Ex-post Monitoring for Completed ODA Loan Projects Uzbekistan "Railway Passenger Transport Improvement project"

> Evaluator: SONODA Hajime Global Group 21 Japan, Inc. Field Survey: June 2008



Location of the Project

Passenger Car Provided By the Project

#### 1.1 Purpose

The purpose of the project was to construct a repair factory for railway passenger cars, to provide necessary spare parts for repair purposes, to purchase new cars, to renew depreciated cars, thereby maintaining and increasing the passenger transport capacity of the railway in Uzbekistan.

Loan Amount Loan Distributed Amount	¥6,102,000,000 ¥6,097,000,000
Loan Agreement Date of (Disbursement)Completion	June 1996 December 2001
Ex-post evaluation	FY2002 <sup>1</sup>
Executing agency	Uzbekistan Railways (UTY)
Main contractors	Marubeni Corporation
Consultant Services	Japan Railway Technical Service, Pacific Consultants International, Japan Transportation Consultants, Inc.

1.2 Outline of the project (Summary of Loan agreement, et
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<sup>&</sup>lt;sup>1</sup> Loan Project Evaluation Reports (FY2003): http://www.jbic.go.jp/japanese/oec/post/2003/pdf/project31\_full.pdf

Since the disintegration of the former USSR in 1991, the railway network in central Asia was segmentalized by the national borders of each country; and the Uzbekistan Railways (UTY) consisting of 3,656km of railway track was established. The UTY did not possess a domestic repair factory for railway passenger cars and were forced to send their passenger cars to consigned repair facilities in the Ukraine, Russia, and Kazakhstan. However, due to foreign currency shortages, repairs were not adequately carried out. Under this project, 25 new cars for the international railway line running from Tashkent to Moscow were provided and a repair factory for railway passenger cars was constructed in the capital of Tashkent that allowed repairs to be effectively carried out by UTY.

### 1.3 Background

In the ex-post evaluation, it was pointed out that the performance of the repair factory for passenger cars had not fulfilled its objectives, and due to the uncertain demand in repairs, there was concern as to whether the yard would be used in future. It was also recommended that the repair factory should quickly set up an accounting system and the passenger transportation company should carry out a research on improving profits.

The ex-post monitoring was implemented to confirm the performance projected by the repair factory up to this point in time and to verify the efforts that had been expended towards improving the profits of the passenger transportation company as well as the accounting system that had been created for the repair factory.

#### 2. Results of monitoring

- 2.1 Effectiveness (Effect)
- Summary of the effect

By starting railway passenger car maintenance and repairs that were not envisioned at the time of appraisal, the revenue of the repair factory for passenger cars was expected to greatly increase in anticipation of orders from neighboring countries. In addition, if passenger car manufacturing was also started, performance was expected to rise. The existence of a repair factory that effectively provided repairs and increased the serviceable life of passenger cars was expected to raise the effectiveness of passenger car transport and significantly contribute to raising the performance of the passenger transportation company. In the project evaluation, it was found that the 25 passenger cars provided in the project were used in the international passenger line to Moscow and helped stimulate new business

centered on developing express and international rail transport by the passenger transportation company.

#### 2.1.1 Performance of the Repair Factory

#### (1) Number of Cars Repaired and Revenue

The railway passenger car repair factory that was constructed in this project obtained its license from the Ministry of Railways, Soviet Union and carries out regular repairs and overhauls of passenger cars based on standards established by the ministry for maintenance of passenger cars.<sup>2</sup> In the ex-post evaluation (FY2002), it was reported that the performance of the repair factory fell below designed levels. Orders from neighboring countries, which were projected at the time of appraisal, did not materialize, and the number of cars projected for repairs was below designed levels at the time of appraisal.

In this study, it was reported that as of 2003, the serviceable life of passenger cars was extended through repairs that were carried out; and orders from neighboring countries that began in 2004, helped raise the revenue of the repair factory to exceed design levels.

The type of repairs carried out at the repair factory and its performance are shown in the table below.<sup>3</sup>

 $<sup>^2</sup>$  The CIS countries including Uzbekistan continue to use the maintenance standards for passenger cars established by the Ministry of Railways of the former Soviet Union. Revisions to these maintenance standards are carried out by the Russian Ministry of Railways. The passenger-car repair factorys in each country carry out their maintenance work according to these standards, and they must be licensed by the Russian Ministry of Railways by passing their technical review on each type of maintenance work that is required. Only passenger cars that undergo maintenance by licensed repair factorys are permitted to cross national borders to use railway lines in neighboring countries. In addition, the serviceable life of passenger cars set by these standards is 28 years, and all passenger cars older than 28 years must be discarded.

