in which a language develops, grows, and changes. Secondly, communication in your working environment today represents a rather extreme departure from the environment in which the human auditory system evolved. In this connection, the critical point to be made is that it is the entire speech communication system—equipment, procedures, and contexts which is inferior rather than the auditory system itself. What we have to do, in a sense, is to achieve a much better matching of components. More specifically, let me mention one fundamental research problem with which we are presently engaged. In selecting one message from a group of competing messages, the human is actually performing a signal selection task of a very high order. He is asked to respond to a signal in the worst possible kind of noise – human communication. Studies are required which range from the simplest investigation of the effects of the various noise stimulus on the reception of spoken words to the effects of "contextual" or intellective" noise on communication performance. The basic questions involved are related to the differences between intellectual and non-intellectual signals, differences between contextual and non-contextual noises, improvement of sound reception when two ears are used to reinforce each other when receiving slightly different messages, and physiological mechanisms which may serve to cancel unwanted stimulus.

These, as mentioned, are some of the examples of our research efforts which concern you and, we hope, will be of eventual benefit. The solutions to these inherent problems will not be easy to come by and, necessarily, will require some time. An important point to be made, I think, is that the Agency is concerned not only with the efficiency of your system as a system but also with the health and well-being of the Air Traffic Control specialist who comprises the better half of this particular dynamic system. We feel that with the cooperation of your group we can arrive at certain solutions that will be mutually satisfactory to all agencies involved. We don't think we are the end-all of knowledge. You have to examine your own group and you have to make certain professional recommendations based on your specialized knowledge and capability. I would charge you that whatever your recommendations are, they should be responsible and germane to the situation of air traffic control—with special emphasis—as I know you would—on the public welfare. We, in the medical service, are at your service. We would like to call to your attention that you, too, are servants of the public you serve. In that service you might also be called upon to do certain things that might be distasteful and might actually impinge upon your free time. I would also recall to your mind that many people are, because of their particular skills called upon to exercise this adjunct of humanity. You have skills that are peculiar to you as individuals and as a group. I would call upon you to exercise your right to be professionally cognizant of your role in flying safety and in the dedication of your role as part of this country's effort.

The above talk was given by Dr. Steinkamp the first week in October at the Seventh National meeting of the Air Traffic Control Association. The world-wide meeting drew 1,200 controllers and some 600 additional participants at Las Vegas, Nev., at the Flamingo Hotel.

FAA FAIR EXHIBIT A SUCCESS

For the third successive year the Federal Aviation Agency drew people by the thousands to the exhibit at the Oklahoma State Fair.

This year's exhibit highlighted air-ground communications and radar. Sponsored jointly by the Airways Engineers Society, the FAA Academy and the Public Affairs Office, the exhibit featured live radar and voice communication between pilot and Will Rogers tower.

Some 24 radar instructors took part, on a voluntary basis, in the demonstrations at the exhibit in the new air-conditioned Arts and Sciences Building at the Oklahoma City fairgrounds. Larry Taranoff and James Edwards worked many extra hours and provided transportation during the setting up and tearing down of the microwave link. The link was used to project the radar signal from the ARS-1 building at the Aeronautical Center. The other instructors Ted Saemes and Jim Sroufe helped in the setting up of the exhibit.

Tacan and television also were a major portion of this year's exhibit. Components of this exhibit were shipped to Dallas for Southwest Region's use at the Texas State Fair.

Table in center contained animated airport layout complete with antenna and lights on field. To the left can be seen the live radar console. The two monitors reflected the image of the viewers at the exhibit. The picture was captured through a small television camera.

