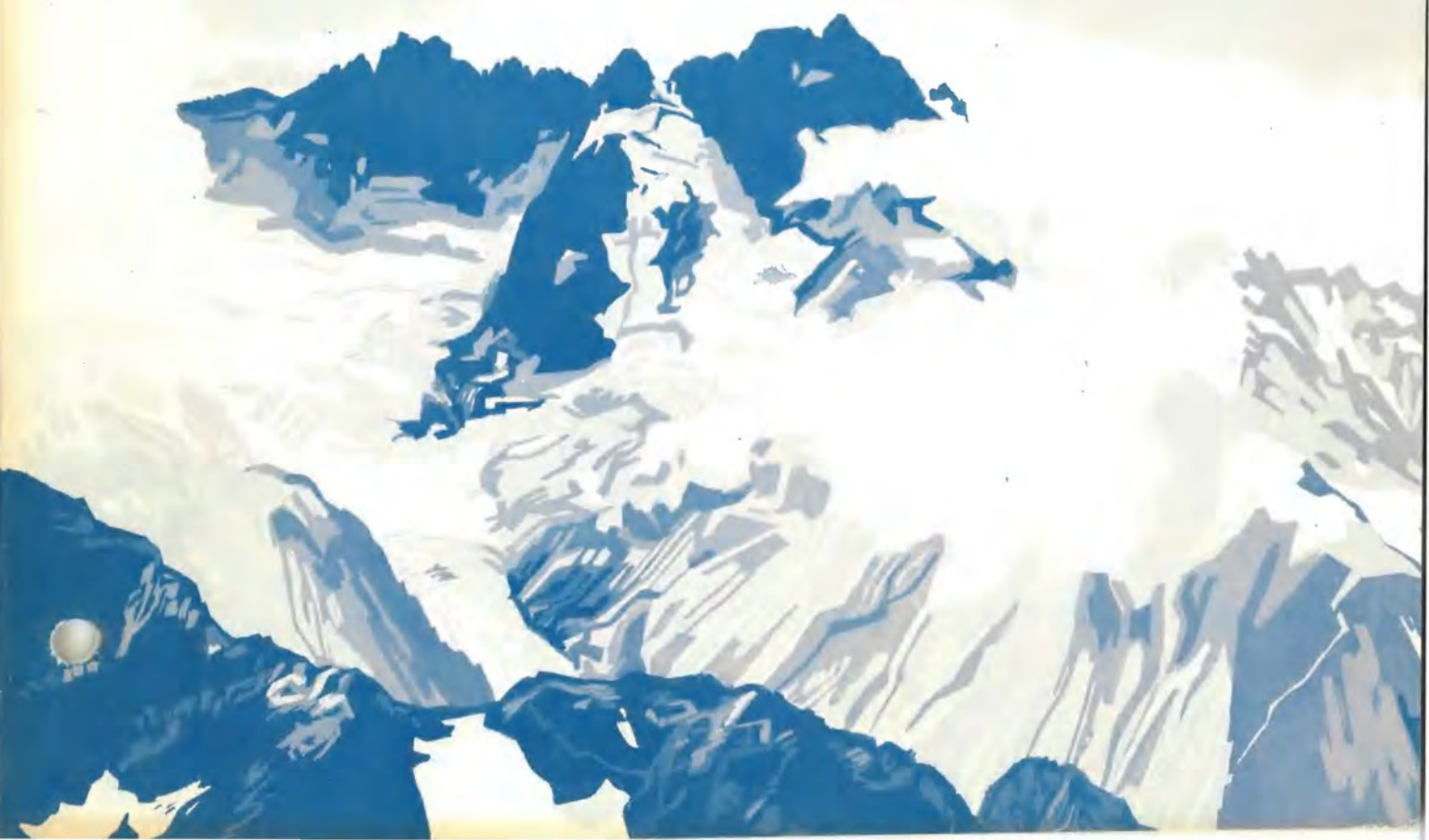
BEACON

FEBRUARY, 1962

FEDERAL AVIATION AGENCY

OKLAHOMA CITY

Aeronautical Center



EDITOR ..... Mark Weaver

ASSISTANT EDITORS..... Doris Nichols, Bob Newkirk

REPORTERS

Bob Oliver	AC-130	Joel Chennault	AF-934
Leona Rickman	AC-130	Carl Drumeller	AF-940
Violet Owens	AC-140	Floyd Gibson	AF-900
Margo Tuller	AC-110	James A. Cavanaugh	AF-957
E. B. McFadden	AM-900	Warren Rice	AF-950
Florine Crockett	FS-800	Jack Alley	AF-942
Betty Ivy	FS-940	Warren Thompson	AF-948
Loretta Falvey	PT-902	Bobby Reynolds	AF-958
Frank Tuckett	PT-930	Paul H. Shively	AF-960
Norman Gibat	PT-940	Neil Davis	AF-970
June Donceel	PT-950	Wesley Chesnut	AF-972
L. E. Shedenhelm	PT-955	Billy A. Holland	AF-974
Art Schmitt	PT-970	Jane Fanning	AF-974
James Ashworth	AF-905	Reinhart Will	AF-980
Naomi Brown	AF-915	Adrian Hart	AF-999
Clarice Hunt	AF-930	Charles Brill	Association

△ △ △

Cover by Robert Tinneman.

This month's cover portrays something of the sheer beauty of high altitude flying.

△ △ △

Tinneman's cartoon this month salutes the designer of the experimental plane and discusses Project Scan.

△ △ △

Inside rear cover is typically Oklahoman. An Indian in full regalia dances at Indian Village near Anadarko, Oklahoma.

LOOKING AHEAD

The building program at the Aeronautical Center is highlighted by a picture story in this issue. The new construction follows the architectural pattern first laid out when the Headquarters Building was designed several years ago.

The Point of View in each issue of the Beacon will highlight the views of Federal Aviation Agency people for the next few months.

The editor would like to point to the cartoon series again this month. If the reader has a pet project for air safety he thinks should be pictured in "Harry and the Co-Pilots" write it in some detail and send it to us.

POINT OF VIEW

The Federal Aviation Agency's greatest asset is the wealth of technical information possessed by the people who work for the Agency. However, unless we are aware of the need to continually update this information we stand in danger of becoming an organization whose information is behind the times. Technical change is occurring more rapidly than most of us realize. For example, it has been pointed out that transistors developed as far in 5 years as vacuum tubes did in 40. Almost every line of endeavor is affected by computers that assist our accounting and evaluation problems, data processing systems that make possible the exchange and recording of information at extremely high speeds, and new navigation systems that will enable pilots to fly a more precise course. These things are with us today and to understand and use them in the most effective way is a challenge to all of us in the Agency.

A recent newspaper story told about Trans-World Airlines equipping all of their overseas aircraft with Doppler radar navigation systems. This electronic marvel eliminates the need for navigators. If this system is made more precise, cheaper and lighter weight it may in time affect the need for ground navigation systems.

In the development stage we have such things as transistors so small that 22,000,000 of them could be mounted on this page, aircraft with wings and fuselage made of plastic, and a one pound magnet that can do the work of a 20-ton magnet. These developments are but a tiny fraction of the technical things we will be expected to deal with in the future and a great effort will be required by everyone to understand them just to keep from being stranded in a sea of unknown new technology.

In the electronic and supersonic jet age we wonder how much any one man can be expected to understand. Specialists will be prone to divorce themselves from all subject matter that is not within their specialty. Non-technical people will label many important subjects as being "too scientific" and will disregard them. Technical people will be inclined to use language that cannot be understood by the laymen. Are these attitudes a matter of mental capacity or a lack of desire to obtain information on what the other fellow is doing? In the coming years we should keep current on what is new that will affect our job, increase our communication with those who are doing the job with us, and maybe even change our "point of view".

CHARLES MUELLER,
Chief; Aviation
Facilities Training Div.
FAA Academy

TRAINING CENTER BECOMES FAA ACADEMY

The training organization at the Federal Aviation Agency Aeronautical Center has a new name. It now is called the Federal Aviation Agency Academy. Director is Enar Olson, who retains the same title he held as head of the organization when it was called the FAA Training Center.

