

IN A SOCIETY FACING A DECLINING POPULATION AND A SERIES OF NATURAL DISASTERS, HOW TO REVITALIZE LOCAL LINES AND TO ENSURE SAFE TRANSPORTATION

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1. Introduction

How are we revitalizing local lines and ensure safe transportation in a society with a declining population and a series of natural disasters?

First, I would like to introduce East Japan Railway Company (JR East). JR East is a railway company based in Tokyo on the main land operating mainly in eastern Japan, including Nagano and Niigata. In addition to the transportation service business, we are mainly developing the life service business and the IT/Suica business. Suica is a transportation IC card. Up to now, the transportation service business has accounted for 70% of our revenue and has become a pillar of our business, but the declining number of commuters due to COVID-19 pandemic and the nation's population declining resulted in the policy of allocating management resources to the Suica business intensively in order to increase earnings. Measures are being taken to ensure efficient management of the transportation service business. In addition, efforts are underway with the company goal of achieving a 5:5 profit ratio.

Currently, in the transportation service business, in order to promote efficient management, in addition to promoting one-man or driver-only operation, station work, and vehicle inspection work are outsourced, track facility maintenance work is also outsourced, and worksite integration are being promoted.

In addition, in order to proceed with transportation operations efficiently, the company has set a major issue on the future of regional and local lines. In addition to transportation within metropolitan areas centering on Tokyo, JR East's transportation is broadly divided into Shinkansen transportation that connects wide areas from Aomori Prefecture in the north to Nagano Prefecture in the west at high speeds, and local lines that run as a means of transportation for residents. Although it is classified into those three types, the number of users is decreasing in the population decline society, especially in the regional local line, which is a major management issue. In this presentation, we will focus on local lines and make recommendations.

2. Rural and local lines:

JR East is a company that was privatized from the Japanese National Railways (JNR). At the time of the division and privatization, JR East oversaw many local lines, mainly in the Northeast region, but on the other hand, it was expected that management would be sufficient because it would also oversee transportation in metropolitan areas centered on Tokyo. From its inauguration, through full privatization in June 2002, until 2019, when it was affected by the COVID-19, it continued to achieve record-high profits, and its management has progressed smoothly. However, on the other hand, the impact of the declining population has been significant, and in addition to the decrease in the number of users of local lines, including commuting to work and school, the spread of the COVID-19 infection has led to a decline of large number of tourists from Japan and overseas. Domestic tourists are now returning, but it will take time for foreign tourists to return.

Under these circumstances, on February 14, 2022, the Ministry of Land, Infrastructure, Transport and Tourism held a panel of experts on restructuring the transportation network, including measures to promote the use of local railways, which have been declining, and if not conversion to buses. Several meetings and deliberations were held, and the results were announced in July. At the same time, JR East and JR West announced for the first time the revenue and expenditure of local lines with few users. So, the panel of experts advised that

- (1) the government should set up a Specific Railway Area Reconstruction Council together with railway operators and local governments along the railway line to discuss the reconstruction of local public transportation, including conversion to buses. Guidelines are set that transportation density should be less than 1,000 people per day during normal times and less than 500 people should be transported per hour during peak hours. Wide-area coordination is necessary for consensus building among stakeholders due to circumstances such as straddling multiple economic spheres and living spheres.
- (2) The Specific Railway Section Restructuring Council will determine measures within three years at the longest after the start of discussions, including the case of conducting a demonstration project, upon agreement between local governments along the railway line and railway operators. In addition, according to the revenue and expenditure of local lines with few users announced by JR East, it was revealed that 35 lines and 66 sections out of 69 lines had less than 2,000 passengers per day which transportation density that makes it difficult to maintain highly convenient and sustainable services through management efforts alone by railway operators. In addition, JR East announced the current status of local transportation lines in February 2022 that there are 19 lines where the Council must be established. One of the challenges facing regional and local lines is maintaining and surviving as the number of users decreases. In addition to the declining number of users, another major issue facing regional lines is how to respond to natural disasters that frequently occur because of global

warming. In 2010, a landslide train derailment occurred on the Iwaizumi Line, and since restoration would cost so much, 2014 the line was discontinued. In addition, the Great East Japan Earthquake occurred in 2011, and although the damaged Hachinohe Line was restored and resumed operation by JR, the section between Miyako and Kamaishi on the Yamada Line was transferred to the third sector, and the section between Kesenuma and Sakari on the Ofunato Line and section between Yanaizu and Kesenuma on the Kesenuma Line have been converted to BRT. The reality is that local lines are still struggling to cope with disasters, such as landslides caused by heavy rains and heavy snowfall in winter.

