Social

Creating "Social Value" —Social—

Building Safe and Resilient Infrastructure

Ensuring safe and reliable transportation is a prerequisite for all business development and marks the found of the railway business; therefore, we have consistently six and the same development and marks the found of the railway business; therefore, we have consistently six and the same development and marks the found of the railway business; therefore, we have consistently six and the same development and marks the found of the railway business; therefore, we have consistently six and the same development and marks the found of the railway business; therefore we have consistently six and the same development and marks the found of the railway business; therefore we have consistently six and the same development and marks the found of the railway business. of the railway business; therefore, we have consistently given top priority to this issue. Specifically, with regard to the Tokaido Shinkansen as the main transportation artery of Japan and the conventional lines as social infrastructure, we are building a safe and resilient infrastructure by promoting various safety measures in both physical and non-physical aspects to support Japan's economic and social activities in a sustainable manner.

trillion yen

General Principles of Safety

JR Central has the General Principles of Safety as the basic spirit for employees involved in transportation safety. It was established following a 1951 accident at Sakuragicho Station on the Keihin-Tohoku Line while we were operating as part of Japan National Railways. The principles specifically state that the correct mindset and moral awareness and attitude are needed for all employees to do their utmost to ensure safety and protect human lives above all else, regardless of their job responsibilities, because the railway business is an important service with the responsibility to safeguard precious lives and assets.

As a result of various safety efforts, especially the Tokaido Shinkansen

line, which has been used by about 6.8 billion passengers, has had no accidents resulting in the death of passengers since the start of its operation in 1964. We will continuously work to maintain safe and reliable transportation as our top priority, aiming to achieve it at

General Principles of Safety

► Safety Report https://company.ir-central.co.ip/others/report/

Basic Approach to Safety

Under the philosophy of the General Principles of Safety, we established the "Basic Approach to Safety" and are abiding by it. We maintain safety through "people," "structure" and "equipment," and what forms the basis is the culture of prioritizing safety. The diagram on right describes a structure whereby a culture in which safety is prioritized above anything else is firmly established and all individuals practice safety-first behavior, upon which each of the three elements of "people," "structure" and "equipment" support safety.

The first pillar of "people" represents ongoing efforts to enhance the ability of employees to detect risks and changes and deal with them without fail on their own initiative, and the ability to deal with difficult situations through effective education and training.

The pillars of "structure" and "equipment" respectively represent ongoing efforts to ensure adherence to, and review, "structures," including rules and handling, by accurately grasping situations on the ground from the correct perspective regarding safety and looking into weaknesses based on changes in the environment, signs and lessons learned from

others, and improve the safety of "equipment" by introducing new technologies, including predictive management methods. We are working to maintain safety while continuously reviewing and enhancing these two pillars, along with the pillar of "people," as "structures for safety."



Priority Execution Items for FY2023

In order to systematically and intensively promote train and industrial accident prevention measures, priority execution items are determined every fiscal year. For FY2023, we designated "adherence to rules by everyone," "thorough checks," "education and training with enhanced

quality," "advance elimination of risks," and "practice of safety-first actions in emergencies" as the five priority execution items. All employees are working together to eradicate serious train accidents and industrial accidents from both physical and non-physical perspectives.

Safety Management System

Operational system to ensure transportation safety

Based on the Railway Business Act, JR Central established the Safety Management Regulations in September 2006, which summarize the rules to be observed for ensuring transportation safety, with the aim of maintaining and improving safety levels. These regulations specify the operational system for ensuring transportation safety and the responsibilities of safety managers.

As the key safety manager, the President is the first to make important

decisions regarding operational safety. In addition, the general safety manager, operation managers, and crew guidance managers have been designated, and their respective responsibilities have been determined. The roles of head office managers in ensuring transportation safety have been clarified, and safety measures have been systematically established and promoted under a consistent system.