The Academy has an average daily flow of approximately 13 hundred students. The greater share of this number falls in the area of electronic technician training. This training program deals with the instruction of engineers and technicians in the maintenance of communications and electronic equipment used in guiding the flow of air traffic. Radio ranges, omni-directional ranges (VOR), long-range and approach radars, distance measuring equipment, instrument landing systems all fall in the category of needing constant checking . . . and this is on a 24 hour basis. In addition, teletype, radio and other communications equipment must be maintained. Without these electronics men the entire structure of traffic control would be of no value.

Air Traffic Controller training is an essential part of the training at the Academy. This is "pressure" work and involves the basic control elements for both tower and enroute control training.

Another area of training in which the Federal Aviation Academy is involved is pilot and flight engineer training. This includes airline inspectors – the men who fly with the airline pilots, general aviation flight inspectors and so on. Currently being used by the Academy for this training are a Lockheed Electra, a Boeing 720 and a Convair 880. FAA inspectors receive 50 hours of refresher training each year. The Academy will soon acquire additional aircraft for such training . . . DC-6 or DC-7's.

Last Spring the Federal Aviation Academy undertook prototype training of some 20 military traffic controllers. The 15 weeks course finished with a radar training session at Kessler Field, Mississippi, but FAA instructors handled the course.

This instruction was so well received that the Department of Defense is giving strong consideration to training all such personnel at the FAA Academy.

FAA Schedules Eight General Aviation Regional Conferences

Changes proposed under the Federal Aviation Agency's plan to revise general aviation operating rules will be discussed publicly for the second time in eight regional conferences scheduled in April.

Initial discussion took place last October when nearly 3,000 airmen gathered at 33 Air Share meetings across the country. They commented on the current Part 43 of the Civil Air Regulations – which covers flight rules for general aviation – and suggested changes. These comments are being analyzed, and the FAA will present the changes it recommends at the April session.

This series of meetings is part of a concerted drive launched by FAA Administrator, N. E. Halaby last year to establish better, closer relations with the "grass roots" of the aviation community. It is an effort aimed at the widest possible direct discussion with airmen of FAA programs and policies so they will be clearly understood–and so they can be changed where appropriate to be more responsive to aviation's needs, but still not compromise safety in any way.

Another facet of this effort has involved a series of "hangar flying" sessions in which Halaby exchanged views with general aviation pilots across the country. A similar series of meeting will be launched with aviation maintenance personnel.

Effective and realistic regulation of general aviation is a prime FAA goal, both to improve service to the present fleet and to provide for its vigorous growth. This growth trend was marked last year by an increase of 4,250 aircraft, bringing the fleet to approximately 80,000 by the end of 1961. A total of 109,000 general aviation aircraft–all civil airplanes except airliners–is predicted by 1970.

The FAA offers a variety of services to this growing fleet, including the Flight Following Service begun early in 1961. Provided through the Agency's 421 Flight Service Stations, this new flying aid received early acceptance and has seen increasing pilot use during its first year. Under Flight Following Service, FAA monitors a pilot through his entire flight, making weather and other advisory information available through each facility over which he flies.

In Fiscal Year 1961 FAA Air Route Traffic Control Centers handled 296,040 Instrument Flight Rule (IFR) departures by general aviation aircraft. This was an increase of 35,000 IFR departures over the previous fiscal year when there were 261,027.

Also in Fiscal Year 1961 FAA's 240 airport traffic control towers handled a total of 14,925,312 general aviation movements. The Agency commissioned a total of 26 airport traffic control towers in calendar year 1961 bringing the total at the end of the year to 254.

Radar adivsory service was another aid instituted for Visual Flight Rules pilots last year at Washington, Indianapolis and New York's Idlewild control towers. It had been under development earlier at Atlanta. This service is available on request. The controller provides a pilot with advisory information, based on radar observations, on air traffic congested areas.

To help general aviation pilots in flying clubs become more proficient, FAA personnel discuss instruction techniques and procedures with flying club operators. Last year these safety inspectors gave courtesy flight checks to 132 members of more than 100 military flying clubs. They also attended 92 regular club meetings and spoke on flying techniques, good operating practices and emergency procedures.

In November, FAA General Aviation Safety Agents conducted 257 meetings in which 6,774 airmen were briefed on the special flying hazards created by cold weather conditions. In another series of meetings, 2,409 pilots joined FAA personnel in discussion of accident prevention measures.

The Agency's Blue Seal program was launched in October to encourage pilots to acquire enough instrument flying ability to get themselves out of any poor weather or visibility conditions they might accidentally encounter. The Aircraft Owners and Pilots Association cooperated in this effort by preparing a pilot's manual and an instructor's syllabus for the AOPA 360 Degree course. This course is not designed to give a pilot full instrument rating, but rather to give him sufficient ability to maintain the proper attitude until he can fly out of deteriorating weather and back to an area where he can fly under Visual Flight Rules conditions.

Nearly 20,000 manuals and 1,200 instruction syllabuses have been distributed. When a pilot qualified, the FAA reissued his certificate imprinted with the Agency's Blue Seal to indicate that he has this minimum instrument capability.

Airmen seeking FAA certification were provided with new publications last year to help them. There are flight test guides for the instrument pilot, the private pilot, the helicopter pilot and the glider pilot. Terrain Flying, a booklet of practical and helpful hints for pilots flying over strange terrain, has been revised and again made available.

To help airmen understand the regulations under which they operate, a "plain language" summary of CAR Part 43, the general aviation operating rules, was prepared for the Air Share meetings and for general information. A broader project, which will produce an integrated, simplified version of all general aviation regulations, is under way.

The growth of general aviation depends heavily on development of the nation's airport complex, and the FAA asked and received from Congress last year the authority to earmark $7,500,000 a year specifically for general aviation fields. This will provide ground facilities for the expansion of general aviation flying and also will relieve congestion at the larger airports.

Aviation Group Picks Director Washington Office Planned

A January meeting of the Airways Engineering Society was held in Oklahoma City. An executive director for the AES, composed of 4,500 Federal Aviation Agency employees, was named by the board of directors.

A Dallas man, Jack Kemp, was named to the post. Kemp was ordered to establish a national headquarters in Washington during February. Kemp has been a Dallas public relations man for 15 years and formerly served on the staff of three Dallas newspapers and United Press International.

No site has been picked for the 1963 convention of the Airways Engineers Society, although Oklahoma City is a prime potential site for the 1963 convention.

Construction at Aeronautical Center

This is the Civil Aeromedical Research Institute Building going up at the Aeronautical Center. Completion date on this multi-million dollar, three-story building is set for mid-summer. The usable footage in the new CARI structure totals 157-thousand, 318 feet. The cost of construction runs to more than six million, 213 thousand dollars.

The building will house all the research and administrative factors of CARI now housed on the North Campus at the University of Oklahoma in Norman.

A dedication and symposium for the new CARI building is planned for November, 1962. Plans call for top medical men from all around the world to attend and the dedication and symposium, running several days, should bring in top government and aviation figures.

The new office building . . . attached to the back of the Air Traffic Management Building, is scheduled for completion sometime in the Summer of 1962. The two-story addition will contain more than 58 thousand square feet of space and will house the offices of the Director, Federal Aviation Academy. The cost of this construction runs to 1-million, 94-thousand dollars.

A contract for construction of maintenance facilities at the Aeronautical Center was awarded during January to Link Cowen Construction Company of Shawnee. The construction will cost approximately 1-million, 235-thousand dollars and includes a maintenance building with an area of 53 thousand square feet and four equipment sheds.

Papers Print Pilots NOTAMS

A number of newspapers in the Oklahoma area have started carrying weekly reports on notices to airmen.

Ordinarily these NOTAMS are available from each Federal Aviation Agency Flight Service Station where the latest information on airports and navigational aids is received by teletype or published through the Airman's Guide.

Oklahoma has 120 airports listed in the latest director.

Pilots can telephone one of the seven FSS stations in Oklahoma to get such information. These stations are located at Oklahoma City, Tulsa, Gage, Ponca City, Ardmore, McAlester and Hobart.

° ° °

Thirty-four Federal Aviation Agency safety inspectors will receive specialist pilot training in three types of turbine-powered transports under a $592,124 contract with United Airlines.

The training, to be performed at United's training base at Denver, Colorado, will include instructions in the operation of DC-8s, Caravelles, and Viscounts.

The training by United is part of an overall program by FAA to insure that its inspectors have the same skill in each aircraft as the airline pilots whose operations they monitor. Training in other types of aircraft is conducted by FAA at its Aeronautical Center in Oklahoma City in its own planes.

