Safety

Material Issues

- Reducing traffic fatalities
- Applying automation and information technologies to everyday life

Basic Approach

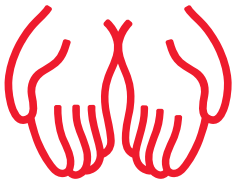
Toward a Collision-Free Mobile Society

As exemplified by the words of the Company's founder Soichiro Honda that "as long as we are handling a mode of transportation, we are entrusted with human lives," Honda is, on the basis of the concept of "Safety for Everyone," aiming at a collision-free mobile society, where not only drivers and riders, but indeed everyone sharing the road, can safely and confidently enjoy the freedom of mobility.

Honda has a long history of engagement in safety initiatives dating back to the 1960s. Back then, in the period of development of motorization in Japan when there was not even a clear concept of "driving safety," Honda started driving safety promotion activities, the first of their kind for motorcycle/automobile manufacturers. Later, the Company developed various technologies including the driver-side SRS airbag, the world's first pedestrian dummies*1 and the Advanced Compatibility Engineering (ACE) body structure*2 that helps to protect occupants of both vehicles in a collision. In 2000, Honda built the world's first indoor crash test facility, making it possible to conduct tests that better reflect real-world crash configurations.

Safety technologies developed as described above have been aggressively applied to various products. As for pedestrian dummies, in order to enhance safety for the traffic society as a whole, their use is not only limited to the development of Honda's products. They are also leased to other companies and research institutions, widely contributing to studies on pedestrian protection.

Honda is actively working on traffic safety, giving attention to the actual conditions of traffic issues that exist in each period and regions.



Global Safety Slogan

Safety for Everyone

Honda dreams of a collision-free mobile society where our customers, and everyone sharing the road, can safely and confidently enjoy the freedom of mobility.

*1 Anthropomorphic models used to reproduce the human body's kinematics during vehicle-to-pedestrian collision with the aim of identifying parts of the vehicle body most often resulting in injuries and reducing pedestrian head injuries during the collision with a vehicle. The current third-generation dummies have more "realistic" neck, back and thighs in addition to the head, thus offering more accurate pedestrian kinematics after a collision and allow realistic collision analysis.

*2 A safety body structure that efficiently distributes and absorbs frontal crash energy through the engine room. It offers significantly greater occupant protection and reduces damage to the other impacted vehicles.

Basic Approach

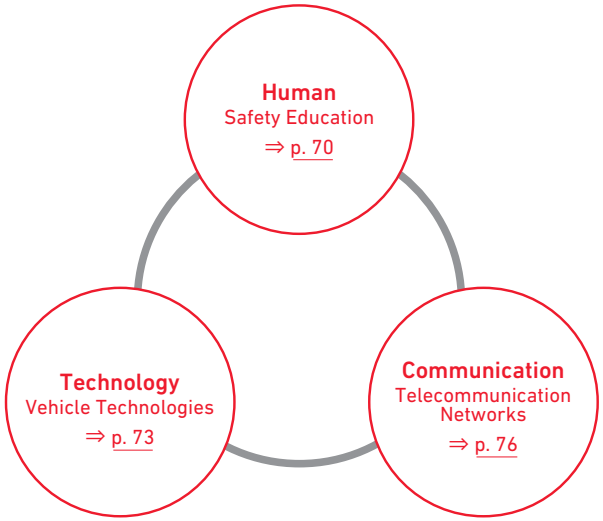
Direction of Activities

Honda is conducting safety promotion activities in three areas: "Human (Safety Education)," "Technology (Vehicle Technologies)" and "Communication (Telecommunication Networks)" with the aim of realizing a collision-free mobile society.

However, issues concerning the traffic environment are diverse and vary from region to region, such as the over-concentration of traffic or poor infrastructure. Against this backdrop, Honda is rolling out initiatives that combine the three areas of "Human," "Technology" and "Communication" in line with the actual conditions existing in each region.

