

Recovery from Great East Japan Earthquake: Full Resumption of Services on Sanriku Railway

Atsushi Tomite

The shaking and duration of the immense M9 undersea earthquake that struck the coast off north-eastern Japan on 11 March 2011 had never been experienced in living memory and it would later be called the Great East Japan Earthquake. The resulting giant tsunami killed more than 20,000 people and wreaked catastrophic destruction on towns, villages, and infrastructure along coastal areas. The Sanriku Railway running along the coast of Iwate Prefecture was severely damaged, making it impossible to operate trains. Although many people feared that restoration would be difficult to accomplish, Sanriku Railway has been restored to full service just 3 years after the disaster. Towns in the Sanriku region are still far from full recovery, but restoring the railway was achieved through the encouragement and support of many people. This article describes the circumstances of the recovery in such a short period.

The Sanriku Railway Company

Sanriku Railway started operations on 1 April 1984. Based on the Law for Special Measures to Promote Japanese National Railways Rehabilitation, the Japanese National Railways' (JNR) local Sakari Line from Sakari to Yoshihama, Miyako Line from Miyako to Taro, and Kuji Line from Kuji to Fudai were scheduled to be closed, and construction of lines from Yoshihama to Kamaishi and Taro to Fudai was halted. To maintain local rail services, the Sanriku Railway Company was formed in 1981 as a public-private partnership financed by Iwate Prefecture, local governments, and the private sector to take over operation of lines scheduled for closure and to construct the planned lines. It received much attention at its birth, because it was the first public-private partnership railway formed by transfer of JNR regional lines. It consists of the 36.6-km Minami-Rias Line between Sakari and Kamaishi, and the 71.0-km Kita-Rias Line between Miyako and Kuji. At that time, the section between Miyako and Kamaishi was part of the JNR Yamada Line, and came to be wedged between the two halves of the Sanriku Railway. The Yamada Line was not scheduled for closure and was transferred to JR East, which took over JNR's business in the area.

The Sanriku Railway received much attention from across Japan at its start, with a record 2.689 million people coming to ride it in the first year of operations. Those numbers started to decline the following year, but staged a temporary recovery in 1990–91 due partly to recovering commuter usage with an increase in the number of high-school students, as well as an increase in tourists riding the introduced retro carriages. However, numbers fell again from 1992 due to a decrease in the number of high-school students, as well as decreasing non-commuter usage due to factors such as relocation of the prefectural hospital. Development of national highways and progressive opening of the Sanriku Expressway also furthered the decline. Contrary to expectations, the railway was profitable in the early days but declining passenger numbers pushed it into the red in 1994, despite efforts to streamline operations, improve services by increasing the number of trains, and revising fares. The railway has operated at a loss since 1994 and passenger numbers had declined to 853,000 in fiscal 2010, the year before the earthquake.

Sections along the coast are limited to regions with no other transport options and there are many long tunnels, due partly to the geography of the area, and because the line was built to resist tsunami damage since the area has suffered severe damage from natural disasters in the past. As a result, despite being a local railway built in the 1960s, it has a modern construction. For example, there are few level crossings, with just one on the Kita-Rias Line and two on the Minami-Rias Line. There are no sharp curves and the maximum speed is a fast 90 km/h because it was constructed as a high-standard trunk line traversing the Sanriku region. The original concept was for a railway extending from Maeyachi on the Ishinomaki Line along the Sanriku coast to Hachinohe and was to include operation of limited express trains. Tunnel cross-sections support AC electrification.

Damage from Great East Japan Earthquake

One train was running on each of the Minami-Rias and Kita-Rias lines when the Great East Japan Earthquake struck.

The long shaking gave some forewarning of the coming tsunami. The train on the Minami-Rias Line stopped inside the Kuwadai Tunnel between Yoshihama and Touni. The train on the Kita-Rias Line stopped at a high-elevation location between Shiraikaigan and Fudai. Both were considered safe locations in a tsunami.

At the time, the train radios and railway telephones were operational, enabling communication with the head office and operations departments of the two lines. Calls from public telephones and ordinary mobile phones were impossible. A major tsunami warning was soon issued and then the giant tsunami struck, wreaking devastation on the towns.

The giant wave destroyed sections of the Sanriku Railway along the coast; train radio base stations were destroyed, rendering train radio unusable. Railway telephone lines were also cut. The only means of communication was mobile phones but public mobile voice services were disabled immediately after the earthquake. However, Sanriku Railway had just introduced mobile phones with disaster priority the previous year and the system proved its worth by enabling communications between the front lines and the prefectural government and the Tohoku District Transport Bureau.

According to hazard maps, a tsunami could not reach Miyako Station. Regular employees were ordered to evacuate to designated locations, and managers remained on the second floor of the station. From the windows, we could see that flooding was occurring. We first thought it was ruptured water pipes, but the water level gradually rose and debris washed by, followed by cars. It was clear that a tsunami had struck, so we evacuated to a nearby overpass for safety. The tsunami stopped just about where the hazard map predicted and did not reach the roundabout in front of the station. The managers eventually returned to the head office at about 5 pm in the cold with a light snow falling. The power was out, and it was cold and pitch dark. We decided to go to a 117D diesel motor car standing at the platform where starting the engine would provide light and heat. That car became our disaster response HQ, and we would be living out of it for a week.

The car was a type 36-102. Unfortunately, it was not a type 36-200, which has inverters to provide 100-Vac power that would have enabled use of PCs and other electrical equipment. Even so, it was a stroke of luck just to be able to have heat. Aftershocks in the night shook the car violently.

All passengers on trains stranded in sections between stations had been rescued by 7 pm. Employees who were at work at the time were all safe, and there were no injuries to passengers. Many employees were off duty at the time of the earthquake and could not be contacted, so people had to go around to their homes and evacuation centres to confirm their safety. It would be a full week before we could confirm that all were safe.