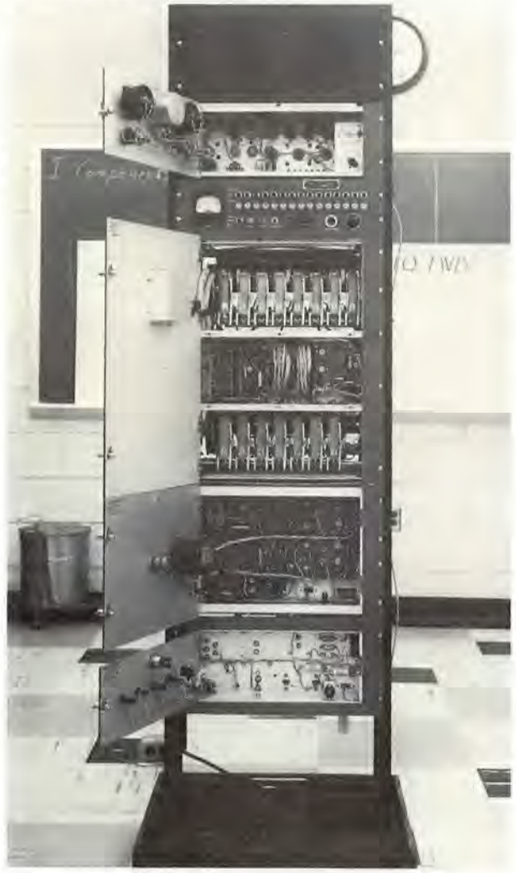
View of the Tacan, Rho-Theta Sysem in operation and a slide and tape narration of communications across the continental United States.

Overall view of the exhibit at the State Fair. Drapes in the background were put up through the courtesy of the FAA Employees Association.

EGYPT'S DR. FADEL RECENT CENTER VISITOR

A recent visitor to the Aeronautical Center was Dr. Aly Fadel of Egypt. Shown with Dr. Fadel are Norman Hodkinson, Ass't Chief, Aircraft Services Base, and Darwin Maurer, International Liaison Officer.

Dr. Fadel is Director of the Foreign Aid Unit, Ministry of International Planning for Egypt. He is visiting the United States under joint sponsorship of the Ford Foundation and the United Nations. He extended his visit a few weeks at the request of the State Department to observe functions and training carried out under sponsorship of the Agency for International Development. He was interested in learning first-hand of the training being received at the Aeronautical Center by AID participants for Egypt.



TRANSCRIBED WEATHER BROADCAST EQUIPMENT TRAINING

Training on the FA-5210 Transcribed Weather Broadcast Equipment is being conducted by the Communications Equipment Branch. The length of the course is one week.

The Transcribed Weather Broadcast Equipment is used at the Flight Service Stations to make continuous broadcasts of weather and other pertinent information to aircraft. This information is pre-recorded on magnetic tape by the Flight Service Specialists and is updated as required. The FA-5210 has fifteen tape channels and will automatically step from channel one through channel fifteen in sequence, or the equipment can be set up for any other pre-determined sequence by selecting the desired channels on the control panel. This equipment is completely transistorized, and the student should have a basic knowledge of transistor fundamentals.

The lecture portion of this course consists of a study of magnetic tape recording principles, transistorized audio amplifiers and switching devices, the control functions and the overall operation of the system.

In the laboratory, the student becomes familiar with the circuitry of the equipment and learns to analyze and evaluate the operation of the equipment. This is accomplished by trouble analysis procedures, which require the student to analyze selected equipment malfunctions and to determine the cause of the malfunction.

POLIO TO BOWLER IS COOPRIDER STORY

From an iron lung to a 183 league bowling average.

That is the story of Jimmy D. Cooprider, 28, an engineering draftsman in the Technical Services Division of the FAA Academy.

One evening in June, 1947 while living in Sayre, Jimmy was stricken with polio and rushed to Crippled Childrens Hospital in Oklahoma City. He was placed in an iron lung where he remained for three weeks.

This illness caused him to remain out of school during the Fall term in 1947. However, through the sympathetic help of his teachers he received his lessons at home and thereby was able to keep up with his class.

Jimmy graduated from Lindsay High School in 1953 as an honor student. He continued his education by attending Central State College in Edmond and was awarded a B.S. degree in Industrial Education in the Spring of 1957.

Cooprider began bowling in 1953 and has been an active participant ever since. In fact, he bowls in two leagues and maintains a highly respectable average in both leagues.

