Safety

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Our Fundamental Concept of Safety

Since the establishment of JR East, safety has been our top management priority, and we have worked relentlessly to heighten our levels of safety. Our earnest efforts to learn from unfortunate accidents in the past have enabled JR East to further the prevention of future accidents with our continued developments in both tangible and intangible aspects. To further reduce potential risk, JR East is committed to steadily improve tangible countermeasures and also to ensure that each one of its employees takes all possible intangible measures.

Pursuit of safety measures can never end. We will continue to work tirelessly to improve safety by pursuing a goal of "zero accidents involving passenger injuries or fatalities and zero accidents involving employee fatalities (including all people involved with railway-related work, including JR East, Group companies, and partner companies)."

General principles of safety

JR East has prescribed General Principles of Safety for the code of conduct for its safety-related employees.

I. Safty is the most important mission in transportation.

II. Ensuring safety is based on exact observance of rules and procedures, and is achieved through constant practice.

III. Enforcement of confirmation and complete contact is most important for ensuring safety.

IV. For ensuring safety, we should cooperate together and go beyond our official responsibility.

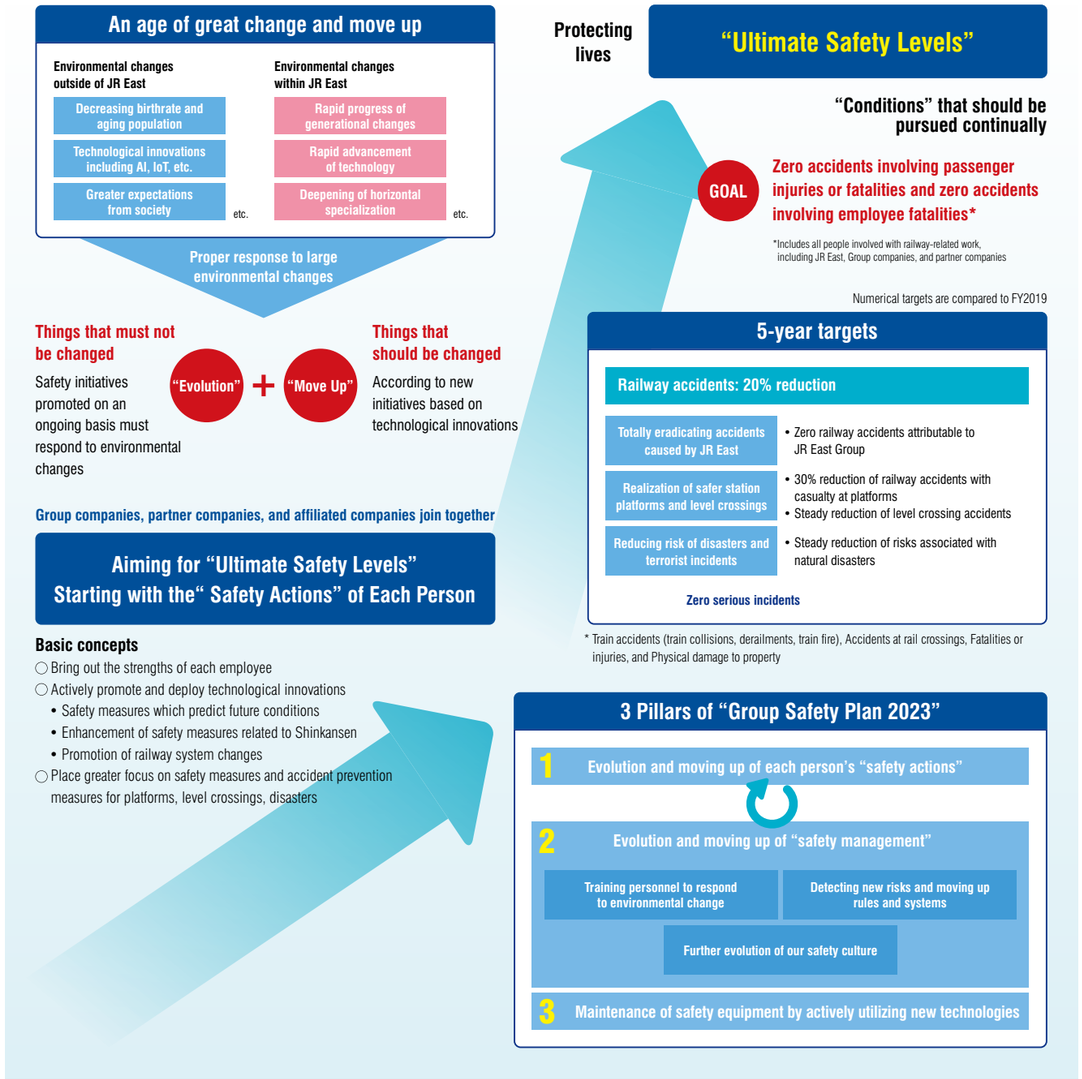
V. When we have questions or must choose among several options, we should remain calm, think by ourselves, and take the safest course after thorough consideration.

Group Safety Plan 2023

Since our establishment, JR East has been implementing a series of 5-year safety plans. In November 2018, we formulated Group Safety Plan 2023, which is the 7th plan. Together with JR East Group companies, partner companies, and affiliated companies, JR East as a whole group will aim for "Ultimate Safety Levels" starting with the "Safety Actions" of each person.

JR East "Group Safety Plan 2023" consists of two building blocks: "Evolution" and "Move Up", which are based on 3 Pillars:
1 Evolution and moving up of each person's "safety actions",
2 Evolution and moving up of "safety management", and
3 Maintenance of safety equipment by actively utilizing new technologies. In consideration of rapid environmental changes both within and outside the Group, we will take specific measures to properly respond to these environmental changes.

Overview of "Group Safety Plan 2023"



https://www.jreast.co.jp/e/data/pdf/group_safety_plan.pdf

Further evolution of our safety culture

The safety culture which JR East Group has continually placed great value on, including the"5 Cultures," "CS (Challenge Safety) Activity," and "Three Actualities Principle," is the foundation of various safety initiatives.

Stop the train if we feel something is dangerous

Safe and stable transport is important for our railways. Safety means protecting lives, while stability means ensuring on-time operations of our trains. However, though stable transport is important for us, safety comes first. Trying too hard to keep to schedule sometimes results in not properly following safety confirmation procedures, which leads to risking the safety of train operations.

To secure the safety of our railway operations, the whole JR East Group will always follow our firm code of conduct to "Stop the train if we feel something is dangerous."

Our Fundamental Concept of Safety

Further ingraining the 5 Cultures

A culture of proper reporting

The prompt and proper reporting of accidents and incidents, and the prevention of the recurrence of accidents.

