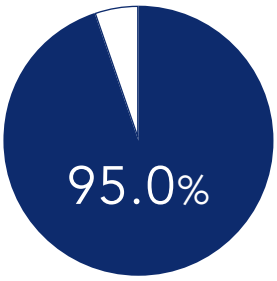
Automotive Business Unit

SUBARU continues to develop cars that promise total driving enjoyment and safety for all passengers.

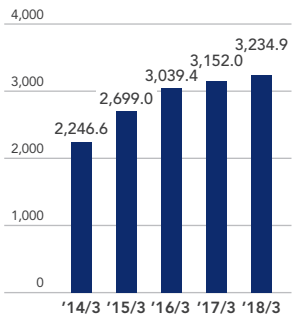
The launch of the SUBARU 360 in 1958 marked SUBARU's start as an automaker. Ever since, we have contributed to the development of Japan's automotive industry by creating a succession of distinctive cars equipped with creative technologies such as the horizontally opposed engine and Symmetrical All-Wheel Drive. We continue to take on new challenges in order to provide all of our customers with "Enjoyment and Peace of Mind." For example, we continue to evolve the EyeSight driver assist system, have improved safety performance and driving performance by adopting the Subaru Global Platform, our next-generation vehicle platform, and were the first Japanese automaker to use a pedestrian protection airbag.

Consolidated Net Sales Contribution Ratio of the Automotive Business Unit



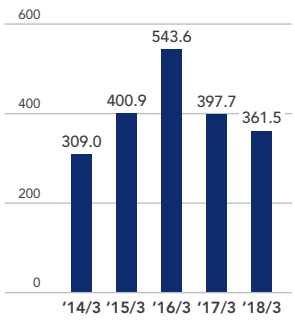
Net Sales

(Billions of yen)



Operating Income

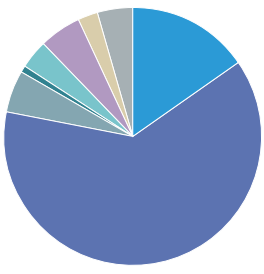
(Billions of yen)



Overview of FYE March 2018

- Consolidated global unit sales increased by 0.2% year on year to 1,067,000 vehicles, reaching a record high for the sixth consecutive year.
- Sales in Japan were 163,000 units. Overseas sales were 903,000 units, and unit sales in North America reached a record high for the ninth consecutive year.

Consolidated Automobile Sales by Region (Thousand units)



Japan	163
United States	671
Canada	57
Russia	8
Europe	40
Australia	56
China	27
Others	45
Total	1,067

Product Lineup

Legacy Series

LEGACY

OUTBACK

Consolidated unit sales: 291,000 units
Sales regions: Japan, North America, Russia, Europe, Australia, China, and other

Impreza Series

IMPREZA

(SEDAN)

(5 Door)

SUBARU XV
(North America: CROSSTREK)

Consolidated unit sales: 373,000 units
Sales regions: Japan, North America, Russia, Europe, Australia, China, and other

FORESTER

Consolidated unit sales: 279,000 units
Sales regions: Japan, North America, Russia, Europe, Australia, China, and other

WRX

Consolidated unit sales: 51,000 units
Sales regions: Japan, North America, Russia, Europe, Australia, and other

LEVORG

Consolidated unit sales: 25,000 units
Sales regions: Japan, Europe, Australia, and other

SUBARU BRZ

Consolidated unit sales: 9,000 units
Sales regions: Japan, North America, Europe, Australia, China, and other

EXIGA

Consolidated unit sales: 3,000 units
Sales region: Japan

OEM Models

JUSTY

CHIFFON

STELLA

PLEO

DIAS WAGON

SAMBAR

Consolidated unit sales: 34,000 units
Sales region: Japan
(OEM supply from Daihatsu Motor Co., Ltd.)