Will Rogers Gets New Landing Lights

A system of light beams, on which pilots glide to a landing, will be installed at Will Rogers Field in Oklahoma City.

This will insure more efficient aircraft operation. Scheduled for completion within the next 30 days, the visual glide slope indicator is made up of 12 lights which will appear as light bars to the pilot.

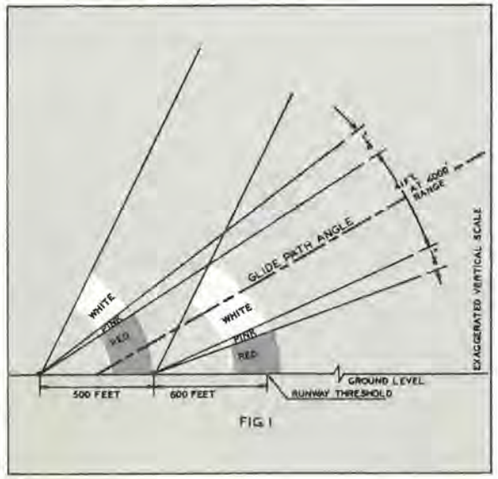


FIG. 1

A visual presentation of a glide path corridor is accomplished in VGSI by setting up two split transverse light bars, as shown in Fig. 1, one approximately 600 feet from the threshold (downwind bar); the other some 1100 feet from the threshold (upwind bar). Each bar emits a two sector red and white light beam.

Three lights will be installed on each side of the runway 600 feet from the approach end, and there will be three lights on each side at the 13-hundred foot mark.

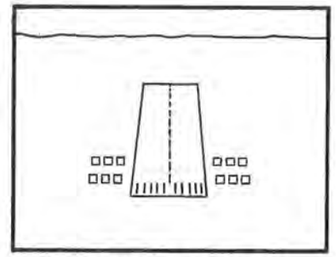
If followed precisely, the lights direct the pilot to a landing midway between the two limits. The lights are of a brilliance that permits use in daytime as well as at night.

As the pilot breaks out of a grey overcast he adjusts his approach so that the first set of flights at the 600-foot mark are white and the second set are red. If he's too low, both sets of lights will appear red. If too high, both sets will be white.

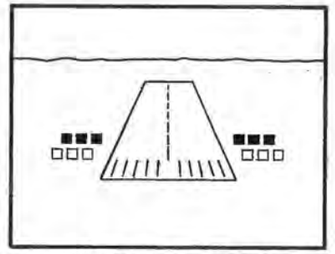
The Federal Aviation Agency says this installation will mean less aircraft noise because of fewer low-level approaches. The light beam system is at a three-degree angle.

It will be particularly useful to smaller aircraft which are not equipped with ILS equipment.

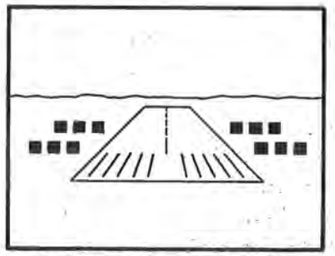
The FAA ordered VGSI systems for 40 airports last fall. Sylvania makes the installation equipment. Cost ranges up to 47-thousand dollars, depending on the amount of electrical facilities already installed in the runway areas.



ABOVE GLIDE PATH
(a)



ON GLIDE PATH
(b)



BELOW GLIDE PATH
(c)

BIOLOGICAL AND GENETIC EFFECTS OF RADIATION

The problems of man continuing his existence following a nuclear attack may be grouped into two broad groups – short term or immediate problems and those having long range implications which will extend into future generations.

The short range considerations may be related directly to survival. Shelter or shielding is critical to survival since this constitutes the only means of avoiding the harmful GAMMA radiation which will be present. Previous discussions of the effects of radioactive fallout have noted that radiation will decay 98% during the first 48 hours. This then represents the critical short range period where shelter is imperative.

Since living body cells consist mostly of water, radiation passing through a cell is most likely to strike water molecules (H_2O); in so doing it alters the bonds between the hydrogen and oxygen atoms of the water and produces toxic breakdown products. When combined with oxygen atoms powerful bleaches are produced such as hydrogen dioxide (HO_2) and hydrogen peroxide (H_2O_2) and these powerful chemicals can break down the highly complex protein molecules in the living cell. If cell division is inhibited as a result of radiation there will be no daughter cells produced to replace the parent cell. If the cell has been altered daughter cells may die before they in turn reproduce themselves or they may continue to grow without dividing thus producing abnormal growth.

Long range aspects of radiation will affect the present generation and may also carry over into future generations. Nerve tissues, including the brain, are generally insensitive to radiation ever after a lethal dose (650 roentgens). On the other hand blood cells, bone marrow, the lungs and certain glands are especially sensitive to radiation and the critical life processes controlled by these units are impaired. Unlike other cells of the body the transparent lens-cells of the eye cannot be replaced by regrowth. When these cells are damaged or die, a cataract forms.

The reproductive organs also are affected by radiation but certain generalizations are possible. Sexual impotency usually will only occur while incapacitated by radiation sickness – as from any other severe illness. Sterility of a permanent nature is not considered likely except from lethal doses of radiation. The possibility of conceptions after irradiation of the reproductive organs however, introduces a genetic hazard which must be understood.

Genetics is the study of inherited characteristics in the reproduction process. Inherited characteristics such as hair and eye color are controlled by genes. Genes occur in pairs with each pair controlling a characteristic. During reproduction each sperm or ovum reecives one gene from each parent. Radiation can affect the gene so that its characteristics differ from the parent. This results in a mutation or change of the offspring.

Over 99 percent of all gene mutations are undesirable. Mutations occur normally at the rate of about 2 percent to an individual. Therefore, for each child there is one chance in 50 that the child will carry a new mutation. A dose of 20 roentgens will increase the chance of a mutation to approximately 3 percent. A dose of 80 roentgens will raise the chances to 4 percent or double the normal rate.

In conclusion it may be stated that all radiation is harmful and should be avoided even for medical purposes unless the benefits to be gained outweigh the damage which will be imposed. Radiation from radioactive fallout can be avoided by an adequate national and individual shelter program to the extent that long range biological and genetic hazards may be minimized. This, of course is possible only through cooperative understanding and action by both individuals and our government.

* * *

A law student described the whole subject of debt: A DEBTOR is a man who owes money, A CREDITOR is a man who ***thinks*** he is going to get it back.

JET GEMS

Rumpus on the ramp – at a major international air terminal such as New York or Los Angeles, each major airline has a terminal almost as large as the entire air terminal of 10 year ago. A major airlines terminal may be on three levels – the upper for passengers, the lower for servicing and the basement for rivers of baggage which flows to and from jetliners an traveling belts. When a jetliner arrives on the scene it sparks the mobilization of more equipment than it takes to dock an ocean liner. This equipment consists of about 45 mobile vehicles including a mechanical "giraffe" for servicing the four story high tail of the mammoth aircraft. Large bellows-like gang planks roll up to the doors of the aircraft, enabling passengers to walk under cover to and from the terminal. They are out of the way of service crews who are inspecting and servicing the airplane, handling baggage, mail and cargo, filling fuel tanks, etc. The team work, efficiency, and split-second timing is worthy of a major national ball game – in some cases the "turn-around" is accomplished neatly in 45 minutes!

Digestion dilemma – the speedy jetliner has created considerable conflict between flight time and stomach time. On an international flight from Paris to Hawaii a first class passenger takes off around noon, has a feast before landing in the early evening in New York. Catching a transcontinental flight about one hour later he is served another full course dinner on the way to Los Angeles. Upon boarding a Honolulu flight he faces a third dinner. Fasten the seat belts and pass the seltzer!

The airborne indigestion is extremely costly to the airlines. The total 1960 passenger food expenses for domestic operations only are listed below:

American	$15,995,900
Braniff	2,735,513
Capital	2,870,604
Continental	2,070,734
Delta	4,063,745
Eastern	8,387,305
National	2,198,723
Northeast	1,203,257
Northwest	3,236,475
TWA	7,794,909
United	11,336,520
Western	2,205,082

When the jet age gets into full operation with completion of deliveries in 1963 it looks like the jet airlines will have to considerably reduce the feeding of passengers (which was developed to while away the time on the comparatively slow speed piston aircraft) or they may "kill their passengers with kindness"!

