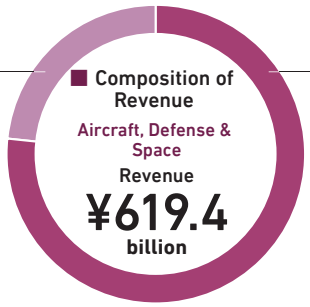
Aircraft, Defense & Space

Commercial Aviation

¥144.5 billion

Key products and services

- Commercial aviation
  (Aerostructure Tier 1 business, Aftermarket business)

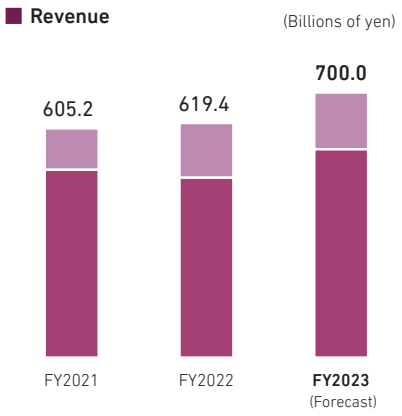


Integrated Defense & Space Systems

¥474.9 billion

Key products and services

- Defense aircraft
- Missile systems
- Naval ships
- Special vehicles (tanks)
- Maritime systems (torpedoes)
- Space systems



Overview of FY2022 and Key Strategies in the Medium to Long Term

Business Environment

In commercial aviation, a full-fledged recovery from sharp declines in passenger demand caused by the COVID-19 pandemic is expected around 2024. While commercial aircraft production rate is also projected to grow in step with the recovery in passenger demand, the emergence of supply chain constraints triggered by industry-wide labor shortages is hampering the recovery in production.

In the field of defense, Japan's Defense Buildup Program has seen significant expansion, reflecting a growing momentum toward further enhancement of national security.

In the field of space, demand for launch vehicles is expanding against the backdrop of growing utilization of space worldwide. Expectations are high among domestic and overseas satellite operators particularly with respect to the H3, Japan's latest mainstay launch vehicle.

Business Status

Consolidated orders received declined year on year to ¥703.6 billion, mainly reflecting a decrease in missile systems despite an increase in commercial aviation. Revenue rose year on year to ¥619.4 billion, lifted by increases in commercial aviation and defense aircraft. Profit from business activities was higher year on year at ¥39.9 billion, largely due to increased profits accompanying higher revenue from commercial aviation.

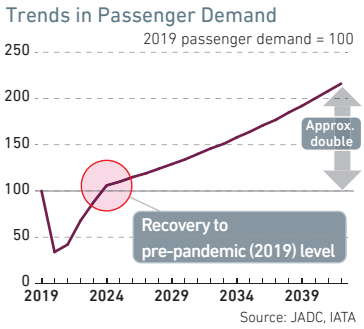
In commercial aviation, one of the main activities at aerostructure Tier 1 business is improving profitability, such as reducing fixed costs to a level appropriate for the business scale, and another is proceeding with initiatives aimed at participating in new programs by leveraging our composite technologies. In the aftermarket business, we will further improve productivity of the existing MRO*1 business, including CRJ, and also expand business scale and improve profitability through the provision of CR&O*2 business, etc.

In the defense business, we will continue to support safety and security of social in Japan as a leading defense company by fundamentally enhancing stand-off and unmanned defense capabilities, improving the capabilities of existing combat equipment, and responding to expansion in peripheral fields.

Meanwhile, in the space business, we are working in cooperation with JAXA aimed at the early completion of H3 Launch Vehicle development.

*1 MRO: Maintenance, repair and overhaul
*2 Component Repair and Overhaul

FOCUS Commercial Aviation: Realize Sustainable Aviation Industry through "Decarbonization of the Sky"



Source: JADC, IATA


Boeing 787


Main wings of Boeing 787

The passenger demand for commercial aviation, which had declined sharply due to the impact of the COVID-19 pandemic, is expected to recover to pre-pandemic levels around 2024. From there, both the movement of people and economic growth are projected to roughly double around 2040.

At the same time, however, CO_2 emissions from the operation of commercial aircraft had already surpassed 1.0 billion tons annually even in 2019, accounting for more than 2% of carbon emissions worldwide—a calculated scale that exceeds comparable emissions from maritime transport and rail use. With the number of fleets in operation expected to increase in line with the growth in passengers, initiatives of decarbonization from commercial aircraft will become even more important in the aviation market, where future growth is anticipated.

The Boeing 787 has achieved significantly lighter weight thanks to the use of composite materials in many of its structural components, including the main wings manufactured by MHI. Together with other advanced technologies, this iteration of the Boeing 787 has realized a roughly 20% reduction in CO_2 emissions compared to previous versions of the aircraft. Since its entry into service in 2011 to today, the Boeing 787 has seen more than 1,000 units enter operation worldwide. MHI, by leveraging decades of amassed expertise in aircraft manufacturing, is contributing to "Decarbonization of the Sky" through the high-precision, high-quality production of the large and complexly designed composite wings for the Boeing 787.

Since FY2022, MHI has moved ahead with CFRP*3 recycling, involving the reuse of waste material from the composite wing production process in home appliances. Through effective resource utilization of this kind, we are promoting initiatives designed to reduce environmental impact and protect the global environment.

Moving forward, while taking full advantage of strengths in the commercial aviation sector, MHI will provide society at large with sustainable value by achieving both sustainable growth in the aviation industry and decarbonization.

*3 CFRP: Carbon Fiber Reinforced Plastic

▶ Stakeholder Voices

Ms. Naoko Masuda
Director of Industry Relations & Special Projects
Boeing Japan

Working together with our partners in Japan for a sustainable future in aviation

For more than fifty years, MHI and Boeing's commercial aircraft division have built a rock-solid cooperative relationship grounded in mutual trust, and today collaborate closely in a unique business partnership. Our companies communicate at every level, and we haveve come to rely on products founded firmly on MHI's well-established system of quality management.

In the summer of 2022, Boeing launched a Japan-based R&D center. In areas such as sustainable aviation fuels (SAF), electrification, and innovative digital design and manufacturing, this move is ushering in genuine R&D work rooted in Japan. With our sights set on a sustainable future for aviation for the entire globe, we are looking forward to cooperating with our Japan partners – even in fields different from those we have tackled before.