The Role of the Russian Far East in International Container Transportation Using the Trans-Siberian Railway

Hisako Tsuji
Senior Researcher, Research Division, ERINA

1. Introduction

About 90,000 TEU of containers were transported using the Trans-Siberian Railway (TSR) and sea transportation between Northeast Asia and Europe, Central Asia or domestic Russia in 2001. The Russian Far East (RFE), particularly Primorsky territory, acts as a link between the rail and sea transportation elements of the multi-modal transportation system. Quicker, easier and cheaper connections could improve the overall service provided on the route. These connections also provide opportunities for players in the local transportation industry, such as ports, railways, warehousing companies and container handlers, to make profits. The more containers being shipped, the higher will be the profits that the RFE will receive. I will outline the current status of international container handling on the TSR and discuss opportunities for further increasing the volume of shipments to be handled in the RFE. Additionally, I will discuss the possibility of connecting the TKR (Trans-Korean Railway) and the TSR.

2. The major TSR routes and their competitive environment

At present, four types of international route that utilize the TSR are in use. The first two routes are defined as 'transit', since cargo just passes through the former Soviet Union countries. The latter two are defined as 'bilateral' transportation. Railway tariffs differ between 'transit' and 'bilateral' transportation, and the customs clearance procedures and time required are also different[1]. Containers owned by Russian Railway can only be used for bilateral cargo.3) 3)

1) *European Transit*: This connects East Asian countries, such as Japan, the ROK, China, Taiwan, and Finland by means of rail and sea transportation. Westbound cargo from East Asian countries, such as electrical appliances, is temporarily stocked in Finnish bonded warehouses and is mostly exported to Russia, including the RFE[2]. It would be more appropriate to call this Finland Transit, as this route is not used for other destinations within Europe. The main reason is a lack of cost competitiveness in comparison with the Deep Sea route, which connects East Asia and Europe via the Suez Canal, by means only of sea transportation[3]. Transportation between Japan/the ROK and Finland takes 30 to 35 days by sea, while the TSR route takes only 20 days. The advantage of the TSR route to Finland over the Deep Sea route is speed, while the strength of the Deep Sea route is its low-cost service, which has been achieved through the introduction of huge container ships with more than 6,000 TEU of capacity, sailing at 28 knots.

2) *Afghanistan Transit*: This connects Japan/the ROK and Afghanistan by sea and rail using the TSR and the railway systems of Central Asian countries. The main competitor with this route is the Iran route, which has been actively used since 2000, when the route was opened, as it is cheaper than the TSR route[4]. The Iran route involves shipping cargo by sea to Bandar Abbas, then overland to the western part of Afghanistan. The major cargoes transported to Afghanistan are tires and used auto parts.

3) *Central Asian Bilateral*: This connects Japan/the ROK and Kazakhstan/Uzbekistan by sea and rail using the TSR and the Central Asian railway. The main items shipped to/from the ROK are goods for Korean companies that have invested in Central Asia[5]. The alternative route to Central Asia via China is called the TCR (Trans-China Railway), which connects the Chinese port of Lianyungang with Kazakhstan by means of the Chinese railway. This route is widely used for cargo from Japan since there are three journeys a week to Chinese ports, compared with two a month on the TSR, and the cost is competitive depending on the destination.

4) *Russian Bilateral*: This connects Japan/the ROK and Russian domestic destinations, transporting export/import cargo. Although this route may seem

[1] Customs clearance for 'transit' cargo takes one or two days, while bilateral cargo requires three to four days at Vostochny Port.
[2] Finnish stock points include Hamina, Kotka, Lappeenranta and Kouvola.
[3] According to a Korean shipping company, the TSR route charges $2,800/40f for westbound cargo from Busan to Finland, while the Deep Sea route costs $2,100/40f. There are reports that the ocean fare of the Deep Sea route has declined to less than $2,000/40f in 2002. In the case of eastbound cargo, the TSR route charges $1,600/40f, while the Deep Sea route costs $1,000/40f. The cost difference between East Asia and other destinations within Europe is even greater.
[4] The Iran route is said to be more than $1,500/TEU cheaper than the TSR route according to a Japanese forwarder.
[5] Daewoo Motors has a motor plant in Tashkent, and LG Electronics has a TV plant in Almaty.