Figure 1 Sanriku Railway Route Map

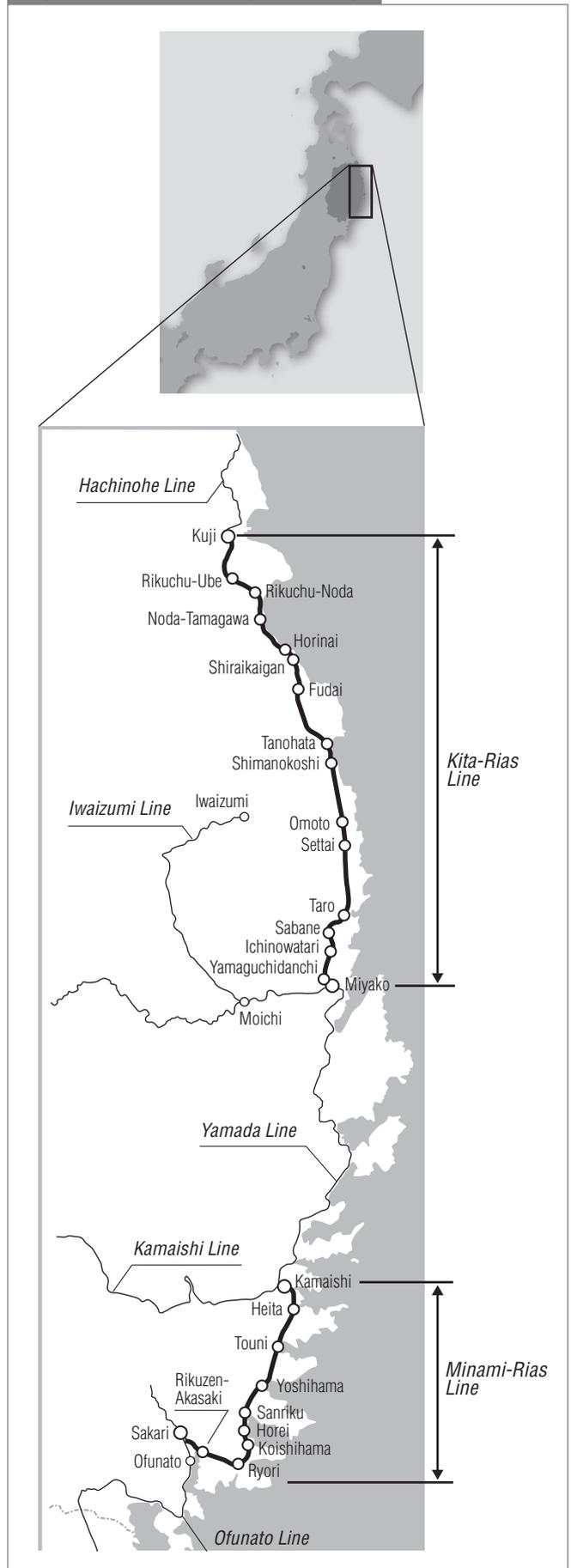
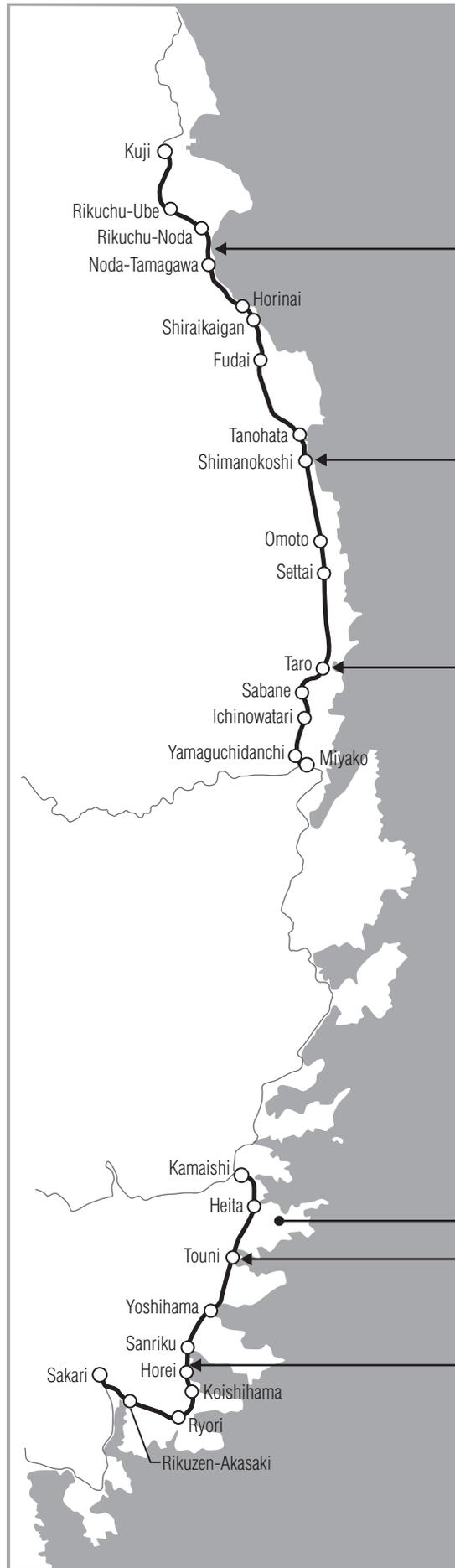


Figure 2 Overview of Damage and Restoration for Sanriku Railway



11 April 2011 between Noda-Tamagawa and Rikuchu-Noda



15 January 2012 restoration work between Noda-Tamagawa and Rikuchu-Noda (Maita area embankment work)



13 March 2011 near Shimanokoshi Station



11 April 2011 Shimanokoshi Station



13 March 2011 Taro Station



13 March 2011 Taro Station facing towards Kuji ①



13 March 2011 near Minami-Rias Line Operations Department ①



13 March 2011 near Minami-Rias Line Operations Department ②



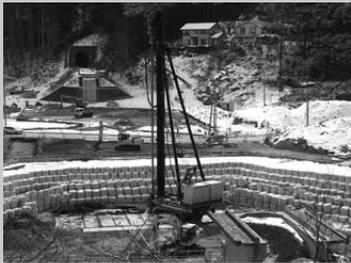
1 September 2012 restoration work between Horei and Sanriku (Tomari area)



13 March 2013 Horei Station



18 February 2012 restoration work between Noda-Tamagawa and Rikuchu-Noda (Tofugaura area)



21 February 2013 restoration work near Shimanokoshi Station



30 January 2014 restoration work near Shimanokoshi Station



13 March 2011 Taro Station facing towards Kuji ②



13 March 2011 Arakawa River Bridge



7 September 2013 Arakawa River Bridge restoration work



13 March 2013 Tomari area between Horei and Sanriku

A whiteboard was brought to the train serving as the disaster response headquarters and the circumstances and time when contact was made were written on it. All the details were copied to notebooks and the whiteboard updated to the latest information. Evacuation orders were issued in the area of the Kita-Rias Line Operations Department, so everyone relocated temporarily to a designated evacuation centre. However, the central area of Kuji had not suffered damage, so everyone returned to the worksite when the evacuation orders were lifted. On the other hand, the Minami-Rias Line Operations Department was just 3 km from the sea, at a location where a tsunami was not expected to reach. However, the tsunami did reach it and also flooded Sakari Station. The damage was widespread due to the tsunami moving upstream along the Sakarigawa and overtopping the levee. Particular care has to be taken regarding tsunamis funnelling upriver; it was later found that the tsunami almost overtopped the levee at Miyako after running up the Heigawa. If it had overtopped the levee, the flooding would have been much worse than just the flooded part of the east side of JR East Miyako Station. It truly was a close call.

