

Scramjet
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the mixture is ignited. The expanding gases are shaped and directed by the engine's nozzle and propel the plane forward." (See the NASA illustration below.)

Unlike jet engines, which can overheat at about 2,500 mph, there are very few moving parts to wear out on the highly efficient scramjet engine. Since it doesn't

require heavy oxygen tanks, the aircraft's weight is dramatically reduced thereby allowing increased range and payload capacity.

RECENT TESTING SUCCESSFUL

A Cornell whitepaper on scramjets points out that "Ramjets are a proven technology, used on the SR-71 Blackbird

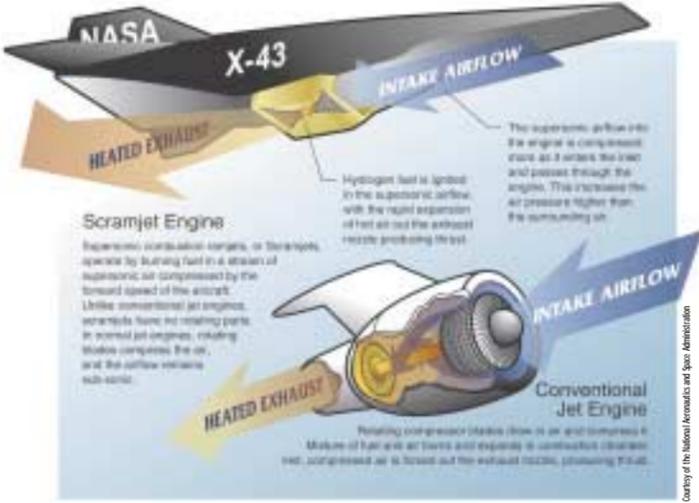
spy plane. The Blackbird also has normal jet engines, used to accelerate it up to Mach 3, the speed at which its ramjets become operational.

"While a jet engine uses fans to compress the air, ramjets and scramjets rely on the forward motion of the vehicle alone. Ramjets and scramjets can produce no static thrust; the vehicle must already be moving fast enough to compress the air before these engines can operate."

In its current configuration, the X-43A is unable to reach altitude on its own. During testing, the 12-foot, wedge-shaped X-43A rested like the tip of a sword on a modified Pegasus booster rocket, which was nestled under the right wing of a B-52B. Once at an altitude of about 40,000 feet, the unit was dropped from the B-52 and the rocket boosted the X-43A to



Courtesy of the National Aeronautics and Space Administration



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95,000 feet over the Pacific Ocean. Once separated from the rocket booster, the unpowered X-43A fired its engine for 10 seconds, performed maneuvers during a glide and splashed down in the ocean.

The Hyper-X program, which is being conducted jointly by the Langley Research Center, Hampton, Va., and the Dryden Flight Research Center, Edwards, Calif., is expected to test at least

one more model-like X-43 aircraft but at speeds near Mach 10. Each test aircraft, three in all, features slightly different oxygen intake designs. In June 2001, the very first X-43A was lost after releasing from the B-52.

OTHERS EYE SCRAMJETS

ATK (Alliant Techsystems) served as the system prime contractor on the X-43A program

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ELLIOTT AVIATION RANKED #4 IN PRO PILOT SURVEY.

Aircraft operators again voted Elliott Aviation's Moline, Illinois facility, as one of the nation's Best Avionics Centers in the 2004 *Pro Pilot* PRASE (Preferences Regarding Aircraft Services and Equipment) Survey. Only Duncan Aviation locations ranked higher, taking first through third place.

"Being recognized in this way is especially gratifying for us," said Wynn Elliott, company president. "In the past, like many other organizations, we've used promotions to encourage pilots to vote for us. However, we've chosen not to do that in the last several years, which makes us all the more proud of our high ranking."



Each year *Professional Pilot* magazine sponsors an industry-wide survey that recognizes a variety of services and products, including best employee, catering, fuel brand and weather service. Five new judges, who are active corporate pilots with a wide range of experience using FBO services worldwide, are chosen each year to verify ballot authenticity and resolve any discrepancies.

According to *Pro Pilot*, the PRASE survey is intended to recognize outstanding service regardless of "where the FBO is situated, how big they are, whether they are part of a chain or how much traffic they handle." The publication started the "contest" 27 years ago.



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TAKING ORDERS FOR MID-JULY: For more information contact Dan Frahm, Director of Avionics Business Development Call 877.456.3100 NOW!

TAWS FOR THE BEECHJET 400/DIAMOND MU-300: The FAA has granted Elliott Aviation multiple Supplemental Type Certificates (STCs) for the installation of Honeywell Mark VIII EGPWS (Class A TAWS) with Multi-Function Radar Display along with Honeywell CAS-67A TCAS II (ACAS) with Change 7 software.

Check the reader response card for more information.



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