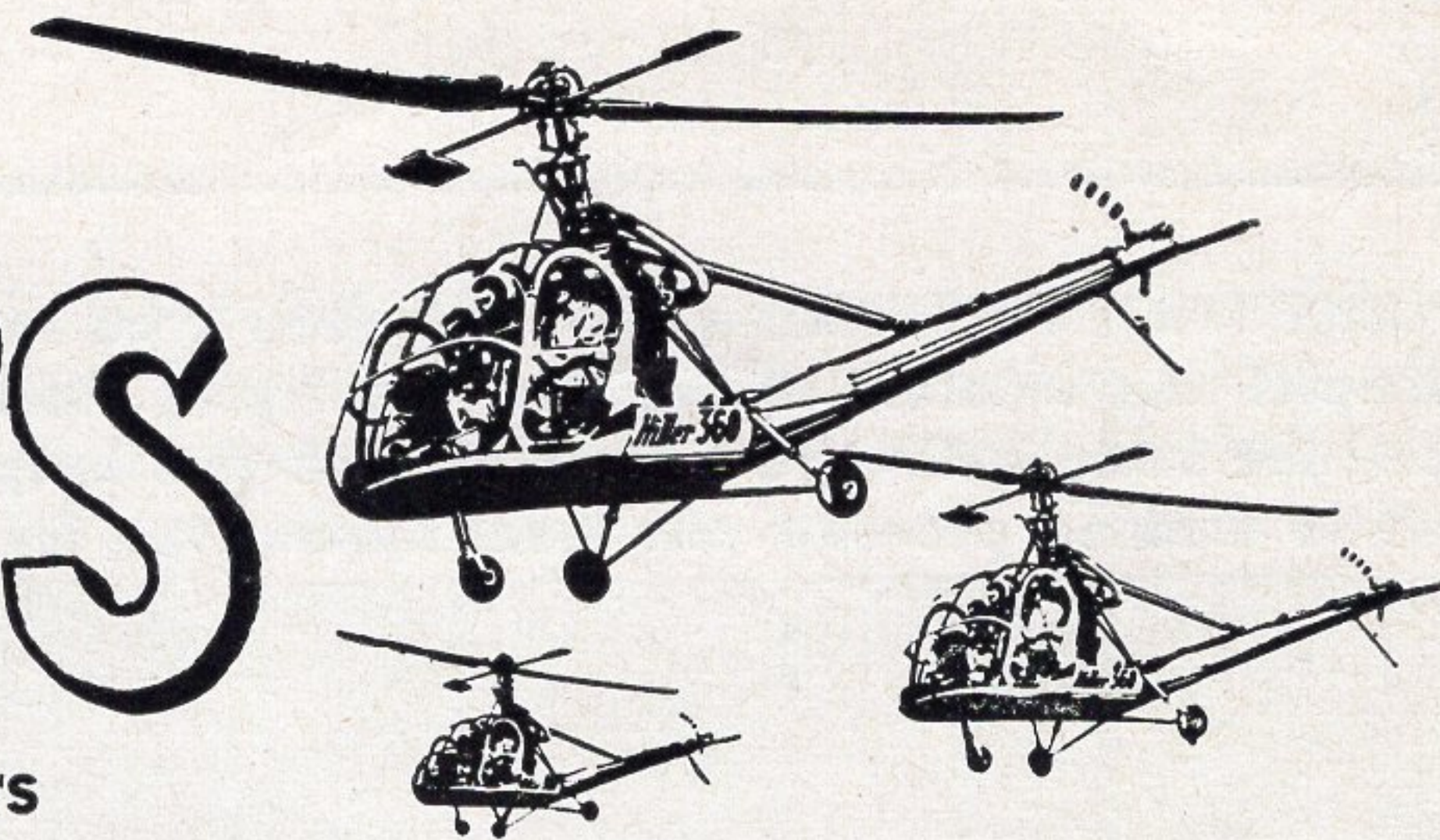


COPTER-NEWS

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PALO ALTO, CALIFORNIA



“FLYING PLATFORM” HERALDS NEW AGE OF WINGLESS FLIGHT

WASHINGTON, D. C.—The Office of Naval Research has revealed the existence of one of the most unusual aircraft yet made public—a small wingless flying platform which has made short successful flights carrying a pilot.

Designed and built by Hiller Helicopters under the direction of the Office of Naval Research, the machine is a research tool and is now undergoing modification to further explore the principle involved.

The Flying Platform is almost literally a flying carpet which the pilot controls merely by shifting his weight instead of using manual or mechanical flight controls.

