

May, 1962



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# Scanner

EMPLOYEE PUBLICATION OF  
THE FEDERAL AVIATION AGENCY SOUTHWEST REGION



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## FRONT COVER

The Army HU-1A Iroquois turbine-powered standard utility helicopter, and military counterpart of the ten-place commercial Model 204B, presently awaiting type certification. The Bell craft claims seven world records for speed and rate of climb.

Since the SCANNER was first published back in March, 1958, its avowed editorial policy has been to help each employee acquire a more comprehensive sense of FAA's mission. We have been trying to uphold this policy by printing at least one informative article about a particular phase of our Agency's operations in each issue, in addition to printing "the news". We are devoting this issue to helicopters, and would like to take this opportunity to express our thanks to those who so generously took time to act as our technical advisors, especially Gene Turner of Airframe Section, and O.K. Haley and the staff of GADO #8. We are also grateful to the Public Relations Department of Bell Helicopter Company for many of the photos appearing in this issue.

When Personnel and Training took over publication of the SCANNER in February, we were, we confess, amateur journalists. With this issue, however, we come of age: we are printing herewith our first retraction. In our article, "Prevention is Goal of Accident Investigators" in the April issue, we attempted to delineate the responsibilities of CAB and FAA in the area of aircraft accident investigation. The statutory responsibility is CAB's, as we stated. However, the authority which CAB delegates to FAA is somewhat more limited than you might have gathered from reading our article. Under the provisions of Public Notice 13, CAB may delegate to FAA the authority to investigate only those accidents involving planes weighing less than 12,500 pounds, and then only if there are no fatalities.

We learned from our recent interest survey that many of you get the same Washington news releases that we have been printing for quite some time under the heading "FAA News". Quite a few of you, however, told us that you do not get these releases, and that you look forward to reading Agency-wise news in the SCANNER. We have decided to adopt a compromise policy in printing only those news releases that would be of considerable interest, and omitting items such as the appointment of new personnel in the Washington office, which usually receive adequate coverage in FLY-BY.

Before the year is over, we hope to be hearing -- and printing -- more news from the field. Our ultimate goal is to have a field reporter in every facility, or at least in every area where several facilities are located. Nineteen persons have been recommended to us so far for this job. We are now devising a work sheet which will provide field reporters with step-by-step assistance in submitting material to the SCANNER. If you would like to be a field reporter, send your name to SW-13.



## Helicopters Come of Age

Twenty-one years ago this year, the first practical helicopter was produced. Since that time, the helicopter has been achieving ever-increasing status as aviation's versatile work horse. Although the helicopter will not replace the family car for many years to come, we may live to see the day when it, or its direct descendant, will. One of the biggest problems helicopter operators have encountered thusfar is cost. The initial cost of a helicopter is considerably higher than that of a comparable fixed-wing craft. Maintenance costs are also quite high, owing to the unique properties of the rotorcraft mechanism. A breakthrough is in sight, however, in the new Light Observation Helicopter (LOH), which we in the Southwest Region are proud to have a hand in developing. Optimistic observers predict that the LOH may prove to be the forerunner of some rotorcraft of the not-too-distant future that will make garages obsolete.

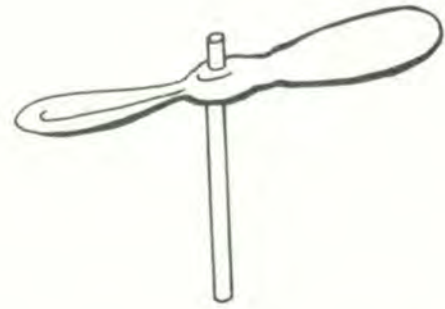
Even though the time has not yet come for us to be thinking of building heliports in our backyards, we can take some pride in what FAA is doing right now to bring the helicopter into a vigorous and productive adulthood. Within the past few months, a helicopter advisor was appointed to the Director of Flight Standards, and a flight test guide for helicopter pilots was issued. FAA engineers are constantly working on new ideas for making helicopters safer, and plans are being made for a complete revision of helicopter regulations. We can be especially proud of the fact that 69% of the helicopters produced in the nation are inspected and certificated by employees of the Southwest Region.

If the first twenty-one years of helicopter development are any indication of what the next twenty-one will be like, then we can count on being pretty busy in the next couple of decades. As new developments arise, FAA's responsibilities in all areas of rotorcraft operations are certain to increase. While we look back and salute the pioneers who brought the helicopter into being, we must look forward to our own tasks in bringing it to the fulfillment of its ultimate usefulness to the public. Of course we can't all be helicopter engineers or inspectors or test pilots, and not many of us will find it possible to work on a helicopter rating, as I am doing. We can, however, inform ourselves of our Agency's goals in the field of rotor flight, and by doing our jobs well, can contribute indirectly towards the accomplishment of these goals.

*Archie W. League*  
Archie W. League, SW-1



# Evolution of



THE "CHINESE TOP"

But for a quirk of fate, the helicopter might have been the principal means of air transportation instead of the fixed-wing airplane. Experiments with rotorcraft were going on long before the Wright Brothers flew at Kitty Hawk. Before the days of the Roman Empire, Chinese children were playing with a flying top, consisting of a propeller on a stick which was spun between the hands. The "Chinese Top" was probably the world's first helicopter.