DON'T ASK HIM, WHAT HE DOES WEEK-ENDS

FLIGHT SERVICE COURSE

The Flight Service Course at the Academy was initiated in July 1961 to take care of the increased complement brought about by the expansion and greater importance of duties given to Flight Service Stations. This eight-week course presents subject material ranging from Air Traffic Rules to Radio Aids to Air Navigation and includes teletypewriter and procedures laboratories. More than 200 students have graduated from the Flight Service Course in the past year. Surveys forwarded to facilities receiving these graduates indicate that Academy students have justified the evaluations of their instructors, and that the basic eight-week course is providing a good understanding of Flight Assistance Service Procedures.

The 21 Flight Service instructors represent 315 years of related Government service, encompassing a variety of facilities—international, domestic and military. This provides the Academy with the instructor experience necessary to aid the student in all phases of training. Along with the Basic Flight Service Course, the instructors present related subjects to foreign national students and a familiarization course to people of industry and the Armed Forces. Some of the Flight Service instructors are assigned duties in certification, which entails the preparation of basic examinations for the Academy and field facilities. Another group is involved in field training materials, preparing standardized training material for use throughout the Agency.

So that the Flight Service instructor can keep abreast of current operating procedures, he is assigned to a flight service station two weeks out of each year. This serves not only to keep the Specialist current, but also helps in keeping the requirements of the laboratory portion of the course in step with the field.

* * *

One thing about growing old is that you don't feel your oats as much as you do your corns.

FOREIGN OFFICER RE-VISITS FAA CENTER

Shown are Enar B. Olson, Director, FAA Academy and Norman Hodkinson, Acting Chief, Aircraft Services Base, on either side of Lt. Colonel Mohammed Gul Bahar of Afghanistan.

This picture was made during the August visit of Colonel Gul Bahar, who is director-General of Civil Aviation in Afghanistan.

Colonel Gul Bahar is in the United States as a participant in the Foreign Leader Program of the State Department, spending about 45 days visiting airports, aviation facilities and aircraft companies in about a dozen cities of this country. This was his second visit to the Aeronautical Center, having last visited in 1956.

METEOROLOGISTS ASSIGNED TO FAA ACADEMY

A staff of four Weather Bureau meteorologists at the FAA Academy in Oklahoma City serve as teechnical consultants to FAA organizations at the Aeronautical Center. These meteorologists instruct Flight Service personnel in weather observing techniques and give them the basic knowledge required for briefing pilots in the expanded FAA program of pre-flight and in-flight assistance to pilots.

A complete Weather Bureau observing station has been established at the Academy to give trainees practical experience in observing. This supports an operational program of the FAA which produces half of the surface weather observations used by the aviation community. Weather reports are made by station personnel at locations where the Weather Bureau does not have offices. Formal training in weather observing is part of the basic Flight Service Station training program at the Academy.

Complete pre-flight weather briefing, which includes high quality interpretation of weather reports and forecasts for specific flight problems, is now available from almost 350 Flight Service Stations in the United States. The meteorologists at the Academy work closely with the Air Traffic Training Division in developing weather training programs to support this new weather service responsibility of the FAA.

The meteorological staff at the Academy is headed by Jeter A. Pruett, a graduate of California Institute of Technology, who began his weather career with the U. S. Air Force before World War II. Mr. Pruett had Weather Bureau duty at Fort Worth, Pittsburgh, St. Louis, Shreveport, and Oklahoma City's Weather Office before being assigned full-time to the FAA Academy in 1961.

INSTRUCTOR LEAVES FOR AFGHANISTAN

Curtis Harris, formerly an instructor in the Communications Equipment Branch of the Aviation Facilities Training Division, has departed for Khandahar, Afghanistan as a member of an AID Training Mission.

Harris will help organize and conduct a training center for Afghanistan students so they may operate and maintain airway facilities in their country.

Harris has been an instructor at the FAA Academy since February 1960, and he has contributed a great deal of time and effort to improve the training in the areas in which he was assigned.

