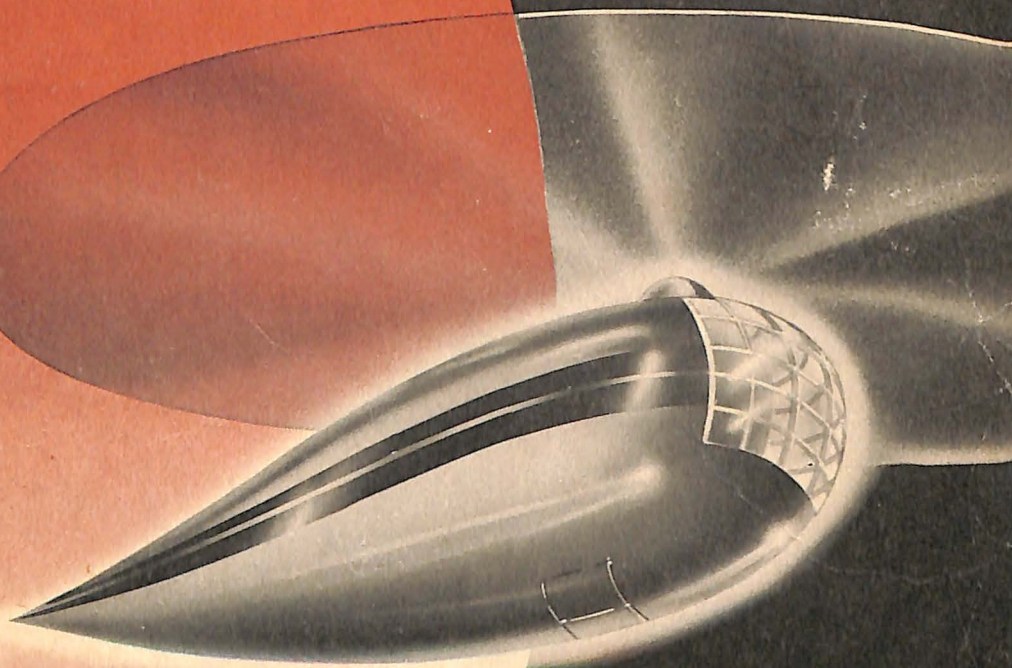


HELICOPTER COUNCIL OF THE AIRCRAFT INDUSTRIES ASSOCIATION

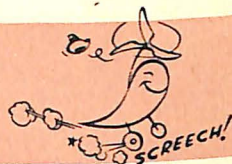


1 helicopter

helicopter

facts

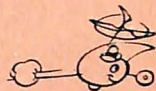
THE HELICOPTER CAN STOP IN MIDAIR



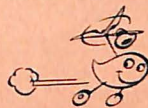
THE HELICOPTER CAN HOVER



THE HELICOPTER CAN FLY BACKWARDS



THE HELICOPTER CAN FLY SIDWAYS



THE HELICOPTER CAN GO STRAIGHT UP



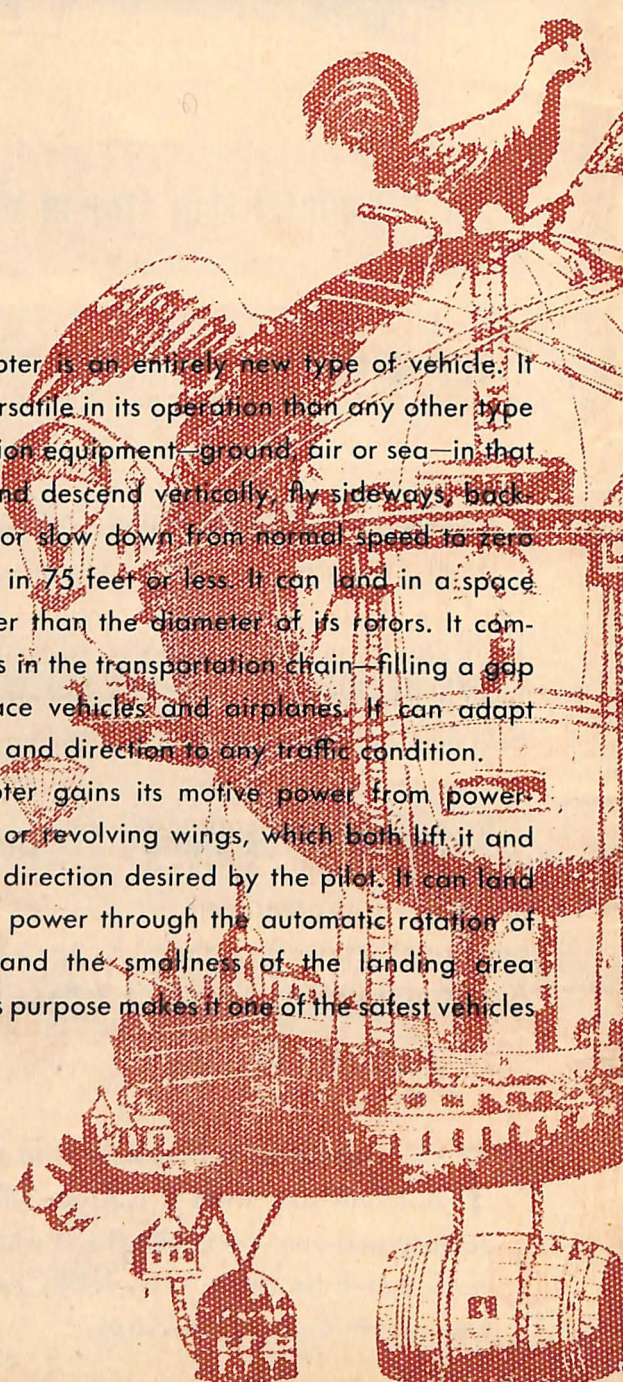
THE HELICOPTER CAN GO STRAIGHT DOWN



THE purpose of this booklet is to tell how the helicopter operates and what it can do, what it will mean to the country and your community, and what your community and state should be doing to be ready for the fullest use of this type of transportation service.