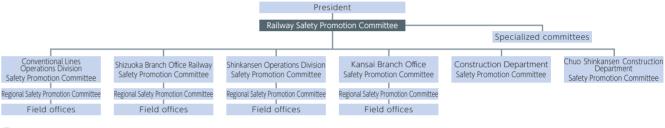
Responsibility of key safety managers

Title	Responsibility						
President	Decides important matters related to operational safety.						
General safety manager	 Ensures that all employees are fully aware of the importance of safety and comply with laws and regulations to ensure transportation safety. Provides opinions to the President on necessary improvements to ensure transportation safety. Confirms the status of systems related to ensuring transportation safety as needed, and expresses opinions on improvements to head office managers who are in charge of the main operations related to ensuring transportation safety, as necessary. Supervises and manages other matters related to ensuring transportation safety. 						
Operation manager	In order to ensure transportation safety, requests reports and gives instructions as necessary concerning the formulation of transportation plans, makes decisions on the operation of train crews and rolling stock, train operation control, training of train crews and maintenance and management of their qualifications.						
Crew guidance manager	Trains crew members and maintains and manages their qualifications.						

Safety Promotion Committee

In order to have a focused deliberation of matters regarding the prevention of railway operation accidents, industrial accidents and disasters and design and promote effective measures, we have established the Railway Safety Promotion Committee at the Head Office, which meets once every month, and sets up specialized committees whenever

necessary to intensively deliberate on the matters assigned to them. Furthermore, each Operations Division and Branch Office has a Safety Promotion Committee. We make sure all staff at field offices are aware of the matters decided by the Safety Promotion Committee through the Regional Safety Promotion Committee.



Safety Audit

Safety audits are conducted at JR Central's business organization and affiliate companies to prevent train accidents and labor accidents. These audits are performed based on three basic policies: confirmation of the level of compliance with laws and regulations, etc., confirmation of measures in place to prevent train and industrial accidents, and prevention of recurrence of the kind of train and labor accidents whose details have

been investigated. In audits, we verify the actual status of daily operations by checking sites where work is being carried out and the documents related to inspections, construction, etc., and share the results. Through these audits, we are working to prevent violations of laws and regulations, the forgetting of past countermeasures in response to past accidents, and lapses of rules before an incident occurs.

Initiatives for Human Resources to Ensure Safety

In order to maintain safety it is essential, as the basic premise, to develop human resources with high technical capabilities, a strong will, and the correct values to support safety. In developing human resources, we believe it is important to observe our own rules ("discipline"), to maintain

and improve quality and prevent accidents ("technical capability"), and to gain a "sense of unity" by collaborating and cooperating with related employees and by fulfilling personal responsibilities. Focusing on these issues, we are engaged in employee training and education.

> Technical skills training

We implement safety education and training for staff engaging in train operations and facility maintenance. We conduct education and training especially for staff engaging in train operations (such as drivers, conductors and directors) according to the content and time stipulated for each duty.

We introduced simulators, which can perform operations simulation training, etc. for emergencies, to field offices for drivers and conductors. We also conduct various training sessions using actual rolling stock and railway lines, so that employees on each system can swiftly and accurately respond to emergencies.

> Emergency condition response training

In FY2022, we conducted practical training to improve technical capabilities and enhance collaboration between related lines and affiliated companies, aiming to ensure capabilities for rescue of customers and early restoration in times of major disasters and contingencies.



Training for recovery from derailment

Employee training in preparation for contingencies

We train all employees to go beyond the call of duty in working together with the train crew, etc., to respond appropriately should employees happen to be present when unforeseen circumstances occur while commuting or on a business trip.



Employee training in preparation for contingencies

> Other training

The General Education Center offers education on specialized knowledge and skills for each function, and provides sessions for various qualifications and training for train conductors and drivers by using a variety of training facilities that can simulate various events that can occur in actual situations.



Building Safe and Resilient Infrastructure

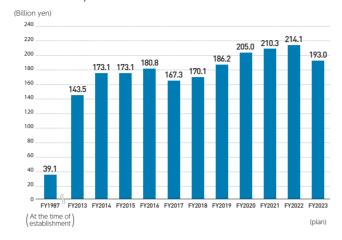
Capital Investment for Safety

JR Central has actively implemented capital investment related to safety since its establishment. In the 36 years up to FY2022, we have made safety-related investments totaling over 4.4 trillion yen, including safety measures such as updating the Automatic Train Control (ATC) on the Tokaido Shinkansen, and introducing ATS-PT (Automatic Train Stop) in all of our conventional lines, as well as disaster prevention measures such as seismic reinforcement, improvements in electrical equipment, replacement of rolling stock, and the introduction of efficient and effective inspection machines and systems.