In Thailand, for example, safety measures are an urgent challenge due to the high percentage of motorcycle riders among the number of traffic fatalities in particular compared with other parts of Asia. In response, Honda decided to conduct a detailed investigation from 2016 to 2020 to collect and analyze information on around 1,000 traffic accidents in Thailand. The investigation, still ongoing as of the end of FY2019, first pinpoints the fundamental cause of each accident. Based on the knowledge accumulated, Honda plans to develop activities to promote more suitable safe driving practices in the area of "Human" and connect this to the development of more effective safety-related technology in the area of "Technology." This initiative is being expanded gradually in the respective regions of Asia and Oceania.

Three areas of safety promotion activities



safety

Safety Initiatives

Human (Safety Education)

Honda's Approach

In 1970, Honda established the Driving Safety Promotion Center. Since then, through cooperation with Honda Traffic Education Centers*, motorcycle/automobile/power product dealers, local corporations and schools, we have provided traffic safety education and training for drivers and riders to more than 6.47 million customers in Japan.

The basic ideas behind Honda's activities are based on "To pass on safety education from person to person," which focuses on people, and "To provide participatory hands-on education," in which people can experience hazards in a safe environment. These activities are based on three pillars. The first pillar is "Instructor Training," which nurtures instructors who will be responsible for traffic safety education. The second is "Opportunity Creation," which provides people with opportunities to think and learn about traffic safety. The third is "Software Development," in which educational programs and equipment are developed to help increase learning effectiveness.

With regard to overseas activities, since Honda started driving safety promotion activities in Brazil in 1972, it has carried out activities in 39 countries and regions throughout the world including Japan, establishing Traffic Education Centers in various countries and cooperating with local dealers. Of those countries, emerging countries in particular contain areas where regulations, traffic rules and road infrastructure are not yet ideal despite the fact that motorization is rapidly progressing. As such, an increase in the number of fatal traffic accidents has become a social issue. Therefore, Honda is strengthening its activities in coordination with the applicable countries and the relevant people in local governments.

Countries and regions where traffic safety education and driving training are conducted

* Honda facilities where internal and external instructors on traffic safety are trained and driving safety education is provided to corporations, schools and individual customers

safety

Safety Initiatives

FY2019 Activities

In FY2019, toward the realization of a "collision-free mobile society" as stated in the 2030 Vision, Honda evolved its activities in accordance with changes and the needs of traffic society in a new era on the basis of "passing on safety education from person to person" and "providing participatory hands-on education."

"Honda Sensing" is a suite of advanced safety and driver-assistive technologies encompassing the Collision Mitigation Braking System (CMBS) and the False Start Prevention Function. In order to increase its use, it is crucial for customers to correctly understand its abilities and limitations. In 2018, as one effort in this area, Honda started providing advanced safety coordinator training for automobile dealers mainly at its Traffic Education Centers. The staff members who have participated in the training now host test-ride events for customers in their respective regions.

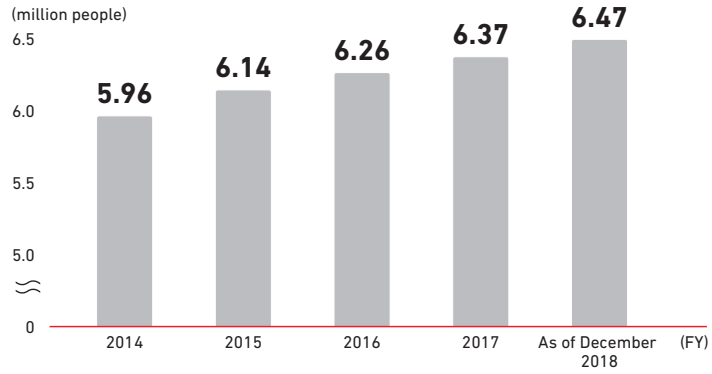
The Suzuka Circuit Traffic Education Center has been providing a program that checks the driver's driving habits since 2017. Using Honda's original driving evaluation system called Honda Driving Style Proposal (HDSP), the program is provided as part of safe driving training held at the Center for corporate and other customers. Honda also developed a simplified USB-type measuring device to collect pre- and post-training driving data and started verifying improvements in participants' driving behavior in 2018.

