

Outline of JR East Group Safety Plan 2018— The Sixth 5-Year Safety Plan

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Introduction

The JR East Group puts safety as its top business priority and has formulated and implemented five 5-year safety plans between fiscal 1987 and 2013. As shown in Figure 1, these plans have reduced railway accidents from 376 in the first year of the company’s establishment (1987) to 147 in fiscal 2012. However, even one operations accident is one too many, and more than 100 accidents are still occurring annually.

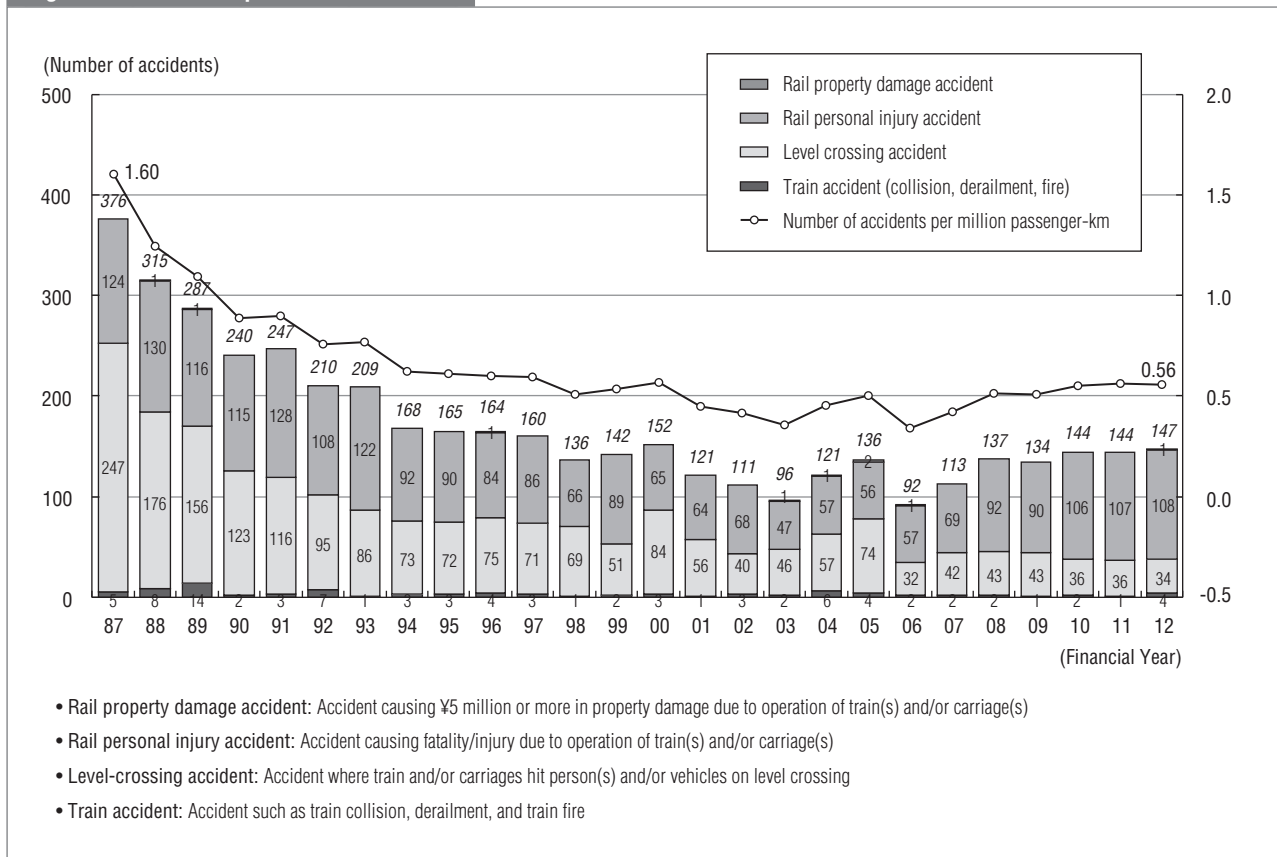
We take accidents very seriously and are steadily implementing countermeasure policies. Furthermore, from the perspective of dealing with the shifting environment that surrounds our company, such as systemization and generational turnover, work assignment to group and partner

companies, and more frequent natural disasters in recent years, we also have newly launched the sixth 5-year JR East Group Safety Plan 2018—Safety through individual development and teamwork (FY2014 to FY2018), in order to rise to the challenge of ‘extreme safety levels’.