The lower part of three rail cars parked in the yard of the Minami-Rias Line Operations Department were drowned in seawater, rendering their engines and other drive parts inoperable. At Sakari Station, the track was flooded, but the stationhouse saw no flooding at all. The stationhouse at Kamaishi Station was damaged by flooding, but the platform was at a higher location and the track was undamaged.

We checked the damage situation on the morning of 13 March when the tsunami warning was cancelled. Highway 45 was cut, so we had to take detours on mountain roads to reach the individual stations.

The Kita-Rias Line suffered very little earthquake damage although areas close to the coast were heavily damaged by the tsunami. The sections between Noda-Tamagawa and Rikuchu-Noda and the area around Shimanokoshi Station were all swept away. The devastation was especially overwhelming around Shimanokoshi Station where viaducts and bridges were completely wiped out. Taro Station suffered some damage, but it was light overall with just part of the line on the Kuji side having been overtopped by the tsunami. It looked like trains could be run after cleaning up debris and supplementing ballast.

On the Minami-Rias Line, the area around Touni Station, the Arakawa Bridge, the Tomari area between Sanriku and Horei, Horei Station, the area around Rikuzen-Akasaki Station, and the area around Sakari

Table 1 Inspection Status

Line		Minami-Rias Line	Kita-Rias Line	Total
Station span		Sakari–Kamaishi	Miyako–Kuji	
Length (km)		36.6	71.0	107.6
Inspection rate (%)		100	100	100
Number of locations suffering damage	Embankments/Earth cuts	61	11	72
	Bridges/Viaducts	20	15	35
	Tunnels	4	0	4
	Stations/Platforms	4	1	5
	Tracks	96	38	134
	Signal facilities, Communications facilities, Power facilities	52	5	57
	Various other equipment	10	0	10
Total		247	70	317

Table 2 Overview of Damage

Category	Damage	Locations
Civil engineering structures	Abutments, piers, or girders washed away	8
	Abutments, piers, girders, or shoes damaged	10
	Bridge railing, inspection platforms, or other facilities damaged	17
	Embankments or slopes washed away	58
	Earth retaining walls, etc., damaged	14
	Tunnel walls or arches cracked	4
	Stations or platforms washed away	1
	Stations or platforms damaged	4
Track	Track washed away	15
	Ballast washed away	46
	Track deformed	50
	Dirt and debris washed in	23
Electrical facilities	Communications equipment damaged (cables, communications equipment)	38
	Signal facilities damaged (cables, signals)	15
	Power facilities damaged (yards, tunnel power receiving equipment)	4
Total		317

Station suffered tsunami damage. Due to the large number of tunnels, washed away sections were very localized. The area saw serious damage to structures caused by seismic movement so intense that it was almost impossible to stand during the earthquake. Bridges were damaged in various parts, with the Owatari River bridge suffering broken and dislocated piers and girders to an extent that restoration would obviously require much time (although to the layman it looked sturdy and able to handle trains). Track was deformed in many places. This heavy damage is why the restoration took so long.

Resumption of Services on Some Sections

While travelling to see the on-site situation, we found that local residents were using the track at Taro as a substitute for roads. The roads were covered in debris, so people were forced to walk along the track on an embankment. Many were without any transport because their cars had been swept away. In this situation, securing some means of transport became an urgent issue. It looked like it might be possible to run trains on sections between Kuji and Rikuchu-Noda and between Miyako and Omoto so a decision was made to put off surveying damage to the entire railway and prioritize work to restore service on sections where it looked like trains could run.

Other services were not running and aftershocks continued, so some people inside and outside the company expressed doubts about the need to run trains in such a situation. Although complete restoration of the whole railway would probably require huge costs and it was unknown whether full restoration would be possible, the management believed that it was meaningful to operate in such circumstance given that the railway is a public–private partnership. Therefore, service was resumed on 16 March on the section between Kuji and Rikuchu-Noda. The Tohoku District Transport Bureau also gave permission to resume service under the condition that only test runs would be made.

To remove debris around Taro Station, we asked the mayor of Miyako City to request assistance from the Self Defence Force. As a result, debris was removed from tracks, under-platform pathways, connecting roads and the like, and service resumed between Miyako and Taro on

20 March. This was followed by the section between Taro and Omoto on 29 March after track maintenance. The number of runs was greatly reduced and speeds were kept to 25 km/h for safety reasons, causing much longer travel times than usual. For this reason and to support people affected by the disaster, we waived fares until the end of March. This was the first time free transport after an earthquake has been provided since JNR provided a similar service following the 1923 Great Kanto Earthquake.

The media reported on the service resumption soon after the earthquake and all Japan learned about the situation. Looking back, it is possible that such reporting was a major stimulus for restoration of the entire railway. If services had not been resumed when they were, they may have been judged unnecessary, leading to closure.

However, this was as far as we could go with restoration by ourselves. Damage in other sections was severe and a large amount of funding would be needed. Local governments were unable to provide funds for restoration, because they too were affected by the earthquake, so we were forced to ask the national government. Support funds were sent from across Japan, but they were nowhere near enough to cover restoration expenses. Some believed that we would receive donations from across the country if we asked, but it was not just Sanriku Railway that was affected by this disaster. And we would have to pay tax on any donations because we are a corporation.

Efforts Towards Restoration

The damage was surveyed in earnest in April with the cooperation of the Japan Railway Construction and Transport and Technology Agency (JRTT) and associate companies. A restoration plan was put together based on the results and the compiled plan was approved by mayors of trackside local governments and submitted to relevant agencies.

The basic premise was to restore the current route. From the start, the line had been built with many sections on higher ground taking tsunami into account, and almost half the line is in tunnel due to the geography. The only track on the coastline is in places where it cannot be avoided. The plan was to restore in a way that would minimize damage if another tsunami of similar size were to strike ever again. Furthermore, Sanriku Railway embankments also served as coastal levees and had been effective in minimizing damage in Horei and other areas.

The first stage was to restore the section between Noda-Tamagawa and Rikuchu-Noda because this would connect the section between Tanohata and Noda-Tamagawa, which had no damage, linking the section from Tanohata to Kuji all at once. The completion target was April 2012. The second stage would cover the section between Sakari

and Yoshihama on the Minami-Rias Line with completion scheduled for April 2013. The third stage was the sections between Omoto and Tanohata on the Kita-Rias Line and between Yoshihama and Kamaishi on the Minami-Rias Line by April 2014. In the end, restoration was completed according to plan.