Controls Eliminated

Thus conventional controls and instruments are virtually eliminated. This new type of control utilizes the same instinctive reactions a person uses to stand and walk. Directional flight is achieved merely by leaning in the direction one wishes to go.

Man's dream of flying has always included the idea of flight so simple as to be instinctive. The concept of the Flying Platform, stabilized and controlled by the same instinctive reactions a person uses to stand upright, more closely approximates this ideal than any aircraft ever built.

Uses Ducted Fan

The small circular device, or “platform,” on which the pilot stands uses a new principle of lift and propulsion called the ducted fan. The Hiller machine, which combines the principle of control by weight shifting with the ducted fan, definitely establishes the feasibility of radically simplified flight. From this experience, it appears reasonable that additional types of Flying Platforms, both larger for long-range missions, and smaller for

short-range missions, may be successful. Further extensive research and development will be necessary before these principles can be applied to production of military or civilian aircraft.

Radically Simplified

The primary advantage of such aircraft would be the extreme ease of flying and learning to fly, and their low cost. In addition, they could be carried fully assembled in a ground vehicle. The machine may be operated out of extremely confined areas. Maintenance would be relatively simple because of the inherent simplicity of the aircraft.

The ONR Flying Platform built by Hiller Helicopters is the first ducted fan type of VTO aircraft to fly carrying a man. Variations of this principle have been flown while tethered, but this aircraft is the first such vehicle to achieve piloted free flight.

Particularly active in the development from the Office of Naval Research were: Rear Adm. Frederick R. Furth, ONR Chief; Capt. William C. Fortune, Head of the Air Branch for ONR; Alexander Satin, Chief Engineer, ONR Air Branch; and Marine Corps Majors Darrell Ritter and Julian Willcox, Project Officers of the ONR Air Branch.



LOOK, MA, NO WINGS!—New vertical take-off Flying Platform built by Hiller Helicopters, under direction of the Office of Naval Research, shown in free flight at Palo Alto, California.

"JUST LEAN FORWARD AND . . ."—You'll go in the direction you lean. It's that simple! An inherent stability of the Flying Platform tends to keep it horizontal, and the same instinctive muscle reaction that keeps one from falling on the ground while walking prevents one from tipping too far in flight.

