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NASA HIMAT CRAFT TO TEST ADVANCED AIRCRAFT MANEUVERABILITY

It's called HiMAT. It blends the latest aeronautics technology from the research laboratories into a flight research vehicle to demonstrate advanced technologies for potential use on air-superiority fighter-concepts of the 1990's.

HiMAT, for highly maneuverable aircraft technology, is a technology development program entering the research flight test phase later this year over the Mojave Desert at NASA's Dryden Flight Research Center, Edwards, Calif.

Engineering studies anticipate that HiMAT will have twice the turning capacity of the most maneuverable fighter today. HiMAT is expected to attain 8g-turns at near-supersonic speeds and 6g-turns at supersonic speeds with no loss of speed or altitude.

(NASA-News-Release-78-99) NASA HIMAT CRAFT
TO TEST ADVANCED AIRCRAFT MANEUVERABILITY
(National Aeronautics and Space
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HiMAT has two objectives--to accelerate aeronautical design advances from the research laboratories into flight testing and to expand design techniques that will permit quantum jumps in performance from one generation of aircraft to the next.

The joint NASA-Air Force research aircraft incorporates technology resulting from advanced research in aerodynamics, structures, propulsion and flight control design, and addresses these combined technologies in a single research vehicle.

For the first time, the vehicle will exploit the property of advanced composite materials called "unidirectional" stiffness. HiMAT's wings and canard surfaces (small forward wings) are tailored to enhance maneuverability. This has been achieved by orienting structural layering of the composite material to capitalize on natural bending of the wing canard during flight.

HiMAT has been designed to use lift of the wing and canard in combination to enhance maneuverability and controllability, also a first use of this technique.

HiMAT consists of a core vehicle, including the engine and basic subsystems, with items such as engine air inlet and exhaust, outboard wings and many other components added in a modular fashion, to permit substitution of new and more efficient designs at minimum cost.

HiMAT will be flown using the NASA-developed concept of remotely-piloted research, where the pilot controls the flight from a ground-based cockpit. This permits high-risk flight testing without the cost of man-rating the aircraft and associated risks to the test pilot.

Rockwell International Corp.'s Los Angeles Aircraft Division in California built two HiMAT 0.44 scale flight research vehicles under a joint NASA-USAF contract awarded in 1975.

