Transcontinental Shipping Route Europe – Central Asia

The Eurasian economic community is an international organisation created to provide the dynamic development of all its member states through agreed social and economic conversions and efficient usage of their economic potentials. One of the activity goals of EurAsEC in the area of economic policy is the formation of Integrated Transport System (ITS), which is combination of transport systems of the member states of EurAsEC. ITS formation includes the solution of several problems, one of which is the efficient usage of the transit-transport potential of the states of the Community, both in mutual transit in the communications with third countries and in transportsations of transit cargos between third countries across the territory of the Community.

The UNECE forecasts 2.0-2.3 fold increase in trade volumes between the Caspian Sea and the Danube-Black Sea countries. In this context, South-Western region, linking Central Asia and Europe across the Azov-Black Sea basin (ABSB), becomes a priority for reaping benefits of the existing transit potential. Meanwhile, the biggest economic effect, due to decrease of transport component in the product price, could be achieved through the creation of a steadily working transcontinental shipping route Europe – Central Asia, connecting Caspian ports with the ports of European countries.

The development of such route is aimed at:

• The creation of a general market of transportation services and the Integrated Transport System of EurAsEC member states;

• The Realisation of geographic advantages for EurAsEC member states during the implementation of the transit transport-economic communications between Europe and Asia;

• Meeting the needs of mutual transit for EurAsEC member states in the communications with third countries, and transportsations of transit cargos between third countries across the territory of the Community;

• A technical upgrade of transportation systems for the purposes of efficient operation, transportation safety and environment protection;

• The proliferation of more economic and ecologically friendly water transport for cargo transportation.
The provision of direct non-terminal communication between the ports of the Caspian Sea and European countries.

Figure 15.1. The Scheme of Transcontinental Shipping Route Europe – Central Asia

The western route branch goes along the Danube with a possible further outlet through the Main-Danube Canal (171 km) to the Main and further to the Rhine. However, the main bulk of transportations expected on the Danube reach 2.226 km long from the influx to Passau (Germany), which has guaranteed depths of more than 2.0 m and where the shipping is regulated by the “Convention of the shipping regime on the Danube” (the Danube Convention) which entered into effect on May 11, 1949. The Convention specifies that “the navigation on the Danube must be free and open for citizens, merchant ships and goods of all states on the basis of equality with regard to port and navigation duties and trade shipping conditions. In contrast to the Danube, the Main-Danube Canal has the status of an inland waterway and an insignificant width (12 m) of sluice chambers. There are 83 sluices on the waterway Rhine-Main-Danube (from Rotterdam to Sulina) with the length of 3503 km. The average passage time of ships/compounds between Rotterdam and Sulina makes: 10.5-13.5 days along the current, 17-18 days against the current. In the peak 1987 year, 3496 ships passed across Sulina and 10.1 million tons
of cargo have been transported, 2.9 million tons of which was transported in the direction of Black Sea, and 7.2 million tons of which was transported from Black Sea to the Danube. Prospectively, a radical improvement to shipping conditions on the Danube is related to bringing the guaranteed navigable pass depth up to 2.7 m by building more than 10 hydrosystems with sluice chambers of 310x34x4.5m.

The eastern route branch represents water-transport connection between the Caspian Sea and the Azov-Black Sea basin (ABSB). This connection, as stated in the address of Russia’s President Vladimir Putin to the Russian Federation Federal Assembly of April 26, 2007, “...will not just provide the entrance for Caspian Sea countries to Black and Mediterranean Seas, i.e. to the world’s oceans, but it is going to change qualitatively their geopolitical position and allow them to become the sea powers”.

At the present time, there are two suggestions on the removal of limitations for transportations increase between Caspian and Azov-Black Sea basins: the construction of the second branch of the Volga-Don waterway (Volga-Don 2) and the Eurasia Canal. It should be noted that there are no technical designs for the Eurasia Canal and Volga-Don 2 as such; there are however conceptual ideas and preliminary planning available for these.
Nevertheless, at this stage a number of issues could be noted providing fairly good summary of prospects of the water-ways transport communication development between Caspian Sea and Azov-Black Sea basin.

A transcontinental shipping route from Europe to Central Asia would be formed between the ports of the Caspian Sea and European countries irrespective of which option would be pursued. Still, its operational efficiency (a key demand on the part of stakeholders) would first of all be based on characteristics of Azov-Caspian communication, which would allow for the realisation of modern transport-technological schemes of cargo delivery, and would suffice to the requirements of cargo traffic, modern shipbuilding, and safety requirements of shipbuilding.