Foreign CAP Cadets Visit Center

Stopped for a picture just prior to their take-off for a training flight on FAA Aircraft N-113, the Boeing 707, are visiting. Civil Air Patrol Cadets from Norway and the United States. The visitors are shown with Warren W. Smith, Chief of the Flight Standards Training Division and Darwin T. Maurer, International Liaison Officer. The Civil Air Patrol Cadets and their military escorts are:

Knut Smith-Oevland, Nils Harold Kraugerud, Bengt Eriksen, Erik Dahlen and Ove Skar, all from Norway, in addition to 1st Lt. Martin S. Knutsen and M/Sgt. Ivar Husby, Royal Norwegian Air Force. USAF Airman 1/C Engaul S. Knutson accompanied U. S. Cadets William Lynch, Dennis D. Burke, Mike Coble and John Black.

The Norwegian Cadets and Air Force Personnel were guests of General Maurice Maars, Manager of Wiley Post Airport. They also toured the Aeronautical Center.

Lt. Colonel Goodwin Speaker For Center Group

Lt. Colonel Frederick C. Goodwin, U. S. Army, who is Chief of the Helicopter and V/STOL Aircraft Division of the Aircraft Development Service of the FAA, was the main speaker October 3 of the Central Oklahoma Division of Aerospace Scientists at Glen's Hik'ry Inn.

He heads up the FAA's Project Hummingbird which is the Agency's development project on helicopters, and other V/STOL, aircraft types.

Good Tuning Pays Dividends

Eugene (Gene) C. Reichart, Radar Instructor at the FAA Academy recently received $95.00 additional on an Employee Suggestion. He suggested a method of tuning RML Transmitters (Collins Type 552A-5) by use of a synchroscope that has a sweep voltage output. Latest money was approved by the Incentive Awards Committee after the Bureau of Facilities and Material adopted the suggestion. The latest money was approved by the Incentive Award Committee after the Maintenance Engineering Branch reviewed the suggestion and recommended that a supplemental award be given based on intangible benefits that were expected to be gained.

The old or the conventional methods of tuning the transmitter are quite tedious and may take 30 minutes or more to tune a new klystron (as many technicians know). Gene's method takes seconds in comparison. With the number of transmitters that are in a system, the savings in man hours should be considerable.

Reichart's suggestion has been issued as an Electronic Facility Instruction RML-1. The procedure establishes a dynamic method of initially tuning a replacement klystron in the transmitter. By use of the Tektronix Oscilloscope Model 545 with dual trace to monitor the TX PWR and TX FREQ at their monitor jacks, and while sweeping the klystron with the scope sawtooth output, it is possible to observe the klystron power and frequency response curves while pushing the XTAL TEST switch. By observing the response curves it is easy to adjust the TX FREQ and TX PWR controls to their approximate proper settings. Fine tuning by normal method is then easily made.

Inherent in this method is a tool to analyze difficult and less obvious faults such as cavity trouble, etc. From the time Gene developed this method, (over two years ago) students have been taught the new procedure while attending the RML T/R and Repeater courses at the Center.

A similar suggestion for tuning the receiver (even more complicated) has ben submitted and favorable action has been indicated.

OF YESTERDAY'S WAR

Black puffs of smoke gave a stark ominous contrast against the blue azure sky. Each puff of smoke represented a mass of hurling metal that could tear an airplane superstructure into bits and shred human flesh into instant eternity. Flak is not pretty. It is a dreadful fear-strewn sky filled with the promise of death and destruction that can fill the stomach with a sickening fear.

Nervous sweat trickled down the side of his oxygen mask as the pilot settled down for the level run over the target. Time stood still. The second hand on his instrument panel slowly pushed its way past five . . . . . ten . . . . . fifteen . . . . . There was scarcely time to pray as the pilot held the aircraft on a steady course, waiting for the words, "Bombs away!"

How fast could time go? If you are old, time flies on wings that bend the body and wrinkle the face too fast, too soon. In combat, it hangs. And seconds slow into minutes as the fascinated eyes of its victim watch incredulously while a second gradually withers away.

