

# Mr. Fujino's Bumpy Flight Lands Honda in the Jet Age

Greensboro, N.C.

**F**OR 20 YEARS, Michimasa Fujino, an engineer for **Honda Motor Co.**, pursued a mission that on the surface seemed both unrealistic and unnecessary: transforming Honda from just another Japanese car maker into the first successful Japanese aircraft builder since World War II.

**MANAGING**  
By *Norihiko Shirouzu*

Now, Mr. Fujino is close to realizing his dream with a tiny five-passenger jet with

the unusual feature of having its engines mounted above its wings. Executives hope the HondaJet, which could start flying in about three years, will shake up the jet business with the same high fuel efficiency, clever design and low price that the first-generation Honda Civic used to rattle Detroit's auto giants three decades ago.

It's been an arduous quest, taking Mr. Fujino from Tokyo, to Starkville, Miss., back to Tokyo

and finally to a rented hangar here in the North Carolina Piedmont. Along the way, his intelligence has been questioned, his design has been mocked and his friends have feared for his career.

"Even today so-called experts tell me with a knowing look that the over-the-wing engine mount is doomed," Mr. Fujino says. "But anger has been part of the energy that pushed me throughout."

Honda President Takeo Fukui says he believes the HondaJet, which is awaiting federal certification, could grab 10% of the small-jet market and turn a profit in three to four years. As long as it is able to deliver all the performance and price claims, "Honda should be able to nibble a 10% share," says Joe Feord, a director of the aviation consulting firm Munro & Associates, Troy, Mich. "I don't think that's a big stretch."

Compared with the roughly similar Cessna Citation CJ1+, one of a new breed of less-expensive small jets that seat four to six passengers, the HondaJet is de-

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The HondaJet's **unorthodox design** places the engines above the wings.



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signed to cruise 8% faster and can take off and land on shorter runways. It is also a much more economical jet: The \$3.65 million Honda plane uses about 22% less fuel than the Citation flying, for instance, at a speed of 441 miles an hour and at an altitude of 35,000 feet. It also has passenger cabin space that is nearly 20% larger, and has cargo space "big enough for Paris Hilton," Mr. Fujino boasts, with 45% more room than the CJI+. On top of all that, the Honda is priced \$880,000 below the Cessna and boasts the fit and finish of a luxury car.

Cessna, a **Textron** Inc. unit, says it's watching the HondaJet closely, but points out the CJI+ is the third generation of Citation and has more advanced electronics than the newcomer, as well as a world-wide service network.

Honda—which won't disclose how much money it has spent to develop the jet—says it has orders and deposits from more than 100 potential customers, but success is far from guaranteed. Honda and its radical design face daunting challenges in an industry where customers tend to be conservative and the market for tiny jets is getting crowded, with new offerings like the Eclipse jet, designed and marketed by privately held **Eclipse Aviation Corp.**, priced at about \$1.5 million. Honda believes its jet should be able to compete effectively with less expensive minijets like the Eclipse. For one thing, the HondaJet is bigger, which allows it to offer amenities they don't have, such as a full-size lavatory.

Mr. Fujino, 45, succeeded in keeping his project alive by nurturing ties to senior executives, and by linking his risk-taking to Honda's broader efforts to rekindle a spirit of innovation. Mr. Fujino fondly remembers occasional late-night dinners and drinks with top executives like Mr. Fukui. While formal reviews of the plane project could be "explosive" and "ugly" at times, Mr. Fujino says behind-the-scenes some of the company's top managers cheered on his efforts.

"There was a feeling inside the company that Fujino's idea wasn't going to fly," Mr. Fukui says. "... But we didn't want to give up because we didn't want to create an ordinary plane; we wanted Fujino to give us a jet that could create a new value and performance equation."

Mr. Fujino, who is now president of Honda Aircraft Co., started his journey in 1986 when he was plucked out of a job working on electrical steering control to join a small team designing a personal jet. They were sent to Mississippi State University in Starkville, 125 miles northeast of Jackson, to collaborate with the school on advanced aeronautics.

By the mid-1990s, the team devel-

oped a jet called MH02. That design featured a fuselage made of composite materials instead of more conventional aluminum. But the company didn't believe the design would be competitive and killed the project in 1996.

Amid this uncertainty, Mr. Fujino began thinking about an unorthodox design that would prove critical to the HondaJet's performance: Putting the engines above the wing, instead of underneath the wing or on the rear of the fuselage. The idea ran against long-held conventions. Designers usually avoid mounting anything on top of the wings for fear of creating a drag on the plane. Mr. Fujino says his design was inspired by a "classical" air-flow calculation described in a 1930s aeronautics textbook.

The initial proposal in 1997 met with skepticism from colleagues. Mr. Fujino says one dubious boss called him the "stupidest engineer I've ever met in my life." But Nobuhiko Kawamoto, then-Honda president and an airplane aficionado who as head of research-and-development in the mid-1980s launched the airplane project, encouraged the idea.

At one critical board meeting, Mr. Fujino and his unconventional design met strong resistance—a "cold gaze," as he puts it—from many directors who doubted the odd-looking jet's marketability. Mr. Fujino, presenting his idea by himself in front of the board, struggled initially but he thinks he was able to drive home the jet's potential when he analogized it to Honda's breakthrough car, calling the jet a "Civic of the sky."

Even after Honda's board gave Mr. Fujino its blessing, the project stalled again in 1998, this time slowed by new team members who expressed renewed design doubts. Initially Mr. Fujino says he tried to address their concerns but made little progress. In the end, he began working exclusively with those who believed in the engine-over-the-wing design and ignored the rest. The project, to his surprise, began gaining steam.

Still, there were skeptics. A friend of Mr. Fujino's who was working for NASA as an engineer warned him against presenting his design to an academic conference, fearing it posed a "career-ending" risk if a flaw were found. Mr. Fujino's concept eventually received a favorable review from the American Institute of Aeronautics and Astronautics in 2002.

Mr. Fujino says the frustrations have been worth it. "A lot of companies try to cut into the small jet business, but most of them ... repeat the same mistakes," he says. "If Honda had done it the same way and did not learn all the skills and technologies involved all from scratch, we couldn't have come up with the design we have today."