<sup>&</sup>lt;sup>3</sup> The data that was provided includes data that greatly differs from the performance published in the ex-post evaluation report. In the ex-post evaluation report, it was reported that repair performance was achieved in 2000, despite the fact that the repair factory began its operations in March 2001; in addition, the repair performance prepared in 2001 for the ex-post evaluation report greatly surpassed the project design. Therefore, it was judged that this data is the most accurate since they are consistent with other data.

Table 1 Types of Repairs Performed by the Repair Factory (source: Questionnaire Responses)

TO-3	Maintenance performed every 150,000km or once every 6 months.
DP	Maintenance performed every 300,000km or once every 2 years.
KR-1	Maintenance performed once every 4 or 5 years depending on the type of passenger car and year of manufacture. Repairs centered on electrical facilities.
KR-2	Maintenance performed once every 20 years, overhaul that includes dismantlement-repairs and renewing the interior of each car.
KR-2M	In addition to the work done in KR-2, maintenance and repairs that will extend the serviceable life of the car for another 7 years is carried out. Thus, increasing serviceable life of the car to a total of 35 years. License was obtained in 2006.
KVR	In addition to the work done in KR-2, maintenance and repairs are carried out that will extend the serviceable life of the car for another 15 years. Thus, the serviceable life of the car is increased to a total of 43 years. License was obtained in 2003.
Interior Assem	bly The completed body of the passenger car is imported from mainly Russia and the interior is completed at the repair factory. However, only 10 cars were completed in 2003 and 2004.
Manufacture	Wheels, axle, bearings, coupling gears, and other parts are imported from mainly Russia, and the assembly of the car body and its interior are completed by the repair factory. However, plans are to obtain the license in 2008.

Type of Repairs		2001	2002	2003	2004	2005	2006	2007	Total
KR-1	Plan	255	259	263	268	273	278	283	1,879
	Actual	39	93	72	32	40	104	30	410
KR-2	Plan	91	93	94	97	98	100	101	674
	Actual	7	31	16	23	26	30	1	134
KR-2 train	Actual		16	16	19	2	8	8	69
(Types of mainter appraisal)	nance, rep	airs, res	storatio	n, and a	assembl	ly not i	ncludeo	l at the	time of
KR-2M	Actual						53	91	144
KVR	Actual			29	50	92	73	118	362
TO-3	Actual	311	571	555	560	552	653	337	3,537
Depot Repair	Actual	59	159	155	168	208	141	203	1,093
Interior Work	Actual			4	6				10
(Of the work perf	formed abo	ove, ord	lers rec	eived fi	om nei	ghboriı	ng coun	tries)	
KR-2 (other	Plan	17	17	17	18	18	18	18	123
country)	Actual		10						10
KR-2 (other country)	Actual								0
KVR (other country)	Actual				32	22	60	99	213
Revenue									
Million	Plan	5.3	6.9	7.8	8.5	9.5	11.0	12.6	61.5
USD	Actual	2.9	5.4	7.3	8.9	10.4	14.4	21.7	79.3

 Table 2. Number of Repairs and Revenue of the Repair Factory (source: Questionnaire Responses)

The targeted performance at the time of appraisal for maintenance and repairs (KR-1) and overhaul work (KR-2) in seven years from the start of repair factory operations was 410 cars for KR-1 (22% of the targeted volume at the time of appraisal) and 203 cars for KR-2 (about 30.1% of the targeted volume). At the time of appraisal, the number of UTY passenger cars (1245 cars for commercial transport in 1995) grew about 2.2% per year, identical to the annual population growth rate. It is estimated that all passenger cars were targeted for KR-1 and KR-2 maintenance and repairs. In addition, it is assumed that the objective to allow passenger cars from Tajikistan to use the repair factory had already been decided. The reasons are given below as to why performance levels for KR-1 and KR-2 stopped after achieving only a 20% to 30% ratio of the project design.

• Due to the decreased demand in passenger transport, the number of UTY passenger cars greatly fell and there was no need to repair a segment of the passenger cars lying idle.<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> Refer to section 2.1.3 for the number of UTY-owned passenger cars. The passenger transport volume that was 5,445 million passengers-km in 1990 dropped to 2,361 million passengers-km in 2007. The number of UTY passenger cars had

- Due to a decrease in cargo transport that had compensated for the deficit in passenger transport, UTY fell into financial straits, and funds could not be allocated to carry out maintenance and repairs of passenger cars.
- The serviceable life of KR-2 will end in 8 years. Therefore, there was little economic benefit for the passenger transportation company.
- There were hardly any orders from neighboring countries, which faced similar problems.

However, due to the additional implementation of maintenance and repairs, restoration, and assembly that had not been estimated at the time of appraisal, the overall performance of the repair factory up to 2007 greatly increased.

