

Coming Model From Honda Sprouts Wings: Will It Fly?

Car Maker's Prototype Small Jet Is Set for Test Flight Next Year, Yet the Market Is Getting Crowded

By NORIHIKO SHIROUZU

WILL A NEW HONDA fly—with wings and jet engines?

Honda Motor Co., the quirky Japanese auto maker that has been a leader in efficiency and dependability, is getting serious about cracking America's personal-jet market.

Takeo Fukui, president of Honda's research-and-development arm and a senior managing director, says Honda wants to build a "Honda Civic of the sky." The company is working on a small, four- to five-passenger, twin-engine jet that it hopes will have far better fuel economy than existing planes.

While "Honda has no immediate business plans for the jet," says Mr. Fukui, he is unabashed in touting the prototype's features: improved aerodynamics, newly developed lightweight composite materials for the fuselage and an engine that would deliver a 20% improvement in fuel economy over a conventional small jet.

About the size of a typical twin-engine Cessna Citation, Honda's jet would fly well above 33,000 feet (above most inclement weather), which means a more comfortable ride. The plane could fly three hours before needing to refuel, the company says.

If the Honda jet ultimately is certified by the Federal Aviation Administration and is proven to be 20% more fuel efficient than conventional jets, "that would make Honda hugely competitive," says Sandy Munro, head of the aviation consulting firm Munro



Fuel efficiency is a goal of Honda's first aircraft. An early prototype using another company's engines takes a test flight.

& Associates, Troy, Mich. That's in part because the small-jet engine industry is full of aging engines, and "nobody's really developing a small jet engine" except for Williams International, the Walled Lake, Mich., supplier of engines to several jet makers, Mr. Munro says. The Honda engine has the potential to become "the only real game in town," he says.

Mr. Fukui says Honda's prototype could "upend the industry, which is full of fuel-guzzling aircraft, and that such a feat would "open a whole new opportunity" for the company. But the development has been a long time in coming: The aircraft is the product of a little-known project going on in Tokyo and in the U.S. since the mid-1980s. Currently being tested and assembled in a rented hangar at the Piedmont Triad International Airport in Greensboro, N.C., Honda's plane isn't expected to make its first test flight until next year.

During the years of development, the auto maker devised two generations of what it has

dubbed its HFX jet engine. And in joint ventures with U.S. aerospace specialists, including those at Mississippi State University's well-known aircraft-engineering program, Honda has created two iterations of a lightweight composite fuselage. The engines and fuselage so far have been tested separately—the moment of truth for Honda comes next summer when the engines and fuselage will be combined for the test flight.

If the airplane passes these "proof-of-concept" tests, it will undergo more than a year of rigorous certification testing by the FAA, Mr. Fukui says. The FAA declines to comment on specific certification requirements for individual companies or aircraft.

Besides meeting tough FAA standards, Honda faces daunting marketing hurdles in an industry where the market for small jets is already getting crowded. Mr. Fukui says the Honda jet could cost \$2 million to \$3 million if it were made today. Yet, Eclipse Aviation Corp., a high-profile start-up, hopes to deliver as early as 2004 a sleek business jet costing less than \$1 million. (But recently Eclipse ended its contract with the company supplying the jet's engines because of a delay in development. Eclipse's top official says its certification and delivery "timeline may be impacted." Analysts say the setback could be serious for Eclipse because the engine was the main selling point of its jet.)

Furthermore, a company called Adam Aircraft announced last month it plans to build the Adam A700, a four-passenger jet costing about \$2 million. Adam expects to make its first customer deliveries by late 2004. Cessna Aircraft Co., a unit of Textron Inc., Providence, R.I., says it will design and deliver by 2006 a small five-passenger jet, priced at \$2.3 million, to compete with the likes of the Adam A700 or the Eclipse jet. Safire Aircraft Co. of West Palm

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Beach, Fla., is developing a four-passenger business jet with a price tag of about \$1 million, which the company says is expected to be certified by the FAA in 2004. The price of Honda's jet, if it sells for nearly \$3 million, could be problematic.

More prototype planes fail rather than succeed in progressing from concept to market. In Japan, Mitsubishi Heavy Industries Ltd. learned how tough it was for a newcomer to sell aircraft in the U.S. during the two decades through the mid-1980s when it failed to make a dent with its MU-2 twin-propeller plane and the MU-300 business jet. Due to mounting losses, the company discontinued both planes in 1986 after selling 700 MU-2s and 100 Mu-300s. The failure wasn't because the planes weren't good technologically, but because Mitsubishi didn't know how to market them properly, analysts say.

Mr. Fukui also says Honda is acutely aware of the possibility that its jet project may be seen as an "invasion" into one of America's most important industries. One way to prevent that, he says, would be to

forgo selling the entire airplane and instead peddle pieces of its technology, either the turbofan engine or the fuselage, to an existing engine or aircraft company to manufacture and market.

Earlier this year, another Japanese car maker, Toyota Motor Corp., successfully tested a prototype of a four-seat, single-propeller-engine aircraft. The headline accompanying an article posted after the flight on an aviation Web site called AVweb screamed: "This Is War: Toyota's Plans to Seize the World GA [general aviation] Market." To avoid such a reaction, some Toyota officials say that for now it has given up developing its own airplane engine and will use an existing engine from a third-party maker for its prototype plane.

Honda would probably seek a partner among existing aircraft-engine and fuselage makers if it were to launch its aviation technologies. "We have no intention of going it alone," Mr. Fukui says. "We know it's that kind of industry ... that demands a lot of political savvy."

That is the right approach to take in entering America's general-aviation market,

says the consultant Mr. Munro. He predicts that, if the FAA certified them, Honda would first sell its jet engines to existing general-aviation aircraft makers, such as Cessna and Raytheon Aircraft Co. "Once they've got a few hundred thousand hours on their engine with the help of the competition, then they would put it on their own fuselage and put everybody else out of business," he says.

Honda believes countries with limited road and rail-transportation infrastructure, such as China, Brazil and India, may become "attractive markets" for its plane. But Mr. Fukui says the most obvious market is the U.S., where he says rich frequent fliers are defecting from major airlines to time-share jet services.

Such "fractional ownership" arrangements, also called air-taxi plans, allow individuals access to a plane within a few hours of notifying its operator. Yet it isn't clear if air-taxi businesses, which normally charge several hundred thousand dollars at a minimum to buy in and then a certain amount for flying time, can expand their appeal to an average individual who uses a regular airline to travel.