A culture of noticing

The recognition and sharing of information regarding the potential sources of accidents in order to prevent accidents and incidents.

A culture of direct confrontation and debate

The open and honest discussion and exchange of opinion in investigating the causes of accidents and incidents in order to identify the causes of accidents and to take truly effective countermeasures against their recurrence.

A culture of learning

The continuous awareness of others, learning from accidents and incidents which occur in all places of work, not just in one's own workplace, and the implementation of appropriate countermeasures.

A culture of action

Safety can be ensured only by taking safe actions.
Think and act by yourself. This is at the core of our safety.

Challenge Safety Activity (CS Activity)

We encourage all employees to be autonomous (take the initiative) in taking charge of safety, and we promote initiatives to share in safety-related deliberation in the workplace.

Through our CS Activity, we aim to change our emphasis from "reactive safety" to "proactive safety", such that each employee thinks about safety and acts autonomously. We cultivate a culture of ongoing efforts to enhance safety, where individual employees are aware of safety, and where field sites, branch offices and the head office, are united in the process of discussing safety and formulating safety measures.

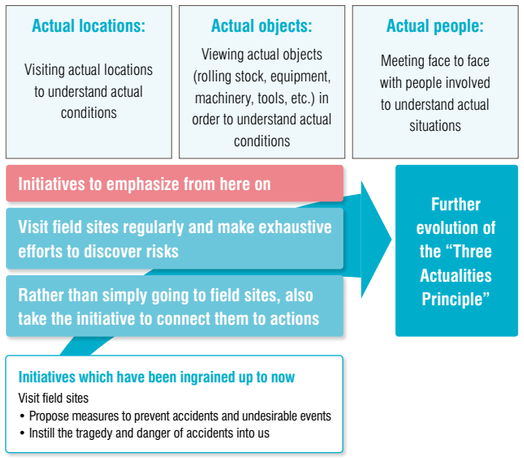
To share information useful to this activity, we publish a monthly safety newsletter, "*Challenge Safety Aoshingo*," and distribute it to all employees.

The "Three Actualities Principle"

Accidents and incidents always occur at the Genba*. This means that the sources of accident prevention can also be found at the Genba.

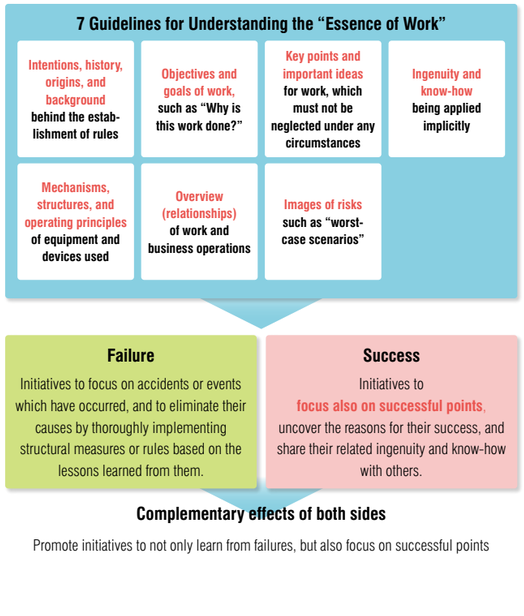
JR East Group continues to search for answers which cannot be found on paper, based on the "Three Actualities Principle" as its standard for action: actual locations, actual objects, and actual people.

* Genba: "Genba" means actual locations, objects, and people directly related to the safety of our operations including points of contact with our customers and fields or workplaces of transport or services.



Facilitate understanding of the "essence of work"

To properly respond to large environmental changes, rather than merely learning the procedures and methods of work, we must be conscious of the "7 Guidelines" which include the purposes of work, the origins of rules, and the operating principles of equipment, to deepen our understanding of the "essence of work."



JR East's Safety Management Organization

Safety management regulations

In response to a revision of the Railway Business Act, JR East formulated its safety management regulations in Oct. 2006. These stipulate various safety management-related matters such as the responsibilities of top management executives in ensuring the safety of operations and on organizational matters and the selection of chief safety management officers, operation managers, and train crew training managers. To ensure transportation safety, we have built a system to promote operations centered on safety management officers and involving executives involved with safety.

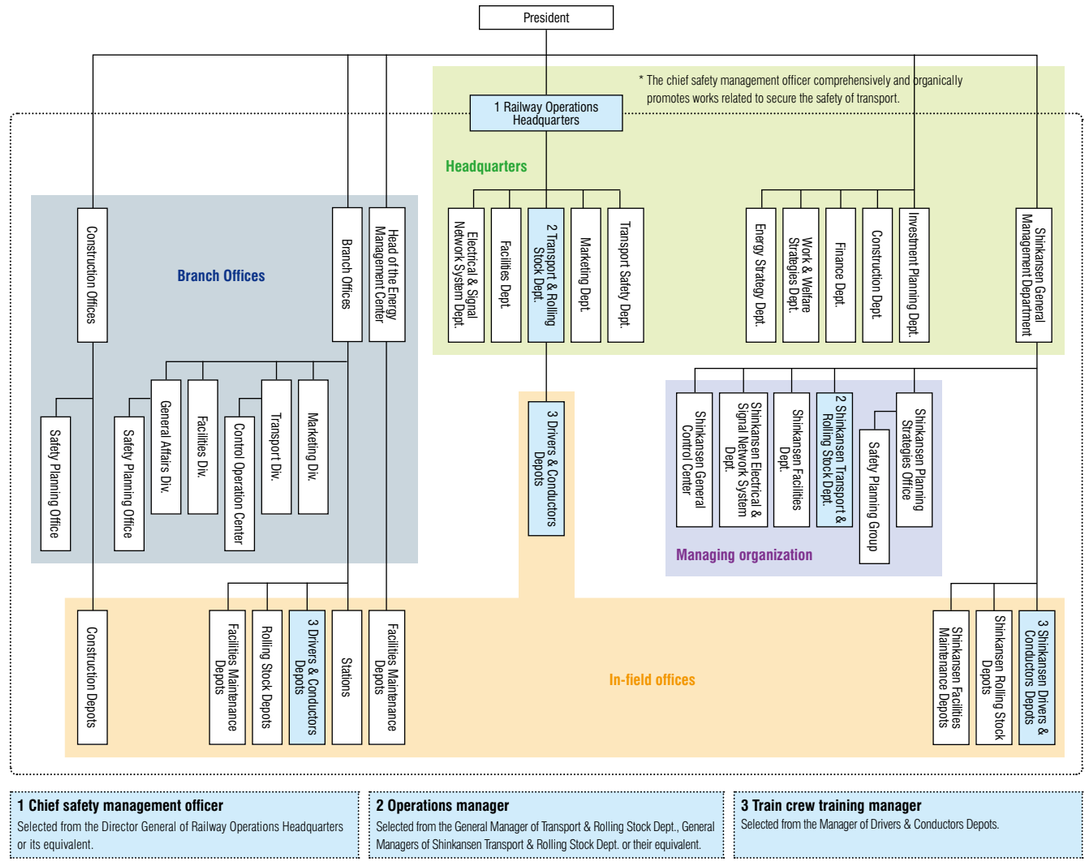
In April 2019, we established the Shinkansen General Management Department to integrate and specialize in managing Shinkansen-related operations.

