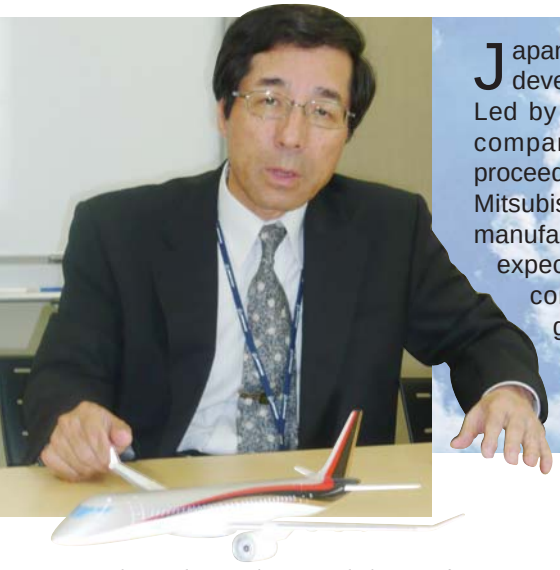
Interview with Nobuo Toda, President, Mitsubishi Aircraft Corp.

Jetliner Project Gaining Momentum

MRJ, Japan's 1st Homemade Jet, to Debut in 2013

Interviewer: Hiroshi OKABE



Japan's first bid to commercialize a domestically developed passenger jet has got into full gear. Led by Mitsubishi Heavy Industries Ltd., a new company, Mitsubishi Aircraft Corp., was set up this spring. The company is proceeding steadily with design work on the next-generation regional jet, dubbed the Mitsubishi Regional Jet (MRJ), seeking to deliver the first jet in 2013. The aircraft manufacturing industry has taken in numerous state-of-the-art technologies, raising expectations that the industry will take the lead in boosting Japan's international competitive power, due in part to its broad industrial base. The Japanese government, too, is throwing all-out support behind efforts to commercialize the fully homemade jet. Mitsubishi Aircraft President Nobuo Toda, who spearheads the project, discusses the current state of development and the outlook for the jet in an interview with *Japan SPOTLIGHT.*

Nobuo Toda, President, Mitsubishi Aircraft Corp.

Technologies Amassed on Defense, Civil Aircraft Business

The propeller-driven YS-11 was developed by a consortium of Japanese heavy machinery makers about 40 years ago. The plane played an active role in domestic air traffic. Production of the aircraft was halted in the 1970s, however, because it failed to receive brisk orders from overseas. In Japan's aircraft manufacturing history, the MRJ represents the country's second domestically developed passenger plane after the YS-11.

The Japanese aircraft industry has undertaken production of jet-fighters and transport aircraft for supply to the Defense Ministry over a long period of time under licensing agreements with foreign companies such as Boeing Co. and McDonnell Douglas Corp. of the United States. Although such military aircraft have been produced on the basis of drawings supplied by the licensers, the industry has improved techniques to manufacture most advanced fighter jets and fostered prowess to develop aircraft. The industry has thus built up capabilities to make the whole aircraft body by incorporating advanced technologies. While Japan's three principles of prohibiting arms exports make it impossible to export military planes, the industry has nurtured its capabilities to turn out the whole of aircraft as an "integrator."

As for civil aircraft, what history does the industry have?

The Japanese aircraft industry has for years acted as a co-developer for Boeing in the field of civil aircraft. Mitsubishi Heavy Industries has served as a partner for Canada's Bombardier Inc. The implementation of a variety of programs in cooperation with the two aircraft manufacturers has made it possible for our company to respond to the global market, accumulate ways of doing business and nurture sensitivity to costs. Such expertise would not have been obtained if we had participated in Defense Ministry programs alone. As far as the civil aircraft business is concerned, there are sharp ups and downs in the market. A steep fall in new orders is likely if disasters occur such as the Sept. 11, 2001, terrorist attacks on the United States. We have learned how to overcome such ups and downs. The Japanese aircraft industry has amassed knowledge in the defense area and at the same time fostered awareness about global business through operations in the civil aircraft sector. Combining these sorts of expertise, we will be able to move a step forward – a concept that has driven us to embark on the commercialization of Japan's first domestically developed jet.

New "Clean-up Batter" Eyed

The accumulation of years of experience and know-how in the field of aircraft has led to the development of Japan's first homemade jet. But it must have been a big decision to actually embark on commercialization.

The global aircraft industry is transforming itself markedly. In order to reduce risks, Boeing is shifting to a strategy of engaging mainly in customer support while dispersing production on a global basis in the form of joint development; the company no longer produces the whole of aircraft alone. Against that background, China is trying hard to catch up with other countries in the area of small jets as well, making all-out efforts to develop them. As a co-developer for Boeing, Mitsubishi Heavy Industries has been in charge of producing main wings. It may be one way of survival to claim our presence as a "center of excellence" in that field. But we believe sticking to that alone would limit our business to a very narrow area. We have concluded that we should

move in the direction of doing aircraft business by ourselves. Actually, there is a good opportunity ahead for us; it is time to combine two conditions – our capabilities as an "integrator" of shared aircraft production and high technologies amassed through the international division of labor. We have made a decision in the belief that "the time is ripe."

