

Ryan Builds Plane That Takes Off, Lands Without Runway

A unique new research airplane, designed to take off and land vertically, hover and fly forward, was revealed this week by the Army, Navy, and the Ryan Aeronautical Company. Designated the "Vertiplane," the VTOL aircraft has been designed and built by Ryan for the Army under the technical direction of the Office of Naval Research.

Unlike the "tail-sitter" type of VTOL aircraft, such as the Ryan X-13 Vertijet, the Vertiplane is a "level-life" airplane. On the ground, it assumes a nose-high attitude because of its extended landing gear. In all phases of flight, including take-off, landing and both vertical and horizontal flight, the Vertiplane operates in the conventional, horizontal attitude.

Conventional in appearance, the Vertiplane is a true VTOL aircraft, taking off and landing without any ground run. It employs the "deflected slipstream" principle. It has two large propellers, powered by a Lycoming T-53 gas turbine engine located within the fuselage, and double retractable wing flaps which extend far below the wing trailing edge.

When extended, these flaps bend the propeller slipstream downward, providing vertical lift or take-off, hovering and landing. For transition into horizontal flight, the flaps are retracted as the plane picks up speed and the slipstream then flows horizontally.

The Vertiplane has been developed in response to a need by the Army for a medium-speed liaison, reconnaissance or utility plane which can operate from rough terrain without runways. Using its propeller-wing combination for lift in vertical take-off and vertical descent and its wing for lift in horizontal flight, the Vertiplane possesses the advantages of the helicopter yet will far exceed rotary-wing aircraft in speed and range capability.

With this performance, the Vertiplane will also have good potential for Navy anti-submarine warfare applications and for commercial use as an executive plane and as a feederline transport to convey passengers between airports.

In sponsoring the development of the Vertiplane, the Army is advancing the state of the art of deflected slipstream knowledge and capitalizing on the research done in this field by the Office of Naval Research, the National Advisory Committee for Aeronautics and Ryan.

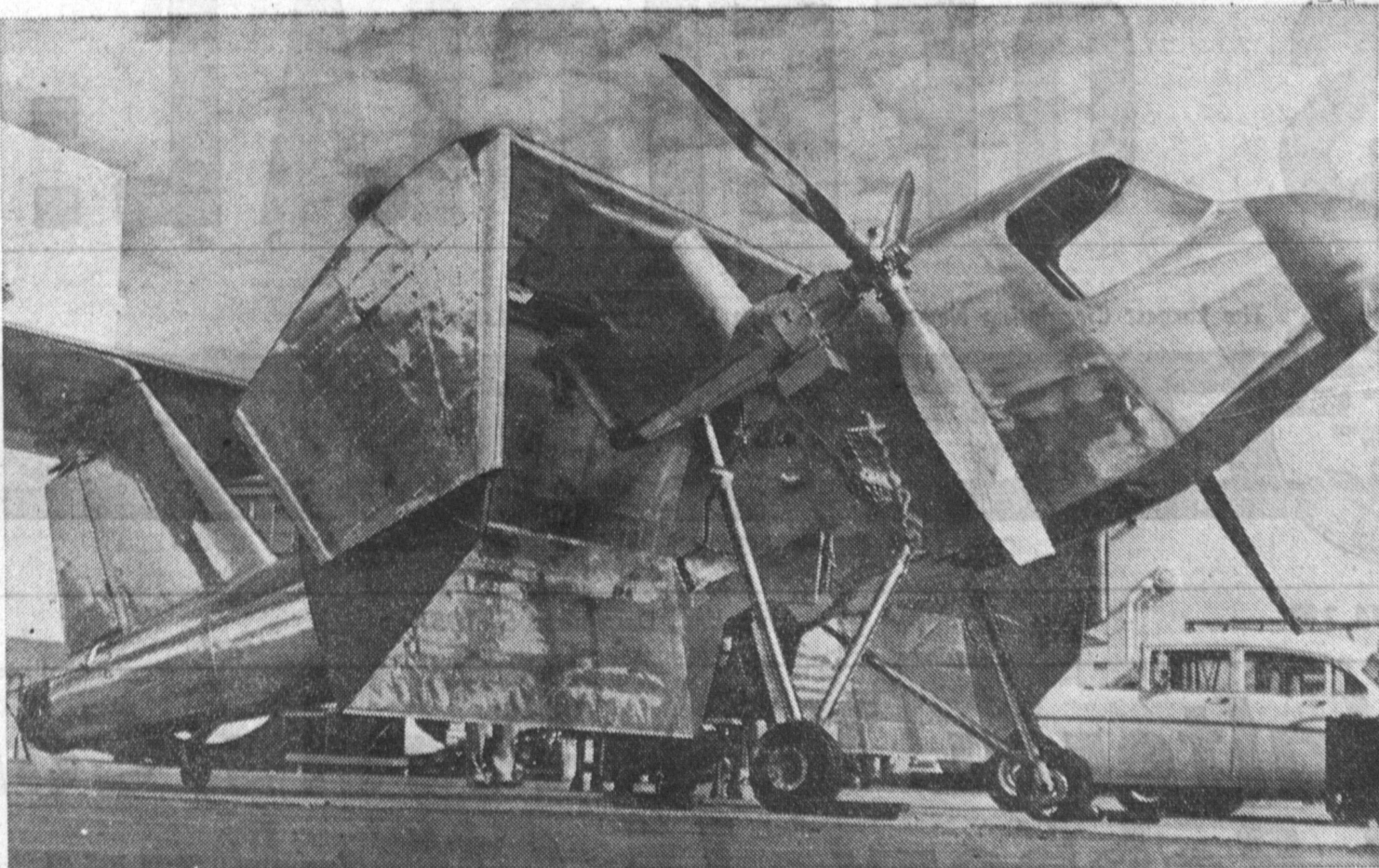
Although this new aircraft is a departure from conventional plane design, it employs two

