



JITI

Japan International Transport Institute, USA



The JITI Journal

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Welcome

Welcome to the JITI Journal, a bimonthly publication of the Japan International Transport Institute, USA (JITI), in which JITI shares information on transportation developments in Japan and elsewhere, as well as recent JITI programs. As a supplement to our regular events, we hope that the Journal likewise serves as a valuable resource for the transportation community.

In this issue, Deputy Representative Tetsu Shimizu reports on the rollout of the first ever Japan-made jetliner, the Mitsubishi Regional Jet. Additionally, Deputy Representative Naohide Arakawa has written a travel article on the abundant natural beauty in his hometown of Kagoshima, Japan.

This issue of the JITI Journal concludes with a roundup of transportation developments in Japan. We hope you enjoy the selection of transportation news articles.

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JITI Events

UPCOMING: TBA: Urban Railway Seminar 2015

We are in the planning stages for an urban railway seminar, to be held in D.C. in spring 2015. Details to be announced soon.

Next-Generation Regional Jet: The MRJ

By Tetsu Shimizu

A rollout ceremony for the MRJ (Mitsubishi Regional Jet) was held on October 18, 2014, at a facility run by Mitsubishi Heavy Industries, Ltd. (MHI), which adjoins Nagoya (Komaki) Airport in Aichi Prefecture in Central Japan. The MRJ is a family of 70 to 90-seat next-generation regional jets developed by Mitsubishi Aircraft Corporation, with the participation of partners, including companies in the United States such as Pratt & Whitney (PW). The MRJ is the first Japan-made airliner in about 50 years, since the NAMC YS-11 turboprop airliner, and is the first Japan-made jet airliner ever.

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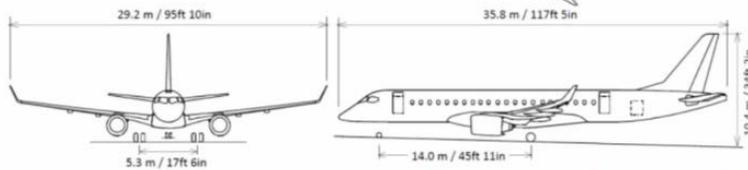
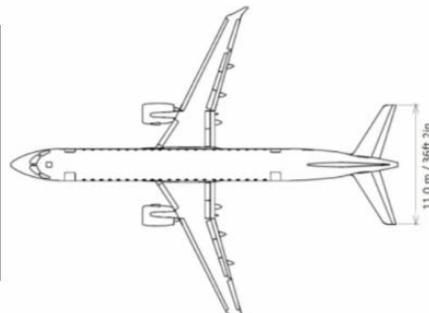
© Mitsubishi Aircraft Corporation

Rollout Ceremony of MRJ (Oct. 18, 2014)

MAJOR SPECIFICATIONS*

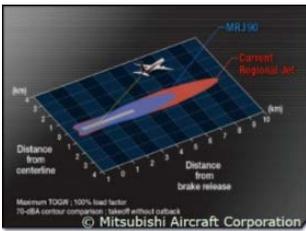
Max Takeoff Weight : 42,800kg(94,358lb)
 Max Range : 3,310km(1,780nm)
 Takeoff Field Length : 1,740m(5,710ft)
 Landing Field Length : 1,480m(4,860ft)
 Max Speed : .78 Mach
 (about 516mph)
 Seat Capacity : 92 (MRJ90)

* Subject to change

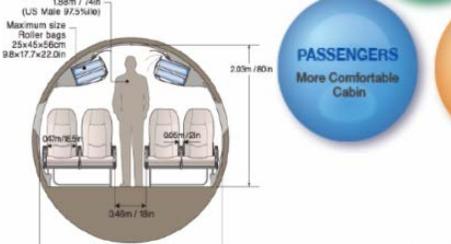


© Mitsubishi Aircraft Corporation

It is expected that the MRJ will significantly cut fuel consumption, noise and emissions as compared to conventional regional jets, by featuring state-of-the-art aerodynamic design, noise analysis technology and a game-changing engine. Its four-abreast seat configuration--with ample seat width, aisle width, head and foot clearance, and large overhead bins--should provide passengers with a more comfortable air trip than ever.



Noise Reduction



More Comfortable Cabin

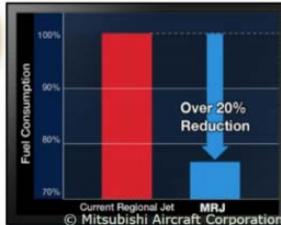
ENVIRONMENT
Lower Fuel Burn,
Noise & Emissions

PASSENGERS
More Comfortable
Cabin

AIRLINES
More Efficient
Aircraft



Lower Emissions



Higher Fuel Efficiency

MHI and Mitsubishi Aircraft Corporation expect the first flight of the MRJ to take place by the second quarter of 2015. They plan to carry out flight tests in the United States using three of five test-flight aircraft based in Moses Lake, Wash., starting in the autumn of 2015, in addition to the flight tests using the other two test-flight aircraft in Japan. They have scheduled the first delivery of MRJs for 2017.

As of the end of October 2014, the total number of orders (including tentative orders indicated by letters of intent) for the MRJ is 407, of which 340 are on order from companies in the United States.

The state in which an aircraft is designed and manufactured has a responsibility to certify that the design of the aircraft meets airworthiness and environmental standards, in other words to issue a Type Certificate (TC) under the Convention on International Civil Aviation. The Japan Civil Aviation Bureau (JCAB), one of the bureaus under the Ministry of Land, Infrastructure, Transport and Tourism of Japan, is currently conducting certification activities on the MRJ. JCAB is also responsible for supervising the manufacture of the aircraft and transmitting information necessary for the safe operation of the aircraft to the state to which the aircraft is registered. Indeed, even after issuing a TC, JCAB is the chief entity responsible for the safety of the aircraft.