Leonardo da Vinci, the Florentine painter, sculptor, architect, and engineer, designed a curious vertical-lift machine in the 15th century, which utilized a screw-type propeller. An Englishman, Sir George Cayley, constructed several successful rotorcraft in the late 18th century, which used elastic substances such as whalebone and clock springs. One of Cayley's models rose to a height of 90 feet.

The American inventor, Thomas A. Edison, also tried his hand at helicopters. He built and tested several electric-powered propellers. He later experimented with a helicopter engine which burned guncotton for fuel, but discontinued the project after it caused an explosion in his laboratory. Two other Americans, Emil Berliner and his son, Henry, experimented with helicopters in the early part of this century. One of their models was a coaxial craft (having two rotors, one above the other, rotating in opposite directions on the same axis). The Berliner machines achieved limited success in hovering and moving forward slowly.

There were several problems confronting the helicopter pioneers, which prevented rotorcraft from achieving the number-one place in air transportation. For one thing, it was difficult to design a structure and engine light enough to enable the craft to lift itself and some useful load. The rigid rotor blades

# the Helicopter

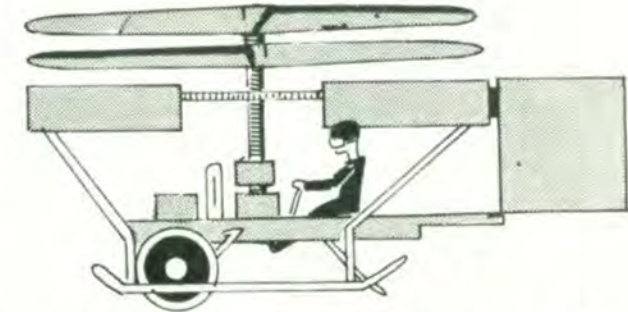
used in early helicopters produced unequal lift forces, causing the craft to sag on one side in forward flight. Still another problem encountered in rotor flight was rotor torque, or the tendency of the craft to spin around with the rotor. American and European pioneers tried all kinds of strange rotor and fuselage designs and configurations in attempts to overcome these problems.

Perhaps the greatest single contribution towards making helicopter flight practicable was that of Juan de la Cierva, a Spaniard who experimented not with helicopters, but with their close relatives, autogyros\*. Cierva's research, which was carried on between 1923 and 1935, established many of the basic facts of rotor behavior, which were later used in helicopter development. The outstanding discovery made by Cierva was that the lift on the two sides of a rotor (which is unequal in forward flight if the rotor is rigid), could be equalized by hinging the rotor blades. Although the principle of flapping blades had been suggested as early as 1904, Cierva was the first to apply it.

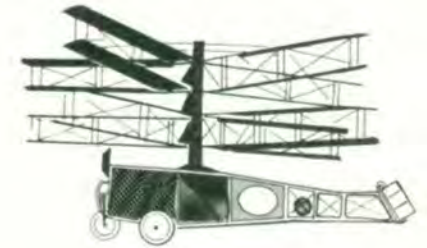
At the same time Cierva was working on the problem of unequal lift in autogyros, another Spaniard, Raoul Pescara, and several Americans, including the Berliners, were tackling the same problem in helicopters. They arrived at basically the same solution by a different means -- cyclic-pitch (tilting the blades at a slight, variable angle instead of hinging them). Either the hinged or the tilted blade helps solve the weight, as well as the unequal lift problem, because rotors with variable blades require smaller, lighter hubs than do rotors with rigid blades. Although these early applications of the cyclic-pitch (tilted blade) principle were rather crude and undistinguished, one of the designers, Pescara, deserves recog-

\*An autogyro is a type of rotorcraft in which the main rotor is "autorotating"; that is, not supplied with power from the engine, as in a helicopter. Only the tail rotor is powered in an autogyro.

(cont'd next page)



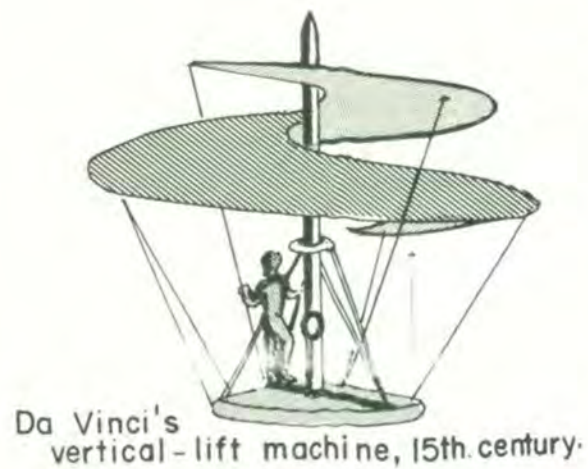
Berliner coaxial helicopter, 1909



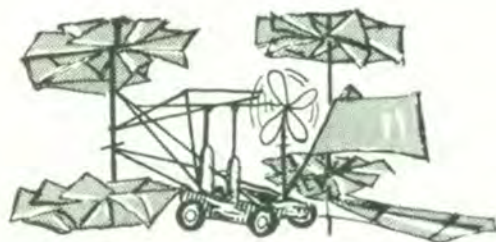
Pescara's monster  
1925



Sikorsky S-52-1, 1949



Da Vinci's  
vertical-lift machine, 15th century.



Cayley's helicopter, 1796



dition for the appearance, if not the performance of his craft. The Pescara helicopter was surely one of the weirdest-looking contraptions in the history of rotor flight. A coaxial model, it used biplane wings for rotor blades -- five of them on each of its two rotors.