well proved elements as its basic features: the propeller and wing flaps. For this reason, Ryan engineers are confident it represents a sound approach to a solution of the Army's need.

The Vertiplane is flown with conventional stick and rudder pedals. In addition to the usual flight controls, special provisions have been made to insure adequate control during hovering flight. In landing, the pilot makes an approach with power on and some flap deflection. Then, he extends the flaps and adds power until touchdown is made at zero forward speed. Drag from the flaps helps to accomplish a smooth landing transition at almost constant altitude.

An unusual feature of the Vertiplane is the end plates at both extremities of the wing. These provide structural support for the large flaps and confine the propeller slipstream to the flap span for better flight efficiency.

The Vertiplane is 27 feet, 8 inches long; 10 feet, 8 inches high and has a wing span of 23 feet, 5 inches. The plane is designed to accommodate two people and to have a gross weight of approximately 2500 pounds.



DESIGNED TO TAKE OFF AND LAND VERTICALLY, hover and fly in horizontal attitude, the Army/Ryan Vertiplane can operate from rough terrain without the use of runways. It is powered by a Lycoming T-53 gas turbine engine located within

the fuselage. Using the "deflected slipstream" principle, the Army/Ryan Vertiplane employs large flaps, shown fully extended at wing tips confine the slipstream to flap span for better flight efficiency.

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Over 50 North High school students will participate in an open speech tournament which will be held at the Alhambra High school on December 13 and 14.

The students will take part in seven events: debate, extemporaneous, impromptu, oratorical interpretation, after dinner, original manuscript and dramatic interpretation.

Representing North High in debate will be: Bruce Harle and Charles Dougherty, Arthur Newman and Mason Wolpert, Glen Sherwood and Carolyn Lunden.

Extemporaneous: Bruce Harle, Ronnie Evans, and Carolyn Lunden. Impromptu: Bruce Harle, Roger Hebler, Wandell McCorvey, Carolyn Lunden, Glen Sherwood, and Leroy Starbuck as alternate.

After Dinner: Bill Kelly, Mason Wolpert, and Ken Spooner and Keith Griffin as alternates.

Original Manuscript: Dennis Schirvier, Bob Bee, Gary Mowery, Marlene Scott, Jeanne

Speech Tourney Attracts North High Students

Mann, Mary Ahee, Judy McCull, Vickie Garrod, with Patsy Okada and Margaret Whitacre as alternates.

Dramatic Interpretations: Roberta Terheggen, Nancy Chanda, Linda Harris, Sharon Wright, Kathy Schade, Rose Marie Simmons, Pam Williams, Rickie Baumgartner, Christie Towers, Ariel Bybee, Barbara

Guiliano. Alternates are: Doris Laney, Barbara Heyns, Jeanette Bishop, Jerry Colen, and Joan Hill.

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Teen-Age Golfers To Meet Friday

Sea-Aire Co-Ed Golf club for teen-agers sponsored by the Torrance Recreation department invites seventh to twelfth grade students to attend the second meeting of the new group to be held at the Sea-Aire Golf course, 22730 Lupine st. (off Reynolds dr.) Friday, December 6 at 4 p.m.

Acting Chairman Dick Puls announced that election of officers will be held at this time. Plans for the club's golf instruction will also be discussed.

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