The weaker sex? – may be an ill-defined play on words – but the implication has shaken the aplomb of the world's best aircraft designers. They thought they had meticulously calculated and provided for every possible load, force, dimension, fatigue factor, etc. until the dictates of fashion created spiked heels on women's shoes! The impact developed by a dainty 110 lb. spike-heeled lass gracefully gliding down a jetliner aisle may exceed 2500 pounds per square inch spot load pressure. Honeycomb floor panels in jetliners soon began to show dimples and ragged edges which required reinforcement of the upper surfaces to cope with this latest feminine fad!

Turbine-itis – the basic reciprocating or piston automobile engine has "thumped" its way into the hearts of millions of people. The latest model has become a status symbol – keeping many of us "broke" much of our time. The automobile manufacturers have knocked themselves out to create "planned obsolescence" in styling in an attempt to hike sales over 6 million cars per year. In the search for new sales "gimmicks" the turbine-powered car has been mentioned but logical reasons such as: high initial cost, operation and maintenance problems, etc. have been given as restricting development.

Recently, a turbine-powered Dodge Dart braked to a whining stop in front of the Statler Hotel in Los Angeles following a five-day 3,154 mile test run from Central Park in New York. It is claimed the turbine engine performed smoothly on Diesel fuel, gasoline, kerosene and military jet fuel (except for water frozen in the fuel line at 18 below zero) –

averaging about 17 miles per gallon. Drag tests — accelerating from zero to 60 MPH in eight seconds resulted in performance equal to a "souped up" passenger car. Slow acceleration has been considered one of the major problems of the turbine for automobiles! Chrysler claims this engine has one-fifth as many parts as a piston engine, half the weight, no vibration and no need for antifreeze or oil changes. They plan on building 50 test cars next year — watch for them on the road. If your dog hits for the fall out shelter don't call the "Vet" — the high pitched whine hurts his ears! Production is at least three years away.

William L. Brown, Supervisory Aerospace Engineer (pointing at front side of engine in rear center of photograph), explained important features and characteristics of the turbojet engine, four of which power the Boeing 720 N113 utilized by the Flight Standards Training Division of the Federal Aviation Agency Academy in training Federal Aviation Agency Operations Supervisors and Inspectors. In addition to proficiency in flying the big jet transport, their training includes the proper procedures in conducting initial ratings and recurring checks of airline flight crews in order to maintain a high standard of performance and public safety in jet air transportation. The display was obtained through the cooperation of Mr. John T. Turner, Field Representative and officials of the Customer Relations Department of the Pratt & Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Connecticut.

Electra Scores 98 Consecutive Training Flights

The Lockheed-California Company reported an Electra prop-jet transport operated by the Federal Aviation Agency completed 98 consecutive training flights without a mechanical cancellation.

Assigned to the FAA's Aeronautical Center at Oklahoma City, the big turbine-powered plane flew 542 hours between February 13 — its delivery date — and the first week in August.

Fourteen government pilots and eight flight engineers completed training. Twelve other pilots attended 25-hour familiarization courses.

"All pilots have commented on how much they enjoy the ease of handling the Electra," an FAA spokesman said.

The Oklahoma City-based Electra keeps busy. On a typical day, according to the FAA, it is flying from 7:30 to 11:30 a.m. — and from 2 to 7 p.m.

Personnel briefing and aircraft preflight are scheduled from 6 to 7:30 a.m. and for two hours before the afternoon sessions.

"You'll get your chance to fly it, Fenley . . . just wait your turn . . ."

Copied from the Lockheed publication: "Lockheed Reports" Ted Perry, Editor.

CARI NOTES

The Civil Aeromedical Research Institute investigators have submitted 18 papers for presentation at the April 9-12 meeting of the Aerospace Medical Association in Atlantic City. Letters of acceptance of many of these papers for presentation are arriving daily at the Institute. This will represent the second year of CARI participation in the proceedings of the Aerospace Medical Association. The papers will range from the subject of research on crash injury through studies of air traffic controller proficiency to studies on crop duster poison effects. It is anticipated that 20 or more CARI staff members will attend the Aerospace Medical Association meeting.

Due to the proximity of NAFEC, this will also provide a good opportunity for some exchange of information between NAFEC investigators and CARI investigators.

* * *

An exhibit to honor the first Medical Director of the Bureau of Aeronautics of the Department of Commerce, Dr. Louis Hopewell Bauer, who assumed this position in 1926, is being planned by General T. C. Bedwell, Commander of the Aerospace Medical Division of the Air Force, Captain Philip B. Phillips, Head of the Department of Neuropsychiatry of the School of Aviation Medicine at Pensacola, and Dr. Stanley Mohler, Director of CARI. The exhibit will present historic photographs and drawings portraying significant aviation events in relation to aviation medicine. Among the items portrayed will be the first manned balloon flight in 1785, the first early balloon fatalities, early heavier than air aircraft advances, and pre-1935 incidents involving aviation medicine. On display will be pre-1935 equipment used in aviation medicine. The title of the exhibit will be the "Aerospace Medical Heritage".

* * *

Two CARI staff members recently received multi-engine ratings. Mr. Howard Hasbrook, who had previously held a multi-engine rating, was qualified for rental Category III aircraft. Dr. Mohler received certification of multi-engine aircraft.

* * *

Dr. Robert Dille will commence his two week Air Force reserve duty at Tinker Air Force Base beginning January 22.

First Aid Course On Television

Starting January 30th, educational television stations in both Oklahoma City and Tulsa will carry a sixteen-week standard First Aid Course. You can attend this class by tuning in Channel 13 in Oklahoma City and Channel 11 in Tulsa.

Each lesson will be shown three times a week to give viewers a chance to catch all lessons. The times each week are Tuesday—7 pm, Thursday—9 pm and Friday at 12 Noon.

Upon completion of the televised course each person will have an opportunity to be certified as First Aid trained.

The program series is being jointly sponsored by the American Red Cross and the Oklahoma Congress of Parents and Teachers. The course ends May 19, 1962.

The only equipment needed by the student is the standard first aid textbook which can be purchased from the Red Cross Chapter in your area for 75 cents.

DOPE HAPPY AMERICANS

The AAA says tranquilizers make some users too happy to drive!

Tranquilizer pills may make first time users dangerously sleepy for driving an automobile, medical experts at the National Institute for Mental Health, have revealed.

According to the experts, an estimated 34 million prescriptions for tranquilizers were written by U. S. physicians during 1956. While not everyone who takes a "happy pill" becomes an unsafe driver, here are a few facts to remember about the drugs:

1. Anyone taking tranquilizers should consult a physician before driving an automobile.
2. Drivers are more likely to be affected adversely by tranquilizers if they are taking them for the first time or are taking more than two pills at once.
3. The effect of tranquilizers varies from driver to driver, because some persons handle drowsiness better than others.
4. Not all brands of tranquilizers (there are 31 or more varieties) affect driving ability to the same degree; some are more potent."

My bathroom scales tell me I'm a do-it-yourself type! All by myself I made a bay window.

DIRECTED STUDY RELEASES DFC-25, A COURSE IN SINGLE-SIDEBAND COMMUNICATIONS

In keeping with its assignment to provide up-to-date material for Agency personnel, Directed Study has developed a course in Single-Sideband Communications which is now available for enrollment.

Designed primarily for Agency personnel concerned with the maintenance of point-to-point communication circuits, the objective of the course is to provide training in the basic theory and techniques of Single-Sideband Communication.

Completely self-contained in one volume, the course consists of eight chapters and six examinations.

A brief resume of the course content follows:

Chapter 1, Introduction, gives a brief history, describes the types and discusses some of the advantages and disadvantages of SSB.

Chapter 2, Modulation and Sideband Theory, reviews amplitude modulation, with emphasis on the frequency and power relationships of the AM wave. Representation of AM by vectors is reviewed and vectors are used to make a power comparison of AM, SSB and DSB Suppressed Carrier transmissions.

Chapter 3, Balanced Modulators, discusses balanced modulator theory.

Chapter 4, Filter and Phasing Methods of SSB Generation, discusses filter characteristics, sideband filters (crystal and mechanical), difficulties encountered in separating the sidebands, 90-degree phase-difference networks and methods of sideband generation.

Chapter 5, Linear Amplifiers, reviews amplifier classifications according to operating conditions, distortion in amplifiers, neutralization, and types of amplifier circuits.

Chapter 6, Receiving SSB, covers general considerations of SSB reception from block diagrams to the actual circuits used.

