NEW JET-POWERED VERTICAL RISING AIRCRAFT

DISCLOSED BY BELL AIRCRAFT

This film records some of the flight testing activities in Bell Aircraft Corporation's development of the world's first jet-powered VTOL (Vertical Take-Off and Landing) airplane. The craft is a test vehicle constructed simply and quickly to study aerodynamic and control problems. The information obtained is being used by Bell Aircraft engineers in the design of a tactical VTOL plane.

Power for the airplane is supplied by two Fairchild J-44 engines mounted on either side of the fuselage. They may be rotated from vertical to horizontal for increased forward thrust (not shown in film, since this stage of testing has not yet been reache). While the tactical ship will be designed to fly at speeds well beyond that of sound, the test vehicle does not require speeds in excess of 150 miles per hour.

This ship is considered a true vertical riser and some have rven called it a "flat riser" to distinguish it from the tailsitter type. While it looks odd, it has proven a theory conclusively, and definitely is the forerunner of a new aircraft concept.

It has been flying since last year at Bell Aircraft's Wheatfield Plant. The first flights were made to familiarize David Howe, test pilot, with the flight characteristics of the airplane. Howe who was formerly in the Air Force, is a native of East Hickory, Pennsylvania. He is the the only pilot to have flown the craft to date.

First tests of the VTOL aircraft were performed in a secret area and were limited to hovering flight. When the test program called for extended flights to be made, the airplane had to be taken to one of the runways at the adjoining Niagara Falls Municipal Airport. Since the airport is a public place, it was no longer possible to

maintain security restrictions and the news of its existence is being made public for the first time today.

The Bell VTOL plane can literally turn on a dime, revolving a full 180 degrees within the twenty-one foot span of its wings. Compressed air jets ejected from nozzles in the wing tips and tail, supply the power for the turn.

The fact that the craft takes off and lands in a horizontal attitude is of very definite help to the pilot in controlling his airplane, and in contrast to the tail sitter type of VTOL, the Bell plane can land in normal, routine fashion in the event of engine failure.

Since VTOL aircraft have no need for runways, it will be possible to station them at strategically important places throughout the nation, regardless of distance from air bases.

The jet-powered VTOL craft is another aviation "first" to the credit of Bell Aircraft Corporation. The company built the P-59, first U.S. Jet and the X-1, world's first supersonic plane. Both ships are now on permanent exhibit in the Smithsonian Institution. Bell also produced the X-1A, which has flown faster (1650 MPH) and higher (90,000 feet) than any other airplane. Both the X -1 and the X - 1A are rocket powered. Another Bell first is the X-5, first airplane to be equipped with wings whose degree of sweep-back may be varied in flight.

Need for VTOL aircraft has increased in direct proportion to the speed of modern jet aircraft. The performance of present-day fighter planes is due, in part, to thinner and smaller wings. Unfortunately, as wings decrease in size, runways must be lengthened before take-off can be accomplished. VTOL planes are the alternative to building extremely costly runways.