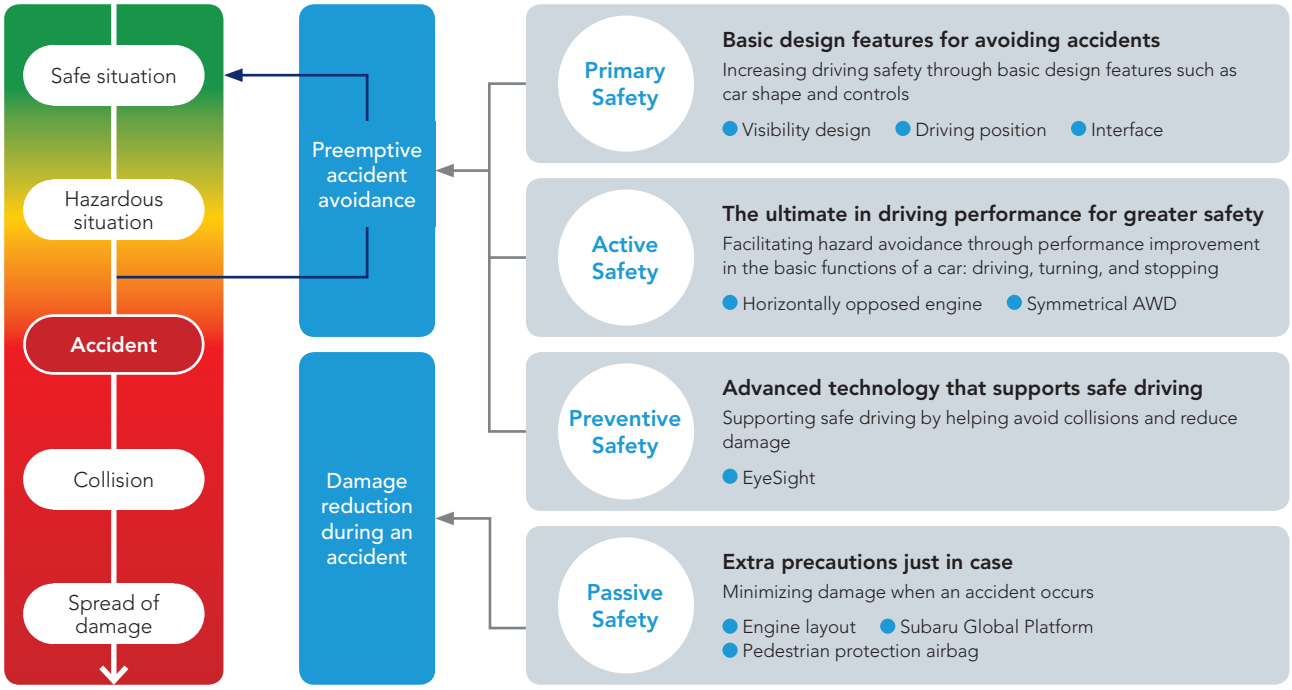
*For the period from April 1, 2017 to March 31, 2018
*Automobile sales of SUBARU CORPORATION and its consolidated subsidiaries

Automotive Business Unit

The SUBARU Concept of All-Around Safety

Aiming for the highest level of peace of mind and safety for all passengers

SUBARU pursues automobile safety performance from every perspective and is refining and perfecting core technologies on the basis of four safety criteria: primary safety, active safety, preventive safety, and passive safety.



Safety Performance Recognized Worldwide

SUBARU has received the highest rating in the NCAP[1] conducted by the authorities in Japan, the U.S., Australia, and other countries, as well as in the safety performance assessment conducted by the IIHS[2] in the U.S.[3]

In the IIHS safety performance assessment, the Impreza, Crosstrek, Legacy, Outback, and WRX (models equipped with EyeSight and Steering Responsive Headlights) received the 2018 Top Safety Pick Plus (TSP+) rating. The 2018 TSP/TSP+ awards only apply to the North America models.

1 NCAP: New Car Assessment Program
2 IIHS: Insurance Institute for Highway Safety
3 For ratings details, please refer to rating agency websites.

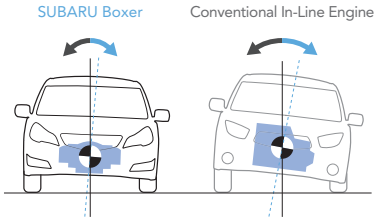
JNCAP ASV++ rated models: Levorg and WRX (models equipped with EyeSight) in 2017
JNCAP 5-star rated models: Impreza and SUBARU XV in 2016
2018 IIHS TSP rated models: 2018 Forester (models equipped with EyeSight and Steering Responsive Headlights)
2018 IIHS TSP+ rated models: 2018 Impreza, Crosstrek, Legacy, Outback, and WRX (models equipped with EyeSight and Steering Responsive Headlights)
US-NCAP 5-star rated models: 2018 Impreza, Crosstrek, Legacy, Outback, and Forester
Euro NCAP 5-star rated models: Impreza and SUBARU XV in 2017
ANCAP 5-star rated model: SUBARU XV in 2017

SUBARU Core Technologies

Horizontally-Opposed Engine (Boxer engine)

Compact, low center of gravity

The horizontally opposed engine has pistons arranged symmetrically to the left and right of the crankshaft. Since the opposed pistons mutually cancel out engine vibrations, the engine can rotate smoothly, which reduces vibrations conveyed to the vehicle interior. The engine's low height and compact design contribute to low vehicle center of gravity. The stable attitude provides a high sense of security during driving.



