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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Scanning the Sun

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A SCIENCE SERVICE PUBLICATION

ELECTRONICS

Spot Crash Location

New device will make pinpointing of airplane crash spots automatic. Consists of radio transmitter that operates immediately after crash and series of receiving stations.

➤ THE U. S. Air Rescue Service of the Air Force is developing an electronic system that takes the guesswork out of finding airplanes that crash in desolate country or into the ocean.

The new system should permit rescues to be made in record-breaking time, thus saving many lives that might otherwise be lost, SCIENCE SERVICE has learned.

By radio, the new system pinpoints the spot at which a plane crashes. It permits rescue teams to fly directly to the scene of the crash without the usual—and sometimes fruitless—search for the missing craft.

Basically the system has two parts: a self-contained radio transmitter beacon that goes into action when the plane crashes, and automatic direction finding stations spotted along the ground.

The beacon sends out vital information about the crash which is received at several remote direction finding stations. The stations feed the information into a central station. There the operator can spot on the map almost exactly where the plane crashed.

Dispatched planes can "home in" on the beacon signals while flying to the rescue.

Carried near the tail of the plane, the Crash Beacon Locator, as it is called, can be released manually by the pilot if he has time. If not, the beacon ejects itself when the airplane strikes the ground or the ocean.

The beacon parachutes to earth, disconnects its parachute harness and, through complex electronic circuits, decides whether it has come to a final rest. Then it turns itself upright, extends its antenna and begins sending distress messages on the international distress frequency.

Instead of sending the usual SOS, the beacon sends the serial number of the plane and a code letter representing the time elapsed since the plane crashed. From the serial number, rescue teams can find out what plane crashed, how many persons were aboard and what type of rescue aid will be needed.

Feeling the need for such a system, the Air Rescue Service drew up the requirements and turned them over to the Air Development Center at Wright-Patterson Air Force Base, Dayton, Ohio. A prototype beacon already has been designed, built and tested. Direction finding stations now are being developed.

The beacon is encased in a cylinder five inches in diameter and two feet long. The electronic parts are protected so they will withstand the shocks of the crash, of being ejected and of striking the ground. The beacon will work automatically on land or water for 48 hours without any attention.

Although developmental work is moving right along, the system probably cannot be used for another two and a half years, the Air Force estimates. Certain "bugs" still have to be worked out, and the whole system has yet to be put into mass production.

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RADIO ASTRONOMY

Unique Interferometer Aids Radio Wave Study

See Front Cover

➤ FOR STUDYING radio waves from the sun, a unique type of interferometer has begun operations at Potts Hill near Sydney, Australia. The radio telescope, shown on the cover of this week's SCIENCE NEWS LETTER, consists of 32 identical parabolic aerials each about six and a half feet in diameter and spaced about 23 feet apart.

Built by the radiophysics division of the Commonwealth Scientific and Industrial Research Organization, the interferometer records the distribution of radiation received from across the sun's disk at the wavelength of 21 centimeters. One of the main features of this radio telescope is that it allows the source of radio noise to be pinpointed on the solar disk.

Studies using it have already confirmed a theoretical prediction that more radio energy comes from the edges of the sun's disk than from its center. If we had "radio eyes," we would see the sun as a bright ring with a less bright patch in the middle, and occasionally a few quite luminous patches on its face.

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PSYCHOLOGY

People Talk Selves Into Neurotic State

➤ IF YOU think some people talk themselves into a neurotic state, you are about right.

If they could not talk, they would not get neurotic, Prof. O. Hobart Mowrer, University of Illinois psychologist, has stated.

"Language makes it possible for man to become neurotic because it enables him to practice deception, one of the causes of neurosis," he stated at a symposium opening the new University of Maryland Psychiatric Institute in Baltimore.

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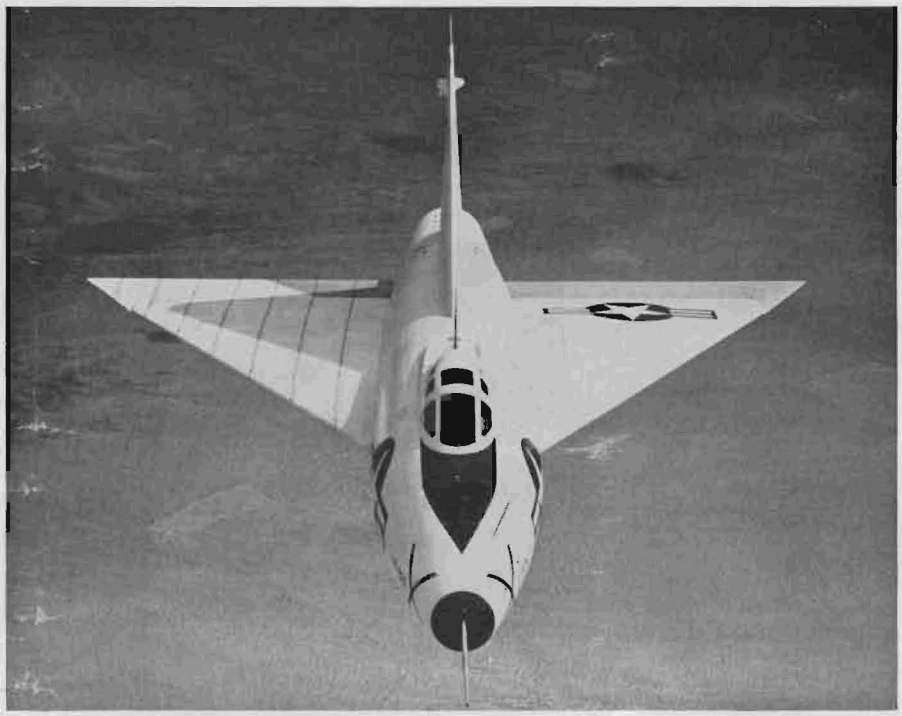

SNAPPED HEAD-ON—From the tail gunner's position in a B-25, a photographer made this flight view of Convair's XF-92-A research interceptor, being flown by Maj. Charles E. Yeager, first man to fly faster than sound, over California's Mojave Desert. Parallel lines on wing at left are wool tufts that show air flow direction. The plane is a forerunner of the supersonic F-102 delta wing interceptor now ordered into production.