

Enhancing railway safety

Enhancing safety, with the Fukuchiyama Line derailment accident as the starting point

The derailment accident on the Fukuchiyama Line

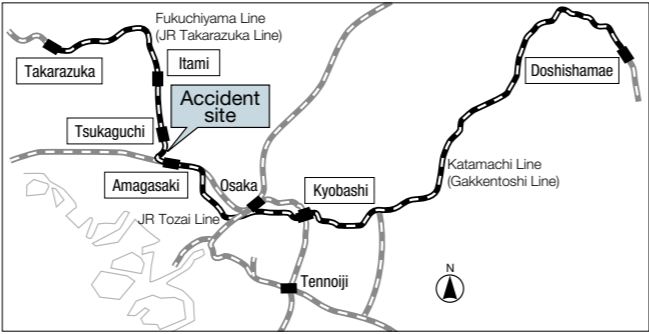
On April 25, 2005, issues at the West Japan Railway Company resulted in an accident on the Fukuchiyama Line, an extremely serious accident resulting in 106 fatalities and 563 injured passengers. We pray for all the victims of the accident and would like to express our sincerest apologies to their bereaved families. We would also like to express our deepest sympathies and sincerest apologies to the injured passengers and their families.

For the immense anxiety that the accident caused, we offer the deepest apology possible to our customers and those in the local community.

We will continue to make concerted efforts for all persons affected by the accident, while striving to further enhance safety measures and reform our corporate culture.

Overview

Date/time	Monday, April 25, 2005, approx. 9:18 AM Weather conditions: sunny
Location	Between Tsukaguchi Station and Amagasaki Station on the Fukuchiyama Line Approx. 1,805 m before Amagasaki Station (Amagasaki City, Hyogo Prefecture)
Train involved	Rapid train from Takarazuka Station bound for Doshishamae Station Train No. 5418M (EMU 207 series, 7 cars)
Summary	Between Tsukaguchi Station and Amagasaki Station, train No. 5418M entered a rightward curve with a radius of 304 m at approximately 116 km/h—greatly exceeding the speed limit of 70 km/h for the corner. As a result, the first through fifth train cars derailed, causing the first and second cars to collide with an apartment building on the left side of the direction the train was traveling. In this derailment, 106 passengers and the train driver were killed. Furthermore, 562 passengers and 1 pedestrian walking near the scene were injured.



Cause of the accident

From the *Railway Accident Investigation Report* issued by the Aircraft and Railway Accidents Investigation Commission (now the Japan Transport Safety Board)

It is considered highly probable that the train driver's delay in applying the brake resulted in the entry of the train into a 304 m-radius rightward curved track at a speed of approximately 116 km/h, which was far higher than the specified speed limit of 70 km/h, and the running of the train along the curved track at the high speed caused the first car of the train to fall left and derail, which caused the second to fifth cars to derail.

It is considered probable that the train driver's delay in applying the brake is attributable to the diversion of his attention from driving the train to (1) listening to the dialogue between the conductor and the train dispatcher by radio communication, which was caused by his belief that he had been hung up on by the conductor while he had been talking to the conductor on the intercom to ask him to make

a false report and (2) making up an excuse to avoid being put on an "off-the-train" re-training course.

It is considered probable that the West Japan Railway Company's train driver management system in which drivers who caused an incident or a mistake are put on an "off-the-train" re-training course that can be considered as a penalty or are subjected to a disciplinary action and drivers who did not report an incident or a mistake they had caused or made a false report about such an incident or mistake are put on an even harder "off-the-train" re-training course or subjected to an even harder disciplinary action may have (1) caused the driver to make the call to the conductor on the intercom to ask him to make a false report and (2) caused the diversion of the driver's attention from driving the train.

Continuing reflection and passing on the lessons of the accident

No matter how much time has elapsed since the accident, and no matter how many generations pass, we must never let it be forgotten, instead making the derailment accident on the Fukuchiyama Line the starting point for all of our safety initiatives. Looking to the future, to ensure that we pass on the serious reflections and lessons that this

accident has taught us, we have reviewed the problems that were present in our corporate culture and safety management at the time and formulated "Achieving Railway Safety into the Future," which outlines what we should hand on as a compass for safety in the future. This was announced in March 2021.

