

Providing integrated defense systems encompassing land, sea, air, and space applications as well as space-related equipment and services

Integrated Defense & Space Systems

Integrated Defense & Space Systems provides integrated land, sea, air, and space defense systems—encompassing naval ships, defense aircraft, missile systems, launch vehicles, and special vehicles—and space-related services. Through the cutting-edge technologies cultivated in these fields, MHI is positioned to supply products and services with high added value.



In accordance with the Japanese government's policies and objectives, we apply our comprehensive expertise and advanced technological capabilities on various types of products in land, sea, air, and space systems to meet the needs of our customers.

Hisakazu Mizutani

Domain CEO, Integrated Defense & Space Systems

Fiscal 2013 in Review

During the year, orders for naval ships and defense aircraft rose, and some orders were received ahead of schedule. As a result, on a consolidated basis this domain booked orders of ¥547.3 billion for fiscal 2013, up from the previous year's level.

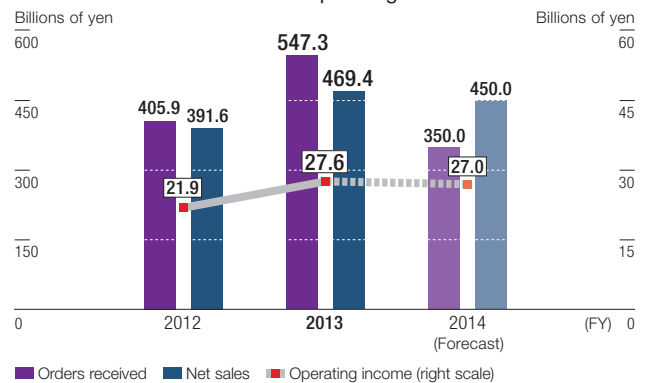
Consolidated net sales in this domain rose, to ¥469.4 billion, buoyed by higher sales of defense aircraft, missiles and other items.

Boosted by the rise in sales, consolidated operating income increased, to ¥27.6 billion.

Operating Environment

The East Asian security environment remains under rising tensions, but growth in defense-related budgets has been sluggish. This trend is expected to continue, and we see little likelihood of this market expanding substantially. The National Security Strategy (NSS) that Japan adopted at the end of 2013 calls for the country to contribute even more proactively in securing peace, stability, and prosperity of the international

Orders Received / Net Sales / Operating Income

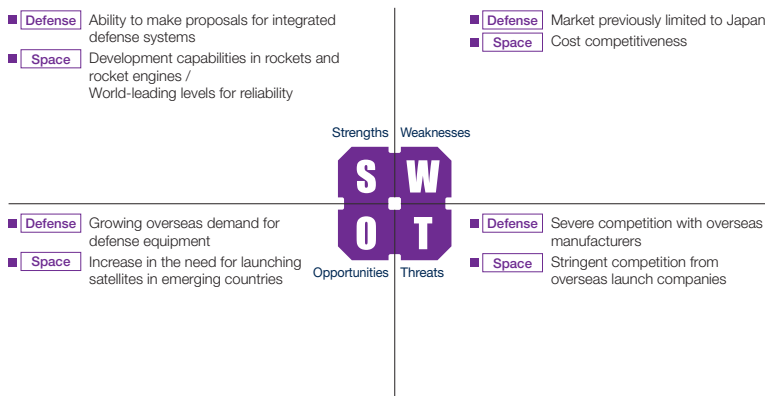


Strategic Business Unit (SBU)

- Naval Ship
- Defense Aircraft
- Missile Systems
- Defense Aero-Engines & Control Equipment
- Maritime Systems
- Space Systems
- Special Vehicle



SWOT Matrix



Basic Strategies

- Propose integrated defense systems by coordinating businesses for land, sea, air, and space defenses
- Promote the mutual application of defense and space technologies and civilian technologies and cost reductions
- Respond to globalization
- Bolster launch capabilities and cost competitiveness through the development of a new flagship launch vehicle

community as a “Proactive Contributor to Peace,” based on the principles of international cooperation. The National Defense Program Guidelines announced in conjunction with the NSS explain Japan’s policy to build a Dynamic Joint Defense Force to address the global security challenges and conduct a diverse range of activities to be seamless as well as dynamic based on joint operations. In response to the Three Principles on Transfer of Defense Equipment and Technology adopted by Cabinet decision in April 2014, MHI recognizes the importance of responding adroitly to the country’s defense-related needs by pursuing globalization initiatives and reinforcing its defense production and technology base.

As for recent space systems business, the government’s Basic Space Plan on Space Policy outline has shifted from space development to space utilization. Furthermore, the space systems business environment is in flux, as demonstrated by the increasingly competitive international launch market.

