

The Feasibility Study on the Rehabilitation Project of the Mongolian Railway

Final Report

Appendix



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Japan Railway Technical Service (JARTS)
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1 US Dollar = 550 Tug. = 110 Yen
(August 1996)



APPENDIX

The Feasibility Study on the Rehabilitation Project of the Mongolian Railway Final Report

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Chapter 2

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AP. Table 2-2-1 Registered Vehicles, 1987-1996

Year	1987	1991	1994	1995	1996
Open Trucks	22,477	22,400	21,000	22,000	26,000
Tankers	4,100	3,819	2,736	2,250	2,140
Trailers, etc	13,190	19,888	11,800	12,600	11,400
Special Veh.			2,776	2,207	2,210
Buses	1,628	1,928	1,700	1,800	3,700
Cars		11,890	19,000	21,000	30,000
Motor Cycles			20,000	23,000	25,952
Total	41,395	59,925	79,012	84,857	101,402

Source: Traffic Police, August, 1996

AP. Table 2-2-2 Civil Aviation Air Ports and Companies

Airports

Ser.No	Name	Fright per week	Ticket Tug. from UB	Runway length (m)
1	Ulaanbaatar	34	-	3,100
2	Arkhangai	2	7,600	2,000
3	Gobi-altai	3	14,200	2,800
4	Dornod	3	10,400	3,000
5	Bayanhongor	2	9,400	2,800
6	Dundgobi	2	4,600	1,600
7	Bulgan	1	5,100	1,900
8	Bayan-ulgii	3	19,800	2,700
9	Zabkhan	2	14,700	1,900
10	Tosontsengel	2	11,700	1,800
11	Sukhbaatar	3	9,500	1,800
12	Ubs	3	17,400	1,950
13	Hobd	3	17,800	2,850
14	Hubsgul	3	9,400	2,440
15	Umnogobi	2	9,300	1,800

Companies

S. No.	Name	Planes owned	International routes
1	MIAT	Boing-727=3 An-24=11 An-26=3 An-30=1 Mi-8=3	Moscov, Erkhuu Beijin, Huhhot Soul, Osaka Berlin
2	Hangard	An-24=1	Ulan-Ud, Erkhuu
3	Tas	An-2=32	0
4	E. Airlines	An-2=1	0
5	T. Ulaach	Mi-8=1	0

Source: Civil Aviation Authority (September, 1996)

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AP. Table 2-2-3 Traffic Count Volumes in 1993 and 1996

Road	km	1993 vpd	1996 vpd 1)
Altanbrag (Russia border) - Sukhubaatar	24	282	364
Sukhubaatar - Darkhan	92	265	233
Darkhan - Ulaan-baatar	220	495	670
Average	336	417	528

Source: 1993 vpd from Road Master Plan Study (ITC & SWK, 1993)

1996 vpd from the counting conducted by the team in August, 1996.

The average annual rate of increase is 8 % in the above data.

Notes: 1) The result of the 1996 counting is factored by 0.92 to indicate the annual average where 0.92 was quoted from the Road Master Plan.

The result of the counting in August 1996 is shown under

(The average is the mean of 2 week day countings of 12 hrs.)

	km	Average	Adjusted
Altanburag-Sukhubaatar	24	396	364
Sukhubaatar - Darkhan	92	253	233
Darkhan - Ulaan-baatar	220	728	670
(Sub-total)	336	417	528
Ulaan- baatar - Nalaiha	32	1296	1192
Nalaiha - Bayan	1	116	107
Total	705	333	306

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AP Table 2-2-4(1) Categorized Railway Service, 1995

(In mln pass-km and ton-km'00)

