

Light-light takes flight

New business jets think small

BY THOMAS A. HORNE

The go-go economic days of the 1990s are gone, but their legacy carries on in a new category of general aviation airplanes—light jets with five or six seats, well under the 12,500-lb maximum gross weight

limits that define “light” airplanes. Fed by carefully cultivated crops of venture capital and new market preferences, the light-light jets are attempting to fill yet another niche. The one that asks for speed and altitude capability, without the usual penalties of high fuel burn and other operating costs. The one that wants to fly a pocket-rocket, in short, and fly it single-pilot. Here are brief status reports on these new designs, presented with the understanding that things change fast in this category—

specifications, timetables, and, of course, conception and life span—and that manufacturers often prefer to keep certain critical details secret.

Eclipse 500

Albuquerque-based Eclipse Aviation crowed the loudest about its technological advances (among them, using friction-stir welding instead of rivets to bond the fuselage), but recently suffered a setback when it decided against the Williams EJ22 twin turbo-

fan engines. Those 750-lb (pounds static thrust) engines were supposed to take the Eclipse to a target speed of 355 knots, but they fell short of that and many other goals.

At this writing, Eclipse is looking for replacement powerplants. The new engines were to have been chosen by late December 2002, but that deadline was missed. The company says it has so far raised \$238 million in funding and needs approximately \$70 million more to bring the airplane

Although the Eclipse 500 made its first flight, engine troubles caused the company to ditch its Williams engines. Future engines may be Pratt & Whitney's new PW600-series turbofans, but at press time no one's talking.





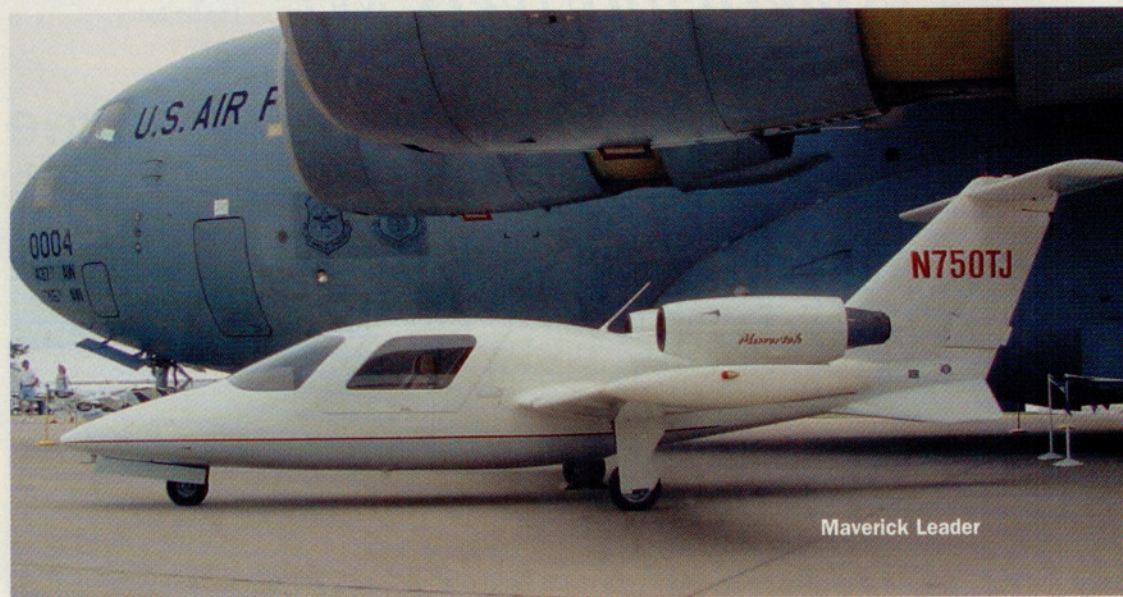
Cessna Mustang

Cessna knows how to build and service Citations, so the Mustang has a solid shot at dominating the light-light market.