In FY2023, we will continue to place top priority on ensuring safe and reliable transportation, which is the starting point of our railway business. In order to further reinforce structures along with earthquake countermeasures, JR Central will pursue derailment and deviation countermeasures for the Tokaido Shinkansen by implementing derailment prevention guards for the entire line. We will also proceed with the seismic reinforcement of platform sheds, the implementation of measures to prevent suspended ceilings at stations from falling in the event of an earthquake, rebuilding of the Nagoya rolling stock repair and inspection depot, and reinforcing the quake resistance of elevated track columns of conventional lines, etc. Furthermore, we are conducting research and design work in preparation for the installation of automatic platform doors in all Shinkansen stations and, for conventional lines, are advancing the work to install such doors on Platforms 5 and 6 (outbound Tokaido line) and Platforms 7 and 8 (Chuo line) at Nagoya Station. As

a result of these efforts, about 80% of the total capital investment in Tokaido Shinkansen, conventional lines, and affiliated businesses, or 193 billion yen, is planned as safety-related investment.

Trends in safety-related investment



Large-scale Renovation

Tokaido Shinkansen

Our civil engineering structures are sufficiently maintained through thorough daily inspections and repair. However, in future, it will be inevitable to replace many of the facilities due to aging. We received the approval of the Minister of Land, Infrastructure, Transport and Tourism for our allowance reserve plan for the large-scale renovation of Shinkansen infrastructure for the Tokaido Shinkansen based on the Nationwide Shinkansen Railway Development Act, and began building the reserve from 2002. Along with this, we have advanced our research on a new construction method, led by our Komaki Research Center. As a result of our R&D efforts, we developed a new construction method that allows us to significantly reduce the impact on train operations during construction work, and to considerably cut construction costs. With this method in place, JR Central began the renovation work in FY2013, ahead of the original schedule. In construction work, we begin with the implementation of measures to extend the life of structures by inhibiting the occurrence of cracking and other damage from aging (measures to inhibit aging damage) and, if necessary, overall renovations such as the replacement of girders

(overall renovation) are

The reserve of 350 billion yen accumulated by FY2012 was appropriated at a rate of 35 billion yen each year beginning in FY2013 until the end of 2022, when the appropriation came to an end.

We will continue to make improvements, etc. to our construction methods, thereby bringing down related costs while steadily advancing construction work.



Large-scale Renovation

Railway Crossing Accident Countermeasures

Conventional Lines

A particularly important factor for improving the safety of Conventional Lines is measures to prevent accidents at railway crossings. We are working to install crossing gates, crossing obstacle detection systems, etc., and are taking such drastic measures as eliminating crossings by, for example, elevating the tracks, for which we negotiate with local governments. As part of effort to prevent crossing accidents, we are also actively working on activities to raise awareness, including crossing accident prevention campaigns.

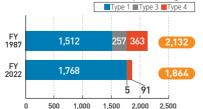
Improvements to crossing equipment

Crossings are classified by the equipment they have into three types: Type 1, which has crossing gates and alarms, Type 3, which has only alarms, and Type 4, which has neither gates nor alarms.

Work to upgrade Type 3 and 4 crossings into Type 1 is under way, considering such factors as the amount of road traffic, the amount of railway traffic, and the situation surrounding the crossing.

Types of railway crossings Type 4 Crossing bar

Historical number of railway crossings and crossing types



Crossing obstacle detection systems

For cases in which a vehicle obstructs a crossing, we install crossing obstacle detection systems that can detect stuck vehicles using infrared or laser beams, and systems that can issue an alert if the crossing gates do not close. If the crossing detects an abnormality, the related signals are made to indicate "stop," and trains are made to stop before they reach the crossing. Starting in FY2022, we have been introducing a high-performance laser sensor crossing obstacle detection system, which has better performance at detecting pedestrians, bicycles, wheelchairs, etc., at crossings where train traffic

is high and that experience high amounts of pedestrian, bicycle, and other traffic

We also have emergency buttons (crossing trouble alert systems), the pressing of which causes related signals to indicate "stop," thereby alerting train drivers of any abnormality occurring at a crossing.



High-performance crossing obstacle detection system (laser sensor type)

Measures to prevent collision with obstacles

If any abnormality is detected by crossing obstacle detection systems, related signals indicate "stop." In addition, a "crossing ATS

system" that complements the brakes manually operated by the driver has been introduced in phases since FY2021.