3. How JR East has handled issues

Regional local lines face two major challenges: declining numbers of users and dealing with natural disasters. JR East is promoting outsourcing and unmanned stations to deal with the first challenge, but the reality is that these countermeasures are making it more difficult to respond to natural disasters, the second challenge local lines face.

In the Great East Japan Earthquake that occurred in 2011, many tracks were damaged by the Tsunami. But it was possible to handle the situation by drivers and conductors on board and as the result there were no crew or passengers being injured. However, currently, the Hachinohe Line, which was damaged by the Tsunami, has started one-man operation. In 2015, when a train ran on the Yamada Line due to sediment runoff because of rain, and when a train ran on the Iwaizumi Line in 2010, both cases where passengers were safely evacuated through the cooperative system of drivers and conductors, even though both were in mountainous areas.

Currently, the Ominato Line has become a line section with no JR employee other than the crew as a result of station work being outsourced, and the Hachinohe Line and Yamada Line are also being outsourced, unmanned stations, and transferred to the third sector. As a result, except for Hachinohe Station and Morioka Station, which are the starting stations, there are no JR employees on the line. The Ominato Line is prone to strong winds, the Hachinohe Line is prone to Tsunami damage because it runs along the sea, and the Yamada Line runs in mountainous areas, so it is subject to sediment inflow, falling rocks, and impacts with animals.

In this way, regional local lines are characterized as being susceptible to damage from natural disasters, but efficient management due to a decrease in the number of users makes it even more difficult to respond to natural disasters. Fortunately, we have not yet encountered a situation in which passengers must be evacuated, but we could encounter at any time so we must have measures for facing natural disasters.

4. How have we kept the lines safe

Due to the characteristics of Japan's topography, regional local lines often run in mountainous and coastal areas. There are also features such as lines with many speed restrictions yet few signals. For these reasons, the skills required for driving are high, and it is rare for new drivers to drive local lines from the beginning.

When driving a local line, in addition to grasping a wide range of speed limits such as curve limits, railroad crossing limits, and gradient limits, there are many slipping and sliding due to sea tides and fallen leaves, so driving skills are accumulated only by experience. So, drivers need to pay attention to daily weather information, quickly detect dangers such as snow and rain levels, and respond to snow removal and making request to stop the train, etc. and exchange such information and share their experiences among drivers. This ensures smooth operation. It is no exaggeration to say that local lines have been covered by the technical skills of drivers.

Currently, in order to promote efficient management, the integration of workplaces and tasks are also being promoted. For example, an employee who does driving work is also doing conductor's work, station work, event planning, kiosk task, even weeding and shoveling snow as additional tasks. Until now our train drivers have been striving for safe transportation with such pride as a train driver who oversees the lives of passengers. But with so many unfamiliar tasks on top of driving they must perform, the ability to make accurate judgments and act in the event of an emergency is in question.

5. Attractiveness of local lines

There are certainly railway lines for sightseeing and focus on attracting passengers. And the train crews are proud of their work and the passengers are attracted to the fact that the railway runs in the great scenic area. Some passengers travel to enjoy the natural scenery that can only be seen on local lines. On the Gono Line, we also contribute to the local community by selling local products on the trains and disseminating the attractions and sightseeing spots of each station through brochure. Since the decline of local railways accelerates the depopulation of local areas, it is necessary to consider with the national government how to revitalize local areas by making use of railway operations and technology, rather than simply discontinuing lines, and changing transportation modes. As a result, the declining population will continue, and it may become an environment where people live only in very limited areas.

6. In 1987, when JNR was split and privatized, many valuable fixed assets, including the area around the station, were inherited by JR companies, giving it an environment that enabled a solid financial foundation. In addition, it has been determined that unprofitable routes can be maintained by profit from Shinkansen, transportation in metropolitan areas, and related businesses. That is why, even though the private

company has inherited valuable fixed assets, it cannot be said that the government that split and privatized the national railway has lost its responsibility.

Since JR has carefully managed the valuable fixed assets inherited, even if the number of users decreases and management becomes difficult due to the impact of the prolonged spread of new coronavirus infections, we should not easily cut those loss-profit making lines.