For protecting children from pedestrian accidents, Honda developed an educational program for early elementary school students in 2017, which has since been providing the program nationwide.

In 2018, Honda also developed a new program for the parents and guardians of small children to help them recognize the importance of traffic safety education at home. The program aims to enable parents of preschoolers to think about what they should do to protect their children. By asking them how to walk safely on a street and why it is important to wear a helmet when riding a bicycle and use a child seat when driving a car, the program is designed to facilitate recognition and understanding among parents.

Program for the parents and guardians of small children and the training using the program

Participation in traffic safety promotion activities in Japan (total)



safety

Safety Initiatives

Additionally, Honda's Safety Map integrates three types of information collected through its "Internavi" car navigation system: areas prone to emergency braking; high-accident locations based on traffic accident data; and online posts on road hazard information by local residents. The Map has been used by the police and road management authorities, actually leading to road improvements and contributing to lower traffic accidents. In 2018, an agreement relating to the promotion of traffic accident prevention measures was concluded with Shiga Police Headquarters.

As one of the ongoing efforts to help people with higher cerebral dysfunction to resume driving, Honda provided support for collaboration between the Authorized Drivers School Association and Association of Occupational Therapists in the respective prefectures of Kumamoto and Kagoshima in 2018. Honda has been supporting each region in Japan to autonomously enhance their help toward people trying to resume driving.

In the area of devices for traffic safety education, Honda fully revamped its Riding Simulator in 2017. The updated, lightweight and compact simulator with an improved representational ability to provide better hazard prediction education has been well received and used by many driving schools.

Overseas, Honda Motor (China) Investment Co., Ltd. (HMCI), a Honda subsidiary in China, started internal training to nurture motorcycle chief instructors with the aim of reducing traffic accidents in China.

A.P. Honda Co., Ltd, a Honda affiliate responsible for distributing Honda motorcycle products in Thailand, has posted Accident Prediction Training (APT) animation on its website as a new initiative to help more people learn about hazard prediction. Honda provided advice on the APT animation production based on its accumulated know-how on hazard prediction training.

TOPICS

Launching Development of a New Educational Program for Elderly Drivers

The most common cause of traffic accidents involving elderly drivers is inappropriately performed driving operations, such as confusing the gas pedal for the brake pedal. In response, Honda started developing a new educational program targeting this age group. The program encourages them to look at their everyday safety awareness and driving behavior and to recognize the importance of safety actions that are necessary to prevent accidents. Honda conducted the program on a trial basis at its car dealers in 2018, and after repeated testing, intends to launch and increase the use of the program in and after April 2019.

Program sessions with elderly drivers at a car dealer

Conducting Training in Japan to Nurture Instructors in China

Honda Motor (China) Investment Co., Ltd. (HMCI), a Honda subsidiary in China, started holding training to nurture motorcycle chief instructors to help reduce traffic accidents in China at the Active Safety Training Park within the Twin Ring Motegi circuit in Japan. The program aims to have these chief instructors provide training for dealer staff to cultivate safe riding instructors.

Training to nurture chief instructors

Safety Initiatives

Technology (Vehicle Technologies)