Earthquake-Resistance Measures

Tokaido Shinkansen

Implementation of derailment and deviation countermeasures

For the Tokaido Shinkansen, we are promoting derailment and deviation countermeasures to prevent the expansion of damage from derailment caused by an earthquake. We are working to introduce such measures as installation of "derailment prevention guards" which prevent vehicle

derailment to the extent possible. We expect to complete the implementation of these measures on the entire line by FY2028. "Deviation prevention stoppers," which prevent a major derailment of rolling stock in the event of a derailment, have already been installed on all of the rolling stock running in our service area.



Derailment prevention guards

Initiatives to stop trains quickly

JR Central adopts an earthquake disaster prevention system* that detects tremors, automatically stops power transmission, and issues orders to moving trains to make an emergency stop. We have also made improvements to the "Earthquake Brake" on rolling stock in an effort to reduce the stopping distance at the time of an earthquake. For the N700S, which we launched in July 2020, we made improvements to the ATC and the brake system to further reduce the stopping distance by roughly 5% compared to the stopping distance of the N700A (3rd edition).

*After introducing the *Urgent Earthquake Detection and Alarm System (UrEDAS)* in 1992 ahead of other companies, we continued to further accelerate the speed of the alarm by introducing the *Tokaido Shinkansen Earthquake Rapid Alarm System (TERRA-S)* in 2005 and started utilizing information from the Seafloor Observation Network for Earthquakes and Tsunamis in April 2019.

Structural Reinforcement

We have been implementing earthquake-resistance measures for various civil engineering structures and buildings so as to prevent Shinkansen services from being suspended for a long period of time in the event of an earthquake. Furthermore, starting in FY2021, we are implementing seismic reinforcement of platform sheds.

leasures taken and progress								
Measures taken	Progress (as of the end of FY2022)							
levated track columns, bridge piers, and embankments	Completed* (Elevated track columns: Approximately 19,600; Bridge piers: Approximately 900; Embankments: Approximately 9.4 km)							
ridge railing (fall prevention)	Under way (completed 2,183 beams out of 2,215 target beams)							
Station buildings / station ceilings / platform sheds	Station buildings: Completed* Station ceilings: Under way (completed at 10 out of a total of 17 stations) Platform sheds: Under way (at 16 stations excluding Shinagawa))							
olling stock workshops, etc.	Completed (Hamamatsu Workshop, buildings at rolling stock depots)							

*Except for some areas under discussion

Tokaido Shinkansen Earthquake Rapid Alarm System (TERRA-S)



-wave (primary tremors) and S-wave (secondary tremors) and once a certain level of tremors is detected, issues an order for trains to stop

Conventional Lines

Reinforcement of structures

In order to minimize the impact of earthquakes, we are implementing earthquake-resistance measures on various civil engineering structures and buildings. Furthermore, as with Shinkansen, starting in FY2021, we are implementing the seismic reinforcement of platform sheds.

Initiatives to stop trains quickly

Information from the aforementioned earthquake disaster prevention system will be used to detect initial weak tremors in case of an earthquake, and provide a warning to the driver's cabin of trains traveling in segments that are likely to be impacted significantly by the earthquake, instructing the driver who receives the warning to apply the brakes immediately. Furthermore, we worked to strengthen the functions of seismometers alongside railway lines since FY2016. As a result, we now can issue warnings to trains more quickly than before.

Measures taken and progress

Progress (as of the end of FY2022)				
Elevated track columns: Under way (completed 5,078 columns previously targeted by the end of FY2017. Since FY2019, 3,338 have been newly added and 1,124 have been completed for the purpose of further early recovery in the event of a disaster.) Bridge piers: Completed (4 target piers)				
Completed (1,985 target beams)				
Station buildings:Under way (completed for stations used by at least 5,000 passengers per day, excluding some areas under discussion) Station ceilings: Under way (completed 22 stations of the 30 target stations used by at least 10,000 passengers per day)Platform sheds: Under way (completed three stations of the 24 stations used by at least 10,000 passengers per day, excluding stations requiring no reinforcement)				
Nagoya Workshop: Completed Nagoya rolling stock section: Rebuilding of the repair and inspection depot is under way				

Earthquake-resistance reinforcements under way in sections including those where there are at least 10 departures per peak hour and where a long, strong earthquake vibration is expected in the case of a Tokai Earthquake

Building Safe and Resilient Infrastructure

Response to Other Natural Disasters

Tokaido Shinkansen

Conventional Lines

In addition to earthquakes, the prevention of accidents caused by natural disasters such as tsunamis, heavy rain, typhoons and snowfall is one of the important pillars of our safety measures, and we are implementing various measures.