to have a monopoly on transport to/from Russia, there are, in fact, several alternative routes to Moscow and the Finland transit route is often used for shipments from East Asia to Moscow. On this route, export goods, such as electrical appliances from the ROK or Japan, are stored in bonded warehouses located at ports near the Russian border, and are shipped out when orders from Moscow are received and payment is confirmed, as mentioned before. These goods are distributed throughout the country, including the RFE. One of the reasons for choosing the Finland route is that import tariffs for goods imported via Finland are reportedly lower than for goods arriving via Far Eastern ports. According to reports from Korean forwarders, a form of smuggling is widely conducted at the Finnish-Russian border. The existence of user-friendly bonded warehouses in Finland is another reason. A further advantage is that the railway fare for transit cargo is set much lower than that for bilateral cargo. There are two routes competing with Finnish bonded warehouses: the TSR European transit route, and the Deep Sea route. The Far Eastern ports are used for cargo shipped to Finland via the TSR, although they are never used for that shipped via the Deep Sea route. This is an opportunity that is being missed.

3. The actual situation on the TSR route

According to data provided by VICS (Vostochny International Container Services), Vostochny Port handled 72,701 TEU in 2000, and 89,917 TEU in 2001, a 24% increase. Looking at the type of cargo, 54% was transit, 26% was Russian bilateral, 8% was bound for Central Asia, and 11% was empty containers. In 2001, cargo from the ROK accounted for the largest share (77%), experiencing an increase of 13% between 2000 and 2001. Chinese cargo was second (12%), outstripping Japan (11%) and recording a twelve-fold increase on the previous year. A route between China (Shanghai) and Vostochny opened in October 2000. Additionally, some Chinese cargo is transshipped at Busan and counted as Korean cargo. Most Chinese cargo seems to be shipped to Russia via Finland. It has been pointed out that such shipments are inefficient, since Chinese cargo tends to involve only one-way westbound shipments.

On the Japanese side, data from Mitsui O.S.K. Lines, which with FESCO has monopolized shipping services between Japanese and Russian ports, are available. According to this, more than 60,000 TEU of containers were shipped to/from Japan in 1992, the volume declined year by year, and in 2001 the volume was only 9,186 TEU, of which 30% were transit and 70% were bilateral shipments. The decline in transit cargo is particularly noticeable[6].

As far as transit containers are concerned, the Trans-Siberian Intermodal Operators Association of Japan (TSIOAJ) holds data for a number of years[7]. According to the TSIOAJ data, transit volume has been declining since reaching the 110,683 TEU mark in 1983; the volume was only 2,238 TEU in 2001, representing only 2% of the peak period.

With regard to the composition of Japanese cargo, the major westbound transit items are electrical appliances, office machines and tires, while log houses form the main eastbound cargo. Major bilateral import cargo includes chemical goods and aluminum ingots, while auto parts form the main bilateral export cargo.

Following the decline in cargo volumes, the frequency of services between Japanese ports and Vostochny decreased from three times per month to twice monthly, beginning in January 2002. It should be noted that the Deep Sea service is available on an almost daily basis.

Korean usage of the TSR is flourishing, in distinct contrast to the Japanese case. TSR cargo to/from the ROK increased from approximately 25,000 TEU in 1991 to 83,000 TEU (a 3.3-fold increase) in 2001, according to the Hyundai Merchant Marine Co., Ltd. (HMM). In 2001, 49% of all cargo was transit and 51% was bilateral, according to a shipping company. In addition, 70% was westbound and 30% was eastbound. Therefore, dealing with empty containers is a problem, and many empty containers are returned by rail. Interestingly, 16% of transit cargo was from China. This was picked up at such Chinese ports as Tianjin, Dalian and Hong Kong by Korean forwarders and transshipped at Busan. The major consignors are Korean companies who have factories in China. Thanks to the large volume of shipments, marine shipments between ROK ports and RFE ports take place more than twice a week.