Several workable methods were eventually discovered for overcoming the problem of rotor torque, which had made the helicopter hard to control in flight. A Dutch scientist, Von Baumhauer, developed the vertical tail rotor in 1924-29, which has become the most commonly used method for counteracting rotor torque. The American aircraft designer, Igor Sikorsky, produced the first relatively simple, completely controllable helicopter in 1941, using the tail rotor principle. (Sikorsky's 1941 model actually had three tail rotors, one vertical and two horizontal. Later Sikorsky models had only the single vertical tail rotor).

The coaxial design, where two rotors rotate in opposite directions in parallel, horizontal planes, is also effective in overcoming torque, but produces a heavy, ungainly aircraft. The side-by-side configuration (rotors turning in opposite directions) is favored as the most effective means of controlling torque, because it requires less power to produce lift. It is not much used, however, because it has the disadvantages of high fuselage drag, high structural weight, and complex gearing and shafting requirements.

Another design for overcoming torque is the tandem configuration, which is similar to the side-by-side arrangement, except that the rotors are placed one in front of the other on an elongated fuselage. It has the added advantage of a large available center-of-gravity range, which enables it to carry heavier loads. It is not nearly so effective in overcoming torque, however, because its rotors tend to defeat each other rather than balance each other out. This results in a loss of lifting power. A few facetious pilots have solved this problem by flying the tandem sideways. By placing the rear rotor on a higher horizontal plane and by varying the relative diameters of the two rotors, it is possible to reduce this problem somewhat, making the tandem a useful craft for heavy load operations.



A modern experimental coaxial model.



The side-by-side configuration.



Tandem configuration.



## A Unique Bird....

"...A unique bird in the aviary of aviation...." That's how Administrator Halaby describes the helicopter. And in the almost unlimited variety of jobs they are performing, helicopters are certainly distinguishing themselves. Did you know that helicopters are being used for:

- \* Property appraisal - Many banks and real estate firms use helicopters to get an otherwise unobtainable view of property for sale. Businessmen find the craft ideal for inspecting proposed building sites.
- \* Ambulance service - Designers of new hospitals are including heliports to be used for this purpose.
- \* Sightseeing - Imagine the view of Niagara Falls or the Grand Canyon that you could get from a helicopter!
- \* Tower inspection - Radio and television stations and utility firms use helicopters to check for damage to broadcasting towers and high-tension power lines.
- \* Ranching operations - One helicopter can do the work of 18 cowboys in herding cattle, riding the range, and patrolling fences.
- \* Ship towing - Helicopters have been used to move vessels up to 3,000 tons in size.
- \* Pipeline patrol - Oil and gas producers find the helicopter a low-cost way of inspecting pipelines, especially those laid over rough terrain.
- \* Construction and petroleum industries - The helicopter has proved itself indispensable in oilwell firefighting, trouble-shooter and parts delivery, and countless other jobs in these industries.
- \* Agriculture and forestry - Frost control, reforestation, clearing log jams, blight control, reseeding, spraying, and moisture control are only a few jobs the helicopter handles with ease.
- \* Communications - Eyewitness coverage of special events, advertising and publicity, motion picture making, etc., are routinely carried out using helicopters.
- \* Fire and police work - Cities around the world are finding helicopters useful for police patrols and in firefighting.
- \* High priority deliveries - Drugs, animals, mail, film, special equipment, fruits, and flowers are a few of the items being hauled by helicopter when it is important to save time.
- \* Executive transportation - Many companies use their own or chartered helicopters to get executives to important locations in a hurry.





# FAA Evaluates Light Observation

For the first time in history, FAA is engaged in engineering evaluation for an Army aircraft, the Light Observation Helicopter, (LOH). The Army, which has no qualified aircraft engineers, has previously depended upon the Air Force or the Navy in its aircraft evaluation and testing programs. The Southwest, Western, and Central Regions are participating in the LOH project, with an Army engineer to be assigned to assist and to act as a contact between the Army and FAA.

Three major helicopter manufacturers, Bell, Hiller, and Hughes, are competing for the Army LOH contract. The Southwest Region is responsible for the certification of the Bell Model 206 (HO-4) helicopter, with the Western Region handling the Hiller and Hughes entries, and the Central Region working on the certification of the engine. Joint meetings have been held in each Region, and will continue to be held from time to time until the project is completed.

The Engineering and Manufacturing Branch of the Southwest Region's Flight Standards Division will approve the design loads of the Bell LOH, review and approve all test proposals on rotor, control systems, main rotor and tail rotor transmissions and drive systems, proof tests of seats, and structure for crash landing conditions. All of these tests will be completed before the prototype is flight tested. Also prior to flight testing, manufacturing inspectors will check each part and assembly for conformity. Flight tests will put the aircraft through its paces to insure stability and controllability. Additional flight tests will be conducted to determine the functioning and reliability of the components and systems in the helicopter. By the target date of late 1963, if all schedules are met, Engineering will be able to approve the LOH for type acceptance tests by the Army. The Bell HO-4, as well as Hiller's HO-5 and Hughes' HO-6, will also be issued type certificates approving them



Bell 206 (Army HO-4)



Hiller 1100 (Army HO-5)



Hughes 369 (Army HO-6)

# Helicopter

for civil use, when they satisfactorily meet the requirements of CAR 6 and portions of CAR 1.

