

Feature Meeting Problem-Solving Needs around the World

Integrated Defense & Space Systems

Shipbuilding & Ocean Development Aerospace Systems General Machinery & Special Vehicles

Contributing to International Space Activities by Enhancing Launch Capability and Reliability

A reliable launch vehicle is essential for space development. MHI has developed the H-II/B Launch Vehicle to meet the growing demand of heavier satellites from global users. MHI is also contributing to international space activities by transporting supplies to the International Space Station using the H-II Transfer Vehicle, “KOUNOTORI,” launched by H-II/B Launch Vehicle.



Lift off of H-II/B Launch Vehicle ©JAXA

Providing assured access to space by our reliable launch vehicle

One of MHI’s business activities is launch services. In this “space shipping” role, the company is entrusted with satellites (freight) by customers (satellite manufacturers and operators) and delivers the cargo by a launch vehicle to a designated place at a predetermined date and time. MHI entered this business in 2007 with the launch of the JAXA*1 lunar orbiter “KAGUYA” on H-II/A Launch Vehicle No. 13. All subsequent launches up to and including H-II/A No. 22 in January 2013 have been successful.

With H-II/A Launch Vehicle No. 21, MHI was commissioned by KARI*2 to launch its first non-Japanese satellite by MHI’s launch services. Moreover, following the successful launch of the H-II/B Launch Vehicle No. 3 – built to transport larger satellites as well as the H-II Transfer Vehicle known as “KOUNOTORI” – MHI has started handling all H-II/B launch services



Earth as seen from KOUNOTORI3 launched by the H-II/B launch vehicle in July 2012

beginning with No. 4, which launched the “KOUNOTORI4” on its way to the International Space Station.

Although several European and American companies are involved in the satellite launch business, there are few that can match MHI’s ability to implement the entire process from vehicle manufacture to launch.

Over nearly 40 years of rocket

development and manufacturing experience, MHI has amassed a wealth of knowledge and improved its launch success rate. A string of successful on-schedule launches is testament to the world-class reliability of MHI’s launch services.

MHI, as a launch services provider, will continue to leverage its technologies and expertise to secure a reliable access to space that can meet a variety of needs from our global customers. MHI will continue to fulfill expectations for space development, paving the way for mankind’s future.

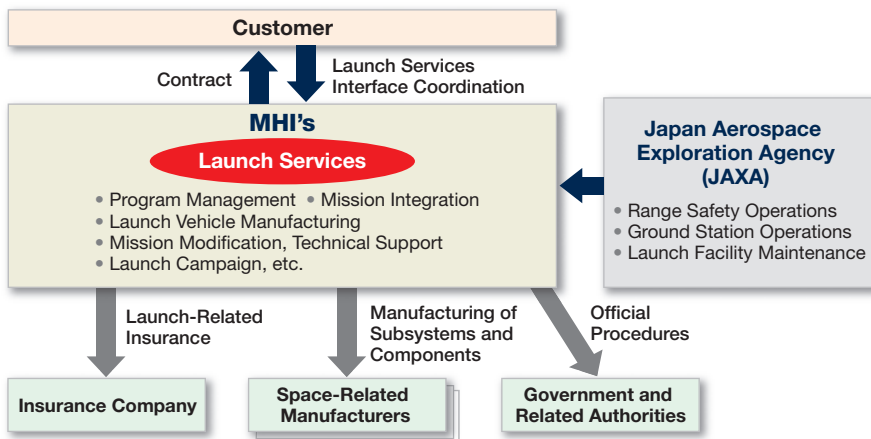
*1 JAXA: Japan Aerospace Exploration Agency. An independent administrative agency in charge of Japan’s space science research, aerospace technology research, and space development research.

*2 KARI: Korea Aerospace Research Institute. A government agency that handles South Korea’s aerospace and space development research.

Utilizing advanced and comprehensive space technologies

MHI coordinates the entire process of launch services from launch vehicle manufacture to interface coordination between the spacecraft and launch vehicle, program management, and execution of the launch campaign.

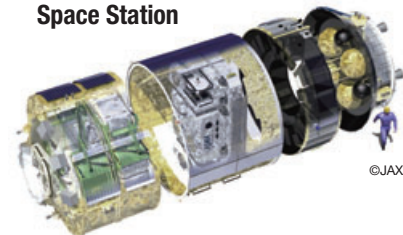
▼ MHI implements the entire process of the launch services from vehicle manufacture to launch



Transporting roughly 6 tons of cargo into space

The administration of the International Space Station (ISS) is shared by 15 nations. MHI is in charge of the system coordination and manufacture of the large H-II Transfer Vehicle "KOUNOTORI," which delivers food, clothing, and experimental equipment of all types to the ISS.

▼ H-II Transfer Vehicle "KOUNOTORI," a supply vehicle to the International Space Station



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"KOUNOTORI" delivers supplies in space

Doubling the launch capability: From 4 tons of H-IIA to approximately 8 tons of H-IIB

▼ Meeting diverse launch needs



The new logo of MHI's launch services, established when H-IIB was added to our lineup in 2013



Parameters		H-IIA Launch H2A202 Standard	H-IIB Launch H2B Heavy Lift
Height	(m)	53	56.6
Gross Mass (excluding satellite mass)	(t)	289	531
Maximum Launch Capacity (t)	GTO	4.0	about 8
	Orbit for HTV	-	16.5

Illustration by JAXA

▼ Development of a new launch vehicle

The H-IIB Launch Vehicle was jointly developed by JAXA and MHI utilizing the technology and experience cultivated during the development of the H-IIA. The four H-IIB launches to date all served to successfully launch the H-II Transfer Vehicle "KOUNOTORI," which can transport approximately six tons of supplies to the ISS.



Manufacture of core fuselage for H-IIB Launch Vehicle No. 3



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Control room at JAXA Tanegashima Space Center where launches and ground facilities are controlled.

Voice Expectations of MHI

Becoming an asset to Japan's space development by facing the world's needs directly

As joint developer of the H-IIB Launch Vehicle, MHI's contributions have been tremendous. In space development, even a small error can drastically affect the entire project, but MHI firmly supported JAXA activities, and it did so from a project management standpoint as well as from a technical viewpoint.

Last year, we transferred the H-IIB launch services to MHI as we did before with the H-IIA. In the future, I hope that MHI promotes its launch services to meet not only national demands but also global customer needs because I believe that MHI's launch services activities will benefit Japan's space development as well.



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