His body tensed as if suspended — waiting and watching; every nerve taut — expectant. The actual disintegration of the aircraft came in one jumbled instant of flying and then falling. His parachute opened with a jerk!

Virgil Dingman, Air Traffic Control Specialist at the Academy, was on his way to becoming an actor in a game of hide-and-seek with the German Gestapo Agents in France. He doesn't look like a ham actor but as he says, "When your life is the prize, you take your lessons seriously".

Fortunately for Virge, the French Underground got to him before the Germans. It was decided on the spot to put him on a French farm where he would pose in the role of a deaf mute until something could be done about getting him out of France — a role he was to play for seven months.

From yesterday's war as a ham actor in the French Underground to the Aeronautical Center in Oklahoma is a long, long way.

DRIVING HAZARDS TRIPLED AFTER SUNDOWN

Until mid-March hours of darkness will be greater than hours of light. Although only one-third as many highway miles are logged after the sun goes down, there are three times as many fatalities per 100,000,000 miles driven then as in daylight. Because of peculiar dangers of nighttime driving, special precautions are necessary—especially in the critical hours of dusk.

In starlight, field of vision is one-tenth what it is in sunshine, and a person with normal vision by day may not see comparably well at night. Foreshortened vision is a major cause of nighttime accidents. Also, the driver's job is complicated by glare from oncoming traffic, inadequate illumination of roads, obsolete vehicle lights, poor road signs, and unlighted vehicles parked on narrow roads. In addition, there is fatigue and highway hypnosis, suddenly encountered ice slicks and fog pockets, erratic speed of drivers, and drunken drivers.

Three basic abilities help offset such risks: to see well under low illumination, to see against glare, and to recover rapidly from glare effects. Every driver should know to what degree he has these characteristics. A vital consideration is age. At age 20, 23% of all persons have substandard sight; at age 60 this rate is 82%, increasing sharply after age 40.

Modern headlights illuminate the roadway for 300 feet. At 60 mph on a dry road, it takes at least 300 feet to stop a car. Therefore, it is easy for a motorist to over-run his headlights and become involved in an accident. The higher the speed the shorter the range of vision. While headlights may pick out bright objects for 400 feet or more ahead, they may not illuminate dark things within 200 feet. Some vehicles exhibit reflective material which can be seen one-half mile in headlight beams, yet give the speeder only 30 seconds or less to stop. To cut down nighttime accidents, such materials are used increasingly on license plates and at strategic points along highways.

College Scholarships Are Granted

The President of the Aeronautical Center Employees Association awarded twelve $150 college scholarships to children of Aeronautical Center employees recently. This is the second year for granting scholarships. Last year the Association awarded four scholarships at $250 each.

Applications for scholarships were available to children of Aeronautical Center employees. Applicants were to be high school seniors or students enrolled in undergraduate study as full time students and eligibility was based only on grades and references.

Thirty-eight applicants were eligible for the scholarships. Names of all eligibles were placed in a box and names of winners and alternates were drawn at the Employees Association Board of Directors meeting on August 8.

Bill Werner, PT-960, Chairman, Scholarship Committee; Bob Beals, PT-912, accepting for his daughter, Pamela, who will attend OSU, Stillwater, Oklahoma; C. W. Von Rosenberg, FS-975, with Charles; OU, Norman, Oklahoma; Opal Gill, AC-113, with Carl; Westminster College, Fulton, Missouri; Mrs. Sandy Dacon, IM-974, with Sandra; OU, Norman, Oklahoma; Katherine Van Horn, AC-116, with Susan; Asbury College, Wilmore, Kentucky; Mr. and Mrs. Russell Myers, AC-118, with Anna Jane; OU, Norman, Oklahoma; Howard Barnett, FS-974, President of the Aeronautical Center Employees Association; Bill Werner, PT-960; Harold Rogers, FS-975, with Jo; Oklahoma College for Women, Chickasha, Oklahoma; Elizabeth Donnell, IM-988, with Paul; Central State College, Edmond, Oklahoma; Grover Fulkerson, PT-935, with David; OU, Norman, Oklahoma; John Freeman, PT-942, with John; Central State College, Edmond, Oklahoma; Mr. and Mrs. Lowell Bracher, AC-111, with Jan; Mercy Hospital School of Nursing, Oklahoma City; William Beam, FS-995, with Bill; Oklahoma City Branch Technical Institute of OSU; Howard Barnett, FS-974.

