Aktau Port Railway System

The state network operated by KTZ, with the line coming from Beyneu, arrives until the station of Mangyshlak (18 km far from the port). From there to Aktau the line is owned and managed by a private company, KazKor Trans Service (KTS). KTS is a joint stock company with 2/3 of the shares in the hands of private interests and 1/3 owned by 2 public companies. KTS owns a total of 175 km of railway tracks. Its network serves many terminals and about 86 companies. Aktau Port is located 15 km from the port station managed by KTS. And the distance from the port station to the station of Mangyshlak of KTZ is 3.5 km.

The entire network managed by KTS has a centralized control system. The KTS track layout is shown here below.
**Strength**

S1. Aktau Port is connected to the railway system.

S2. The Railway system reaches the main locations of the Country.

S3. The Railway system is connected to the neighbouring countries (China, Russia, Uzbekistan, Kyrgyzstan).

**Weakness**

W1. Not all berths equipped with rail access

W2. No container terminal

W3. Few siding tracks in the port

W4. Rail connection to the port managed by private company increases the number of entities involved

W5. Different rail tariffs between KTS and KTZ

W6. Problems of coordination between Authorities involved

W7. Long route from China to Aktau Port and change of track gauge

**Opportunity**

O1. Plan for a new port to be set at Kuryk

O2. Both 28 and 52 wagons ferries could be loaded

O3. Standardization of terminal sidings

O4. KTS and KTZ locomotives can access each other network

O5. Custom clearance could be done outside the port area

O6. Increase capacity on the KTS network up to 16 trains/day

O7. New rail connection between the Port and KTZ network

O8. No lack of wagons or of platforms

O9. New planned lines in Kazakhstan will reduce transit time from East to West

O10. Shippers needing to reduce the volume of cargo sent by trucks from Europe to Asia

**Threat**

T1. Crude oil transportation

T2. Grain transportation

T3. KTS is operating near to its fullest capacity

T4. Aktau Port station is congested

T5. The line Beyneu - Aktau is single track on the entire distance

T6. Grain wagons waiting to be downloaded overload the sidings

T7. Decrease of world freight traffic due to the economic crisis
Weaknesses (Barriers)

W1. Not all berths are equipped with rail access. Only berths 1 to 5 have a rail access. Port management informs that existing equipment can handle only 20’ container of maximum 10 T GW. Discharging from the ship re-loading to a platform takes 7 minutes per box. Time could be halved with better equipment.

W2. There is no container terminal in the port and the storage area is limited (about 120 containers). At the moment, Aktau port, under, seemingly, political pressure, reluctantly handles only the (fast growing) NATO traffic to Afghanistan, complaining this is depriving them from resources needed to fulfill other contractual obligations (such as steel export to Russia) said to be more profitable for the country and for the port. The lack of adequate handling equipment and storage facilities is reflected in the very expensive container handling costs at Aktau (in excess of 350 USD per box).

W3. Port reception sidings are few. The 4 sidings that handle traffic onto and off the port and also to near terminals are a key constraint to increasing capacity. Terminal operators reported that they experience delays between the removals of empty wagons and berthing of the next set of loaded ones.

W4. 18 km of railway section from the port to Mangyshlak station is managed by the private company KTS, which increases the number of entities to be coordinated. The port has a single access line to the local rail network operated by KTS. The port does not have its own shunting locomotives or staff.

W5. KTS charges its own tariffs, independently of KTZ, and is a commercially independent organisation. Forwarders have to have two separate contracts, one for KTZ and one for KTS which discourages many of them to even use Aktau route. The tariff charged by KTS appears high for the short route section of 15 km. It must be said that KTS’s costs per route km will inevitably be considerably higher than those required for normal main line operations, due to the amount of shunting and marshalling that is required to service the multiplicity of sites.

W6. There are significant problems of coordination between the Administrations of the Ports of Aktau and Baku and between Ports and Railways. The traffic of wagons is mainly from Baku to Aktau and sometimes there are wagons waiting for long time in Baku. Solving these communication issues would help improve the services.

W7. The international transit from China would suffer for long rail route from the border to Aktau Port and for the change of track gauge at the border between China and Kazakhstan.

Figure1: Layout of Railway System within Aktau Port
Opportunities

O1. Plans have been announced for a new port to be set at Kuryk, 70 km south of Aktau. More capacity and space will be available for container operations in Aktau.

O2. Both 28 and 52 wagons ferries could be loaded and unloaded in Aktau port. For 52 wagon ferry, however, maximum wagons length is 14 metres.

O3. If industries are going to invest in capacity for their terminals then they should be encouraged to standardise at the maximum length of 57 wagons permitted by KTS/KTZ contract so as to maximise capacity.

O4. Agreement between KTS and KTZ to permit each other locomotives to go on each other network from Mangyshlak to terminals so as to reduce number of marshalling operations from two to one. The key action which would improve system throughput would be to encourage terminals and KTS to co-operate in basing as much traffic movement on trainload (block) working rather than staging trains at Aktau port station. This would cut down the amount of shunting and remarshallings required, and simplify wagon handover between KTZ and KTS.

