

## AERONAUTICS

# Pressurized Glider Urged

To study winds, chemical composition and other details of the stratosphere, sailplane carrying men and equipment up to 13 miles above earth's surface is proposed.

► A HUGE two-man glider with a pressurized cockpit may soon soar higher than 13 miles into the air to explore winds in the stratosphere.

The proposed craft, called a strato-sailplane, could ride the jet stream, a swift-moving current of air that circles the earth at about 30,000 feet, the American Meteorological Society was told.

Scientists could glide in the plane for as long as eight hours with 650 pounds of instruments for their high altitude tests. Until now, instruments in balloons, rockets and powered aircraft have provided most of the known data about the upper atmosphere.

The strato-sailplane would be the cheapest way to carry men to such altitudes, Victor M. Saudek, a director of the Southern California Soaring Association, Inc., told the meeting, held in Pasadena, Calif., in conjunction with the Pacific Division of the American Association for the Advancement of Science. It could also be ready for flight sooner than special power planes.

Glider without pressurized cockpits have reached altitudes of more than seven miles for a short time, by riding the Sierra Wave, a rising air current near the Sierra Nevada Mountains. They might have remained at that altitude, or climbed even higher, but the pilots could not endure the high altitude conditions for long.

The strato-sailplane will have interchangeable pressurized cockpits, designed for different missions. In case of emergency, the cockpit would fly free and drop by parachute until it was safe for the crew to bail out.

The plane will withstand violent turbulence, permit the crew to breathe easily at 70,000 feet, or more than 13 miles above sea level, and will be roomy and comfortable.

As a safety measure, the pilots will wear pressure suits, which will also supply warmth to protect them from the temperatures of 112 degrees below zero Fahrenheit found at such heights. The craft would fly at a top speed of about 100 miles an hour at 70,000 feet.

Two designs for the sailplane were proposed. The first has a 100-foot wingspan and would weigh 3,250 pounds. The second would have a wingspan of 120 feet and weight of 3,700 pounds. The DC-7, a four-engine commercial airliner, has a wingspan of 117 feet.

To reach 70,000 feet, the glider will be towed by a powered plane into the rising Sierra Wave. The sailplane will then drop the towline and soar above the tow plane, climbing at a rate of about 2,000 feet a minute. The climbing rate drops at higher

altitudes. With favorable currents, the plane should reach 70,000 feet in two to four hours.

The descent would take about an hour and no problems are foreseen in landing safely. At 10,000 feet, such a strato-sailplane could choose any landing place in an area of 60,000 square miles.

The proposal for the plane was based on research by the Southern California Soaring Association for the University of California and the Geophysics Research Division of the Air Force Cambridge Research Center.

Science News Letter, July 2, 1955

## RADIO ASTRONOMY

## Twinkling of Stellar Radio Waves Studied

► TWINKLING OF invisible "stars" in the sky detected by changes in the radio waves they emit is being studied by scientists at the University of Alaska.

There are "marked differences" between the way radio "stars" twinkle in England and in Alaska, Dr. C. Gordon Little found in his preliminary studies, the first known to have been made so near the Arctic circle.

These differences and the twinkling itself give clues to the size, shape and movements of the dense regions in the ionosphere that cause them.

Scintillations are more common in Alaska than in England and do not show the same daily variations, Dr. Little's study showed.

The stellar radio waves have many advantages over man-made transmitters for ionospheric studies, including no cost, investigation of a wide area of the ionosphere from a single station and the possibility of obtaining information about very high regions of the ionosphere.

Science News Letter, July 2, 1955

## NUTRITION

## Opaque Paper Best to Keep Vitamin in Bread

► THE HOUSEWIFE may like to buy bread wrapped in transparent cellophane so she can see the loaf but enriched white bread keeps more of the important B vitamin, riboflavin, when wrapped in opaque waxed paper.

Commercially baked, enriched white bread wrapped in opaque waxed paper kept 70% to 85% of its original riboflavin content when exposed to light 12 hours a day for five days. The same commercially baked bread wrapped in cellophane kept 45% to 65% of its original riboflavin under the same light exposure.

Light breaks down the riboflavin, W. H. Kanninen, director of food technology for Foster D. Snell, Inc., New York, reported to the Institute of Food Technologists meeting in Columbus, Ohio.

Science News Letter, July 2, 1955



**CARRIER-BASED FIGHTER**—The Navy's supersonic jet fighter, XF8U-1, designed to operate from carriers, is now being tested. It can swiftly climb to more than ten miles, and is believed to fly about 900 miles an hour. Chance Vought test pilot John Konrad is flying the plane out of Edwards Air Force Base, Calif.