Honda's Approach

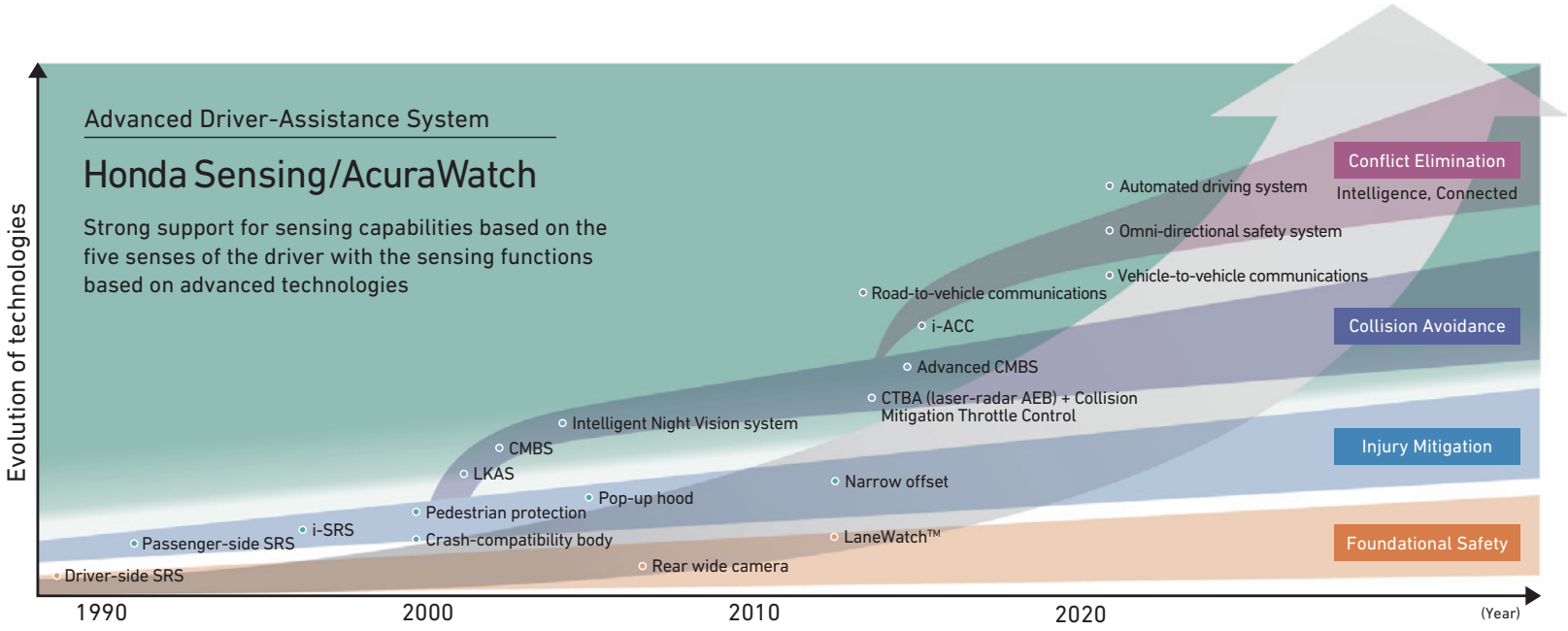
Honda has engaged in the development of safety technology focusing on real traffic and collisions involving multiple types of road users. The Company is dedicated to developing safety technology, consistently setting higher targets often exceeding requirements in a spirit that "if it does not exist, we will make it."

The Company has been developing and commercializing safety technologies one after the other. In 1998, Honda developed the world's first pedestrian dummies, while it built the world's first indoor, all-weather omni-directional crash test facility in 2000. In 2003, Honda developed the crash-compatibility body and the world's first Collision Mitigation Brake System (CMBS).

In 2014, the Company announced "Honda Sensing/AcuraWatch," new advanced safety and driver-assistive technologies. "Honda Sensing/AcuraWatch" is a general term for advanced safety technologies that will lead to automated driving technologies in the future. It assists the driver from normal driving to collision avoidance based on information on the surroundings of the vehicle, collected through the use of sensors and other elements.

Honda will steadily continue to develop technologies as indicated in the roadmap for safety technologies for automobiles (see the diagram below), with an aim to realize "a collision-free mobile society" where anybody using the road can do so in safety.

Roadmap for safety technologies



Safety Initiatives

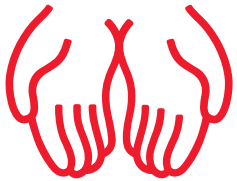
FY2019 Activities

The "Honda Sensing/AcuraWatch" advanced safety and driver-assistive system continues to be used in an increasing number of models since its launch in the three regions of Japan, the United States and Europe in 2015.

In Japan, Honda has installed this system in more models in the mini-vehicle and compact vehicle categories, such as the N-BOX, Grace and Shuttle, and has been increasing the number of models offering the system as a standard feature. The N-VAN, released in July 2018, is the first model among Honda's van-type mini-vehicles to adopt "Honda Sensing" as standard in all available models*.