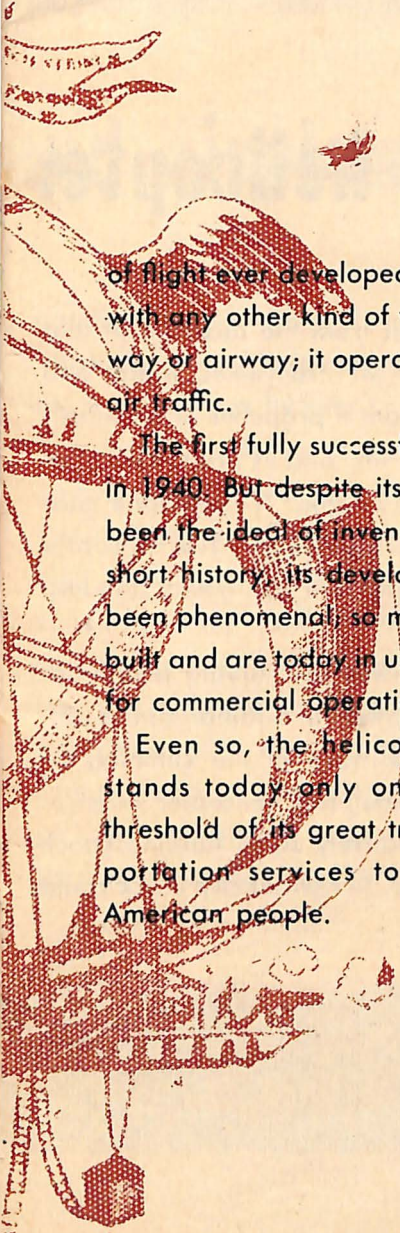


what is a helicopter



THE helicopter is an entirely new type of vehicle. It is more versatile in its operation than any other type of transportation equipment—ground, air or sea—in that it can climb and descend vertically, fly sideways, backwards, hover or slow down from normal speed to zero miles an hour in 75 feet or less. It can land in a space but little larger than the diameter of its rotors. It completes the links in the transportation chain—filling a gap between surface vehicles and airplanes. It can adapt itself in speed and direction to any traffic condition.