Structures to Promote Safety Measures

In 1987, we established the Railway Safety Promotion Committee, chaired by the director general of The Railway Operations Headquarters, at the Head Office. This committee aims to enhance rail safety and prevent accidents by elucidating the causes of major accidents, formulating measures to prevent recurrence, and determining and promoting measures for safety-related equipment and rolling stock.

We also have Regional Safety Promotion Committees, which are chaired by the heads of the Shinkansen General Management Department, branch offices, and construction offices. These committees enhance railway safety at branch offices and seek to prevent accidents. They also liaise with the Rail Safety Promotion Committee to conduct specific measures.

Management structure for transport safety



1 Chief safety management officer
Selected from the Director General of Railway Operations Headquarters or its equivalent.

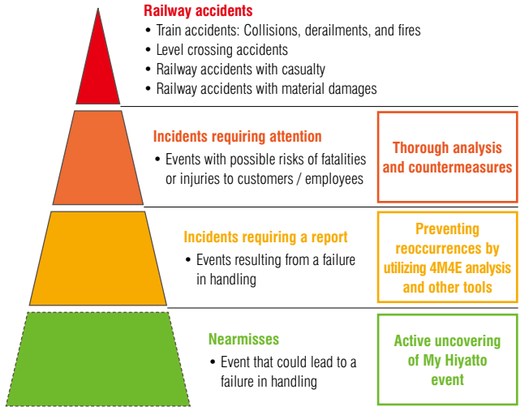
2 Operations manager
Selected from the General Manager of Transport & Rolling Stock Dept., General Managers of Shinkansen Transport & Rolling Stock Dept. or their equivalent.

3 Train crew training manager
Selected from the Manager of Drivers & Conductors Depots.

JR East's Safety Management Organization

Rules for reporting accidents and incidents

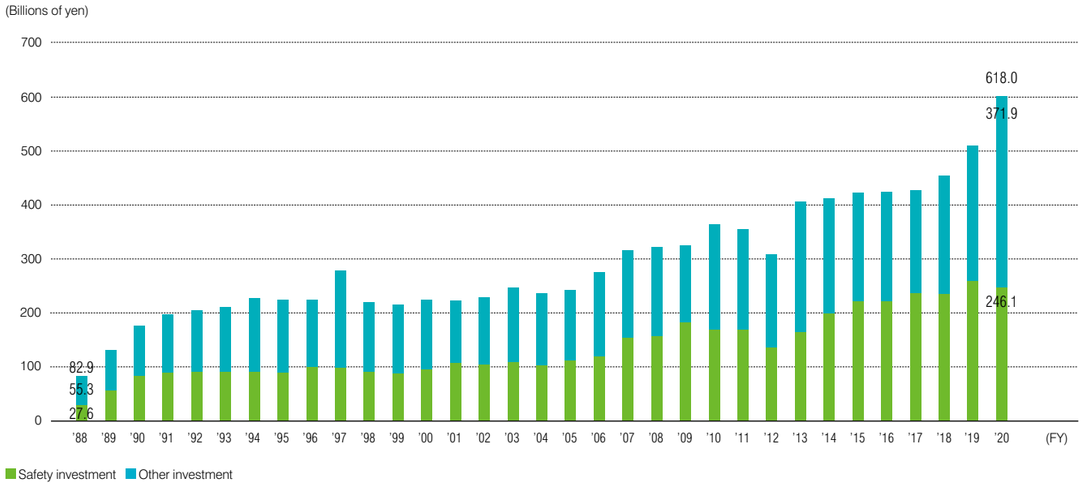
We endeavor to accurately understand accidents and incidents, analyze their causes, and implement measures to prevent them from occurring and recurring. To this end, we work to further enhance safety through accident reporting and by establishing rules pertaining to classes of accidents.



Investment in safety facilities

JR East has invested more than 4.5 trillion yen in safety since its establishment. In its Group Safety Plan 2023, JR East plans to invest approximately 1.2 trillion yen in safety measures during the five years from FY2020 to FY2024. We will continue to focus on putting safety facilities in place. At the same time, we will more actively embrace new technologies and respond to new risks.

Trends in safety investment



Efforts to Further Improve Safety Levels

Fostering safety-oriented personnel

Safety education and training

To heighten safety awareness among employees by placing priority on safety education and training, JR East is offering educational and training opportunities to its employees at the JR East General Education Center (Shirakawa City, Fukushima Prefecture) and General Training Centers (branch offices), and on-the-job training in each workplace.

The JR East General Education Center offers group training for personnel development and improvement of knowledge and skills, fostering the development of new train crews and also providing the necessary training for job transfers.

JR East General Education Center

Practical drills on training tracks

Accident History Exhibition Hall

In November 2002, we established the Accident History Exhibition Hall within the JR East General Education Center. This facility provides opportunities for all employees to learn about and reflect on the tragedies of past accidents and the major social responsibility railways bear. In October 2018, we expanded the Accident History Exhibition Hall and placed on exhibit the rolling stock involved in a 2014 accident involving a derailed Keihin-Tohoku Line train at Kawasaki Station, as well as a road-rail vehicle. We also opened the Interactive Learning Hall to encourage consideration from various perspectives of the train derailment accidents.

Accident History Exhibition Hall

Promoting the use of educational and training facilities

As one aspect of its efforts toward training personnel to respond to environmental change, JR East is promoting the establishment of educational and training facilities that facilitate an understanding of the "essence of work."

By the end of FY2020, we had installed crew member simulators in all transport-related workplaces. We also opened the Shinkansen Education and Training Center, which is related to the equipment of the Shinkansen, to learn knowledge about the specific rules and mechanisms of the Shinkansen.