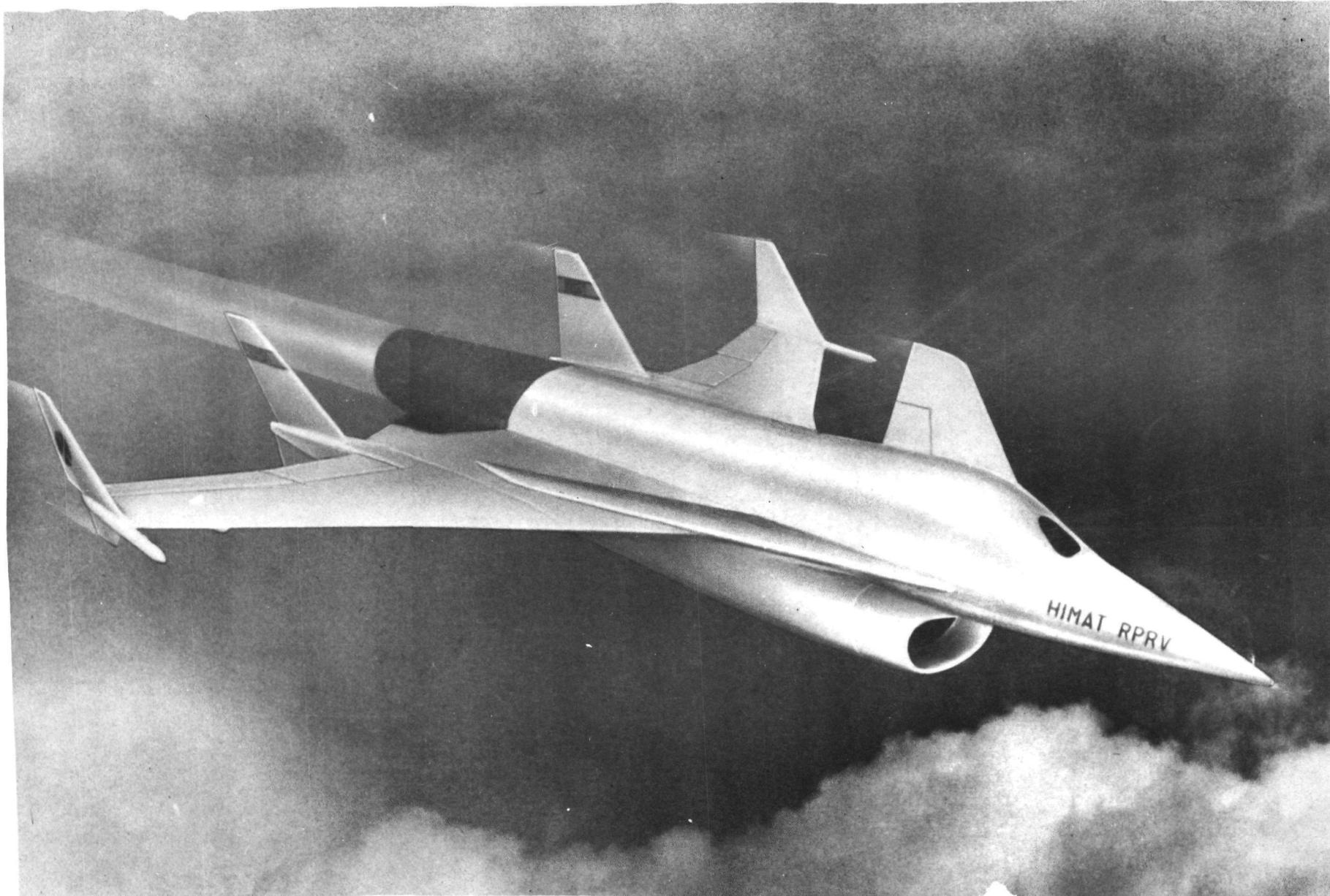
HiMAT is one of many aeronautics research and technology development efforts of NASA, directed toward maintaining the United States' superiority in both civil and military aviation.

Photographs and drawings to illustrate this news release will be distributed without charge only to media representatives in the United States. They may be obtained by writing or phoning:

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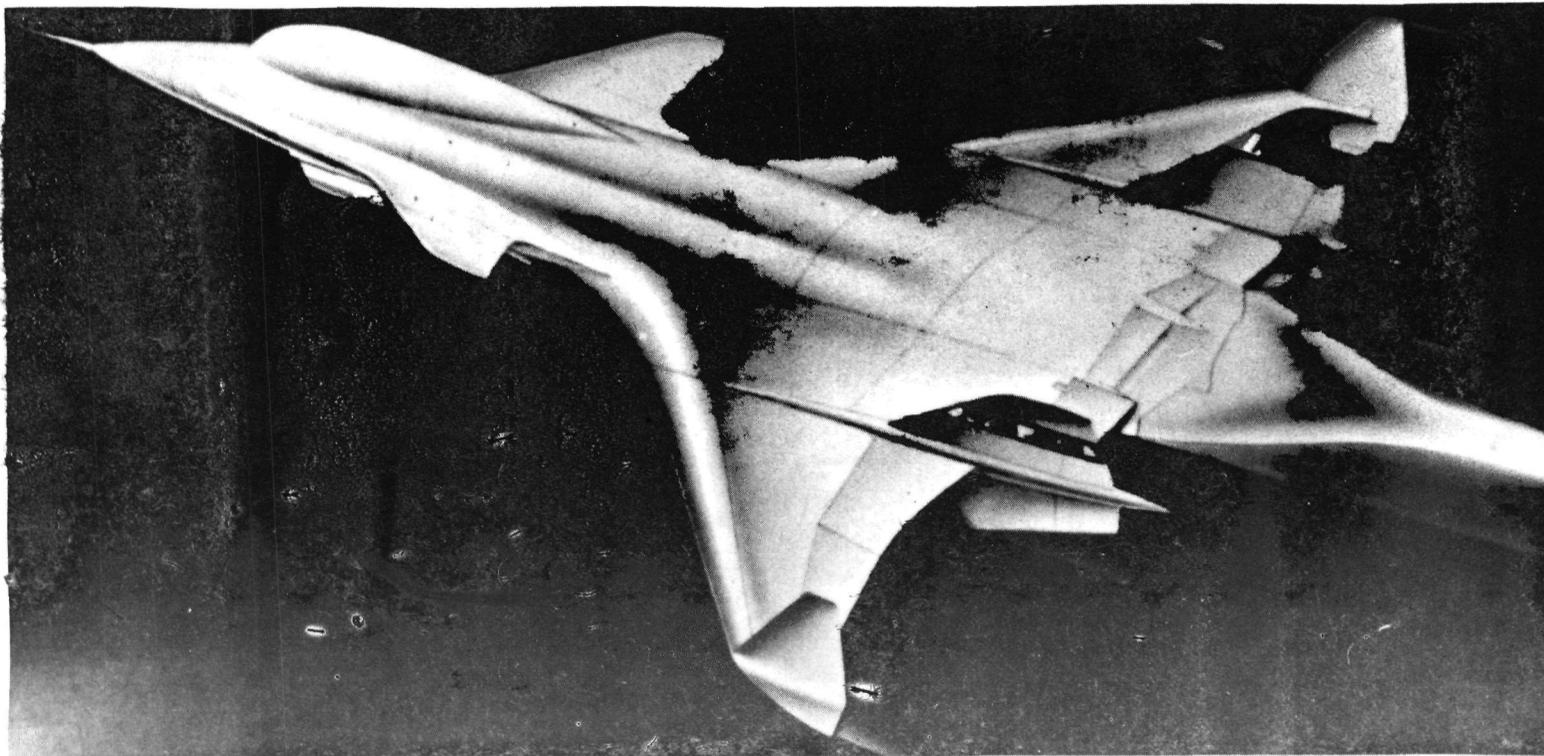
Photo Nos: 77-H-659
76-H-346
75-H-1026
75-H-1029