Furthermore, as a labor union, our mission is to protect the employment and interests of union members. The abolition of local railways may lead to the loss of employment opportunities, and at the same time, the disappearance of railways from the map has reduced the number of people visiting rural areas, and eventually the rural areas may be forgotten.

Therefore, when considering the future of local railways, it is important to consider that local railways are fixed assets created by the people's valuable taxes, and being loved by tourists and residents, thus we must leave jobs in rural areas and help revitalize the areas. Based on the above, I would like to propose how to revitalize local lines and ensure safe transportation in a society with a declining population and a series of natural disasters.

7. Recommendations

1. Indicate the railway sections that the government considers necessary among the target railway sections indicated by the Experts Study Group for which the government will set up a Specific Railway Section Reconstruction Council together with railway operators and local governments along the railway lines.

The panel of experts considers that railroads to be (1) supporting economic and industrial activities of the country as a means of mass transportation. (2) It is attracting attention from the viewpoint of carbon neutrality. (3) Even in rural areas, it is the cornerstone of the local economy as daily transportation for example commuting to work and school, and tourism. In addition, just as freight trains were used to transport gasoline to the disaster-stricken areas after the Great East Japan Earthquake, among the railway sections targeted by the establishment of the Specific Railway Section Restructuring Council, in addition to the revitalization of the economy and industry, the public will be supported in the event of a disaster. We need a rail

network to protect. Based on those recognitions, we will indicate the railway sections that are necessary for the country, and the Specific Railway Section Reconstruction Council will eliminate the option of discontinuing the railway section.

2. The national government cooperates with local governments and JR to set up a forum for consultation to increase the number of users for the necessary railway sections designated by the national government and contribute the necessary expenses. Towards the maintenance and continuation of the railway line that the government considers necessary, the government will also take part of its responsibility, and cooperate with local governments and JR to create tourism and set up a forum for regional development through local business.

3. When the Specific Line Section Reconstruction Council chooses to separate the operation from infrastructures in order to keep the railway, the national government, not the local government, will contribute the expenses necessary for the maintenance and management of the facilities. To preserve the railway, there are cases in which operation management and facility management are performed separately, but if local governments are in charge, they will contribute the cost while the population is expected to decrease significantly then it is highly probable that the local government will not be able to do so. Therefore, if the railroad is left by separating the operation and infrastructure, the national government must contribute the expenses necessary for maintenance.

4. Along with JR, the national government and local governments will work on disaster prevention in areas that are prone to natural disasters on local lines. JR takes responsibility for disaster prevention for its facilities, such as improving the seismic resistance of Shinkansen viaducts. There is a limit to prevent impacts from outside the company site, such as collisions with animals. Therefore, it is necessary to cooperate with national and local governments to ensure the safety of transportation networks. The government should not only entrust the operation of the railway business to the operators but will also ensure to establish rules such as the allocation of employees that make it possible for other employees to rush to the disaster site within at least one hour and to provide guidance to railway operators that the number of crew members required to guide passengers to evacuation.

5. In order to develop crews who can respond to natural disasters, JR East should not integrate other jobs for three years, including the trainee period for driving duties. In addition, even after three years have passed, in order to prevent a decline in safety awareness and ensure safe transportation, the company should not make drivers perform other tasks.

On railway lines where natural disasters are expected, safety has been protected by the safety awareness and the judgment and technical capabilities that have been accumulated through mostly crews' experience. Safe transportation must be maintained even as the integration of work progresses. There need be a system that trains and educates reliable train crew members to ensure safe transportation and that prevents drivers from distraction due to integration with other work.

8. Conclusion

35 years have passed since JNR was privatized. The environment surrounding railways is undergoing major changes, including a declining population and the frequent occurrence of natural disasters due to global warming. Currently, the Ministry of Land, Infrastructure, Transport and Tourism is considering rebuilding the local railway lines, but since the local lines are fixed assets created with taxpayers' money, as well as being loved and cherished by the residents and tourists, they will not only be entrusted to JR, but the government will also cooperate in maintaining. On the other hand, the fact that JR East has inherited valuable fixed assets and successfully managed its business also must not be forgotten.

Now that we are facing a society with a declining population and frequent occurrences of natural disasters, it is necessary for both sides to share their wisdom and cooperate on how to maintain and continue railways for the benefit of the people. The JREU as beloved railway workers will continue to cooperate with JR East to increase the number of users and ensure safety. Thank you very much.