O5. Custom clearance could be done outside the port area (i.e. in Aktau port station) in order to reduce occupation time on sidings in the port and increase their capacity.

O6. Increase capacity on the KTS network up to 16 trains/day. The system is characterised by a large number of siding connections that are now redundant and infrastructure that in many cases is inappropriate for the current traffic. Therefore long-term remodelling is inevitably required. Investment in upgrading technological and signalling system could be also considered to increase capacity and dependability both in KTS and KTZ networks. It is also possible to increase capacity of the system modifying methods of work and concentration on trainload traffic movements. This will require cooperation between KTS, KTZ, terminals and the port. In any case, given the relatively small size of the system and short journeys, a disproportionate portion of the total train time is inevitably occupied by shunting activities.

O7. A scheme is being developed by KTZ and the Port of Aktau to create a new independent rail access (approximately 14 km length) to the Port of Aktau. The advantage of this scheme is that it will create a new KTZ-controlled access to the port that will act as a competitor to KTS. The other advantage is that KTZ will be able to offer a tariff direct to the port or terminal, thus simplifying commercial arrangements. This access would further boost the rail capacity of the port and surrounding industry.

O8. There is not lack of wagons or of platforms. And in the countries there are many plants which produce rolling stock: container platforms in Aralwagan in Aralsk, diesel locomotives of General Electric in Astana and electric locomotives of Siemens in Atbasar. Other wagons plants are in Ekibastuz and Petropavlosk. Also 20’ containers can be produced in Almaty.

O9. Projects of new lines in Kazakhstan which will reduce transit time from East to West and will attract more cargo to Aktau port:

- Zhetygen-Korgas to the China border will shorten the TRACECA route of about 500 km.
- Beyneu-Zhezkazgan will shorten the route from Central to West Kazakhstan by about 1000 km (transit-time should be shorter from 3 to 5 days).
- Uzen-Turkmenistan border – part of a new line which will connect Kazakhstan, Turkmenistan and Iran.

O10. Shippers need to reduce transport costs and therefore decrease the volume of cargo sent by trucks from Europe to Asia.
**Threats**

T1. Crude oil transport is the main business of the Aktau Port. Crude oil transportation is in competition with the container traffic so any increase in oil quantities reduces the capacity for container train movements.

T2. The unreliability / irregular schedule of the railferry service between Baku and Aktau results mostly from the unpredictability of the availability of the berth at Aktau. This berth is also used by the vessels loading grain, which, in spite of official statements to the contrary, seem to enjoy a priority – in line with the priority set by the Kazakh Government for the export of grain. This also results in CASPAR (the state shipping company of Azerbaijan plying the service) keeping their better / larger tonnage for the economically more viable service from Baku to Turkmenbashi and deploying on the Baku/Aktau line railferries of 28 wagon capacity only.

T3. KTS reported that the contract with KTZ states that capacity data are: 456 wagons per day, divided in 8 train/day of 57 wagons each. These figures have been confirmed by KTZ. KTS declared they managed in 2009 11,250 M T (their average monthly traffic is about 900,000 T), considering not only the traffic to the port but the whole traffic on their network. Based on 360 day/year it means each wagon carried 68 tonnes. This value seems too big, considering also that traffic is not balanced. KTS also reported that they are able to manage up to 1,300 M T per month, i.e. 95 T/wagon. The Consultant believes that this value is not possible or it is calculated on a greater quantity of daily wagons than the current 456. It is therefore fair to assume that KTS is operating near to its fullest capacity.

T4. Aktau Port station is congested with wagons waiting discharge. The reasons for the backlog of wagons are complex. KTZ and customers appear to generally believe that it is due to the inefficiency of KTS, while KTS believes that it is due to customers being highly selective as to the wagons they call forward. Whatever the reason, there is a considerable backlog of wagons awaiting discharge and this inevitably impacts negatively the commercial attractiveness of transport via the Port of Aktau.

T5. The line Beyneu - Aktau is single track on its entire stretch. The severity of the gradient in a section of the line restricts the maximum permitted loads with a maximum of about 40 wagons. According to available data, the maximum permitted number of pairs per day on this section is 16-17.

The existing traffic on the line is: 11 trains/day, out of which 4 couples to KTS, 1 couple to Uzen, 1 train remains in the station. There are also 8 passenger trains on the Aktau-Beyneu section. Therefore the total traffic on the line is 19 trains: 11 freight trains + 8 passenger trains, which are equivalent to 10 pairs per day. It means that there is a spare capacity of 6 pairs per day.

It is assumed that to increase beyond this level, KTZ would need to at least double the track section.

T6. During autumn, grain wagons waiting for the ferries overload the sidings. It depends on the lack of rail ferries connections.

T7. Cargo volumes will remain low if the world economic crisis goes on.
Figure 2: Mangyshlak Railway Station