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Working Party on Intermodal Transport and Logistics

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Annual themes on Intermodal Transport and Logistics:

Follow-up to the 2013 workshop on weights and dimensions of Intermodal Transport Units (ITU)

Modular Loading Units and Modular Cargo Transport Complexes

Submitted by Firma Gloria

1. Introduction

The structure of the rolling stock and container fleet of a 1520-mm track gauge, formed to ensure the operation of the former USSR national economy, unexposed to the outside world, does not meet the new political and economical changes that have occurred in Eurasia. With the emergence of independent states, private operators, private wagon owners, manufacturers and entrepreneurs of the small and medium businesses, amid the processes of privatization and market economy development, there arose a conflict of their interests and views on the required structure of the rolling stock and container fleet, the sources for their investment, the order of their use and management.

2. Characteristics of wagons for a 1520-mm track gauge

The rolling stock of a 1520-mm track gauge consists of the so-called "multipurpose" wagons (platforms, open-top and covered wagons), designed to carry a wide range of cargoes and having a dual purpose, and the special, "purpose-built" wagons designed for the transportation of certain narrow range of cargoes. The special wagon bodies are purposely designed and sized for such cargoes in order to reduce the cargo owners' costs for loading, transportation and unloading.

It became more profitable for the rail carriers and private wagon operators in the interests of their own businesses to use the open-top wagons because of the possibility to load them not only with coal, for the transportation of which, in fact, they have been designed, but also with the other goods to reduce their downtime and empty runs. But an open-top wagon's body design and dimensions are not suitable for the cost-effective stowing, securing and transporting any other goods, except for coal. Therefore, when loading any other cargo in it,

the shippers require plenty of the loading consumables, and the design and dimensions of an open-top wagon's body are not always optimal for them.

It is economically advantageous for the shippers, unlike the carriers and wagon operators, to use the purpose-built wagons with the design and dimensions well suited for transportation of certain specific types of the goods. But they cannot carry any other goods they were not designed for. Therefore, a half of their resource they run empty and used irregularly or seasonally. Therefore, they are not useful for the private wagon operators and carriers. A disadvantage of the purpose-built wagons lies in the inability to change their specialization during transportation "outside the wagon works" to carry a wider range of the goods.

A general disadvantage of the multipurpose and purpose-built wagons is the inability to perform the intermodal transportation on a "door to door" principle. They are used only for the railway transportation of the goods "from station to station."

As you know, this disadvantage may be solved by using the loading units - containers of ISO 668 standard series 1, and EN 238 and EN 452 swap bodies.

But the existing types of the containers and swap bodies in their loading characteristics largely have the same disadvantages of the multipurpose and purpose-built wagons.

3. Loading unit characteristics

The containers ISO 668 series 1, as well as the wagons, are also divided into multipurpose and purpose-built ones. They are designed for the intercontinental maritime transport on ships stacked and, therefore have the strictly regulated dimensions. Their width of 2438 mm is less than the stowing gauge of 2550 mm permitted for the road transport, substantially less than the stowing gauge of 3150 mm permitted on the railways of a 1435-mm track and significantly less than the stowing gauge of 3250 mm permitted on the railways of a 1520-mm track. Furthermore, the multipurpose containers are fit for loading only via the end doors, which makes impossible their top or side loading. Therefore, stowing goods requires their removal or putting onto wagons by the heavy-duty cranes. They are mainly adapted to transport the goods of high degree of processing and have limited overall dimensions. The purpose-built containers, as well as the purpose-built wagons, are designed to transport only certain cargo types. They cannot be used for transportation of the goods they are not intended for. Therefore, a half of their resource they run empty and used irregularly or seasonally. A disadvantage of the purpose-built wagons lies in the inability to change their specialty during transportation "outside the wagon works" to carry a wider range of the goods.

The swap bodies of EN 238 and EN 452 standards, specifically designed for the combined inland transport without the possibility of stacking, have a number of improvements as compared to ISO 668 series 1 containers, at the account of a larger width (to 2550 mm) and length (to 13600 mm). But in other respects, they have disadvantages of the loading characteristics similar to ISO 668 series 1 containers.

The main technical drawback to widely use ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies is that in this case, the railway stations should be equipped with the heavy-duty cranes to remove them from the wagon or put onto a wagon loaded. Just a small number of the railway stations of a 1520-mm track are equipped with such cranes and open for the container operations. For example, only 1.5% of the railway stations in Ukraine are open to working with ISO 668 series 1 containers of gross weight 30.48 tons and none is suitable to work with the swap bodies of EN 238 and EN 452 standards.

The second major technical drawback to their wide use is that the multipurpose containers and swap bodies are not suitable for loading and transportation of more than 40% of the goods that are considered to be non-containerized. These are the raw goods and products of the initial degree of processing, which are transported inland and exported by countries having 1520-mm track, such as: timber, grain, pellets, building materials, iron and rolled metal products, automotive vehicles, machinery and equipment.

Through the above mentioned drawbacks of the loading units and imperfection of the infrastructure for the intermodal combined transport, only 0.3% of cargoes are transported by the Ukrainian railways in containers (as of 2013). The rest of the goods are transported by wagons. On the 1520-mm railways of the other countries the situation with the container transport is similar. Because of the inability to command the rail carrier services for the intermodal combined transport, the manufacturers massively command the road transport services causing much greater damage to the environment.

To solve these technical problems, our enterprise has elaborated a new concept of the modular loading units and a new concept of the modular cargo transport complexes to allow a much wider range of the goods delivered by the intermodal combined transport and opening up all the railway cargo stations in Eurasia to work with the modular loading units ensuring the cost-efficient transportation not using the purpose-built wagons and purpose-built containers.

4. Modular loading unit

A modular loading unit designed by our enterprise has a modular container complex design. This is a cargo transport unit, built up, at least, of two modules detachable while in service:

- a container module made as a multipurpose special type container like a platform in the terminology of ISO 830, corresponding to ISO 668 series 1, ISO 1496-5, the SCC and CCC Conventions, the size code and type 29R0, gross weight 30.48 tones, model 480.00.010, designed by our enterprise, which provides for the transport intermodality. The product code as per the State Classifier of Products and Services of Ukraine DK 016-2010: 29.20.21. An example of marking in accordance with ISO 6346: GPFU 000001 [1], 29P0;
- a loading module made as a removable container equipment – a special reusable means for the cargo stowing and securing (RM) or, at least, one special container (SC) mounted on a container module, which provides for the intended transportation. The product code as per the State Classifier of Products and Services of Ukraine DK 016 2010: 25.11.23. An example of marking in accordance with ISO 6346: GPFJ 000001 [1].