Main Features of JR East Group Safety Plan 2018 — Strongly Emphasizing ‘The Group’

Our railway safety is underpinned by cooperation between every employee involved in railway work at JR East, Group and partner companies. Indeed, we have added the word ‘Group’ to our plan to emphasize our collective cooperation because operations by Group and partner companies have increased in recent years.

Figure 1 Trends in Operations Accidents



Clarifying Direction of Safety Measures

Continuing the previous *Safety Vision 2013* plan, the goals for the *JR East Group Safety Plan 2018* include 'zero passenger fatalities and injuries' and 'zero employee fatalities' (including employees from group and partner companies). To achieve these goals, we have clarified the following three directions, and have established specific initiatives for everyone to implement.

The first objective is to completely eliminate 'accidents due to internal causes.' Incidents like signals passed at danger (SPAD), speeding, and improper track-closure procedures all come back to us as accident factors, so we can prevent such accidents by improving rail operations and maintenance.

The second objective is to reduce the risk of 'accidents due to external factors' by systematically improving facilities and making other efforts to minimize damage after accidents resulting from natural disasters, etc.

The third objective is to cooperate with communities at large to develop comprehensive countermeasures to 'accidents closely related to society,' such as preventing level-crossing accidents, people falling off train platforms, etc. We will not only provide the main impetus for implementing steady countermeasures but will also

cooperate with customers and communities to develop measures, such as reorganizing or eliminating level crossings, and carefully communicating the hidden dangers of railways to the public.

Plan Focusing on Passing on Technical Expertise

Realizing that the next 5 years are our last chance to establish efforts to hand on technical expertise before losing a generation of skilled veteran staff to retirement, we will refine our safety management system to develop specific measures, such as being proactive and specific about passing on technical skills and implementing initiatives to help new staff learn about causes of accidents.

Details of Specific Efforts

Figure 2 shows an overall image of the *JR East Group Safety Plan 2018*. We are implementing specific efforts based on the four pillars to achieve our goals and directions.

Establishing Safety Cultures

By assigning all the safety approaches developed so far to our 'safety cultures as a foundation to build on', we shall establish safety as 'part of the DNA' of each employee.