JCAB established the Aircraft Engineering and Certification Center (AECC) at Nagoya (Komaki) Airport in 2004 with the aim of enhancing its certification capability in the Nagoya area, where major aerospace manufacturers and various suppliers are located, to fulfill its role as the state's overseer of the design and manufacturing of aircraft. JCAB has been increasing the number of staff in AECC, and 73 staff members are involved in certification activities today. JCAB also works with the Federal Aviation Administration (FAA) in the U.S. on developing the certification capabilities of its staff by inviting FAA specialists as instructors, holding training courses in Japan, and sending JCAB staff to FAA training facilities.

JCAB has been evaluating the design documents of the MRJ, a process that includes drawings and analysis reports, the witnessing of equipment tests and inspection of the manufacturing process. JCAB will witness ground tests using actual aircraft, then will evaluate the results of the ground tests prior to flight tests. These activities are conducted in close cooperation with the FAA, as MRJs are equipped with a great deal of equipment designed and manufactured in the United States. Moreover, many MRJs will be delivered to companies in the United States and flight tests will be conducted in the United States.

Examples of Ground Tests:

- Full-scale static strength test
- Full-scale fatigue strength test
- Weight and balance measurement
- Lightning impulse resistance test
- Evacuation test
- Electromagnetic interference

Examples of Flight Tests:

- Takeoff and landing
- Performance test
- Maneuverability test
- Cold weather test
- Noise test
- System test

- test
- Vibration test
- Instrument legibility test
- Fuel system test
- Pressurization test
- Lighting test
- Engine operation test

Even if all the tests are completed, followed by the issuance of a TC and the delivery of MRJ, the work for MHI, Mitsubishi Aircraft Corporation and JCAB is not over. It is necessary for them to cooperate not only with each other, but also with Civil Aviation Authorities of the states in which MRJs are to be operated, on development and certification of derivatives, handling of troubles experienced during daily operation, etc. For this next-generation regional jet, a symbol of partnership between Japan and the United States, to be a success, all relevant parties must truly work together.

Introducing Kagoshima

By Naohide Arakawa

I would like to introduce you to my hometown of Kagoshima, Japan.

The prefecture of Kagoshima is located in the southern part of the Kyushu region and consists of the mainland and over 600 islands. Historically, Kagoshima, well known as the place where Francis Xavier first introduced Christianity to Japan in 1549, has flourished for centuries as Japan's so-called "southern gateway to the world". Geographically, Kagoshima is almost at the same latitude as Florida. In fact, due to their geographical and historical similarities, Kagoshima City and Miami are sister cities.

Kagoshima has abundant tourist attractions, such as the Yakushima cedar forest, which is registered as a UNESCO World Heritage Site; Kirishima Shrine, the largest Shinto shrine in southern Kyushu, which was built in the sixth century (though it was moved to its present location 500 years ago); and Sakurajima, a nationally famous volcano. One of the most unique features of Kagoshima, though, is the area's *suna-mushi onsen*, or natural sand baths.



Mossy jungle of Yakushima

Because many volcanos are active in Kyushu, Kagoshima boasts an abundance of hot springs. Most people think of hot springs as a bathing experience, but *suna-mushi onsen* can be enjoyed without ever going underwater. At Kagoshima's *suna-mushi onsen*, "bathers" dig a hole in the sand, lie in it, and are buried up to their necks in sand. Hot springs warm the sand up to 50° to 60° C (120° to

140° F), and people typically remain buried for around 15 minutes. The heat helps with circulation and has detoxifying effects. Moreover, you can enjoy beautiful ocean scenery while bathing in *suna-mushi onsen*.



Kirishima Shrine

In addition, there are a lot of delicious foods in Kagoshima. Some foods and drinks unique to Kagoshima include a deep-fried fish cake, called *satsuma-age*, as well as a type of liquor made from sweet potatoes, called *shochu*. Kagoshima is only a short, two-hour flight from Tokyo, making it perfect for a brief trip for any visitor to Japan. Please visit Kagoshima if you have a chance.

Japanese Transportation News Roundup

Osaka's Kansai Airport [expects record travel in winter](#) as budget airlines spike in popularity.

Western Japan makes innovative efforts to [interest foreign visitors in rail travel](#).

In connection with a Southeast Asian economic integration plan, Japan's Tsuneishi [will build a shipyard in Indonesia](#).

Honda gears up for a planned 2015 launch of a [corporate jet offering](#).

As travelers seek bargains and more international flights, Haneda Airport sees [rising interest in redeyes](#).

Toshiba [plans to lease out empty container space](#) for a corporate shipping service.

Mitsubishi [signs a 30-year deal](#) to lead a venture operating Myanmar's Mandalay Airport.

Toyota is using record profits to [fund driverless car research](#) in the U.S.

Japan's new maglev train has [launched its first public tests](#), speeding riders along at up to 500 km/h.

Meanwhile, the government has approved a [maglev line between Tokyo and Nagoya](#), raising hopes for economic benefits.

Stay in Touch with JITI

Please follow the Japan International Transport Institute Twitter feed at [@JITIUSA](https://twitter.com/JITIUSA). We look forward to you becoming one of our #transpo tweeps.

Thank you for reading the JITI Journal. Until the next issue, whatever your mode, travel safely!

The JITI Team