A modular loading unit allows to:

- assure a wider range of the containerized cargoes by allowing the top and side loading of a platform-type container and making loading modules of the required size, design and purpose;
- open all the railway cargo stations in Eurasia to work with such modular loading units by enabling their loading and unloading without removing them from a wagon or putting loaded onto a wagon;
- adapt it to the shipper's needs while in service by replacing a loading module by another one of a different specialization rather than the entire loading unit. In this case, the multipurpose container module remains unchanged;

- make the loading module of the required purpose, design, length, width and height, which may, if necessary, exceed the container module dimensions to fully use the loading gauge allowed for the road and rail transport,
- make a modular loading unit open or close, or suitable for stacking for the sea shipping through the appropriate loading module version, which may be flexible, rigid or equipped with the standard upper corner fittings and suitable for stacking of the other cargo units for storage and sea shipping;
- thanks to the technical level of performance, open wide access for the shippers to the intermodal combined transport;
- reduce the natural and economic resources spent for the loading units construction by unifying a container module, and its use in all the options of arrangement and intended use of the modular loading units, facilitate the introduction and development of the "green logistics" and the intermodal combined transport.

5. Modular cargo transport complex

- A modular cargo transport complex designed by our enterprise is the product to provide for the intermodal and unimodal transportation of a wide range of the goods, built up of the modules detachable in service:
- a transport module in the form of a container or multipurpose platform, or an open-top wagon of any existing model, which provides for transportation. The product code as per the State Classifier of Products and Services of Ukraine DK 016-2010: 30.20.33;
- a container module made as a general-purpose special type container like a platform in the terminology of ISO 830, corresponding to ISO 668 series 1, ISO 1496-5, the SCC and CCC Conventions, the size code and type 29R0, gross weight 30.48 tones, model 480.00.010, designed by our enterprise, which provides for the transport intermodality. The product code as per the State Classifier of Products and Services of Ukraine DK 016-2010: 29.20.21. Example of labeling in accordance with ISO 6346: GPFU 000001 [1], 29R0;
- a loading module, made as a removable container equipment – a special reusable means for the cargo stowing and securing (RM) or, at least, one special container (SC) mounted on a container module, which provides for the intended transportation. The product code as per the State Classifier of Products and Services of Ukraine DK 016 2010: 25.11.23. An example of marking in accordance with ISO 6346: GPFJ 000001 [1].

Making a cargo transport complex modular allows to adapt it to the shipper's needs while in service by replacing just a loading module by another one of the required specialization rather than one wagon by another, or a container by another one. In this case, the multipurpose transport and container modules remain unchanged.

By combining different transport and loading modules of the same container module model, one may form the cargo transport complexes of various lengths, capacity and purpose, not at the wagon works, but in service, by:

- replacement of a transport module to the required type, length and capacity, using, for example, existing 40, 60, or 80-foot container platforms, or the multipurpose platforms or open-top wagons to transport the container modules;

- replacement of the container modules quantity depending on the transport module length, size and weight of the shipment. Thereat, the container module model 480.00.010 remains unchanged and unified;
- replacement of the loading modules by another ones of the required specialization.

Making a cargo transport complex modular allows:

- for its operator to exclude the risk of its demurrage (as opposed to a purpose-built wagon's operator) by allowing its multiple re-specialization in service by replacing just loading modules rather than the entire wagon;
- open access to its operator to handle transportation not only "from station to station," but also "door to door", involving the motor carriers at the initial and final stations to transport the modular loading units, increasing the scope of services provided and the amount of their income;
- reduce the natural and economic resources spent to form the rolling stock by unifying a transport and container module and its active use in all the options of arrangement and intended use of the modular cargo transport complexes, facilitate the introduction and development of the "green logistics" and the intermodal combined transport.

6. Technical regulations for the transport, container, loading modules, modular loading units and modular cargo transport complexes

A transport module is a container or multipurpose platform, or an open-top wagon meeting the technical railways regulations for the railway wagons.

A container module is a multipurpose special type container like a platform in the terminology of ISO 830, corresponding to ISO 668 series 1, ISO 1496-5, ISO 6346, the SCC and CCC Conventions, the size code and type 29R0, model 480.00.010, designed by our enterprise.

A loading module is the container equipment for stowing and securing the cargoes on a container module, which may be made as a reusable means to stow and secure cargoes, or as one or several special, purpose-built or multipurpose containers. A loading module shall provide for a handy stowing and securing the cargoes, and, if necessary, protect them from an external access and environmental exposure. To have a possibility to stack the cargo during storage or sea shipping, it can be equipped with the standard upper corner fittings. For secure transportation by the different means of transport, a loading module shall comply with the requirements of the IMO/ ILO/ UNECE Code of Practice for Packing of Cargo Transport Units (CTU code), the requirements of Annex 3 to the AIGTR to reusable means for stowing and securing cargoes in the wagons and containers, the national legislations of the countries for the road, rail and water transport.

A modular loading unit consists of two products – a container module and a loading module, built up with a possibility of detachment in service. For safe transportation by the different means of transport, each of its modules and the modular loading unit in general shall comply with the requirements of the IMO/ ILO/ UNECE Code of Practice for Packing of Cargo Transport Units (CTU code), the requirements of Annex 3 to the AIGTR to reusable means for stowing and securing cargoes in wagons and containers, the national legislations of the countries for the road, rail and water transport.

A modular cargo transport complex consists of three products – a transport module, a container module and a loading module built up with a possibility of detachment in service, and designed for the safe transportation of goods by rail. Each of its modules and the modular cargo transport complex in general shall comply with the requirements of the IMO/ ILO/ UNECE Code of Practice for Packing of Cargo Transport Units (CTU code), the requirements of Annex 3 to the AIGTR to reusable means for stowing and securing cargoes in wagons and containers, the national legislations of the countries for the road, rail and water transport.

7. Technical, social, economical and ecological effects on implementing the modular loading units and modular cargo transport complexes

7.1. With the help of the modular loading units, all the cargoes considered to be non-containerized can be containerized to transport in the general-purpose ISO 668 series 1 containers and swap bodies, thereby making a breakthrough in the development of the intermodal combined transport in Eurasia.

With the help of the modular loading units, all the railway cargo stations in Eurasia can be opened for operations with them thanks to the possibility of their top and side loading and unloading by the light-duty means of the shippers and consignees without removing the container module from the wagon. Opening of all the railway cargo stations to work with the modular loading units will provide access to the railway infrastructure for a wide range of shippers, including the small and medium-sized businesses for the combined road-rail transport of their goods.

The modular loading units, in contrast to the containers of ISO 668 series 1 standard and swap bodies, can be transformed in service by changing their specialization by replacing only the loading modules. This possibility allows reducing the natural and economic resources spent to build a variety of the purpose-built containers.

A container platform model 480.00.010, size and type code 29R0 is a unified container module used in all variants of configuration and intended use of the modular loading units to transport a wide range of the goods, which makes it a reliable investee for the private investors who can build it for their own needs or leasing operations.