FOND FAREWELL

Another milestone was reached in the life of a grand old man when Carl Henry Kalm Nuckolls, better known as "Pop" to all those he worked and associated with, retired September 7, 1962.

"Pop" has had a full and eventful life since his birth in Scammon, Kansas on February 9, 1898. He has remained a true "Okie" by finishing his schooling in Claremore and Henryetta and turning to Oklahoma business, he has worked for Magneto Ignition Company, Tulsa; Oilfield Ignition Parts Company, Oklahoma City; and Southwest Aviation, Oklahoma City, which is now Aircraftsman, Inc.

In 1942 "Pop" entered civil service with the Army Air Corps at Will Rogers field. In 1946 "Pop" joined the CAA as an aircraft electrician. He had a big hand in the first flight inspection Aircraft Electrical System and muses about the great strides forward that have come about during his tenure. In 1957 "Pop" was made an Aircraft Electrical Foreman in the Aircraft Division at the FAA Aeronautical Center, which he held until retiremnt.

The contributions made to the CAA and FAA by Carl Henry Nuckolls have been many and varied and we, who knew and worked with him, know that we have lost an inimitable personage in "Pop" Nuckolls.

"Pop's" plans for the future include some fishing, helping his wife redecorate the house at 1937 N. W. 9th, and playing with his two sons (so he says); Carl W. Nuckolls, retired Master Sergeant, age 43, and Jay Nuckolls, age 40, of Nuckolls Banana Company, Oklahoma City.

Wishing you Godspeed, our prayers and best wishes go with you "Pop" Nuckolls.

Former Center Employee Now Principal

A former FAA employee, Delbert G. Lanham, is now serving as principal of the Bible Missionary School, Lake Charles, La.

While at the FAA Center, Lanham worked in the steel yard, later transferred to the Structural Building Material Group and most recently the Aircraft Service Group.

The last position was on the swing shift, and it permitted him to attend the University of Oklahoma during the day. He received his Bachelor of Science in Education Degree this spring at OU.

His wife will teach in the grade school in connection with the school he now directs.

OMB Hosts Southwest Region Materiel Personnel

OMB was host September 4-6, to seven Southwest Region Materiel Personnel as part of an extensive training program being given to the Materiel Specialist that will serve as the supply arm at Regional, District and Sector levels.

Presentations were developed and given by OMB personnel to familiarize each participant with the overall operation of OMB as well as the overall responsibilities of the Installation and Materiel Depot.

The benefits of this type training program are considered to be far reaching and should prove to increase the adequacy of supply support to the using activities.

Former Center Employee In California

Evan Melton, a former FAA employee, has moved to California and is continuing his post of a Lt. Commander in the U.S. Navy Reserve.

He recently was on a 14-day training cruise with the U.S. Naval Air Reserve Transport Squadron 702, Naval Air Station, Minneapolis, Minn.

Iowa Company Representatives Visit Center

In August, the Flight Standards Training Division arranged facilities to enable representatives of the Collins Radio Company of Cedar Rapids, Iowa to familiarize various Aeronautical Center groups with their latest production airborne equipment. The group shown in the accompanying photograph was the first of four groups totaling 85 engineering, operations and aircraft maintenance personnel attending the sessions.

The equipment on the table in the foreground of the photograph includes Navigation, Instrument Approach, Beacon, Transponder and Distance Measuring equipments. The manufacturer's representatives stressed several features of their new equipments. The elimination of moving devices precludes erratic operation and failures due to vibration, wear, tobacco tars, moisture, dust, wide temperature variations, etc. Substitution of solid state switching circuitry has resulted in reduction of size, weight and power requirements. Extensive utilization of point-to-point wiring in lieu of printed circuitry and plug-in components improves serviceability and reduces maintenance time.

