
Project Working Group on Transport and Border Crossing (PWG-TBC)

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Almaty, Kazakhstan

**ANALYSIS OF SELECTED ROUTES OF THE SPECA REGION
USING UNESCAP TIME/COST-DISTANCE METHODOLOGY**

(Item 4 (c) of the Agenda)

Note by UNESCAP

Introduction

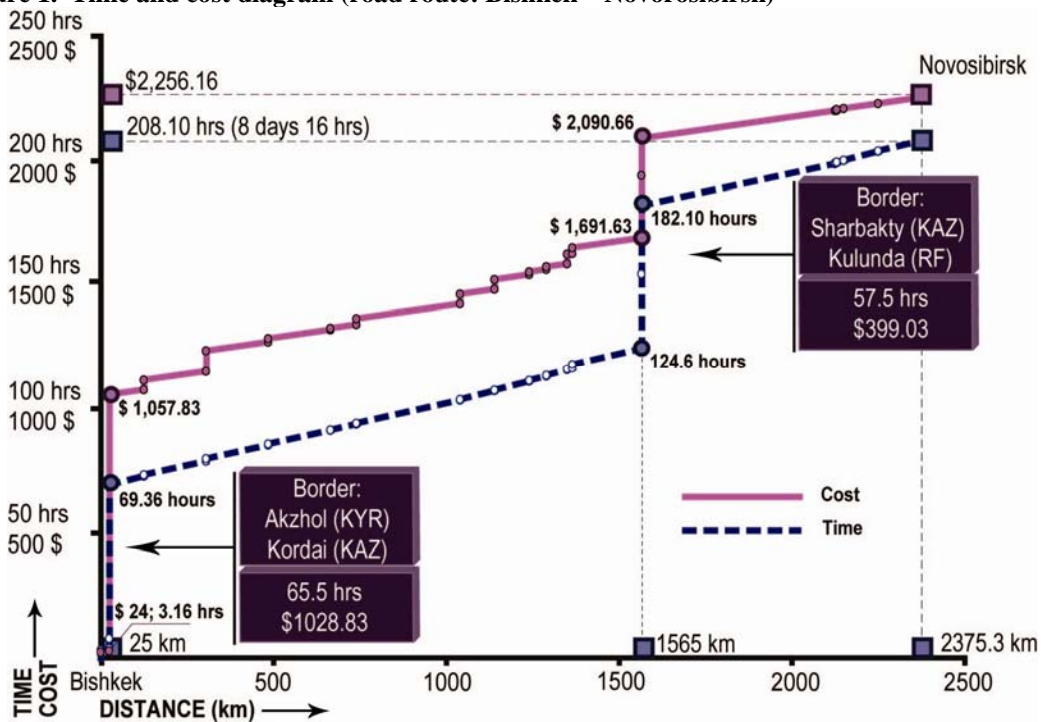
1. The UNESCAP Time/Cost-Distance methodology is a practical and simple way of illustrating the time and costs involved in the transportation process and identifying inefficiencies and isolating time bottlenecks along a particular route.
2. The methodology (http://www.unescap.org/ttdw/common/TFS/ImprovingTx/ESCAP_Methodology.pdf) is based on the graphical representation of data collected with respect to the cost and time associated with transport process. The vertical axis of the model represents the time and cost incurred while the horizontal axis represents the distance traveled from origin to destination. The methodology enables easy identification of time and cost related barriers along the entire international transport route.
3. At its 10th session held on 24 March 2005 in Issyk-Kul, Kyrgyzstan, the SPECA Project Working Group on Transport and Border Crossing (PWG-TBC) defined analysis of selected routes of interest to the SPECA countries using UNESCAP Time/Cost-Distance methodology as one of the thrust areas of its 2005-2006 Programme of Work.
4. As an initial step, UNESCAP presents analysis of the following international routes:
 - (a) Road route from Bishkek (Kyrgyzstan) to Novosibirsk (Russian Federation);
 - (b) Rail route from Lianyungang (China) to Almaty (Kazakhstan);
 - (c) Road route from Tashkent (Uzbekistan) to Istanbul (Turkey);
 - (d) Intermodal route from Veracruz port (Mexico) to Almaty (Kazakhstan)

5. The present document summarizes the route analysis to provide background information for discussion by the Project Working Group.

