Organization of export transportation of goods from Russia to China

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Abstract. The relevance of the scientific article is because the growth rate of export shipments of container trains is increasing, and the transport infrastructure is developing. The article is devoted to the organization of containerized export transportation of goods from Russia to China. The transit, domestic, import and export transportation of containers carried out along the main railway of Russia - along the Trans-Siberian Railway (Great Siberian Route). Transition of the document flow of participants of foreign economic activity into electronic form with the possibility of using electronic signatures, as well as maintaining a register of all documents using the Internet platform, will allow customs authorities to track the legitimacy of companies. Since rail transport at this stage of development still belongs to the branches of the natural monopoly, the character and completeness of the regulation of tariffs for freight rail transportation is of no small importance in improving tariffs. The article explores the main advantages in organizing rail container transportation. Lists the services that include the rate of export of goods from Moscow to Shanghai by rail. Also, services that are not included in the calculation of rates. "Drop Off Charges" rates are presented depending on the place of departure and the place of delivery of the empty container. On the example of the Trade Logistic company, an algorithm is proposed for calculating the rate for sending one container from the Bazaikha station from the Trade Logistic company.

1. Introduction
The transportation of large-sized various cargoes in large containers has a huge prospect, both in the transport services sector and in foreign economic activity. An increase in such transportation means a focus on the modernization of old rolling stock and the creation of new improved units to increase the efficiency and quality of the organization of container cargo transportation, as well as to reduce costs and reduce delivery time. The focus on the development of international rail transport is explain by the fact that in relation to other modes of transport the railway is the most competitive.
2. Study methodology
The works of such authors as Bilegan I. C., Brotcorne L., Feillet D., Gasparik J., Hayel, Y., Kudlac, S., Kurenkov P. Luptak V. are devoted to the organization of export cargo transportation.

Transport aspects are the impact on the efficiency of international transactions, one of the main criteria for efficiency is minimizing costs and time.

For this reason, the goal is to assess the level of cargo delivery from Russia to China.

In the research process, the following methods used: expert estimates, computational and analytical methods, a comparison method, statistical and quantitative methods, as well as a system analysis method.

3. Assessment and results
The organization of a container train for export is as follows. First of all, the department receives an application for the supply of goods, which lists the name and quantity of cargo, container sizes, type of transportation, departure and destination points, border crossings, consignor and consignee, conditions for loading and unloading, and other information [1, 2, 25].

To form a container train, at a minimum, you need to find out if there are the right quantity of containers in the park and what is the duration of their temporary stay on the territory of the Russian Federation and China - for this, contact the container park management department (CPM). This is a very important condition for the hassle-free shipment of goods, since the extension takes from 3 to 12 days, and in some cases the extension is refused, then you have to resort to the re-export procedure. If the carrier is forced to resort to this procedure, the company incurs high costs: the cargo is forced to be transferred to another container with a normal period of temporary importation, and the empty one sent to China to resolve all problems [12, 13].

It is also necessary to prepare all the necessary supporting documents: an agreement on international freight traffic, a certificate of fumigation (and also track its expiration date), an invoice, a cargo customs declaration, a product specification, sketches for the placement and fastening of goods in a container according to technical conditions, are simultaneously being decided questions about the terms of delivery, the company follows the rules of Incoterms 2010 [8-10]. For processing documents and applications, the «EBL» program (electronic bill of lading) is used. There is also a calculation of the mileage from the point of departure to the point of arrival and the calculation of the freight charge.

In this program, it is very easy to monitor the workflow of the company. The next step is to submit documents to the Center for Corporate Transport Services (CCTS) of JSC Russian Railways, as well as to the TCTS (territorial center for transport services) [6, 11].

After the approval of all documents and applications, a container issued, which sent by truck to the customer’s warehouse, where the goods are loaded into containers, according to the terms of the sketch of the placement and securing of cargo by technical certificate. After delivery of the container from the warehouse to the container terminal, documents and containers with cargo are delivery.

For clarity of all information, company employees make transit manifests for each train departing. They put down in it: on which car was the container, what was the seal on it, gross weight, on which cargo customs declaration does it go and what is carrying [15, 21]. All this greatly facilitates the work of both internal employees and employees at the container terminal. Chinese colleagues from the import department are better oriented on the arrival of a container train to China.

Copies and originals of all documents are delivered to the terminal, where the next check of both regulatory documents and the timing of temporary importation of containers takes place. Without providing the originals by the client, the train cannot leave. Very often for this reason, there is a delay in departure, and then all planned dates are violated. Customs services right at the terminal can arrange both inspection and inspection of the shipment.

During the inspection, the container number and seal are checked, and the customs authorities also pay attention to the deformation and damage to the packaging, which can lead to the replacement of the etc. During the inspection, the boxes are already opened and a careful examination of the containers (both outside and inside) and cargo is in progress [3, 4, 7].
After the train leaves the dispatch station, it reaches the customs control zone at the border railway posts (Naushki, Zabaykalsk), where the customs authorities can again inspect or search. When crossing the border, all documentation is viewed, and the agreement on international freight traffic stamps that the export of the goods transported is allowed.