MARGUERITE MAXWELL LEAVES CENTER

Cake, coffee and a note of thanks from the staff of the Security and Compliance Division marked the retirement for Marguerite Markwell.

MANY STOPS BEFORE OKLAHOMA CITY FOR FAA ELECTRONIC TECHNICIAN

Peter Bergsneider, 35-year-old electronic technician has been employed in the Electronic Laboratory, Technical Services Division of the FAA Academy since the 19th of February this year.

So what, you probably ask. Well, with so many native Okies employed at the Center, Bergsneider's background is quite a contrast. Peter was born near Bogata, Columbia, South America, later moving to Belgium and then to Holland.

He finished his elementary and high school education in the Holland and Belgium Public Schools.

The jump from south of the border to Oklahoma City was prompted by a life long desire to come to the United States. Oklahoma City was the chosen spot because his wife's brother was a student at Central State College in Edmond.

Bergsneider is continuing his education in physics thru the O.U. Extension Division.

Peter is married and the father of four boys, ages 1-10. His wife is a professional ballerina dancer and performed extensively in South America. She is temporarily inactive on the stage, but continues her love for the ballet by teaching.

Patrol Safety Show Big Hit At Center

Trooper Dan Combs of the Oklahoma Highway Patrol "packed them in" in September at the Headquarters Building with a live safety show.

About 1,650 Center employees got the safety message via entertaining fast draw demonstrations and humorous situations.

Trooper Combs used pistols and his service revolver and a fast draw to vividly demonstrate the slow reaction time of individuals in comparison to how fast accidents occur. Although this demonstration was originally prepared as a traffic safety promotion show, Trooper Combs emphasized that the safety message contained is applicable to any work or play situation.

Lt. Dale Petty, also of the Oklahoma Highway Patrol, Safety Education Division, assisted Trooper Combs in the presentation.

Both Trooper Combs and Lt. Petty expressed their appreciation for being given the opportunity to present the show at the Aeronautical Center.

Complimentary meal tickets weret furnished the Highway Patrolmen by the FAA AC Employees Association.

Both patrolmen wish to express their gratitude for the superb hospitality extended to them by all Aeronautical Center employees and in particular those organizations which took them on a tour of their facilities.

Trooper Combs said that he was available to put this safety show on anywhere in the State of Oklahoma, for Schools, civic clubs, public meetings, and other gatherings. Arrangements can be made by contacting Lt. Patterson of the Oklahoma Highway Patrol at Central 2-1261.

QUICK THINKING SAVES CHILD'S LIFE

Harvey M. Mayer, a student in the Radar School at the Academy, was recently credited with saving the life of a little three-year old girl. The techniques he used in saving her life were taught to him as part of the normal course given by the Communications Equipment Branch while he was a student here last year.

Mayer and his family are staying at a nearby motel which includes a swimming pool as one of its attractions. One evening this attraction proved almost fatal to a little three-year old California girl whose parents were staying at the same motel. Her older brother noticed what he thought was a doll floating near the bottom of the pool and pointed it out to his mother. She immediately recognized her daughter and the older brother dived in and pulled his sister from the water by her hair.

At about this time Mayer had stepped on to his front porch when he heard the mother's agonized cries. He ran across the grass and jumped the fence surrounding the pool. The little girl was quite blue by this time and her mother was ineffectually and desperately trying to give her artifical respiration by techniques now considered outmoded. Mr. Mayer offered the mother his help and immediately began using mouth to mouth resuscitation. After a period of between five and ten minutes she responded and was conscious and crying when the emergency team arrived.

