



Safety is Our DNA

Having roots in the aircraft industry, the Subaru Group considers safety to be the most important feature underpinning automobiles. Since the launch of Subaru 360 more than half a century ago to this day, Subaru has engaged in automotive manufacturing with a philosophy of “All-Around Safety” and maximum emphasis on safety performance.

SINCE 1917

Ensuring Safety for Pilots

Our DNA of safety is inherited from aircraft development.

At the core of Subaru’s safety development expertise lies traits acquired from developing aircrafts. Given the lethal ramifications of a crash, aircraft development requires designs that consider all possible emergency situations, hence the implementation of ideas and countermeasures within the aircraft’s basic structure to prevent the onset of danger. In addition, one of the indispensable safety features of smaller aircrafts is the ability for the pilot to be able to secure an all-around unobstructed line of sight. This approach to safety has not diminished even after Subaru moved into automobile manufacturing. Since Subaru released the Subaru 360, all of our vehicles have been developed with an emphasis on safety features, starting with unobstructed visibility.

SINCE 1960

Ensuring Safety for Drivers



Subaru 360

Going ahead of the times

Developing a vehicle body for collision safety based on All-Around Safety

Subaru 360, launched in 1958, had played an important role in expanding the popularization of automobiles during the period of high economic development. Since that period, Subaru has dedicated itself to developing vehicle bodies for collision safety following the principle of All-Around Safety—effectively absorbing shock from collisions in all directions and protecting passengers with a cabin structure of robust strength.

Early on, safety was not yet emphasized as part of the value of vehicles and there were no crash test dummies in existence. Subaru’s development team, however, pushed forward independent research on car body structure and how it affects human body. Through trial and error, Subaru pursued superior collision safety technologies ahead of the times.

Horizontally-opposed engine and AWD Developing proprietary technologies for enhanced driving safety

Fundamental automobile performance in terms of driving, turning, and braking differs depending on the vehicle's structure. In particular, the location of the center of gravity and the type of drive train have a significant effect. The lower the center of gravity is, the more stable the cornering would be, while a drive train that delivers power to all of the wheels gives constant stability when driving. This is the perspective that led Subaru, in 1966, to launch the Subaru 1000—a FWD vehicle with a horizontally-opposed engine—and, in 1972, the 4WD Subaru Leone. Since that time, Subaru has further honed our proprietary technologies and continued to pursue safe and stable driving performance.



Launching our flagship Legacy Embarking on development of driving support systems.

Our flagship Legacy model, launched in 1989, demonstrated both reliable driving performance and mechanical endurance when it set a world speed record in January of that same year for 100,000 km of continuous driving. Furthermore, around this period, Subaru started development of a driving support system using stereo cameras. In 1999, Subaru commercialized ADA, Active Driving Assist, which was the predecessor of our current EyeSight technology.

Commercialized EyeSight, fitting the latest advanced safety features—pedestrian protection airbags and EyeSight Touring Assist—as standard equipment on all vehicles

In 2008, Subaru commercialized our EyeSight technology with stereo cameras constantly surveying the area forward of the vehicle, and warnings and pre-crash braking functions for preventing accidents or mitigating damage from accidents.

In 2017, we began fitting vehicles with the new Touring Assist function, extending the minimum speed at which Lane Keep Assist can operate from 60 km/h to 0 km/h.

We have also added automated steering that follows the preceding vehicle in the same lane, teamed with Adaptive Cruise Control to assist drivers with automated control of acceleration, braking, and steering on expressways.

The new Forester launched in 2018 is equipped with Subaru's pioneering Driver Monitoring System. A dedicated camera installed in the visor of the Multi-Function Display monitors the driver to support safe driving.

If the system detects signs of drowsiness in the driver, it sounds and illuminates a warning in both the instrument cluster and the Multi-Function Display to alert both the driver and the passengers. If it sees the driver's eyes off the road for too long, it sounds and illuminates a warning in the instrument cluster to alert the driver, thereby supporting safe driving.

In addition, we have fitted the latest advanced safety features—pedestrian protection airbags and EyeSight Touring Assist—as standard equipment on all vehicles.



Adaptive Cruise Control has been combined with EyeSight Touring Assist in the Forester, marking the first time that this model has been equipped with the Lane Keep Assist function and automated steering that follows the preceding vehicle in the same lane. This offers automated control of acceleration, braking, and steering at speeds of 0–120 km/h on expressways, thereby providing support for driving. These features will greatly reduce fatigue on vehicle-only roads.

In addition, we have fitted the latest advanced safety features—a pedestrian protection airbags and EyeSight Touring Assist—as standard equipment on all vehicles.

Inspired by our overall safety philosophy, Subaru’s goal of making vehicles that deliver enjoyment and peace of mind for all passengers has resulted in the class-leading safety performance, offering safe and enjoyable driving at all times - not just in an emergency.