- The restoration (KVR) that extends the usual serviceable life of the passenger car from 28 years to 43 years started in 2003; and the restoration (KR-2M) that extends the serviceable life of the passenger car to 35 years started in 2006.<sup>5</sup> As of 2007, KVR was performed on 362 cars and KR-2M on 144 cars, of which 213 cars that underwent KVR were orders from neighboring countries.
- TO-3 that used to be implemented at each engine depot was undertaken by the repair factory.
- DP that had been implemented by each engine depot in the past is now being carried out at the repair factory due to stricter working standards that could not be met by the engine depots.
- From 2003 to 2004, completed body parts were imported from Russia and the interior of 10 cars were assembled by the repair factory. Due to improved finances and cost performance of the passenger transportation company, this was terminated after a period of two years.

decreased to 723 cars in 2008. Railway transport decreased due to (1) the independence achieved in 1991, broke up the national railway network in central Asia, creating confusion among the newly independent national railway companies, and thereby lowering services, (2) economic confusion in the aftermath of the dissolution of the former Soviet Union's division of labor, led to decreased demand in transport services, (3) international rail transport of people and goods was impeded due to the need to meet transborder procedures that did not exist in the past.

<sup>&</sup>lt;sup>5</sup> The repair factory obtained the KVR license in 2003 and began to implement maintenance and repairs of new (or in good condition) passenger cars that were lying idle. KVR at the repair factory halved the cost of undertaking this maintenance and repairs in Russia and cost versus effect was higher than importing new cars. Orders were received from Tajikistan (250 cars), Kazakhstan (60 cars), and Kyrgyzstan (90 cars), countries that faced similar circumstances. From 2006, KR-2M, a new type of maintenance and repairs (from Russia) that was in between KR-2 and KVR was started.

This repair factory is equipped with production equipment from Japan and Europe, equipment with the highest standards in the CIS countries, and it still remains the highest in Central Asia. The maintenance and repair services are licensed by the Russian Ministry of Railways. The passenger transportation company that is mainly responsible for the orders is very satisfied with the quality and delivery of the repair factory's work.

The repair factory is planning to start manufacturing passenger cars in 2009. Presently, it is involved in manufacturing a trial car in order to obtain the manufacturing license from the Russian Ministry of Railways and it is engaged in expansion works of the repair factory that will expand its production capacity to a maximum of 15 cars/month.<sup>6</sup> Orders from the passenger transportation company were 10 cars for 2009, 30 cars for 2010, 50 cars for 2011, and 80 cars for 2012. Production capacity permitting, orders from neighboring countries are also anticipated.

Туре	2008	2009	2010	2011
KR-1	35	60	50	55
KR-2 train	9			
KR-2M	46	55	72	60
KVR	160(98)	135(50)	130(50)	120(50)
DR	210	205	200	190
Manufacture	1	10	30(10)	50(20)

Table 3 Projected Orders of the Repair Factory (source: Questionnaire Responses)

Note: Figures in the parentheses indicate the projected number of cars ordered from neighboring countries.

<sup>&</sup>lt;sup>6</sup> UTY began reviewing the possibility of manufacturing passenger cars at the repair factory from around 2004; and after receiving technical cooperation from the Institute of Car Construction in St. Petersburg (Russia), it began its preparations to produce the major parts of the cars, excluding difficult to manufacture wheels and couplings. New equipment was introduced as of last year and trial productions were pursued. The first trial car was completed in October 2008. Test runs will be carried out for one month with the goal of obtaining the manufacturing license. About 300 million yen was invested in constructing a new repair factory building. The background information as to why the yard was expanded to include the manufacture of passenger cars is as follows.

In conjunction with the drop in the number of cars owned by UTY and the increased demand for international and long-distance express trains, the demand for passenger cars continues to grow. The number of idle cars will disappear within two years, but the number of passenger cars whose serviceable life was extended through KR-2M and KVR no longer exist. Thus, there was a need to supply new passenger cars. Simultaneously, orders for new passenger cars from neighboring countries were expected in future.

Rising profits from the repair factory due to increased orders for KVR from neighboring countries and the UTY has allowed it to invest in expansion.

<sup>•</sup> Passenger cars can be produced at least 20% cheaper using the domestic repair factory with lower employment costs than importing the cars from Russia.



Passenger Car Repair factory:

(Left: Wheel, axle that has been removed; Right: Platform for trial manufacture of a passenger car)



Passenger Car Repair Factory: (Left: Passenger car with paint removed before restoration; Right: After restoration)

## (2) Economizing on Repair Costs

In the ex-post evaluation, it was estimated that 2.2 million dollars in repair costs for KR-1 and KR-2 performed at the repair factory was saved in 2002 in comparison to the cost of consigning these repairs outside the country.

The government is focusing on promoting import substitution and in view of this policy, the major objective of the repair factory is to increase the domestic production rate. Excluding wheels, axle, coupling, and steel plate materials, the cars are now produced at the repair factory or supplied by domestic manufacturers. Presently, a maximum of 65% of the repair costs consists of procurement costs for materials, of which about 60% of the materials are imported from Russia and about 40% are supplied from domestic sources.