Speed, endurance, range, and productivity of the number of passenger miles per hour are to be increased by the LOH design. Reduction in maintenance costs is another goal of the Army. Initial cost is an important factor, as the lowest cost is a major requirement in the competition for the Army contract. Approximately 4,000 of these LOH aircraft will eventually be purchased by the Army, which is expected to lower the cost of production greatly. Optimistic observers predict that the sale price will dip close to that of a four place fixed-wing airplane, which would of course have an enormous impact on the civil market.

In the past, military aircraft have been of little practical interest to civil operators, owing to their high initial cost. The LOH, however, is different, in that Army specifications just about coincide with what the civil operators want in a helicopter. The Army desires a gross weight of approximately 2,400 pounds, a single 250 hp turbine engine, cruising speed of 110 knots at sea level, endurance of three hours, and a hovering ceiling of 6,000 feet on a 90° day. These features combined with a lower initial cost resulting from quantitative production will be of great importance in the future development of air travel. A lower priced helicopter would greatly reduce general aviation airport problems, and would provide door-to-door transportation in residential and business areas.

Southwest Region personnel assigned to the LOH project are E.L. (Gene) Turner, project engineer (Airframe and Equipment Section); L.N. (Sam) Bass and C.J. Archer, also of Airframe and Equipment Section; W.F. (Bud) Wells, Propulsion Section; D.A. Tuck, Flight Test Section.

# FAA Helps Army Break 'Copter Record



YHU-1D Iroquois (Bell)

FAA Southwest Region personnel received special commendation from Major Neely R. Brown, Army Airspace Representative, for their contribution towards the Army's record-breaking helicopter flight on April 20. FAAers fulfilled the Army's requirements for necessary airspace approval for installation of two non-directional radio beacons, sufficient reserved airspace to conduct the operation, and obtaining of frequencies for the radio beacons--all within 36 hours after the receipt of the requirements.

The April 20 flight marked the third record to be broken by the Army YHU-1D Iroquois last month. On April 13 and 14, two new time-to-climb records were established in the YHU-1D by Army 'copter pilots Capt. Boyce B. Buckner and Lt. Col. Leland F. Wilhelm. The April 20 flight by Capt. William F. Gurley set a new average speed record of 133.9 mph, toppling the Soviet-held record of 87.856 mph.

Capt. Gurley flew the turbine-powered helicopter on two non-stop round trips between Fort Worth and Longview, Texas, in 4 hours, 38 minutes, and 31 seconds. For most of the flight, he maintained an altitude of 10,000 feet. His top speed was 150 mph.

FAA personnel singled out for special commendation by the Army Airspace Representative were Victor W. Post, Air Traffic Division, Evans S. Miller, Aviation Facilities Division, and W.V. Fox, Fort Worth Air Route Traffic Control Center.



## SUGGESTER OF THE YEAR (8,000 B.C.)



Fred Flatstone, spear tip chipper at the Dull Tool Spear and Club Factory in Clifftown, was recently awarded the largest prize in history for an adopted employee suggestion. At a ceremony conducted under a tree at the plant's stone quarry, Flatstone was named "Suggester of the Year" and presented with his prize of 1,000 brontosaurus steaks. I.M. Primitive, manager of the huge armament works, said, "Fred's method of using dinosaur thongs for tying spear tips to the spear shafts has enabled us to pull abreast of the Neanderthals in the current arms race at least one year before we could have done so otherwise."

When asked what he was working on at the present time, Flatstone said he was thinking about a way to speed up the movement of rock from the quarry to the flint chipping shops. He reasoned that if he could saw logs into sections and bore a hole in the middle of each section, he could transport the stones with these "wheels". Flatstone said that his supervisor thought he had gone "off his rock" and would not allow him to try out the idea on company time. He stated further, however, that he was not discouraged, and would proceed with the development of the "wheel" on his own time.

In the course of the interview following the awards ceremony, Flatstone talked of another idea he said he had in the back of his head. He had observed sparks coming from the flint as he chipped it. He wondered whether there might be some way to use these sparks in producing fire artificially. It seemed kind of far-fetched, he said, but still if he could ... it would certainly .... At this point his voice dropped off, a far away look came over his face, and he didn't complete the sentence. His eyes were fixed on a towering cumulus cloud which loomed over the horizon. "Say, do you suppose the time will come when a man could fly over a cloud like that to the other side of the mountains? I wonder what it's like over there ... I wonder what it's like to fly...."

## Power Mower Safety Tips



What's wrong in this picture?

In Vincennes, Indiana, a man died after being struck by a nail hurled by a power mower. An athlete in Columbus, Ohio, lost part of his foot when his power mower slipped and the whirling blade struck his foot. In Anderson, South Carolina, a man died when a piece of wire thrown by a mower pierced his heart. During a two-year period, physicians in Georgia reported 737 power lawn mower accidents resulting in 794 injuries. The injuries are in two categories: those caused by direct contact with the mower (69.6%) and injuries caused by objects thrown by the mower (30.4%). Of the 533 injuries caused by direct contact with the mower, 66.2% involved toes or feet; 25.8% were injuries to fingers or hands; 8% were injuries to other areas.

Most power mower accidents are due to carelessness. The most common accident happens when operators attempt to start machines. They ignore safe procedure by starting the machine with one or both feet under the back or sides of the machine. The second most common accident occurs when the operator mows on a hill or incline. He loses his footing and the machine rolls back over his feet. Operators are also injured when they try to remove cut grass while the engine is running. The whirling blades are not visible and the operator doesn't realize the hazard.