I. ROAD ROUTE FROM BISHKEK TO NOVOSIBIRSK

6. Figure 1 illustrates time/cost – distance diagram for road transport route from Bishkek to Novosibirsk. It is shown that it takes 8 days and 16 hours (208 hours) and costs US\$2,256 to deliver a loaded truck from Bishkek to Novosibirsk. It is noted that in most cases cost increases coincide with delays in time.

Figure 1. Time and cost diagram (road route: Bishkek – Novosibirsk)

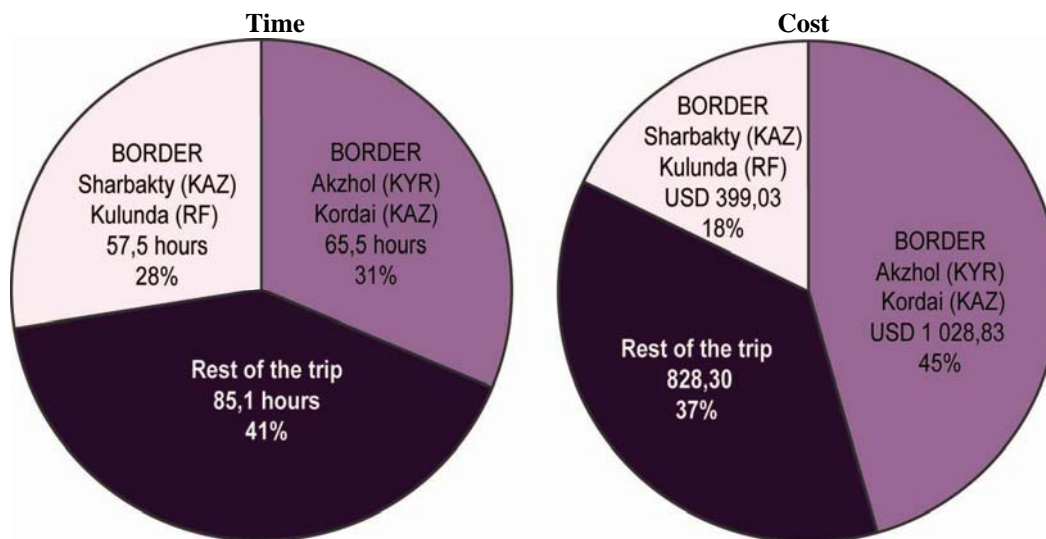


7. *Data.* Data for the analysis were provided by Pragma/USAID based on one case only. The data/information were presented in a great detail for each stop along the trip. In addition, Pragma/USAID indicated that:

- Both official and unofficial charges are reflected (Annexes 1 and 2).
- Fees for TIR and non-TIR transport differ. The analysis is based on a non-TIR case.
- Customs charges in the amount of 0.15% of the value of goods are not included into analysis.

8. *Bottlenecks.* A quick glance at the diagram would suggest that the two major bottlenecks are at the border crossing points, Akzhol (Kyrgyzstan)/Kordai (Kazakhstan) and Sharbakhty (Kazakhstan)/Kulunda (Russian Federation). These border crossings account for 59% of total time and 63% of total costs (Figure 2 and Table 1).

Figure 2. Portion of time and cost at the border crossings (road route: Bishkek-Novorosibirsk)



9. The time spent at the Akzhol/Kordai and Sharbakhty/Kulunda border crossings differ by 8 hours only (65.5 and 57.5 hours respectively, of total time of 208.10 hours). The costs lost at the two border crossings are USD 1,028.83 for the Kyrgyzstan/Kazakhstan border and USD 399.03 for the border between Kazakhstan and the Russian Federation (total cost is USD 2,256.16).

Table 1. Time and costs at the border crossings (road route: Bishkek-Novorosibirsk)

Border crossings	Time (hours)	Time (% of total)	Cost (US\$)	Cost (% of total)
Akzhol / Kordai	65.50	31%	1,028.83	46%
Sharbakhty / Kulunda	57.50	28%	399.03	18%
Rest of the trip	85.10	41%	828.30	37%
Total	208.10	100%	2,256.16	100%

10. *Border crossings procedures.* The costs and time associated with border crossings can be further broken down to a greater level of detail, and this will be particularly useful to policy makers in focusing their policy approaches on the most critical issues. The border crossing procedures and the relevant authorities involved in the road transport from Bishkek to Novorossiysk are illustrated in Annex 1.

