The derailment accident on the Fukuchiyama Line

On April 25, 2005, we at the West Japan Railway Company caused the Accident on the Fukuchiyama Line, an extremely serious accident resulting in 106 fatalities and more than 500 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.

Overview

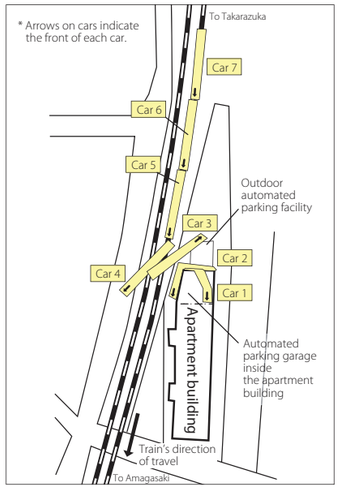
Date/time Monday, April 25, 2005, approx. 9:18 AM
Weather conditions: sunny

Location Between Tsukaguchi Sta. and Amagasaki Sta. on the Fukuchiyama Line
Approx. 1,805 m before Amagasaki Sta. (Amagasaki city, Hyogo prefecture)

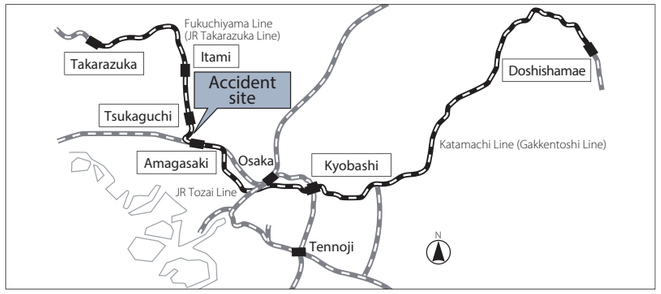
Trains involved Rapid train from Takarazuka Sta. bound for Doshishamae Sta.
Train No. 5418M (EMU 207 series, 7 cars)

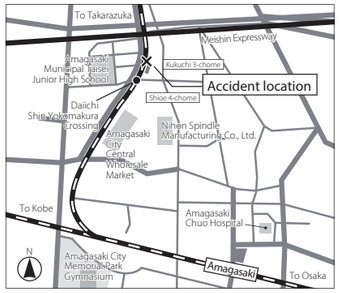
Summary Between Tsukaguchi station and Amagasaki station, train No. 5418M entered a rightward curve with a radius of 304 m at 116 km/h — greatly exceeding the speed limit of 70 km/h for the corner. As a result, the first through fifth train cars derailed, causing the first and second cars to collide with an apartment building on the left side of the direction of travel.

On this derailment, 106 passengers and the train driver were killed. Furthermore, 562 passengers and 1 pedestrian walking near the scene were injured.



Train car positions during the derailment





Sketch of the accident area on April 25, 2005

Cause of the accident

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.

— From the Aircraft and Railway Accidents Investigation Commission's Railway Accident Investigation Report*

* The Aircraft and Railway Accidents Investigation Commission was reorganized as the Japan Transport Safety Board in October 2008

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.

This accident has left an indelible mark on our hearts and we will continue drawing upon all of our capabilities to be fully conscious of our responsibility for protecting the truly precious lives of our customers, and incessantly acting on the basis of safety first, while building a railway that assures our customers of its safety and reliability.

Taking to heart the lessons from the accident

Because JR-West had never predicted an accident of this great magnitude before, we did not have an ATS (Automatic Train Stop) system with speed check functions installed on the curve where the derailment occurred and we did not sufficiently take into account human factors in our employee training and similar programs.

After the accident, in looking back on the issues JR-West needs to rectify, and while implementing various safety initiatives, we came up with the following points of reflection as we reassess why we were unable to preempt the derailment accident on the Fukuchiyama Line.

1 Company-wide system for ensuring safety

Inadequacies in the system for identifying and addressing risks

As a company engaged in the railway business, we need to ensure safety by having each part of the organization earnestly fulfill its duties, while also mutually coordinating with its counterparts. These include management personnel, who handle overall supervision and determine the management policies and their requisite safety measures; technical/engineering personnel, who design and build the railway systems that put the above policies into action; and operational/functional personnel, who run the railways, stand on the front lines, and maintain railway system equipment. When implementing management policies in particular, the technical/engineering personnel work at the design stage to first identify and evaluate risks accompanying those policies, then propose safety measures, while the management personnel execute decisions on management policies after confirming that the necessary safety measures have been taken. Then, the operational/functional personnel strive to notice any safety issues after the policies have been implemented (including during day-to-day work tasks), with the management and technical/engineering personnel responding to address any issues.