7.2. The modular cargo transport complexes, unlike the wagons, can be transformed, and their specialization can be changed in service "outside the wagon works". When loading them, any client of the rail carrier under its control, either a shipper, a freight forwarder, a wagon operator, or a loading unit operator on the children's "Lego" constructor principle, can arrange the loading modules of the required specialization on the container modules in the required quantity on the existing transport means – the container platforms of the required length, multipurpose platforms or open-top wagons of different models. Thanks to modularity of the cargo transport complexes, specialized transportation is provided without the use of the purpose-built wagons and purpose-built containers. This possibility allows reducing the natural and economic resources spent to build a variety of the purpose-built wagons not so actively used. Use of the existing container platforms, multipurpose platforms and open-top wagons for the cost-beneficial special intermodal (or unimodal) transport of a wide range of the goods will increase the intensity of their use and reduce empty runs.

7.3. The modular loading units and modular cargo transport complexes will pave the way for cooperation on the principles of the public-private partnership of the infrastructure owners, shippers, rail and road carriers, wagon operators, modular loading unit operators

and freight forwarders to jointly and mutually beneficially form the modular transport infrastructure, develop the intermodal combined transport in Eurasia, introduce and spread the "green logistics" to reduce the load on the ecological system of our planet.

8. Configuration examples of the modular loading units and cargo transport complexes

There may be a variety of configurations of the modular loading units (MLU) and modular cargo transport complexes (MCTC). Any configuration of the special loading modules (LM) can be developed by the cargo shippers themselves.

There are just some configuration examples of the modular loading units and modular cargo transport complexes in the graphic application showing how to containerize the cargoes, which are now considered to be non-containerized for transportation in ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies, and how to open all the railway cargo stations in Eurasia for operations with them.

8.1. Figure 1 shows the structure of the loading units and cargo transport products. The structure of the existing rolling stock is highly specialized. To change the transport specialization it is necessary to make a purpose-built wagon at the wagon works. Its specialization cannot be changed in service, "outside the wagon works".

When effecting transportation in ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies, their specialization is achieved through using the differently specialized loading units. To change the transport specialization it is necessary to make a purpose-built loading unit at the wagon works. The only transport module – a container platform - is unified.

When effecting transportation by the modular loading units composed of the modular cargo transport complexes, a transport module (TM) and a container module (CM) unification is achieved. To change the transport specialization it is necessary only to replace a loading module by another one of the required specialization. Separation of a loading unit into modules allows expanding the range of the containerized cargoes and opening to work with them the railway cargo stations not equipped with the heavy-duty cranes.

8.2. Figure 2 shows the "Green Logistics Tree", formed from the modular cargo transport complexes. It is a living tree. Its branches will grow by means of developing the different special loading module variants.

8.3. Figure 3 shows an example of configuration of a modular cargo transport complex to transport pipes, timber and other long loads not suitable for transportation by ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies. One and the same modular unit provides transportation of pipes (6 to 24 m long) using the container platforms of different lengths. The side supports of this loading module are sliding and can be installed edgewise in a number of positions, including those wider than the container module to completely use the loading gauge permitted for a 1435-mm rail track. This allows for the intermodal transport by railways of 1520-mm and 1435-mm loading gauge. After unloading the long loads, ISO 668 series 1 containers or swap bodies may be loaded into a loading unit by stacking them on the top container module fittings. The modular loading units by means of the sliding side supports installed in three positions edgewise, after unloading, can also be transported stacked in 3 tiers.

8.4. Figure 4 shows an example of configuration of a modular cargo transport complex to transport the steel sheet rolls. The container module is equipped with the removable column bases to put a few rolls in a vertical position. In this variant, their top and side loading without removing a container module from the wagon is provided.

8. 5. Figure 5 shows an example of configuration of a modular cargo transport complex to transport automotive vehicles, machinery and equipment. In this variant, the module is equipped with wood flooring as a reusable means to secure cargoes in the required position with the help of the timber stops and anchor wires. Thus, top loading or unloading of the automotive vehicles without removing a container module from the wagon is provided.

8. 6. Figure 6 shows an example of configuration of a modular cargo transport complex to transport grain, pellets and other lightweight bulk cargoes. The cargo module is wider than the container module for a fuller rail transport loading gauge use and is equipped with the standard corner fittings to enable transshipment and stacking. Top loading through the charge hatches without removal from the wagon is provided. This modular loading unit will be transported by railways with a 1435-mm and 1520-mm track gauge as such within the loading gauge, and as oversized at the initial and final stations when transported by the motor vehicles.

8. 7. Figure 7 shows an example of configuration of a modular cargo transport complex to transport the piece cargoes requiring protection from an external access and atmospheric precipitations. The cargo module is designed as a box mounted on the container module "upside down" and equipped with the standard corner fittings to allow stacking of the modular loading units and sea shipping. Making the loading module detachable allows for its top and side loading and unloading without removing and putting a loaded container module onto a wagon. In contrast to ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies, all the cargo stations in Eurasia not equipped with the heavy-duty cranes are open to work with them.

8.8. Figure 8 shows an example of configuration of a modular cargo transport complex to transport grain and other bulk cargoes. The cargo module has the bottom flexible hoppers. When grain is loaded through the upper charge hatches, they lie folded on the container module. When the loading module is disconnected from the container module and lifted, they are filled with grain. When releasing the hoppers, the grain is poured out into the vessel's hold. A cargo transport complex for grain transportation is the intermodal alternative to the purpose-built grain wagons.

8.9. Figure 9 is a copy of the certificate for the main sample of a platform container GPFU 000001 [1], size and type code 29R0, model 480.00.010, designed and owned by the Private Enterprise "Firma Gloria" confirming the requirements of the SCC and CCC Conventions, issued by the Classification Society "The Shipping Register of Ukraine".

8.10. Figure 10 is a copy of the certificate issued by the International Bureau of Containers and intermodal transport BIC for renewal prefix GPF 2015 Container property Private Enterprise "Company" Gloria ".

8.11. Figure 11 is a photograph of a modular cargo transport complex consisting of:

- a transport module in the form of a railway container platform to transport the supersize containers;
- a container module in the form of a platform container GPFU 000001 [1].

Any cargo module is installed here.

8.12. Figure 12 is a photograph of a modular loading unit consisting of:

- a container module (blue) in the form of a platform container GPFU 000001 [1];
- a loading module (yellow) in the form of a column bases set to fix the sheet steel rolls vertically, the side lips to fix the rolls in a horizontal position on pallets and the stacking cones to stack the container modules during transportation after unloading the rolls.

8.13. Figure 13 is a photograph of a modular loading unit showing that the column bases for fixing the sheet steel rolls are removable. They can be installed in the required quantity in the right places to arrange the rolls of different weight and quantity.