The unmanned aircraft illustrated here was developed by NASA and the U.S. Air Force to test advanced flight concepts. The Highly Maneuverable Aircraft Technology (HIMAT) is a joint NASA-Air Force effort, using scaled, unmanned, remotely controlled flight vehicles for low-cost flight research and experimentation with very advanced technology concepts.

NASA Photo: 77-H-659

REMOTELY PILOTED RESEARCH AIRCRAFT



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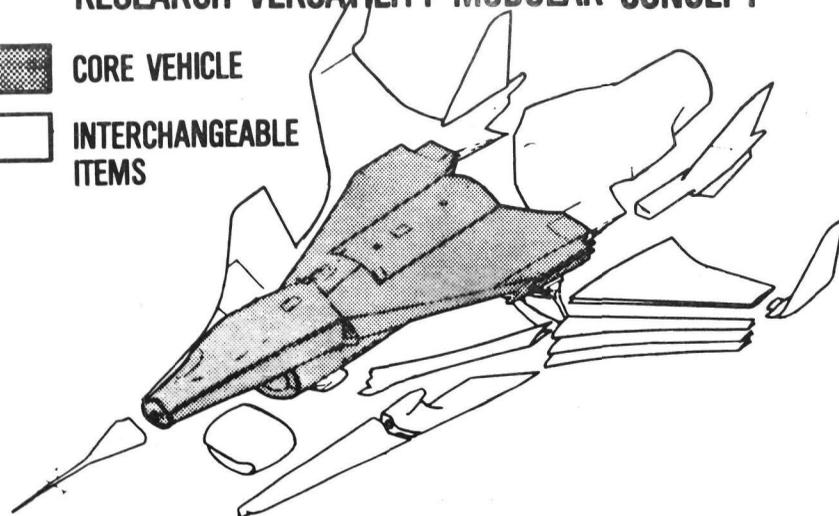
RESEARCH VERSATILITY MODULAR CONCEPT