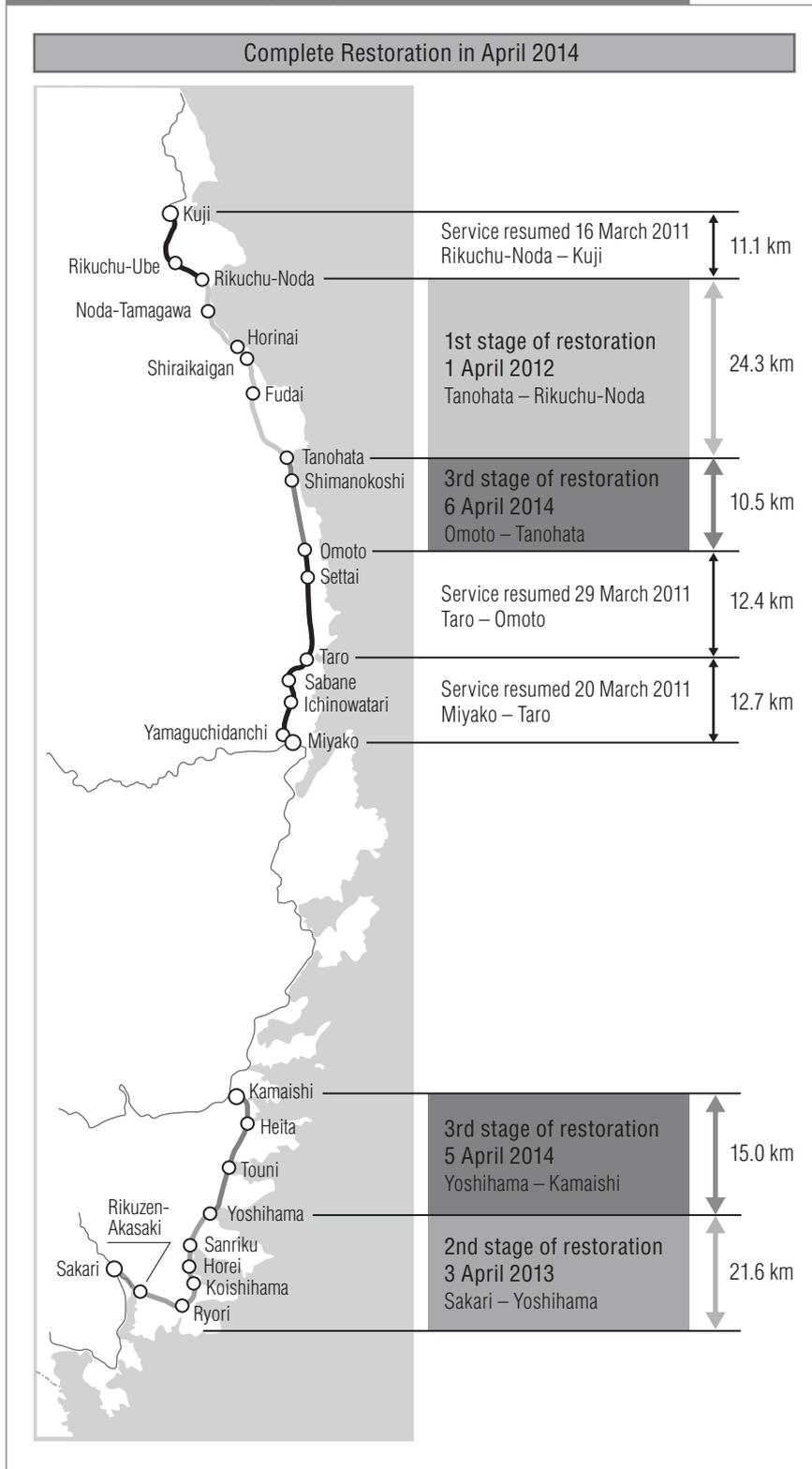
Our company president, Masahiko Mochizuki, petitioned national and prefectural government agencies tirelessly for support. At the same time, various people visited to observe the restoration efforts. However, the local governments were in no position to support a single railway company and other railway companies had also suffered severe damage, including JR East, Sendai Airport Transit, Abukuma Express, Hitachinaka Seaside Railway, Kashima Rinkai Railway, Fukushima Rinkai Railway, Sendai Rinkai Railway, Hachinohe Rinkai Railway, and Iwate Development Railway. As a result, conditions were harsh.

Effectively, resumption of full service along the entire railway came down to the fact that the national government could allocate budget for funding. Under ordinary circumstances, the financial burden of railway restoration from disasters is borne half by the railway company and half by national and local governments. However, an exception was made in this case where the national government bore half the burden and local government the remaining half. The local government portion was financed by tax allocations to local governments, so the national government in effect subsidized the entire restoration effort. A condition for this support was that ownership of structures such as track be transferred to local governments. While direct subsidies could not be made to an individual corporation, a scheme was put together where local governments were provided with subsidies.

Public opinion also affected budget allocation for restoration efforts. Many people expressed their support and partial resumption of service garnered much attention. Therefore restoration was possible thanks to all the people who provided their support. If public opinion had been greatly divided over whether or not to restore the railway, it would have been difficult to restore. As word of the service resumption spread, more and more support was forthcoming. Corporations and individuals provided continuous support. Emails of encouragement and opinions arrived every day, and I regret that we did not have the capacity to reply to them all.

In addition to securing funds for recovery, there was also the issue of whether the company could continue to exist. We conducted measures to increase revenues, such as making rails from damaged sections into memorials dedicated to recovery and selling those, selling tickets for closed sections as part of support efforts, and affixing name plates to the front cars, where 'owners' could place their own

Figure 2 Sanriku Railway Complete Service Restoration Scheme



observation trips to the disaster-affected areas, and Disaster Education Trains.

We were also able to keep personnel costs down by means such as having Iwate Galaxy Railway take on some employees for a short period. Business trips were also suspended for the most part—even business trips to various events. There were some outside opinions that we should attend events to ask for support, and while we would have in normal times, we were at the very limit of our resources. It may have appeared that we visited outside bodies a lot despite the policy, but those visits were mainly to organizations covering the travel costs for our staff.

We are extremely grateful for all the support we received. Without it Sanriku Railway might have disappeared before recovery could be completed. Isumi Railway, Hokuso Railway, Ohmi Railway, Sangi Railway, Sagami Railway, and Fuji Kyuko sold commemorative support tickets, which increased our revenues because fares were received as if for trips on Sanriku Railway. We also received support from railway companies across Japan selling souvenirs at events and the like.