Of the 241 injuries caused by objects thrown by the mower (nails, rocks, bones, wires, pieces of wood, metal, or glass), 69.3% involved the lower extremities, 16.2% were eye accidents, and the rest involved the upper extremities and trunk. A four-cycle engine, turning a 20-inch blade at 3,000 rpm can pick up a nail or stone and hurl it at a speed of 170 mph. An 18-inch blade revolving at 2,500 rpm can propel a small object at 120 mph.

Most accidents (about 82%) were caused by the gasoline rotary-type mower. This machine is potentially more dangerous than the reel type because the blade whirls at a higher rate of speed. About 10,000 persons throughout the United States were injured by rotary lawn mowers during the summer of 1959. These findings clearly indicate that the problem of power mower injuries is more serious than most people believe. To lessen your chances of injury, follow these recommendations:

### DOs

- \* Inspect your lawn before you start. Clear the area of all rocks, stones, nails, bones, wires, sticks, and other debris.
- \* When you start the mower, be sure your feet are in a safe position. Keep them away from the blades.
- \* Know how to disengage the clutch or how to stop the engine quickly. Practice this in case of emergency.
- \* Store gasoline in an approved, tightly-sealed container. Keep the container in a safe place.

### DON'Ts

- \* Bystanders and pets should not be in the immediate area of mowing.
- \* Don't leave the mower unattended when the motor is running.
- \* Don't let the mower pull you. To maintain control, slow it down. Never run or trot.
- \* Don't cut up and down on hills. If you slip, the machine may slide down over your toes. Cut sideways.
- \* Never attempt removal of any object from the mower until you are certain the blades have stopped turning. Remember, the blades may still be whirling a few seconds after the engine has been cut off.
- \* Don't increase the speed by tampering with the governor. Excessive cutting blade speed is dangerous.
- \* Don't refuel the engine when it is hot - it may burst into flames. And don't fill the tank to the brim - allow room for expansion. Always refuel out of doors.
- \* If you are using an electric mower, don't cut the grass when it is wet or when it is raining unless you are sure the motor and cord are in perfect condition. Before you start, check to see whether the cord is frayed. Make sure the ground wire is secured.



## FAA Proposes Rules for Sky Diving

Rules to provide greater safety for sport parachuting or "sky diving" have been proposed by FAA. In general, they follow the recommendations suggested by Administrator Halaby after completing his first parachute jump at Orange, Massachusetts, last July. Halaby made the jump to familiarize himself with the sport and its safety problems. "Sport parachuting has enjoyed a tremendous increase in popularity during the past five years and new rules are necessary to assure that future growth occurs under proper conditions," Halaby said.

In 1956, there were only about 238 sport parachute jumps in this country. Four years later, they had increased to an estimated 60,000, and resulted in some casualties. The proposed rules would make parachutists, as well as pilots, responsible under the CAR for the safe conduct of non-emergency jumps. Presently only the pilots of aircraft which drop the parachutists are covered by the regulations.

The rules also would apply to military pilots and parachutists in some instances. For example, they would cover jumps made by members of the armed forces at civil airports, but not those made at most military facilities. They would also not apply to military parachute equipment when used by armed forces personnel. Non-emergency jumps over congested areas and open-air assemblies would continue to be prohibited except when authorized by the FAA. Only experienced jumpers would be permitted to jump in these areas, and only under controlled conditions.

Jumps at airports with FAA control towers would require authorization from the tower. Those made in other controlled airspace, such as the Federal airways, would require authorization from the appropriate air traffic control facility. Persons making night jumps would be required to have a means for producing a light visible for at least three miles.

Visibility requirements for jumps would be five miles in continental control areas and three miles elsewhere. Jumps through clouds would be prohibited, since they could be hazardous to aircraft flying below or through the clouds.

Parachutists would be permitted, as they are now, to pack their own main chute, but the auxiliary chute would have to be packed by a certificated rigger. All chutes would be required to have been packed within 60 days of their use.

At present, only sections of Parts 43 and 25 of the CAR apply to non-emergency parachute jumps. The former provides that no pilot shall permit a non-emergency jump over congested areas or open-air assemblies unless authorized by the FAA. The latter covers packing, repair, maintenance, alteration, and inspection of parachutes. These provisions would be incorporated in proposed new CAR Part 38, together



## Dr. Kaplan Writes--

Now that the temperature is increasing and people are getting out of doors more, the hazards of exposure to high temperatures must be guarded against. The three major dangers in this respect, listed in the order of increasing severity are (1) heat cramps (2) heat exhaustion and (3) heat stroke.

Heat cramps are painful contractions of the skeletal muscles, probably resulting from low salt intake during periods of excessive perspiration. Rest of the muscles, a little extra salt in food, and avoidance of excessive heat serve as both prevention and treatment of the condition.

Heat exhaustion results from the same causes as heat cramps. Removal to cooler surroundings, fanning, cool applications, and the administration of salt should cure the condition. The same precautions as recommended for preventing heat cramps should be observed, and in addition, the victim should not return to activities involving exposure to heat for about 48 hours.

Heat stroke is one of the true medical emergencies. Whereas in heat exhaustion the body temperature is slightly to moderately elevated, the temperature elevation in heat stroke is incompatible with life. If it remains untreated, the victim is certain to die. If heat stroke is suspected, a quick method of diagnosis is to look at the person's skin and see whether it is dry or perspiring. If the skin is dry, and if the person is flushed rather than pale, then he has heat stroke. It is of prime importance to get his body temperature down immediately. If this is not done within minutes, he will not survive. The usual method of treatment in the past has been to pack the victim in ice. Some other treatments have been experimented with, but have not been generally adopted.