With regard to our framework for ensuring safety as a Company comprised of these three parts, we reflected on what should have been done before the accident and came up with the following improvement points for each stage of implementing management policies.

The planning stage for management policies

A system for preemptively identifying and addressing risks — in order to prevent severe accidents before they occur — was not established at the planning stage of management policies. For instance, at the planning stage for revising the timetable (which enabled large-scale formation changes to the train line and an accelerated operation schedule) when service began on the JR Tozai Line, policies did not include equipping the line with an ATS system on the curve where the accident occurred.

The decision-making stage for management policies

A system for deciding management policies after confirming that necessary safety measures have been taken was not established. As a result, the confirmation of safety measures and the decision-making process for management policies were undertaken separately, without mutual coordination, including in the case of management policies for changing the formation of the train line and revising the timetable, and safety measures such as equipping the line with an ATS system.

The post-implementation stage for management policies (including during day-to-day work tasks)

After the implementation of management policies such as changing the formation of the train line, revising the timetable, etc., there were insufficiencies in the system for acknowledging safety issues noticed by personnel during their day-to-day work tasks, as well as gathering information on risks that could lead to major accidents.

Inadequacies in systems such as employee training (greater attention to the "human factor")

As stated in the Aircraft and Railway Accidents Investigation Commission's Railway Accident Investigation Report, "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." In the background to this were insufficiencies in our employee training program's consideration of human factors, as well as a lack of resilience from minimal leeway built into the train timetable.

At that time, the Company thought that pursuing the individual's responsibility for an error would prevent recurrence, so we were carrying out disciplinary action and a re-training program that could be perceived as a penalty against personnel. This led to personnel directing their attention toward covering up and making excuses for errors, which resulted in a situation that opened the door to accidents, as opposed to preventing human errors.

The derailment accident on the Fukuchiyama Line

2 Culture that makes safety the top priority

We believe that part of the background to not having these organization-wide systems for ensuring safety was not having a Company-wide culture that made safety the top priority, and that management personnel in particular had insufficiencies in their actions and awareness of the priority of safety.

Attenuated technical expertise and sensitivity to safety accompanying emphasis on operational efficiency

When the Company was initially founded, efforts were made to promote efficiency across all operations due to the challenging environment in which our operational foundations were being established. As a result, any surplus leeway in operations was reduced and we were not able to elevate safety initiatives as we only took care of maintaining daily tasks. Consequently, technical expertise lagged and we were not able to boost our sensitivity to safety issues.

Insufficient understanding of the "human factor"

As we built up safety measures grounded in experience-based engineering (which is a particularity of the railway business), our fundamental focus became a belief that we could assure safety, so long as we paid attention to laws, regulations, and other rules created from measures and knowledge gained from past accidents. As a result, there was a bias toward preventing recurrence of incidents in an approach that "treated symptoms" while not installing measures for predicting risks preemptively.

Additionally, a focus on ensuring safety by attending to laws, regulations, and other rules led to an inadequate understanding of human factors, such as "humans being prone to fallibility" and "human errors being effects, not causes." This entailed insufficiencies in our multifaceted analysis of causes and our implementation of countermeasures.

Excessive top-down communications, insistence on punishment and rewards, and emphasis on liability

The particularities of the railway business mean that it is comprised of a variety of technical domains and organized with numerous specialized fields (transportation in general, rolling stocks in particular, facilities & equipment, electronics, etc.). This creates fertile ground for a culture prone to top-down communications, including hierarchy within each specialized field and a salient chain of command.

Drawing on lessons learned from when we were a nationalized company, we followed a workplace management approach in which instructions were comprehensively issued at each workplace and an emphasis on punishment and rewards was fundamental. When these were taken to extremes, the corporate culture became focused on pursuing individual liability and the general awareness of sectionalism was heightened. At the same time, top-down communication became excessive and frank discussion was difficult. Dialogue between management, technical, and operational personnel, as well as communication between superiors and subordinates, along with reciprocal coordination between specialized fields and separate workplaces, were all insufficient.

Overconfidence from a successful track record

As JR-West steadily established its management foundation, we weathered the Great Hanshin Awaji (Kobe) Earthquake disaster, then successfully emerged from full privatization and gradually built up a track record of continuously stable operations. We believe that experiencing these successes engendered an organization prone to over-confidence and a sense of contentment with current circumstances. A stance of humbly learning from external examples gradually diminished and discrepancies with society at large emerged.