There was a good chance that work would not have gone as scheduled if restoration construction did not start on time. Recovery projects start seeing delays as construction costs rise, materials become scarce, and fewer workers are available. The initial restoration costs were expected to be ¥10.8 billion, but we managed to complete the restoration for ¥9.1 billion thanks to the various cooperation received. Even so, we must note that the restoration was accomplished using a huge amount of tax monies. However, it is a fact that the amount was not large in comparison to the cost for roads. The

cost of railway restoration was a topic of conversation, but the media did not cover the costs for reconstructing roads in great detail. For that reason, many people may believe wrongly that the road construction costs were less than for railways.

ads. These measures were needed because there were few passengers with trains only running on a third of the total sections and fare income dropped considerably. We were able to gain considerable train use other than normal passenger use by running projects such as Disaster Area Front Line Training, which coordinated groups making

Progress of Restoration

A rough idea of what the budget would be was gained in November 2012 when a ceremony was held at Noda Village to commemorate the start of restoration. In the first-stage restoration section between Tanohata and Rikuchu-Noda, damage was suffered on the 2-km section between Noda-Tamagawa and Rikuchu-Noda. Work was primarily re-laying track, and service resumed on 1 April 2012 as scheduled after about 6 months of work. We asked much of JR TT and other companies involved in construction to complete the work in such a short time, and it was only through their cooperation that we were able to resume service. At that time, centralized traffic control (CTC) was restored for the entire Kita-Rias Line, and substitute blocking (by pilot and telephone system) between Miyako and Omoto ended.

Construction on the second-stage restoration section started in 2012. The area around Sakari Station and the yard at the Minami-Rias Line Operations Department were restored. Rikuzen-Akasaki Station was demolished because it suffered major deformation in the earthquake. It was relocated about 100 m towards Ryori and given sloped access to the platform to alleviate the need for a long stairway. Safety was also increased by putting it closer to an evacuation route. Piers on the Sakarigawa bridge had been damaged by shaking, and they were repaired and reinforced. Washed-away track in the Horei area was restored, and construction was carried out to restore the track and embankments washed away between Horei and Sanriku. Embankments were originally riprap masonry, but no craftsmen were available, so they were given a concrete coastal levee-like structure. Construction went almost as scheduled and service resumed on the Minami-Rias Line between Sakari and Yoshihama on 3 April 2013.

The third-stage restoration construction was around Shimanokoshi on the Kita-Rias Line and between Yoshihama and Kamaishi on the Minami-Rias Line. The main part of restoration work on the Minami-Rias Line between Yoshihama and Kamaishi was major repairs to the Owatarikawa bridge between Heita and Kamaishi and construction to restore Touni Station, which suffered tsunami damage in the yard, as well as to restore the Arakawa bridge between Yoshihama and Touni, which had been swept away. There was also track deformation around Heita, which was also repaired.

Construction of signals and communications equipment was conducted in February, test runs made in March, and service was completely resumed on 5 April 2014.

The area around Shimanokoshi was switched from viaducts to embankments. More land is required for embankments than viaducts, so we asked Tanohata Village for assistance in securing the additional land. Ground

reinforcement to prevent subsidence was also needed to build embankments, and this took time to accomplish. Embankments were covered in concrete to make a more robust station where any future tsunami damage could be minimized. Shimanokoshi Station was relocated in the direction of Kuji in front of the No. 1 Shimanokoshi Tunnel to make it closer to an evacuation route. It was connected to the nearby road by a slope, an improvement over the long stairway before the earthquake, which had been an inconvenience to the elderly and others. The stationhouse of Shimanokoshi Station (more precisely, the tourist centre built by Tanohata Village) had not yet been completed when service resumed on 6 April 2014, and construction was in progress on the station-front plaza, so the platform had to be accessed via a temporary stairway.

The Koikorobe-sawa bridge and Haipe-sawa bridge between Shimanokoshi and Tanohata had been swept away, so restoration construction was conducted on those too. The new bridges are an integrated rigid frame structure, which reduces damage in any future tsunami. Magizawa bridge over the stream between Omoto and Shimanokoshi was also overtopped by the tsunami, so track repair was conducted there too.

New Rolling Stock

The depot on the Minami-Rias Line was flooded, and three cars were rendered unusable. We considered restoring the flooded cars, but the cost would have been high and at almost 30-years old, the cars would not withstand long-term use. So the only rolling stock usable on the Minami-Rias Line was the 36-105 train No. 213D that had stopped inside the Kuwadai Tunnel at the earthquake.

When considering what to do about rolling stock, Kuwait had generously just donated 5 million barrels of crude oil to Japan as support for the disaster-affected areas. It was exchanged for cash that was distributed via the Japanese Red Cross to the three disaster-affected prefectures. Iwate Prefecture decided to use some (not all) of that money to purchase eight cars for Sanriku Railway. Three ordinary type 36-700 cars were initially introduced in conjunction with the resumption of service on the Minami-Rias Line.

The remaining five cars were built in March 2014. One was a new type 36-R3 retro style car used for sightseeing on the Minami-Rias Line. Four cars were used for the Kita-Rias Line. One is a type 36-Z1 with the passenger cabin fully floored with tatami and named *Sanriku Hamakaze* chosen by public submission. The other three were ordinary type 36-700 cars.

The national emblem of Kuwait is attached to the front of these cars and expressions of gratitude are printed on the sides in Arabic, English, and Japanese.

Issues after Complete Resumption of Service

Full service resumed as scheduled on 6 April 2014. It was big news in terms of the recovery and gained much media attention. Many people visited on the opening day and in the string of public holidays later in the month. Sales of group tours were also robust, and we were forced to turn some down due to a lack of trains.

However, a number of issues need to be dealt with in the future. Some people in Iwate Prefecture expressed the opinion immediately after the earthquake that restoring Sanriku Railway would be a waste of resources. It may sound like they were seeking to abandon the Sanriku area, but there was also the fact that railway operations seemed unfeasible due to factors such as the declining population. We continued with partial restoration, but it is a fact that the number of commuters has dropped.

The Kita-Rias Line was featured in national broadcaster NHK's morning TV drama *Amachan* in 2013, resulting in a sudden jump in tourists in the section between Kuji and Tanohata. The number of passengers came close to that before the earthquake looking at just this section, but this boom hides the fact that school commuters decreased more than 10% on this section compared to 2012. This is an effect of the dropping population due to factors such as the dwindling number of children and relocation to outside the area. Even after the full resumption of service, commuter passengers are far below the numbers before the earthquake.