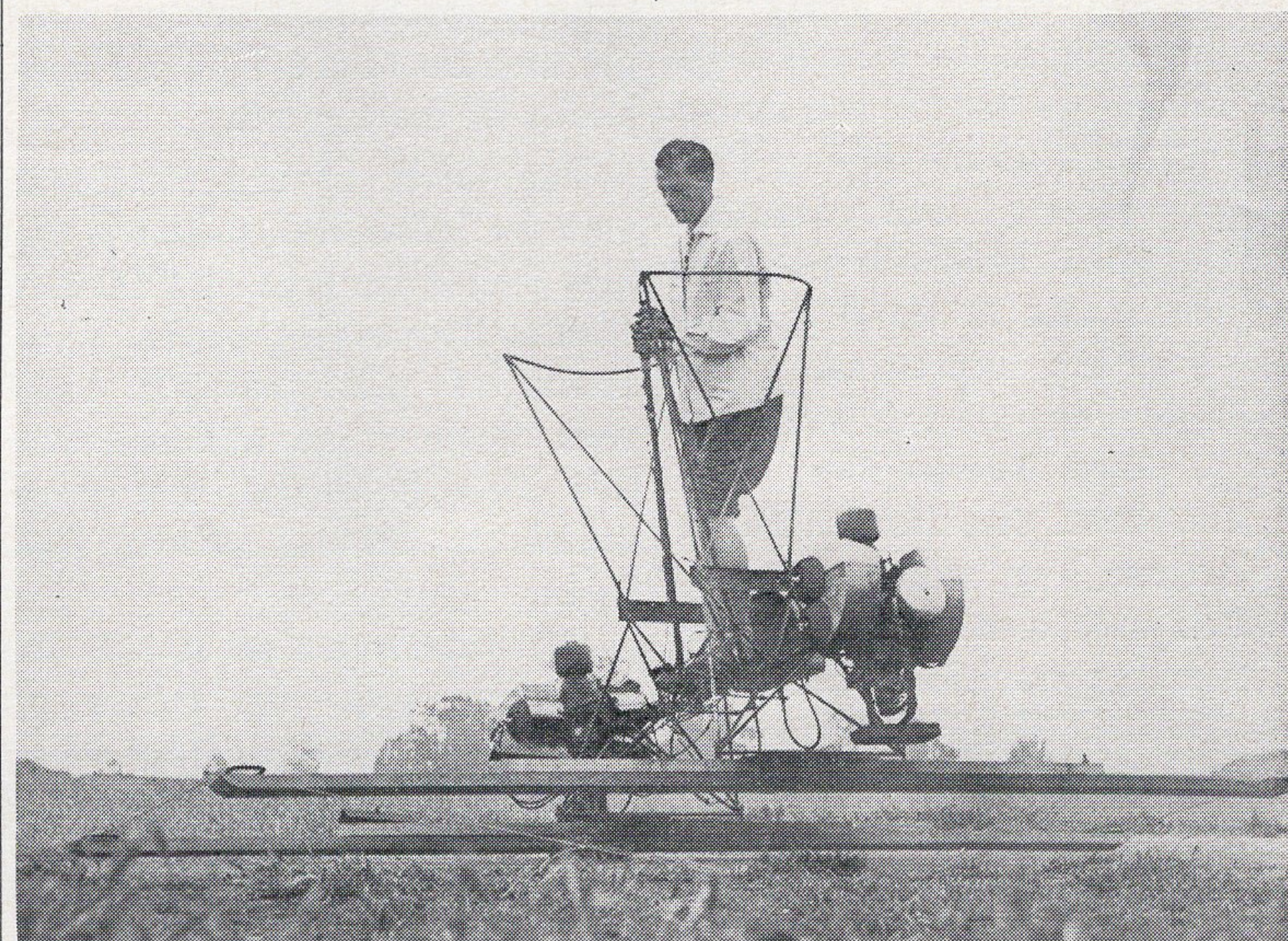


RESEARCH BEGUN IN 1947

A forerunner of the present Flying Platform was developed by Charles H. Zimmerman and tested by Hiller Helicopters in 1947, but free flight was not then achieved. In early 1952 the National Advisory Committee for Aeronautics flew a tethered device of this type with Charles

Zimmerman and Paul Hill as project engineers for NACA.

In 1954 Hiller Helicopters was awarded a contract by the Office of Naval Research for the development of a free flight platform. Present activities are confined to research only, directed to further development of kinesthetic control and the ducted fan principle.



1947 MODEL—Research at Hiller Helicopters into the possibilities of an aircraft using the weight shift control principle began with the machine pictured above, designed by Charles H. Zimmerman, N. A. C. A. aeronautical engineer. Tethered tests were conducted in which the craft lifted a pilot several inches off the ground, but difficulties were encountered and free flight was never achieved. Because Hiller was then concentrating on its production helicopter, the project was shelved temporarily in 1948. Shown above on aircraft is former Hiller test pilot Frank Peterson.



"ANYONE CAN FLY IT"—So says pilot Phil Johnston as he demonstrates free flight at the Hiller plant in Palo Alto. These photo sequences show him taking off, using the principle of weight shift to control directional movement of the craft, and landing.



PILOT, PROJECT ENGINEER BOTH ENTHUSIASTIC FOR FUTURE OF FLYING PLATFORM CONCEPTS

Both Phil Johnston, test pilot, and Arthur Robertson, project engineer for the Flying Platform, were among the first to recognize the tremendous future possibilities for the principles on which they were working. Actually, they both point out, the Flying Platform is just "slightly crack-ing open the door" leading into a vast new realm of flight meth-ods, in which both the ducted fan principle and the weight shift principle will be utilized.

Recognizing that this aircraft is just the Kitty Hawk version of a new era, they feel that prin-ciples have been proved which will greatly influence the course of aviation's future and make possible fantastic new types of aircraft, both small and large.

Former Air Force Pilot

Phil Johnston, 33, married and the father of two children, started to fly with the Air Force in 1942 and served in Europe during World War II. He was with Hil-ler from 1948 until he entered

