

IMPROVING SAFETY MANAGEMENT SYSTEM

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SUMMARY

East Japan Railway Company has formulated the new five-year safety plan “JR East Group Safety Plan 2018” (fiscal year 2014 to 2018), poised to take on the challenge of “ultimate safety”.

In this plan, we show four principles. The one is ‘Ingraining the culture of safety’, the two is ‘Improving safety management’, the three is ‘Steadily reducing risk, the four is ‘Priority improvement plan for safety equipment’.

This report, while providing an overview of the indicated plan, describes the theme of two, ‘Improving safety management’.

INTRODUCTION

Since the foundation of East Japan Railway Company, we have positioned safety as the top-priority issue for our operation and have made great efforts toward its enhancement. The goals for the new five-year safety plan “JR East Group Safety Plan 2018” (fiscal year 2014 to 2018) include “zero passenger fatalities and injuries” and “zero employee fatalities” (including employees of group and partner companies).



Figure 1: JR East Group Safety Plan 2018 and Four Principles

In order to resolve the remaining safety-related issues and achieve further improvements in safety, there is a necessity to ensure the advancement of policies and measures that have been implemented up to this point. At the same time, the environment surrounding East Japan Railway Company has been changing in recent years, involving such aspects as the progress of systematization, responses to generational changes, division of work among group and partner companies, and frequent occurrences of natural disasters. Especially, amidst the rapid loss of skilled veterans retiring, the importance of nurturing younger employees who will be at the core of safety-related knowledge, technologies, 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.

EDUCATION OF SPECIALISTS IN SAFETY MANAGEMENT

We will work to educate personnel by exposing them to 'safety professional's working in regional management offices, key safety leader in all our operational offices as well as the General Training Centre and Skills Training Centers where training adapted to actual practice is implemented.

Through the fostering of key safety leaders and safety professionals, JR East aims to pass on its safety technologies and knowledge to the next generations of workers. Furthermore, we endeavor to pursue measures which allow us to deeply comprehend the gravity of accidents and to minimize human error.

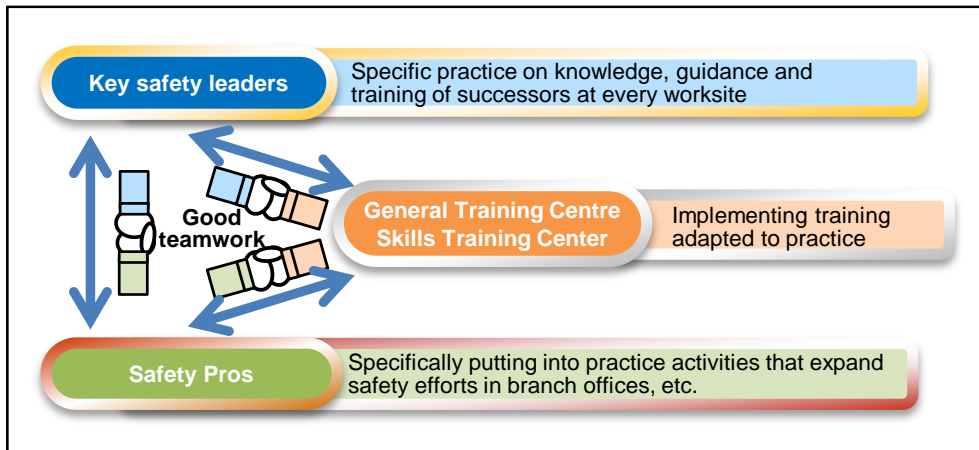


Figure 2: Cooperation between Key Safety Leaders, Safety Professionals and General Training Centers.

PROACTIVE AND PRACTICAL SUCCESSION 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 experts. To succeed knowledge and backgrounds of safety rules, we have been making many documents, for example, `The casebook of serious accidents` and `Collection of constitution of safety rules`.

In addition, we organized a group of ex-employees of JR East who possessed an abundance of knowledge and applied skills in railway safety to act as our "Chroniclers of Safety (narrators of oral history)" since FY2009. Currently, Chronicler of Safety Seminars are being conducted by a group of eight of these Chroniclers at Head Office and Branch Offices, in the hope that they will pass their accumulated experiences and skills down to future generations.



Figure 3: JR East's Eight Chroniclers of Safety

LEARNING FROM THE EXPERIENCES OF THE GREAT EARTHQUAKE

Learning from earthquakes in the past, JR East has employed the following three anti-earthquake measures:

① Stopping trains immediately (emergency train stop measures)

JR East has installed seismographs along coastal and Shinkansen railway lines for the detection of primary tremors (P-waves). Our present system allows us to stop trains as soon as primary tremors are detected.