Chapter 7, The SSB-R3 Receiver, gives an explanation of the operation of this receiver.

Chapter 8, The AN/FRT-39 SSB Transmitter, includes a detailed explanation of the sideband exciter unit of the transmitter and a general discussion of the amplifier sections.

Examinations are included after Chapters 2, 4, 5, 6, 7 and 8. Estimated time for completion of the course is from two to four months.

PMB MAKES GONIOMETER AWARD

Mr. R. C. North displays his Goni Award plaque. Looking on, from left to right, are Messrs. William Cosgrove, Chief of the Goniometer Group; W. J. Shedlowe, Chief, Electronic Materiel Section; and Ralph Rea, Assistant Chief, Program Materiel Branch.

Borrowing a leaf from the more well-known Oscar and Emmy award presentations, the Electronic Materiel Section (AF-974) of the Program Materiel Branch, recently presented Mr. R. C. North, Chief of the Electronic Engineering Shops Unit, with a Goni Award. Following the same philosophy, PMB's award was for outstanding performance in the field of Agency improvement in providing field materiel support.

For the uninitiated, a "goni" is short for goniometer, an integral part of the VOR electronic equipment system used to implement our short range air navigational aid requirements along the Federal airways. Improvements in flight checking techniques and greater utilization of the system for navigation and air traffic control procedures resulted in a gradual tightening of allowable operational tolerances. The problem of improving equipment operation to meet the need for a better facility was somewhat aggravated by the fact that the original manufacturing specifications were based on somewhat less stringent requirements.

The goniometer unit fell into this category. The periodic overhaul by PMB of the approximately 1800 units in the field required more and more shop time due to the more intensive and thorough overhaul procedures now deemed necessary. Backlog became a pressing problem.

A crash program was put into effect. PMB talent, irrespective of organizational segment to which currently assigned, was formed into a working group. Messrs. E. W. Foster, Louis Foree, William Cosgrove, and North, were designated as members and the Washington Office periodically contributed the service of Mr. L. W. Wolfe, AF-131. Intensive study of the problem resulted in at least six significant modifications to overhaul techniques. A time and motion study was made and improvements implemented. Dissemination of additional information to the field via instructions and sketches attached to the unit and issuance of a Washington Electronic Facility Instruction based on PMB recommendations, contributed further to resolving the goniometer problem.

As a result of the blitz methods applied within a four-week period, production was increased 51% and the number of due-outs was reduced to zero. In behalf of and in recognition of the efforts of all concerned with this project, the termination of Project Goni was climaxed by presentation of the "Goni" Award to Mr. North.

The effects of this "crash" improvement program continue. Reject rates have been lowered, and production increases continue. At a recent reading, there were 41 "Goni's" overhauled and ready for shipment to the field to meet either emergency or routine needs. We feel that another "milestone" in PMB history has been achieved.

"WHEN YOU'RE IN WILLY'S CAR POOL...YOU GET TO WORK ONE WAY OR ANOTHER."

AMATEUR RADIO LINKS CENTER TO CENTRAL REGION

Up in the Central Region, a group of radio amateurs decided to test the ability of their stations to knit the Region together in case some catastrophe should knock out normal communications channels. The initial try, on 7 December 1961, was so successful they decided to make it a weekly affair.

As a result of a bit of written exchange between the Emergency Readiness Officers of the Center and the Central Region, amateurs at the Center were invited join in the test. The purpose of the test, of course, was to ascertain just how well amateur radio could link the Center with a Regional Office.

On Thursday evening, 11 January, at 7:00 PM (really 0100Z Friday, if you want to be modern and use Universal Time), George Lagaly, AF-974.5, manned the Aeronautical Center Amateur Radio Club's station, W5PAA. Everything ticked off like a charm under George's capable operation. Not only was contact effected with the headquarters station at Kansas City, but George talked with other amateur operators in the FAA employment all over the Central Region and one or two in the Southwest Region!

For other Center employees who might like to join the group, it meets every Friday, 0100Z, on 3977 kc/s. The normal mode of transmission is single sideband, of course, but AM phone and CW stations are equally welcome.

W5PAA is available for students' use while at the Center. For further information, contact "The Bookstore," Room 112, ANF-2 Building, Ext. 295; Larry Weissenberger, Ext. 371; or Carl Drumeller, Ext. 536.

* * *

In people as in machines, tolerance permits maximum efficiency with a minimum of friction.

* * *

The man who does not read good books has no advantage over the man who can't read them.

* * *

The only man who never makes a mistake is the one who never does anything.

Theodore Roosevelt

UNITED FUND AWARDS PRESENTED

First row: left to right; Bill B. Werner, Management and General Training Division, Lenora Heiser, Non-Resident Training Division, Loretta G. Falvey, Management Staff Division, Enar B. Olson, Director, FAA Academy, Mary S. Wiley, Management Staff Division, Margaret E. Russell, Training Development Division, **Second row:** Donald E. Lake, Aviation Facilities Training Division, Arthur R. Fillebrown, Non-Resident Training Division, Harold T. Swenson, Aviation Facilities Training Division, Claude E. Gardner, Charles L. Nichols, both of Technical Services Division, Herbert R. Richardson, Management and General Training Division, Warren W. Smith, Flight Standards Training Division, and George M. Waller, Air Traffic Training Division.

The successful completion of the United Fund Drive within the FAA Academy was recognized on Wednesday, January 10, 1962, when Certificates were awarded to all Divisions who met or exceeded their assigned quotas; and "Oscars" were awarded to all Divisions who participated, commending their efforts.

The FAA Academy is justifiably proud to claim its overall record – 105% of quota.

The Director, M. Enar B. Olson presented the awards. All Divisions participated.

Mr. W. E. Godfrey, Mrs. Darlene Steele.

Mr. Donald J. Odvody, Mr. Jack W. Ferguson, Mr. W. E. Godfrey.

Mr. W. E. Godfrey, Chief, Materiel Division, Aviation Facilities Depot, presented United Appeal Citations to Mrs. Darlene Steele, Division Secretary and to Mr. Jack W. Ferguson, Procurement Branch; Don Odvody, Chief, Procurement Branch looks on. Both of these folks are known as the "Glorious Leaders" when campaign time rolls around. They usually rack up a good score and really came through this time. Darlene raised 247% of established goal and Jack scored 131%.

Receiving awards and congratulations for suggestions valuable to the Federal Aviation Agency are these three FAA Academy employees. Shown left to right are Ronald V. Rudolph, William B. Taylor, both of the Aviation Facilities Training Division, and Ronald D. Ashby, Non-Resident Training Division. Mr. Enar B. Olson, Director of the FAA Academy, presented the awards.

Left to right above, Robert M. Beals, Training Development Division, Derrill L. Latham, and Ted J. Alkire, both of Flight Standards Training Division are presented awards in recognition of Sustained Superior Performance of Duties. Director, FAA Academy, Mr. Enar B. Olson is offering congratulations.

Mr. Bobby G. Tarpenning, Technical Services Division, receives a Sustained Superior Performance Award from Mr. Enar B. Olson, Director, FAA Academy.

Mr. R. W. Pulling, Manager of the Aviation Facilities Depot, is shown presenting a Sustained Superior Performance Award to Mr. James A. Owens, Aircraft Division, (left) and a Suggestion Award to Mr. Thomas E. Watkins, Materiel Division, (right).

The 1961 SCOUT-O-RAMA, held at the State Fairgrounds in Oklahoma City in December, had a decided international flavor. Special invitations along with free tickets went out to all foreign students and visitors in Oklahoma.

With 87 countries carrying on scouting programs, sponsors of SCOUT-O-RAMA, "Oklahoma's Largest Boys' Show", wanted the international visitors as guests so they could see the American youth organization in action. The 45 international students from the FAA Aeronautical Center saw a very complete show – from numerous and colorful displays of scouting crafts and skills – to samples of camp-fire cooked flap-jacks and biscuits – and tribal dances performed by Oklahoma Indian Scouts.

Shown are three participants being sponsored by the Agency for International Development in their training at the Federal Aviation Agency Aeronautical Center, Oklahoma City, receiving SCOUT-O-RAMA tickets. They are Shoichi Koike, Japan; Saad El Masry, Egypt and Ivo Costa de Vargas, Brazil. Mr. Koike was in the Flight Inspection School at the Aeronautical Center, while Messrs. El Masry and Vargas have been enrolled during the past few months in electronics courses. Oklahoma City Boy Scouts making the presentation are Chris Scruton of Cub Pack 10 and David Sears of Scout Troop 200.