For this reason, we must work to increase the number of visitors from areas other than along the railway. Soon after the earthquake, we started Disaster Area Front Line Training, where we lead observation trips to the disaster-affected areas, and Disaster Education Trains are currently also doing well. To attract tourists, we are promoting the new cars, and we have decided to keep using the Sanriku Shiokaze with its tatami floor for some time due to the popularity of *Amachan*.

We have also asked for community development to be centred on stations to promote use by the community, and Omoto Station is scheduled to become a central facility of the community upon reconstruction. Other topics for consideration include establishing new stations.

We encourage you to visit Sanriku Railway, which is now fully operational, and see the situation in the recovering Sanriku area for yourself. ■

Timeline of Events for Sanriku Railway

2011

March

- 11— Great East Japan Earthquake strikes. Major damage caused by earthquake and tsunami, and operation becomes impossible over entire line
- 13— Tsunami warning cancelled. Damage investigation starts
- 16— Service restarts on Kita-Rias Line between Rikuchu-Noda and Kuji (fares waived as disaster recovery support train)
- 20— Service restarts on Kita-Rias Line between Miyako and Taro (fares waived as disaster recovery support train)
- 29— Service restarts on Kita-Rias Line between Taro and Omoto (fares waived as disaster recovery support train)
- 31— Waived fare service ends

April

- 1— Temporary discount fares set (to 31 March 2012)
- 1— Fares waived until 30 April to those showing disaster victim certificate
- 1— Runs between Rikuchu-Noda and Kuji increase to five round trips daily
- 7— Temporary bus service starts by Northern Iwate Transportation buses in section between Omoto and Rikuchu-Noda with disrupted train service
- 7— Operation starts on weekdays only with four round trips daily
- 11— Maximum speed increased from 25 km/h to 45 km/h on six round trips daily between Rikuchu-Noda and Kuji and four round trips daily between Miyako and Omoto
- 14— Companies in Tohoku Association of Private Railways present joint petition to MILT for disaster recovery budgeting
- 18— Sanriku Railway president visits mayors of cities along lines up to 19 April
- 23— Timetable changes between Miyako and Omoto for connection to Yamada Line
- 27— Meiji Gakuin University professor Takeshi Hara visits Sanriku Railway and purchases 1000 tickets as show of support

May

- 1— Iwate Bus starts temporary bus service between Ofunato and Kamaishi to help areas with disrupted service on Minami-Rias Line; starts with two round trips daily, increasing to four from 9 May
- 2— Front Line Training starts (first participant: Japan Association of Real Estate Counselors)
- 9— Service between Rikuchu-Noda and Kuji increases to eight round trips daily, and timetable between Miyako and Omoto changes (with start of high-school classes)
- 9— Sanriku Railway president makes petition to prefectural governor related restoration
- 17— Minister of State for Disaster Management Tatsuo Hirano visits Sanriku Railway
- 22— Chief Cabinet Secretary Yukio Edano makes observation visit
- 26— Rolling stock transport work (trailer transport) conducted from Kuji to Miyako, with two cars transported (continues to 28 May)
- 28— Hokuso Railway releases special sets of 'Scrum Tickets' to support four railways that suffered in earthquake (Sanriku Railway, Kashima Rinkai Railway, Abukuma Express, Hitachinaka Seaside Railway)

June

- 1— Self Defense Force conducts 'Santetsu Hope Operation' for removal of debris and like on Minami-Rias Line to 14 June
- 3— Iwate Galaxy Railway holds mini steam locomotive operation event in front of Miyako Station as part of disaster area support
- 8— 'Sure to Bud' senbei rice cracker set goes on sale
- 11— Temporary buses run by Northern Iwate Transportation in section between Omoto and Rikuchu-Noda start partial Saturday service
- 17— Self Defense Force ceremony marking end of 'Santetsu Hope Operation' (Horei Station)
- 24— 36-105 train car stopped in Kuwadai Tunnel between Yoshihama and Touni on Minami-Rias Line during Great East Japan Earthquake moves out of tunnel to Yoshihama Station
- 24— 64th general meeting of Tohoku Association of Private Railways held in retro style car
- 29— Assembly for encouragement of Tohoku (featuring singer/actor Ryotaro Sugi, singer Natsuko Godai, singer Joji Yamamoto, singer Eiko Segawa, and speed skater Hiroyasu Shimizu) held in front of Miyako Station, attended by 3000 people
- 29— Sanriku Railway encouragement tickets featuring comic book 'Shin Tetsuko no Tabi' (New Train Girl's Journey) go on sale with cooperation of publisher Shogakukan

July

- 2— Jazz train makes first run with cooperation of Waseda University New Orleans Jazz Club
- 8— Japan Philharmonic Orchestra concertmaster Masayuki Kino holds concert at Minami-Rias Line Operations Department depot
- 15— Restoration plan presented and approved at general shareholders' meeting
- 23— Land, Infrastructure, Transport and Tourism Minister Akihiro Ohata makes observation visit
- 31— Tateai level crossing of Minami-Rias Line and JR Yamada Line restored and usage resumes

August

- 1— Iwate Galaxy Railway take some Sanriku Railway employees for limited period of time (one year), and holds entrance ceremony
- 8— Timetable between Rikuchu-Noda and Kuji corrected due to change in timetable of replacement bus service for JR Hachinohe Line
- 26— Rail memorials dedicated to recovery go on sale and sell out same day

September

- 7— Rolling stock used between Miyako and Omoto travels to Morioka for first inspection at JR Morioka Rolling Stock Centre
- 28— Name plates for front cars where 'owners' place ads released with Sugitomo Co., Ltd. (office of singer/actor Ryotaro Sugi) as first owner

October

- 2— 'Tohoku Railway Encouragement Club' gives full cooperation for Sanriku Railway booth at Tohoku Railway Festival
- 5— Closed Sakari Station opens as 'Fureai Waiting Room' by NPO Yume Dream Net Ofunato
- 7— Previous secretary general of Democratic Party of Japan Katsuya Okada makes observation visit
- 12— Minister for Reconstruction Tatsuo Hirano makes observation visit, expressing intention to support restoration
- 15— 'Miyako dream rail Festa' held in front of Miyako Station
- 16— Rail walking event planned by Tanohata Village held on section with disrupted service near Tanohata Station
- 25— University employee Yasuhiko Terui presents opinion in Iwate Nippo newspaper that restoration of Sanriku Railway is 'tyranny' that will increase debt