CORE VEHICLE



INTERCHANGEABLE
ITEMS

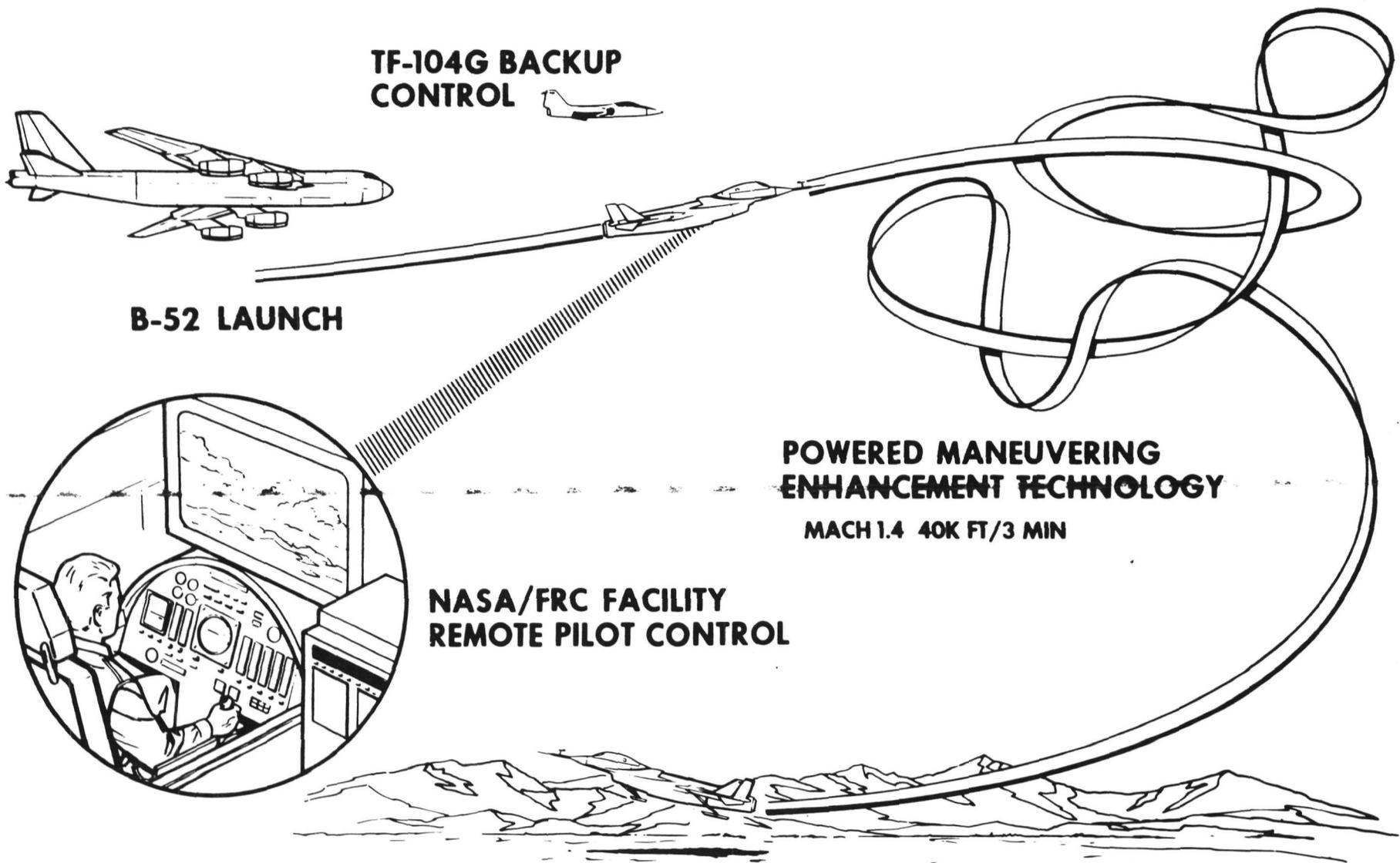


LESS THAN 1/2 SCALE OF
MODERN FIGHTER AIRCRAFT

The HIMAT remotely piloted research vehicle has unusual versatility, allowing quick, low-cost modifications to be made for future testing.