Figure 2 Overall Image of JR East Group Safety Plan 2018

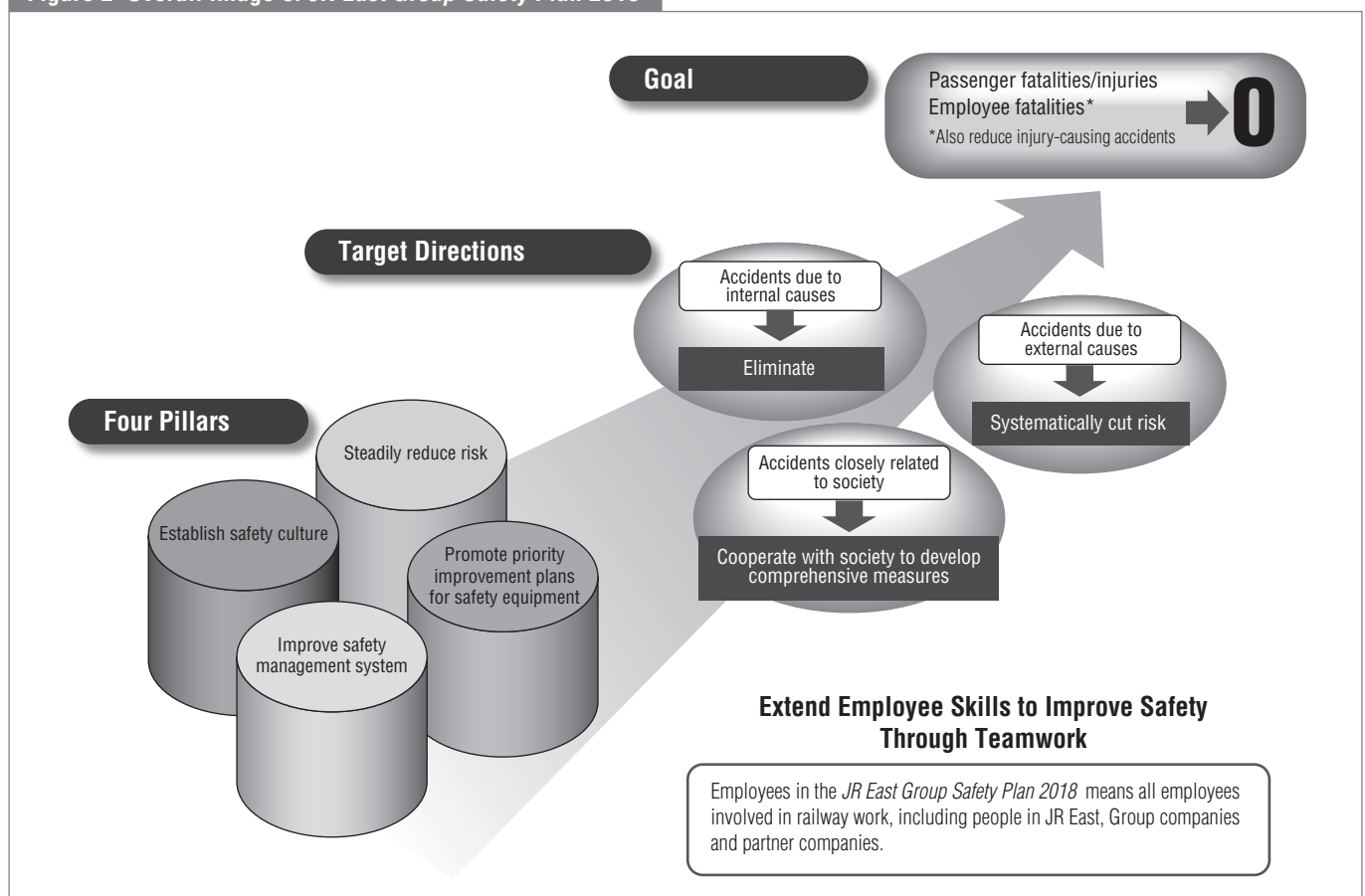


Figure 3 Five Cultures



Train driver pointing at important indicators and calling out status

(JR East)

Five Cultures

We will promote a culture where employees take serious note of accidents that have happened and signs of potential accidents—a culture where employees discuss, learn from, and act on the issues based on information (Fig. 3). Especially, in the culture of action, we will implement a firm code of behaviour for our group that will comprise

the golden rule: 'Stop the train if you feel something is dangerous'. As part of our effort to conscientiously and strenuously maintain safety on a daily basis and thus prevent accidents, we will also work to re-acknowledge the importance of basic actions in confirmation dialogue as well as pointing and calling out to confirm the completion of manual and mechanical actions.



Train protection training at JR East General Training Centre

(JR East)



Construction workers during confirmation dialogue checking train operation schedule and work procedures

(JR East)

Three Principles of Actualities

Safety problems always occur at actual locations, and solutions are also always at actual locations. Consequently, we will pursue 'three principles of actualities' (actual location, actual objects, and actual people) that involve actually going to locations to see, hear, experience, and think about what is happening in order to see the reality as well as unearth the problems in the process of producing true solutions (Fig. 4).

Figure 4 Three Principles of Actualities

- Actual location:** Go to the actual location to understand the circumstances.
- Actual objects:** Examine the actual object (rolling stock, equipment, machine, tool, etc.) to understand its condition.
- Actual people:** Meet face-to-face with the people actually involved to understand their situation.

Challenge Safety Campaign

This campaign seeks to proactively encourage employees in every workplace to think about safety, debate it, act on it, and feel satisfaction in achieving it, and in so doing refine their safety consciousness and sensitivity and channel these into further safety-related approaches. By doing these things, we will not simply implement standard formulas, like conferences and presentations, but rather we want individual workplace units to address safety issues in a free-thinking manner.

Improving Safety Management System

Amidst the rapid loss of skilled veterans through retirement, the importance of nurturing younger employees who will be at the core of safety-related knowledge, technology, and leadership is growing greater. To meet this challenge, we will improve our management system in the area of safety based on personnel training and passing-on technical expertise.

Developing Personnel Taking Responsibility for Safety

We will work to develop personnel by exposing them to safety professionals working in branch offices, and key safety leaders in all our operational bodies as well as

implementing training adapted to actual practice at the General Training Centre and Skills Training Centres (Fig. 5).