In the United States, almost all models are now offered with Honda Sensing, including the Fit and HR-V (Vezel in Japan) in the compact vehicle category. In April 2018, accumulated sales of vehicles equipped with the system reached the one-million mark. Honda aims to install Honda Sensing in all vehicles sold in the United States by 2022.

Also, Honda has been increasing the use of the system by equipping it on the Jazz (Fit in Japan) and HR-V in Europe, Fit in China and CR-V in Thailand.



* A version without Honda Sensing is also available in some types.

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Safety Initiatives

TOPICS

Participated in the ITS Asia-Pacific Forum Fukuoka 2018 in May 2018

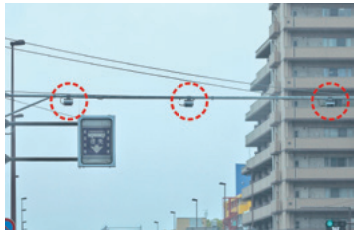
An Intelligent Transport System (ITS)*1 helps to resolve problems related to road traffic by connecting roadside infrastructure, vehicles and drivers. Under its global safety slogan, "Safety for Everyone," Honda has been working to realize an ITS to provide safety and security to all road users.

From May 8 to 10, 2018, Honda participated in the 16th ITS Asia-Pacific Forum Fukuoka 2018, the largest ITS promotion event in the Asia-Pacific region.

At the event, held for the second time in Japan in 22 years, Honda presented its efforts concerning technology development for an autonomous safety and driver-assistive system as well as its commercialization and promotion of widespread use. The exhibition also included its technologies for automated highway driving.

An on-road test-ride event was also held in Fukuoka City. The event used the Accord, the world's first Traffic Signal Prediction System (TSPS)*2 compatibility car on the market, and provided visitors an opportunity to experience Honda's safety and driver-assistive system.

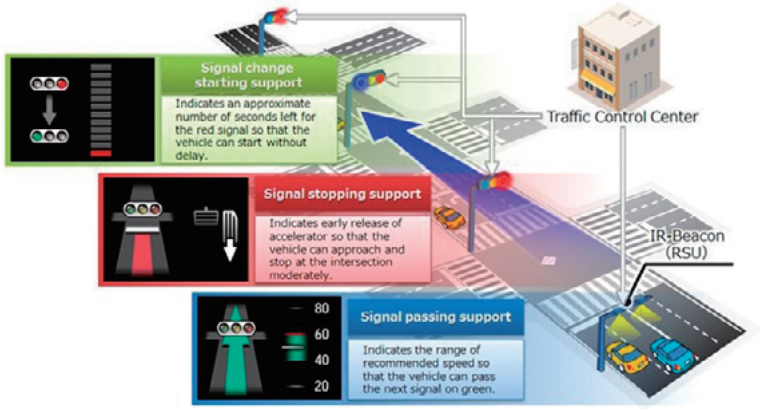
Through academic conferences, technology exhibitions and other opportunities, Honda will continue to present its safety efforts to a broad audience, including policymakers and experts both in and outside Japan. Such efforts include the development of vehicle-infrastructure cooperative support systems and safety initiatives using telematics. While collaborating with external partners involved in road traffic, Honda intends to gain a greater understanding of its activities that aim to create a better traffic environment.



Advanced infrared (IR) beacons installed in Fukuoka City

Multi-information display to show guidance to drivers to maintain speed or slow down based on traffic signal data

TSPS operation



Honda's exhibition booth

TSPS test-ride

*1 A system to pass information between drivers, roadside infrastructure and vehicles to resolve issues related to road traffic, such as accidents, traffic jams and environmental measures

*2 A system to provide drivers with appropriate information based on traffic signal timing data from advanced IR beacons installed along the road. It helps to facilitate crossing an intersection and prompt starting as the signal changes to green.

safety

Safety Initiatives

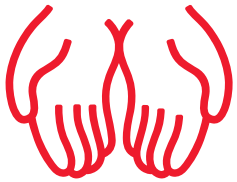
Communication (Telecommunication Networks)

Honda's Approach

In 1998, Honda started to offer "Internavi," a car navigation system equipped with communication functions that provides information on traffic congestion through the use of driving data gathered from Honda vehicles. In addition to the usefulness mentioned above, Honda started to offer weather information in 2004 and disaster information in 2007. By utilizing the telematics service that integrates communication and information, the Company has started to provide drivers with information that will help them drive more safely and more comfortably.