8.14. Figure 14 is a photograph of a modular loading unit showing SCC and CCC plates, the date of the next inspection of the platform container and the trademark of the Classification Society "The Shipping Register of Ukraine".

8.15. Figure 15 shows the cargoes that can be transported by the modular loading units.

Our company has developed for introduction a variety of MLU and MCTC configurations to transport timber, grain, pellets, cement, iron-ore pellets, ferroalloys and other bulk cargoes, sheet steel rolls, rolled metal products, oil and gas pipes, automotive vehicles, scrap metal, liquid, piece and other general cargoes.

We have got the patents of Ukraine for the inventions and utility models. Patenting of the other technical solutions is in progress. Our development has been approved for implementation by the Ministry of Infrastructure of Ukraine.

9. Conclusion

A modular loading unit is a breakthrough development in the field of the container building enabling a possibility of its transformation in service "outside the wagon works" to achieve the required specialization.

Along with ISO 668 series 1 containers, EN 238 and EN 452 swap bodies, and European intermodal loading units, they will accelerate the development of the intermodal combined transport across the continent of Eurasia by expanding the range of the containerized cargoes and opening all the railway cargo stations in Eurasia for operations with them.

A modular cargo transport complex is a breakthrough development in the field of the carriage building enabling a possibility of its transformation in service "outside the wagon works" to achieve the required specialization.

They open the way to cooperation of the container and wagon manufacturers, shippers, carriers and freight forwarders to establish a public-private partnership in the rolling stock formation for the intermodal combined transport in Eurasia.

Unification of the transport and container modules included into the modular cargo transport complexes, will significantly reduce the natural and economic resources spent for construction of the rolling stock and container fleets.

Because of its environmental policy, the EU has made significant environmental improvements. But rapid economic development, population growth and consumption of the natural resources require multiplying efforts to this end, including, in the neighboring countries having common traffic flows with the EU. In this regard, in 2012 the European Commission proposed a new general Union Environmental Action Programme to 2020, entitled "Living well, within the limits of our planet". The objectives of this program are to protect our natural capital, stimulate resource-efficient, low-carbon "green" growth and innovation, and safeguard people's health and wellbeing.

I am confident that developments of our company will contribute to the "green logistics".

Obstacles to the intermodal combined transport development in Ukraine

Realizing that elimination only of the technical barriers is not sufficient for the intermodal combined transport development, let me express my opinion on the other obstacles to their development in Ukraine.

1. Regulatory obstacles.

1.1. The regulatory documents of the Ministry of Infrastructure of Ukraine governing the container transport are outdated and in a number of provisions conflict with the other laws, such as the State Classifier of Products and Services of Ukraine DK016-2010 harmonized with the similar classifiers of the international and European level, the Customs Commodity Classification and Terminology on combined transport, developed by the Working Party on Intermodal Transport and Logistics UNECE.

For example, in the "Rules for cargo transportation in the multipurpose containers" one can still with amazement read that ... "a multipurpose container is a reusable transport means", although a container, in accordance with ISO 830, the above mentioned classifiers and UNECE Terminology on combined transport, is the equipment for transportation, and has never been a transport means.

In the regulatory acts issued by the Ministry of Infrastructure of Ukraine there are no rules of cargo transportation by the other types of ISO 668 series 1 containers, and EN 238 and EN 452 swap bodies.

In the amendments to the Agreement on International Goods Transport by Rail (AIGTR) of Organization for Railways Cooperation (ORC) effective of July 01, 2015, there are no such terms as "a loading unit" and "a container shipping". The containers and swap bodies are mentioned only together with the semi-trailers in the general term "the intermodal transport unit". This is a ground for the subsequent tariffs to transport the containers and swap bodies in the international traffic at the level of wagon shipments of the transport means which significantly raise the containerization price and disable its development.

In the amendments to AIGTR ORC of July 01, 2015 again, the term "the removable auto bodies" instead of the "swap bodies" as per EN 238 and EN 452 is used, and reference to the so-called "piggyback" transport means the road transport. Such interpretation of the swap bodies served as the basis to the former management of the Ministry of Infrastructure of Ukraine to several times increase the railway tariffs for carriage of the European swap bodies on the territory of Ukraine.

I'm not giving here the many other examples of the regulatory acts hindering the development of the container transport in Ukraine. The regulatory framework of the Ministry of Infrastructure of Ukraine regarding the container transport should be radically revised and brought in line with the international and European legislation in the field of transport. Herewith, I ask the Inland Transport Committee and the Working Party on Combined Transport and Logistics turn the attention of the Ministry of Infrastructure of Ukraine on the need to address in the regulatory documents of Ukraine and ORC these and other barriers to development of the intermodal combined transport.

A landmark event in the intermodal transport development between Europe and Asia was the ECMT/ UNECE seminar on "Intermodal Transport between Europe and Asia: Opportunities and Challenges" held in 2000 in Kiev, supposed to serve the intermodal transport development in Ukraine. However, after 15 years, no significant changes in the development of the intermodal combined transport in Ukraine happened because of inaction of the former management of the Ministry of Infrastructure. As I have indicated, according to statistics, as of 2013 only 0.3% of goods in Ukraine were transported by railways in containers.

There are a number of reasons. First, the container fleet of the State Company "Liski" does not meet the manufacturers' needs. This company owns only the general purpose containers of ISO 668 series 1 standard, intended for the sea shipping of the goods of the final stage of processing, but unsuccessfully tries to use them on route between the ports of the Black and

Baltic Seas, while the raw goods and products of the initial degree of processing in Ukraine and from Ukraine to the EU countries are transported exclusively by road.

Second, the public policies to encourage the private investors to develop the combined transport are lacking. As a result, according to BIC, today only 5 private companies in Ukraine own a small number of containers. For comparison, in Germany, more than 400 private companies have their own containers.

Now the new management of the Ministry of Infrastructure of Ukraine is looking for ways to optimally reform the transport industry. It should approve a "Comprehensive Program for the Intermodal Combined Transport Development" and strictly implement it. This program should encourage the private partners to invest in the intermodal transport development. Absence of "green tariffs" for the "green logistics" in the pricing policy will not change the situation with the intermodal transport in Ukraine for the better.

Please pay your attention to the fact that the development of the combined transport in Ukraine is not only an internal affair of Ukraine. Also, the EU countries having the economic relations and cargo traffic with Ukraine are interested. For example, encouraging by the EU member states of their companies to develop the "green energy" has increased the bio fuel consumption and, consequently, export of pellets from Ukraine. But the exporters carry the pellets on the territory of Ukraine and the EU countries not by the intermodal combined "green logistics" method, but by the road transport causing damage to the environment both, in Ukraine and the EU. As a result, the environmental effect of the bio fuel is reduced. The wood, timber, grain, iron-ore pellets, rolled metal products, food and other goods are also transported to the EU countries mainly by road.

