

### Vertical Take-Off Aircraft Models Will Be Tested Soon

By JOHN E. BIRD  
Canadian Press Staff Writer  
OTTAWA (CP) — Canadian scientists have launched a research program on the possible design of a multi-engine transport aircraft able to take off and land vertically.

The study has reached a stage where the aerodynamics section of the National Research Council's division of mechanical engineering now is considering models for wind tunnel tests.

R. J. Templin, chief of the section, and P. J. Pocock, head of the low speed aerodynamics laboratory, forecast in an interview that the development of vertical take-off and landing aircraft may be a reality within 10 years.

**CARGO TRANSPORTS**  
"A study has been initiated of the capabilities of the so-called VTOL (Vertical Take - Off and Landing) type of aircraft in order to keep abreast of developments in this field," Mr. Templin said.

"The study is being carried out with particular reference to cargo transport requirements which may arise either in civil operations in undeveloped areas of the Canadian north or in certain military operations."

A VTOL aircraft would bear no resemblance to a helicopter. Mr. Templin and Mr. Pocock believe the first successful VTOL plane will look much like a conventional transport, except it will have wings that can be tilted.

When the aircraft is on the ground in a take-off position, the wings would be tilted vertically, with the engines and propellers pointing skyward. The propellers would lift the plane into the air until it reached a safe flying height.

**HORIZONTAL SPEED**  
The theory is that the wings then would be tilted slowly to a normal horizontal position, enabling the motor to propel the plane forward. The tilting process would take place gradually to permit the aircraft to attain a safe flying speed.

"We think the tilt-wing theory is worth investigating," Mr. Templin said. "It looks feasible and the rewards look rich enough to make a study worthwhile."

Mr. Pocock did not envision any major problem in the production of turbine motors capable of driving a propeller fast enough to lift a VTOL plane off the ground. Turbine motors were becoming more powerful and lighter every year.

Mr. Templin emphasized that the study is of a fundamental nature. It had been started because the council wanted to keep abreast of developments in this field in other countries, particularly the United States.

"We are studying the possibilities of such a plane," he said. "The actual design of the plane, motors and other parts will not be undertaken until some time in the future."

**MOTORS COUPLED**  
Present studies by Mr. Templin and his associates are on the possible design of a four-motored transport. The motors would be linked together to prevent the plane from being endangered by one motor failing. If one motor broke down its propeller would be driven by the other three motors.

A successful VTOL aircraft would be able to take off and land in a small space with large payload, and fly long distances at high speeds.

Helicopters now in use require only a small runway for taking off and landing but have a limited payload, range and speed. In addition, they are expensive to build and hard to equip with most types of navigation instruments.

"The main attraction about a VTOL plane is that it will not require long runways," Mr. Pocock said. "This would make it valuable for freighting supplies and passengers to areas without airports or to parts of Canada, like the North, where it is next to impossible and very expensive to build big airports."

Mr. Templin said the council's studies will be concentrated on a transport plane because research on military aircraft now is well advanced in the U.S. A similar type of fundamental research program also is understood to be in progress by Avro Aircraft Ltd. at Malton, Ont.

**Close Look At Mars Shows It Now Looks Decidedly Grey**  
By ALTON L. BLAKESLEE  
NEW YORK (AP) — Life on Mars is colored grey or has just turned that way. And the planet perhaps is having a bad drought. These are findings from excellent peeks at Mars when it paid its closest visit to earth this summer in 32 years.

Dark areas which presumably are plant life have long been seen on Mars. They have appeared in vivid greens and blues to observers during the height of the Martian spring.

This year they seemed to be an almost uniform grey in color tests says Carl Sagan of the Yerkes and McDonald observatories of the University of Chicago.

**Last Of The Manchus Is Thoroughly Brain-Washed**  
By DAVIS LANCASHIRE  
FUSHUN, China (AP)—A man who held the throne of China when he was two years old now wears the blue cotton suit of communism instead of the yellow silk of royalty.

Bewildered and brainwashed, Henry Pu-yi speaks the dry phrases of the Marxism-Leninism he has been absorbing for 11 years behind the bars of four prisons.

"I consider this the most fortunate, the most enriching period of my life," Pu-yi, the last Manchu emperor, told me.

He sat in a straight-backed chair in the reception room of the prison outside Fushun. Three officers listened to his recitation.

A thin, sensitive-looking man of 60, wearing thick glasses, Pu-yi outwardly appears to have survived his ordeal well.

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Perhaps the greens and blues seen before were optical illusions he says. Perhaps a severe drought cut down the lavish color this year.

Grey could be important for Martian life. Grey-colored plants would absorb more of the weaker sun rays reaching that more distant planet.

Sagan described these observations made by Dr. G. P. Kuiper and others in a speech prepared for the American Association for the Advancement of Science.

It still seems that Mars has plant life, but it must be a tougher, more efficient form than found on earth.

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### Spitfire Is Given Sad Farewell By Regretful Britons

LONDON (Reuters) — Britons today bade a sad farewell to the Spitfire, the famed single-seater fighter plane often credited with winning the Battle of Britain and thus making possible victory in the second World War.

An announcement that the last three Spitfires still in service with the RAF will be withdrawn was made Thursday night.

The three are Mark-19 photographic reconnaissance planes used by the air ministry for high-altitude weather observation. One of them, however, will be kept airworthy to take part in a yearly flight over London in tribute to the victory over the Luftwaffe.

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First tested in 1936, the Spitfires flew more than a million wartime and post-war sorties in 16 years of operational service.

The Spitfires got their baptism of fire on Oct. 16, 1939, when they took part in the downing of three German bombers attacking British shipping.

They took a heavy toll of German bombers after Hitler launched his all-out air offensive against Britain in 1940.

Spitfires underwent several changes during the war to keep pace with new enemy weapons and tactics.

Their speed was increased from 259.5 miles an hour to 450, and their rate of climb from 2,500 to 5,700 feet a minute. In 1944 the speed of the Spitfire Mark-14F was increased by 30 miles an hour at low altitude to operations against the V-1 buzz-bombs.

When the Spitfire was first made a part of the RAF it had eight Browning .2030 machine-guns. By 1946 it had four 20-millimetre cannons.

Many Canadians flew the Spitfire with the RAF, and there were several all-Canadian Spitfire squadrons.

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