Technical Review Special Edition: Aerospace Technology

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Welcome to this special edition of our technical review featuring aircraft and space projects.

On April 1, 2017, Mitsubishi Heavy Industries, Ltd. (MHI) launched its Aircraft, Defense & Space business domain, which consists of Integrated Defense & Space Systems, Commercial Aviation Systems, and MRJ Division.

The commercial aviation market is expected to increase to approximately five trillion dollars on new aircraft over the next two decades, which will add roughly 35,000 units to the global fleet (a growth rate of 1.4 times annually).

Such a robust forecast comes with demand for wide-ranging technological advances at all stages of the aircraft life cycle, including low-cost design/manufacturing, superior fuel efficiency supported by light-weight structures and advanced aerodynamic design, and improved environmental performance through low noise/emissions. MHI Group plays an active role in building global air transportation infrastructure through international collaboration in aircraft development/manufacturing, our commercial aircraft engine business, and development of the MRJ, our next-generation regional jet.

This special edition of our technical review features some of our latest products and technologies in these businesses. With regards to the MRJ, currently under development, we report on a series of flight tests being undertaken in Moses Lake, WA (US) to obtain technical data required for type certificate acquisition, as well as the MRJ flight test aircraft on static display at a renowned international air show in Paris in June 2017. Also introduced are technical characteristics, development progress, and commercial production of the PW1200G engine that powers the MRJ. Production, assembly, and testing of the PW1200G engine are to be carried out by Mitsubishi Heavy Industries Aero Engines, Ltd., marking the first final assembly of engines for passenger aircraft ever conducted in Japan.

In large commercial aircraft, we introduce our newly developed mixed-flow production line for fuselage panels. This automated system enables flexible and low-labor-intensive processes that are swiftly adaptable to changes in production requirements.

Lastly, in the area of composite materials used in aerospace structural applications, we introduce a testing method and an inspection technology we have developed, and which are being implemented: an accelerated water absorption method used in component development that evaluates reduction in strength and rigidity due to water absorption over long-term operation, and a state-of-the-art technology for non-destructive testing that affords higher precision and efficiency in quality assurance.

We deeply appreciate your ongoing support and understanding in our future quest.