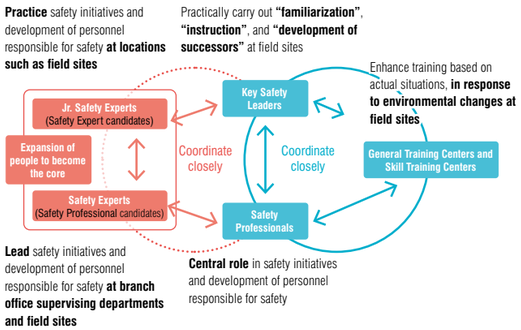
In addition, at each branch office we have educational facilities for learning about major incidents and accidents that occurred within that branch office's jurisdiction, looking at preceding events and countermeasures. We are promoting better safety awareness among all employees of JR East, Group companies, and partner companies to achieve "ultimate safety levels".

Crew member simulator bringing the training experience to life by using actual video

Safety Tradition Museum at the Mito Branch Office

Development of personnel responsible for safety

We are responding to the rapid transition to the next generation of employees by moving forward on a variety of initiatives that emphasizes cultivating employees that put safety at the core.



Safety storytellers (Narrators of Oral History)

To educate employees who can share and pass on safety-related knowledge, leadership, and technological capabilities within the Company, we have appointed highly experienced and technologically capable personnel in various specialized fields as safety storytellers (Narrators of Oral History).

Safety storyteller swearing-in ceremony

The Railway Safety Symposium

To further enhance rail safety, each year we hold the Railway Safety Symposium. We strive to gain knowledge through discussion among domestic experts and share good initiatives at workplaces.

Railway Safety Symposium

Efforts to Further Improve Safety Levels

JES-Net (JR East Safety Network)

As the division of work increasingly progresses among Group and partner companies, the JR East Safety Network (JES-Net) was established to further improve safety levels, given the essential nature of sharing common safety values and cooperation. Membership includes 36 companies. JR East Group continues to promote measures for improvement and share issues to enhance safety levels across JES-Net through safety reviews where frontline staff exchange various opinions on site.

Safety review underway

Initiatives at JR Niigata Railway Service Co., Ltd.

This company uses the Seiunkan, a training center completed in September 2019, to impart knowledge and enhance skills related to cleaning, train driving, and railcar maintenance.

Training session on wheel axle measurement

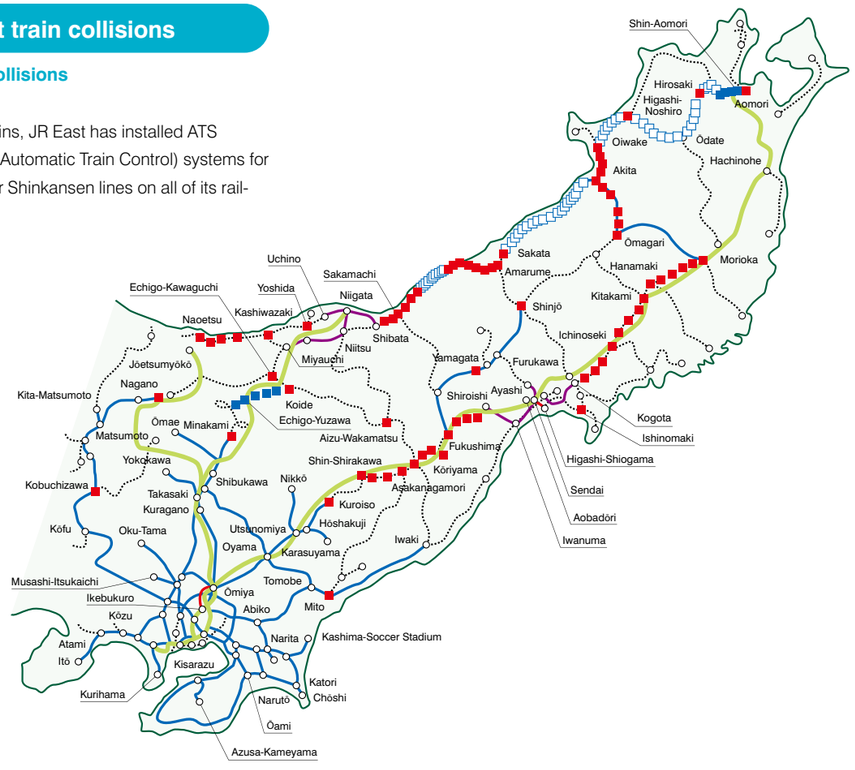
Drivers Training Simulator System

Measures to prevent train collisions

Measures to prevent train collisions

ATS and ATC

To prevent collisions between trains, JR East has installed ATS (Automatic Train Stop) and ATC (Automatic Train Control) systems for its conventional lines and ATC for Shinkansen lines on all of its railway lines.



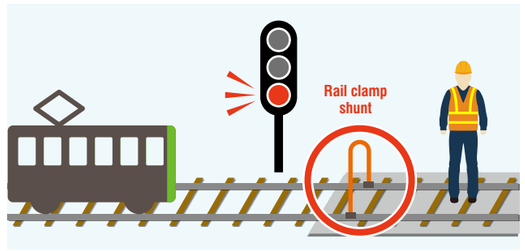
(As of the end of Mar. 2020)

Installation plan for ATS-P and ATS-Ps systems

	Areas for planned installation	Installation status as of the end of FY2020
ATS-P system	Mainly for railway sections with frequent train operations in the Tokyo metropolitan area	Completed installation in 9 major stations and railway sections for 2,405.8km (service km)
ATS-Ps system	Provincial city areas and major railway sections excluding the Tokyo metropolitan area	Completed installation in 72 major stations and railway sections for 210.8km

Dual safety measures

Procedures are in place to close train lines during rail construction, maintenance, and inspection (to prevent cars from entering). In addition, train shunts are used to isolate the area of track being worked on, and traffic signals are set to “stop.” We install this double safety measure as a further precaution to prevent trains from entering the work location in case these other procedures fail.

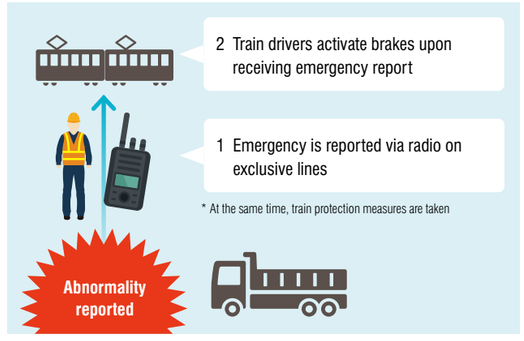


Dual safety measures

Wireless system to help prevent collisions

Following a February 2014 accident involving a derailed Keihin-Tohoku Line train near Kawasaki Station, we installed a wireless system to help prevent collisions. This system supplements the emergency brake in emergency situations. A dedicated wireless terminal is used to notify trains operating in the vicinity when a state of emergency occurs so that conductors can stop their trains. This system is being used on all conventional lines.