The Volga-Don route from the Azov Sea to the Caspian Sea (even in case of second sluice lines construction), unfortunately, does not allow for the implementation of modern high-speed technologies of container and rolling (motor transport) cargo transportation. Limitations for draft (no more than 3.6 m) exclude the possibility of using a lighter aboard the ship (LASH) non-terminal technologies due to long transit passage time (seven days on an average) coupled with the length of the route (about 1300 km), passage of 18 sluices and a large number of difficult reaches on the Nizhni Don (Lower Don). Besides, the geographic location of the route of the Volga-Don shipping canal has the main advantages of entering the inland waterways of Russia, thereby increasing the water-ways transport routes for foreign trade cargos of Caspian Sea countries by 600-800 km when compared to the route of the Eurasia Canal.

Using the Eurasia Canal for shipping, the transit passage time from Azov to the Caspian Sea (about 700 km, six sluices) would take no more than 2.5–3 days, and the navigation period will be no less than 10 months per year, compared to the 8 months of the Volga-Don route. The dimensions of the canal and navigation passes will allow for the wide usage requirements of modern ships (consist of ships) with a width of up to 28 m and a draft of up to 5.0 m.

An important conclusion is that the Volga-Don 2 and Eurasia Canal cannot be considered as competing options. Each has its own purpose, and its own role in the development of the transport system of Russia and ITS of EurAsEC. Volga-Don 2 goal is to provide the operation of the united deep-water system of the European part of Russia, cargos transportation between the Volga basin and ABSB. The Eurasia Canal aims to provide cargos transportation between Caspian Sea and ABSB.

The implementation of the Eurasia Canal Project will open several new prospects for developing transparent open-end routes from Western and Central Europe to the ports of Caspian basin, and will provide a new entrance
for the Central Asian countries into the markets of Europe. The route will make possible the realisation of modern technological transport projects allowing for:

- A reduction of cost of cargo transportations owing to using sea and river transport;
- The same, or even reduced time of goods delivery;
- A decrease in energy consumption of transportation products;
- Long-distance transportation of heavy and large-dimensioned packages without the costs for preparation of the route.

The new transcontinental route makes expedient the implementation of such transport-technological systems (TTS) as:

- LASH TTS on the basis of LASHs of dock type with capacity of six lighters of the type "the Danube – Sea", each having a weight-carrying capacity of more than 1000 tons;
- Barge-towing TTS with separate cargo and power modules;
- Ro-Ro TTS for providing transportation of trailers, containers and motor transport by fast-speed ferry vessels (cargos delivery “HH” (house-house) by motor transport);
- Container TTS, using feed container ships with a capacity of up to 400 – 500 TEU, allowing transport communication with main ocean container lines for servicing the Caspian Sea ports.

A significant contribution to the development of the transcontinental shipping route Europe – Central Asia can be made by the implementation of the perspective development plan of Ust-Dunaisk Port, a project of the sluice junction between the canal Danube – Black Sea on the area of established soils on the northern part of the Danube delta on the route Vilkovo – South-Western part of Zhebriyanski bay.

The construction of a deep-water port “Kuban” in the Taman Gulf of the Kerch Strait will not only provide transshipment of significant volumes of foreign trade cargos to ocean- shipping facilities, but will also predetermine the construction of a new shipping canal between the North-Eastern part of Taman Gulf and the Azov Sea.
As an example, we will consider a multimodal transport-technological system (TTS) for the transportation of rolling and container cargo modules, which can be implemented on the basis of the shipping route described above for the purpose of:

- Optimising non-terminal cargo delivery through the "HH" scheme between the states of Europe and Central Asia;
- Decreasing loads on highways;
- Reducing the negative environmental impact.

TTS transport assets include:

- A fleet of motor trailers (MT);
- A fleet of twenty- and forty-foot containers;
- The Danube river ferry vessels with width 22.8 m, length 160-180 m, draft 1.9 m, speed 26 km/h, capacity about 80 AT.
- Ro-Ro Ships with draft up to 5.0 m.
River ferry vessels within the Black, Azov and Caspian Seas achieve the transportation of motor trailers within the Danube and the Eurasia Canal – by Ro-Ro ships. Transshipment from river motor ferry vessels to Ro-Ro ships and back is performed at Ust-Dunaisk Port. The transit time of cargo delivery (including handling operations) between the route terminals amounts to 13.5-16.5 days, against which the time of the Passage makes: across the Dunabe along the current – 6 days (against the current ~ 8 days), between Ust-Dunaisk and Eurasia Canal – 1.5 days, across Eurasia Canal – 3 days, from Eurasia Canal to the ports of Caspian Sea countries – 0.6-1.5 days.

Preliminary studies of other TTS, which can be formed on the basis of the reviewed shipping route, suggest a reasonably high efficiency of operation.

In this context, a transcontinental shipping route from Europe to Central Asia, expanding as far as Caspian Sea to the west, the seven (Danube) International Transportation Corridor (ITC), systemically interacting with “Cretan” transportation corridors №№ 4,7,8,9, ITC “North-South”, TRACECA will bring in an important component in the system of Euro-Asian international transportation corridors, significantly improving the transit potential of EurAsEC member states.