Points to reflect on, and their background

At the time of the accident, JR-West had not put in place systems to identify and deal with risks when planning and implementing management policies, and we did not have an ATS (Automatic Train Stop) system with speed check functions installed on the curve where the derailment occurred. Moreover, our understanding of human factors was insufficient, and we had reeducation measures in place that were seen as being punitive. Further, there were problems within our organization, including stagnating technical capabilities and a decreasing awareness of safety,

excessive top-down communications, and overconfidence due to our previous successes.

As this shows, at the time of the accident, there were a slew of issues in every aspect of our safety management, and we had been unable to build a company-wide framework for ensuring safety and establish a corporate culture in which safety is the highest priority. We have deeply reflected on our failure to fulfill our responsibilities as a company entrusted with the lives of our passengers.

Reflections on the derailment accident on the Fukuchiyama Line

We had been unable to build a company-wide framework for ensuring safety and establish a corporate culture in which safety is the highest priority.

In other words, we did not fulfill our responsibility as a company entrusted with the precious lives of passengers.

Major background factors to reflect on (Problems rooted in the organization)
How to address safety and ensure it in an organizational context

- We had not based our thinking on the idea that risk is inherent to operating a railway, and thus efforts must be made to prevent possible accidents with serious consequences, regardless of the laws and regulations.
- Because of strongly embedded perceptions that specialist divisions should be responsible for their own activities, management was not prepared to work together with the entire organization to make safety a top priority.

Dealing with employees who stand at the forefront of safety

- We were not working from the concept that any person may make a mistake, which led to the spread of idealistic instruction that had the potential to be perceived as punitive.
- Front-line employees were under the expectation that they should do what they had been told, exactly as they had been told, and as an organization JR-West had not yet matured to a level that allowed the opinions of its employees to be heard, recognized the personalities and independence of each person in the company, and improved the safety and quality of service through proactive effort.

Attitude toward society and overconfidence and excessive pride in railway operations

- We had grown overconfident and excessively proud of our operations, and we lacked the humility to learn from outside our own organization.

Learning from the lessons of the accident

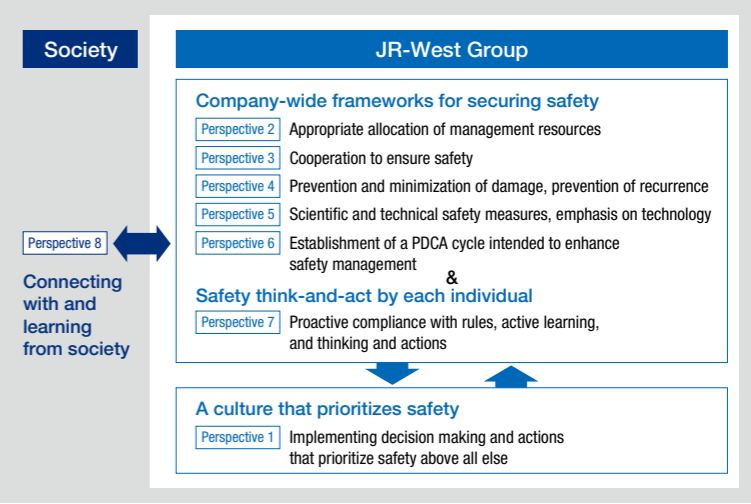
In order to continue to operate safe railways in the future, we must create a company-wide framework for ensuring safety and leverage that framework to encourage safety "think-and-act" by each individual.

These activities will give rise to a culture in which safety is the highest priority, leading to the construction and improvement of systems and increased safety-oriented thinking and action by all individuals. Repeating this cycle will allow continuous improvements to safety.

In addition to promoting safety initiatives within the company, we will work to connect with and learn from society while gaining the cooperation of our customers and society at large, thus further improving railway safety.

Based on the lessons learned from the accident on the Fukuchiyama Line, we defined the following essential perspectives in achieving safety.

Essential perspectives in achieving safety



Initiatives based on the essential perspectives in achieving safety

We will periodically check the direction and effectiveness of our safety initiatives, which are based on the essential perspectives in achieving safety, as we build mechanisms that improve safety and raise the level of our safety management. Moreover, we will work harder on employee

education by, for example, increasing their understanding of the purpose and background of the safety initiatives and making them aware of the role they have to play in putting these into action.

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Memorial Grove (Inori no Mori) at the accident site

The place where the Fukuchiyama Line accident occurred holds great importance. It recalls the sorrow felt by those who lost their lives, the grief of their families, and the painful memories of those injured. It also preserves traces of the aftermath of where the train derailed and crashed. It is thus the site of Memorial Grove, which serves as a place to remember and lay to rest the souls of those who perished, while also leaving a record of the accident for those who come after. The site will keep the accident from being forgotten and will convey the preciousness of life to society and future generations. It will help JR-West reflect on the accident and will act as a physical pledge to ongoing safety as the company continues to carefully and responsibly preserve the site for all future generations.