For conventional lines, our Early Earthquake Alert System was introduced all areas. The system enables trains in any section of tracks to be stopped in the case of a major earthquake, utilizing information obtained from our Shinkansen seismographs and from any advance announcements given by the Japan Meteorological Agency.

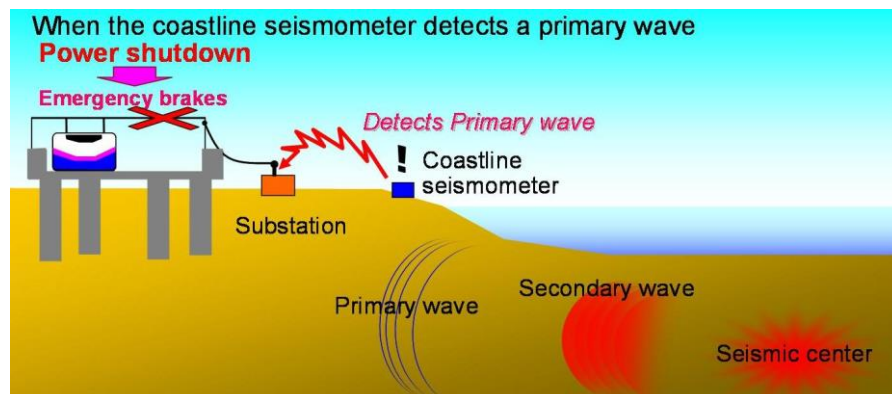


Figure 4: Early Earthquake Detection System

② Preventing structural damage (seismic reinforcement measures)

In response to the 1995 Great Hanshin-Awaji Earthquake, JR East has been taking a number of seismic reinforcement measures. By the end of March 2008, we had reinforced all of our elevated Shinkansen viaduct support columns and Shinkansen bridge columns.

Based on experience derived from the Great East Japan Earthquake, we will proceed with the seismic reinforcement of railway station buildings serving more than 3,000 passengers per day, along with the seismic reinforcement of Shinkansen electrical poles.



Figure 5: Reinforced pillars

③ Minimizing secondary accidents following derailment (preventive measures against derailed trains leaving the track area)

During the Niigata Chuetsu Earthquake in 2004, one of our Joetsu Shinkansen (“TOKI 325” limited express, from Tokyo to Niigata terminal) trains was derailed while running. Fortunately, this derailment did not lead to any injury to either our passengers or our train crew.

Learning from the events surrounding this earthquake, JR East has taken several measures for our Shinkansen trains and tracks.

“TOKI 325” was able to stop without greatly deviating because the part of boggy was caught on a rail. Learning from this truth, we decided to install an L-shaped car guide on the bogies, and to make rail fastener stronger, and glued-insulated joint.

During the Great East Japan Earthquake, one deadhead Shinkansen train was derailed by the shaking of an earthquake near Sendai station. And, such measures functioned successfully.



Figure 6: L-shaped car guide (Actual derailed Shinkansen)

In the Great East Japan Earthquake, 5 conventional trains were derailed and 23 stations were destroyed by Tsunami. And many buildings and constructions were destroyed by this Great Earthquake. But, our station staffs and train crews successfully led our customers to the emergency evacuation areas before the tsunami hit. Therefore, nobody at station or on train was dead.