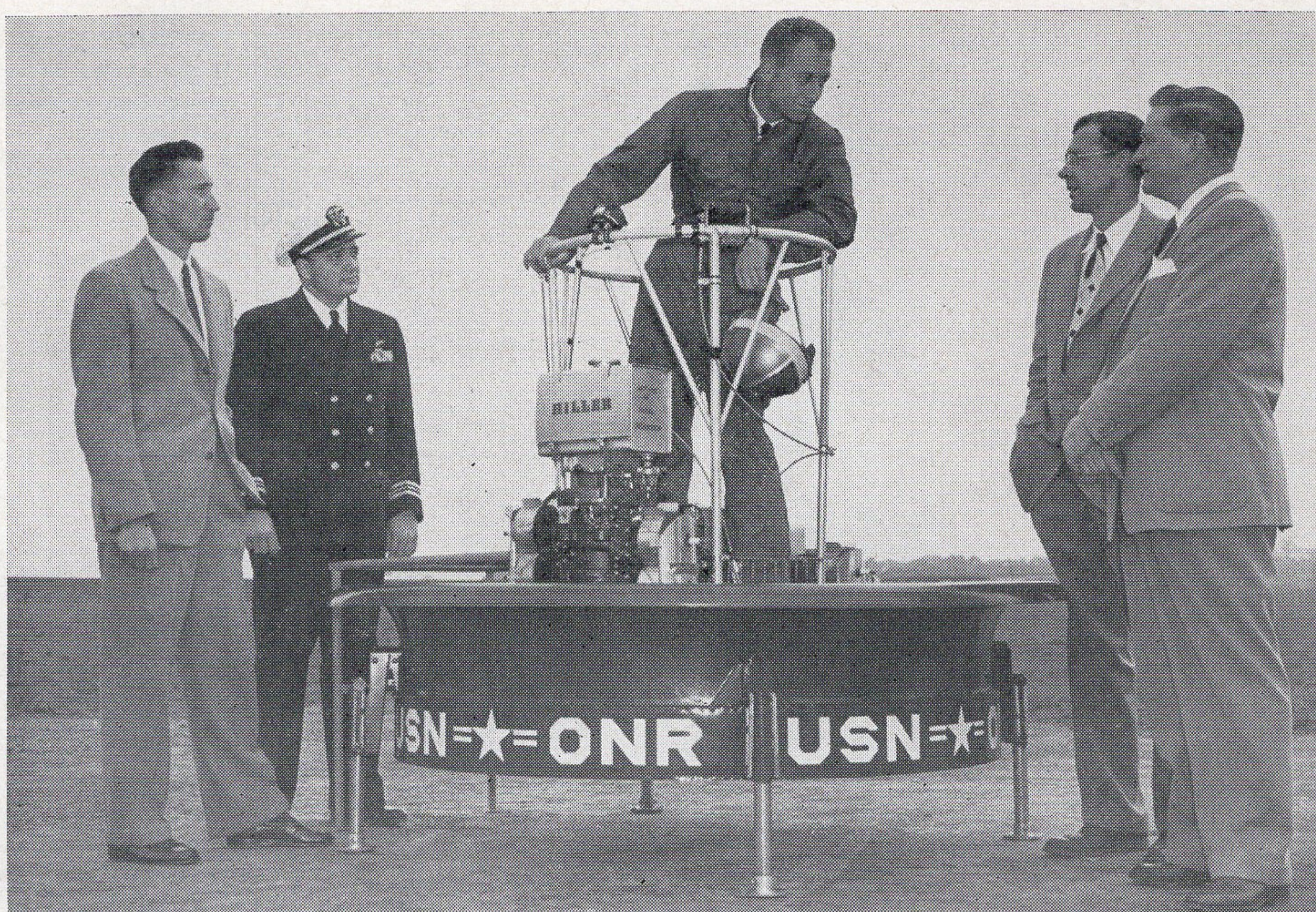
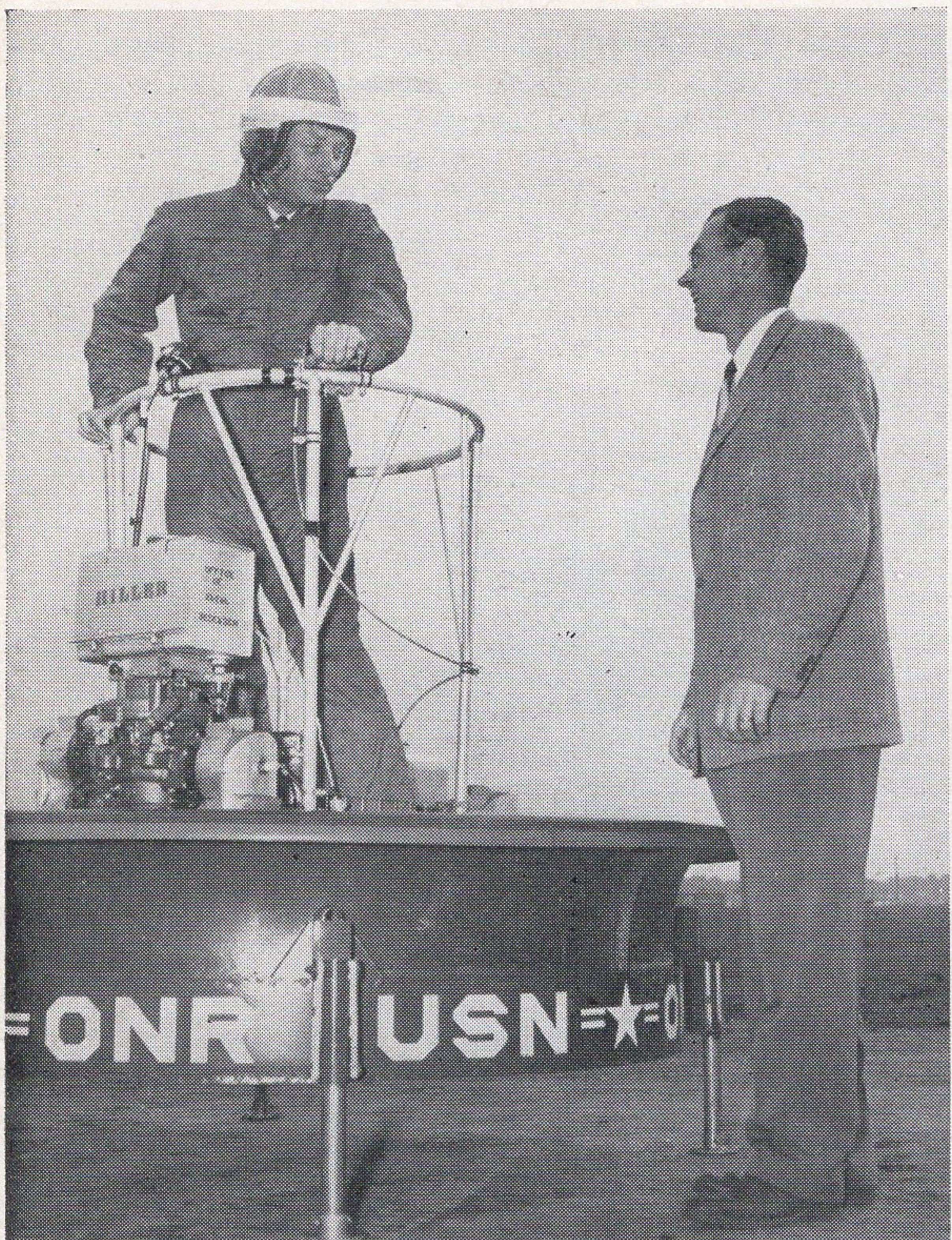
active Air Force duty in 1951, subsequently serving as an oper-ations officer at Yuma and with the Air Material Command. Early in the Korean War he delivered Hiller aircraft to the combat area and helped instruct Army pilots. In 1953 he rejoined Hil-ler as a test pilot and has been with the company since.