Symmetrical All-Wheel Drive (AWD)

Superior overall weight distribution

The combination of the low center of gravity provided by the horizontally opposed engine and superior longitudinal-transverse weight balance achieved by placing the transmission near the center of the vehicle maximizes all-wheel drive capability and delivers superb driving performance in various conditions. SUBARU has been committed to Symmetrical AWD as a core technology that drivers can depend on in every situation from day-to-day town use to high-speed highway driving.

Symmetrical All-Wheel Drive (AWD)

Subaru Global Platform

A next-generation vehicle platform designed with the future in mind, looking ahead to 2025

SUBARU is sequentially introducing the Subaru Global Platform, starting with the all-new Impreza launched in October 2016. The new vehicle platform substantially increases body and chassis rigidity and further lowers vehicle center of gravity, raising the level of active safety and passive safety and delivering responsive handling performance and a comfortable ride with reduced unpleasant vibration and noise.

Subaru Global Platform

EyeSight Driver Assist System

Stereo cameras for advanced object recognition capabilities

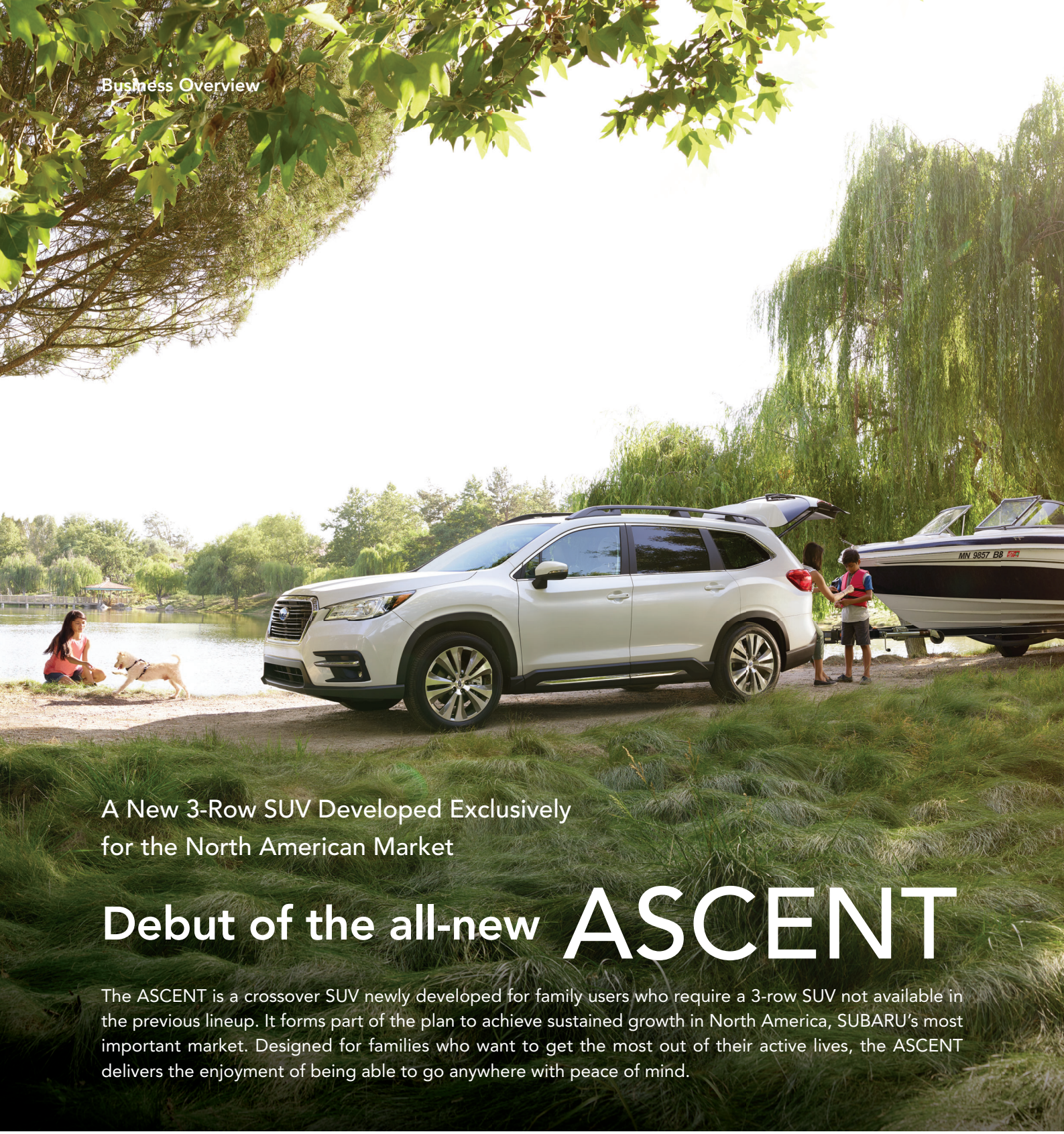
The use of two cameras positioned to the left and right, like human eyes, contributes to preventive safety by helping avoid accidents, reduce impact, and alleviate driver burden by enabling three-dimensional recognition of cars, pedestrians, and other objects in front of the vehicle and accurate recognition of the distance, shape, and speed of movement of these objects. SUBARU began development of a driver assist system using stereo cameras in 1989. Application of research results and experience accumulated over many years since then has culminated in EyeSight, a system that anyone can use with peace of mind. In 2017, we introduced EyeSight Touring Assist, which dramatically reduces driver fatigue by automatically assisting accelerator, brake, and steering operation at a wide range of speeds from 0 to approximately 120 km/h for expressway driving.