Unfortunately, data on the production rate of each part and materials supplied domestically could not be obtained and the final domestic production rate could not be computed. As a result, it was difficult to accurately evaluate the amount of foreign currency that was saved.<sup>7</sup>

The amount of repair cost that was saved when compared to repair costs done outside the country was difficult to accurately estimate due to inadequate data on past repairs consigned outside the country. However, calculations based on the limited data showed that repairs were undertaken at about 70% of the cost, in comparison to the costs generated between 2003 and 2007 when repairs were consigned outside the country; and it is estimated that an annual average of US\$2,500,000 to US\$3,000,000 was saved. This amount is equivalent to importing three to four new passenger cars per year.

(3) Economizing on the Number of Repair Days

The actual number of repair days for KR-1 and KR-2 was 30 and 50 days, respectively, in contrast to the 12 and 20 days projected in the project design; and the fact that number of days required for repairs exceeded the project design was pointed out in the ex-post evaluation report.

In this monitoring, the number of days for KR-1 was a maximum of 30 days and a maximum of 50 days for KR-2 as well. However, according to explanations by the repair factory, the work content had increased since the project's appraisal due to the added work of revising guidelines, the increased depreciation of the passenger cars that contributed to the increased number of days; and it was not due to the lack of repair equipment capacity or lowered work efficiency. Thus, the number of work days at the repair factory is believed to be equivalent to the number of days required if the passenger cars were sent to Russia for maintenance and repairs. In addition, in view of the number of days required to transport the cars including passing through Customs (10 to 15 days one-way) and the possibility of the passenger cars being placed on low priority status with Russian cars serviced first, the number of days required for maintenance and repairs, even at

<sup>&</sup>lt;sup>7</sup> In the project appraisal and ex-post evaluation, foreign exchange savings was considered to be an advantage in calculating the EIRR. But, data on the domestic production rate (component prices, excluding the cost of imported parts) of repair parts is needed to evaluate foreign exchange savings and without this data, an accurate evaluation is difficult. In addition, the amount of foreign currency income generated from exports must also be computed to obtain the amount of foreign exchange savings and ex-post evaluation, the foreign exchange savings are seen as the difference between domestic and foreign repair costs, but this is only the amount of repair costs that was saved (although it is foreign currency) and it is not the amount of foreign exchange savings. It is surmised that foreign exchange savings at the time of appraisal referred to the amount of repair costs that was saved.

modest estimates, will take 40 to 50 days longer than servicing carried out domestically.<sup>8</sup>

If the passenger transportation company consigned the KR-1, KR-2, KR-2M, and KRV (a total of 896 cars) work carried out at the repair factory from 2001 to 2007 to outside Uzbekistan and the estimated additional days required was 40 days longer than domestic consignments, the number of passenger cars available for actual use in commercial transport by the passenger transportation company during this period is estimated to have been 15 cars less.

#### 2.1.2 Performance of Newly Purchased Passenger Cars

It was reported in the ex-post evaluation that the 25 new sleeping cars that were purchased in this project have been mainly used in the train line bound for Moscow and 22 to 24 cars were in constant operation.

Presently, these passenger cars are divided into three-car units and used in the international line between Tashkent and Moscow three times per week.<sup>9</sup> Excluding the regular maintenance inspection periods, the cars are in full operation; and it is surmised that their operation rate surpasses what it was at the time of the ex-post evaluation.<sup>10</sup>

The Tashkent-Moscow route was operated 1.1 times a week in 2000 and 1.5 times a week in 2001, but increased to 2.6 to 3.0 times a week after the passenger cars were introduced in January 2002. The passenger ratio exceeds 80% and it is often full to capacity; and its use is very high.

#### 2.1.3 Renewing Depreciated Passenger Cars

According to projections at the time of appraisal, it was estimated that the number of passenger cars owned by UTY would increase at nearly the same pace as the population growth rate (2.2%). In actuality, the number of passenger cars greatly decreased from the 1271 cars in 1998, and by April 2008, it had fallen to 695 cars. As the passenger cars that reached their serviceable years were discarded, the number of new cars, which was provided during this period, was 35 (the 25 passenger cars provided by the project and 10 cars whose interiors were assembled by the repair factory).

<sup>&</sup>lt;sup>8</sup> The repair factory is located next to the Tashkent railway storage area and the number of days required to transport the car to the repair factory is not applicable.

<sup>&</sup>lt;sup>9</sup> The Tashkent-Moscow route requires going through Customs twice at the border, and a one-way trip takes 2½ days. One train line consists of the locomotive, dining car, etc. for a total of 22 cars and it is used once a week traveling roundtrip between Tashkent and Moscow.

<sup>&</sup>lt;sup>10</sup> The operation rate in 2002 was 286 days/year. It increased to 314 days/year in 2006.