The helicopter gains its motive power from power-driven rotors, or revolving wings, which both lift it and drive it in the direction desired by the pilot. It can land safely without power through the automatic rotation of these rotors, and the smallness of the landing area needed for this purpose makes it one of the safest vehicles.

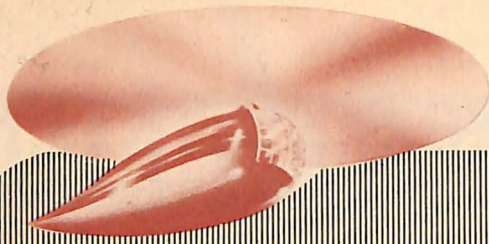


of flight ever developed. It can perform tasks impossible with any other kind of vehicle. It is not confined to highway or airway; it operates above auto traffic and below air traffic.

The first fully successful American helicopter flew only in 1940. But despite its short history, the helicopter has been the ideal of inventors for centuries. And despite its short history, its development in the United States has been phenomenal, so much so that hundreds have been built and are today in use, both for military purposes and for commercial operations.

Even so, the helicopter stands today only on the threshold of its great transportation services to the American people.





how the helicopter

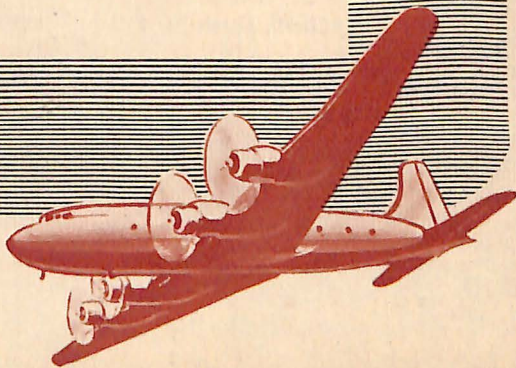
THE helicopter is different from the airplane in that the airplane obtains its "lift" from fixed wings, and its forward motive power from a propeller or jet thrust; while the helicopter obtains "lift" and its propulsion from blades that rotate above the cabin. The airplane must have forward speed to remain in the air. The helicopter does not require forward speed. It can hover standing still.

The airplane requires runways of varying length depending upon its size and power. In addition to the runway, there must be no obstacles in the climbing or descending path of the plane. The helicopter requires no runways and only a relatively small landing space several hundred feet square. A normal city block could

and airplane differ

handle the operations of many helicopters with ease. Obstacles are of little consequence because of the helicopter's ability to fly over or around them.

In the event of an emergency, an airplane requires a large area for landing. In the event of bad weather, or low visibility conditions, the airplane must operate at high altitudes and high speeds under controlled traffic conditions or not at all. The helicopter, on the other hand, descends safely in the event of emergency because the rotors continue to rotate and can land safely in open areas of smallest size. In bad weather or when the pilot cannot see far, the helicopter can fly "under the weather" at safe, slow speeds. He can stop, climb, or descend at the pilot's discretion, has literally millions of landing areas.



How the helicopter flies



SIMPLY EXPRESSED, a helicopter flies by pushing air downwards. If it ascends vertically, the air is pushed straight down. As the helicopter flies forward, the air is pushed downward and to the rear by the rotor blades. An airplane flies because the wing pushes air downward as the propeller draws it forward through the air. In a helicopter, the rotor blades accomplish both functions.

To go up, the pilot of a helicopter changes the angle of the rotor blades to obtain a deep "bite" of the air. To descend, blades are flattened.

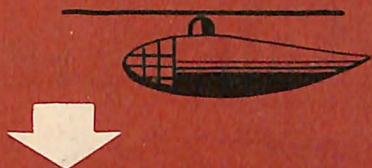
For forward movement, the rotors are tilted in the direction of flight, so that they are lower as they pass to the front, and higher in the back of their cycle. Similarly, to fly backwards or sidewise, the rotors are tilted in that direction, pushing the helicopter in that direction.