Adam A700

The Adam A700 retains the basic A500 design, but bolts two Williams turboprops to the twin-boom airframe.



Maverick Leader

This five-seat, kit-built twin jet uses modified military helicopter engines and boasts an endorsement from airshow legend Bob Hoover. U.S. Air Force C-17 sold separately.

to market. But with the engine crisis, this and other benchmarks may come and go—including the originally advertised 2004 certification date and what many feel is an unrealistically low \$837,500 (in June 2000 dollars) price tag.

Rice anticipates that an infusion of cash from an overseas investment group will provide funding to complete the Vantage program.

Cessna Mustang

Cessna is the 900-pound gorilla in the light-light jet arena. In a bit of me-tooism, the company made a surprise announcement of its offering at the 2002 National Business Aviation Association's annual convention. Orders immediately came in for some 300 Mustangs, even though the airplane amounted to little more than an artist's rendition—an affirmation of Cessna's proven dominance in the small business jet market. Ironically, the Mustang currently shares Eclipse's predicament in that Cessna has yet to choose engines for the new airplane. Like Eclipse, Cessna was set to announce its choice of engines in late 2002 and didn't. Cessna plans to deliver the first Mustang in 2006 for \$2.3 million.

Adam A700

No sooner had Denver-based Adam Aircraft Industries rolled out its centerline-thrust piston twin, the A500, than it announced its A700. The A700 will retain the twin-boom tail arrangement and carbon-fiber construction of the A500, but be equipped with twin Williams FJ33 turboprops of 1,200 lbst.

The A700 program is an ambitious one, with certification set for late 2004. This speedy certification is possible thanks to the great commonalities between the A500 and the A700, the company says. The A700 shares 80 percent of its parts with the A500, which is due to be certified in early 2003. The A700, priced at \$2 million, will have a large 30-cubic-foot nose baggage bay and an aft lavatory as standard equipment. The avionics supplier has yet to be announced, but company spokesmen say the panel will have a three-tube display setup.

Maverick Leader

The Leader is a kitbuilt twinjet billed as the "Top Gun" of personal airplanes. It

uses modified 750-lbft turboshaft engines of the type used in such heavy-lift military helicopters as the Boeing Chinook.

There's a 35,000-square-foot factory at the Melbourne, Florida, airport where parts of the composite jet are

built, and Maverick says there will be three "build-assist" centers where owners can go to get professional supervision on completing their 51 percent of the kit. Two are already established—one in Tbilisi, Georgia (a state of the former USSR), and the other in Melbourne. Another will be set up in the Dallas-Fort Worth area. Maverick Aircraft says that 150 Leaders have been bought by the Indian Air Force, but right now the sales hype is centered on airshow legend Bob Hoover, who recently bought his own Leader and is the company's senior advisor.

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Light-lights at a glance

	Adam A700	ATG Javelin	Cessna Mustang	Eclipse 500	Maverick Leader	Safire S-26	Vantage VA-10
Price	\$1.995 million	\$2.2 million	\$2.295 million	\$837,500	\$750,000	\$919,000	\$2.195 million
First flight	Mid-to-late 2003	Mid 2004	N/A	August 2002	2001	N/A	Early 2004
Certification	Late 2004	Late 2005	Mid 2006	Delayed	N/A	N/A	Late 2004
First deliveries	Late 2004	Early 2006	Late 2006	Delayed	Early 2003	N/A	N/A
Max cruise speed	340 kt	Mach .92	340 kt	355 kt	350 kt	340 kt	350 kt
Max altitude	41,000 ft	49,000 ft	41,000 ft	41,000 ft	31,000 ft	37,000 ft	41,000 ft
IFR range	1,100 nm	1,250 nm	1,100 nm	1,300 nm	1,700 nm	1,020 nm	900 nm
Orders	N/A	26	292	2,072	12	841	Less than 50
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Funding	\$30 million raised so far	Now in \$12.5 million development phase; \$120 million required	Self-funded	\$238 million; additional \$70 million needed	Privately funded by company president and one partner	Funded through first flight	All necessary funding by January 2003
Remarks	Williams FJ33 engines	10,000 fpm climb rate; Homeland Defense version includes Sidewinder missiles and a minigun	Engines and avionics not yet selected	1,357 firm orders; final price determined by cost-of-living escalator; listed price is in June 2000 dollars	Kitplane; Maverick engines derivatives of T-58 military helicopter turboshaft engines; 3,500 fpm climb rate	Agilis TF1000 engines, though decision not final	In Chapter 11 bankruptcy; single P&W JT15D engine