I kindly ask the Inland Transport Committee and the Working Party on Combined Transport and Logistics draw the attention of the Ministry of Infrastructure of Ukraine to the actual need to develop the intermodal combined transport between the EU and Ukraine, to provide the necessary advice in this regard thus assisting European integration of Ukraine's infrastructure and environmental protection.



MODULAR LOADING UNITS AND MODULAR CARGO TRANSPORT COMPLEXES (graphic application)



INTERMODAL TRANSPORT OF BOTH, BREAD AND STEEL

For the first time in the CIS, the Private Enterprise “Firma Gloria” (Ukraine) has designed, patented and made under the supervision of the Ukrainian Register of Shipping a platform container 480.00.010, gross weight 30.480 tons, size and type code 29P0, gauge 1CX, meeting the requirements of ISO 1496-5.

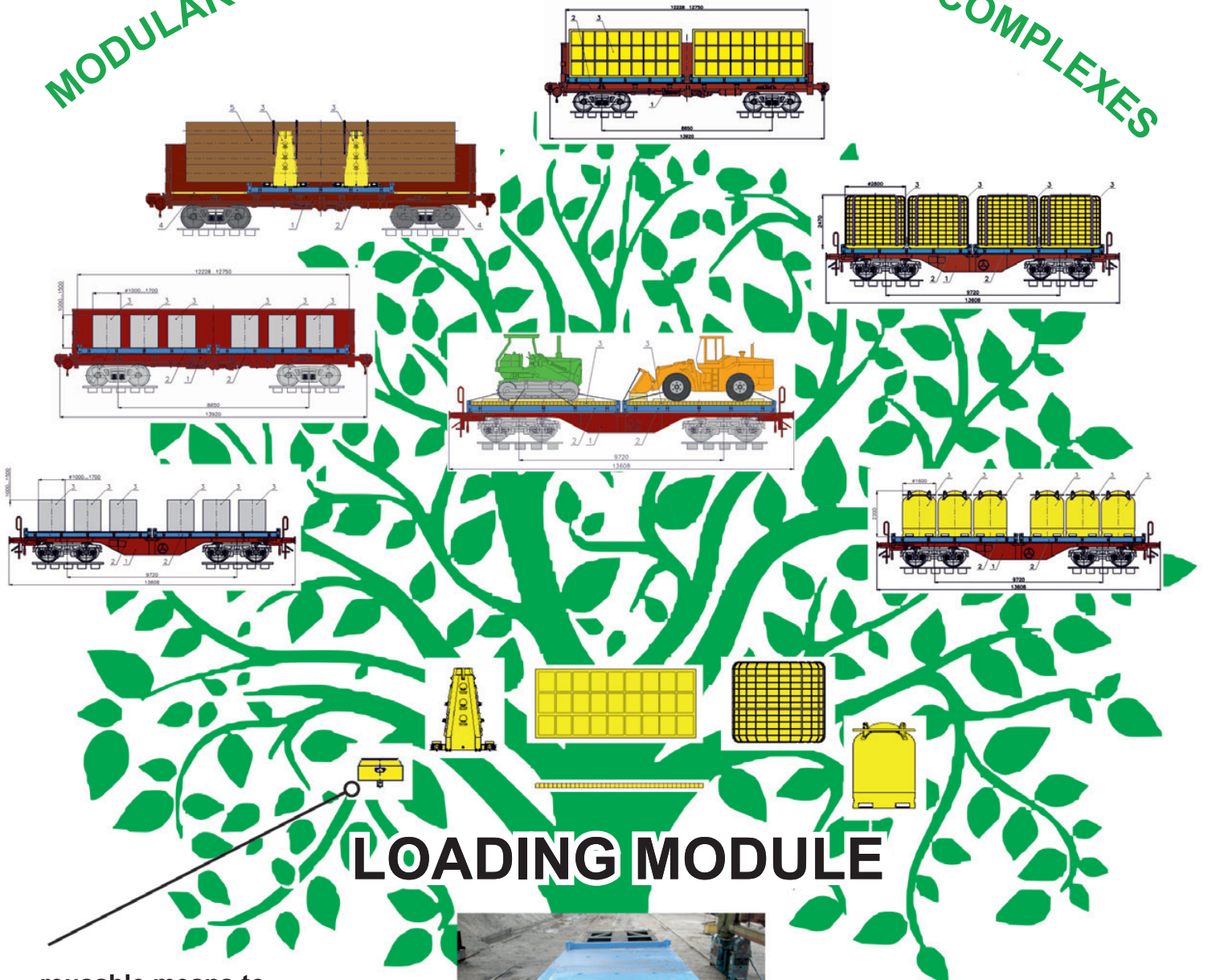
A platform container 480.00.010 is designed for the intermodal transport in Eurasia of the following general cargoes considered to be non-containerized through inconvenience of loading into the general-purpose container: metal castings, oil and gas pipes, timber, construction materials, other raw goods and products of the initial degree of processing. Transportation of such cargoes by a platform container makes better use of the loading gauge permitted for the road, river and railway transport with 1435-mm and 1520-mm tracks.

Depending on the purpose, a platform container can be equipped with a variety of reusable means to secure the cargo. When completing a platform container with the side sliding supports, it can be used to transport timber, oil and gas pipes, power line supports and other general-purpose containers. When completing a platform container with the grain bodies or soft containers, it can be used to transport grain and other bulk cargoes. When equipped with the removable column bases - to transport the sheet steel rolls.

Both, bread and steel can be transported by a platform container. Using the platform container 480.00.010 will make a breakthrough in increasing the containerization of the inland freight flows of the raw cargoes and goods of the initial degree of processing in Eurasia continent.