To turn, or to revolve on its own axis, the tail rotor of the single rotor helicopter is speeded or slowed, depending upon the direction desired.

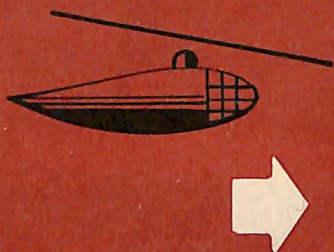
HOW THE HELICOPTER FLIES



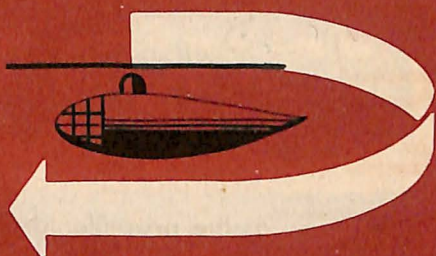
A DEEPER "BITE" BY THE ROTOR BLADES SENDS A HELICOPTER STRAIGHT UP IN THE AIR.



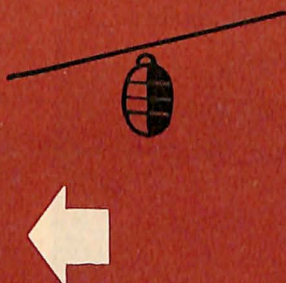
THE BLADES ARE FLATTENED TO PERMIT THE HELICOPTER TO DESCEND AT DESIRED RATE.



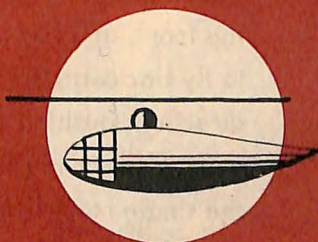
EXAGGERATED HERE, ROTOR BLADES ARE TILTED FORWARD TO PULL THE HELICOPTER FORWARD.



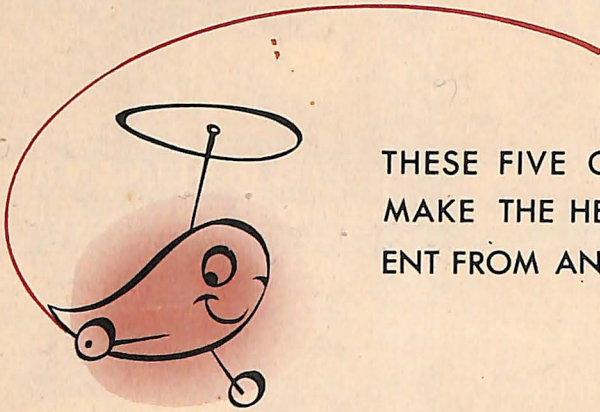
THE HELICOPTER CAN TURN ON ITS OWN AXIS BY SPEEDING OR SLOWING ITS TAIL ROTOR.



TILTING OF THE ROTOR ASSEMBLY ENABLES THE HELICOPTER TO FLY SIDWAYS AT ANY TIME.



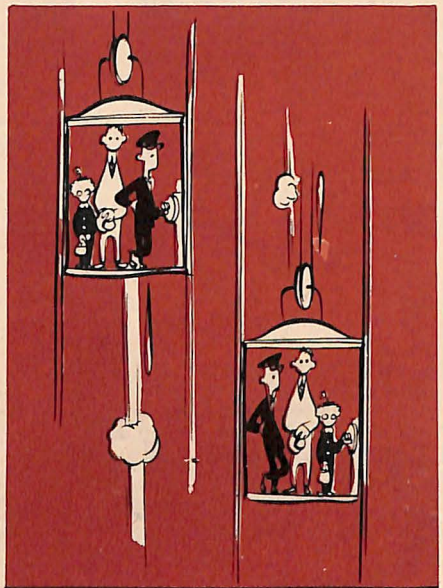
A COMBINATION OF ENGINE SPEED AND ROTOR ANGLES ENABLES THE HELICOPTER TO HOVER.



THESE FIVE CHARACTERISTICS
MAKE THE HELICOPTER DIFFER-
ENT FROM ANY OTHER VEHICLE.