Safire S-26



ATG Javelin

The Safire S-26 (above) just received a financial shot in the arm but, like other designs featured in this article, is still a "paper airplane" at this writing. The ATG Javelin (top right) is a Mach .92 macho machine, aimed at Top Gun wannabes and homeland defenders. VisionAire's Vantage (right) has been around for six years, but has endured redesigns and financial crises.



VisionAire Vantage

VisionAire Vantage

The Vantage program may be the most troubled of all the light-light jets. What began by capturing the imagination (and 155 orders) back in 1996 has devolved into a series of impressive challenges. In 1998 the original airplane underwent a massive redesign to tame its stall behavior, shave 500 pounds off its bulk, change its engine air intakes to prevent ice ingestion, and then up the thrust of its single Pratt & Whitney JT15D engine. The recent economic slump caused some investors to back out of the program, VisionAire went into Chapter 11 bankruptcy in mid-2002, and the order book fell to "less than 50" depositors, according to VisionAire President and CEO Jim Rice. However, Rice remains confident. He anticipates that an infusion of cash from an overseas investment group will provide enough funding to complete the Vantage program, and says that he'll augment his current skeleton staff with a full complement of employees by early this year. The company's Ames, Iowa, manufacturing facility is ready, Rice noted, and said of the Vantage's future, "I believe we're going to make it...the Mustang's the only one I'm concerned about."

Safire S-26

Safire Aircraft announced its baby twinjet in December 1998, and now says 841 buyers have anted up deposits. At first, the company, based in Palm Beach, Florida, said the S-26 would use the Williams EJ22 engine, then changed its mind in favor of 1,000-lb Agilis turbofans (after Eclipse claimed exclusive dibs on the EJ22—but that was then). Since then the company has opened the door to other possible engine manufacturers. Thanks to investment from a Swiss syndicate, Safire says it has enough funding to take the airplane through first flight. Meanwhile, the design team is finalizing the prototype, and the company is scouting out four manufacturing sites in two different states. The ultimate goal: to build four S-26s per day.

Aviation Technology Group Javelin

For those with a *really strong* need for speed there's the two-seat, fighterlike, Mach .92 Javelin. At this juncture, the airplane exists as a full-scale mock-up at Aviation Technology Group's facility at Denver's Centennial Airport. When wind-tunnel tests are complete, plans are to begin building a flying, noncon-

forming prototype. First flight of this airplane is scheduled for mid-2004, with certification and deliveries of the real McCoy planned for early 2006. The Javelin is to be manufactured under an agreement with the Luscombe Aircraft Corporation, of Altus, Oklahoma. Yes, the makers of the Luscombe 11E piston singles. There could be two variants of the Javelin—the personal jet and what ATG has called the HDI (Homeland Defense Interceptor). The HDI would have an avionics, fire-control, and weapons system capable of directing wing tip-mounted missiles and a

minigun. Its mission: destroy airborne terrorists. Its price tag: \$4.5 million, about double that of the personal jet. Don't laugh. The HDI concept has congressional support. Of course, sales of the HDI would be controlled by the Department of Defense.

i Links to additional information about small personal jets may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

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