U. of Washington Graduate

With Hiller since 1951 as a design engineer, Robertson is a graduate of the University of Washington with a B.S. in Aero-nautical Engineering. He entered the industry with Lockheed Air-craft in 1942, doing design and stress analysis work. From 1948 to 1950 he was with Aerocar, Inc., engineering a flying auto-mobile. Immediately prior to joining Hiller, he rejoined Lock-heed's Engineering Department doing work on stress problems of the Constellation fuselage shell. He was made project engineer on the Platform shortly after the contract was received in 1954.

(See picture on back page)





PROJECT TEAM—Many people at Hiller Helicopters and the Office of Naval Research played important roles in the development of the Flying Platform, but pictured above are representative key figures in the project. In photo at top left, test pilot Phil Johnston talks to Arthur Robertson, project engineer. Photo above shows (l. to r.): President Stanley Hiller, Jr.; Lt. Commander Hugh F. McLinden, Bureau of Aeronautics Resident Representative at Hiller; pilot Johnston; project engineer Robertson; and E. T. Bolton, Executive Vice President at Hiller Helicopters.

TETHERED FLIGHT A REQUISITE FOR ALL INITIAL TESTING—In initial phases of development of the Flying Platform, tethered flight is a normal manner of ascertaining its capabilities. Supporting and restraining cables, run through an overhead rig, prevent serious mishaps but still allow the pilot to test the aircraft in both hovering and directional flight. Notice how supporting cables are actually loose in the photograph below, taken while pilot Phil Johnston was demonstrating the craft to a group of military officials.

Photo immediately to the right shows over-all view of tethered rig, with Johnston hovering. At far right, President Stanley Hiller tries the platform to get the "feel" of its flight characteristics.