SUBARU will continue to work to realize an accident-free future.

EyeSight
Driver Assist Technology

Stereo cameras

Stereo camera recognition image



A New 3-Row SUV Developed Exclusively for the North American Market

Debut of the all-new ASCENT

The ASCENT is a crossover SUV newly developed for family users who require a 3-row SUV not available in the previous lineup. It forms part of the plan to achieve sustained growth in North America, SUBARU's most important market. Designed for families who want to get the most out of their active lives, the ASCENT delivers the enjoyment of being able to go anywhere with peace of mind.

- Comfortable cabin environment realized by a package design that gives all passengers a pleasant ride experience in any seat, ample interior features, and vibration noise suppression made possible by the Subaru Global Platform's increased body rigidity
- Standard EyeSight Driver Assist Technology and pursuit of top-of-class safety performance
- Powered by an all-new 2.4-liter four-cylinder Boxer direct fuel injection turbo engine, offering drivability and fuel economy equal to or better than that of six-cylinder engines
- Standard SUBARU Symmetrical All-Wheel Drive and X-Mode offer the optimal blend of drivability and SUV capability
- To be built in the U.S. with start of sales scheduled for early summer 2018

The Head of Development Discusses his Vision of the ASCENT
Uncompromising Attention to Detail in a Vehicle Designed for North America

Project General Manager
Product & Portfolio Planning Division*

Yasunori Kumagai

Background to the Birth of the ASCENT

SUBARU's vehicle lineup for North America consists mainly of compact to mid-size SUVs. There are no vehicles that families with more than three children can continue to drive, and some customers switch to vehicles of other automakers. Development of the ASCENT, a crossover SUV exclusively for North America, began in response to strong requests from dealers in North America who argued that a 3-row SUV is absolutely necessary for customers to continue to drive SUBARU vehicles throughout their life.

Uncompromising Attention to the Third-row Seats and Comfort

Ordinarily, the third row of seats is cramped, the air conditioning doesn't reach the passengers, visibility is poor, and it's difficult to converse with passengers in the second row. We aimed to eliminate the disadvantages of what is derisively called the "penalty box" and instead create third-row seats that would actually make children enjoy riding there. We had North American dealer employees ride in full-size mockups and went through a repeated process of trial and error based on their impressions and opinions. Our highest priority in development was to uncompromisingly create a comfortable cabin space in each row. Of course, we also included ample interior features conceived from the perspective of families and children to ensure that every member of the family enjoys the ride. In addition, in planning the interior features, we set an objective of not giving people a reason for rejection on the grounds of unavailability of a particular feature offered by other automakers.