Currently, there are five main export routes from Russia to China: five routes, respectively, five different border crossings.

However, if the train travels along the East Siberian Railway, that is, through the border crossing (subway) of Naushki, then on the territory of Mongolia - at the station Suhe Bator, they can also inspect the containers and, if any comments found, open the box for inspection. It also stamps the agreement on international freight traffic stating that the goods export from the country of export. This seal makes it possible to confirm 0% VAT for international shipments. On the way, there are situations when the container or wagon needs to be repairer. In this case, it is necessary to unhook the car from the train and send it to the repair depot. After repair work, the container car attached to the nearest train to the Chinese border.

After passing the Russian and Mongolian border, the train reaches the territory of the People’s Republic of China. The Zamyn-Ude border crossing has the same gauge as Russia - 1,520 mm, so containers travel across the territory of Mongolia on wagons leased from Russian partners. At the Erlyan railway station (Eren-Hot), containers are removed from Russian wagons and rearranged to “native”, Chinese (CPC is owned by the Chinese side) - a gauge in the PRC of 1435 mm. Here, the train is waiting for the repaired containers.

Further, the container with the cargo passes under the responsibility of colleagues from the Chinese branch, in case of some risks, these costs are borne by the importers.

Lumber and wood products are export to the following cities in China: Harbin, Manchuria, Baishan, Guangzhou, Changzhou, Baotou, Chengdu, Chongqing, Xi’an, Qingdao, Ganzhou, Fuzhou, Xinzhou, Shenzhen, Tianjin, Suzhou, Shanghai, Dalian, Yingkou Ningbo, Nanjing, Yangzhou, etc. In addition to China, lumber from Russia, as well as grain, domestic cars and other goods exported to Belarus, Poland, East and Southeast Asia (Vietnam, South Korea, etc.) and even to the United States of America. To calculate the cost of sending a container, bids used, which the operational managers recalculate monthly. The following services are included in the export rate from Moscow to Shanghai by rail using a forty-foot container:
- supply of a vehicle for loading within the Moscow ring road;
- transportation of the loaded container to the departure station;
- terminal processing of containers at the station of departure - temporary storage and preparation of the cargo transfer code for transportation;
- use of a wagon and a container box on Russian and Chinese railways;
- freight charges and railway tariffs in the territories of both countries;
- loading and unloading at the border [23, 24].

The rate calculation does not include:
- terminal services at the arrival station;
- the empty container is returned by the customer, is not included in the bid;
- fees related to customs;
- cargo protection [5, 20, 22].

Carriage charges should be understood as follows: “payments that include carriage charges, fare for a conductor, train driver, additional fees and other fees that arose from the conclusion of the contract of carriage to the delivery of the goods to the recipient, including those related to cargo reloading or rearrangement of carts.”

Using the container implies a Drop Off Charges rate and means the amount that the client must pay for the rental of containers on the way from point A to point B, as well as an extra charge for the delivery of an empty container to a depot in the PRC. The use of the container for the export procedure on the territory of Russia is calculated by Russian employees, and on the territory of China by Chinese [14, 19, 30]. This rate varies depending on the place of delivery of the container in China, on the place
of departure in Russia, on how the container delivered to Russia - through import or arrival empty, and on the carrier's commission.

