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The grainy film showed a round ship floating out of a hangar. Its silver, aluminum exterior glinted in the sun as it hovered a few feet off the ground. As it glided over a pool of water, it kicked debris into the air and the glass canopies of the two cockpits were showered with grass and gravel as the saucer flew forward.

It may seem like a scene out of a classic Hollywood blockbuster, but the footage is documentation of testing held by the U.S. government on an experimental aircraft. This prototype, and fascinating piece of American history, sits on display at the National U.S. Air Force Museum at Wright-Patterson Air Force Base, Ohio, and another resides at U.S. Army Transportation Museum at Fort Eustis, Va., where plans are underway for its restoration.

With its round design standing at nearly five feet tall and 18 feet wide, the Avro Canada VZ-9AV Avrocar looks like something out of a 1950s science-fiction film. While it may look like something a martian would fly, the Avrocar is anything but science fiction.

Newly declassified documents concerning the Avrocar project were released Oct. 8, when they were published by the U.S. National Archives. Information about the aircraft has been available for years, but the documents now include diagrams that clearly demonstrate the scope of the project.

“The Avrocar was a good start, and the first step on a long road to discovering technology we use today,” said Jeff Underwood, National Museum of the U.S. Air Force historian. “Although the project was never implemented, it serves a successful teaching tool.”

The Avrocar was the result of a Canadian effort to develop a supersonic fighter-bomber, capable of vertical takeoff and landing, in the early 1950s. The Idea of what was to become the Avrocar was originally envisioned by British Aircraft designer, Jack Carver Meadows Frost.

A.V. Roe, a Canadian aircraft manufacturing company, along with Frost, based its design concept for the Avrocar on using the exhaust from turbojet engines to drive a circular rotor to produce thrust. By directing this thrust downward, it was believed the turbo-rotor could create a cushion of air under the aircraft, allowing it to float a few feet off the ground, as well as accelerate to high speeds at higher altitudes.

DAYTON, Ohio — Avro Canada VZ-9AV Avrocar at the National Museum of the United States Air Force. (U.S. Air Force photo)

The Canadian government provided initial funding for the prototype, but dropped the project when it became too expensive. Avro offered the project to the U.S. government, and the U.S. Army and U.S. Air Force took over testing in 1955. Although the project primarily remained in Canada, it was owned and controlled by the U.S. government.

While testing was a combined effort, both services were interested in the project for different reasons. The Army was interested in a durable and adaptable, all-terrain transport and reconnaissance aircraft. The Army Intended the Avrocar to replace their light observation craft and helicopters.

The Air Force was interested in the Avrocar's vertical take-off and landing capabilities, which could potentially hover below enemy radar and accelerate to supersonic speed.

Research data originally indicated that a circular design may have satisfied both service's requirements. A.V. Roe built two, small test models to prove the concept.

"Engineers predicted the Avrocar would be able to reach heights of nearly 10,000 feet," said Marc Sammis, U.S. Army Transportation Museum curator. "Unfortunately, it was soon discovered that the aircraft wouldn't be able to perform as well as predicted."

Tests with scale models at Wright-Patterson AFB indicated the cushion of air under the Avrocar would become unstable when the aircraft passed roughly three feet off the ground. It was determined the aircraft was not incapable of reaching supersonic speeds, nor would the circular shape of the craft allow the Avrocar to have stealth capabilities. Although the aircraft did not meet the expectations of the Air Force, testing was continued to examine if a suitable model could be developed to fit the Army's needs.

The first prototype was sent to the National Aeronautics and Space Administration's Ames Research Center at Moffett Field, Calif. Wind-tunnel tests proved the aircraft had insufficient control for high speed flight and was aerodynamically unstable. Although engineers attempted to perfect the design, the project was marred with problems.

"Once engineers would fix a problem, another would arise because of the modification," said Sammis.

The second Avrocar prototype underwent flight tests. Project engineers discovered once the craft rose beyond three feet above the ground, it displayed uncontrollable pitch and roll motions. The lack of computer technology and design flaws required pilots to control each engine separately, making it very difficult even for two pilots to properly control.

In December 1961, project leaders discovered the Avrocar could not reach a maximum speed higher than 35 mph. This, along with the crafts other shortcomings, led them to cancel testing permanently.

"This project was far ahead of its time," said Underwood. " It was a perfect concept, but the technology of the time wasn't advanced enough."

Although the testing was deemed a failure by the engineers and pilots who spearheaded the experimentation, the implications of the Avrocar's technology had far reaching results.

"Just because the tests weren't successful, doesn't mean it was a failure," said Underwood. "This experiment started engineers down a path to more innovative concepts based on what was learned."

Technology used by many aircraft, like the AV-8B Harrier II, V-22 Osprey and the F-22 Raptor, can trace its history back to the Avrocar.

Concepts gleaned from the Avrocar testing are still being implemented today with the development of the U.S. Marine's variant of the F-35 Lightning II. The F-35B will offer the capability to land vertically, making it the first aircraft in history to combine both stealth and vertical landing capabilities.

"Aircraft with capabilities to take-off and land vertically have their roots in this experiment," said Sammis. "These capabilities come from a long line of experimentation which started with the Avrocar."