NASA Photo: 76-H-346

HIMAT OPERATIONAL CONCEPT



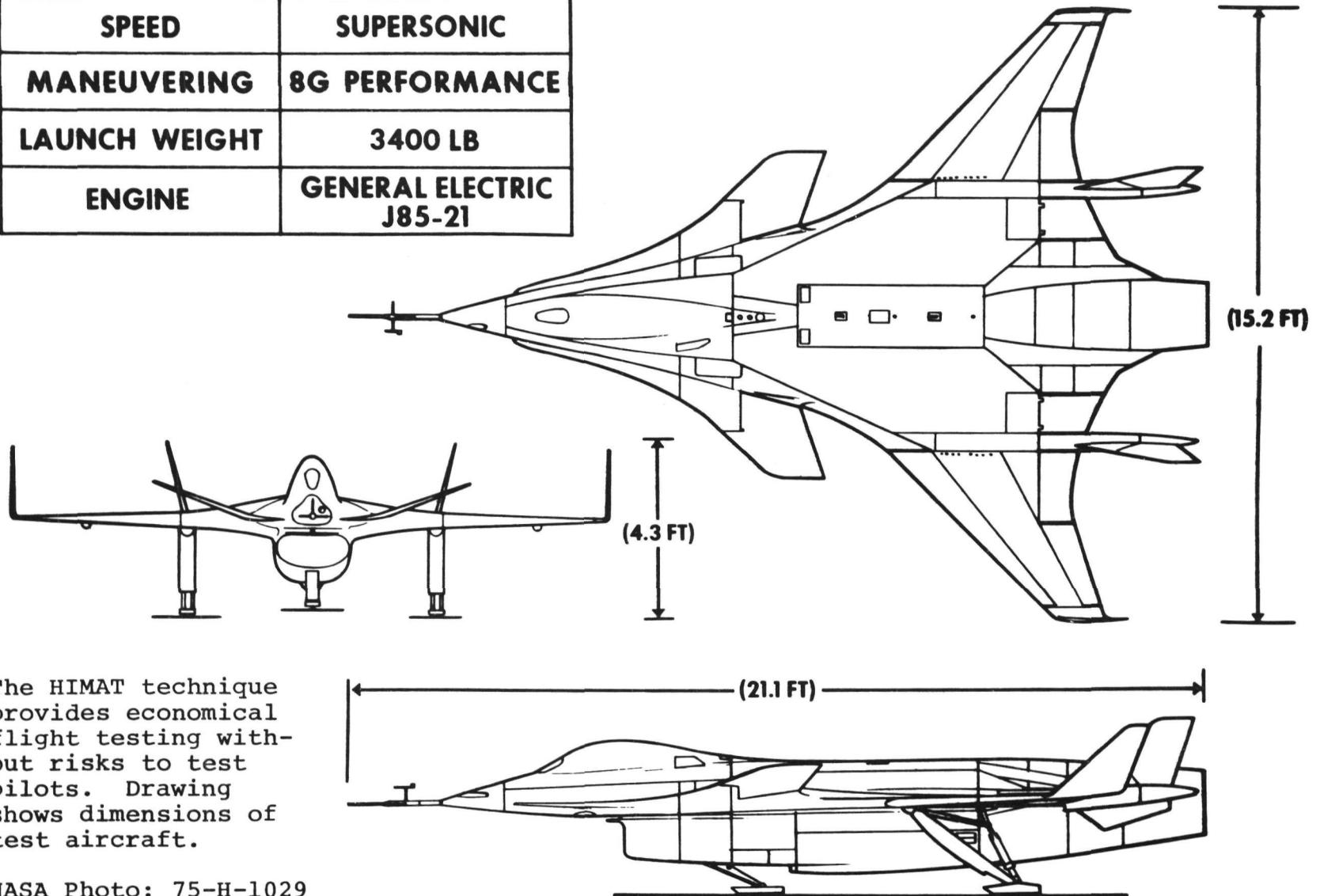
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The HIMAT remotely piloted research vehicle technique uses two unmanned airplanes. They will be air-launched. Using television telemetry and radar, they will be flown by the pilot, located in a ground cockpit.

NASA Photo: 75-H-1026

HiMAT

SPEED	SUPERSONIC
MANEUVERING	8G PERFORMANCE
LAUNCH WEIGHT	3400 LB
ENGINE	GENERAL ELECTRIC J85-21



The HiMAT technique provides economical flight testing without risks to test pilots. Drawing shows dimensions of test aircraft.

NASA Photo: 75-H-1029