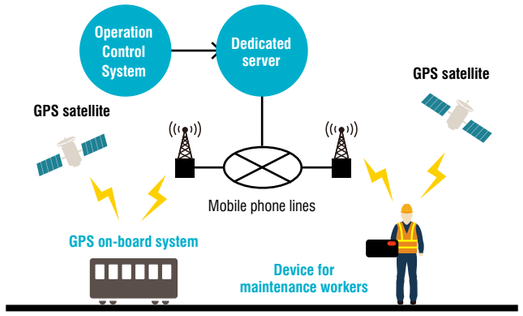
Wireless system to help prevent collisions



Train approach alarm system

Workers are provided with warning devices to communicate the “train approaching” signal. On segments where track circuits are in place, specialized wireless warning devices provide notice that trains are approaching track circuits. On segments where track circuits are undeveloped, we have installed GPS warning devices to communicate train and worker positions.

GPS train approach alarm system



Shinkansen safety measures

In April 2019, we established the Shinkansen General Management Department as a new department for the centralized and dedicated control of Shinkansen-related measures. Through this department, we aim to strengthen our response to and management of unknown risks, training of Shinkansen specialists, maintenance and enhancement of unique technologies, and rapid decision-making.

As Shinkansen-related safety measures, we are steadily performing construction to replace superannuated rail and installing equipment to prevent rails from overturning. To reduce the amount of snow brought in on high-speed sections of the Komachi, we have installed and begun using a trolley snow melting system at Okama Station on the Tazawako Line.

March 2020 marked the opening of the Shinkansen Education Rule and Training Center. This employee safety training facility has crew training simulators at all locations. It also uses full-scale equipment to encourage a better understanding of Shinkansen-specific rule mechanisms.

Furthermore, we are conducting various types of test runs using the ALFA-X test railcar, which is under development with a view to realizing the next-generation Shinkansen.

Shinkansen Education Rule and Training Center

The ALFA-X, a type E956 Shinkansen test railcar

Efforts to Further Improve Safety Levels

Preparedness against natural disaster

Our measures against earthquakes

Seismic reinforcement measures

Since 1993, we have been enacting measures to prevent bridge collapses and seismically reinforce elevated railway track pillars and bridge piers. Since FY2013, following the Great East Japan Earthquake, we have proceeded with measures on sections identified as high-priority. Based on knowledge gained from leading-edge earthquake research, in FY2018 we expanded the countermeasure area and began new reinforcement measures targeting Shinkansen girder seams.

Seismic reinforcement of embankment

Seismic reinforcement of elevated railway tracks

Emergency train stopping measures

We are constructing systems to ensure that high-speed trains can stop as quickly as possible in the event of an earthquake. For the Shinkansen, we have installed seismographs along our railway lines, in coastal areas and inland, to provide early warnings of even minor movements. In addition, we employ earthquake early warnings from the Japan Meteorological Agency and underwater seismograph information from the National Research Institute for Earth Science and Disaster Resilience in our Shinkansen early-stage earthquake warning system.

Using the seismic information provided by this Shinkansen system, we have also installed an early earthquake warning system on conventional lines to provide emergency stop notification if large-scale earthquakes are observed.

Measures to travel path departures on Shinkansen lines

We have measures in place to prevent Shinkansen trains from departing from their path of travel even in the event of derailment due to an earthquake.

L-shaped car guide

L-shaped car guide

L-shaped car guide

Preventing breaks at glued insulation joints

Rail rollover prevention devices

General emergency drills

Every year, we conduct a comprehensive disaster-preparedness drill, assuming an earthquake has struck. These drills are timed around disaster prevention week, which includes September 1. Training includes countermeasure headquarters operational drills, rescue/lifesaving training, and training on evacuation guidance. We conduct such training in cooperation with local government agencies.

Drills to operate an on-site disaster countermeasure headquarters

Drill to rescue passengers with firefighters

Preparing rescue kits and first aid kits

In the case of an earthquake with an epicenter directly beneath the Tokyo metropolitan area, many passengers might be injured and we might need to save the lives of passengers with the help of a limited number of our employees. For a major earthquake, JR East has prepared the following first aid kits and is also conducting drills to give personnel necessary first aid skills.

JR East Japan rescue/lifesaving course

Rescue kits

Measures against tsunami

Before the Great East Japan Earthquake, we had set operational restriction methods and tsunami danger zones for each location, prepared manuals, and were holding study sessions and conducting drills on guiding passengers to deboard trains for evacuation. We believe that these efforts led to the prompt evacuation of passengers away from tsunami danger zones at the time of the earthquake.

Tsunami evacuation manual

Drill to guide passengers to alight from a train for evacuation

Formulating action guidelines for evacuation to avoid tsunami

To prepare for a case when there is no time before the arrival of a tsunami, JR East formulated action guidelines for evacuation during tsunamis for each one of its employees to follow in January 2012.

Action guidelines for evacuation to avoid tsunami

1. At a time of a large earthquake, be prepared for tsunamis. Gather information by yourselves and if communication lines are disconnected, make your own decisions for evacuation. (Do not be afraid to make a mistake.)
2. Once decided to evacuate, by judging the conditions of customers, promptly guide customers to evacuate.
3. In alighting from trains, evacuating and gathering information, ask customers and local people to cooperate.
4. Even after evacuation, go to a higher place without being satisfied and thinking this would be high enough.
5. Stay evacuated with customers and do not return to field offices or trains while tsunami warnings are still issued.

Tsunami evacuation navigation system

Learning from the tsunami evacuation at the time of the Great East Japan Earthquake, we have developed and introduced tools to help crew on operating trains guide passenger evacuations in unfamiliar locations.

Tsunami evacuation navigations

Measures for rainfall

Measures for rainfall

To prevent landslides due to rainfall, JR East takes disaster prevention measures for wayside embankments in all railway sections in accordance with its plans. Especially in the Tokyo metropolitan area and for all Shinkansen routes, we take thorough measures to secure safe and stable transport.

Countermeasures for rainfall

Cutting slope protection (spray framework)

Embankment slope protection (spray framework)

Initiatives to address flooding

Having suffered significant damage due to the impact of Typhoon No. 19 (Hagibis) in October 2019, as overflowing rivers caused damage to railcars on the Hokuriku Shinkansen, we have clarified flood prevention measures. For each railway facility, we consider both tangible and intangible flood countermeasures given an assumed scale of rainfall*1.

For railcars, we have put in place decision standards for railcar evacuation based on the maximum expected amount of rainfall*2.

We are also moving forward with the development and implementation of such indicators in a system to support decisions on railcar evacuation.