The average age of the cars owned by UTY was 17.4 years in 1995, which rose to 22.5 years by 2008. This was due to the limited number of new cars that were provided after 1995 and extending the serviceable years of each passenger car through KVR and KR-2M.

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	Number Owned (as of Jan. 1)	Number Discarded	Number Provided
1998	1271	74	
1999	1197	72	
2000	1125	128	25
2001	1012	39	
2002	973	19	
2003	954	4	4
2004	954	109	6
2005	851	37	
2006	814	56	
2007	758	35	
2008	723		

Table 4 Number of Passengers Owned by Uzbekistan Railways, the Number of Cars Provided, the Number of Cars Discarded

In the 1990s, the demand in passenger transport greatly fell and despite the number of passenger cars that decreased, a segment of the passenger cars lay idle (see note 4). The passenger transportation company is planning to supply new passenger cars on a continual basis from 2009, based on its projection of a shortage in passenger cars, in conjunction with a recovery in transport volume.

#### 2.2 Impacts

2.2.1 Contribution to Maintaining Railway Passenger Transport Capacity

In the ex-post evaluation report, it was pointed out that despite the trend toward an increased number of railway passengers utilizing the railways for short trips in the country from 1998 to 2002, the number of long-distance railway passengers in the country or international travel was on the decrease. The ex-post evaluation report also suggested that, if this project had not been implemented, consignment of repairs outside the country would not have been possible due to foreign currency shortages and the number of passengers using the railways for transport would have markedly dropped.



Number of Passengers (1000 people)



Fig. 1 Transitions in UTY Passenger Transportation Volume

Passenger Transportation Volume (1 million passenger-km)

Table 5 0111 Lassenger Transportation volume (unit. 1 minion passenger-ki	Table 5	UTY	Passenger	Transportation	Volume	(unit: 1	l million	passenger-kn
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	2000	2001	2002	2003	2004	2005	2006	2007
<b>Domestic Passenger</b>								
Transportation	2,163	2,166	2,018	2,011	2,012	2,099	2,339	2,362
Volume (total)								
Long-distance	874	652	645	877	865	0/6	1 220	1 5 1 6
(over 150km)	0/4	052	045	027	805	940	1,220	1,310
Short-distance	1 280	1 514	1 373	1 18/	1 1/17	1 1 5 3	1 1 1 0	846
(under 150km)	1,209	1,514	1,375	1,104	1,147	1,155	1,119	040
International								
Passenger	650	/10	375	534	563	507	736	835
Transportation	030	417	515	554	505	391	750	055
Volume (total)								
Leaving the country	230	142	125	89	99	119	142	172
Entering the country	147	81	64	73	56	63	98	112
Transfers	273	196	185	372	408	414	497	550

The domestic passenger railway transportation volume in Uzbekistan hit bottom from 2002 to 2004, but as shown in Table 5, the share of passenger volume greatly shifted from short-distance to long-distance travel. It is surmised that the use of convenient and inexpensive buses is the cause of the drop in short-distance railway passengers. Meanwhile, in order to reduce its deficits, the passenger transportation company reduced their domestic short-distance trains and successively began operating domestic long-distance express and international lines.<sup>11</sup>

<sup>&</sup>lt;sup>11</sup> With technical assistance from other donors, the UTY conducted a marketing survey of passengers and reflected their findings in their business plans.

The passenger transportation company projects a 40% increase in domestic demand for passenger transportation by 2015. The demand in long-distance railway transport is high due to safety and comfort. A case example is the express train line, Registon, where the interior of its passenger cars was assembled by the repair factory in 2003, and transports passengers between Tashkent and Samarkand. The comfortable passenger cars are highly popular and it is always full to capacity. There are plans to increase its services. With the rise in demand for long-distance express trains, the passenger transportation company has plans to make all its long-distance express trains into comfortable passenger cars.

The volume in international passenger transportation is headed for recovery after hitting bottom from 2001 to 2002; and the demand in 2002 to 2007 increased by 30%. Economic recovery in central Asia, an increased demand by the growing tourism industry, and improved coordination in train travel with neighboring countries appear to be the underlying factors. However, there is room for improvement in removing non-physical barriers and procedures at the border still requires a four-hour stop as it did during the ex-post evaluation. The great rise in passenger transfers from 2003 is due to an increase in travel distance within the country because of the change in the connecting train routes in Tajikistan.

The passenger trains that were provided in this project and introduced in the Tashkent to Moscow line were the most comfortable passenger cars in the former republics of the Soviet Union. Stimulated by this, the Russian Railways also introduced the same passenger cars. Having gained confidence by this success, the UTY started to operate express trains like the Registon that consisted of passenger cars assembled at the repair factory. Presently, express trains are operated from Tashkent to Samarkand, Bukhara, and Kalush. In addition, new international train lines between Russia and Ukraine began operations from 2006 to 2008. This project is believed to have contributed greatly to the realization of these operations.