3 Steps going forward

In consideration of these reflections and in order to achieve a safe railway system, it has been incumbent upon our management personnel to exhibit leadership and build a structure that guarantees safety—through an organization-wide culture where safety is of the highest priority, followed by enhancing railway systems for maintaining safety.

In order to build a culture where safety is of the highest priority going forward, we will maintain and improve our technical expertise and sensitivity to safety under the operational framework required for guaranteeing safety, as we further boost efforts to disseminate awareness of safety as the highest priority.

Moreover, with an understanding of human factors, we will analyze causes from multiple angles and emphasize a mindset for preemptive avoidance (including forecasting risks and implementing countermeasures). We will strive for dialogue between management, technical, and operational personnel; communication between supervisors and subordinates; and reciprocal collaboration between specialized fields and between workplaces; and we will further establish an environment conducive to each employee reporting safety-related information.

Additionally, the three parts that comprise the Company, including operational/functional personnel, will each sincerely fulfill their role. Specifically, management personnel will continue to maintain a strong focus on railway safety and technical personnel who support management personnel will proactively report relevant opinions. In particular, management personnel will also consistently maintain a humble stance and approach their future work acknowledging that safety is the highest priority.

In order to enhance organization-wide systems for ensuring safety, we will, within a culture where safety is of the highest priority, strive for on-going improvement based on an understanding of human factors in our employee training, etc. As we implement management policies, we will also ensure reciprocal coordination among the three parts of the Company engaging in each stage of activities from planning, to decision-making, and post-implementation. As we do so, we will identify risks and further enhance systems for addressing those risks.

The JR-West Group will solemnly reflect on our responsibility for protecting the truly precious lives of our customers and, into the future, will make the central focus of our actions an unchanging determination to ensure that we will never again cause an accident such as that on the Fukuchiyama Line. Each and every member of the JR-West Group will dedicate ceaseless effort toward making safety a reality.

Responding to victims

At present, our specially established Supporting Headquarters for the Victims of the Derailment Accident on the Fukuchiyama Line is responding to the needs of those who suffered from the accident. Going forward, we will earnestly listen to the thoughts and opinions of each individual person and continue to make concerted efforts for all persons affected by the accident. Furthermore, we will continue to keep a contact office open in order to be able to consult with and listen to victims into the future.

Holding a memorial ceremony

In September 2005, we held a Memorial Ceremony & Safety Event, which has been followed up with a Memorial Ceremony every year on April 25. After the service ends every year, there have typically been tributes from general visitors bringing flower offerings.

Holding explanation meetings

We have been holding explanation meetings, with attendance by the Company President and relevant executives, as an opportunity to provide victims with information on Company issues and initiatives, while also receiving input from victims.

The Memorial Ceremony

Memorial Grove (Inori no Mori) at the accident site

We incorporated input from victims and drew up a plan in order to construct a Memorial Grove (Inori no Mori) at the site of the Fukuchiyama Line accident in September 2018.

The Memorial Grove includes a cenotaph, a Memorial Corner (with letters to the deceased from their loved ones as well as various items donated in their memory), and an Accident Information Corner (with panels giving details about the accident, as well as newspaper clippings, publications, and other related media covering the accident). Anyone may freely visit the Memorial Grove.

The Memorial Grove 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 on-going safety as the Company continues to carefully and responsibly preserve the site into the future.

Post-accident Actions

2005
- April: Fukuchiyama Line derailment accident
- May: Formulated a Safety Enhancement Plan
  Established the Deliberation Department of the Derailment Accident on the Fukuchiyama Line
- June: Held a public apology and briefing on future actions (with subsequent explanation meetings held as needed)
- September: Aircraft and Railway Accidents Investigation Commission releases its Railway Accident Report, in addition to recommendations, findings and other issues raised

2006
- March: Established the Supporting Headquarters for the Victims of the Derailment Accident on the Fukuchiyama Line
- April: Formulated "JR-West Corporate Philosophy" and "Safety Charter"
  Memorial Ceremony held to mark the accident (thereafter, service is repeated annually on April 25)
- June: Established the Safety Research Institute
- October: Ministry of Land, Infrastructure, Transport and Tourism implements the 1st Transport Safety Management Assessment (which is followed by the 2nd through 8th assessments)
  Formulated the Railway Safety Management Directives
  Reassessed Medium-Term Management Plan targets