The main items shipped are various electrical appliances exported to Russia via Finland, chemical ingredients (resin for plastic) bound for Moscow and goods for Korean companies that have invested in Central Asia. Since there is less eastbound than westbound cargo, forwarders are making efforts to book eastbound cargo. For example, pulp from Finland, chemicals from Russia to China, and cotton from Central Asia are shipped as eastbound cargo.

The volume of Korean and Chinese cargo is growing, while that of Japanese cargo is declining. This difference can be attributed to several factors.

Firstly, the TSR route has lost its cost competitiveness as a route to Europe, because of the drastic reduction in the marine fares of the Deep Sea route that was facilitated by the introduction of huge, fast high-tech ships. In recent years, the TSR route has been more expensive than the Deep Sea route, even between Japan/the ROK and Finland. Japanese consignors are cost-sensitive and choose the Deep Sea route to Finland, while some of the Korean consignors try to ship faster using the TSR route and make a profit by collecting the proceeds quickly. Some Japanese forwarders complain that the Russian Railway does not provide containers for transit cargo, thus the fee for leasing the container has to be added to the total cost.

---

[6] The figure includes Taiwanese cargo, which represents about 10~15% of bilateral shipments.

[7] The data only include shipments by member companies, representing more than 95% of the total. These data are valuable in understanding long-range trends.

Secondly, following the dissolution of the Soviet Union, the TSR suffered security problems and unstable operating times due to weakened management functions. However, these operational problems have been solved as the political and economic situation has improved in Russia. Nevertheless, many Japanese consignors still perceive the TSR to be unreliable, even though Korean consignors have regained confidence in its reliability.

Thirdly, exports from Japan to Russia have decreased due to Japanese manufacturing companies relocating factories to such low-cost sites as China or Southeast Asian countries. In the case of electrical appliances for the Russian market, Korean products are more price-competitive than Japanese products. Chinese products may be even more competitive, even in the case of those manufactured at plants in which Japanese companies have invested. As a result, Japanese exports to Finland and thence to Russia have decreased, while Korean and Chinese exports have increased.

Fourthly, Korean forwarders are actively creating a favorable business environment for consignors where a faster service is available at a reasonable price. Frankly speaking, Japanese forwarders are passive about using the TSR route. Korean forwarders have taken such steps aimed at offering a reliable service to consignors as abolishing the monopoly in the marine transportation sector of the TSR route, providing their own containers, picking up Chinese cargo and obtaining volume discounts for railway fares. Korean shipping companies also provide their own containers and offer frequent shipping services.

4. Future issues concerning the TSR

Korean and Chinese use of the TSR appears to be very successful. However, there are issues to be tackled and some people are concerned about the future of the route. In fact, some Korean electric appliance makers believe that the ROK will have similar experiences to Japan.

Firstly, cost competition will become more severe on all four routes. In fact, business on the Afghanistan transit route declined sharply as the Iran route was developed. On the European transit route, if the fare for the Deep Sea route declines further once the plan to introduce even larger ships is implemented, more cargo may shift from the TSR to the Deep Sea route. The TSR route may be able to counter the increased competitiveness of the Deep Sea route by means of increased speed and punctual delivery as well as further cost reductions. In order to speed up the TSR, technological improvements will be necessary on the Russian side. One Japanese forwarder has said that, "The TSR could be used if it took only 2 weeks from Japan to Finland."

Secondly, it is expected that many Korean exporting companies will relocate their major plants to China or Southeast Asia, as Japanese companies have done. In that case, the quantity of Korean export goods will decrease. The Deep Sea route has competitive advantages over the TSR route from Southeast Asia and Southern China to Europe, including Finland.

Thirdly, the use and distribution of empty containers is a headache for forwarders and shipping companies because there is an imbalance between westbound and eastbound Korean and Chinese cargo and containers tend to accumulate in Europe. If this is not coordinated smoothly, forwarders' profits will be squeezed. According to a major Korean forwarder, of the 2,000 FEU (40f) handled in 2001, 500 to 600 FEU were empty containers. In fact, one Japanese forwarder that used to do business extensively using the TSR in the 1980s, eventually went bankrupt due to the poor positioning of a large number of its own containers. Japanese forwarders believe that the Russian Railway should provide a sufficient number of containers for transit cargo as well as bilateral cargo, in order to solve all these container-related problems. On the Deep Sea route, shipping companies provide their own containers.