11. *Checking points within countries.* Besides the border crossings, vehicles are stopped for checking and inspection as shown as many small steps in Figure 1. The data used for analysis indicate that there are 16 stops totalling 6 hours 15 min during the road transport from Bishkek to Novosibirsk for document check and cargo/truck inspection. Types of inspection and relevant costs in Kazakhstan and the Russian Federation are provided in Annex 2 to the present document.

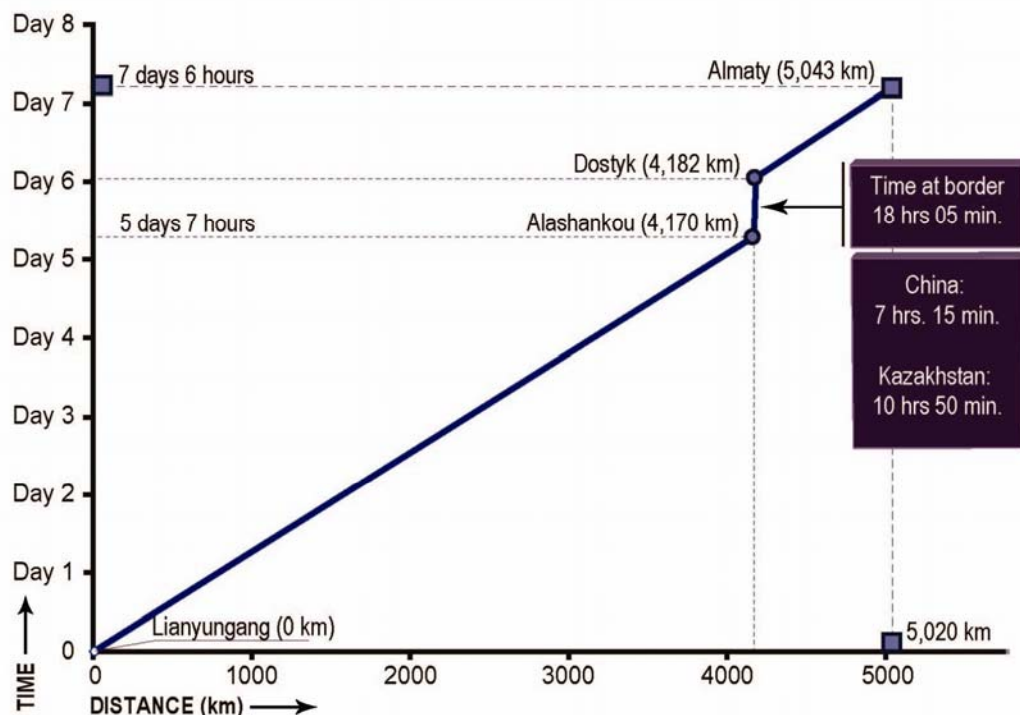
II. RAIL ROUTE FROM LIANYUNGANG TO ALMATY

12. In April 2004 UNESCAP, jointly with OSJD, launched a demonstration run of container block-train from Lianyungang to Almaty, carrying thirty eight 40ft. containers of TV components, cars, etc. The demonstration run was organized under the joint UNESCAP-OSJD Project on Development of Asia-Europe Rail Container Transport through Block-trains in the Northern Corridor of the Trans-Asian Railway.

13. It took the block-train 7 days and 6 hours to complete the 5,020 km distance with an average speed of 29.2 km/h. Average transit speed was 788 km per day in China and 696 km per day in Kazakhstan.

14. Time spent at the border to complete overall customs and other border-crossing formalities and railways procedures amounted to 18 hours 5 min, out of which 7 hrs 15 min. were spent on the Chinese side of the border and 10 hrs 50 min on the Kazakhstani side.