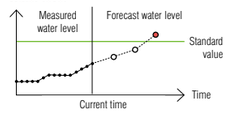
*1 This is the probable maximum level of precipitation stipulated by the Flood Control Act Enforcement Regulations (the level of precipitation used for preparation of river works). The annual probability for this level of rainfall is from one in several tens to one in 200.
*2 This is the maximum level of precipitation stipulated in the Flood Control Act, with an annual probability of around 1/1,000.

Indicators to aid decisions about evacuating railcars

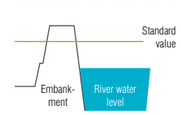
River Water Levels

River water level in railyards

Water level



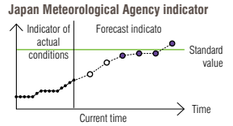
Embankments and Water Levels



Basin Rainfall Index

Indicator quantifying the potential for river flooding near railyards

Japan Meteorological Agency indicator

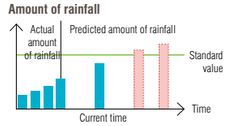


Note: We determine the level of urgency of flood disasters based by comparing the basin rainfall index publicized by the Japan Meteorological Agency with flood warnings and other standard values.

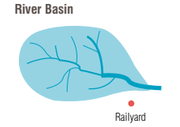
Basin rainfall

Amount of rainfall within the river basin in the upstream area of railyards

Amount of rainfall



River Basin



Note: In addition to these indicators, we use general meteorological information to make a comprehensive decision on railcar evacuation.

Efforts to Further Improve Safety Levels

Protecting against strong winds and gusts

Since a train accident on the Uetsu Main Line in December 2005, we have introduced the major wind-related initiatives described below.

Increased number of anemometers (wind meters)

We typically install multiple anemometers on sections wind-based operating restrictions that are in effect. We have also increased the number of anemometers in locations where windbreaks have been installed. To ensure accuracy, we are also moving toward the installation of dual anemometers.

Installation of windbreak fences

We install windbreaks to protect railcars from the wind.

Uetsu Main Line, between Sagoshi and Kita-Amarume

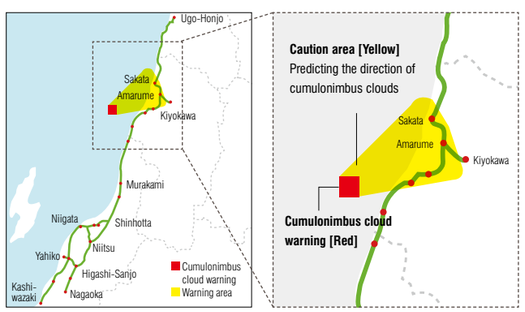
Expanded introduction of the gale warning system

With this system, operations are halted if the values measured by anemometers exceed regulation levels. Wind speed regulations also call for the halting of operations if the maximum predicted wind speed a short time in the future is expected to exceed regulation levels, based on measured values on a time axis. We have installed this system on all sections of conventional lines where wind restrictions are in place.

Utilizing meteorological information for operation control

We have developed a method to restrict operations by using meteorological information, such as rain intensity measured by the Japan Meteorological Agency's weather radar and the agency's nowcasts on the likelihood of tornados, using this information to predict gusts of wind that could be generated by cumulonimbus clouds. We are currently using this system along sections on the Sea of Japan during winter.

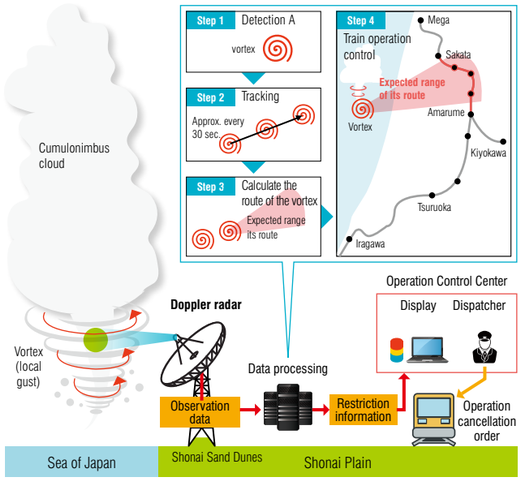
Display of operation control area
by utilizing meteorological information (image)



Operation control method against wind gust using Doppler radar

We have collaborated with the Japan Meteorological Agency's Meteorological Research Institute on a system that detects vortexes by using Doppler radar to measure the movement of raindrops in the air and sounds an alarm if these vortexes come near train lines. We have put in place operating restrictions using this system in winter on the Uetsu Main Line and sections of the Rikuu West Line. We are also expanding the scope of measurement employing operating restrictions and working with the Meteorological Research Institute on research using AI to detect gusts of wind.

Doppler radar observation method



Doppler radar installed at Kuromori, Sakata

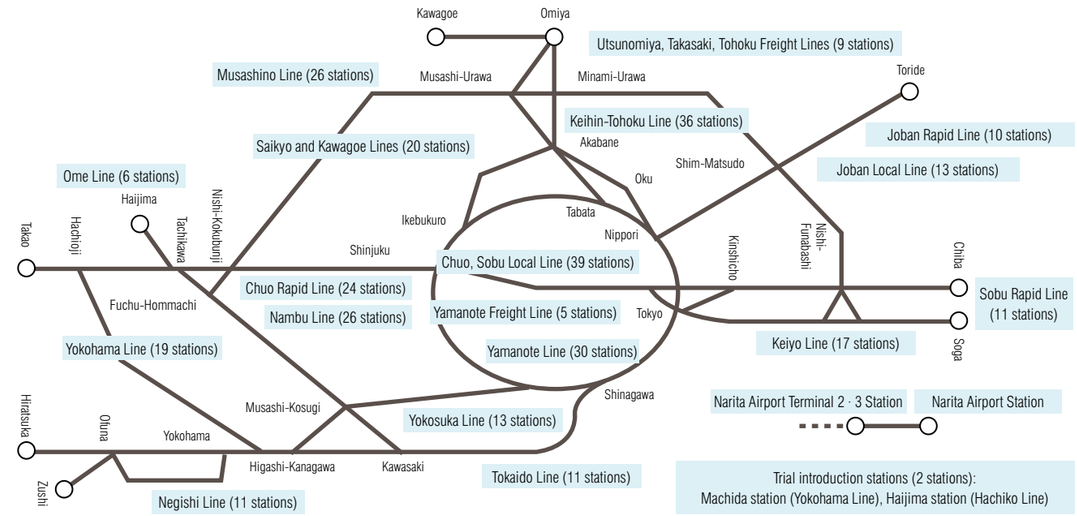
Safety measures at platforms

To prevent accidents involving customers falling from platforms or coming into contact with trains, we are installing platform doors. By the end of FY2020, we completed the installation of platform doors at 48 stations mainly on the Yamanote, Keihin-Tohoku, and Negishi lines (a total of 57 stations* by line).