Fourthly, the TSR route has scope for improving its service. Neither Korean forwarders nor consignors are fully satisfied with the Russian service with regard to such problems as a shortage of wagons, a seasonal shortage of containers supplied by the Russian Railway, and frequent changes of bilateral rail fare. Meanwhile, Japanese consignors complain about unstable delivery times on the TSR route. They require punctual delivery at specific times of day and say that, although Deep Sea shipments take time, their delivery is reliable.

5. How to tackle missing business while keeping existing business?

The business environment faced by the TSR routes will be quite tough. I will discuss the possibilities for expanding TSR business by developing new areas as well as improving current services.

One of the businesses missing in the RFE is transit cargo shipped from East Asia to Finland via the Deep Sea route. A vast quantity of electric appliances is shipped to such Finnish ports as Hamina and Kotka, where they await delivery to Russia, including the RFE. About half of them arrive in the RFE via a very long and convoluted Deep Sea route. Rather than being sent to Finnish ports, these goods should be imported to Far Eastern ports as bilateral cargo, whence they could be shipped throughout Russia. In order to bring this about, the Russian government must do something about the anomaly that makes customs clearance at the Finnish border easier and cheaper than at Far Eastern ports. RFE should make an appeal to Moscow to do something to normalize the situation. Under international standards, it is unusual for customs clearance costs to differ depending on the entry point, and the current situation could become a barrier to Russian entry into the WTO in the near future. This issue is well-known in Japan. Earlier this year, we had a chance to talk with Japanese traders located in Niigata regarding export business to Russia. They said that exporting electrical appliances to RFE is not competitive since the same product imported from Finland is cheaper.

If Korean and Japanese exports, currently stored in Finnish ports, are shipped using Far Eastern ports, both the TSR, ports and traders will gain enormous economic benefits. At the same time, the Far Eastern ports must establish user-friendly bonded warehouses for imported cargo, and the Russian Railway has to reduce railway fares for bilateral cargo.

Up to now, Russian interest has focused on transit use of the TSR. Contrary to the Russian view, the Japanese

transportation industry believes that the future role of the TSR will be in bilateral shipments between Northeast Asia and Russia. Given Russia's favorable economic situation, Russian imports from East Asia - both of industrial goods and consumer goods - could grow further.

Secondly, there may be opportunities for modernizing railway facilities and increasing speed on the TSR. Considering that the only strength of the TSR route over the Deep Sea route is its faster speed, capitalizing upon this and pursuing even greater speed will enable the TSR to be positioned as a mid-market option between the Deep Sea route and air transportation.

Thirdly, the cost of each element of inter-modal transportation should be lowered in order to minimize the cost disadvantages faced by the TSR route in comparison with its competitors. In the summer of 2001, new shipping companies began to enter the marine shipping market between Korean ports and Russian ports, due to initiatives undertaken by Korean forwarders. This demonstrates that costs could be reduced by encouraging competition among players in each section of inter-modal transportation.

Fourthly, the recovery of the route's image of reliability in Japan is essential. In order to boost confidence in the Russian Railway among Japanese cargo owners, it may be useful for forwarders and shipping companies to cooperate with their Russian partners in running a campaign promoting the TSR route. Specifically, this could take the form of undertaking trial shipments and applying special trial rates for a certain period.

Fifthly, those operating the TSR could learn from a similar multi-modal transportation system operated in North America, which has experienced success in the field of technology as well as management. One example is the strong initiative of marine shipping companies in the operation of the ALB (American Land Bridge). They also supply their own containers. This is quite different from the TSR, where forwarders conclude contracts with consignors, and containers are supplied by forwarders in most cases. Another example is that the ocean and land components of the ALB are efficiently connected. Once containers arrive at ports on the west coast, they are put on a container-dedicated train by the end of the day. This is made possible by the broad usage of information technology.