Initiatives for Growth over the Medium to Long Term

The basic policy of this domain is to ensure the safety and security of the populace and contribute to long-term economic and social development by fostering cutting-edge technologies

in the defense and space businesses and applying the defense and space technologies to civilian sectors. At the same time, we strive to uphold the levels of safety assurance, compliance, and information security that are essential to the operation of these businesses.

In the defense business, we will provide products and services that meet customers’ needs for joint operation by generating synergies across product lines for the technologies related to land, sea, and air. These products and services were divided along product lines under the Business Headquarters Structure and are now integrated by this domain.

Specifically, we will collaborate with customers in developing compact, sophisticated escort ships and amphibious vehicles, considering technologies for future surface-to-air missiles, and researching technologies related to future jet fighters. In these ways, we will move forward with initiatives targeting the demand related to national security.

In the space systems business, we aim to maintain a high success rate for our H-II A/B rockets. Furthermore, we will continue to assume a leading role in Japan’s space development and endeavor to expand this business by developing a new flagship launch vehicle. (See the “FOCUS” article on the next page for details.)

MHI is dedicated to a core vision of supplying cutting-edge technologies for national safety and security. As a leading supplier in the Japanese defense industry, MHI endeavors to maintain and strengthen defense production and technological bases. MHI develops and manufactures a vast array of defense equipment to meet the needs of the Japanese government and also provides operational support.

See the following website for information on maintaining and strengthening defense production and technological bases.

 <http://www.mhi-global.com/company/csr/index.html>



FOCUS

Integrated Defense & Space Systems

Satellite Launch Services for Future Space Development

The satellite launch services of MHI have achieved a strong global reputation thanks to the remarkable success rate of its H-II A/B rockets and on-time service—despite the difficulties. In fiscal 2014, we will embark on the development of a new flagship launch vehicle as the prime contractor, employing technologies that will open up the next era of space development.

Backdrop

- Shift in the main thrust of the Basic Plan on Space Policy from development to utilization
- Growing satellite launch demand especially in emerging markets

The Basic Plan on Space Policy, unveiled by the Japanese government in January 2013, outlined a shift in Japan's space policy from development to the utilization of space. The plan strongly promotes initiatives related directly to enhancing the quality of life for the Japanese nation, such as data communications, satellite broadcasting, mapping and resource exploration, and the use of the global positioning system (GPS) for navigation. In addition to the ability to manufacture and operate satellites for such purposes as telecommunications and broadcasting, positioning, and remote sensing, such ambitions require enhanced satellite launch capabilities as well as maintaining the Japanese industrial and technological base to support them.

Overseas demand is growing in Southeast Asian and other emerging countries for the launch of communication satellites and others, providing a growing number of opportunities in the business of launching commercial satellites.

Key Capital

- H-IIA rocket, with increased launch capability
- Track record of highly successful on-time launches

For around the past 40 years, MHI has played a key role in Japanese space policy by developing and manufacturing the rockets for launching satellites. At present, our current flagship launch vehicle is the H-IIA rocket. After receiving a technology transfer from JAXA*1, MHI has handled the entire process from manufacture to launch since the H-IIA Launch Vehicle No.13, which was launched in September 2007. By working with JAXA on improvements of the H-IIA's second stage, we are going to succeed in enhancing our satellite launch capability, which is closer to geostationary orbit than ever, placing them in geostationary transfer orbit. Through this improvement, we are able to support a variety of demand from customers throughout the world.

The H-IIA rocket is highly reliable, boasting a current*2 success rate of approximately 96% (23 of 24 launches). Furthermore, launches continue to be performed at the appointed time and date.

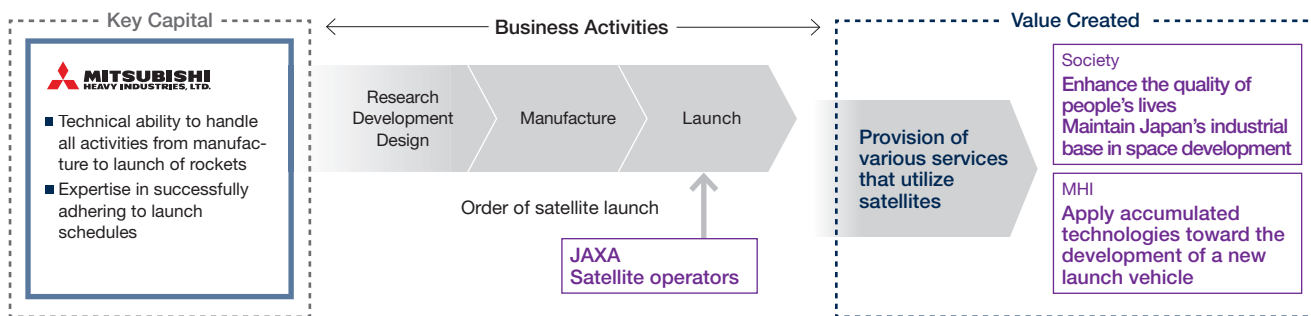
*1. JAXA: Japan Aerospace Exploration Agency. An independent administrative agency in charge of Japan's space science research, aerospace technology research, and space development research.
*2. As of July 2014