> Tsunami countermeasures

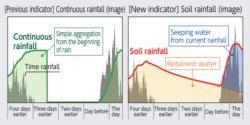
JR Central defines the Conventional Line segments that a tsunami is expected to reach as a "tsunami hazard expected area," based on the tsunami hazard map of each municipality. When a tsunami is expected, first of all, we make arrangements to ensure that no trains enter the "tsunami hazard expected area." For trains already in the area, we move them out of the area or guide passengers to a safe place. In addition, a "tsunami warning sign" has been installed in the area to indicate the direction of evacuation. We also take measures to evacuate quickly by displaying the evacuation route to the nearest evacuation center on tablet devices for conventional line train drivers distributed to train crews. Furthermore, to ensure that these measures can be taken, we make sure that staff are aware of them and conduct evacuation training using actual rolling stock in cooperation with local municipalities.



Evacuation route display on tablet terminal for conventional ine train driver

> Rain countermeasures

We are taking measures such as protecting the slopes of embankments and cut sections with concrete and other materials, laying drainage pipes to promote drainage, and installing earth and sand stoppers to prevent the inflow of earth and sand. Furthermore, rain gauges are installed along railway lines, and when the amount of rainfall exceeds the regulation value, a warning is automatically issued to the control center, train station, etc., and operation regulations such as stopping or slowing down trains are carried out. Furthermore, in June 2020, we introduced an operation regulation using rainfall radars, which can finely capture "soil rainfall," a superior indicator for grasping the extent of sediment disaster risk, and localized heavy downpour, in all sections of Conventional Lines, thereby securing a higher level of safety.



Operation regulation using "soil rainfall"

> Flooding countermeasures

For the Tokaido Shinkansen, we are working to relocate or elevate signal equipment rooms and power equipment, which are important facilities, install anti-flooding doors, etc., and take measures to maintain the necessary vehicle inspection functions to ensure the stable operation of trains against flooding anticipated for railway facilities. In addition, we have plans to evacuate trains in train-parking areas exposed to the risk of being flooded, and regularly conduct train evacuation drills to be able to evacuate trains according to such plans if the risk of damage arises.



Train evacuation drill

Wind protection

Anemometers are installed in areas where wind is concentrated, such as on mountains and bridges, or where gusts are expected to occur. When the wind velocity exceeds a certain value, an alarm is automatically issued to the control center, train station, etc., and as in the case of rain, operation regulations such as stopping or slowing down trains are carried out. In addition, due to geographical and other conditions, some anemometers have an additional function of automatically displaying a stop signal when the wind exceeds the standard.



Anemometer

Measures against landslides

For Conventional Line routes where there is a risk of landslides, we have installed falling rockretaining walls, rock cover works, and avalanche retaining walls as protective equipment. In addition, if a rock fall or an avalanche is detected by a detector, the train is stopped to prevent accidents



Falling rock retaining walls and alarm devices

Snow protection

When snow falls or accumulates, Tokaido Shinkansen trains may operate at a lower speed to prevent the equipment below train floors from being damaged, hit by stones of ballast being lifted up when a mass of snow, formed under the train floor by drifts caused by the train's movement, drops onto the tracks. As a countermeasure, we use rotary brush vehicles to remove snow before the first trains. In the particularly snowy Sekigahara section, we have installed sprinklers to moisten snow to prevent drifts from being lifted up. For N700S, measures on the train side to prevent snow from sticking to train bodies have been enhanced, such as changing the shape of the bogie cover. Furthermore, we use ground-installed cameras to monitor the situation of snow sticking to train bogies and ensure trains operate at an appropriate speed. We have also installed a high-pressure washing machine to quickly remove snow stuck to trains at stations.