In Japan, as one form of progress from these initiatives, Honda has created a "Safety Map" currently used by many people. Various information, such as emergency braking applied by cars, information on traffic accidents provided by the police and local governments, traffic information provided by local residents and other relevant information, is integrated and analyzed to generate the Safety Map. The Map tells local residents and drivers in advance about places on the road that require special caution.

In addition, Honda is currently focusing on building a system to integrate Honda Sensing/AcuraWatch technologies and the telematics service. The system will provide information on traffic conditions and traffic accidents risks on a real-time basis using wireless communication such as Wi-Fi to connect vehicles equipped with sensors or GPS and smartphones carried by people in the surrounding areas. Honda is striving to realize "a collision-free mobile society" where everyone sharing the road can safely and confidently enjoy the freedom of mobility.



Safety Initiatives

TOPICS

Feasibility Testing of Smart Intersection Technology in Marysville, Ohio

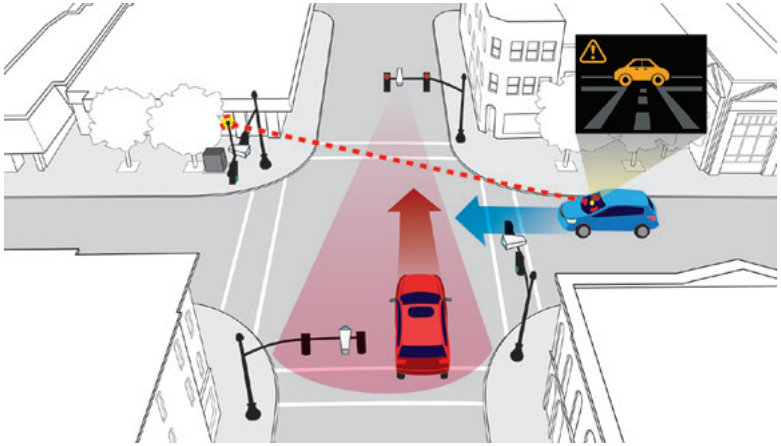
Since October 2018, Honda R&D Americas, Inc. (HRA), Honda's research and development subsidiary in the United States, has been carrying out a feasibility test of V2X communication to reduce traffic collisions at an intersection in Marysville, Ohio. The test has been promoted in partnership with the City of Marysville as part of the 33 Smart Mobility Corridor Project, to which the City and the State of Ohio had applied and been accepted by the Department of Transportation.

In the feasibility test, HRA has set up a "Smart Intersection" system, consisting of advanced cameras and dedicated short-range communications (DSRC) devices, at an intersection in Marysville and installed DSRC devices and driver displays in 20 of its vehicles. HRA plans to further increase the number of connected vehicles in the future.

One notable characteristic of the Smart Intersection system is that it is capable of providing connected vehicles with location and alert information on both connected and unconnected vehicles. It detects approaching objects, such as emergency vehicles and pedestrians, and warns the driver through an cooperative network. The system is designed to help prevent traffic accidents, including collisions at roadway intersections.

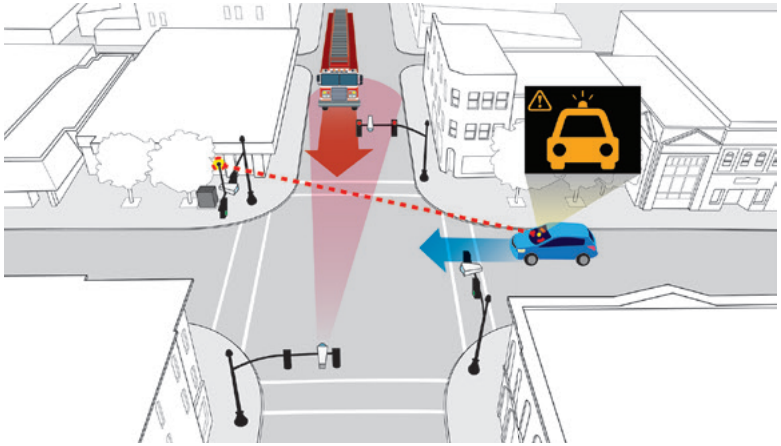
Intersection collisions account for roughly 50% of all collisions and 20% of traffic fatalities in the United States. Honda believes that V2X technology will play a key role in realizing a zero-collision society and that their evolution will provide a safer traffic society.

