

# REPORT SAYS NO HYPERSONIC MISSILE BEFORE 2015

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By David Atkinson Defense Daily, 8/13/98

**A report commissioned by the Air Force says that the service will not be able to introduce a hypersonic missile system before 2015 at the current rate of development.**

**The Air Force Science and Technology Board of the National Research Council's study of the problems of producing and fielding a [hypersonic](#) (Mach 6-8) missile found the Air Force lacks both the infrastructure to support such a development and the defined operational requirements that would allow research to go forward. The panel was asked to evaluate whether the HyTech program could lead to an Initial Operational Capability (IOC) of a scramjet-powered weapon by 2015.**

**The Review and Evaluation of the Air Force Hypersonic Technology Program (HyTech), says the program, which is designed to investigate [hypersonic flight](#) regimes and associated technologies, is not sufficient to lead to an operational capability. The Air Force "is not developing several critical enabling technologies for the realization of an operational hypersonic air-to-surface weapon," the report says. HyTech is the Air Force's only hypersonic missile technology development program.**

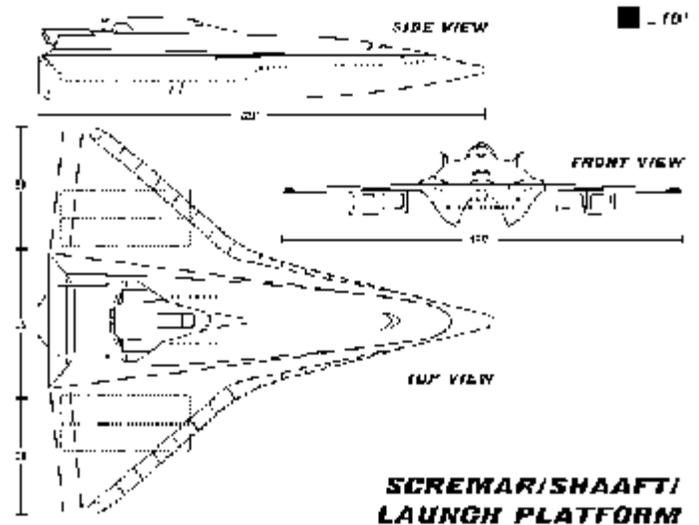
**In July, the Air Force and Navy started consideration of a joint hypersonic development program based on a Mission Needs Statement produced by the Navy (Defense Daily, July 17). The joint program will have to be approved by the Air Force, the Joint Staff, and the Pentagon's Joint Requirements Oversight Committee before development work can begin.**

**HyTech was initiated in 1995 at the then-Wright Laboratory at Wright Patterson AFB, Ohio, to provide a research program on hypersonic technologies following the cancellation of the National Aerospace Plane concept in January of that year. The program was funded at a fixed level of \$20 million per year. Initial work included both propulsion and airframe systems, but was restructured in 1996 to concentrate solely on engine development. The current goal of the program is to lead to a freejet ground test of a hypersonic scramjet propulsion system by 2003.**

**The report laid out the**

following hurdles to the development of a hypersonic missile before 2015:

the HyTech program includes only limited ground testing of propulsion systems, leaving out flight testing to ensure engine reliability and durability of an integrated system;



A [proposed hypersonic attack platform](#) (none of artwork on this page was included with press release)

the HyTech program does not include critical technologies like fuel systems, cooling systems, guidance and control systems, integration, and warhead development;

the program, if expanded to include a full-scale flight test program, could produce an operational system by 2015, but only if an integrated, supported System Program Office were established;

the Air Force has not laid out concrete operational requirements or conducted any study of the trade-offs involved in hypersonic development;

the higher the speed of the missile, the higher the risk involved. The Air Force, without set parameters, may be pushing the speed of the missile beyond what is needed, increasing complexity; and existing ground test facilities support testing only up to Mach 7. The Air Force will have to develop additional computational test and range facilities to deal with hypersonic weapons.

## Foreign Hypersonic Programs

The report points out that several other nations are currently exploring hypersonic missiles for a variety of roles. No other country currently fields a hypersonic system. Several countries, including France, Russia, and Germany, have all initiated development of Mach 4+ missile systems, with an eye to fielding operational systems eventually.

The Navy is studying a hypersonic replacement, called Fasthawk, for its Tomahawk cruise missile. The Fasthawk is planned to cruise at Mach 4 and be capable of striking targets as deep as 12 feet

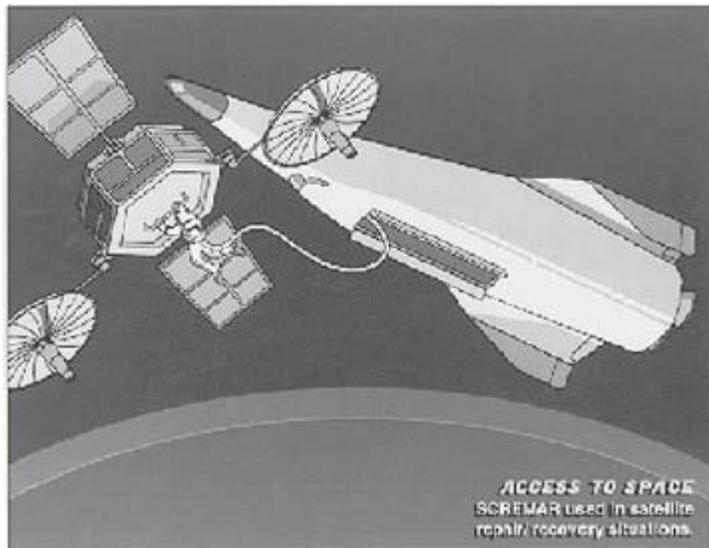
**underground.**

The report also pointed out that, even traveling at Mach 6, a hypersonic missile would still be vulnerable to technologically feasible surface-to-air missile systems.

The Air Force, according to the report, has two options for developing the hypersonic concept. The first is to invest the resources to pursue a "broad range of technologies covering a variety of potential applications," which would then lead to an integrated system. The second option is to explore the evolutionary development of a weapon based on "established capabilities and clearly stated Air Force requirements."

In both cases, the report recommends the establishment of an optimized program office to rationalize and oversee the development program and develop a long-range plan to bring the weapons into service.

Until then, the technical problems involved and the limited scope of current efforts mean that the HyTech program is "not sufficient for the development of a scramjet engine as an integral part of a missile system," the report concluded.



Japanese hypersonic vehicle design.

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