Mr. Mayer is a native of Hosmer, South Dakota, joined the FAA in 1961 and is presently at Valdosta, Georgia. He attended Class 181 in the Communications Equipment School. One of the requirements of the C. E. Course is that all graduates be familiar with emergency first aid techniques. The instructor in this phase was J. Leslie Huff. This training is required primarily to include a greater measure of safety for the field technician whose daily environment is surrounded by lethal voltages and other dangers of life. But, as can be seen, such training sometimes pays unusual dividends.

"What-a-ya-mean . . . airsick? — We're still on the bus!"

HURLEY BIRDS

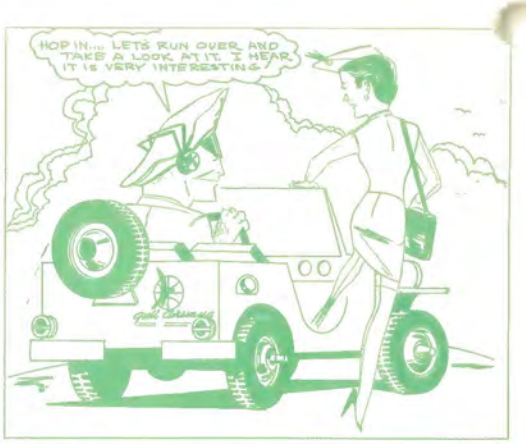
by Tom Hurley

"Don't argue with me, I know when I'm lost!"

"Say . . . I just remembered, we got a new batch of students tomorrow."

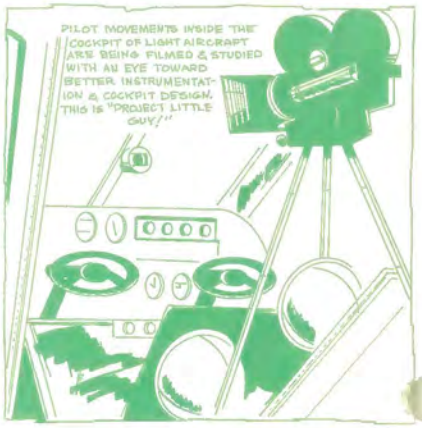
"Good grief! Was there **that** much water in the tank?"

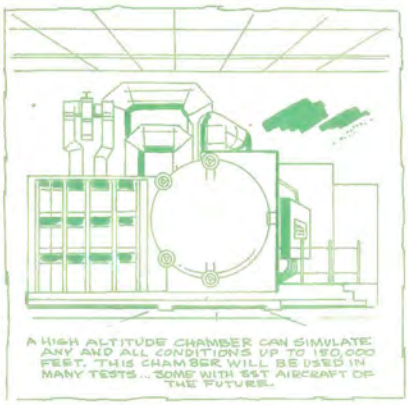
Happy and the Pilots



CIVIL AEROMEDICAL RESEARCH INSTITUTE OR CARI

CARI RESEARCH DELVES INTO MANY AREAS OF AVIATION SAFETY AND RUNS THE GAMUT FROM CROP DUSTING PRECAUTIONS TO A BETTER DESIGNED INSTRUMENT PANEL AND COCKPIT FOR LIGHT AIRCRAFT.... ALSO STUDIES IN TENSION AND FATIGUE AND THEIR REASONS ARE UNDERWAY. A BETTER SELECTION OF AIR-TRAFFIC CONTROLLERS.... THROUGH A SERIES OF PHYSIOLOGICAL AND PSYCHOLOGICAL TESTS BEING HANDLED THROUGH MEDICAL RESEARCH.





CARI IS VAST BUT THOROUGH

HUMAN FACTORS IN SUSTAINING LIFE AND COMFORT FOR THE PASSENGERS AND CREWMEMBERS AT ALTITUDES NEAR THE EDGE OF SPACE ARE AND WILL BE STUDIED.

PASSENGER SURVIVAL DURING AND IMMEDIATELY AFTER A CRASH IS A CURRENT STUDY.

AGING FACTORS IN ALL AIRMAN ARE BEING PROFILED THROUGH A RESEARCH THAT WILL TAKE SOME YEARS TO PROPERLY DELINEATE. AGE MAY BE PHYSICAL AND NOT MEASURED IN CALENDAR YEARS.