Efforts to keep the accident in mind and think and act accordingly

Based on our strong determination to prevent an accident such as that on the Fukuchiyama Line from ever occurring again, we conduct training and other initiatives to increase the awareness of each employee regarding safety. This will ensure that we do not forget this accident and will allow us to put the lessons learned from it into practice in our daily work.

Safety Day and workplace initiatives

In order to never forget the Fukuchiyama Line accident and to build a corporate culture that prioritizes safety above all else, we have made the 25th of each month Safety Day to mark the accident's occurrence on April 25, 2005. Company-wide activities are held on this day. Besides visiting Memorial Grove, employees of each workplace plan and implement a range of activities, including first-aid training for customers, discussions among employees in different jobs, viewings of interviews with victims of the accident, and talks by employees who were there at the time.

Workplace initiatives
Hiroshima Track Maintenance Center,
Chugoku Regional Head Office

Every month on Safety Day, all employees take part in education intended to maintain an awareness of the Fukuchiyama Line derailment accident. Opportunities are provided for employees who joined the company after the accident to act as lecturers and share with other employees what they have learned, while employees who visited the Memorial Grove can share what they saw and felt and how it has given them resolve for the future. Through this, employees learn and discuss the background of the accident, as well as reflect on it and the lessons to be learned from it. In addition, we get employees thinking more about how they should act by, for example, providing educational materials that incorporate essential perspectives in achieving safety into the specific duties of our track maintenance center, creating a connection between safety behavior and employees' personal goals and conducting periodic reviews. We will work to ensure that employees who joined the company after the accident see the Fukuchiyama Line derailment accident as personally relevant to them, talking about it as members of the company that caused the accident, and they will continue to impart this message to employees who will join the company in the future.



Learning at the Memorial Grove

By visiting the Memorial Grove, a site of great importance holding many different emotions for victims, as well as the reality of the accident, employees learn about the facts of the accident and the importance of life, which stimulates them to think concretely about putting safety first.



Learning at the Railway Safety Education Center

We are working in a variety of ways to cultivate a safety-first mindset in employees, such as by fostering learning at the Railway Safety Education Center, a facility where reflection on the Fukuchiyama Line derailment accident and the lessons learned from past accidents and disasters are taught in a systematic way. We also deepen employees' understanding of occupational accidents and human factors through instruction at the Safety Experience Building, where employees can learn about countermeasures through hands-on experience.



Responding to victims

We will continue to respond to the needs of those who suffered from the Fukuchiyama Line derailment accident through concerted ongoing efforts to listen closely to their thoughts and opinions.

Memorial ceremony

To express our condolences to those who died in the Fukuchiyama Line derailment accident, in September 2005 we held a Memorial Ceremony and Safety Event. We have followed this up with a Memorial Ceremony every year on April 25.

Explanation meetings

Every year we hold explanation meetings at which the company president and other associated executives inform accident victims directly of our improvements to safety and initiatives we have taken to address issues, as well as receiving input from them.



Initiatives toward creating a society that affords safety and peace of mind

As a company entrusted with the precious lives of passengers, we are committed to reflecting on the gravity of allowing such a major accident to occur and, as part of creating a society that affords safety and peace of mind, we established the JR-West Relief Foundation in April 2009. The

foundation strives to enrich people's hearts and lives by engaging in projects that provide physical and mental care to those affected by accidents and disasters, while also joining projects for building safer local communities.

Hosting events

The foundation holds Life Seminars presented by guest speakers from various fields, which focus on life from multiple perspectives and strive to provide participants with the opportunity for personal reflection. As an event marking its 10th anniversary, the organization now holds an annual essay contest for elementary and junior high school students on the topic of life, and shares the best submissions with the community.

Offering grants

The foundation offers grants to support groups and research projects working on preparations and recovery care for accidents, natural disasters, and unforeseen tragedies, in an effort to create a society that affords safety and peace of mind. Furthermore, in order to help promote emergency aid/life support training in local communities the foundation subsidizes AED practice equipment and also supports a group whose achievements include providing Inochi no Denwa (a suicide prevention line servicing the six prefectures of the Kansai area).