**Table 1.** Drop Off Charges rates depending on the place of departure and place of delivery of the empty container.

| Departure point | Empty delivery location | Cost from the Russian Federation, USD | Cost from China, USD | Total, USD |
|-----------------|-------------------------|---------------------------------------|---------------------|-----------|
|                 |                         | 20 GP  | 40 HC  | 20 GP  | 40 HC  | 20 GP  | 40 HC  |
| **Irkutsk**     | Tianjin / 天津          | $ 130  | $ 700  | $ 0    | $ -50  | $ 130  | $ 650  |
|                 | Xiamen / 厦门           | $ 130  | $ 700  | $ 0    | $ 0    | $ 130  | $ 700  |
|                 | Ningbo / 宁波/Shanghai / 上海 | $ 130  | $ 700  | $ 0    | $ -100 | $ 130  | $ 600  |
|                 | Taicang / 太仓          | $ 130  | $ 700  | $ 0    | $ 150  | $ 130  | $ 850  |
|                 | Suifenhe / 绥芬河       | $ 130  | $ 700  | TBA    | $ 300  | TBA    | $ 1 000 |
|                 | Guangzhou/ 廣州         | $ 130  | $ 700  | $ 0    | $ 0    | $ 130  | $ 700  |
|                 | Dalian / 大連           | $ 130  | $ 700  | $ 0    | $ 200  | $ 130  | $ 900  |
|                 | Chengdu / 成都          | $ 130  | $ 700  | TBA    | $ 500  | TBA    | $ 1 200 |
|                 | Chongqing / 重慶        | $ 130  | $ 700  | TBA    | $ 500  | TBA    | $ 1 200 |
|                 | XI AN / 西安            | $ 130  | $ 700  | TBA    | $ 600  | TBA    | $ 1 300 |
|                 | Tianjin / 天津          | $ 130  | $ 850  | $ 0    | $ -50  | $ 130  | $ 800  |
|                 | Xiamen / 厦门           | $ 130  | $ 850  | $ 0    | $ 0    | $ 130  | $ 850  |
|                 | Ningbo / 宁波/          | $ 130  | $ 850  | $ 0    | $ -100 | $ 130  | $ 750  |
|                 | Taicang / 太仓          | $ 130  | $ 850  | $ 0    | $ 150  | $ 130  | $ 1 000 |
|                 | Suifenhe / 绥芬河       | $ 130  | $ 850  | TBA    | $ 300  | TBA    | $ 1 150 |
|                 | Guangzhou/ 廣州         | $ 130  | $ 850  | $ 0    | $ 0    | $ 130  | $ 850  |
| **Krasnoyarsk** | Dalian / 大連 / Qingdao / 青島 | $ 130  | $ 850  | $ 0    | $ 200  | $ 130  | $ 1 050 |
|                 | Chengdu / 成都          | $ 130  | $ 850  | TBA    | $ 500  | TBA    | $ 1 350 |
|                 | Chongqing / 重慶        | $ 130  | $ 850  | TBA    | $ 500  | TBA    | $ 1 350 |
|                 | XI AN / 西安            | $ 130  | $ 850  | TBA    | $ 600  | TBA    | $ 1 450 |
| **Novosibirsk** | Tianjin / 天津          | $ 130  | $ 550  | $ 0    | $ -50  | $ 130  | $ 800  |
But since container trains mainly depart from Krasnoyarsk, Novosibirsk and Irkutsk, we will consider the final rates applicable for the first half of May for sending a container from the Bazaikha station, Krasnoyarsk:

**Table 2. Rates for sending one container from the Bazaikha station from the Trade Logistic company.**

| Departure station - border + Drop Off Charges rate to a specific container delivery point | 20 GP | 40 HC |
|---|---|---|
| 1 Bazaikha - Erlian + Drop Off to Tianjin | 1638 $ | 2 724 $ |
| 2 Bazaikha - Erlian + Drop Off to Siamen | 1 638 $ | 2 774 $ |
| 3 Bazaikha - Erlian + Drop Off to Ganzhou | TBA | 3 074 $ |
| 4 Bazaikha - Erlian + Drop Off to Shanghai / Ningbo | 1 638 $ | 2 674 $ |
| 5 Bazaikha - Erlian + Drop Off to Guangzhou / Shenzhen | 1 638 $ | 2 774 $ |
| 6 Bazaikha - Erlian + Drop Off to Chengdu | TBA | 3 274 $ |
| 7 Bazaikha - Erlian + Drop Off to Chongqing | TBA | 3 274 $ |
| 8 Bazaikha - Erlian + Drop Off to Xian | TBA | 3 374 $ |
| 9 Bazaikha - Erlian + Drop Off to Dalian | 1 638 $ | 2 974 $ |

The algorithm for calculating this rate is considered as an example (No. 4 - Bazaikha - Erlian - Shanghai / Ningbo for a forty-foot container):

$1 824 + $ 750 + $ 100 = $ 2 674,$

Where:

- **1 824 $** - the rate of Trade Logistic company, which includes the railway tariff + provision of wagons according to the FOR-FOR condition to the border - in this case we are talking about the border crossing Zamyn-Ude (Mongolia) - Eren-Hot (Erlian) (China) + use of the container on the territory of both states;

In China, the same rate is set (the amount is different), the railway tariff in China. This also includes loading and unloading at the border and the provision of a wagon in China, since the wagon arriving from Russia, having reached the border, is sent empty back.
• 750 $ - using a container in China and returning empty containers to the depot.

The Russian side, for its part, invoices $ 850, meaning by this amount the cost of returning an empty container. From China, the rate is minus 100 US dollars, since the container was taken after the import procedure, which is the basis for receiving a discount, since there were no expenses for excessive use across the territory of the Russian Federation from Chinese colleagues;

• 100 $ is the commission of the company.

The client is also offered terminal services: a full package of services for storing containers at the departure terminal for 20 days - $ 4 and other operations.

In addition to the railway tariff and container rental fees, there are other cost items. The “local charges” rate, which provides for the payment of local expenses: removal of the container from the supplier’s warehouse and delivery by automobile to the terminal, container terminal services, as well as ordering of a locking and sealing device [16 - 18].

4. Conclusions
The issue of creating a common Internet portal with an electronic information base remains relevant so that all accompanying documents are available within six months from the date of sending the KP in open access for all participants in foreign economic activity carrying out a particular transaction. This Internet platform can become an analogue of the «EBL» program (electronic bill of lading Russian Railways) program [26-29].

An important issue in the further improvement of the tariff system is determining the types of the market for transport services and building the corresponding tariffs. There are transportation where railway transport acts as a real natural monopolist, at the same time there are transportations that carried out by various modes of transport. It should be borne in mind that for different types of transport services market appropriate tariff setting methods must be develop.

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