GREEN LOGISTICS TREE

MODULAR INTERMODAL CARGO TRANSPORT COMPLEXES



LOADING MODULE

reusable means to secure cargoes on a platform container



a platform container of ISO 1496-5 standard

CONTAINER MODULE



TRANSPORT MODULE

I. 12-m pipes

a) 40-foot container platforms



b) 60-foot container platforms



c) 80-foot container platforms



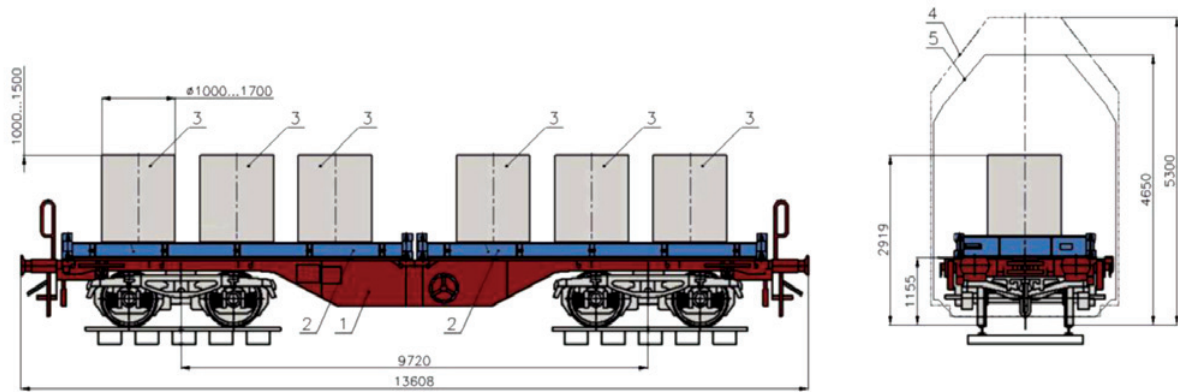
II. 18-m pipes on 60-foot container platforms



III. 24-m pipes on 80-foot container platforms

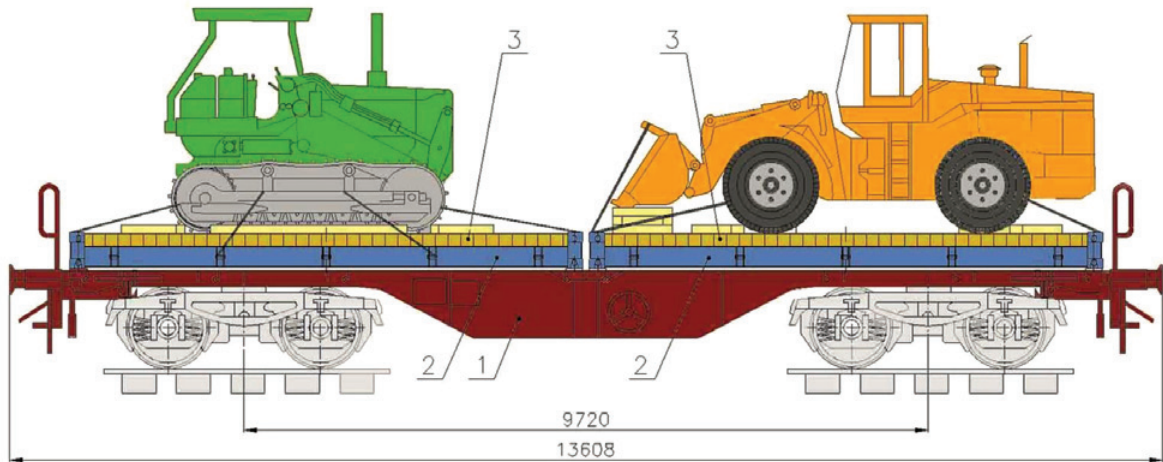


Fig. 3



1. container platform
2. ISO platform container
3. sheet steel rolls

Fig. 4

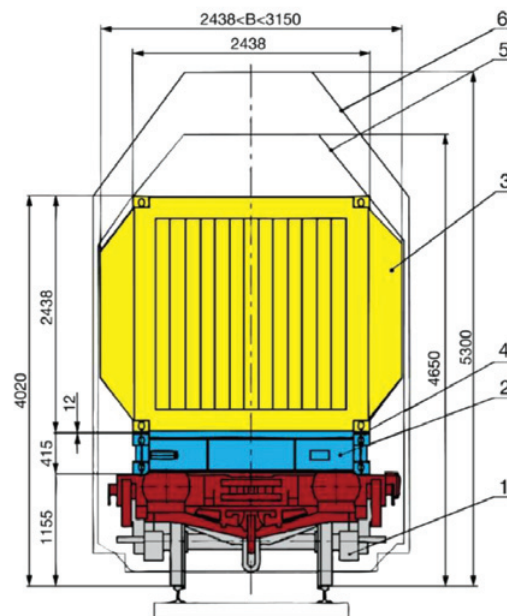


1. container platform

2. ISO 1496-5 platform container

3. wood flooring as the removable reusable means to secure cargoes

Fig. 5



1. Transport module – a multipurpose container platform or open wagon for a 1520-mm or 1435-mm track gauge
2. Container module – a platform container designed by PE “Firma Gloria” meeting ISO standards. Gross weight 30.48 tons, tare weight 2.1 tons, length 20 feet, size and type code 29P0
3. Loading module – a purpose-built container with a flexible hopper, model 480.00.020, designed by PE “Firma Gloria” for the bulk cargoes. Gross weight 28.38 tons, tare weight 2.1 tons, length 20 feet, volume 40 m³, max. bulk cargo weight 26.28 tons
4. Stacking cone type “Twist lock”
5. Loading gauge for a 1435-mm track
6. Loading gauge for a 1520-mm track

Fig. 6

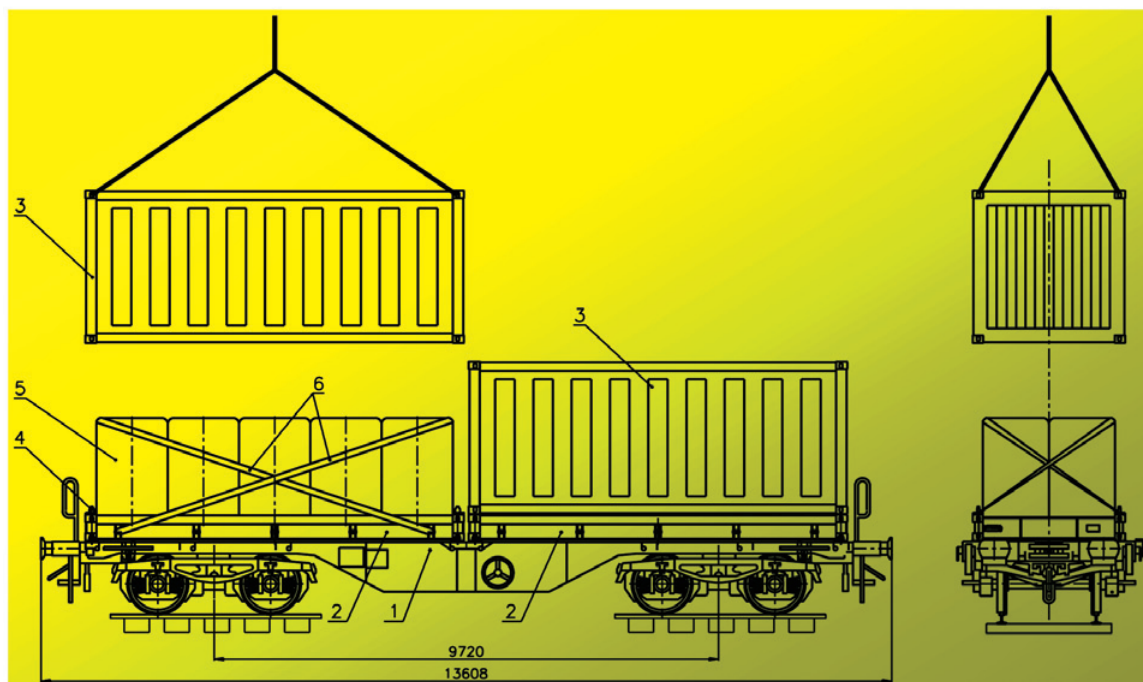


Modular loading unit for transportation of the piece cargoes, requiring protection from the external access and precipitations

Provides side and top loading/unloading of the cargoes placed to a loading unit by the cargo shippers and consignees without its removal from the wagon or putting onto a wagon loaded.