This project helped secure passenger cars through efficient maintenance and repairs and extend their serviceable life. If this project had not been implemented, the passenger transportation company would have been forced to consign a segment of its maintenance and repairs of passenger cars to another country and to import new passenger cars at a much earlier period. This would have led to stringent finances for the company, the number of usable passenger cars would have been limited, and the development of international trains and long-distance express trains would have lagged.<sup>12</sup>

<sup>&</sup>lt;sup>12</sup> According to UTY, if this project had not been implemented, KR-2 and KVR orders from other countries would have



Departure of Moscow Bound International Train (Tashkent Station)

#### 2.2.2 Social Impact

The social impact of this project in the ex-post evaluation report was to help avoid the extreme reduction in passenger railway transportation that is highly used by the low-income population and to improve passenger services by providing new cars.

As explained earlier, measures taken by UTY such as reducing the domestic short-distance trains and focusing on long-distance express trains appears to have shifted the role of railways as the conventional means of transport for the lower-income population to buses. In either case, since the major depression in passenger railway transport since the 1990s, railway transportation has not recovered to half its former levels. Even if the project had not been implemented, an extreme shortage in passenger cars would not have occurred.

To understand the level of passenger satisfaction regarding passenger services, a questionnaire survey was conducted in this study with the cooperation of the UTY, targeting passengers using the Samarkand route (Registon) where passenger cars, whose interiors were assembled at the passenger car repair factory, are used and the passengers using the Moscow route, where newly procured passenger cars are used.<sup>13</sup> As shown in the table below, the passengers gave an extremely high assessment of the passenger car and the

been one-third the volume due to foreign currency constraints. Moreover, the great cost and time of orders consigned abroad would have made the management and operations of passenger cars difficult. The remaining KVR could not be carried out domestically and would have stopped at KR-2 and it would not have been possible to extend the serviceable life of the passenger cars. The remaining KR-1, KR-2 may have been carried out domestically as much as possible, but it would not have been able to carry out work that required licensing and the repair factory would not be usable for servicing international trains.

<sup>&</sup>lt;sup>13</sup> When asked about the purpose of their trip, 30% of the passengers on the Moscow route responded to visit relatives, 25% responded for tourism, 15% responded for business, and 30% for other reasons. On the Samarkand route, 45% responded to visit relatives, 10% for tourism, 30% for business, and 15% for other reasons. When asked about travel frequency, 30% responded once a year and 65% responded less than that on the Moscow route; and on the Samarkand route, 60% responded once a month, 15% responded once a year, and 25% responded less than that.

comfort level of the route. In the Moscow route, poor air conditioning was mentioned by a few passengers.

		Moscow	Samarkand
		Route	Route
Purpose of travel	Visit relatives	30%	45%
	Business	15%	30%
	Tourism, vacation	25%	10%
	Other	30%	15%
Condition of passenger	Comfortable	50%	65%
car	Normal	35%	35%
	Not bad	15%	0%
	Poor	0%	0%
Vibration, noise	Satisfactory	25%	32%
	Normal	65%	42%
	Not bad	10%	21%
	Poor	0%	5%
Comfort level of	Outstanding	25%	30%
passenger car	Good	70%	55%
	Normal	5%	5%
	Poor	0%	0%

Table 6 Summary of Survey Results on Passenger Satisfaction with Services(Number of Samples: 100)

(Note: Many of the passengers on the Moscow route who responded that the purpose of their travel was "for other reasons" were guest laborers.)



Passenger car Interior (left: Sleeper car on the Moscow route; right: Domestic express train, Registon)

## 2.2.3 Other Impact

About 30% to 40% of the production value of parts and materials used by the repair factory are supplied domestically, and it is surmised that this had an impact in helping to

foster surrounding industries.

#### 2.3 Sustainability

Summary of sustainability

The financial management system of the repair factory has been organized. Although the business accounting is separated between UTY and the passenger transportation company, actual operations are not always independent. It is the target of the privatization program, but in reality, there is limited benefit for either the private investor or the repair factory. Thus, privatization is not expected to occur soon. The passenger transportation company has reduced its local lines that are in the red and pursued measures to strengthen its express and international trains in order to minimize the scope of its deficits. But, it continues to need UTY assistance.

#### 2.3.1 Executing Agency

#### 2.3.1.1 Structural organizations of operation and maintenance

Maintenance and operations remains unchanged from the time of the ex-post evaluation. As national companies, UTY owns 51% of the stock for the repair factory and passenger transportation company and 10% is owned by employees. Under the government's privatization program of national companies, the remaining 39% of the stock will be sold to private investors. However, there have been no interested investors for the reasons given below.

- In the case of the repair factory, UTY as the owner of 51% of the stock repays the lease from the government in this project and receives only a minimal dividend from the repair factory. If there are private investors, who wish to invest capital, UTY plans to solicit a fixed contribution from them to be used for repayment; thus, making it an unattractive prospect for private investors. Moreover, a definite financial structure that will make such contributions possible has not been reviewed.
- In the case the passenger transportation company, although financial reforms have been carried out, real deficits continue to exist making it an unattractive investment.