November

- 1— 45 km/h limit between Rikuchu-Noda and Kuji lifted
- 3— Restoration work starting ceremony held at Rikuchu-Noda
- 11— Ohmi Railway starts sales of tickets for encouragement of restoration in sets that include tickets for Sanriku Railway and Ohmi Railway (1100 yen)
- 19— Joint railway festival held on Minami-Rias Line by Sanriku Railway, Iwate Development Railway, and JR East
- 24— Sanriku Railway recovery construction office opens in Kuji City

December

- 22— Departure ceremony held for train decorated with mascot of National Association of Commercial Broadcasters (runs between Kuji and Rikuchu-Noda until 31 March 2012)

2012

January

- 1— First sunrise of year train runs between Kuji and Rikuchu-Noda
- 29— Photo exhibition of railways for encouragement of Tohoku region held at The Museum of Contemporary Japanese Poetry, Tanka and Haiku in Kitakami City. Cooperation received in form of sales of Sanriku Railway goods to 5 February

February

- 1— 45 km/h limit between Miyako and Omoto lifted
- 5— Tickets for encouragement go on sale at Sangi Railway in sets that include train photos and tickets for Sanriku Railway and Sangi Railway (1000 yen for four tickets)
- 7— Japan Philharmonic Orchestra concertmaster Masayuki Kino holds concert at Miyako Station

March

- 10— Trains run between Tanohata and Noda-Tamagawa to confirm state of line
- 18— Tohoku Tourism Expo runs until 31 March 2013
- 19— Trains to confirm state of line run for first time between Noda-Tamagawa and Rikuchu-Noda, section damaged by tsunami and almost completely restored

April

- 1— Service restarts on Kita-Rias Line between Tanohata and Rikuchu-Noda
- 1— KitKat train starts service as support project by Nestle in Japan
- 1— Temporary bus service by Northern Iwate Transportation increases to seven round trips daily on Kita-Rias Line section between Omoto and Tanohata with disrupted train service
- 1— Iwate Destination Campaign opens, running to 30 June
- 1— Commemorative ticket sets that include tickets for Sanriku Railway and Sagami Railway go on sale at Sagami Railway (1000 yen)
- 13— Front Line Training earns 33rd International Association of Traffic and Safety Sciences Award (Achievement Award)
- 18— Departure event held for 'Teotsuna-go' (let's hold hands) train decorated with popular children's characters holding hands in expression of solidarity for disaster-affected people (Fudai Station)
- 22— National Railway Workers' Union Numazu branch holds mini steam locomotive ride event in grounds of Miyako Elementary School in support of Sanriku Railway
- 25— Sanriku Railway Minami-Rias Line recovery construction office opens in Kamaishi City
- 28— JR East Resort Umineko special event train starts service between Hachinohe and Tanohata, running weekends and holidays until September

May

- 3— Publisher Tokuma Shoten holds special photo exhibit featuring Sanriku Railway at Kuji City Cultural Hall (Amber Hall) until 6 May
- 5— Publisher Tokuma Shoten holds special event featuring railway photographer Seiya Nakai on train between Kuji and Tanohata
- 6— Festival thanking high-school students for using Sanriku Railway held in front of Miyako Station
- 18— First meeting of project promoting four stations in Japan with word 'koi' (love) in name held at Noboribetsu hot springs
- 30— Restoration work starts on Minami-Rias Line

June

- 13— Disaster Education Trains start service (First passengers are participants from USA in first Kizuna (Bond) Project visit to Japan program of Japan Foundation Center for Global Partnership)
- 13— Ceremony to wish for safe restoration work between Omoto and Tanohata
- 21— Tono Culture Research Center donates books to Tanohata and Fudai stations
- 26— Groundbreaking ceremony for restoration work between Yoshihama and Kamaishi
- 29— Sanriku Railway encouragement tickets featuring comic book 'Shin Tetsuko no Tabi' (New Train Girl's Journey) go on sale with cooperation of publisher Shogakukan

July

- 1— Through service of Sanriku Railway trains (ordinary train, retro train, and KitKat train) between Tanohata and Hachinohe starts (weekends and holidays through September)
- 21— Tohoku local line stamp rally 2012 held by Sagami Railway through 31 October
- 27— Letter of thanks received from Minister of Land, Infrastructure, Transport and Tourism in recognition of restoration work
- 28— Special trains serving lunch and sweets start service on Kita-Rias Line, running every day during summer holidays and on weekends and holidays until 10 November

August

- 24— Sale of boneless saury fish starts as joint project by retailer Aeon, Kuji Fisheries Cooperative, and Sanriku Railway.
- 24— Sanriku Railway participates in networking event held at Akita Nairiku Jukan Railway for high-school-student fans of regional railways

October

- 4— Tickets with online game characters for one-day unlimited use on Kita-Rias Line between Tanohata and Kuji go on sale
- 14— Sanriku Railway runs special 'Koharu' train between Hachinohe and Aoimori for Aoimori Railway festival and exhibits there
- 28— Joint railway festival held on Minami-Rias Line by Sanriku Railway, Iwate Development Railway, and JR East near Sakari Station

November

- 4— Fourth Sanriku Railway autumn festival held
- 18— Sleeper plate laying ceremony held at Noda (support project by Credit Saison)
- 24— Second meeting of project promoting four stations in Japan with word 'koi' (love) in name held at Kawagoe City

December

- 7— Magnitude 7.3 earthquake strikes off Sanriku coast with 20 cm tsunami at Kuji. Train service temporarily halted
- 15— 'Kotatsu' (low table covered by blanket for warmth) train starts service between Kuji and Tanohata for first time since earthquake, running through March 2013

2013

January

- 1— First sunrise of year train runs between Kuji and Fudai (restored to course used before earthquake)
- 15— Tickets go on sale for railways of four stations in Japan with word 'koi' (love) in name (Sanriku Railway, Seibu Railway, JR Hokkaido, Chizu Express)
- 19— Service starts on 'Kokokara-go' (just starting point) decorated train for music company Della Inc., with departure ceremony held at Kuji

February

- 24— Ceremony to wish for safety of new Series 36-700 rolling stock on Minami-Rias Line
- 27— Ceremony commemorating start of sales of boneless saury fish as joint project by retailer Aeon, Kuji Fisheries Cooperative, and Sanriku Railway held at Aeon Shinagawa Seaside shopping centre

March

- 10— Panel exhibition held at passageway of Omoto Station in Iwazumi Town as 11 March earthquake memorial event
- 16— 'Eizan Electric Railway + Sanriku Railway *Trains Bien France Train*' runs on Eizan Electric Railway
- 20— Commemorative ticket sets that include tickets for Sanriku Railway and Fuji Kyuko (1000 yen) go on sale at Fuji Kyuko
- 31— Final event for 'Teotsuna-go' (let's hold hands) train decorated with popular children's characters holding hands in expression of solidarity for disaster-affected people (Kuji, Miyako)