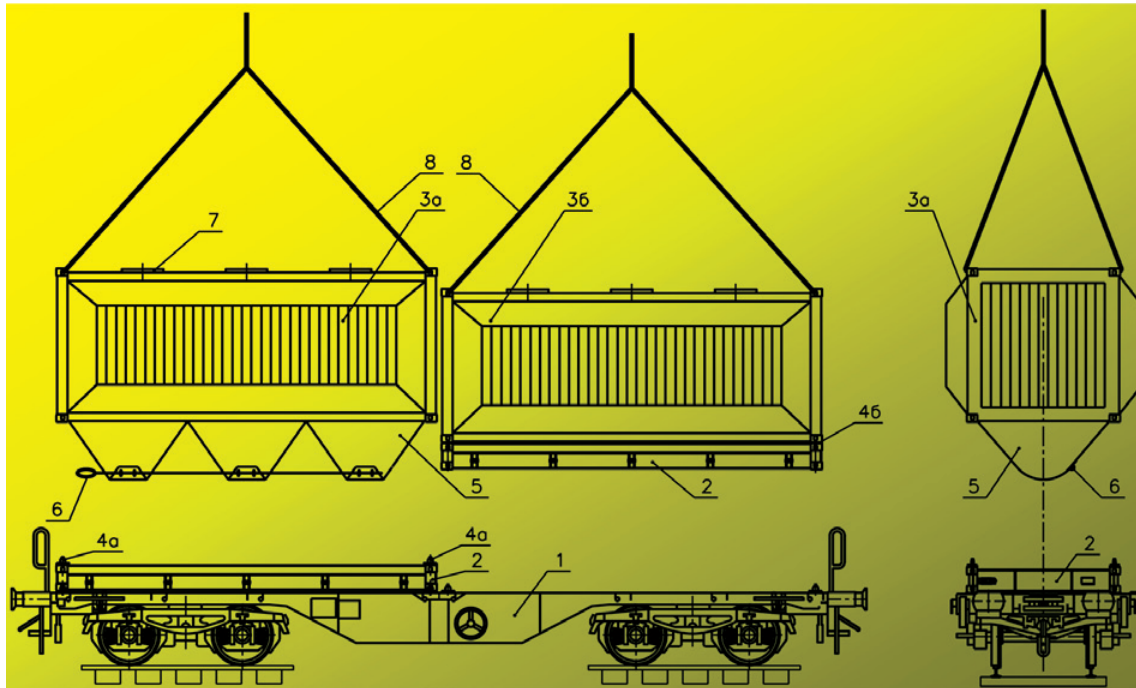
All the cargo stations in Eurasia may be open for operations with such cargo units.

Provides transportation by all modes of transport, stacking during storage and sea shipping



1. Transport module – a container platform of 1520-mm or 1435-mm track gauge;
2. Container module - a platform container model 480.00.010 designed by PE «Firma Gloria», meeting ISO-668 series 1. Gross weight 30.48 tons, size and type code 29P0;
3. Loading module – a reusable means for the cargo stowing, securing and covering as a box placed “upside down”;
4. Twist lock;
5. Big bag or other piece cargo;
6. Tie straps for securing the cargo.

Fig. 7



**Modular cargo transport module,
unloading a loading module with flexible hoppers and unloading
a modular loading unit**

1. Transport module – a multipurpose container platform or open wagon of 1520-mm or 1435-mm track gauge;
2. Container module - a platform container model 480.00.010 designed by PE “Firma Gloria”, meeting ISO 668 series 1. Gross weight 30.48 tons, size and type code 29P0;
- 3a) Loading module with flexible hoppers removed from a platform container to unload grain;
- 3b) Loading module with flexible hoppers unloaded together with the container module 2 for transshipment on another transport means or storage;
- 4a) –Twist lock released;
- 4b) –Twist lock closed;
5. Flexible hopper;
6. Closing rope;
7. Charge hatch;
8. Lifting slings.

Fig. 8



**СВИДЕТЕЛЬСТВО
НА ГРУЗОВОЙ(ЫЕ) КОНТЕЙНЕР(Ы)**
**CERTIFICATE
FOR FREIGHT CONTAINER(S)**

Настоящим удостоверяется, что указанный(ые) ниже грузовой(ые) контейнер(ы) удовлетворяет(ют) требованиям Международной конвенции по безопасным контейнерам, 1972 г., Таможенной конвенции, касающейся контейнеров, 1972 г., изготовлен(ы) и испытан(ы) под техническим наблюдением и по правилам Регистра судоходства Украины и допущен(ы) к перевозке грузов в соответствии с назначением.

This is to certify that the freight container(s) specified below complies(y) with the requirements of the International Convention for Safe Containers, 1972. Customs Convention on Containers, 1972, has(ve) been manufactured and tested under the technical supervision and in compliance with the rules of the Shipping Register of Ukraine and has(ve) been approved for the transport of goods according to the purpose.

Свидетельство о допущении типа конструкции грузового контейнера по безопасности
Certificate of Freight Container Safety Approval by Design Type

UA/SRU-307/27-08/13

Свидетельство о допущении типа конструкции контейнера к перевозке грузов под таможенными печатями и пломбами
Certificate of Container Approval by Design Type for the Transport of Goods under Customs Seal

UA/SRU-308/13

Предприятие-изготовитель **ТОВ "Іллічівський Судноремонтний Завод", 68093, Україна, Одеська обл., м. Іллічівськ, с. Малодоліньке, вул. Космонавтів, 61.**
Manufacturer **"ILYICHEVSK SHIPREPAIR YARD" LIMITED LIABILITY COMPANY, 61, Kosmonavtov Str., Malodolinske village, Ilyichevsk, Odessa reg., 68093, Ukraine.**

Заводской(ие) номер(а)
Manufacturer's No.(Nos) **см. на обороте / see overleaf**

Владелец **ЧП «Фирма «Глория»/ Private Enterprise "Firma Gloria"**
Owner

Код(ы) и номер(а) владельца
Owner's code(s) and serial No.(Nos) **см. на обороте / see overleaf**