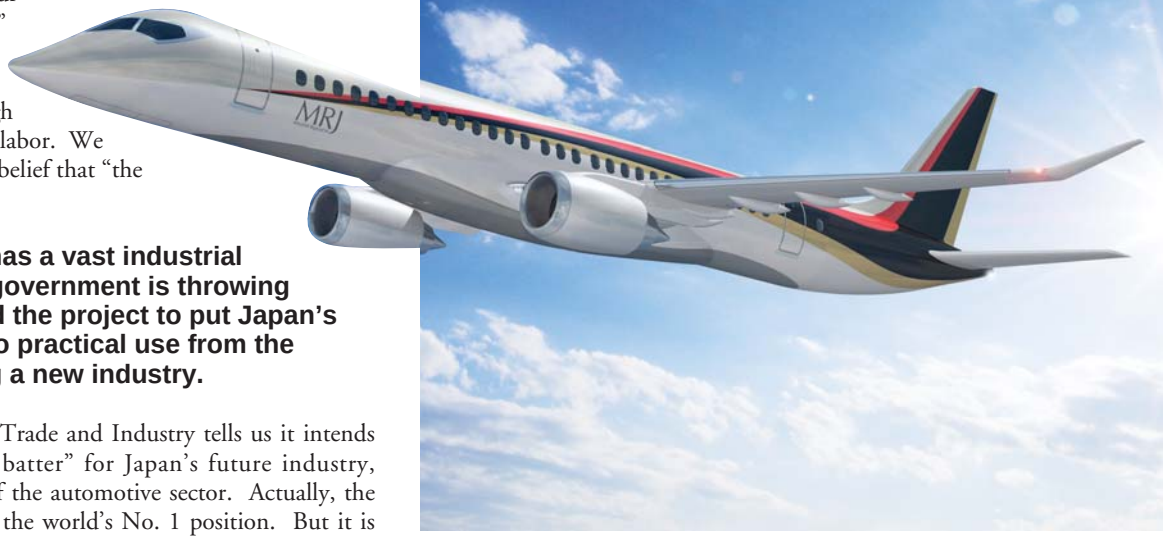


Photo: Mitsubishi Aircraft Corp.

An artist's sketch of MRJ: its maiden flight set for late 2011 and delivery of the first jet to All Nippon Airways planned for late 2013

The aircraft industry has a vast industrial base. The Japanese government is throwing strong support behind the project to put Japan's first international jet to practical use from the viewpoint of nurturing a new industry.

The Ministry of Economy, Trade and Industry tells us it intends to foster a new "clean-up batter" for Japan's future industry, following in the footsteps of the automotive sector. Actually, the auto industry will maintain the world's No. 1 position. But it is necessary to nurture another industrial pillar in Japan. Specifically, it seems a main challenge for the ministry to foster industries such as aircraft and nuclear power generation. We are being underpinned by such a long-term vision.

Demand for 5,000 Aircraft over 20 Years

How do you see global demand for small passenger jets such as the MRJ?

Global demand for small passenger jets is on the upward trend in the form of a hub-and-spoke distribution network in which all traffic moves along spokes connected to the hub at the center. Large passenger jets connect major cities in the form of "point to point." Then regional aircraft connect major cities to smaller ones in the form of "the hub and spokes." Boeing 737 aircraft are too large for airlines to profitably operate in a flight range of 2,000-3,000 km – in Japan, from Haneda airport to smaller regional cities. Meanwhile, 50-seater planes are too small to secure profitability. Regional jets which lie between 737s and 50-seaters are in increasingly strong demand. Global demand for regional jets such as the MRJ, which will seat 70-90 passengers, is projected to reach 5,000 units in the next 20 years. With Mitsubishi Aircraft's first jet set to make its debut in around five years, some demand will have been met by other manufacturers. Yet demand thereafter is expected to reach 3,500 aircraft.

Do you mean demand for small jets will shift to 70- to 90-seaters from 50-seaters?

Aircraft of 50 seats sold well for some time when fuel costs were low, with airlines being able to set airfares at relatively high levels. Aircraft that connect regional cities sold explosively. The ensuing change in economic conditions, however, gradually altered demand for aircraft. Any aircraft – large or small – requires two pilots along with engines and a variety of equipment even if some of them carry only a limited number of passengers. Development costs cannot easily be depreciated in the case of small planes.

High Oil Prices: A Big Advantage

Reflecting high crude oil prices, fuel costs are at historically high levels. You believe the major change in the environment surrounding the aircraft industry will benefit the MRJ, don't you?