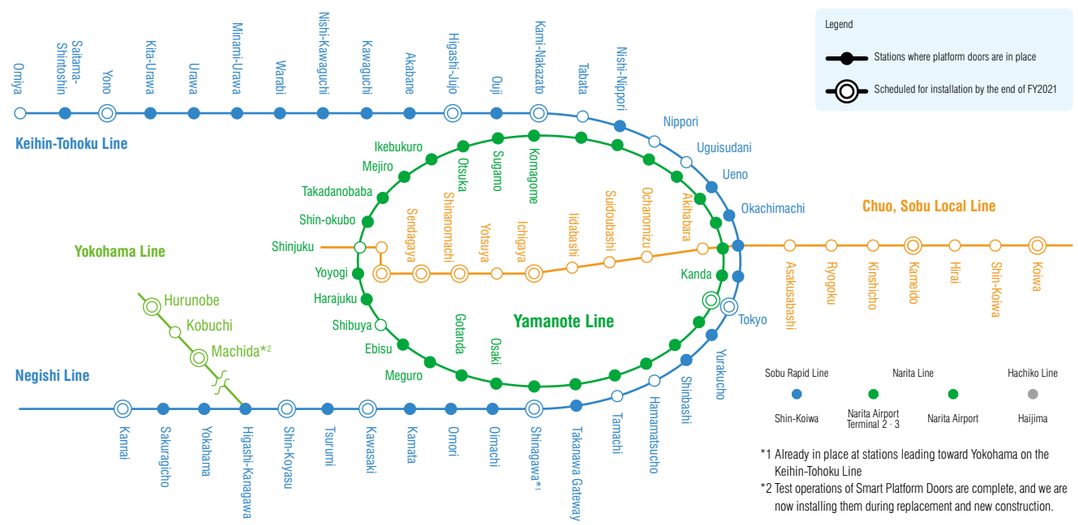
Going forward, we plan to proactively deploy newly developed Smart Platform Doors. As a result, by around the end of FY2033 we plan to have installed platform doors at all the stations on the major conventional lines in the Tokyo metropolitan area (330 stations by line, including the 243 stations where we have completed the installation to date).

* No. of stations is counted by line, e.g., Yurakucho Station is counted as two stations, one for the Yamanote Line and one for the Keihin Tohoku Line.

Railway lines where platform doors are scheduled for installation by the end of FY2033 (as of March 2018)



Stations where platform doors are installed or scheduled for installation in FY2021(as of April 2020)



*1 Already in place at stations leading toward Yokohama on the Keihin-Tohoku Line
*2 Test operations of Smart Platform Doors are complete, and we are now installing them during replacement and new construction.

Efforts to Further Improve Safety Levels

CP (color psychology) lines

Lines use colors that people associate with danger to encourage a visual and psychological connection between danger and the edges of platforms.

Dot-Braille blocks that indicate which direction is away from the edge of the platform

We have designed linear protrusions on the insides of platforms and put in place blocks that make it easy to distinguish platforms' insides from their outsides.

Installation of high-resolution ITVs

We have installed high-resolution monitors for station employees and customers to check.

Fall detection mat

A mat placed on the tracks along the platform detects whether a person has fallen onto the tracks and notifies incoming trains to stop.

Emergency stop buttons on platforms

On platform pillars, we have installed emergency stop buttons so people on platforms can notify drivers, conductors, and station staff of danger.

Platform doors

We are installing platform doors to prevent people from coming into contact with trains or falling onto tracks.

JR East is currently working to install an increased number of emergency stop buttons on platforms and dot-Braille blocks that indicate which direction is away from the edge of the platform.

Moreover, to ask customers for their cooperation in preventing accidents, we are promoting platform zero accident campaigns.

Measures to prevent level crossing accidents

We are working to reduce accidents on roads that cross railways.

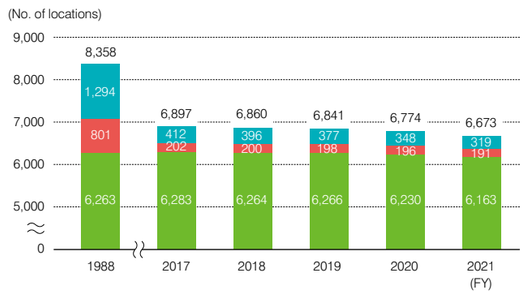
Our efforts to eliminate level crossings

Our principal measure for preventing accidents at level crossings is to eliminate such crossings. We are working with people in local communities to elevate, consolidate, and eliminate tracks. Where eliminating level crossings is difficult, such as for Class 3 and Class 4 crossings, we are converting them to Class 1 crossings.

No. of eliminated level crossings by measures such as the introduction of overhead crossings (excluding those transferred to third sectors)

FY	2016	2017	2018	2019	2020
No. eliminated	18	42	20	17	7

Changes to the number of level crossings (as of April 1st every year)



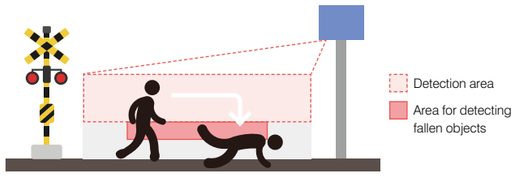
Installing obstacle detectors

To train derailment due to collisions with automobiles (including large ones), we are installing equipment to detect automobiles stuck at level crossings that trains will be passing through.

Our obstacle detectors use 3D laser radar to detect the overall level crossing areas. Going beyond conventional functionality (the ability to detect pedestrians), the new devices feature technologies to detect people who have fallen. We began installing these devices in FY2020 and are steadily increasing their number.

Three-dimensional laser radar obstacle detector

Increasing the Level of Sophistication of Obstacle Detectors with 3D Laser Radar



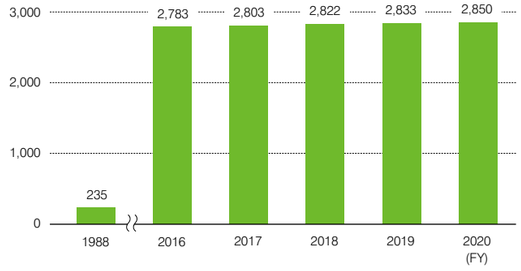
Function for detecting fallen objects

In the past, devices did not detect in certain areas to avoid over-sensitivity, such as detecting small animals. We overcame this shortcoming by adding a function that broadens the detection area around the object in question.

Noise removal function

We added a function to reduce false positives, akin to the process of using snow removal to eliminate floating substances.