Дата изготовления Date of manufacture	08.2013	Код типа и размера Type and size code	29P0	Модель Model	480.00.010
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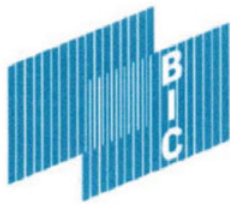
**Характеристики
Characteristics**

Материал каркаса, стенок, фитингов
Material of framework walls fittings
каркас: 09Г2С ГОСТ 5520-79; фитинги: литейная конструкционная легированная сталь ГОСТ 20527-1982, ГОСТ 51891-2008
framework: 09Г2С GOST 5520-79; castings: cast alloy steel GOST 20527-1982, GOST 51891-2008

наружные размеры external dimensions	6058 x 2438 x 480	мм mm	полезный объем net volume	-	м ³ m ³
максимальная масса (вес) брутто maximum gross mass (weight)	30480	кг kg	собственная масса (вес) контейнера tare mass (weight) of container	2100	кг kg

046960

Fig. 9



Bureau International des Containers et du Transport Intermodal (B.I.C.)

PRIVATE ENTERPRISE "FIRMA GLORIA"
8 MARTA STR. 52/34
PO BOX 2653
69068 ZAPOROHYE
UKRAINE

CERTIFICATE OF REGISTRATION OF CONTAINER CODE

In accordance with ISO Standard 6346, Customs Conventions and BIC Registration terms,

The Bureau International des Containers hereby certifies that the BIC Code:

GPFU

has been duly registered by the BIC and assigned to :

PRIVATE ENTERPRISE "FIRMA GLORIA"

Certificate No. GPFU-1315/1

2015

The registered code shall apply only for containers owned/operated by the company named above and remains valid for through **15 March 2016**. In January 2016 a renewal notice and associated invoice shall be issued. Please ensure prompt return and payment to ensure continued validity of this code. Should the company name, address or ownership status change, please notify the BIC at the postal or email address or shown below.

Freight container prefix registration with the BIC is required by ISO standard 6346 and by the National Customs Administrations according to both Customs Convention on Containers (CCC-1972, revised 2008) and Istanbul Convention (1990, revised 2010). This grants the benefits of free circulation and temporary admission for containers displaying an owner's code registered with the BIC.

Important notice: Consequences of the official registration of a BIC-code Extract of the Registration Procedures, (for more information please consult the official annual CONTAINERS BIC-Code Register or the website www.bic-code.org)
Each container marked with a code "- - - U" is officially and worldwide known to be owned - or operated (see 8.1.2) - by the code holder as recorded in BIC Register, with all the related responsibility (legal, commercial, damage, insurance, etc...) of such ownership.
After initial registration, this international code protection is subject to the payment of a yearly renewal fee (as per tariff published each year in the CONTAINERS BIC-Code Register).
Non-payment of the renewal fee will result in the **cancellation of this code protection within a period of 6 months**, confirmed by a registered letter, and with information to the controlling authorities worldwide. In case of transfer of ownership of such container(s), responsibility shall remain with above mentioned code holder until the time when :
- the code marking is removed from each and every container.
or - the code marking is changed for another - duly registered with BIC - held by the new owner (see 8.1.7)
or - the code marking remains unchanged but its ownership has been duly transferred to another entity (see 8.1.3.d).

13 March 2015

Certificate issued by
Virginie Charroyer
Coding Department
vch@bic-code.org

41, rue Réaumur - FR 75003 Paris
www.bic-code.org

Tiana Randriamose
Coding Department
tra@bic-code.org

Tél. : +33 (0)1 47 66 03 90 - Fax : +33 (0) 1 47 66 08 91
e-mail : bic@bic-code.org

SIRET : 784 330 193 00045 - APE 9412Z

(ASSOCIATION SANS BUT LUCRATIF FONDÉE EN 1933 SOUS LES AUSPICES DE LA CHAMBRE DE COMMERCE INTERNATIONALE)
(ESTABLISHED IN 1933 UNDER THE AUSPICES OF THE INTERNATIONAL CHAMBER OF COMMERCE AS NON-PROFIT ASSOCIATION)



Fig. 11



Fig. 12

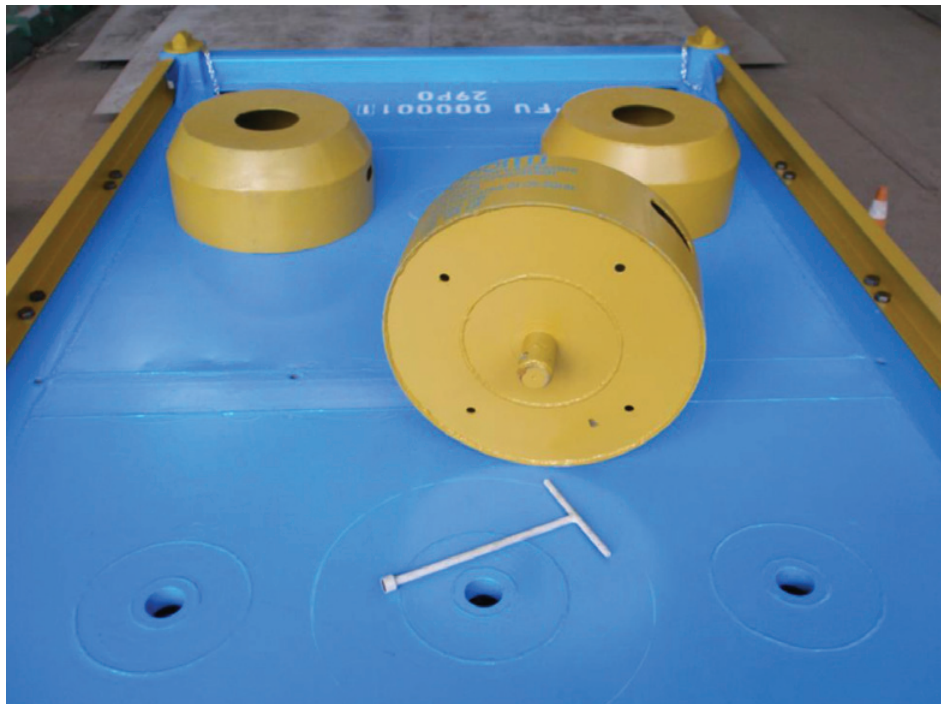


Fig. 13



Fig. 14



1. Timber



2. Lumber



3. Crude iron



4. Sheet steel rolls



5. Minerals



6. Building products



7. Oil and gas pipes



8. Liquids



9. Grain and other bulk cargoes



10. Automotive vehicles

Fig. 15