		Domestic	Go Out	Import	Transit	Total
Passengers mn pas-km	Railways	601.4	46.0	24.2	9.4	681.0
	Roads	424.3				424.3
	Air lines	320.2				320.2
	Total	1,345.9	46.0	24.2	9.4	1,425.5
Freight mn ton-km	Coal	1,010.9				1010.9
	Others	261.0				261.0
	Total	1,271.9				1,271.9
	Copper		228.8			228.8
	Fluorite		103.8			103.8
	Others		208.7			208.7
	Total		541.3			541.3
	Fuel			144.0		144.0
	Others			178.2		178.2
	Total			322.2		322.2
	Transit				148.6	148.6
	Total	1,271.9	541.3	322.2	148.6	2,284.0
	Roads Total	152.4				152.4
Air Line Total	4.5				4.3	
Total	1,428.8	541.3	322.2	148.6	2,440.7	

Source :Mongolian Railway, September 1997 and Statistical Yearbook 1996

It should be emphasized the following information should be surveyed at least if "modal split analysis" is a critical matter.

- Origin and destination of cargo and passengers in road-vehicles both on main road sections and on railways, taking consideration in seasonal variation.
- Supplementary modes to/from rail station should be known, with which arrival or departure points beyond the railway station can be identified. Those supplementary service are often included in traffic the road sections in parallel to the railways.
- Travel hours, fares and cost
- Socio-economic data in sub-areas of Aimag or of the influence area of each rail station.

AP Table 2-2-4(2) Categorized Railway Service, 1996

(In mln pass-km and ton-km'00)

		Domestic	Go Out	Import	Transit	Total
Passengers mn pas-km	Railways	654.2	52.3	20.5	6.4	733.4
	Roads	425.1				425.1
	Air lines	382.6				382.6
	Total	1,461.9	52.3	20.5	6.4	1,541.1
Freight mn ton-km	Coal	972.7				972.7
	Others	273.3				273.3
	Total	1,246.1				1,246.1
	Copper		295.0			295.0
	Fluorite		-			-
	Others		8.3			8.3
	Total		303.3			303.3
	Fuel			371.0		371.0
	Others			259.9		259.9
	Total			630.9		630.9
	Transit				360.5	360.5
	Total	1,246.1	303.3	630.9	360.5	2,540.8
	Roads Total	152.4				152.4
	Air Line Total	4.3				4.3
Total	1,402.8	303.3	630.9	360.5	2,697.5	

Source :Mongolian Railway, September 1997 and Statistical Yearbook 1996

It Should be emphasized the following information should be surveyed at least if "modal split analysis" is a critical matter.

- Origin and destination of cargo and passengers in road-vehicles both on main road sections and on railways, taking consideration in seasonal variation.
- Supplementary modes to/from rail station should be known, with which arrival or departure points beyond the railway station can be identified. Those supplementary service are often included in traffic the road sections in parallel to the railways.
- Travel hours, fares and cost
- Socio-economic data in sub-areas of Aimag or of the influence area of each rail station.

Chapter 5

APPENDIX

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APPENDIX 5-2 Coal Transport Estimate

APPENDIX 5-3 Cargoes in Domestic Movement

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**Table 5-8-21 Fare Comparison between Railway and Road
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**Table 5-8-22 Industrial Production and Population
by Province, 1990-95**

**Table 5-8-23 Link volume between the Stations, Passengers
1995-2020**

Table 5-8-24 Arrival and Departure by Station, 1995-2020

Appendix 5-1 Supplements

In Chapter 5 of the main text, demand forecast is presented starting from the forecast of growth of socio-economy to the tabulation of railway volumes by link and/or by station. In order to make the presentation in Chapter 5 understandable some parts are discussed in this Appendices. Appendices 5-2 to 5-7 to Chapter 5 discuss actual approach, estimated parameters in regression, adjusted parameters and other alternate consideration of growth factors which might be thought better to be used. The Chapter 5 study was conducted by using the data up to 1995. Additional data of 1996 were found in mid-1997 study in Mongolia. But, it is understood those additions would not change the parameters and volumes substantially. Estimates in framework and volumes in the master plan study are not altered in the part of Feasibility Study.

Appendix 5-2 Coal Transport Estimate

(1) Master Plan Study

“Coal Industry Development Master Plan” was studied upto 2010 by JICA in 1994. Economic growth in high case and in low case were assumed there and, in each case two coal production plans for mines along the railways are estimated. The assumed high growth of the economy showed the figures mostly equal to the assumption determined in this study. The followings are the summary of average of two coal plans under the high case of economic growth.

