

## **FARNBOROUGH: Mitsubishi cranks up MRJ PR machine**

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Mitsubishi Aircraft is in public relations overdrive this year, as it seeks to highlight every milestone in the development of its MRJ regional jet programme, assuring customers and prospects alike that a maiden flight in the second quarter of 2015 is well on track.

The Japanese airframer does have something to prove since its order book has not grown since late 2012, when it finalised the SkyWest Airlines deal for 100 MRJ90s. Another cloud is its failure thus far to gain flag carrier Japan Airlines (JAL) as customer. Though All Nippon Airways (ANA) has signed up for the MRJ, a JAL order would be a huge endorsement for the indigenous aircraft.

At the upcoming Farnborough air show, eyes will be on Mitsubishi to see if it will be able to steal the limelight for a second time. It was at the same show in 2012 when it surprised many with the announcement of the SkyWest commitment.

Its president Teruaki Kawai has also been quoted saying that the manufacturer is in deep discussions with several airlines on the MRJ, and that new orders could be in the pipeline for the first half of the year.

At the Singapore air show in February, the usually low-key airframer unveiled pictures of the first MRJ joined fuselage. The pictures show aircraft 10001, joined from the forward fuselage through to the aft fuselage, and bearing Mitsubishi's red, black and gold livery. Two months later, it released pictures of a 16m long by 4m wide right wing being delivered to Mitsubishi Heavy Industries for final assembly.

In a clear show that the regional jet is coming together, it rolled out the first MRJ ground test aircraft in May, in preparation for static strength tests. Mitsubishi has since taken delivery of its first Pratt & Whitney PW1200G geared turbofan engine, which will soon be mounted on the programme's first flight test vehicle.

“We would say that we’re proceeding step by step to the first test flight. We are pleased with the progress and are confident we will be able to move forward to the first test flight as planned,” Mitsubishi tells Flightglobal.

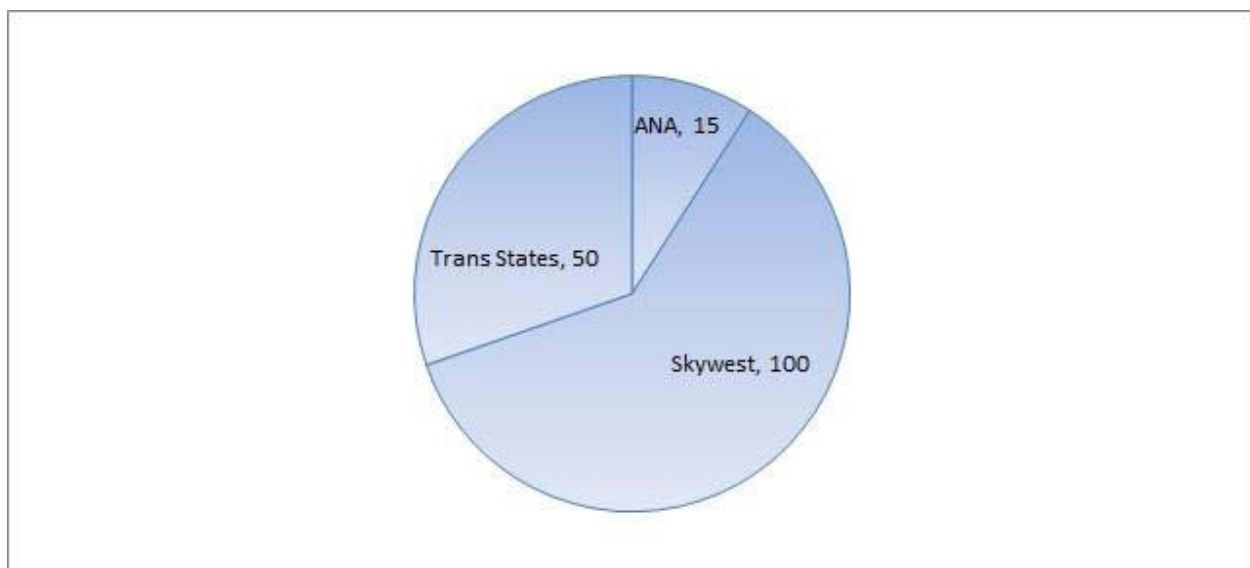
It adds, however, that the programme still needs to accomplish three important tasks before a maiden flight. These are: complete static strength tests, qualification tests of MRJ equipment and components, as well as software verification tests.

Mitsubishi will be using five flight test and two ground test aircraft for the MRJ programme, and has said that various tests will be done in the USA.

Ray Jaworowski, senior aerospace analyst at Forecast International, believes that the main challenge for Mitsubishi during development and flight testing of its indigenous regional jet, will be to demonstrate that the aircraft can achieve, or at least come close to achieving, its promised specifications and operating efficiencies.