Figure 3. Time - distance diagram (rail route Lianyungang – Almaty)

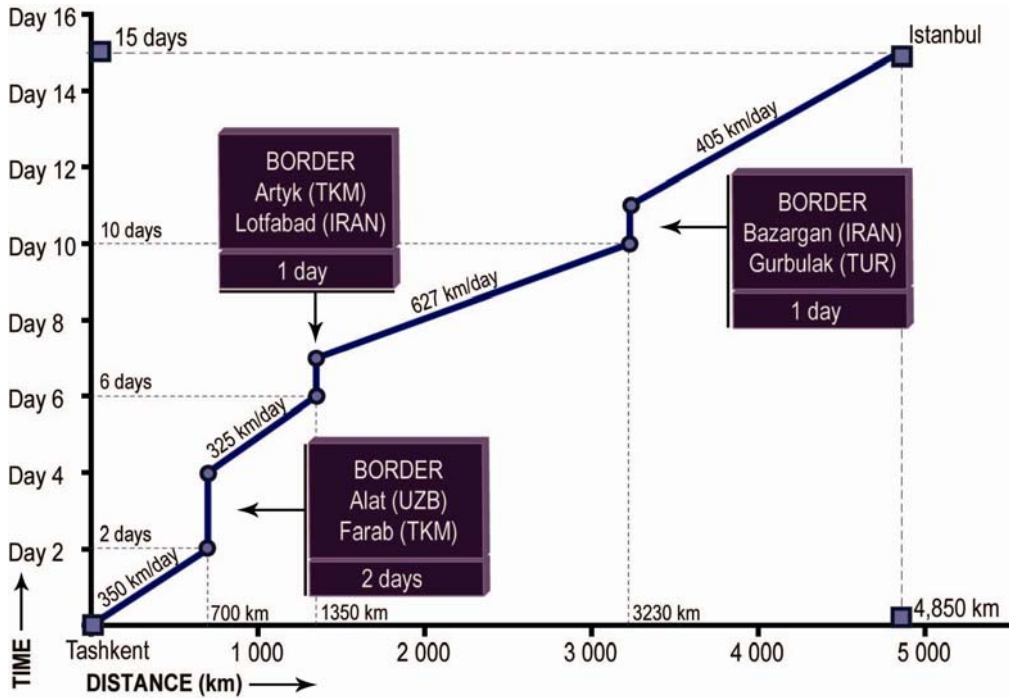


III. ROAD ROUTE FROM TASHKENT TO ISTANBUL

15. Figure 4 below illustrates time – distance diagram for the international road transport route from Tashkent to Istanbul. Information for the analysis was provided by the Uzbek Association for Road and River Transport.

16. It takes a truck approximately 15 days to get to Istanbul. The travel of 4,850 km distance between the capitals of Uzbekistan and Turkey is completed with an average speed of 323 km per day. However, as time is expressed in days, which may have resulted in significant rounding, the estimates of the average speed should be treated with caution.

Figure 4. Time - distance diagram (road route Tashkent – Istanbul)



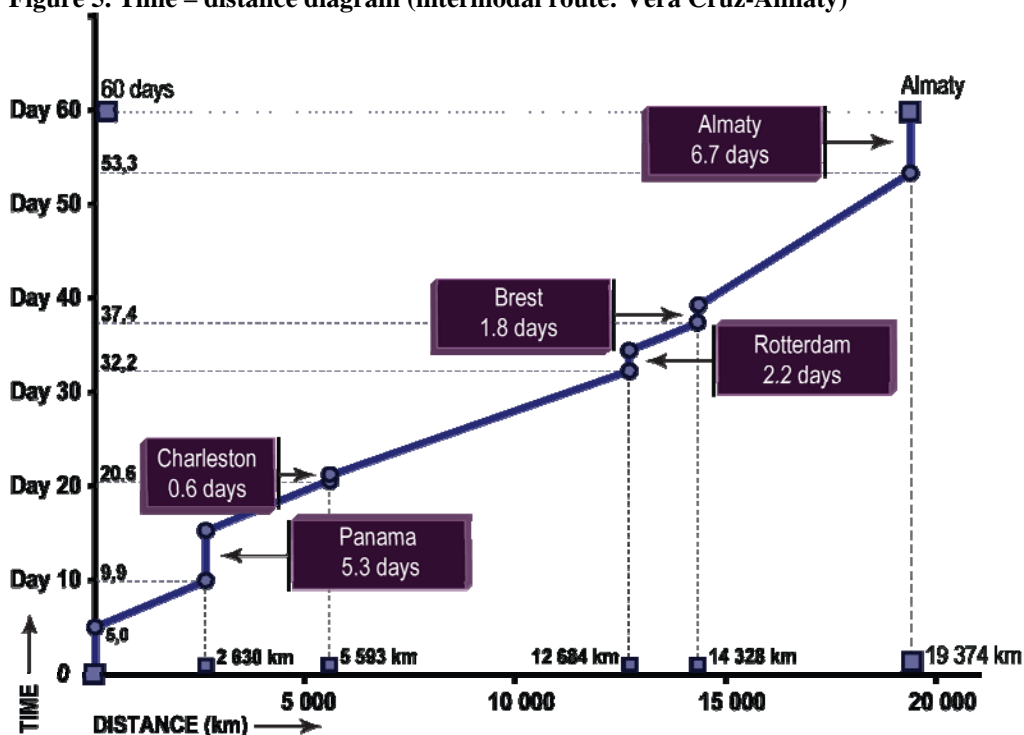
17. The route lies within the territories of four countries (Uzbekistan, Turkmenistan, Islamic Republic of Iran and Turkey) and involves three border crossings: Alat (Uzbekistan)/Farab (Turkmenistan), Artyk (Turkmenistan)/Lotfabad (Iran), and Bazargan (Iran)/Gurbulak (Turkey). Cumulative time spent at the border crossings amounts to 4 days, which constitutes approximately 27% of the total time (15 days).