Proactive and Specific Measures to Pass on Technical Expertise

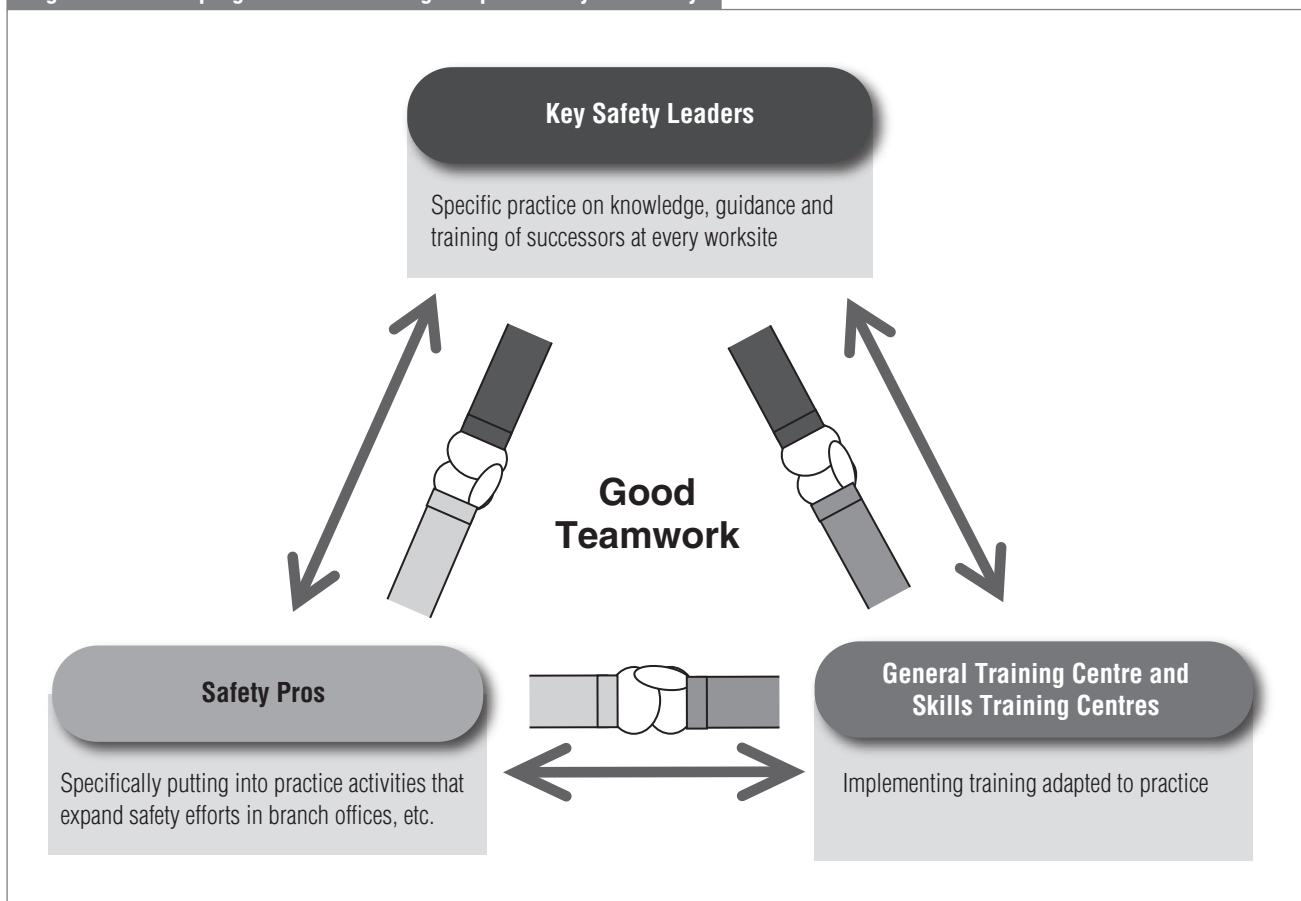
We will search out and pass on knowledge of the history of safety rules and the backgrounds of previous accidents, and the wisdom that comes with experience retained by veterans. In addition, we will hold seminars run by 'narrators of safety-related oral history' comprising JR retirees with a wealth of safety-related experiences.

In readiness for emergencies, we are learning lessons from the Great East Japan Earthquake to prepare ourselves for the massive damage if an accident, earthquake or large fire occurs, and will nurture the skills to make the necessary responses.