"Well! Let me congratulate you, Forsgren. You've finally managed to get to work on time."

Pictured above, left to right, are Mr. Hamza Dabbagh, Chief, Safety and Accident Investigation Division, Saudi Arabia; Mr. G. J. Fulkerson, Chief, Special Air Traffic Training Branch and former Civil Aviation Advisor to Saudi Arabia; and Mr. Jaffer Dabbagh, Chief, Air Traffic Services, Dhaharan Airport, Saudi Arabia.

Two Civil Aviation officials from Saudi Arabia recently visited the Aeronautical Center for familiarization tours. During this time they renewed their friendship with the former Civil Aviation Advisor to their country.

Martin J. Zemler, nearest, and Louis L. McKenzie, driver, and the well-equipped truck which they drove to Akron, Colo., to change out an engine on an FAA DC-3 during sub-zero weather recently. The men got the aircraft back to flying status in three days, despite the absence of shelter of any kind in 20 below zero weather.

Neither rain, nor sleet, nor snow, etc. . . .

Pshaw! This applies to our emergency engine change crew here as well as to your postman.

Did you ever change out an engine on a DC-3 at 20 degrees below zero in a biting 18-miles-an-hour wind, amid snow drifts nearly 10-feet high – with no shelter yet?

Louis L. McKenzie and Martin J. Zemler, both of AF-943 know about such an experience, and you can bet your last peso on that.

It all started when a DC-3 checked to the Western Region and flown out of Denver, developed trouble when a cylinder swallowed a valve. Since two solid objects can't occupy the same space, the mishap resulted in a huge crack in a cylinder wall.

Only minutes away was the tiny airstrip which serves light single engine craft at the village of Akron, Colorado, about 100 miles northeast of Denver. The pilot set her down and called for help.

Such calls wind up in AF-943, and the names of McKenzie and Zemler were on the board to answer.

Fifty miles from Oklahoma City, the two men started bucking snow toward Colorado in the big service truck. They plowed through snow all the way to Akron.

Then the real fun began. The mercury was 20 below and snow, from a 13-inch fall the day before, had drifted up around the nacelles. A norther was blowing at 18 MPH. The DC-3 sat in the middle of the runway and no shelter was available.

McKenzie and Zemler went to work. After clearing snow away, they battled the elements three days in sub-zero weather to give the DC-3 a second good engine.

For completion of their efforts under hazardous and frigid condition, McKenzie and Zemler received a well justified citation from their Division Chief.

But the two mechanics insist that they have a responsibiilty to answer every call for such help, that they never turn down a call and that it is only a part of their job to keep the FAA fleet flying, no matter where, or under what conditions they must respond.

They are two of only 14 men available in the Aircraft area here to move out, whether it be anywhere from Maine to California or from Florida to Washington State, for emergency engine changes.

Those jobs are in addition to their regular line maintenance duties at the Aeronautical Center.

FIRST AERONAUTICAL CENTER FORMS IMPROVEMENT WORKSHOP

Standing, left to right. Charles Brill, Aeronautical Center Forms Management Officer; Cosmo Bowlin, AF-990; Frances Chase, AC-110; Janelle McNabb, AC-140; Kelly Tabor, AF-982; Paul Fast, AF-934; James Allen, AF-960; Evelyn Wiginton, AF-957; John Mahaffey, AF-958; Thelma Johnson, AF-945; Odell B. Lamb, Chief, Records Management Division, General Services Administration, Dallas Region. **Seated:** Irene Jaggers, AF-940; ReNetta Osborn, AF-942; Mae Laughlin, AF-934; Earl Minnis, AF-934; Delores Stinson, AF-924; Lee Kelly, PT-960.

Forms Management Program Aided by Forms Improvement Workshops Presented by GSA

Administrative Services Division's forms management program at the Aeronautical Center got a shot in the arm – in fact two – with the presentation of Forms Improvement Workshops Dec. 13-14, 1961, at the Aeronautical Center attended by 37 forms management representatives and line supervisors who use forms.

Two sesssions comprised each workshop from 9:00-11:45 a.m. and 1:00-3.45 p.m. each of the two days. Each participant was to select a form to improve and submit a forms improvement report describing the improvement and the expected benefits and savings.

The workshops were arranged through the cooperation of Ivan D. Eyler, Regional Director, National Archives and Records Service, General Services Administration, Dallas, Texas. The first workshops on Dec. 13 was presented by Odell B. Lamb, Chief, Records Management Division, GSA, Dallas. The second, by John B. Watson, National Archives and Records Service, Dallas. Also accompanying the group was Burton K. (Keith) Jennings, Federal Records Center, Fort Worth, who in 1959 presented a Records Disposition Workshop for Custodians of Files at the Aeronautical Center.

The Forms Improvement Workshop is something quite new to the government. Yet the principle is not new. The principle is simply the systematic application of common sense, the key being "systematic." Industry and Government have recently been giving work simplification courses to encourage improvement in tools and operations by applying the SYSTEMATIC methods of Management Engineers and other specialists. There is no secret formula involved when the methods are applied to

SECOND AERONAUTICAL CENTER FORMS IMPROVEMENT WORKSHOP

Standing, left to right: John B. Watson, National Archives and Records Service, General Services Administration, Dallas Region; Joe Kordish, FS-874; John Freeman, PT-940; Jimmie McLane, PT-970; Peggy Bennett, AC-130; Jane Eastham, PT-931; Betty Donoho, FS-910; Joy Railey, PT-960; Jacqueline Williams, FS-940; Ruth Baxter, PT-930; Muriel Lowe IAO; Marjorie Goyer, AC-190; Mildred M. Davis, PT-960; Bettye Corbin, PT-902; Charles Brill, Aeronautical Center Forms Management Officer. **Seated:** Eddie Kjelshus, FS-870; Betty Brown, AF-951; Gwen Moran, AF-930; Patti Chapman, FS-802; Lois Brasher, PT-942; Virginia Freeman, FS-873; Margie Shannon, AC-140; and Asia Krause, AC-140.

forms. Forms, after all, are simply tools – tools made of paper and print. In the workshop, some of the systematic methods used by those skilled in designing such paper tools were considered.

It was emphasized that all forms cost money, but paper and print are only a small part of this cost. To be specific, cost studies in private industry and Government show that for every $1 spent in printing a form, $20 worth of clerical time will be spent in using the form.

The workshop is designed to help achieve improvement . . . not perfection. Admittedly, we have probably never seen the perfect form; there is always room for improvement.

By means of handouts to each participant, the workshop consisted of step-by-step group discussion and improvement of a hypothetical Shipping Order and Invoice which involved beginning with a separate Shipping Order Form and an Invoice. There followed the draft of combined form; form after item challenge; form after improved arrangement; form after improved spacing; and the final printed form.

The improvement and expected benefits and savings of this action resulted in the following:

1. The Shipping Order and the Invoice were combined, thereby eliminating the separate typing of 31,200 invoices a year. This saves the unnecessary re-typing of about one million items of information every year.
2. The cost information will now be entered from the stock cards by a Supply Clerk while the form is being typed, rather than by an Accounting Clerk later. This saves looking up price information for over 187,000 items a year.
3. By eliminating other unneeded items, there will be 60,000 fewer entries annually.
4. Over 150,000 fewer copies will be prepared and filed since it will no longer be necessary to keep five of the seven files previously maintained.

5. Line numbers have been substituted for stock numbers in the Shipping Instructions section of the form, greatly simplifying these entries.

6. Check-off boxes and signature space have been provided for the entry of receiving information. This replaces the handwritten certification previously necessary on the old Shipping Order form.

7. Numerous improvements have been made in the arrangement, spacing, and clarity of the form which will simplify the writing, reading, mailing, and filing of the form.

8. Only the savings resulting from the combination of the forms and the elimination of copies have been computed. This adds up to the time of five clerical employees or approximately $19,000 a year.

Left to Right – Thomas J. Creswell, Agency Safety Engineer; Henry A. Rieger, Aeronautical Center Occupational Safety Officer; and Rudolph M. Marrazzo, Agency Industrial Hyiene Engineer.

Focusing attention on environmental working conditions, T. J. Creswell, Agency Safety Engineer, and R. M. Marrazzo, Agency Industrial Hygiene Engineer, recently spent several days at the Aeronautical Center.