Key Projects

Announcement	Delivery Date	Project
May 2014	–	MHI Achieves Successful Launch of the H-IIA Launch Vehicle No. 24
May 2014	Fiscal 2016	MHI Receives Order for Satellite Launch Services from SKY Perfect JSAT
March 2014	–	MHI Selected by JAXA as Prime Contractor in Charge of Development and Manufacture of New Flagship Launch Vehicle (Responsibility for Space Transportation Services Also Included)
September 2013	Late 2015	MHI Receives Order to Launch Telesat's New High Throughput Satellite, Telstar 12 VANTAGE (First Order for Launch Services Involving a Commercial Satellite)
June 2013	–	MHI and Arianespace S.A. Conclude memorandum of understanding (MOU) on Cooperation in Commercial Space Rocket Launches

The 24th H-IIA, launched on May 24, 2014





Strategy

- Achieve continued launch successes and ongoing improvements to production efficiency on the H-II A/B launch vehicles
- Develop a new and internationally competitive flagship launch vehicle

By ensuring Japan’s autonomous launch capabilities and maintaining its industrial base, increase the launch vehicle’s contribution to space development, and enhance our presence

These H-IIA launch capabilities, as well as to reliably launch as planned, have earned a high reputation with Telesat Holdings Inc., the world’s fourth-largest satellite operator. MHI has received an order to provide launch services for Telesat’s Telstar 12 VANTAGE satellite. The launch is scheduled to take place in late 2015 and marks the first time MHI has received an order to launch a commercial satellite. In May 2014, MHI received its first order from a domestic satellite operator, signing an agreement with SKY Perfect JSAT Corporation, which is also the world’s fifth-largest satellite operator. Building on the momentum of these orders from two of the world’s leading operators, we look forward to actively cultivating the market for satellite launch services in Japan and overseas.

At present, MHI launches between two and three rockets per year that are capable of launching satellites. In perspective, industrywide launches are currently being carried out at a rate of 20 to 30 per year, buoyed by energetic demand from emerging countries. To take advantage of this business opportunity, MHI believes that in addition to the H-IIA launch vehicle, building up a solid track record for the H-IIB—added to the lineup in 2013—will be essential. At the same time, we will work toward increased manufacturing efficiency and cost competitiveness.

Furthermore, in March 2014 MHI was selected by JAXA to serve as the prime contractor in charge of the development and provider of launch services for a new flagship launch vehicle. MHI intends to commence development in fiscal 2014, aiming for a maiden flight in 2020. The new launch vehicle represents the first time a private-sector company has been called upon to play a leading role from the development stage. MHI will take full charge of all aspects of the new launch vehicle’s development, manufacture, and launch services, working in cooperation with JAXA and other private-sector companies. The new launch vehicle is to be based on the current H-IIA and H-IIB rockets, incorporating a wealth of the latest technologies, and be internationally competitive, simultaneously achieving supreme reliability and a low-cost structure.

While continuing to build on a stable launch history for its existing rocket lineup, MHI will push forward with the development of this new launch vehicle, shoring up its technological base in the field of space development. These efforts are directly linked with ensuring Japan’s autonomous launch capabilities and promoting the nation’s industrial base. Going forward, MHI aims to further enhance its presence and contribute to worldwide space development and utilization, thereby meeting increasingly diverse industry needs.

VOICE

Daniel S. Goldberg
President and CEO,
Telesat Holdings Inc.



We judged MHI’s satellite launch service to be superior to that of its competitors in a number of ways.

Telesat selected MHI to launch its new Telstar 12 VANTAGE satellite after an extensive evaluation of the H-IIA launch vehicle, including the planned enhancements. MHI scored highest on our selection criteria that took into account the flexibility of the launch schedule, vehicle performance,

technical and operational expertise, and overall commercial terms. Telesat is confident that our strong record of innovation will be enhanced by our partnership with MHI, and we look forward to the successful Telstar 12 VANTAGE launch mission.