**THE ABILITY TO LAND IN
A SMALL AREA, WITH
OR WITHOUT POWER**



**THE ABILITY TO ASCEND
OR DESCEND VERTICALLY
TO AVOID ANY OBSTACLES**



**THE ABILITY TO HOVER
OVER ANY DESIRED AREA**

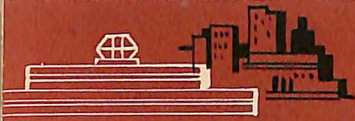


**THE ABILITY TO FLY IN ANY
DIRECTION AT ANY TIME**



**THE ABILITY TO FLY AT
ANY DESIRED SPEED UP
TO ITS MAXIMUM LIMIT**





SHUTTLE AIR PASSENGERS



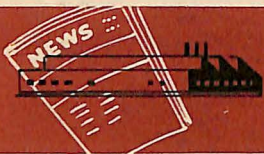
HELIMAIL AND CARGO DELIVERIES



COMMUTING AND TAXIS



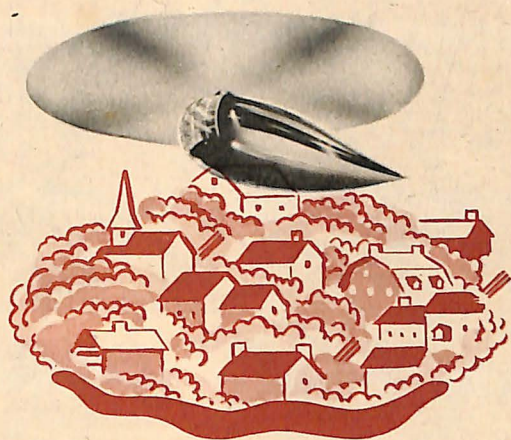
EMERGENCY POLICE CONTROL



NEWSPAPER DELIVERIES



PROPERTY SURVEY

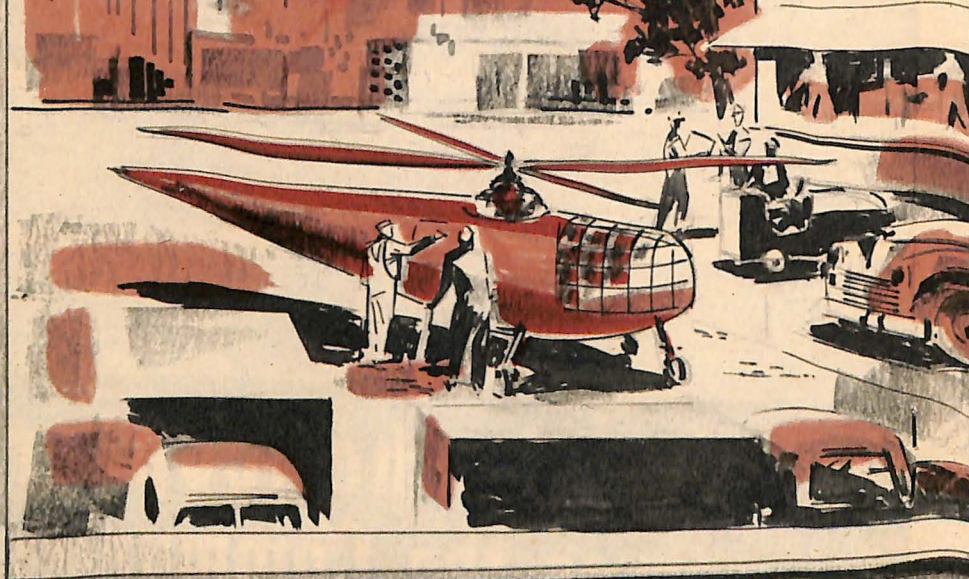



**how the helicopter
serves the Community**

UNITED STATES

POST OFFICE

HELICAR





INDU
GO & EXPRESS Inc



helimail

Among the first and most important services to be rendered by the helicopter to the nation's communities will be through *helimail* and cargo networks in metropolitan areas. Extensive tests have indicated that the movement of air mail can be expedited in some instances as much as 12 hours or more through this service, which takes mail directly from one suburb to another, from central post offices and airports to and from downtown and suburban post offices and suburban communities.