Guiding the Washington visitors through the various Center activities was Henry Rieger, Occupational Safety Officer for the Aeronautical Center. Cooperation from personnel of the Center activities surveyed resulted in information which will be utilized to improve working conditions.

FEDERAL SERVICE JOINT CRUSADE

The annual campaign for the Federal Service Joint Crusade Agencies will be conducted at the Aeronautical Center sometime between now and April 30th.

Recently President Kennedy said, "The Crusade provides an opportunity for us in the Federal service to demonstrate our belief in the dignity and importance of man as an individual. Through the three organizations which conduct this joint campaign – Radio Free Europe, the American-Korean Foundation and CARE – each of us can voluntarily contribute to our nation's fight against the fear, poverty and hopelessness which are still the daily expectation of much of humanity."

This campaign is based upon the policy of true voluntary giving. There are no agency money goals or quotas and no pledges. The goal of the campaign at the Aeronautical Center this year, as it has in the past, will be again to increase both the average gift and the number of contributors.

The campaign will be conducted on that basis. Give generously.

GO AHEAD AND DO IT!

Take that trip to Europe and the Middle East that you have only thought about before. It is now possible to do this on the ever popular Go Now – Pay Later Plan.

All for only $1450 from New York or $145 down and $64.74 per month for 24 months. This is strictly first class including jet service, first class hotels, all meals, and sightseeing with a tour escort through these romantic places – Lisbon, Madrid, Athens, Cairo, Jordan, Israel, Vienna and Copenhagen.

For further information concerning this trip, you may contact the FA Club Travel Committee

Attn: Mrs. Lois Heinricks, AF-333
2065 T-4 Building
Washington 25, D. C.

When – from May 5 to June 3, 1962 – Only 19 days leave.

Annual Employee Performance Ratings

The regular annual employee performance rating is to be accomplished for all employees who have had three months or more of service during the rating period and who are on the rolls on the rating date of January 31, 1962, with the exception of those employees who are serving probationary or trial periods. The rating period begins the day following the end of the last rating period or the date of assignment to the current position, whichever is later. Agency Practice 3-430 prescribes the procedures to follow in rating employees.

The main objectives of the performance rating program are (1) to recognize the merits of employees and their contributions to efficiency and economy in the Federal Service; (2) to improve the effectiveness of employee's performance of duty; and (3) to strengthen supervisor-employee relationships.

Performance ratings are utilized by the supervisor as an integral part of a continuing overall program of effective supervision. Supervisors are continuously studying their staff to identify: (1) Employees whose performance should be recognized by an "outstanding" rating, or an incentive award, or both; (2) Employees having potential capacity for development for whom the supervisor should make specific future development plans; (3) Employees whose performance reveals deficiencies correctible by special training and supervision; and (4) Employees who are misplaced in their present assignments or who are unsuitable for Government employment and should be reassigned or dismissed.

No written performance rating report form is normally used to record "satisfactory" ratings; however the rating official will notify each employee of his finally approved rating, discuss the evaluation with him, and notify the employee of his right of appeal. The evaluation of performance and the development of employees is a continuous responsibility of the supervisor. The discussion of the performance rating is only one of the frequent appraisals and discussions a supervisor normally has with his employee throughout the rating period. It is at these times that the supervisor makes sure that employees are aware of the performance requirements of their jobs and deficiencies in current performance, and suggests ways that employees may improve their performance. The interviews with the employee regarding his performance should not be handled as a perfunctory obligation. They should be used to improve the effectiveness of employee performance and to strengthen supervisor-employee relationships.

To assure completion of all steps in the rating process, the following deadlines have been established. However, rating officials should complete all phases of the rating process as soon as possible and not necessarily wait for the completion date of any one step before commencing the next step:

January 31st - February 15th

Rating official (immediate supervisor) rates his employees.

February 16th - March 1st

Rating official discusses assigned ratings with reviewing official (next highest supervisor)

March 2nd - March 15th

Forward all recommendations for outstanding ratings to the appropriate Approval Authority

March 16th - March 31st

Rating official notifies employees of his approved rating and discusses evaluation with him.

We urge each employee to give serious thought to his individual work performance on a day-to-day basis. If you can honestly say at the end of your work day, "I have done my job ot the best of my abiilty," you may be reasonably sure that your efforts will be recognized and that you will receive consideration for a performance award.

* * *

The man who wants to do something finds a way; the man who doesn't finds an excuse.

TRAINING CORNER

Training is a common-place word in practically all fields of endeavor. Our own Agency is undoubtedly more conscious of Training than most organizations and especially is this true of the Aeronautical Center where Training is one of the reasons for our being. In spite of our acute awareness of training, there is one area that we are prone to overlook.

This area overlooked is on-the-job training. We readily recognize the formalized on-the-job program but fail to see the day to day on-the-job training required and accomplished. Every time there is a change in personnel, and every time there is a change in procedures or methods, there is a certain amount of on-the-job training. Another most important item we overlook is cost. The next time a situation of this nature exists, pause a moment, figure the manhours involved, and estimate the dollar value. This is high value Training.

If we are to get the most for our money in on-the-job training, we must use careful planning to assure that our training is adequate and accomplished as economically as possible.

To give you a better picture of the costs of on-the-job training, we are reprinting an excerpt from an article in the October issue of Nation's Business:

In 1962 American companies will spend from $25 billion to $30 billion for on-the-job training of American workers, according to reliable estimates.

That sum will be roughly equal to total spending for all formal public and private education in the United States in the same period.

The training figure for industry covers not only amounts budgeted directly for on-the-job training programs but money spent in inducting new people, as well as training required because of transfers, job changes, introduction of new product lines, and other factors.

Dr. George S. Odiorne, Director of the Bureau of Industrial Relations at the University of Michigan, estimates total spending for on-the-job training in the 1960's will approximate $300 billion.

Dr. Odiorne suggests that industry, facing a staggering and expensive training job in the future, may some day campaign for tax allowances for depreciation of "the vast investments they make in human capital' in an era of rapid change and accelerated obsolescence of skills."

When we remain constantly alert to our training needs and conduct each bit of training keeping in mind its true importance, we will harvest a crop of benefits. Training time will be reduced. Training will be effective. Costs will be cut and efficiency and productivity increased. And, our people can get on with the job to be done with the confidence that comes with knowledge.

EDUCATION

"When is a man educated?"

When he can look upon the universe, now lucid and lovely, now dark and terrible, with a sense of his own littleness in the great scheme of things and yet have faith and courage.

When he knows how to make friends and keep them, and above all when he can keep friends with himself.

When he can be happy alone and highminded amid the drudgeries of life.

When he can look into a wayside puddle and see something besides mud, and into the face of the most forlorn mortal and see something beyond sin.

When he knows how to live, how to love, how to hope, how to pray—glad to live and not afraid to die, in his hands a sword for evil and in his heart a bit of song."

JOSEPH FORT NEWTON

SIGNS OF THE TIME — *Lead To Safety*

Mr. Dormah A. Knight, Illustrator of the Materiel Division Staff discussed a safety poster he recently developed with Mr. Roy L. Taylor, Materiel Division Safety Representative.

In creating this poster, Mr. Knight chose some forty of the various caution and warning signs we see from day to day but sometimes fail to heed. These are not overlays or cut-outs but are faithful reproductions in full color. If you look close you will observe in cartoon form some of the unfortunate consequences that follow failure to abide by such signs.

This poster will be displayed in various areas of the Materiel Division and Depot operations.

MENTAL HYGIENE CREED

1. I believe in God, and with His help I will make my life significant.
2. I will adapt to life immediately, completely and gracefully.
3. I will work, rest, exercise, play—everyday.
4. I will work at a worthwhile job.
5. I will avoid undue fatigue.
6. I will laugh more everyday.
7. I will form good habits of living, thinking, acting, speaking, and feeling.
8. I believe that self-pity, suspicion, envy, jealousy, and revenge are useless sentiments. That loyalty, courage, and kindness are dependable sentiments. In them will I put my trust.
9. I will discount harmful emotional urges, avoid emotional orgies, and keep away from emotionally undisciplined people.
10. I will face facts, discount my likes and dislikes, and cultivate an objective point of view.
11. I will know myself, accept my liabilities, and cultivate my assets.
12. I will make clear-cut decisions and abide by them. I will ask for counsel, and consider it without argument, but let no one make up my mind for me.
13. I do not expect to get precisely what I want in this world. I will not kick against the pricks of life. I expect trouble and have accepted inevitable difficulty, that I may be free to accept opportunity unhandicapped by a sense of difficulties.
14. I know that fear, anxiety and worry cannot hurt me. They threaten to destroy, but they possess no weapons other than the ones I give them. Even though afraid, anxious, and worried, I shall continue with my usual activities, knowing that fear is the normal stimulus to courage.
15. I choose to see the good aspects and meanings of life. I do not deny that ugliness and evil exist; I do not overlook them, but having seen them I choose to look for the good.
16. I know and will help others to remember that humanity is a vast reservoir of love, courage, helpfulness, strength, and ability. I shall draw on it without limit to help others and myself.