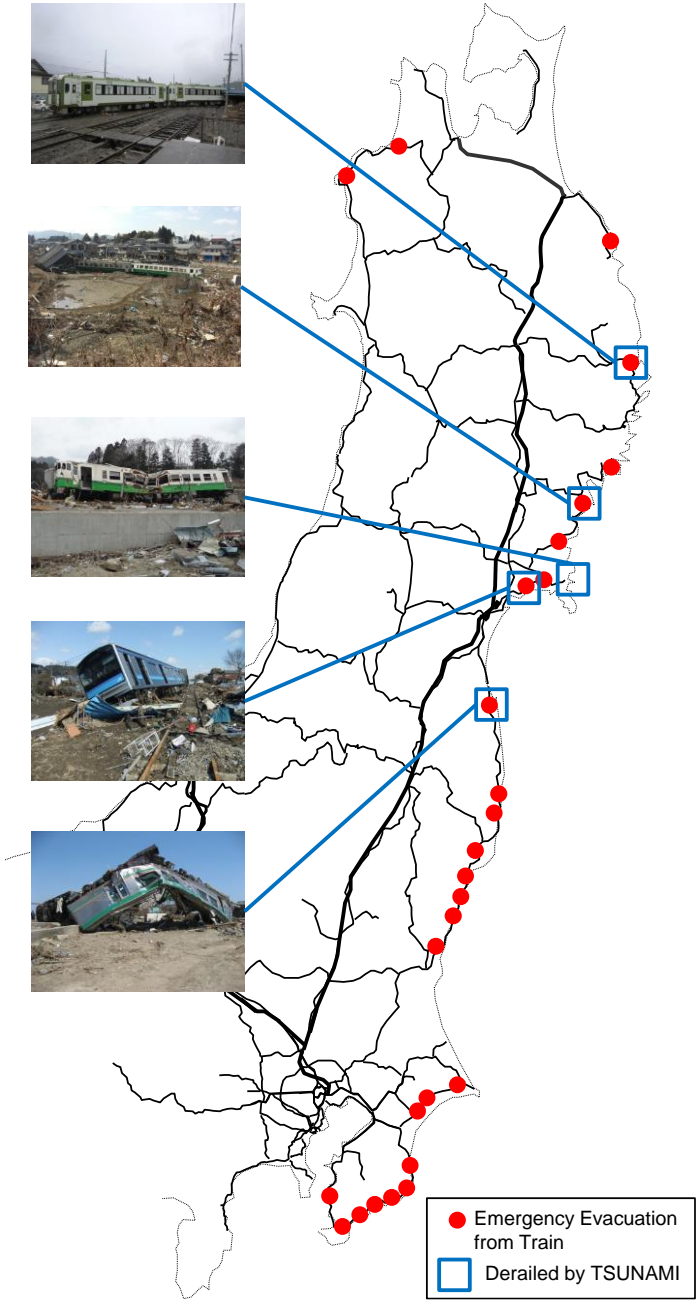


Figure 7: Map of evacuation and derailment during Great East Japan Earthquake

We have General Principles of safety. We, railway staff, must obey rules for safety operation. However, when we face an unanticipated situation such as Great East Japan Earthquake, we must remember “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”. And our employee obeyed it.

General Principles of Safety

1. Safety is the most important mission in transportation .
2. Ensuring safety is based on exact observance of rules and procedures, and is achieved through constant practice.
3. Enforcement of confirmation and complete contact is most important for ensuring safety.
4. For ensuring safety we should cooperate together and go beyond our official responsibility.
5. 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.

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

EFFORT FOR DEEPLY UNDERSTANDING ABOUT TERROR OF THE ACCIDENT

To improve the skills of train crews, accident prevention simulator training is conducted regularly in the General Training Centers in each of our branch offices. At the JR East General Education Center in Shirakawa City, Fukushima Prefecture, we train both drivers and conductors, and provide human resource development in the form of knowledge and technical proficiency.



Figure 8: Appearance of General Education Center



Figure 9: Outdoor training facilities



Figure 10: Shinkansen crew training simulator



Figure 11: Driver training simulator (Conventional train)

The Accident History Exhibition Hall was established in the General Education Center to emphasize the importance of learning from past accidents. In FY2014, we constructed the Train Accident Preservation Center for the preservation of actual trains damaged in accidents or disasters in order to comprehensively understand the events.

We will ensure all employees visit our Accident History Exhibition Hall with exhibits of actual trains involved in railway accidents. By getting employees to experience simulations of train accidents and incidents, we will implement initiatives for 'deep' learning the misery accidents.



Figure 12: Accident History Exhibition Hall



Figure 13: Train Accident Preservation Center

RAILWAY SAFETY SYMPOSIUM

We have been holding Safety Symposium since 1990 every year for the purpose of raising awareness for railway safety. About 500 employees (including employees of group and partner companies) join this symposium and learn about JR East's Group Safety Plan 2018 and some excellent efforts of our or other companies.



Figure 14: Railway safety symposium (in FY 2014)

PROVIDING UNDERSTANDABLE LEARNING MATERIALS AND INFORMATION

We will make use of our Safety Portal website to create an environment where materials (including video clips) can be viewed. This portal website presents some useful contents to learn about railway safety. And Bulletin Board System was installed to inform good efforts in our company.

Moreover, we will use e-learning to help personnel study whenever they want on personal computers and tablets.

CONCLUSION

Since establishment of East Japan Railway Company in 1988, we have been formulating safety plans every five years. “JR East Group Safety Plan 2018” is the fifth safety plan. For our company, safety has been the top priority, and we have worked to heighten our levels of safety.

We are pursuing “Ultimate Safety” not “Perfect Safety”. We consider that “Perfect Safety” doesn’t exist, and can’t reach the goal. Therefore, 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 (including employees of group and partner companies) fatalities.

All employees share our strong resolve to prevent any major accidents, and will continue to eternally rise to the challenge of ‘Ultimate Safety’.