2007
- April: Opened the Railway Safety Education Center
- June: Aircraft and Railway Accidents Investigation Commission releases Railway Accident Investigation Report, in addition to recommendations, findings and other issues raised
  First Railway Safety Report released
- July: Compiling of the Advisory Committee on Safety's final report
- September: 1st gathering of the Council on Safety Promotion

2008
- February: Proposal by the Council on Safety Promotion
- April: Formulated the Fundamental Safety Plan
- May: Formulated Medium-Term Management Plan 2008-2012

2009
- September: Disclosure that there was pressure to leak information related to the government's accident investigation
- November: Report to the Minister of Land, Infrastructure, Transport and Tourism on the information leak
- December: Established the Corporate Revival Headquarters and Corporate Ethics & Risk Management Department

2010
- October: Reassessed the Medium-Term Management Plan 2008-2012

2011
- April: Japan Transport Safety Board's Inspection Team releases its Corruption Inspection and Proposal on Reforming the Accident Investigation System

2013
- March: Formulated Medium-Term Management Plan 2017 and Railway Safety Think-and-Act Plan 2017

2015
- April: Released the update of the JR-West Group Medium-Term Management Plan 2017 and an update on future key initiatives

2016
- April: Commenced initiatives on Total Personnel Safety Management
- June: Released Third-Party Evaluation of the Safety Management System (thereafter, updated annually)

2017
- December: Occurrence of the 2017 critical incident with the discovery of cracks in the steel frame of Shinkansen bullet trains

2018
- February: Formulated JR-West Group Railway Safety Think-and-Act Plan 2022
- April: Formulated Medium-Term Management Plan 2022
- September: Opening of the Memorial Grove (Inori no Mori) at the accident site

The derailment accident on the Fukuchiyama Line

"Think-and-act" initiatives taking to heart the lessons of the accident

With 14 years having passed since the derailment accident on the Fukuchiyama Line, nearly half of current JR-West employees joined the Company after the incident. In order to ensure that the accident is not forgotten, and to implement initiatives for improving safety, the entire JR-West Group is carrying out measures to hold in our hearts the lessons of that day.

We have designated the 25th day of every month "safety day." In addition to having study sessions and cross-departmental discussions on safety at each workplace, we hold "think-and-act" safety training at the Railway Safety Education Center and Memorial Grove (Inori no Mori) at the accident site for the purpose of acknowledging the lessons and points of reflection from the accident, using those insights in safety improvement initiatives, and connecting this to the work tasks of each employee.

Furthermore, we are following "think-and-act initiatives" in each employee's daily work in order to build a culture where safety is of the highest priority. This includes striving to enhance communication and reciprocal coordination among worksites, as well as endeavoring to establish an environment where it is easy to report information related to safety.

Employee thoughts

Improving safety awareness by "creating a workplace more conducive to speaking out"

Osaka Train Drivers' Section, Osaka Branch,
Kansai Urban Area Regional Head Office

We think that part of the background to the derailment accident on the Fukuchiyama Line was an atmosphere in which it was difficult to report to supervisors and co-workers mistakes that occurred during operations and risks that were noticed. Hence, we are striving to create a workplace more conducive to speaking out.

Specifically, we have reassessed report forms in order to make it easier to report hazards noticed during train operation and we have meetings that allow employees who have noticed errors or points of concern to explain those issues in their own words. This information is posted on a bulletin board and shared with the entire worksite.

We feel that a mindset is becoming more entrenched where drivers reflect on their day of work and report things they have noticed, while an atmosphere more conducive to making reports is spreading at the workplace. The objective of these initiatives is to prevent errors. We believe that our mission is to translate reported information into countermeasures, while being able to laterally deploy those measures across the workplace.

As drivers on the Fukuchiyama Line, every time we pass by the site where the accident occurred, we feel a strong conviction that a similar derailment accident must never be allowed to happen again. Also, in order to utilize the lessons of the accident across the entire workplace, and to communicate those lessons to junior colleagues, we will strive to create a culture that makes safety the highest priority, because that is something we are especially equipped to do.

(From left)
Yusuke Fukumori,
Koichi Hanada,
Junpei Horiguchi

Improving the quality of work by enhancing communication between specialized divisions

Yamaguchi Civil Engineering Center, Hiroshima Branch
RAILWAY TRACK AND STRUCTURES TECHNOLOGY Co., Ltd.