“Mitsubishi claims that the MRJ will have a reduction in fuel consumption of more than 20% compared to current regional jets. A claim such as this surely captures the attention of cash-strapped airlines that need to operate in an increasingly competitive business environment,” he adds.

**MRJ order book June 2014**



Ascend

The flight path for the MRJ will however not be without turbulence. It is entering a competitive landscape crowded with new entrants such as the Comac ARJ21 and the Sukhoi Superjet 100. Mitsubishi also has to contend with Bombardier, which is introducing the CSeries at the top of the market segment, and its closest competitor, Embraer, will have an E-Jet E2 line in the 2018-2020 time frame, based on a proven airframe with the same engine family as the MRJ.

The delay of the MRJ90's first flight by more than 15 months to Q2 2015, with first delivery to ANA pushed to the summer of 2017, already cuts deeply into the MRJ's first-mover advantage

over Embraer's new range. The MRJ will enter service only a year ahead of Embraer's 106-seat E190 E2 - provided both airframers keep to their schedules.

Mitsubishi, however, believes it will stay ahead of the competition because the MRJ's "clean sheet design" means it has been optimised for the 'game changing PW1200G engines", it tells Flightglobal.

Being the only airframer to have launched an all new next generation regional jet however also comes with "high execution risks."

"The aircraft is the first commercial jet designed and manufactured by Mitsubishi and the first commercial aircraft certified by the Japanese authorities for many years," says Chris Seymour, head of market analysis at Flightglobal's Ascend consultancy arm.

"The delays have highlighted the complexities of developing a new design – although more established airframers have had similar issues – it seems every all new programme has experienced some delays."

The programme now has firm orders from ANA, SkyWest and US-based Trans States Holdings for 165 MRJs, with analysts doubtful any more orders will come before the jet takes to the sky. Its three existing customers also have options for a further 160 MRJs.

Comparatively, Embraer, which launched its E2 jets only at the 2013 Paris air show, has already raked in 200 firm orders from SkyWest, lessor ILFC, and Indian start-up carrier Air Costa.

Data from Flightglobal's Ascend Online database indicates that Mitsubishi will build 12 MRJs in 2017, before ramping up production to 33 in 2018 and 43 in 2019, through to 2022. Embraer meanwhile is expected to manufacture 13 E2s in 2018, 28 in 2019 and 31 in 2020, through to 2027.

More than just winning new orders, however, Mitsubishi also has the added task of making sure that existing MRJ customers remain committed to the aircraft.

"It must work to assuage any concerns that its three customers may have. SkyWest in particular is key in this regard...president Brad Rich affirmed that his company remained committed to the MRJ, but also implied that future schedule delays could jeopardise this commitment," says Jaworowski.

This is precisely why Mitsubishi has been more engaged with the media. It is also keen to bring attention to every bit of progress, however incremental. Recently, for example, it released pictures showing the arrival of the first PW1200G engine at MHI's Komaki South Plant, in preparation to be mounted on the first MRJ flight test aircraft.

The delivery came shortly after Bombardier grounded the CSeries flight test fleet after a failure involving a PW1500G engine on the first flying prototype on 29 May. Bombardier has since identified the low-pressure turbine as the source of the uncontained engine failure, though the root cause of the failure is still under investigation.

It is still unclear, however, how the CSeries engine issue could affect the PW1200G and consequently the MRJ programme. The step change in fuel efficiency of the MRJ comes mainly from the engines. The promise of the MRJ programme is intimately intertwined with the performance of Pratt's ambitious geared turbofan.

"The PW1500G does share architecture with the MRJ's PW1200G, but there are enough differences that a failure in one does not automatically mean weakness in the other," says William Alibrandi, aero turbine analyst at Forecast International.

To be fully competitive, Mitsubishi also needs to develop a family of aircraft, but it has no firm timeline for this. This would include the 76-seat MRJ70 and a larger capacity variant dubbed the MRJ100X, which Mitsubishi has not firmly committed to developing.

Flightglobal's Fleet Forecast expects the market for MRJ-sized aircraft (70-100 seat) to exceed 4,100 aircraft over the next 20 years. This will come from a replacement market for the early CRJ700/900s and E-Jet family in the 2020s.

Going forward, analysts expect a relatively problem free development and flight tests of the MRJ to "go a long way" in persuading more customers to come onboard.

"The market is definitely in a 'wait and see' mode. The lack of any new orders in the past 19 months perhaps highlights a reluctance to commit until there is more certainty about the schedule and seeing that the aircraft can meet its promises on economics," says Seymour.

"On paper it looks to be a very competitive product, but Mitsubishi may have to be creative in pricing and financing to tempt more customers before it provides what it can do in service, and that it is well supported."

Source: <http://www.flightglobal.com/news/articles/farnborough-mitsubishi-cranks-up-mrj-pr-machine-400381/>