The best way to avoid heat stroke is to follow the advice given for avoiding the other two less severe conditions. Also, be sure to wear a hat in the sun, especially if you are not yet adapted to a hot climate. By following this advice, you can avoid these three very troublesome consequences of exposure to heat, and make your summer a more pleasant one.

\*Dr. Harry Gibbons, our usual medical columnist, is away attending a session of the FAA Career Management School at Charlottesville, Virginia. In his absence, Dr. Philip Kaplan has graciously consented to write our medical column.

with the new rules for sport parachuting.

Comments on the proposals will be accepted until June 30, 1962, at the Dockets Section, Federal Aviation Agency, Washington 25, D.C. These comments will be available for examination, and all will be considered by the Administrator before taking action on the new Part 38 of the Civil Air Regulations.

## The New Fort Worth Center



This is the new Fort Worth Air Route Traffic Control Center, which has been in operation almost two months at the new location near Carter Field. The relocation of the Center from its old quarters on the FAA reservation, which were obsoleted by time, usage, and increased traffic demands, was a huge undertaking. As a result of careful planning over a period of several months, however, and close coordination among all concerned, the cut-over went off smoothly, and in step with a pre-arranged countdown. A lot of fine workmanship has gone into the making of the new Center, and all who had a part in it deserve special commendation.



### REGIONAL OFFICE WELCOMES NEW REGIONAL COUNSEL

Mr. William A. Crawford, formerly Chief Attorney for Litigation in the General Counsel's office in Washington, has been designated Regional Counsel for the Southwest Region by the Administrator. Many of you may remember Mr. Crawford, who served as Regional Attorney in the CAA Fort Worth Regional Office from 1946 to 1958. He has served continuously with CAA/FAA since 1941, except for a tour of wartime duty as a naval officer in the Pacific. A native of Tazewell, Virginia, Mr. Crawford received his law degree from the University of Virginia in 1939. He is a member of the State Bar in Texas and in his native state of Virginia.



## Awards and Honors



During a recent visit to the Regional Office, Flight Service Specialists Clayton J. Collins, right, and Francis J. Boyle, left, were presented with certificates and cash awards by Air Traffic Division Chief D.E. McHam, center. The Special Service Awards were presented to Messrs. Collins and Boyle in recognition of their work in aiding a lost, inexperienced, non-instrument pilot in effecting a safe landing at the Cotulla airport during instrument weather conditions in January of 1961. Mr. Collins, Chief of Cotulla FSS, was honored by the Aircraft Owners and Pilots Association as the outstanding Flight Service Specialist of 1961 for executing the most noteworthy pilot assist on record for the year.



Recently cited for outstanding performance in Airports Division are, left to right, Airport Planning Engineer Bobby J. Boswell, Supervisory District Engineer Robert B. Allen, and extreme right, Airport Planning Engineer Hugh W. Lyon. Second from right is Division Chief W.E. Peterson, who presented the men with copies of their approved outstanding performance ratings.



Clerk-Steno Bobbie R. Spiggle, Aircraft Management Branch, Flight Standards Division, is presented with Sustained Superior Performance Award by Robert H. Hunt, Acting Branch Chief.



Charles E. Fulkerson, left, receives Sustained Superior Performance Award from Acting Branch Chief Robert H. Hunt. Mr. Fulkerson is Program Control Officer for Aircraft Management Branch, Flight Standards Division.



Faye Sanford, Clerk-Steno in Airspace Utilization Branch, Air Traffic Division, receives Sustained Superior Performance Award from Division Chief D.E. McHam, who also informed her of her nomination for both a Certificate of Achievement and for the Career Girl Award sponsored by the Fort Worth Federal Business Association Awards for 1962.

## Awards and Honors



Aviation Facilities personnel who were awarded for suggestions or Sustained Superior Performance in a recent ceremony are, left to right, first row, Ray C. Carter, Geraldine Duff, James E. Farner, James G. Bates, Edwin P. Shadle, and Loyd C. Lowrie.

Second row, left to right, W.F. Harrison, R.L. McCarroll, M.W. Callaway, R.L. Stubblefield, Dan A. Powhaston, Sam E. Eppler, Alfrey J. Brenam, and Leland H. Hayden, Chief of the Division, who presented the awards and congratulated the recipients.

Other Facilities personnel who received awards, but are not shown in the picture are Austin E. Sterling, Raymond T. Seibert, Lionel J. Edmonson, and Leroy Lee.

