AERONAUTICS

Atlantic Helicopter Hop

Helicopter delivery from America to Europe by the Greenland-Iceland air route may be the method of the future.

➤ HELICOPTER HOPPING, from America to Europe, will probably never compete with airplane flights but may prove to be an easy way to get these essential modern war-aids to U. S. military forces in Western Europe.

This type of aircraft, which came of age about ten years ago, has proved in Korea to be an essential in modern warfare. Helicopters are work horses, delivering men and equipment to forward, hard-to-get-at positions, bringing out injured men and serving as observation stations.

Ordinarily, helicopters are regarded as slow, low-altitude, short-range craft. Usual fuel capacity will not keep them in the air for long periods. Their range is usually less than 500 miles. But for Atlantic hopping without passengers or cargo, supplementary fuel tanks are easily installed in the cabin space.

Using the Labrador-Greenland-Iceland-England route, the overwater legs of the trip are not excessively long. The longest leg is the approximately 750-mile stretch from Iceland to Scotland.

Transatlantic crossing by helicopter under its own power is a mark of notable achievement for this versatile aircraft, the first American version of which made its first flight in September, 1939. This was the Sikorsky helicopter, known as the VS-300, still in an experimental stage. During the next four years it went through a development period during which hundreds of alterations were made, then finally evolved as a successful aircraft.

Perhaps the true age of the helicopter should date from May 13, 1942, when the then Army Air Forces' first successful helicopter took off from a field near the old Sikorsky airplane factory near Stratford, Conn., for Wright Field, Ohio. This was the first cross-country helicopter flight in the western hemisphere. Its success established a definite place in aviation for helicopters.

The idea of an aircraft held aloft and propelled forward by giant blades rotating above it is much older than the present helicopter era. It dates back to the 16th century and a proposal by Leonardo da Vinci, the great Venetian scientist. Little came of his suggestion until the 18th century, when several European scientists developed types of helicopters successful enough to encourage further work.

Igor I. Sikorsky, who might be called the father of the American helicopter, actually began his work on this type of aircraft in 1909 in his native Russia. Forced to lay aside his "dream" craft, he took an active part in airplane development, coming to the United States later to become a leading figure in American aviation.

In 1937, when news broke in America about a new helicopter, developed in Germany largely by Heinrich Focke and superier to all former types, Sikorsky took up again his plans for a practical helicopter. He persuaded the United Aircraft Corporation, of whose Vought-Sikorsky division he was engineering manager, to set aside money for the development of such a craft. The VS-300 was the first result.

Helicopters today are made in America by many different companies and they are greatly improved over the earlier one-passenger type. Ten-passenger craft are plentiful and even larger ones are being built. Single sets of rotating blades are giving way to dual sets. In a well-known Piasecki ten-passenger helicopter, the rotors are at front and rear, the body hanging below like a giant banana.

The helicopter may never become the backyard machine for every household, as once predicted, because piloting this type of craft is not an easy job. However, better controls are making it easier. Automatic electronic controls, somewhat similar to those used in airplanes, have been developed. These will make blind flying at night and in heavy weather possible and greatly increase the sphere of usefulness of the helicopter.

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• RADIO

Saturday, Aug. 2, 1952, 3:15-3:30 p.m. EDT

"Adventures in Science," with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Walter Grant, director of research, Carrier Corporation, Syracuse, N. Y., discusses "Air Conditioning."

INVENTION

Direct Elevators By Remote Control

➤ SKYSCRAPER ELEVATORS, television-directed by remote control, are envisioned in an invention that recently received a patent from the government.

No operator inside the elevator and no buttons for the passengers to push would be the result of use of the invention of Joshua E. Shirley, North Hills, Pa., which received patent number 2,602,524. Furthermore, one operator at a remote control panel, could send several elevators at once shooting up and down and stopping at different floors to pick up and let off passengers.

He points out that, especially in tall office buildings, the banks of elevators take up a great deal of room, and the operators, one to an elevator, take up room which might better be used for the transportation of passengers.

To save this space, Mr. Shirley would install a television camera and a microphone and loudspeaker inside each elevator. These would be connected to a remote control panel. The operator at the panel would have a view of all the elevator doors and he could receive instructions as to floors from the passengers over the microphone installed in the elevator.

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CHEMISTRY

Hot Rubber Developed

➤ IN SCIENCE'S continual striving to make better synthetic rubber, a way is claimed to produce rubber at ordinary temperatures with qualities that equal superior "cold" rubber.

Through use of a chemical catalyst that is known as Nitrazole CF pilot plant operation has been completed and a short production run of the new rubber has been made in government-owned plants by the Firestone Tire and Rubber Co. of Akron, Ohio.

Firestone officials are enthusiastic about the results while others are not so convinced that the new development will produce such uniform results that the program of refrigerating the plants to the 41-degree-Fahrenheit temperature needed for cold rubber will be made unnecessary.

The new Nitrazole rubber can be made in World War II plants for GR-S rubber production at 122-degree temperatures to bring about the necessary polymerization. When production and development problems are worked out on the new rubber, it may be possible to obtain even better rubber for future automobile tire treads by using the cold temperatures with different chemicals than are now used.

Still in development, the work on the new synthetic 122-degree rubber will be continued. Regular production in the government-owned plants will be the cold rubber of the present production and even some of the hot rubber such as used in war days.

The catalyst Nitrazole CF is a dye intermediate which is chemically para-nitrobenzene diazonium parachlorobenzene sulfonate. The cold rubber Redox catalyst system uses iron salts and organic peroxides, while the older hot rubber uses potassium persulfate.

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