Uncompromising Attention to Driving Performance

Although 3.5-liter six-cylinder engines are the norm in this class for other automakers, we newly developed a 2.4-liter four cylinder downsized turbocharged direct-injection boxer engine to meet recent environmental requirements and realize top-of-class fuel efficiency. To make the ASCENT suitable for daily family use, we use an engine that runs on budget-friendly regular gasoline. We dispelled the conventional image of a four-cylinder engine, giving the engine powerful driving performance in no way inferior to competitors' six-cylinder engines in freeway merging and high-speed passing situations. To the contrary, I think that the end result is a vehicle that will enable customers to personally experience the high-RPM boost and exhilarating driving performance distinctive to a turbocharged engine.

Uncompromising Attention to Safety

Passive safety for third-row passengers was a focus of uncompromising attention from the very beginning of development. The ASCENT is vastly superior to vehicles of other automakers with respect to the extent of head injuries and integrity of passenger survival space in a rear-end collision. Committed to protecting the rearmost passengers, we designed a thick rear frame and at the early stage of development created a structure capable of absorbing impact. While the ASCENT has of course successfully passed the assessments of third-party ratings organizations as proof of safety, third-row safety is not included in those assessments. Even so, we are fully committed to protecting drivers and all passengers in the real world, beyond what tests demand. That's the SUBARU safety concept.

Since the ASCENT is for family use, we focused on quiet and smooth ride comfort, and throughout development boosted our objectives in these areas several times. We upgraded our objectives and embraced the challenge of outstripping other automakers when competitors increased the performance of their vehicles during the ASCENT's prototype stage and at the latter stages of development. We have collaborated time and again with employees of dealers in North America and SIA to put the finishing touches on a car that dealers and makers would want for themselves. It was the desire of the entire development team to create a vehicle that customers will be truly glad they purchased and that others will recognize as a high-quality vehicle and wise purchase.

*As of September 30, 2018

Aerospace Company

Leveraging tradition and innovative technologies to develop and produce a wide variety of aircraft.

SUBARU's roots trace to 1917 and Aircraft Research Laboratory, later to become Nakajima Aircraft. The Aerospace Company, which has inherited Nakajima Aircraft's manufacturing technologies and spirit, leads Japan's aerospace industry and develops and produces a wide variety of aircraft.

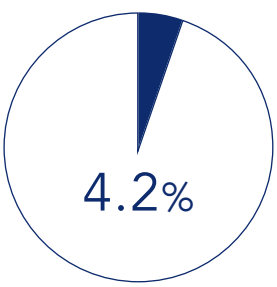
In the defense program, we develop, manufacture, maintain, repair, and provide technical support for products such as the UH-1J multipurpose helicopter used by the Japan Ground Self-Defense Force for disaster relief and other purposes, the T-5 Maritime Self-Defense Force trainer, unmanned aerial vehicles (more than 15 models developed over a half century), and flight simulators. In the commercial program, we participate in many international joint development projects for Boeing. We are responsible for the development and manufacturing of the center wing box as well as wing-to-body fairings and the integration of the center wing box with the main landing gear for the 777X, Boeing's newest large passenger airliner, and other Boeing aircraft. In addition, taking advantage of an alliance with Bell Helicopter Textron, we are jointly developing the SUBARU BELL 412EPX.

By further refining our technologies through involvement in a wide variety of aircraft programs, we will continue to take on additional challenges for growing into an aircraft manufacturer with a global presence.

Boeing 777X

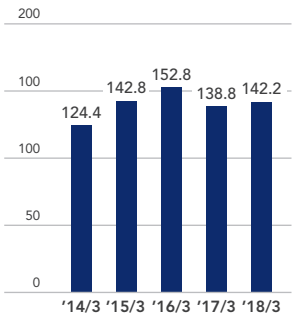
SUBARU BELL 412EPX
This will become the basis for the UH-X, which is a new multipurpose helicopter for the Japan Ground Self-Defense Force.

