

Great Britain claims her mounting achievements in turbo-props is giving her an established lead in this field, matching the claimed lead in the turbo-jet field. All of the engines under development may never reach the production stage, but the experimental work done will add to turbo-prop knowledge.

In the three years since the Trent-engined Meteor, the world's first turbo-prop powered airplane, took the air the carefully planned program of turbo-prop development has gone steadily on. One of the latest installations is that of an

Armstrong Siddeley turbo-prop now used to power the Balliol Air Force trainer. This engine replaces a Mercury piston engine formerly used in this plane.

The Balliol is an all-purpose advanced service trainer and is designed to meet the training requirements of day or night flying, gunnery, navigation, bombing, photography and glider towing. Instructor and student sit side by side in a roomy cabin with a fine all-around view. This land-based plane can easily be adapted for carrier deck landings.

*Science News Letter, June 26, 1948*

fully transmitted through ground strata alone, and also by way of trolley wires, pipes and other metallic installations.

Radio communication was made between the surface and underground workings, and also between widely separated points underground. Tests have been made in three bituminous mines, three anthracite collieries, a salt mine and an iron mine. These mines were located in both eastern and western mining districts.

The sending and receiving set used on the surface was run by a 110-volt current, and that underground by a 6-volt storage battery and a vibrator power pack. The power of the transmitter was two to three watts. In addition to successful communication between underground workings and the surface through the ground strata and between different points within the mines, communication was held between the hoisting engineer and moving or standing cages and cars in shafts and slopes.

*Science News Letter, June 26, 1948*

#### AERONAUTICS-METEOROLOGY

## Make Safe-Speed Charts

➤ SAFE-SPEED charts for airplanes in thunderstorms are the results of the so-called Thunderstorm Project carried out by the U. S. Air Force in the Ohio-Indiana area during the past two years. During the study especially equipped planes made 2,000 flights high above the earth within the thunderstorms themselves, and recorded all weather conditions encountered.

The research was made by Air Force crews in Air Force planes, under technical direction of the U. S. Weather Bureau. The National Advisory Committee for Aeronautics and the Navy furnished considerable meteorological equipment. The resulting charts, for use of pilots, show the airspeed limits within which nine types of transport and cargo planes of various weights can be most safely operated during thunderstorms.

The Air Force's Black Widow, the P-61, was the plane used in the studies because of its construction, stability and high-altitude performance. All planes were radar-equipped, and carried all sorts of instruments to record automatically all weather conditions encountered in flight, also stresses on the body of the plane and the electric content of the outside atmosphere.

Five planes were used as a team to study a single storm. Approaching thunderstorms were located by ground-based radar, which also kept track of the planes after their take-off. The aircraft entered the storms at altitudes of 6,000, 10,000, 15,000, 20,000, and 25,000 feet. This enabled the observers to get a complete picture of storm conditions at all altitudes at which military and commercial planes might operate. Instrument records, photographs and ob-

servers' notes were all used in making up the thunderstorm safe-speed chart.

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#### MEDICINE

## Mass Screening Technic Aids Cancer Cure Search

➤ Search for a chemical cure for cancer is being aided by a mass screening technic similar to that used in the wartime search for anti-malaria chemicals to replace quinine.

The screening is being done by the CBCC, which is the short name for the Chemical-Biological Coordination Center in Washington. The CBCC is operated by the National Research Council with funds from the Army, Navy, National Cancer Institute and American Cancer Society.

Hundreds of thousands of chemical compounds, made by industrial, government and university laboratories, will be catalogued by mechanical minds and fingers in the CBCC machines for their biological activity.

Of some 4,000 already catalogued, 800 have been sent to collaborating university and government laboratories for testing as possible remedies against cancer and other diseases.

*Science News Letter, June 26, 1948*

#### ENGINEERING-RADIO

## Radio Communications in Mines Found Successful

➤ LIVES of miners entrapped underground may be saved by a radio communication system, using low-frequency waves, developed by the U. S. Bureau of Mines. The human voice was success-

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