Detecting a Red-Light Runner



The system senses the speed and direction of vehicles approaching the intersection from all directions. A connected vehicle can warn the driver of a potential collision if likely to occur, such as in a red-light-runner scenario.

Detecting an Emergency Vehicle



The system visually detects when an emergency vehicle's light bar is activated and broadcasts that status. Nearby connected vehicles can warn the driver before the driver may see or hear the emergency vehicle.

Third-Party Evaluations

Honda's Approach

Many of Honda's models have achieved high safety assessments from NCAP*1 in various regions. In Japan, the N-VAN was evaluated as "ASV+++"*2, the highest rank, in the JNCAP's preventive safety assessment.

Results of key third-party evaluations (tests conducted in FY2019)

Country / Region	Third-party evaluation		Model
Japan	JNCAP	5 ★	Odyssey
		ASV+++	N-VAN / CR-V / Insight
Europe	Euro NCAP	5 ★	CR-V
China	C-NCAP	5 ★	CR-V
	C-IASI*3	GGG	Accord
U.S.A.	NCAP	5 ★	Insight / RDX
	IIHS*4	TSP+	Insight / RDX
		TSP	HR-V / Pilot
Australia	ANCAP	5 ★	Performance not evaluated in FY2019
Southeast Asia	ASEAN NCAP	5 ★	Performance not evaluated in FY2019
Latin America	Latin NCAP	5 ★	Performance not evaluated in FY2019

*1 This refers to New Car Assessment Program. This is a program that tests and evaluates the safety performance of cars, which is performed by public organizations in various regions. Testing and evaluation methods are different for each region. Ratings range from 0★ to 5★ (5★ is the highest rating in some regions).

*2 This refers to Advanced Safety Vehicle. Advanced safety performance, which includes the technology for automatic braking when a collision is not avoidable, is tested and evaluated. The four levels of ASV, ASV+, ASV++ and ASV+++ are used to assess the vehicles.

*3 This refers to China Insurance Automotive Safety Index. It tests and assesses the safety performance of vehicles, in which the four grades of G (excellent), A (good), M (general) and P (poor) are used. The purpose of the assessment is to improve the safety of vehicles and reduce the insurance premium.

*4 The organization conducts the car assessment that tests and evaluates the safety performance of various cars. IIHS only awards TSP and TSP+ to vehicles that achieved excellent test results. TSP refers to Top Safety Pick.

TOPICS

N-VAN Receiving the Highest Rating in the JNCAP's Preventive Safety Assessment

The N-VAN achieved the highest rating in the JNCAP's FY2019 Preventive Safety Assessment (ASV+++). The N-VAN earned a perfect score in the test for a collision damage mitigation brake system that detects pedestrians (at night with street lighting), a new category added to the FY2019 assessment.

N-VAN

Honda CR-V Sold in the United States Receiving the Highest Pedestrian Detection and Crash Prevention Ratings from IIHS

The Honda CR-V earned the highest rating in the Insurance Institute for Highway Safety's (IIHS) pedestrian detection and crash prevention assessment of small sports utility vehicles (SUV).

IIHS performed the testing for the first time with the goal of reducing pedestrian crashes. The result was announced in February 2019.

According to IIHS, pedestrian fatalities in the United States has increased by 45% compared with 2009 when the number reached the lowest point, and 5,977 people were killed in car crashes in 2017. IIHS believes that "autobrake systems that can detect and brake for pedestrians are one important countermeasure to address the problem."

Honda CR-V undergoing a pedestrian dummy test (photo courtesy of IIHS)