Preventing snow drifts with sprinklers

Trends in measures against disasters (extracts)

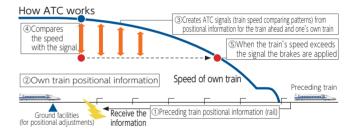
	··· 19	95~	2000~	2005~	2010~	2015~	2020~	(Year)
	Ja	ın. 1995 Great Ha	nshin-Awaji Earthqua	ake				
Earthquake -Resistance Measures		1996 – Impleme	entation of measures	to prevent prolonged	interruption of train	service (reinforcemen	t of elevated bridge pillars, etc.)	
		1996 - Establish	ment of Shinkansen	Second General Cont	rol Center			
					2010 - Reconstruction	and reinforcement (Ham	amatsu Workshop, Nagoya Works	hop, etc.)
			Oc	t. 2004 Mid Niigata P	refecture Earthquake			
				2009	– Implementation of	derailment and devi	ation countermeasures	
					Mar. 2011 Great	East Japan Earthqua	ke	
						2016 - Implementation	n of countermeasures against falling of st	ation ceilings
							2021 – Seismic reinforcement of pl	atform sheds
Rain and flooding countermeasures			Sep. 2000 Tokai H	leavy Rain		Oct.	2019 Typhoon 19 (Hagibis) (Burst of banks of the	Chikuma River)
			2000 - Protection	of the slopes of emb	ankments with concre	ete	2020 – Implementation of flooding countermeasure	es for Shinkansen
Wind protection				Dec. 2005 Derailm on JR East Uetsu N	ent accident Oct	t. 2013 Typhoon 26 (\	Vipha)	
				2005 – Addition and reloc		3 – Relocation of anemo	meters	
Measures against rockslides and avalanches		nstallation of falli	ng rock detectors an	d falling rock protecti	on equipment			
Snow protection	•••	Installation of snov monitoring ITVs		istallation of on-vehicle nd cameras	2012 - Installa snowfall inform		2020 – Trial of new sprinkler sy	stem

Operation Management and Safety Measures

Tokaido Shinkansen

The principle of Crash Avoidance

The biggest feature of the Tokaido Shinkansen and other Japanese high-speed railway systems is the introduction of an operation control system based on the principle of Crash Avoidance. This principle has been derived to prevent the possibility of a collision by using (1) dedicated tracks for high speed passenger rail service, which have no grade crossings, and (2) an Automatic Train Control (ATC) system, which automatically controls the speed limit of high speed trains and prevents collisions from happening.



Shinkansen General Control Center / Operational control systems

The safe and reliable transportation of the Shinkansen is supported by the Shinkansen General Control Center in Tokyo, where directors work in close collaboration using various systems, such as Computer Aided Traffic Control (COMTRAC*), to accurately grasp a significant amount of information, including the operational status of trains and the utilization status of facilities, control overall transportation services, and manage their

Moreover, the Shinkansen Second General Control Center has been established in Osaka jointly with JR West, and is equipped with the

same functions as the Shinkansen General Control Center in Tokyo so that it can serve as an alternative control center should Tokyo's General Control Center become non-operational due to a disaster. Thus, we have strengthened our crisis management in preparation for emergencies.

*COMTRAC (COMputer-aided TRAffic Control): A system that controls train routes, manages train operations, and operates and manages the allocation of staff (drivers and conductors) and rolling stock. Based on input data prescribing the operational conditions for each train (such as station departure and arrival times, platforms, and order of movement) in the computer, the system can monitor the status of all trains in operation at all times.

The Shinkansen Multiple Inspection Train (Dr. Yellow)

We have also introduced the "Shinkansen Multiple Inspection Train (Dr. Yellow)" to test electrical facilities such as overhead wires and ground facilities such as tracks. This rolling stock, which is based on the Series 700, aids safe and reliable transportation by efficiently conducting high precision inspections at speeds of 270 km/h.



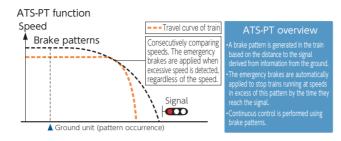
Social

Building Safe and Resilient Infrastructure

Conventional Lines

ATS-PT (Automatic Train Stop)

ATS-PT continuously checks the speed on conventional lines according to the distance between the train and the signal, the curve, and the points. It ensures safety by automatically applying emergency brakes when there is a risk that the train will exceed the safe speed. We have completed the introduction of ATS-PT on all of our conventional lines.