Improving Safety as Integrated Group

We will share information among the entire group, including both group and partner companies, and push ahead with specific initiatives like sharing the same vision of safety values, sharing safety training and educational facilities, as well as establishing a scheme to improve facilities.

Figure 5 Developing Personnel Taking Responsibility for Safety





Seminar by 'narrator of safety-related oral history'

(JR East)

Initiatives for 'Deep' Learning about Accidents

We will ensure all employees visit our Accident History Exhibition Hall (at the JR East General Training Centre) with exhibits of actual trains involved in rail accidents. By getting employees to experience simulations of train accidents and incidents, we will implement initiatives for 'deep' learning about accidents.

Minimizing Human Error

Since complex rules and the increasing diversity of machines are sources of human error, we will seek simplification by refining our rules and unifying machine types.

Providing Understandable Training Materials and Information

We will make use of our Safety Portal website to create an environment where materials (including video clips) can be viewed. Moreover, we will use e-learning to help people study whenever they want on computers and tablets.

Steadily Reducing Risk

We will categorize accidents into those due to internal causes, those due to external factors, and those closely related to society, and will then decide how to approach each category to promote steady risk reduction.

Even if certain issues are not presently seen as risks, we will continue to stay one step ahead by unearthing and counteracting potential risks that are emerging with the changing circumstances in the railway sector.

Thoroughly Reducing Risks Accompanying Accidents due to Internal Causes

For accidents due to internal causes that can be prevented by improving railway operations and maintenance, we will take every possible means to eliminate such accidents, including systematically enhancing measures used to date to reduce risks, making use of technology development outcomes, and reviewing our setup.

To start, we will evaluate incidents that did not result in accidents, but that could have led to fatalities and injuries



Large earthquake countermeasures (aseismic reinforcement of viaducts)

(JR East)



Large earthquake countermeasures (aseismic reinforcement of embankments)

(JR East)

among customers and employees. We will aim to eliminate any recurrence of similar incidents due to the same causes.

Reducing Risk of Accidents due to External Factors

In readiness for large earthquakes and increasingly more-frequent severe weather, etc., we will reduce risks by promoting disaster countermeasures to minimize secondary damage after disasters.

Reducing Risk of Accidents Closely Related to Society

We are implementing measures to prevent level-crossing accidents, people falling from platforms onto tracks, etc., by installing more intelligent warning devices at level crossings, and platform doors. At the same time, we will cooperate with customers and communities to develop overall measures, such as eliminating level crossings when possible and developing campaigns (about platforms,



Platform doors

(JR East)

level crossings, elevators, etc.) to communicate the hidden dangers of railways to the public.

Prioritizing Safety Equipment Planning

Since our foundation 27 years ago, JR East has invested more than ¥3 trillion in safety, and the *JR East Group Safety Plan 2018* invests about ¥1 trillion more over the next 5 years. In specific terms, we will continue to invest in countermeasures for large earthquakes, introduce even better protection devices, and work on measures to prevent level-crossing accidents. Also, we will work to complete installation of platform doors at 23 stations on the Yamanote Line, as well as formulate installation plans for other lines (Fig. 6).

Conclusions

Our *JR East Group Safety Plan 2018* is a 5-year plan for improving the safety of both people and facilities. All employees share our strong resolve to prevent any major accidents, and will continue to tirelessly rise to the challenge of 'extreme safety'.

Figure 6 Main Safety Equipment Provision Plan

Eliminate Accidents due to Internal Causes

- Further install ATS-P, ATS-Ps and other better protection devices.
- Introduce a system that will transmit information to train drivers about temporary reduced-speed restrictions, etc., caused by strong winds or heavy rain, etc.
- Work to introduce backup equipment to ensure operation of level crossings when trains are passing.
- Install measuring devices on trains, and aim to make practical use of monitoring technologies to monitor onboard and on-the-ground equipment.
- Make use of GPS, etc., and aim to make practical use of devices that warn track workers of nearby trains.

Reduce Risks of Accidents due to External Factors

- Continue to implement large-earthquake countermeasures, such as seismic reinforcement.
- Continue to implement storm countermeasures, such as fitting tracks with windbreaks.
- Continue to implement rock-fall and landslide countermeasures.

Reduce Risks of Accidents Closely Related to Society

- Work to complete the installation of platform doors at 23 stations on the Yamanote Line and develop and implement installation plans for other lines.
- Continue to install obstruction warning devices (PB units) and crossing obstruction detectors on level crossings to prevent crossing accidents.



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