A Life Seminar



JR-West provides AED practice equipment



Essay contest booklet

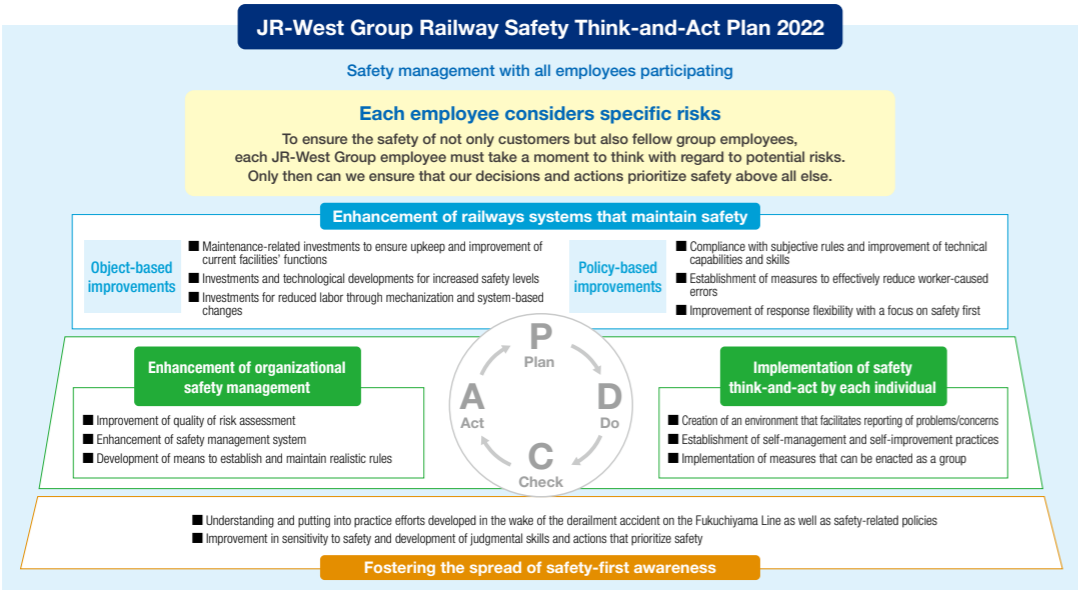
Enhancing railway safety

Initiatives to improve safety

The JR-West Group Railway Safety Think-and-Act Plan 2022, which was inaugurated in fiscal 2019, was formulated as a plan to pursue safety by going back to first principles, and it was motivated by a desire to ensure that we will never again allow an accident such as that on the Fukuchiyama Line to occur. We have been promoting initiatives for five years up to fiscal 2023.

After confirming our previous initiatives, we have formulated the JR-West Group Railway Safety Think-and-Act Plan 2027 to implement further safety improvement initiatives, starting from fiscal 2024. Based on this plan, in order to fulfill our mission of safely guiding customers to their destinations, we will deepen our approach to safety with a strong awareness of putting customers first and meeting their expectations, and build railways that customers can trust.

Review of the JR-West Group Railway Safety Think-and-Act Plan 2022



Objectives of the JR-West Group Railway Safety Think-and-Act Plan 2022, and progress under the plan

Objectives			FY2019	FY2020	FY2021	FY2022	FY2023
Objectives over the 5 years through FY2023	Train accidents that result in casualties among customers	Zero 0	0	0	0	0	0
	Train labor accidents that result in fatalities among employees	Zero 0	1	0	0	0	0
FY2023 objectives	Train accidents involving people that result in casualties among customers ^{*2}	Further 10% reduction 9 or less	11	8	5	4	10
	Accidents at level crossings	Further 10% reduction 22 or less	24	17	11	17	13
	Transportation disruptions due to internal factors	Further 10% reduction 126 or less	170	167	145	142	201

^{*1} Further 10% decrease from the objectives achieved in Safety Think-and-Act Plan 2017
^{*2} An expansion of scope from the objective "Train accidents with casualties on platforms" in Safety Think-and-Act Plan 2017

We achieved the goal of zero for "train accidents that result in casualties among customers," which was set as a goal throughout the five years. On the other hand, one "train labor accident that resulted in a fatality among employees" occurred, and the irreplaceable life of one colleague was lost.

We achieved the goal for "accidents at level crossings" among the goals to be achieved for fiscal 2023. On the other hand, with regard to "train accidents

involving people that result in casualties among customers," it was not possible to achieve the goal. With regard to "transportation disruptions due to internal factors," we have analyzed the events that have occurred so far and attempted to reduce disruptions by prioritizing, but we could not achieve the goal due to the occurrence of events outside the priority areas.