By: William B. Terhune, M. D.

"YES! I KNOW YOU...YOU'RE THE GUY THE GIRLS CALL "ROMEO"!

Railey--Manahan Nuptial

Miss Joy Lee Manahan became the bride of Mr. Robert H. Railey on January 8, 1962, at St. Matthews Methodist Church in Midwest City, Oklahoma. The Reverend Wayne Segars officiated. After a honeymoon trip to Texas the couple is at home at 3620 N. W. 42nd in Oklahoma City.

Joy is presently an employee of the FAA Academy. Before joining the Management and General Training Division last November she was secretary to the Training Coordinator, 1707th Air Transport Training Wing at Tinker Air Force Base.

Bob, who was formerly Chief, Management Services Section, Civil Engineering Division at Tinker, has been with the Office of the Manager since September 1960. He is the Administrative Officer to the Chief, Plant Engineering Division.

The couples' many friends wish them much happiness.

MRS. HELEN I. HEFNER RESIGNS

Goodbyes were said reluctantly to Mrs. Helen I. Hefner on December 15, 1961, her last day on official duty at the Aeronautical Center. She has since moved with her family – husband Carl and daughter Linda – to Lindsay, Oklahoma. Another daughter Charlotte, is attending Oklahoma State University at Stillwater. For more than four years Helen served as secretary to Mr. J. B. Mitchell, Assistant Director, FAA Academy. Before then she had worked in other areas including the Federal Airways Standardization Division, the Aircraft Standardization Division, the Aviation Safety Standardization Division and the staff of the Director, Aeronautical Center. Her many friends are truly sorry to see her leave. To make the parting a little less sad, those most closely associated with her gathered for a "farewell coffee-break" which included cake and all the trimmings.

She received a going-away gift of costume jewelry, presented by Mr. Mitchell, in behalf of the group.

"Pull over to the side of the road."

"Yes?"

"Here is Our Center Basketball Team"

Top Row, Left to Right: James Ogle, Glenn Mayfield, James Burnett, Dan Sykora, Bob Howard & John Gamble. **Bottom Row, Left to Right:** Rubel Garner, Glenn Hightower, Carl Wilson, Wayne Farrell & Leroy Snellen.

JAMES OGLE stands 6'1" tall and works in the Program Material Branch, Materiel Division, Aviation Facilities Depot. Jim is occupied as a warehouse Lead Foreman.

GLENN MAYFIELD stands 6'3" tall and works in the Program Materiel Branch, Materiel Division, Aviation Facilities Deport. Glenn is occupied as an Electronic Technician.

JAMES BURNETT stands 6'2½" tall and works in the Administrative Staff Branch, Aircraft Division, Aviation Facilities Depot. Jim is occupied as a Management Analyst.

DAN SYKORA stands 6'5" tall and works in the Operating Materiel Branch, Materiel Division, Aviation Facilities Depot. Dan is occcupied as a Digital Computer Programmer.

BOB HOWARD stands 6'0" tall and works in the Program Materiel Branch, Materiel Division, Aviation Facilities Depot. Bob is occupied as a Warehouseman.

JOHN GAMBLE stands 5'11½" tall and works in the Operating Materiel Branch, Materiel Division, Aviation Facilities Depot. John is occupied as a Supply Commodity Officer.

RUBEL GARNER stands 5'9" tall and works in the Operating Material Branch, Material Division, Aviation Facilities Depot. Rubel is occupied as a TAB Project Planner.

GLENN HIGHTOWER stands 5'8" tall and works in the Operating Materiel Branch, Materiel Division, Aviation Facilities Depot. Glenn is occupied as a Digital Computer Programmer.

CARL WILSON stands 5'7" tall and works in the Operating Materiel Branch, Materiel Division, Aviation Facilities Depot. Carl is occupied as a Digital Computer Programmer.

WAYNE FARRELL stands 6'0" tall and works in the Operating Materiel Branch, Materiel Division, Aviation Facilities Depot. Wayne is occupied as a Digital Computer Programmer.

LEROY SNELLEN stands 5'11" tall and works in the Communications Equipment Branch, Aviation Facilities Training Division, Federal Aviation Academy. Leroy is occupied as an Instructor.

Our basketball team plays in the Oklahoma City Closed Commercial League, Red Division. It is well to mention that the league limits the number of players to twelve. We have a need for someone that would like to coach our team. If you are interested, please contact any one of the team members.

We play all our league games at the Municipal Gym at the corner of 8th and Shartel.

Date	*Time*	*Opponent*
Feb. 14	6:30 pm	Fred Jones
Feb. 21	6:30 pm	Playhouse USA
Feb. 28	8:50 pm	Wilson & Co.
Mar. 7	7:40 pm	Draughon's Sch. of Bus.
Mar. 15	8:50 pm	T. G. & Y.

AERONAUTICAL CENTER EMPLOYEES ASSOCIATION OFFICERS

Pictured above are the outgoing and incoming officers of the Aeronautical Center Employees Association. Back row, left to right, R. A. Wenzel, Warren Brakebill, R. H. Gober, and Howard J. Barnett. Front row, left to right, Paul Dawson, Ruth Hodgkinson, Peggy Bennett, and Welcome Holliday.

The new officers for 1962 who took office at the January meeting of the Association's Board of Directors are: President, Howard J. Barnett; Vice-President, Richard H. Gober; Secretary, Welcome Holliday, Treasurer, Ruth Hodgkinson.

The Association completed a very successful year and the new officers have pledged themselves to carry on the Association activities to assure the continued growth and success of the organization.

ROBERT TINNEMAN
WHY CERTAINLY HARRY... I'D LOVE TO SEE YOUR EX-PERIMENTAL PLANE TOMORROW!
THE FAA ENCOURAGES ALL AVIATION MINDED PEOPLE TO DESIGN AND CONSTRUCT THEIR OWN EXPERIMENTAL AIR-CRAFT AND IF THE FAA STANDARDS ARE MET... LICENSES ARE GRANTED EASILY.
MMMM, PICK YOU UP AT 10:00 O.K.?
NEXT MORNING
HARRY! WATCH OUT FOR THAT KID ON THE SCOOTER UP AHEAD
MMRMPH
BOY... SOMETHING SHOULD BE DONE
WOW! I OUGHT TO TURN THAT KID IN TO "PROJECT SCAN"
PHOOM!
WHATS THIS "PROJECT SCAN" YOU SPOKE OF AND HOW DOES IT WORK?
"PROJECT SCAN" IS A PLAN DESIGNED TO STUDY CAUSES OF THE NEAR MISS BY AIR-CRAFT.
MORE TIMES THAN THE PUBLIC HEARS ABOUT..... AIRCRAFT ON COLLISION COURSE NARROWLY MISS EACH OTHER AND NOTHING IS EVER SAID... OUTSIDE OF THE COCKPIT!
WHEN ONE OF THESE INCIDENTS OCCURS, EITHER PILOT OR BOTH FILL OUT ONE OF THOSE PAPERS
AFTER THE FORM HAS BEEN FILLED OUT COMPLETE... WITH ALL DATA AS ACCURATE AS POSSIBLE IT IS TURNED IN TO THE PEOPLE WHO OPERATE "SCAN" WHICH IS NOT A POLICE FORCE BUT A PRIVATE ORGA IZATION
THE FORMS ARE THEN STUDIED FOR CAUSES AND POSSIBLE METHODS OF PREVENTION AND THE RESULTS ARE TURNED IN TO THE FEDERAL AVIATION AGENCY.... THUS MAKING FLYING MUCH SAFER FOR COMMERCIAL AS WELL AS PRIVATE PLANES!