## Recent Suggestion Awards

NAME	FACILITY	AMOUNT OF AWARD	SUPERVISOR	SUGGESTION
Majorie T. Ford	Aviation Facilities, R.O.	\$15.00	C.R. Horan	A check list for new stenographers to assist them in compiling, typing, and assembling final progress payment forms.
Robert S. Inasand	Mobile RAPCON	\$25.00	Robert F. Hartin	Provision of a vernier control for remote adjustment of Automatic Amplitude Control and Automatic Temporal Control of CM-34/CPN-18.
Ernest G. Lackey, Sr.	Fort Worth SMS	\$25.00	Russel Balding	Relocation of stop area and splice area on T.W.E.B. tape cartridges to cut maintenance and outage time, and number of cartridges used to achieve normal operation.
Charles A. Robertson	Flight Standards, R.O.	\$55.00	Jerry H. Valcik	CEC Recording Oscilloscope Type 5-119PB.
Robert A. Switzer	Anniston SMS	\$50.00	J.E. Forester	Disabling Muting of 121.5mc on FAS Panel CA-1799 A/A.
Bill Gallemore	Admin. Services, R.O.	\$15.00	R. Harrington	Making out of T.R.'s.
Eppie Allison	Aviation Facilities, R.O.	\$50.00	Pat Hutto	Request Form for Radar Maps.
Arthur Putnam	Alice SMS	\$25.00	C.G. Warner	Voices shutting down low frequency range for servicing remote control unit and permits normal voice feature during servicing.
W.W. Whittington	Marianna SMS	\$25.00	L.E. Aker	RCQ Test Board.
James E. Lewis	Aviation Facilities, R.O.	\$50.00	M.H. Gross	Modification of Northern Radio 152F/S Receive Converters.
Jessie M. Wilson	San Antonio SMS	\$50.00	K. Glowka	Modification of pre-amps located in the reading side of the TI 440 Scan Converters to eliminate smear in the video presentation.
Victor H. Buswell	Oklahoma City RAPCON	\$30.00	L.W. Long	Improving safety catch on indicator IF-185/OA-348/CPN-18.
Harold M. Elsworth	New Orleans SMS	\$25.00	Louis M. Bowen	Modification of VG/VG-1 sweep circuit to correct sweep nonlinearities.
James B. Pader	Miami SMS	\$25.00	C.A. Owen	VG sweep length control accessibility.
Dorothy H. Schoolfield	Corpus Christi SMS	\$50.00	Norman Cox	Procedure for handling requisitions and invoices.
Arthur Contreras	San Antonio SMS	\$50.00	K. Glowka	Receive-transmit audio tester for ARTCC.
Lawrence H. Pfeiffer	San Antonio SMS	\$75.00	K. Glowka	Modification of time correlator torsion spring 200021.
Walter B. Turner	Charlotte SMDO	\$25.00	W.B. Daniel	Control line check jacks.
Robert A. Switzer	Anniston SMS	\$25.00	J.E. Forester	Improving the Kaar TR-427 transceiver.
Damon F. McDaniel	Shreveport RAPCON/TWRC/S/T	\$25.00	Frank H. Foster	Mobile expediter.
Faye L. Sanford	Air Traffic, R.O.	\$25.00	Van Houston	Use of "no carbon needed" paper for form letter.
Jack B. Pennock, Jr.	Accounting, R.O.	\$20.00	C.W. Whitney	Revision of communication service billings.
Howard A. Shryock, Jr.	Hobart FSS	\$100.00	J.D. Miller	Change in method of scan of APULS used on Area "B".
Richard D. Holland	Aviation Facilities, R.O.	\$50.00	O.G. Danner	Modification of ADIS equipment to improve operation.





If we were staging a contest to find the most unusual and original use for helicopters, we would probably have to give the prize to the Ontario Department of Lands and Forests. They are using chartered helicopters in an extensive moose-tagging operation. The moose, it seems, is quite an important economic asset to the Province of Ontario. It attracts about 30,000 moose hunters annually, and about \$4,000,000 in revenue.

The Provincial government is naturally interested in taking care of the moose--they want to keep count of them, make sure they are properly dispersed over the feeding area, and that they are surviving the hunting season in good numbers. In order to keep track of the moose, the Department of Lands and Forests is ear-tagging them with metal tags which are turned in by successful hunters. The Department is able thereby to accumulate certain data about the animal's migration habits.

The moose-tagging operation is quite simple in a helicopter. The animal is spotted from the air, chased into deep water, and the tag attached to its ear with special livestock pliers--all in about five minutes. Thanks to the helicopter, the operation is easy, cheap, safe, efficient, and humane.

-- Adapted from *Bell Helicopter News*

## THREE FROM SW REGION EARN TOP MARKS AT FAA ACADEMY

Three Southwest Region FAAers who have been attending the FAA Academy at Oklahoma City finished their courses with the highest grade average in their respective classes. They are Roy D. Anderson, Electronic Engineer in the Establishment Branch, R.O., William M. Pyron, Electronic Maintenance Technician at Sulphur Springs SMS, and Roy F. Beebe, Electro-Maintenance Technician at El Paso SMS. Mr. Anderson, who was enrolled in Communications Equipment Class 199, tied with another student for top honors in his class. Mr. Pyron was in Radar Microwave Link Repeater Class 35, and Mr. Beebe, Advanced Electro-Mechanics Class 3.

### A Reminder--

--that as employees of the Federal government we accept special restrictions and incur special obligations, not only in the performance of our duties, but in our conduct outside our employment. These special conditions have been the subject of the following FAA issuances:

Agency Order 51 (Revised)  
Agency Practice 3-713

Agency Practice 3-735.1  
Agency Practice 3-735.2  
Agency Practice 3-735.4

"Policy on Official Conduct"  
"Employment Policy Practices Against Discrimination"  
"Obligations of Employees"  
"Standards of Conduct"  
"Conflict of Interest"

The policy which is basic to each of these issuances can be summed up as follows:  
"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."