Confirmation in light of the essential perspectives in achieving safety

We confirmed the effectiveness of five years of safety management, the adequacy of the efforts, and the direction we are taking in light of the essential perspectives in achieving safety, compiled as lessons from the Fukuchiyama Line train accident.

In order to further enhance safety, we recognize that it is important to focus on

further improving the effectiveness of the established mechanisms, and we will strive to improve execution ability. In addition, we will deepen our approach to safety so that we are strongly aware of putting customers first and meeting their expectations in improving safety.

Instilling an awareness of safety as the top priority

"Stop the train without hesitation" training
across departments and organizations (San-in Branch, Chugoku Regional Head Office)

We hold training with the participation of various departments and group companies to practice stopping the train without hesitation when an employee senses danger or when they cannot confirm safety. We run actual trains for training purposes at night.

Employees who participated said that they were able to increase their confidence in stopping the train without hesitation. In addition, by having participants from a range of jobs and organizations, employees can learn various means of stopping trains to improve their practical skills.



Explaining emergency equipment in the train to participants



Explaining how to stop the train and actually operating the onboard emergency button

Improving practical skills by actually stopping a train with colleagues from different organizations



Transport Safety Department, Chugoku Regional Head Office
Ryota Hara

We had so far communicated the importance of stopping trains without hesitation when an employee senses danger or when they cannot confirm safety. Because not all employees had actually done an emergency stop, we thought that some may be worried about actually stopping the train. So we decided to do this training.

We ran trains for training purposes at night and invited employees from various workplaces to participate. With employees in different jobs taking part, participants were able to observe how the train is actually stopped using the method for each job. This deepens their understanding of various means of stopping and improves their practical skills.

We will continue to provide training centered on district station managers and that includes each workplace.

By actually stopping the train with colleagues, I was able to deepen my learning



Yonago Electric Technology Center, Yonago Electric Section, Chugoku Regional Head Office
Sayaka Minato

I was trained on stopping the train without hesitation and knew how to stop it. But I had never encountered a situation where I actually needed to stop the train. In this training, I experienced pressing the emergency button on the platform and running while waving a red light toward the incoming train to stop it on the platform. Through training, I have been able to increase my confidence in stopping the train without hesitation in the event of an emergency.

In addition to my own training, I was able to learn more deeply by training with my colleagues, getting in-depth explanations from senior colleagues and learning how employees in other workplaces stop the train.

Using what we have learned in this training, I will definitely stop the train without hesitation when I sense danger or when I cannot confirm safety.

Enhancing railway safety
Initiatives to improve safety

Enhancement of organizational safety management

Using drones in the event of a disaster (Hiroshima Civil Engineering Center)

When damage occurs to facilities like tracks due to a disaster or other reason, we use drones to take aerial photos to get a full view of the damage so that we can consider repair methods. Detailed assessment of the damage and repair method requires on-site visual confirmation. By using drones, we can confirm the whole picture even in places where there is a risk of secondary disaster and where the human eye cannot reach. This helps us to quickly assess the damage and consider repair methods.



Drone photography

By using drones in the event of a disaster, we can assess the damage to tracks and consider repair methods



Hiroshima Civil Engineering Center,
Chugoku Regional Head Office
Masahiro Kameda

If mud enters the tracks due to heavy rain or if stones fall on the tracks, we need to suspend the trains and remove the debris as soon as possible. We use drones to take aerial photos of the damaged areas, which helps us assess the damage at an early stage and consider ways to remove the debris.

We cannot fully understand the situation only by taking aerial photos with a drone but taking photos from positions that cannot be easily seen by the human eye helps us assess the damage.

I will continue to work with colleagues to improve my level of flight control so that I can operate drones accurately in the event of damage to railway facilities caused by disasters.

Safety think-and-act by each individual

Thinking about risks concretely before engaging in work (Vehicle Center, Hakata Depot)

We do KRM (inspection and repair risk management) based on photos of the actual work scene before the work starts. When identifying risks, we have devised ways to think about them more specifically by setting conditions that can occur (such as first time, after a long time, changed, or whether an employee is swamped with other work). Going forward, we will accumulate the risks considered by each person as data and use them to develop measures.