If investment from the private sector is possible, UTY and the passenger transportation company should have a collaborator that is capable of providing useful know-how about various new types of maintenance, repairs, and restoration technology as well as in passenger car manufacturing rather than just capital participation.

The number of employees at the repair factory has not increased despite the growing number of orders. The number of employees at the time of the ex-post evaluation was 1180 in contrast to 1262 employees in 2007; and labor productivity improved about 3.8 times from 2003 to 2007. In addition, the president of the repair factory, who was the same person prior to the project's implementation, remains unchanged and continuity of its operations is high. He has been responsible for selecting the equipment that was provided in the project, for educating his employees, continues to show his leadership in business plans, and has contributed to the good performance of the yard.

#### 2.3.1.2 Technical capacity of operation and maintenance

Approximately 400 people were educated during the construction of the repair factory and the start of the training program for skilled mechanics and many continue to be employed by the repair factory. Internal training continues at the same pace as during the ex-post evaluation. With the start of KVR and the manufacture of passenger cars, technical assistance was provided by Russia; and the repair factory was ISO9001 certified for its quality control in production in 2006. Employees of this repair factory have gone to a similar facility in Russia to provide technical guidance, trainees from Kazakhstan are received every year, and other activities corroborate the high technical standards that are maintained by this repair factory among the CIS countries.

#### 2.3.1.3 Financial Status in operation and maintenance

#### (1) Passenger Car Repair factory

The passenger car repair factory began its independent accounting system in September 2002. Repayments for this project continue to be the responsibility of the UTY as it was during the ex-post evaluation, and the repair factory has not made any repayments.<sup>14</sup>

It appears that the accounting system has greatly improved since the time of the ex-post evaluation. Financial statements are prepared using business software based on international accounting standards, but since Uzbekistan's national accounting standards were decided, the financial statement format has been changed. An accounting audit is carried out annually.

 $<sup>^{14}</sup>$  According to the balance sheet of the passenger car repair factory, about \$2 billion of this project's input in the repair factory is recorded as assets (the amount before depreciation) and about \$500 million is recorded as UTY's long-term debt. This long-term debt has not been repaid.

Favorable factors are there are no loan repayments, price setting is based on manufacturing costs (domestically), financial performance is strong due to increased orders domestically and from neighboring countries, and profits are expanding. According to the balance sheet, the capital adequacy ratio has reached 70%.<sup>15</sup> If it obtains the license to manufacture passenger cars as planned, its performance for the next few years will improve without fail, due to orders that are expected from the passenger transportation company. The passenger transportation company projects that it will need 500 cars by 2015.

2003 2004 2005 2006 2007 Income Income from repairs 7,045 8,923 11,573 17,598 27,473 Interest rate, etc. 0 37 47 74 41 192 Others 108 121 200 265 Total 7,153 9,081 11,812 17,872 27,779 Expenditure Repair related costs 5,656 7.389 9.575 14.727 22.323 Administrative expenses 994 1,127 1,512 1,777 2,864 Others 0 29 10 36 98 8,545 16,539 6,650 11,098 Total 25,305 **Balance of payments** 503 536 714 1,333 2,474

Table 7 Balance of Payments of the Passenger Car Repair factory (unit: 1 million sum<sup>16</sup>)

Source: Passenger Car Repair Factory

Table 8 Balance Sheet of the Passenger Car Repair Factory (every year as of January 1,unit: 1 million sum)

	2001	2006	2007	2008			
Assets							
Liquid assets	3,259	6,296	10,984	15,325			
Loans receivable	912	3,065	2,976	1,584			
Capital, investment, others	175	630	111	119			
Fixed assets	10,554	13,120	12,425	12,940			
Total	14,900	23,111	26,496	29,968			
Debt, Capital	Debt, Capital						
Floating debts	410	1,019	2,627	3,075			
Long-term debt, others	6,528	5,942	5,942	5,942			
Capital fund	7,483	15,233	16,154	17,734			
Inner reserve	479	917	1,690	3,214			
Total	14,900	23,111	26,496	29,968			

Source: FY2001 Ex-post Evaluation Report, FY2006 to FY2008 repair factory

<sup>&</sup>lt;sup>15</sup> The revenue increased nearly fourfold during the five-year period from 2003 to 2007; and pretax income increased fivefold from 2003 to 2007. In 2006, the export ratio of the revenue reached 42%, taxes were reduced by 50%, and it was awarded the Best Tax Payer award for national companies in 2007.

<sup>&</sup>lt;sup>16</sup> 1yen =12.0 sum (August 2008)

#### (2) Passenger Transportation Company

According to the ex-post evaluation report, the passenger transportation company had to reduce the number of operations due to a drop in demand, its operations were in deficit due to a low fare policy, and it was receiving financial assistance from UTY. Since then, the company has reduced its deficit lines, and has tried to compress its losses through increased low-fare measures, but the deficit of its domestic lines remains.