Subaru’s safety philosophy has also informed the enhanced safety features in the new Outback (US model), which had its world premiere at the 2019 New York International Auto Show. The Outback is fitted with EyeSight Touring Assist and the Driver Monitoring System, further increasing the peace of mind as a partner to support an active lifestyle.

In addition to increased body and chassis rigidity, the new Subaru Global Platform that we began introducing in 2016 achieves a dramatic increase in body strength, due to an optimized frame structure, multiplexed load transmission paths, and the use of high-strength materials. This all adds up to an increase of about 40% in the efficiency of impact energy absorption compared with the previous level.

Having started with the Impreza launched in 2016, Subaru equipped the new Subaru XV with this platform in 2017, followed by the new Forester and Outback (launching in North America in autumn 2019) in 2018, and plans to continue expanding the number of models using it in the future.

INTO THE FUTURE

Working toward Achieving A Safer Society

Attaching particular importance to protecting lives and aiming for zero fatal road accidents* by 2030

Subaru’s intention does not lie in changing everything automatic, but in “Respect what humans are good at and leave what humans are not good at to automobiles for safe transportation.” With this idea, Subaru further strives to polish our driver assist technology and to enhance our collision safety performance.

We aim to achieve zero fatal road accidents by 2030 by interlinking the five fields of safety: the four conventional fields of Primary Safety, Active Safety, Preventive Safety, and Passive Safety, plus Connected Safety.

In addition, the evolution of advanced driver assistance systems (ADAS) will make it possible to slow down and avoid collisions in high-speed zones and on large bends, which is expected to be of further assistance in preventing and mitigating accidents.

At the same time, we still face an issue that around 30% of fatal accidents is expected to remain under the current situation, primarily accidents caused by the behavior of others, which are typically due to an oncoming car straying outside its lane or a pedestrian or animal dashing out into the road. We are addressing this by developing technology that will increase safety standards in all five safety fields and will continue to pursue our goal of achieving zero fatal road accidents by 2030.

Our Approach to Making Safe Vehicles

Subaru believes that a car is more than just a means of transport, but rather a partner that enriches people's lives by understanding and meeting their expectations.

Having roots in the aircraft industry, the Subaru Group has, for more than half a century, consistently engaged in automotive manufacturing with maximum emphasis on safety performance, attaching particular importance to protecting lives in order to ensure that each and every one of our customers experiences enjoyment and peace of mind.

In our pursuit of vehicle safety performance from all perspectives, we are honing our unique safety technologies in the four areas of Primary Safety, Active Safety, Preventive Safety, and Passive Safety, based on Subaru's overall safety philosophy, which focuses on delivering the world's highest standard of safety and peace of mind for all passengers.

Published in July 2018, our mid-term management vision STEP describes our efforts to enhance safety and peace of mind by focusing on protecting people's lives and setting a target of achieving zero fatal road accidents by 2030*. As such, we are engaged in the development of vehicles that will enable us to eliminate traffic accident deaths.

* Reducing to zero the number of fatal accidents occurring while a driver or passenger in a Subaru vehicle and the number of fatalities among pedestrians, cyclists, and the like arising from collisions with a Subaru vehicle.

Thoughts on Primary Safety

Automobile safety technology is evolving on various fronts. The ideal is that no danger should be encountered, and the basis of this is for drivers to make correct judgment and operation.

Primary Safety is based on an approach that enhances safety through initial and basic design techniques for the automobile form and interface. To realize safe, concentrated driving without distraction, Subaru pays meticulous attention to details of the instrument panel and seat design, including visibility design.

Related information

[Subaru's automobile manufacturing](#) > [TECHNOLOGY: Safety](#) > [Primary Safety](#) 

Thoughts on Active Safety

Active Safety is an approach to safety based on preventing accidents, assuming that accidents may occur. In the event of an accident, for safe avoidance it is important to maintain vehicle stability no different from normal, under a variety of weather and road conditions.

Based on the idea that the ultimate drive fosters safety, Subaru puts the exceptional fundamental performance delivered by our horizontally-opposed BOXER engine and Symmetrical All-Wheel Drive (AWD) as the basis for refinement of vehicle performance that enables users to drive with confidence in any kinds of environment and climate.




Horizontally-opposed engine



Symmetrical All-Wheel Drive

Related information

[Subaru's automobile manufacturing > TECHNOLOGY: Safety > Active Safety](#) 

Thoughts on Preventive Safety

Preventive Safety is an approach that assists driver's driving operations and predicts hazards with the aim of helping reduce damage in the event of a collision.

Subaru, quick to introduce the idea of preventive safety, has proceeded with the development of EyeSight. It adopts a stereo camera for judging conditions in front of the vehicle as well as linkage to the engine, transmission and brakes for hazard avoidance, and has been highly evaluated as an advanced driving support system. The new EyeSight (Ver.3) is now installed in Levorg, WRX, Legacy, Impreza, SUBARU XV, and Forester.