IV. INTERMODAL ROUTE FROM VERA CRUZ PORT TO ALMATY

18. Figure 5 shows an average time – distance diagram for twenty containers transported from the North America to the port of Rotterdam by sea and then via Brest to Almaty by rail.

19. The information/data for the analysis were obtained by using a container tracking service from a website of an international freight forwarding company. While the data are recorded for all major transshipments, no information is available on time spent at the major border crossings (except for the Poland/Belarus border crossing at Brest) along the railway segment of the intermodal route. The border crossings between Netherlands/Germany, Germany/Poland, Belarus/Russian Federation, and Russian Federation/Kazakhstan are therefore not reflected in the diagram.

Figure 5. Time – distance diagram (intermodal route: Vera Cruz-Almaty)



20. As it is seen from the diagram, it takes two months to ship a container to Almaty. Vertical steps are shown at the origin (5 days for loading and pre-departure formalities); transshipment at a terminal in Panama (5.3 days); intermodal transshipment (sea to rail) at the port of Rotterdam (2.2 days); delay at the rail break-of-gauge station at Brest (1.8 days); and at the destination point (one week, or 5 working days to complete the customs procedures).

V. ISSUES FOR CONSIDERATION OF THE PROJECT WORKING GROUP

21. The Project Working Group may wish to:
- (a) Take note of the reflected data and information, provide comments and stress the importance of such an analysis of major unimodal and intermodal international transport routes of interest to SPECA countries.
 - (b) Request SPECA member states to identify by 15 May 2006 transport routes (rail, road, intermodal) originating from their respective capitals and destined for Afghanistan, Europe, Russian Federation, Islamic Republic of Iran, and China; and conduct such analyses on selected routes in cooperation with UNESCAP with results to be presented to the 12th session of SPECA PWG-TBC.

Annex 1.

LIST OF BORDER CROSSING PROCEDURES AND THE RELEVANT AUTHORITIES INVOLVED IN THE ROAD TRANSPORT FROM BISHKEK TO NOVOROSIYSK

Table 1. Border crossing procedures between Kazakhstan and Kyrgyzstan (Kyrgyzstan side): border crossing point Akzhol, 4 hours, US\$ 0.

Authorities	Procedures
1. Border control office, Migration office	<ul style="list-style-type: none"> ▪ Passport control
2. Customs	<ul style="list-style-type: none"> ▪ Documents check - cargo ▪ Documents check - vehicle ▪ Payment of customs fees and charges

Table 2. Border crossing procedures between Kazakhstan and Kyrgyzstan (Kazakhstan side): border crossing point Kordai, 61.5 hours, US\$ 1,028.80.