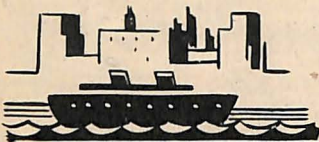
FOREST FIRES



GEOLOGICAL SURVEY



FOREST RE-SEEDING



SHIP TO SHORE MAIL



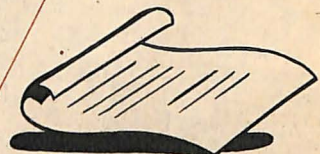
CATTLE ROUND UP



SPOTTING FISH



PIPELINE PATROL



MAPPING

how the helicopter

Only a few of the many uses of the helicopter, the most versatile of vehicles, are illustrated. Like the early days of the automobile and the airplane, the numberless ways in which the helicopter can serve the people of the country are only now in development and study.

Experiments with spraying and dusting of crops and orchards, for example, show that the helicopter is more efficient and more effective than ground or airplane methods because of its ability to



can serve the country

maneuver in small areas, at slow speeds and in such a way as to drive sprays and dusts thoroughly into affected sections. Tests under way in planting methods, re-forestation, and other agricultural uses are showing the way to the saving of millions and to more effective uses of our land.

The possibilities of its use in rural mail deliveries only recently was indicated in experiments with the helicopter in an entirely different setting—at sea. A single heli-

copter completed ship mail deliveries in the Atlantic fleet in 35 minutes, a task that hitherto has taken a destroyer and its crew of several hundred an entire day.

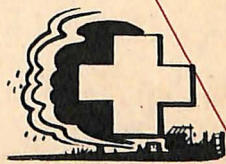
As experience with the helicopter increases, countless new applications will be developed, just as they have with other forms of transportation, all of which have contributed to the nation's wealth and to better living for all.



BORDER PATROL



SPRAYING & DUSTING



AIR AMBULANCE



search and rescue





by helicopter

AN airliner crashes in the swamps of Newfoundland . . . a Navy fighter drops into the ocean . . . two men are adrift on an ice floe in Lake Erie . . . a boy is trapped on a burning railroad trestle near New York . . . someone is ill aboard a freighter miles at sea . . . only a few years ago rescue would have been impossible, or at best a long, dreary and dangerous operation. Today, in minutes or hours instead of days and weeks, the helicopter performs countless errands of mercy.

For the lost, the injured, the flood-bound, here is a new angel of the skies.



RESCUE WOUNDED



HOT FOOD TO FRONT LINES



ARTILLERY SPOTTING



helicopter



AIRCREW RESCUE



COMMUNICATIONS



THE Army Air Forces, the Army Ground Forces, the Navy and Coast Guard all are finding the helicopter of great value in their operations. For the AAF, it has many uses as a utility vehicle and for purposes still in the development stages. For the Ground forces, it offers flexibility in operations impossible with any other kind of equipment; it combines all the advantages of ground and air transportation with an ability to operate in terrain that even jeeps and mules would find impossible; it will be invaluable in arctic operations. For the Navy, it can be used in activities that heretofore took ships with hundreds of men, both for service and for rescue work, for ship-to-shore deliveries, for coastal patrol and spotting operations. The U. S. Coast Guard has already carried out a number of successful rescues of personnel by helicopter from places inaccessible to other means of transportation. This new vehicle will continue to aid them in carrying on their traditional role of bringing aid to the distressed.