Related information

[Subaru's automobile manufacturing > TECHNOLOGY: Safety > Preventive Safety](#) 

Thoughts on Passive Safety

Passive Safety is an approach to safety technology that aims to minimize damage in the event of an accident. Subaru has promoted development considering safety in all aspects of a vehicle. With an original crash safety body featuring a new Ring-Shaped Reinforcement Frame Body Structure, and engine layout, etc., for mitigating collision impact on vehicle occupants, cabin occupants are, of course, protected. But Subaru also considers collision with pedestrians in its safety system, for which it is highly acclaimed, not only in Japan but also throughout the world.

Furthermore, with the next generation platform “Subaru Global Platform,” Subaru has achieved greater passive safety capability by increasing the amount of energy absorbed at the time of impact by a factor of 1.4 over past systems.

Beginning with the Impreza launched in 2016, Subaru has equipped the new model Forester with this Subaru Global Platform in 2018 and plans to continue expanding the models with it in the future.

Related information


[> Subaru’s automobile manufacturing > TECHNOLOGY: Safety > Passive Safety](#) 



Image of Forester JNCAP* Frontal Offset Crash Test
Source: National Agency for Automotive Safety & Victims’ Aid

* JNCAP: Japan New Car Assessment Program: testing and assessment of vehicle safety performance conducted by the Ministry of Land, Infrastructure, and Transport (MLIT) together with the National Agency for Automotive Safety & Victims’ Aid (NASVA).

FYE2019 Car Assessment Results

Subaru undergoes safety performance testing and assessment of public organizations in and out of Japan including JNCAP in Japan, IIHS*¹ in the U.S., EuroNCAP*² in Europe, and ANCAP*³ in Australia, and have gained the highest rank of assessment in most of them.

In FYE2019, the Forester won the JNCAP Five Star Award and the Grand Prix Award for earning the highest score in the JNCAP collision safety performance assessment. In addition, the Forester, Impreza, and Subaru XV received the Advanced Safety Vehicle Triple Plus (ASV+++)⁴ rating, the highest rating, in the JNCAP preventive safety performance assessment.

*¹ IIHS: Insurance Institute for Highway Safety.

*² EuroNCAP: European New Car Assessment Programme: a program for publishing vehicle safety information conducted in Europe.

*³ ANCAP: The Australasian New Car Assessment Program: a safety assessment program that has been provided by an independent organization composed mainly of the transportation authorities of Australia and New Zealand since 1993.

FYE2019 Commendations

Assessed automobiles	Assessment organization	Assessment
Forester, Impreza, SUBARU XV	  JNCAP, Japan	Forester Collision Safety Performance Assessment: 5★ Collision Safety Performance Assessment Grand Prix Preventive Safety Performance Assessment: ASV+++ Impreza, Subaru XV Preventive Safety Performance Assessment: ASV+++
Legacy, Outback, Impreza, Crosstrek, Forester, WRX, and Ascent models fitted with EyeSight and specific headlights	 IIHS, USA	2019 TSP+ Award*
Forester	 ANCAP, Australia	5★ in 2019

* In the IIHS's publication of vehicle safety information, TOP SAFETY PICK (TSP) award is given to vehicles that earned the rating of "Good" in all test results including the Offset Frontal Test, the Driver-side Small Overlap Front Test, the Side Crash Test, the Rear Impact (Whiplash) Test and the Roof Strength Test, the rating of "Acceptable" or higher in the Passenger-side Small Overlap Front Test and the Headlight Evaluation, as well as the rating of "Advanced" or higher in the Front Crash Prevention Test. In addition to these ratings, vehicles are awarded the TOP SAFETY PICK+ (TSP+) if they earn the rating of "Good" in both the Passenger-side Small Overlap Front Test and the Headlight Evaluation.

Towards Zero Fatal Road Accidents by 2030

Subaru conducted a survey of the number of personal accidents by Subaru vehicles sold within Japan from FYE2011 to FYE2015. The results showed that vehicles with the EyeSight Driver Assist Technology (version 2) had about 80% fewer rear-end collision accidents and about 50% fewer pedestrian accidents compared to vehicles without EyeSight per 10,000 vehicles, and about 60% fewer accidents in the survey overall.*

* For this survey, Subaru based our independent calculations on data from the Institute for Traffic Accident Research and Data Analysis (ITARDA). The occurrences of personal accidents by EyeSight (version 2) available models of Subaru vehicles that were sold in Japan from FYE2011 to FYE2015 (246,139 units had EyeSight (version 2) installed; 48,085 did not) were categorized in the survey.

> [EyeSight for 2030 \(Japanese version only\)](#) 