AP. Table 5-2-1 Coal Production Plan

	('000 tons / yr)			
Year	1995	2005	2010	Ratio of 2010/95
Baganour	2,848	4,650	6,000	2.11
Shivee-Ovoo	603	1,176	2,000	3.32
Sharingal	1,123	800	800	0.71
Others & New	229	1,746	2,959	12.80
Total	4,863	9,196	11,754	2.17
Ratio from the previous year	1.00	1.89	1.28	2.17

Source: Master Plan of Coal Industry Development (JICA, 1995)

(2) Transport Volumes

Most of the coal output from the above mines have been transported to urban areas by railways for power plant and industries. If the above forecast is adjusted to the MR's OD data in 1995 and future years, the following volumes can be calculated. Estimates in Ap Table 5-2-2 are incorporated in the future volume matrices of coal transport in this study.

AP. Table 5-2-2 Coal Transport Forecast: 1995 - 2020

Year	(In '000 tons)			
	1995	2005	2010	2020 ³⁾
Baganour	2,955	4,962	6,000	6,600
Shivee-Ovoo	364	1,589	2,000	2,200
Sharingal	1,014	801	801	880
Others ¹⁾	8	15	17	20
Total	4,340	7,368	8,822	9,704
Ratio to the Prev. Year	1.00	1.70	1.20	1.10

Note: 1) New mines are excluded since the mines and railway stations are not explicitly shown in the master plan

2) A 10 % increase is assumed from 2010 to 2020.

Appendix 5-3 Cargoes in Domestic Movement

(1) Others in Domestic Movements

Domestic transport of other commodities excluding "coal" has shown a trend of reduction from 1989 to 1994. The reduced volumes are related to reduced GDP/POP and a regression line was calculated as under:

$$\text{Transport in tons} = -7,644 + 76.4 * \text{G/P} \quad r^2 = 0.985$$

In order to estimate the volume in the future, the slope of the line is reduced half and extrapolated upward with assumed increases of GDP/POP for years beyond 1995. The estimate indicates mostly the same rate of increase with the coal transport.

$$\text{Transport in tons forecast} = -1,891 + 38.2 * \text{G/P}$$

(2) Total Domestic Movements

The result is summarized in the following Ap. Table 5-3-1 in the total of coal and others in terms of tons in MR's domestic transport volumes for the future. The coal master plan study shows the estimates in terms of tons.

AP. Table 5-3-1 Domestic Transport Forecast, 1995 - 2020

	(In '000 tons)			
	Coal	Others ¹⁾	Total	Ratio
1995	4,350	1,110	5,460	-
2005	7,368	1,898	9,265	1.70
2010	8,822	2,363	11,185	1.21
2020	9,704	2,942	12,646	1.17

Note: 1) excluding the short distant trips within the representative zones

Appendix 5-4 Imports

The volume of import cargoes in tons were related to GDP/POP of Mongolia and regression analysis was conducted. The result is:

$$y = 54.8 * G/P - 1715 \quad r^2 = 0.997$$

The parameters are adjusted to have a half degree in slope and used for the future volumes, which will be go up along with the growth of GDP/pop. The parameters modified to be used for the future years are:

$$y = -27.9 * G/P - 1318$$

The import share of petrol had increased in the past 10 years from 36 % in 1989 to 39 % of the total import in 1995. Import and use of petrol products is likely to increase higher than other imports since there will be no effective control of fuel consumption by vehicles.. This trend is extrapolated as under in case of tons.

The petrol share in the import total is assumed as 1995 (38 %), 2005 (40 %), 2010 (41 %), 2020 (43 %) and the calculated result is shown in ton-km and tons as under.