Authorities	Procedures
1. Border control office, migration office	<ul style="list-style-type: none"> ▪ Passport control, ▪ Migration cards issued ▪ Visas
2. Customs	<ul style="list-style-type: none"> ▪ Documents on customs registration issued ▪ Documents check - cargo ▪ Documents check - vehicle ▪ The cargo truck is to be places in a terminal – regardless whether it has TIR or not; ▪ Payment of customs fees and charges
3. Vehicle inspection	<ul style="list-style-type: none"> ▪ Inspection: axle load ▪ Check – weight, overloading ▪ Charges on perishable goods ▪ International license on transport of goods
4. Insurance company	<ul style="list-style-type: none"> ▪ Vehicle insurance

Table 3. Border crossing procedures between Kazakhstan and the Russian Federation (Kazakhstan side): border crossing point Sharbakhty, 30 hours, US\$ 250.00.

Authorities	Procedures
1. Migration office	<ul style="list-style-type: none"> ▪ Passport control ▪ Check – migration card ▪ Visas
2. Transport office	<ul style="list-style-type: none"> ▪ Issues inspection coupon in exchange for drivers' license and vehicle documents. ▪ Upon completion of on the necessary inspections <ol style="list-style-type: none"> (1. transport inspection; (2. veterinary-phytosanitary inspection; (3. customs inspection; (4. border crossing / migration, the coupon is stamped on the back and can be re-exchanged for the drivers' license and vehicle documents
3. Customs	<ul style="list-style-type: none"> ▪ Documents check - cargo ▪ Payment of customs fees and charges

Table 4. Border crossing procedures between Kazakhstan and the Russian Federation (Russian Federation's side): border crossing point Kulunda, 27.5 hours, US\$ 149.00.

Authorities	Procedures
1. Border control office	<ul style="list-style-type: none"> ▪ Passport control
2. Insurance	<ul style="list-style-type: none"> ▪ Vehicle insurance ▪ Driver's insurance ▪
3. Customs	<ul style="list-style-type: none"> ▪ Documents check - cargo ▪ Payment of customs fees and charges ▪ The cargo is placed in a bonded warehouse <ol style="list-style-type: none"> 1. Registration at the customs office (submit copies of constituent documents / registration) 2. Submit notice of arrival of goods and vehicles 3. Place cargo to the bonded warehouse 4. Submit brief declaration, TIR and cargo documents 5. Submit cargo customs declaration and related documents
4. Traffic police	<ul style="list-style-type: none"> ▪ Documents check - vehicle ▪ Documents check - drivers license ▪ Documents check - insurance
5. Drugs control	<ul style="list-style-type: none"> ▪ Inspection: drugs and narcotics content ▪ Issued certificate
6. Vehicle inspection	<ul style="list-style-type: none"> ▪ Inspection: axle load ▪ Check – weight, overloading ▪ Issued vehicle inspection certificate

INSPECTIONS IN KAZAKHSTAN AND THE RUSSIAN FEDERATION

Table 1. Summary table on inspection procedures

Segment	Distance (km)	Number of stops	Stops per 1000 km	Cost per stop (US\$)	Time per stop (Minutes)
Kyrgyzstan	25	0	0.0	N/A	N/A
Kazakhstan	1540	12	7.8	27.15	27
Russian Federation	810	4	4.9	0.88	12
Total	2375.3	16			

Table 2. Types of inspections: Kazakhstan

Authority	Procedures	Number of checks ¹	Time	Costs
1. Traffic police (mobile post)	▪ Documents check – vehicle, insurance	9	Ave.: 22 min Range: 0-90min Total: 3h 15m	Ave.: \$10.5 Range: \$0-30 Total: \$93.9
2. Migration office	▪ Documents check - migration card, visa	1	5 min	\$0
3. Drug control	▪ Cargo inspection – drugs and narcotics	1	15 min	\$0
4. Transport control (stationary)	▪ Inspection: axle load, overload	4	Ave.: 27.5 min Range: 15-60m Total: 1h 50m	Ave.: \$50.1 Range: \$38.5-85 Total: \$200.5
		Total	5 h 25 m	\$294.4

Table 3. Types of inspections: Russian Federation

Authority	Procedures	Number of checks ¹	Time	Costs
1. Traffic police (mobile post)	▪ Documents check - vehicle, insurance	4	Ave.: 27.5 min Range: 10-15 m Total: 45 min	Ave.: \$0
2. Toll: bridge		1	5 min	\$3.5
		Total	50 min	\$3.5

¹ Total number of checks may differ from total number of stops, as at one stop there may be a number of authorities each performing different types of inspection