6. Future possibilities for connecting the TKR and the TSR

Since the historic North-South summit meeting held in 2000, the reconnection and revival of the Trans-Korean Railway (TKR) has been the focus of attention. Furthermore, the idea of connecting the TKR and the TSR to replace the current maritime shipment section between the ROK and the Russian Far East, thereby making rail transport from the ROK to Europe possible, is being promoted. I will discuss the possibility of connecting the TKR and the TSR and using this link for through transportation.

A collaborative effort between South and North Korea to link the railways along the west coast of the Korean Peninsula (Gyeongeui Line) is currently underway. Another possible future project is connecting the railways of the North and South along the east coast (Donghae Line).

The Gyeongeui Line was once a trunk railway connecting Pyongyang, Seoul and Busan. Unfortunately, the railway was severed due to the division of the country, with about 12km of track disconnected on both sides of the DMZ. A road is due to be constructed along the Gyeongeui Line. Were the railway and the road to be completed, it should become quicker and easier to undertake mutual trade overland, rather than using marine transportation, as at present. In 2001, mutual trade amounted to about 700~900 thousand tons, and the marine shipment cost between Incheon and Nampo was $800~850/TEU. If land transportation were realized, transportation costs could be cut.

In the second stage, the ROK and Northeast China will be linked overland, instead of shipping by sea via Dalian. How much cargo and how many passengers will use the land route will depend on its competitiveness in terms of time, cost and the complexity of procedures.

In the third stage, the Geongeui Line will be further extended to Russia and Europe. On this route, transshipment at the China-Russia border could reduce competitiveness, and the busy Chinese railway system could be a problem in the smooth running of block trains. Many people engaged in the Korean transportation business are skeptical about the possibility of the Gyeongeui Line being further extended to Russia and Europe.

The Donghae Line project, which is aimed at constructing a railroad along the east coast, is the focus of attention. This idea was included in the agreements concluded when President Kim Dae-Jung's special envoy Mr. Lim visited Pyongyang in April 2002. According to the Korean press, it is planned that the northern part (127km) and the central part (171km) will be constructed by 2010, completing the entire Donghae Line between Busan and the DMZ (502km). Only a short section (18km) needs to be built on DPRK territory. On this route, transshipment is needed between the DPRK and Russia due to the gauge difference.

If the TKR is constructed, there may be a possibility for the TKR to be used for shipments to Russia and Europe, replacing the marine shipments that take place at present. Some Korean forwarders expect the reconnected railway to be used for shipments to Europe or Central Asia.

However, at the same time, the shipping and port industries, particularly in Primorsky, feel the idea of the TKR to be a threat to their existing business. Some people think that the current shipping and port industry will die. At the same time some experts believe it will not be easy to ensure the economic competitiveness of the TKR-TSR route. The reason is that Korean export industries are located in the southern part of the ROK, near Busan. Export products will have to be shipped more than 500km to the TKR in the ROK before passing through Wonsan, Rajin and Khasan. The domestic railway tariff in the ROK is fairly expensive, and the DPRK may charge a transfer fee. Transshipment is also required. Given the reduction in the marine tariff between ROK ports and Russian ports, it is a question of whether the TKR is more competitive than the current marine route in terms of time and cost.

There will be accelerated competition between the

three alternative routes - the TKR and TSR combination, marine transportation combined with the TSR, and the Deep Sea route. It is hard to tell which route will provide the most economically attractive services. The ultimate advantage will be that the competition could end up providing users with faster and cheaper transportation routes.

7. Conclusions

1) The biggest business opportunity that the RFE could take is switching detoured shipments from the route via Finland to one through a Far East port. If Korean, Chinese and Japanese exports, currently stocked in Finnish ports are shipped using Far East ports, the TSR as well as these ports will gain enormous economic benefits.
2) The business environment facing the TSR routes will become tougher in the future. It will be necessary further to strengthen competitiveness in terms of service and speed as well as cost.
3) Even if the TKR and TSR were connected, Primorsky ports could survive as long as they could provide a speedy, high quality service at a low cost to users.

(Presented in an International scientific and practical conference on *Trans-Siberian Railroad Role in Asia Pacific Countries Cooperation Development: Perspectives of Trans-Siberian and Trans-Korean Railroads Alliance* - 24th-25th of July, 2002 at Vladivostok)