April

- 1— One-way school commuter passes go on sale
- 1— National broadcaster NHK's morning TV drama *Amachan* featuring Minami-Rias Line starts, airing 156 episodes to 28 September
- 3— Service restarts on Minami-Rias Line between Sakari and Yoshihama with commemorative train running three round trips daily
- 3— Comedian Ken Shimura appointed part-time stationmaster for Yoshihama Station
- 3— Second KitKat train (Series 36-105) debuts as support project by Nestle in Japan
- 3— Naming rights to Sakari Station given to sponsor Smile Tohoku Project to change name to 'Smile Iwate Sakari'
- 4— Commercial service restarts on Minami-Rias Line between Sakari and Yoshihama with seven round trips daily
- 4— Tickets to commemorate restart of service on Minami-Rias Line between Sakari and Yoshihama go on sale with tickets made using trees from Ofunato destroyed by tsunami
- 27— 'Sanriku-go' train with tatami mat floor seats starts service, running weekends and holidays to 14 October and during summer holidays

May

- 19— Idol girl group AKB48 holds support concert for disaster-affected areas in front of Miyako Station and helps with work such as cleaning of Sanriku Railway cars
- 25— Special concert by singer/songwriter Junko Yamamoto held at Kuji City Cultural Hall (Amber Hall) as support project by music company Della Inc.

June

- 3— Disaster Education Trains start service on Minami-Rias Line (first participant Harada Seisakusho of Hyogo Prefecture)
- 9— '7 days Challenge' charity event celebrating Nippon TV's 60th anniversary of start of broadcasting shows completion of library at Omoto Station live (Exhibit library also set up at Tanohata, Fudai, Kuji, and Rikuchu-Noda)
- 30— Sleeper plate laying ceremony held at Sakari (support project by Credit Saison)

July

- 7— Jazz train runs with cooperation of Waseda University New Orleans Jazz Club
- 10— Train decorated by Federation of Japan 'Natto' Manufacturers Cooperative Society starts service with ceremony held at Kuji
- 12— Digital signage set-up ceremony (Miyako Station)
- 12— Digital signage set up at Sakari, Ryori, Sanriku, Kamaishi, Miyako, Tanohata, Fudai, and Kuji stations
- 20— Temporary bus service by Northern Iwate Transportation increases between Omoto and Tanohata by 1.5 round trips daily from 20 July to 31 August and on weekends and holidays to 10 November
- 24— Special trains serving lunch and sweets start service on Minami-Rias Line
- 27— Children's event featuring character 'Incredible Zorori' held through September

August

- 6— His Imperial Highness Prince Hitachi rides retro train on observation trip
- 26— Miyako Harbor Radio starts broadcasting

September

- 3— Sanriku Railway president gives explanation to prefectural governors riding between Miyako and Taro as part of 17th Hokkaido and Northern Tohoku Governors' Summit
- 14— Timetable revised for Minami-Rias Line with increase in maximum speed from 45 km/h to 90 km/h

October

- 1— Fifth Japan Tourism Agency Commissioner's Commendation (domestic tourism stimulation)
- 6— Joint railway festival held on Minami-Rias Line by Sanriku Railway, Iwate Development Railway, and JR East near Sakari Station featuring driving experience on Series 36-700 trains
- 8— Onboard announcements by Sanriku Railway character 'Yu Tanohata' start and train decorated with character unveiled
- 19— Sleeper plate laying ceremony held at Horei (support project by Credit Saison)

November

- 3— Fifth Sanriku Railway autumn festival held at Kuji with NHK morning TV drama *Amachan* as main feature
- 3— Actor Tetta Sugimoto appointed honorary stationmaster
- 10— 'Kids Geomaster' event held as geopark promotion council project on Kita-Rias Line
- 20— Early morning bus service runs between Sanriku-cho and Ofunato High School

December

- 1— 'Kotatsu' (low table covered by blanket for warmth) train starts service, running mainly on weekends and holidays to 30 March 2014
- 1— Naming rights for Miyako Station given to sponsor Television Iwate to change name to '5kigen Miyako Station' after network programme
- 1— Junior high-school students visit Sanriku Railway with Smile Tohoku Project to see disaster-affected area and receive explanation by company's president
- 21— 'Taihen yoku dekimashita-go' (you did very well) train exhibiting pictures by kindergarten children starts service on Minami-Rias Line, running to 6 January
- 24— 'Je Je Je Santa Carnival' event held in front of Miyako Station with performance by idol group Babyraids
- 24— Third KitKat train starts service

29— Minami-Rias version of song 'Koi Suru Fortune Cookie' (The Fall-in-Love Fortune Cookie) by idol group AKB48 released on YouTube

31— Kitasanriku Station (Kuji Station) appears on national broadcaster NHK's New Year's Eve music programme

2014

January

- 1— First sunrise of year train runs between Kuji and Fudai
- 31— JR East proposes transfer of Yamada Line from Miyako to Kamaishi to Sanriku Railway at seventh meeting to coordinate recovery of Yamada Line

February

- 9— Service suspended on section from Kuji to Tanohata from evening due to heavy snowfall
- 15— Service suspended on Kita-Rias Line from evening due to heavy snowfall, with service fully restored on 19 February

March

- 11— Trekking event on rails held near Touni Station of Minami-Rias Line
- 15— Test runs start on Minami-Rias Line between Yoshihama and Kamaishi
- 17— Test runs start on Kita-Rias Line between Omoto and Tanohata
- 20— Service suspended on Kita-Rias Line from evening due to heavy snowfall, with service fully restored on 23 March
- 21— One Series 36-Z and three Series 36-700 cars arrive late at night at Kuji Station by freight rail and truck transport (greatly delayed due to heavy snowfall)
- 22— Series 36-R3 car arrives at Kamaishi by freight rail and truck transport
- 29— Event to promote restart of Sanriku Railway service held at Tokyo Tower event space until 30 March

April

- 1— Fares rise in line with increase in consumption tax
- 5— Service fully restored on entire Minami-Rias Line (Yoshihama to Kamaishi)
- 6— Service fully restored on entire Kita-Rias Line (Omoto to Tanohata)
- 24— Train serving 'hanami-kaki' oysters runs again
- 26— 'Kitasanriku-go' train with tatami mat floor seats using *Sanriku Hamakaze* cars resumes service



Atsushi Tomite

Mr Tomite is a manager in the Passenger Service Department of Sanriku Railway Company.