

Cross Between Helicopter and Airplane Expected To Revolutionize Air Industry

Editor's note—The following exclusive United Press dispatch is the first story of the development by Hillier Helicopter Company of a revolutionary new aircraft. Part of the military security wraps were taken off the plane today and this dispatch gives President Stanley Hillier's own estimate of the future of such aircraft.

By **GLENN STACKHOUSE**
United Press Correspondent

Palo Alto, Calif. — (U.P.)—The X18 propellerplane, an unpiloted cross-breed between a helicopter and a conventional airplane which is expected to revolutionize aviation, is being constructed under Air Force contract at the Hillier Helicopter plant here.

It is a twin-engine transport aircraft, approximately the size of a Convair airliner, which can rise straight into the air like a helicopter, then dart forward in high speed level flight like an

ordinary fixed-wing airplane. The X18 is the first operational prototype of the so-called "tilt-wing" concept. And its birth announcement is a significant aeronautical news event, its designers call it the greatest step forward in the aviation industry since the development of jet propulsion.

Will Realize Long Dream
It performs up to expectations, and both Hillier and the Air Force are betting it will, it will represent the realization of aviation's long dream of combining the best features of both the helicopter and the airplane, without the limitations of either.

Stanley Hillier Jr., youthful president of the parent company, told the United Press his firm had been working on vertical take-off (VTO) designs since 1947 and settled on the tilt-wing

concept three years ago as "the optimum of technical improvements we were looking for." Actual construction of the X18 began last year under Air Force orders.

Although production schedules are not released, it was expected the strange new plane would take the air some time next year.

Hillier said the prototype propellerplane was "strictly a research aircraft" designed primarily for the military. But its potential for both military and commercial use is almost unlimited.

Hence, it has the "boxcar" fuselage and tail assembly of a Chase C122 transport. Its power plant consists of two out-sized Allison turboprop engines pirated from the Navy's XF1Y "Pogo-stick" plane, a tail-sitting VTO fighter first flown at nearby Moffett Naval Air Station in 1954. As in the Pogo, the engines will spin six-bladed, counter-rotating Curtiss propellers.

The principal, and most startling, innovation is the unique Hillier-designed tilting wing that sets the plane apart from anything that has ever taken the air.

Squatting on the ground in position for take-off, the wings will tilt vertically at a 90-degree angle from the fuselage, with the two props pointing straight up. When the pilot pours on the

throttle, the two powerful engines will literally yank the plane off the ground by its bootstraps. Once airborne, the pilot will touch a control which will swing the wings into normal flying position and shove off in level flight.

Will Climb Faster
Hillier has predicted that despite its bulk and weight, the tilt-wing transport will climb "two to three times as fast as a DC7" and will "potentially outfly the fastest propeller-driven plane in existence today."

In addition to its ability to take off, hover and land vertically, the X18 is also perfectly adapted for the STOL (short take-off and landing) facility also sought by the Air Force.

"Not only will it be able to take off vertically," Hillier said, "but it will be able to load itself to the gills with cargo and take off as a conventional airplane when fields are available. But that's not all."

"Furthermore," Hillier said, "by tilting the wings less than 90 degrees, it may take off in any given distance, depending entirely on the runway length and — or the degree of cargo overloading or extra range desired."

Minus Drawbacks
The X18 will incorporate all of the versatility of the "copter minus all of the whirlybird's drawbacks, namely limited forward speed, short range, high cost and "prodigious" maintenance problems.

The helicopter is basically a hovering device which is also designed to fly forward. The propellerplane is a forward-flying

device, capable of hovering. Hillier said the door to VTO flight was opened with the development of the turboprop engine with its comparatively light weight and high power.

Although the intercontinental jet or rocket versions of the X18 are "most certain" to come, Hillier said, research has shown that present day jet engines just can't do the job of the turboprop in VTO flight.

Available jet power plants would require so much fuel to lift the entire dead weight of a transport aircraft from speed zero "that the aircraft's cargo would be almost exclusively fuel, and little else," Hillier said.

Revolutionary Move
The aviation executive views the development of the X18 as a truly revolutionary move in flying. "One day we'll probably regard all conventional take-off planes of this age as nothing more than elements of an extended transition period which necessarily had to precede VTO aircraft," he said.