The train fares for domestic lines are decided by the Ministry of Finance, making it difficult to generate a profit. As a result, the passenger transportation company is always in stringent negotiations with the ministry. Although a 40% increase in fare was approved in 2007 and 2008, short-distance lines continue to be in deficit and the balance of payments for long-distance lines is in equilibrium. Fares for the international lines are decided in negotiations by the railway companies of each country, and they are in the black. To compress their deficit, the passenger transportation company, is trying to improve profits through services such as dining on the train. Its balance of payments was in the black for FY2007 due to an increase in its profitable domestic long-distance and international rail transport, but usage fees for the railways and locomotives are completely subsidized by UTY (in other words, the usage fees are waived), and in actuality, operations are in the red. The UTY fills a deficit of the passenger transportation company with income generated from its cargo transport service. The improved performance of the passenger transportation company in recent years is due to the T/A provided for its operations by donors such as ADB and EBRD.

	2006	2007
Income		
Income from passenger fares	23,080	36,150
Other	9,436	13,831
Total	32,516	49,981
Expenditure		
Passenger transport costs	25,079	28,370
Other	15,686	15,679
Total	40,765	44,049
Balance of Payments	-8,248	5.932

Table 9 Balance of Payments of the Passenger Transportation Company

Source: Passenger Transportation Company

Although its performance may improve due to increased special express and international lines, the company continues to face the risk of a deficit unless it is given the freedom to set the fares for its domestic lines.

The passenger transportation company has introduced an automatic accounting system for all of its branch offices, but an integrated system for the entire company is still in the planning stage. The accounting standards used are the national accounting standards.

#### 2.3.2 Current operation and maintenance

The passenger car repair factory has a maintenance plan for each piece of equipment and preventative maintenance is practiced. Focus is placed on educating operators since much of the malfunctions stem from human factors in operations and maintenance. Spare parts are either built at the yard or supplied domestically as much as possible, and the use of imported parts is kept to a minimum. Inventory control appears to be appropriately carried out and parts for each piece of equipment are kept in stock.

There are no problems of note with regard to passenger car maintenance. Regular maintenance and repairs are carried out and the operation rate is adequately high.

#### 3. Conclusions, Lessons Learned, and Recommendations

#### **3.1 Conclusions**

The revenue of the passenger car repair factory has greatly exceeded project design, and if the manufacture of passenger cars begins, its performance is expected to improve even more. The repair factory is surmised to have contributed to the efficiency of passenger train operations and improved the performance of the passenger transportation company. The passenger cars provided in this project are used in the international train line.

Although the financial management system of the repair factory has undergone an overall improvement, its operations are one with UTY and the passenger transportation company. The possibility of gaining private capital input in the near future is low. The passenger transportation company is trying to compress the scope of its deficits, but continues to need UTY assistance.

#### 3.2 Recommendations

[For UTY and Passenger Car Repair factory]

- The repair factory should continue its efforts to begin manufacturing passenger cars as early as possible.
- · Regarding the input of private capital in the repair factory, collaboration that will

provide useful know-how when it begins its operations in manufacturing passenger cars is recommended. For such partners, the possibility of reducing or waiving the obligation to contribute to repayments should be examined.

3.3 Lessons Learned None

Item	Plans	Plans executed
Output	<ul> <li>(1) Construction of the passenger car repair factory</li> <li>1. Civil work: 6,280 m<sup>2</sup></li> <li>2. Materials</li> <li>3. Training: 30MM</li> <li>(2) Passenger car provision: 25 cars</li> <li>(3) Supplying spare parts</li> <li>(4) Consulting service: 103MM</li> </ul>	<ul> <li>(1) Construction of the passenger car repair factory</li> <li>1. As designed</li> <li>2. As designed</li> <li>3. 20MM</li> <li>(2) As designed</li> <li>(3) As designed</li> <li>(4) 107.8MM</li> </ul>
Duration Construction of the passenger car repair factory	April 1998 - March 2000,	Feb. 1999 - March 2001,
provided passenger cars	April 1998 - April 1999,	Feb. 1999 - August 2000,
provided spare parts	April - September 1998,	Feb. 1999 - August 2002,
consulting services	December 1996 - September 2000	April 1997 - August 2001
Project Cost		
Foreign capital	¥6,102,000,000	¥6,097,000,000
Domestic capital	¥2,037,000,000	¥3,383,000,000
Total	¥8,139,000,000	¥9,480,000,000
ODA loans out of the total	¥6,102,000,000	¥6,097,000,000
Exchange rate	1USD=102.01JPY	1USD=118.50JPY
	(June 1996)	(1998-2001 annual average)

# Comparison of main plans and achievement