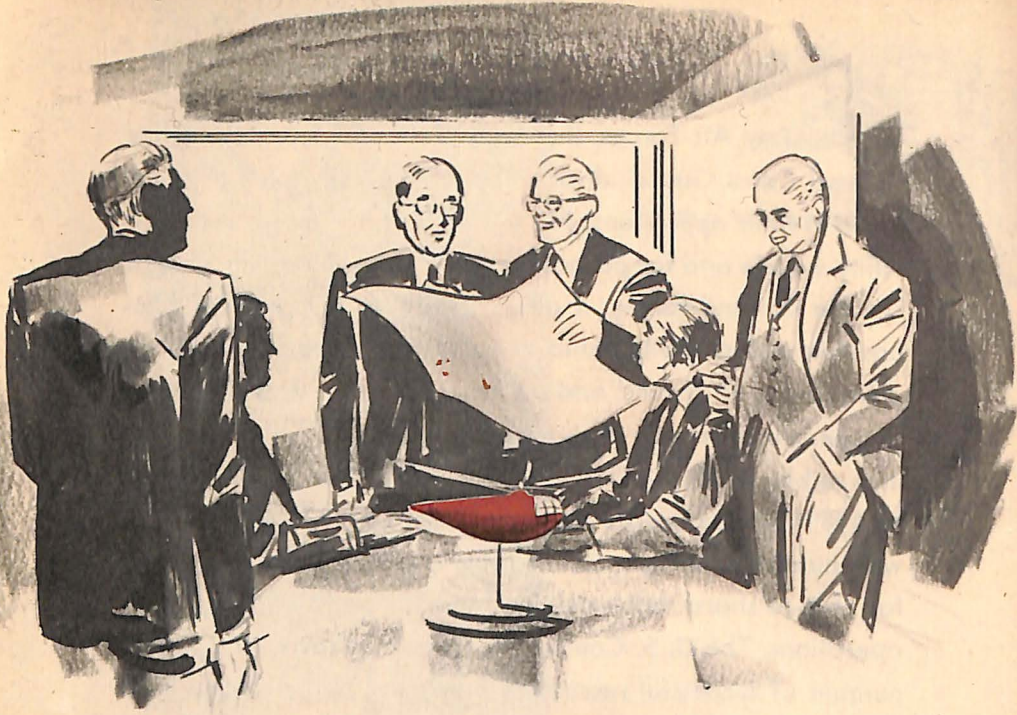
in National Security

TRANSPORTATION

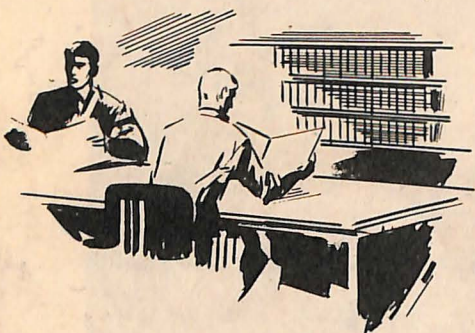


EMERGENCY OPERATIONS

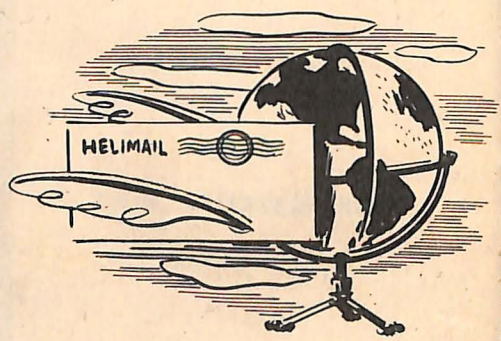




how States and Communities can act now



KNOWLEDGE

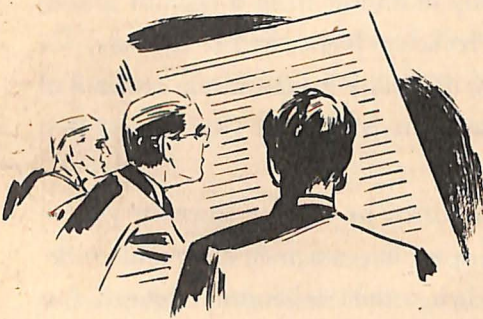


NEW USES



OFFICIALS OF STATES AND COMMUNITIES CAN TAKE ADVANTAGE OF THE HELICOPTER'S POSSIBILITIES BY:

- Learning as much as possible about how the helicopter operates, about what it can do, and how it can serve.
- Keeping in mind that the helicopter is a new type of vehicle distinct from fixed-wing airplanes and can provide a new type of transportation not heretofore available.
- Recognizing its special characteristics and permitting it to serve to the full extent of its usefulness by freeing it from laws, ordinances and regulations which might prevent it from doing so.
- Being a pioneer in the development and use of helicopters.