Devising ways to think more effectively about specific risks before each person does their work



Vehicle Center, Hakata Depot,
Sanyo Shinkansen Head Office
Daiki Eto, Shimpei Inuzuka

As in various other workplaces, we have been making each person think about risks concretely before they work. But we felt that it was getting difficult to identify risks, so we devised a way to make it easier to think about them. In order to prevent work errors, each person writes their views on a sheet when they think about risks as a way to encourage awareness.

We also encourage employees to think of risks as being an issue directly related to them by linking the sheet to human errors that have occurred in the past. We also accumulate the risks considered by each person as data.

Going forward, we will come up with new methods, such as considering how to use the accumulated data.

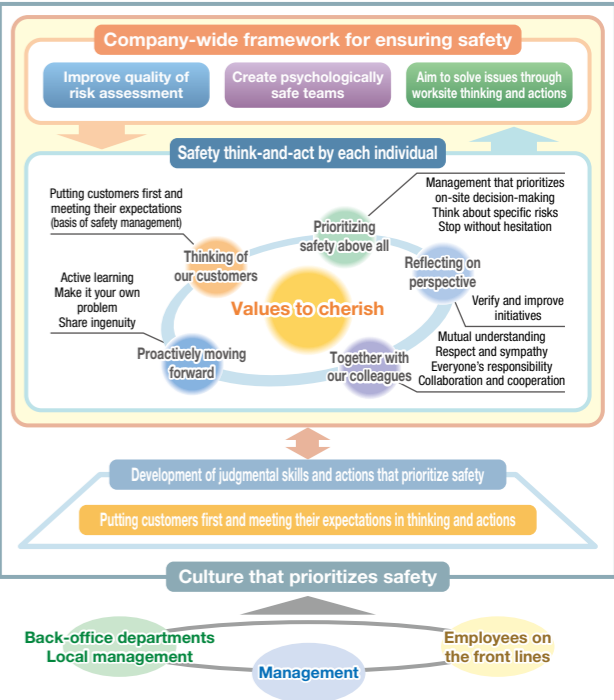
JR-West Group Railway Safety Think-and-Act Plan 2027

In the JR-West Group Railway Safety Think-and-Act Plan 2027, which began in fiscal 2024, we deepen our approach to safety and foster safety as an organizational culture in order to improve safety with a strong awareness of putting customers first and meeting their expectations.

Each of us, including management, shares the five values we want to cherish (prioritizing safety above all, thinking of our customers, proactively moving forward, together with our colleagues, and reflecting on perspective). We will respect each other, speak frankly, and create “psychologically safe teams” that learn and improve through challenges. We will share the problems on the worksite across departments and organizations, and together with our colleagues, take on the challenge of solving the problems through on-site thinking and actions.

In addition, we will strengthen and expand measures for disaster prevention and mitigation, such as those for safety on station platforms and at railroad crossings, and earthquake and rainfall countermeasures. We will also improve vehicle renewal, crime prevention, and industrial accident prevention measures, as well as review and improve mechanisms and rules to increase their effectiveness.

Regarding safety investment, we expect to invest about 530 billion yen over the five years from fiscal 2024 to fiscal 2028, and we will steadily implement hardware measures to maintain and improve safety.



Key initiatives in JR-West Group Railway Safety Think-and-Act Plan 2027

Platform safety

- Maintain platform gates and safety screens to prevent train-involved accidents caused by customers falling off the platform



Moveable platform gates

Railway crossing safety

- To prevent collisions between trains and large vehicles at railroad crossings, install devices that verbally notify train drivers when a large vehicle is stuck on the crossing



Derailment prevention guards

Earthquake countermeasures

- Implement earthquake safety measures such as seismic reinforcement and prevention of derailment to improve safety during earthquakes

Object-based and policy-based improvements

- Enhance safety through object-based and policy-based improvements
- Provide safe and reliable transportation (improve transportation quality)

Create a culture that puts safety first

- Establish management that prioritizes on-site decisions
- Promote a mindset of putting customers first and meeting their expectations



Training to stop trains without hesitation

Strengthen framework to ensure safety throughout the organization

- Improve quality of risk assessment
- Create psychologically safe teams
- Aim to solve issues through on-site thinking and actions



Collaboration across departments and organizations

Safety think-and-act initiatives by each individual

- Share and actively practice the five values we want to cherish



Inspecting wheels

Connect with society and learn from outside the company

- Engage in dialogue with relevant organizations regarding responses to natural disasters and other incidents
- Promote efforts to learn from and implement safety measures used by other railway companies and related organizations