Generally, the issuances referred to above prohibit employees from engaging in:

- Activities which might improperly influence the full performance of their duties.
- Outside employment which conflicts with any of the programs administered by FAA.
- Practices which would reflect a lack of industry, cooperation, and loyalty to FAA and U.S. Government objectives.
- Activities that are specifically prohibited, or that might result in a loss of respect for FAA and the U.S. Government.
- Any practices or activities which might reasonably give the appearance of impropriety.

An important public trust has been reposed in FAA. Each one of us bears that trust and has the responsibility to go beyond the letter and abide by the spirit of the law in the matter of official conduct.

All supervisors should make sure that the directives listed above are brought to the attention of each employee.

All employees should review all of the above directives and set a high personal standard that will insure that their conduct and integrity are of the highest order.

# TORNADO SAFETY RULES

## TO KNOW WHAT TO DO WHEN A TORNADO IS APPROACHING, MAY MEAN THE DIFFERENCE BETWEEN LIFE OR DEATH ! !

**I** THERE IS NO UNIVERSAL PROTECTION AGAINST TORNADOES EXCEPT UNDERGROUND EXCAVATIONS. When time permits, go to a tornado cellar, cave, or underground excavation which should have an air outlet to help equalize the air pressure. It should be kept fit for use, free from water, gas, or debris; and preferably equipped with pick and shovel.

### II If you are in open country :

1. Move at right angles to the tornado's path. Tornadoes usually move ahead at about 25 to 40 miles per hour.
2. If there is no time to escape, lie flat in the nearest depression such as a ditch or ravine.

### III If in a city or town :

1. Seek inside shelter, preferably in a strongly reinforced building. STAY AWAY FROM WINDOWS!
2. In homes: The southwest corner of the basement usually offers greatest safety, particularly in frame houses. People in houses without basements can sometimes be protected by taking cover under heavy furniture against inside walls. Doors and windows on the north and east sides of the house may be opened to help reduce damage to the building.
3. Standing against the inside wall on a lower floor of an office building offers some protection.

### IV If in schools :

1. In city areas: If school building is of strongly reinforced construction, stay inside, away from windows, remain near an inside wall on the lower floors when possible. AVOID AUDITORIUMS AND GYMNASIUMS with large, poorly-supported roofs!
2. In rural schools that do not have strongly reinforced construction, remove children and teachers to a ravine or ditch if storm shelter is not available.

### V If in factories and industrial plants :

On receiving a tornado warning, a lookout should be posted to keep safety officials advised of the tornado's approach. Advance preparation should be made for moving workers to sections of the plant offering the greatest protection.

**VI** Keep calm! It will not help to get excited. People have been killed by running out into streets and by turning back into the path of a tornado. Even though a warning is issued, chances of a tornado striking one's home or location are very slight. Tornadoes cover such a small zone, as a rule, that relatively only a few places in a warned area are directly affected. You should know about tornadoes though, "just in case". See other side for details.

**VII** Keep tuned to your radio or television station for latest tornado advisory information. Do not call the Weather Bureau, except to report a tornado, as your individual request may tie up telephone lines urgently needed to receive special reports or to relay advisories to radio and television stations for dissemination to thousands in the critical area.



# SECURITY



*is your  
Responsibility*

*It cannot be redelegated  
Must not be neglected  
Face up to this responsibility....*

## Invest in the United States

Federal agencies are participating in the Freedom Bond drive, kicked off May 1. Last year Federal employees bought \$581 million in bonds through payroll savings plan. Goal for 1962 is \$600 million. Federal employees continue to set the pace for business and industry; 54% of all Federal employees are enrolled. In inaugurating the Bond drive, President Kennedy said: "A year ago, in taking over the responsibilities of this office, I emphasized the desirability of contributions which all of us could make to our Country. The task of selling Savings Bonds...is more important than it ever was. And, therefore, though it may not be spectacular, it represents the kind of day to day work and contribution by you which I think makes a measurable difference to our Country. It eases some of the pressures on the inflationary scale...it represents an investment in the United States."

**underwrite  
your country's**



**SAVINGS  
BONDS**

### Accumulated value of Payroll Savings

SAVE EACH 2 WEEKS	AND YOU WILL HAVE			SAVE EACH MONTH	AND YOU WILL HAVE		
	In 3 years	In 5 years	In 7 years & 9 months		In 3 years	In 5 years	In 7 years & 9 months
\$ 3.75	\$ 303	\$ 525	\$ 863	\$ 6.25	\$ 233	\$ 403	\$ 661
7.50	608	1,052	1,728	7.50	280	484	794
9.38	760	1,316	2,163	12.50	466	807	1,323
12.50	1,013	1,754	2,883	18.75	701	1,214	1,991
15.00	1,216	2,105	3,459	25.00	934	1,617	2,652
18.75	1,521	2,633	4,327	37.50	1,402	2,428	3,981
37.50	3,042	5,267	8,654	75.00	2,805	4,856	7,963

KEEP FREEDOM IN YOUR FUTURE WITH U. S. SAVINGS BONDS!





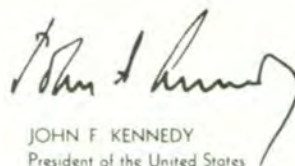
# A PERSONAL CHALLENGE

toward greater

## Efficiency and Economy

Urgent conditions in some instances have called for new Federal programs, and have necessitated the acceleration of others.

To get the most from every program dollar, I ask that each of you in the public service accept a personal challenge to strive toward maximum efficiency and to carry out your duties with increased cost-awareness.



JOHN F. KENNEDY  
President of the United States