The X18's ability to hover motionless in the air will be limited, as compared with a helicopter. But it will be enough to lend it to the myriad of rescue and airborne loading missions now impossible for an airplane.

This helicopter facility, combined with the forward speed and load-carrying capacity of the airplane, is expected to make the tilt-wing plane the prime mover in the new atomic infantry pattern which calls for quick movement of supplies to the forward areas and the hop-skipping of troops from one section of a

combat area to another. The manufacturers make it very evident they feel the X18 will prove, the first time it goes up, that it is the forerunner of a new era in flying — an age that will eventually see the modern airport, with its mile-long superhighway landing strips, a thing of the past.

The airport of the tilt-wing era, as envisioned by Hillier, will be a rooftop heliport in the center of the metropolis, instead of a sprawled-out, land-devouring ranch a \$6 taxi ride from town.

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Women and Pigs Unusual Feature of Russians' Detachment in Antarctic

McMurdo Sound, Antarctica — (U.P.) — The lone American scientist attached to the Soviet Antarctic expedition said today the Russians have two refinements not found in the U. S. expedition — women and pigs.

Meteorologist Gordon D. Cartwright, 47, Newcastle, Pa., was interviewed by United Press here by radio from the Russian camp on the Indian Ocean side of the continent.

He has been with the Russians for more than a month and will remain there through the winter. In exchange, a Soviet scientist will winter over at the U.S. International Geophysical Year

BWARE FLYING CANOES
Evanston, Ill. — (U.P.) — George Bates, 37, a telephone company personnel man, ran into a new traffic hazard—a flying canoe. He was struck by the 16-foot canoe when it sailed through the windshield of his car and hit him on the head and shoulders. Strong wind tore the canoe from the auto of Douglas Swihart, 17, where he had tied it.

Hong Kong-Okinawa Flight Time Reduced
Hong Kong — (U.P.) — A Viscount turbo-jet airliner of Hong Kong Airways has shaved 37 minutes off the record flying time for the 930 mile flight between Hong Kong and Okinawa it was reported today.

The plane covered the distance in three hours and 25 minutes Sunday for an average airspeed of 332 miles per hour.

Antarctic headquarters at Little America. Cartwright said the Russian expedition ship Ob has three women scientists and there are eight to 10 women crewmembers on other ships.

Hundreds Applied
None are at the Soviet land bases, however, and none will remain the winter although hundreds of Soviet women applied for permission to join the expedition, he said.

Cartwright reported that Russian ship captains said the women are "very efficient on ships and no difficulties whatsoever have been experienced with mixed crews."

The American scientist said he discovered the Russians were raising 40 pigs at their Mirny base and had imported eight tons of soil for an experimental garden.

He did not say how either project was faring but both are unique for this frozen continent.

Well Established
Mirny is 1,400 miles from the U.S. base at McMurdo Sound. Both are equidistant from the South Pole.

Cartwright said the Russian camp is modern, well-equipped and comfortable. His description made it sound comparable to the facilities at the U.S. base.

But the Soviets' clothing, he said, "seems superior in appearance, variety and utility. All personnel are equipped with leather and fur garments."

The food is wholesome and there is plenty of it, he said.

"The tea is wonderful, but caviar for breakfast is hard to face," he said.

Nevada Governor Raps Demo Critics

San Francisco — (U.P.) — Republican Gov. Charles H. Russell of Nevada has taken sharp issue with Democratic critics of the administration.

The Democrats, 1,000 strong, met during the week end in a western conference that gave them a forum from which to criticize the Eisenhower Administration and for its attitude on civil rights.

"The Republican party has done more for civil rights in four years than the Democratic party did in 20," Russell said.

"The civil rights issue is a battle within the Democratic party. Let the Democrats clean their own house before criticizing President Eisenhower and the Republicans."

Russell said he preferred President Eisenhower's foreign policy to Democratic programs of "indetermination and appeasement."

"How can we in so short a time forget the meetings at Yalta, Malta and Potsdam when the leaders of the Democratic party yielded to Soviet influence?" he asked.

BROOKLYN BRIDGE
Brooklyn, Conn. — (U.P.) — The Brooklyn Bridge here was offered for sale but there were no takers—the State Highway Department had to pay \$2,500 to have it hauled away.

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