Consolidated Net Sales Contribution Ratio of the Aerospace Company



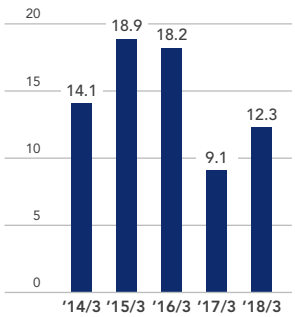
Net Sales

(Billions of yen)



Operating Income

(Billions of yen)

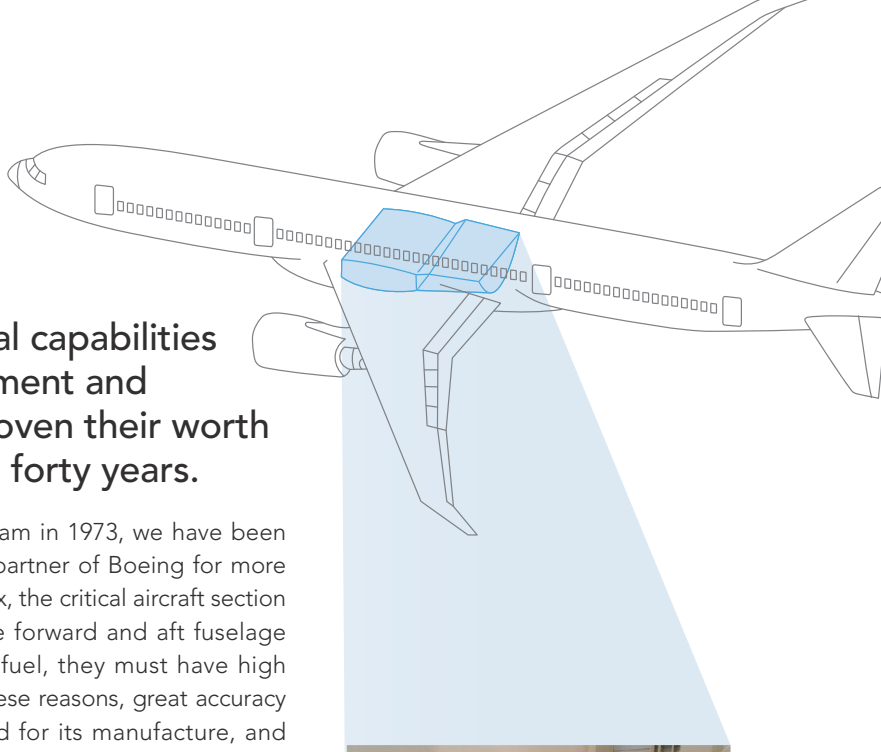


Overview of Center Wing Box and SUBARU's Technology

SUBARU's advanced technological capabilities continue to support the development and production of wings that have proven their worth in the world's skies for more than forty years.

Since first participating in Boeing passenger program in 1973, we have been involved in development and production as a key partner of Boeing for more than forty years. We manufacture the center wing box, the critical aircraft section where the right and left wings are attached to the forward and aft fuselage sections. Since the center wing box contains the fuel, they must have high mechanical strength and high fluid tightness. For these reasons, great accuracy and advanced assembly technologies are required for its manufacture, and SUBARU is one of the few companies capable of making them. The Handa Plant, where center wing boxes are manufactured, is a global-level production center that produces these parts for the new Boeing 777X as well as for the 777 large airliner, the 787 mid-size airliner, the Ministry of Defense's P-1 maritime patrol aircraft, and the C-2 transport aircraft.

SUBARU's advanced technological capabilities are recognized worldwide. For example, we also cooperate in A380 super jumbo airliner program with Airbus. We engage in development on the "Drop test for Simplified Evaluation of Non-symmetrically Distributed sonic boom" Project (D-SEND) together with Japan Aerospace Exploration Agency (JAXA).



A center wing box (Handa Plant)

President
Aerospace Company

Shoichiro Tozuka

Message from the Company President

The Aerospace Company will contribute to the enhancement of the SUBARU brand.

We are a start-to-finish aircraft builder that is capable of the complete development and manufacturing of aircraft fuselages, from materials development to quality assurance, including flight testing. Flight safety is an important factor for aircraft. And for many years we have fostered a culture in which quality and safety are recognized as inextricably linked and uncompromisingly pursued. This total safety concept applied to aircraft, from materials development to quality assurance, including flight testing, is at the core of SUBARU's DNA.

The Aerospace Company currently faces a major inflection point. A change of mainstay production models is underway at Boeing, with production of the Boeing 777 decreasing, due to development of the 777X, and the production rate of the 787 increased to 14 shipsets per month in its stead. At the same time, we have entered the design and production phase of new business activities that will support the future growth of the Aerospace Company, such as 777X center wing box, the SUBARU BELL 412EPX and other projects. So our engineering load and facilities investments have peaked. Also, although continued growth in global air passenger demand is forecast, price competition for fuselages is intensifying.

We will continue to steadily and reliably play a role in enhancing the SUBARU brand by further honing our technological strengths in areas including wing design and manufacturing.