We are in charge of inspecting roadway bridges above railway lines in the Yamaguchi area. Our technicians range from those engaged in civil engineering, track maintenance, electricity, as well as other diverse areas, and we work under various conditions inspecting each section. Consequently, the work constantly comes with risks of occupational hazards, such as collisions with trains, electrocution, falls, etc. In order to confront these risks, we must, from the planning stages, mutually share and address issues in each line of work and go about our business with coordination by all parties concerned. We were especially nervous about collisions and electrocution when performing our first inspections at stations where multiple train lines intersect. Because of that, we were careful to regularly and repeatedly check in with all of the relevant parties on site in order to identify risks.

Meticulously speaking face to face and reviewing situations with others helped create an atmosphere conducive to open discussion and the active exchange of opinions. As a result, we were able to take necessary precautions, approach our work with a sense of security for all those involved, and perform higher quality inspections.

Protecting the lives of employees helps in protecting the lives of passengers. Going forward, we will continue to engage in uncompromising daily tasks so that everyone around us can enjoy peace of mind.

(From left)
Hiroshima Branch:
Mototsugu Nishida,
Yuta Uchida
(currently dispatched to KOSEI CORPORATION),
Yuzo Fukano
RAILWAY TRACK AND STRUCTURES TECHNOLOGY CO., LTD.: Tsuyoshi Kawai,
Hiroshi Isobe

Initiatives that take into account the accident and work to benefit local communities

As a company entrusted with the precious lives of passengers, we are committed to reflecting on the gravity of causing such a major accident and, as part of creating a society that affords safety and peace of mind, we established the JR-West Relief Foundation in April 2009 (active as a public interest incorporated foundation since January 2010).

Since its inception, the foundation has followed the spirit of its creation by engaging in physical and mental care, such as grief counseling for those affected by accidents and disasters, while also engaging in projects for building safer local communities.

Hosting events

The foundation holds Life Seminars that take up the themes of sorrow and grief counseling, focus on life from multiple perspectives, and strive to provide participants with the opportunity for personal reflection. The foundation also holds Safety Seminars, which take a wide-angle look at addressing safety in local communities, and Life Relay Races, which work with fire departments to help promote emergency aid/life support training.

Holding a life-focused essay & haiku contest for elementary and junior high school students

In 2019, the foundation entered its eleventh year.

As an event marking its tenth anniversary, the organization held an essay and haiku contest for elementary and junior high school students, asking them to write about what life means to them. By creating essays and haiku poems about life, students were able to reflect on the importance of life. We share these reflections with the community by compiling them in a published digest of the best submissions.

Offering grants

Toward creating a society that affords safety and peace of mind, the foundation offers grants to groups and research projects supporting preparations and recovery care for accidents, natural disasters, and unforeseen tragedies, with a special category created covering support projects for areas and individuals afflicted by the Heavy Rain Event of July 2018. Furthermore, in order to help the grass-roots promotion of emergency aid/life support training in local regions, the foundation subsidizes AED training devices and also supports a group whose achievements include providing Inochi no Denwa (a suicide prevention line servicing the six prefectures of the Kinki area).

Comment from a grant recipient

Mami Otake
Representative of Pocosmama Kansai

Pocosmama is a group of those who have experienced miscarriage or stillbirth. Our purpose is to engage in activities that support mothers coping with the profound sadness of losing a young child and we also serve as a community offering mutual support for family members coping with the same heartache. Using the grant from the JR-West Relief Foundation, the Kansai branch of Pocosmama has been able to provide education and establish a solid groundwork for spreading information, holding peer support gatherings, and offering support for women who would like to become pregnant again. This year, we have been able to offer the Pocos Café, which is a safe place for sharing experiences of loss, shedding tears among companions who understand feelings held for a lost child, and grasping some sense of encouragement. Also this year, we have received medical research and training. Empathy from those who have had similar experiences, and participation in our activities, helps people to find the spirit to carry on, which is why we will continue our initiatives into the future.

Comments from the organizer

Hideo Hironaka
Department Manager, JR-West Relief Foundation

Activities related to mental and physical care for those afflicted by accidents and disasters have given me a poignant sense of how many people there are in the world who are trying to do their best, as well as how many individuals there are concerned about the struggles of life.

At the same time, as the foundation pursues each of our projects, I have felt great meaningfulness from the voices of gratitude coming from grant recipients and seminar participants. Going forward, I would like to cherish these connections, keep the spirit of the foundation at the heart of our thoughts and actions, and continue activities that are beneficial to communities.