PROGRESSIVE LAWS



COMMUNITY DEVELOPMENT



STATEMENT of POLICY

THE Helicopter Council of the Aircraft Industries Association is comprised of those members engaged in the manufacture of helicopters. Membership consists of the companies which have pioneered in this new industry and are now furthering research and development, and manufacturing helicopters.

The helicopter possesses characteristics which set it apart from all other kinds of aircraft in basic safety and broad utility. These are:

Its ability to adapt itself in speed and direction to any traffic conditions; its ability to fly backwards or sideways; its ability to stop quickly in midair from a normal speed; its ability to hover; its freedom from need of runways for landings and take-offs; its ability to operate in and out of a space of very limited area, and its ability to land in a small area without power.

Because of these characteristics, and because of the potential great value of the helicopter in transport, communication, pleasure and national security, the Helicopter Council has adopted this statement of policy to be followed by its members, and to guide development and operation of helicopters.

OPERATION

A Helicopter Code for all operations will be formulated to assure the use of helicopters in such a manner that they will perform their transportation services with a maximum of safety and a minimum of noise.

REGULATION

The Council holds that the utility of the helicopter can be developed to the fullest extent only by adjusting existing regulations to take advantage of the helicopter's unusually safe and useful flight characteristics. These revisions should permit flight in urban areas and flight conditions in low visibility.

The cooperation of federal, state and municipal authorities is required in the development of operating regulations which will insure a uniform approach to their establishment without holding back the development of helicopter operations and the widespread economic benefit they bring.

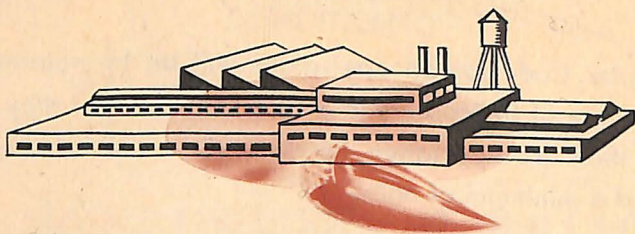
LANDING AREAS

Helicopter landing areas at airports should be established away from runway landing areas of conventional aircraft; while flights to and from airports should be conducted in such a manner as to avoid the traffic pattern of conventional aircraft.

The Council will cooperate with municipalities in drafting ordinances permitting the establishment of helicopter landing areas in metropolitan sections to permit full utilization of the helicopter as a transport vehicle.

PUBLIC EDUCATION

The Council will endeavor to bring to the public a further appreciation of the usefulness of the helicopter and the economical potential to be realized from helicopter transportation.



The Helicopter Council of the Aircraft Industries Association was organized on May 8, 1946, with a membership of five AIA companies, each of which had successfully built and flown a helicopter. The AIA is the trade association of the airframe, engine and accessory manufacturers of the United States.

Members

Bell Aircraft Corporation
P. O. Box 482
Fort Worth 1, Texas

Kaman Aircraft Corp.
Old Windsor Road
Bloomfield, Conn.

Cessna Aircraft Company
Helicopter Division
Wichita, Kansas

McDonnell Aircraft Corp.
P. O. Box 516
St. Louis, Mo.

Hiller Helicopters
1350 Willow Road
Palo Alto, Calif.

Piasecki Helicopter Co
Woodland Ave.
Morton, Pa.

Hughes Aircraft Company
Aeronautical Division
Culver City, Calif.

Sikorsky Aircraft Div
United Aircraft Corp.
Bridgeport 1, Conn.

Voque Pattern

S 4598

\$1.00

April-May 1955

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~~long haul~~

~~city center~~

~~3 minutes~~

~~indirect - terminal of procedure~~

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~~change in procedure - on time~~

~~several business - road -~~

~~where people want to travel~~

See -

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