That will be a big advantage. Aircraft engines cannot easily be replaced. The technology to differentiate our aircraft from other ones will remain our strength for an extended period of time. But the possession of such technology may serve as both merit and demerit from the viewpoint of demand for small jets. The rise in unit fuel prices would make larger aircraft more efficient economically because airlines find it easier to manage their business given fixed expenses such as pilot costs that remain the same irrespective of aircraft size. Yet airlines also find it hard to continue operating large planes on unprofitable routes. Demand for replacement of large jets with smaller ones for greater efficiency on existing routes is strong not only in Japan but the United States and Europe as well.

Demand Growing for Regional Factors

How do you foresee overseas demand?

The main portion of global demand comes from the United States. Looking ahead, however, rapid growth is expected from Asia and the Middle East. Promising markets are the United States and Europe, where absolute demand is big, and Asia and the Middle East, where growth potential is strong. There are a variety of backgrounds and characteristics market by market. In the United States, deregulation has widened the degree of route freedom, raising demand for 70- to 90-seat jets on regional routes.

Photo: Mitsubishi Aircraft Corp.

MRJ's cabin: boasting the same level of seating comfort as that of large aircraft

In Europe, replacement demand is rising because small jets have been used for years, thus bringing about the need for improving fuel economy and ride quality. In Southeast Asia, propeller-driven planes are being replaced by passenger jets. In the meantime, higher oil prices have made funds abundant in the Middle East, which is expected to prompt Mideast countries to extend routes to the areas surrounding Arab nations.

MRJ Features High Fuel Economy, Good Passenger Comfort

What are characteristics of the MRJ?

First, our concept is to offer a fuel-efficient and environment-friendly jet. Second, we offer good seating comfort to passengers. Our jet, though small, boasts the same level of passenger comfort as that of large aircraft. Third, the key is how to ensure high operational efficiency for airlines; in other words, curbing the cost of maintenance and other operational expenses. This summer we displayed a mockup cabin of our jet at the Farnborough International Air Show held in the suburbs of London to permit airline people to experience the passenger comfort of our jet. We were able to win high acclaim because a variety of unique ideas have been adopted for the cabin. Based on various views expressed by airline people during business talks, we are determined to further advance our jet.

What has made it possible to improve fuel economy, compared with conventional jets?

There are two main factors. One lies in the engine. The MRJ is equipped with a newly developed engine that has broken the conventional concept and is capable of producing a big thrust with only a limited amount of fuel. The other is the aerodynamic design of the jet body. We have employed the aerodynamic technology that we have amassed through our experience in the area of jet-fighters. Moreover, we have reduced the weight of the jet by making good use of composite materials for its body.

Learning from Toyota's Production System

Please explain your business plan leading up to the delivery of the jet.

With the basic design process completed, a process of detailed design has got under way. The design work will end in a year. A maiden flight is scheduled for late 2011. We plan to deliver the first jet to All Nippon Airways Co. at the end of 2013.

Shareholders in Mitsubishi Aircraft include Toyota Motor Corp. and major trading companies such as Mitsubishi Corp. What sort of alliance will you carry out with those companies in commercializing the MRJ?

We plan to form a technological partnership with Toyota. We have no plans to ask the automaker to take charge of design or manufacture something. Concerning manufacturing costs, we have lots to learn from Toyota's production system. We need to consider receiving advice from Toyota in this connection. From trading houses, we intend to obtain marketing and financing know-how. We will also utilize the traders' overseas footholds. But our company will undertake marketing and customer support by itself under the basic policy of direct sales. We will not rely entirely on trading houses but will establish overseas bases on our own using our marketing staff.

Much of the MRJ's main equipment is to be procured from abroad. Are you planning to domestically produce such equipment?

We are set to buy main equipment such as engines, fuel systems and flight control systems from their respective top manufacturers centering on the United States. I don't deny we feel like developing the engine domestically as well. But we have prioritized collecting cutting-edge technologies from around the world. In this sense, Japan boasts of high technology regarding the structure of the aircraft body and we pin high hopes on Japanese parts manufacturers for the supply of structural components as we are set to shift to composite material structure from metal structure. Composite materials represent an element of Japan's strength, with Japan supplying 70% of the world's total output of such materials.

Unflagging Resolve

How long have you been involved in the aircraft industry?

I have devoted my full career to the aerospace business. I feel chagrined at the fact that the Japanese aircraft industry remains middle-ranked in the world despite our status as an advanced country. The scale of development is very large. Therefore it is too risky for a single company to develop aircraft. This time both the private and public sectors have joined hands to develop the MRJ. I am very thankful for such a grand trend. It will take a decade for our project to get on track. During that period, we must be prepared for big losses. But now that a decision has been made, we will be unwavering in our resolve to carry through with the project. JS

Hiroshi Okabe is a senior business news editor at Kyodo News.