Tokai General Control Center (Nagoya) / Shizuoka General Control Center / Operation management systems

The operation of our conventional lines is managed by the Tokai General Control Center (in Nagoya) and the Shizuoka General Control Center. In these Control Centers, directors work in close collaboration using various systems, such as CTC (Centralized Traffic Control*), to accurately grasp a significant amount of information, including the

Multiple Inspection Train and Track Inspection Train (Dr. Tokai)

We efficiently and thoroughly manage and maintain railway tracks and electrical facilities on conventional lines using the "Multiple Inspection Train (Dr. Tokai)."

operational status of trains and the utilization status of facilities, control overall transportation services, and manage their safety to support safe and reliable transportation on conventional lines.

*CTC: The CTC system not only remotely and integrally controls station signaling equipment, etc. in order to efficiently manage train operations, but also has the function of conducting real-time monitoring of the operational status of trains.



> Cyber security measures

In terms of systems, we are also working to build a safe and resilient infrastructure. We are taking necessary measures, including achieving the redundancy of facilities and securing backups, to ensure that the provision of services to customers and the execution of internal operations will not be disrupted due to earthquakes and other natural disasters and system failures. For example, the Shinkansen Operation Management System has an alternative center in Osaka in case the system center in Tokyo is damaged, and the Express Reservation System comprises multiple computers to ensure sufficient processing capacity even if one computer fails. In addition, we regularly conduct drills to prepare for natural disasters

Furthermore, we have taken all possible measures to ensure system security against cyber attacks, which have been increasing in recent years. For example, for systems that require absolute safety, such as those related to train operation, we have established an independent system structure that eliminates any contact with the outside world, thereby avoiding external attacks.



Shinkansen Second General Control Center

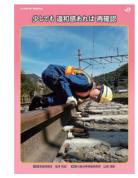
Initiatives for Ensuring the Safety of Employees

Ensuring the safety of employees is also an important issue. We have established internal regulations based on the Industrial Safety and Health Act and put in place a safety and health management system. At our business organizations, etc., safety management officers and health management officers are appointed, systems are in place to ensure safety at work and to manage workplace hygiene, and careful safety and health examinations are conducted as part of our active efforts to prevent industrial accidents and improve the

We are also promoting safety and health education throughout the Company. In addition to conducting the induction course on safety and health for all new employees at the General Education Center, we also provide classroom education on laws and regulations at the General Education Center and at each site in accordance with the nature, role and level of work, as well as safety and health education through necessary practical training, including the use of equipment and tools and simulations of industrial accidents.

Regarding people, structure, and equipment, the three pillars that support safety, we have been promoting various activities, such as the "Improve Safety!" campaign to make our work safer by identifying

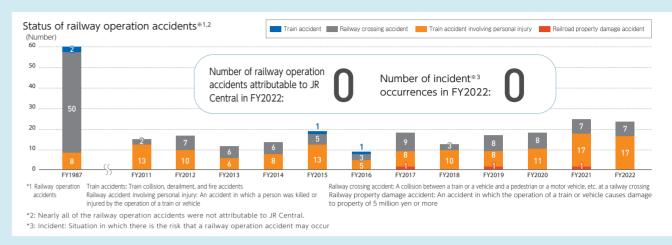
existing weaknesses and risks and making improvements to them, and initiatives to raise employees' awareness for the prevention of train accidents and industrial accidents through soliciting illustrations, photographs, and slogans related to accident prevention.

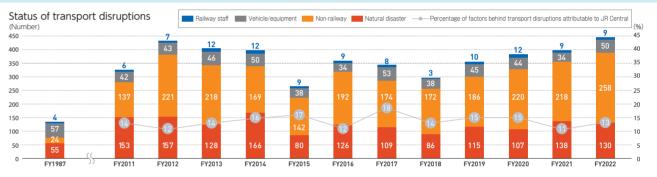




Posters promoting the prevention of train accidents and industrial accidents

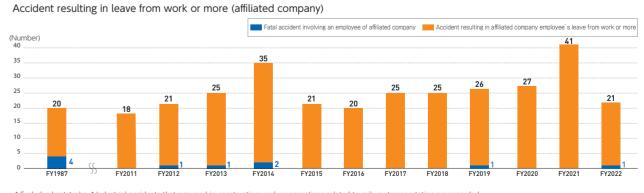
Safety-Related Data





*Transport disruption refers to cases that are not railway operation accidents, but involved suspended operation of a train or where a passenger train was delayed for 30 minutes or more (one hour or more for non-passenger trains).





* Excludes heatstroke. * Industrial accidents that occurred in construction work or operations related to railway transportation are recorded