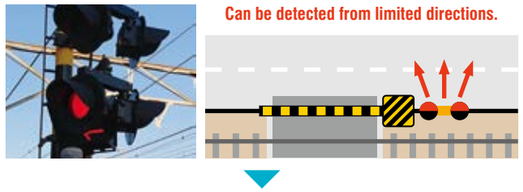
No. of locations with obstacle detectors (as of the end of Mar. every year)



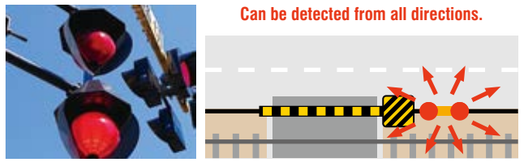
Installing omnidirectional warning lights

Regarding level crossing warning lights to notify the approaching of a train, we are replacing conventional warning lights with omnidirectional warning lights so that they can be easily detected by the elderly with lower sight lines and automobile drivers who enter level crossings from roads.

Conventional warning light



Omnidirectional warning light



Efforts to Further Improve Safety Levels

Level crossing for easier passage

Based on the Act on Promotion of Level Crossings, we are elevating and widening roads at level crossings designated for improvement. In addition, where necessary we are using colored pavements or adopting other approaches for roads that cross railways (such as building pedestrian overpasses), making improvements as dictated by local conditions.

In cooperation with road administrators, we are increasing the width of level crossings and separating crossings for pedestrians from those for automobiles by changing the colors of the roads and walkways.

Initiatives involving Class 4 level crossings

Class 4 level crossings are not equipped with alarms or crossing gates. We are working with local communities to eliminate such crossings or upgrade them to Class 1 level crossings. In addition, as another measure to prevent accidents at level crossings we are erecting signs calling for caution and erecting whistle boards to warn people at crossings of approaching trains.

Class 4 level crossing

Safety efforts with customers and people in local communities

Rather than conducting initiatives on our own as a railway operator, we communicate information to the people who use our services and elicit their cooperation in our efforts to enhance the safety of station platforms and level crossings. We also collaborate with related institutions in conducting awareness activities targeting schools. Each year, we also run campaigns, broadcasting television commercials in the JR East Service area, as well as broadcasting radio commercials jointly with other railway operators.

Level crossing zero accident campaign

Platform zero accident campaign

Holding a level crossing safety lesson

Awareness activity: hands-on simulation of pressing the emergency button at a level crossing

Current Safety Record of JR East

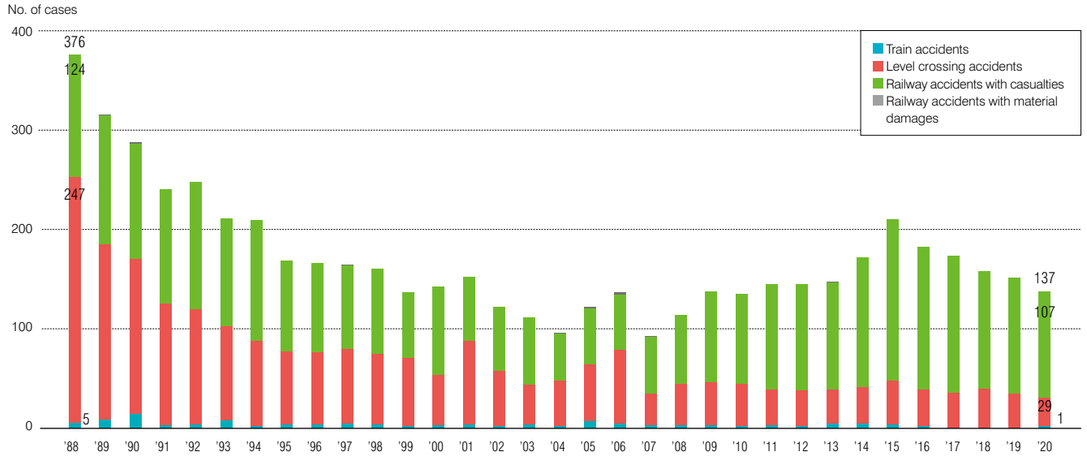
Railway accidents

In FY2020, JR East recorded 137 railway accidents, down significantly from the level at the Company's foundation. "Railway accident with casualty" account for approximately 80 percent of the total number of "railway accidents."

Train accidents	Train collisions, derailments, and train fire
Level crossing accidents	People or automobiles being hit by trains
Railway accidents with casualties	People killed or injured by train operation excluding suicide
Railway accidents with material damages	Accidents causing more than 5 million yen damage to property by train operation

Occurrences of railway accidents

* From the third quarter of FY2014, incidents which could not be determined to be a suicide are involved in accidents at rail crossings or fatalities or injuries.



Train accidents

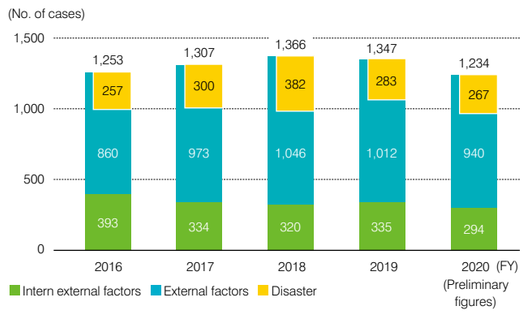
In FY2020, an accident occurred on the section of track between Shibukawa Station and Shikishima Station on the Joetsu Line, when a train hit landslide rubble (including uprooted trees) from a nearby slope, derailing the train.

Transport disorders

JR East recorded 1,234 cases of transport disorder in FY2020.

Transport disorders	Except railway accidents, there are transport disorders, which encompass train service cancellations due to failures of trains or facilities, mishandling by employees, or disasters, or delays to passenger trains for over 30 min. or other trains for over 1 hour.
Disaster	Natural phenomena such as powerful storms, heavy rainfall, heavy snowfall, flooding, high tides, earthquakes, tsunamis, etc.
External factors	External factors such as trespassing or suicide
Internal factors	Internal factors such as those related to staff, trains, or facilities

No. of transport disorders



Incidents

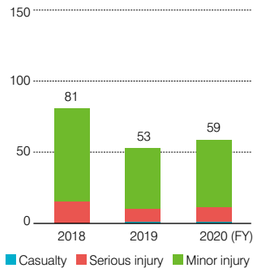
JR East recorded one incident (equipment failure) in FY2020.

Incidents	"Incidents" mean situations that could lead to a railway accident. The definitions of incidents are stipulated by the rules and regulations for railway accidents that require reporting.

Employee accident

In FY2020, three lives were lost due to accidents, and 146 accidents resulted in lost work time.

Accidents with lost work time and fatality (JR East employees)



Accidents with lost work time and fatality (employees of JES-Net, etc.)