AP. Table 5-4-1 Imports Forecast: 1995 - 2020

Import	Total ton-km	Total Petrol	Others	Total
	mn tonkm	Tons'000	'tons'000	'tons'000
1995	322.2	328.3	540.3	868.6
2005	547.7	591.0	885.0	1,476.0
2010	642.0	726.0	1,045.0	1,771.0
2020	725.4	864.0	1,143.0	2,007.0

Appendix 5-5 Exports

(1) Copper & Fluorite Products

1) Copper is produced by Erdenet mine which is owned by Russia (49 %) and Mongolia (51 %). The product is exported mostly to Russia and some to Europe and Asian countries. The Erdenet Co. says their current efforts are to demonstrate capability of producing constant volume for years to come with which they can retain stable demand from customers. The export was 450,000 tons in average over the years, 1993 - 95. It is hard to estimate changes in demand in Russia on Mongolian copper output since its economy has shown reduced GDP even in 1995. Under the current circumstances, the future export volume is assumed constant as in 1995.

2) Fluorite

Fluorite is produced at Borondor mine by Mongolrosts-vetmet owned by Mongolia (51 %) and Russia (49 %). Fluorite products have their major export market in Russia, exporting 130,000 tons in average over the years 1993 - 95. Some are consumed domestically. It is said by the company their production target will increase by 5 ~ 10 % in every 3 years, but rail transport for export will not increase as much since the company will tend to process the output at the site. Russian economy is also difficult to estimate in the same conditions as in the case of copper. The transport volumes in future are assumed constant at the level of 1995.

(2) Other Export Cargoes

The reduction of export in other categories in the years of 1989 - 95 was substantial by 67 %: from 1,617 mn ton-km to 530 mn ton-km, a rate of -27 % p.a. Reduction rates became less in the recent 3 years from 1993 to 1995, at -19 per annum. Demand on Mongolian exports are determined in the markets of Russia, China and other countries. It is difficult to find a long run demand on Mongolian products in those foreign countries. The result of regression analysis is found hard to apply as the forecast becomes too high. The export of others in volume have a large number of customers more than the case like the copper product.

In this study the annual rate of increase is assumed at 5 % in average for the years upto 2005, which is the same rate of outgoing passenger-km. The growth will be 4 % annually in the second period and 3 % annually in the third period. The total of export (1)+(2), all minerals and others, are tabulated and shown in Table 5-3-2 of Chapter 5.

Appendix 5-6 Roads

The cargo-ton-km statistics of roads showed similar large reductions in volume in the same period of transition: 2,097.9 mn ton-km of 1989 to 146.7 mn ton-km of 1994. A small recovery of 4 % increase is shown in 1995. On the other hand, there was a steady increase in vehicles registered: from 41,400 in 1987 to 101,400 in 1996: about a 10% per annum increase in 8 years. Majority of the owners are in private sector.

Traffic count was conducted on roads in August - September in 1996 at 5 locations between Uraanbaatar and Russian border. After seasonal adjustment, they can be compared with the data of count showing the volume in 1993 in Road Master Plan(ITC and Scot. W.K., 1993). The average volume increased from 417 to 528 in 3 years: an annual growth rate of 8 % between Uraan-baatar and Altanbrag of 350 km. Traffic growth on other earth road sections over the country would be less and the total of the country would be 5 - 7 % in those years. In this study the road transport is assumed to increase at 5 % per annum in the years upto 2005, 4 % upto 2010 and 3 % for the remaining years upto 2020.

The Road Master Plan (ICT and Scott WK, 1993) indicated a list of priority of 24 links in the total of 3,900 km and these sections of 720 km was recommended for feasibility study. The master plan study did traffic counting on selected sections over the country but not conducted OD surveys because of cost and time consuming works on national roads of 11,000 km. The study did not explicitly mentioned the regional distribution of generated/attracted trips

nor the modal split estimate between roads and railways. The selection and evaluation of priority roads was not only traffic but also by other factors which were weighted numerically for comparison with rehabilitation costs. No explicit estimate of road traffic growth was described but the study adopted an annual growth rate of 8 % p.a. in the feasibility of the most priority roads: Nalaih - Baganour (37 km), Darhan - Erdenet (131 km), Nalaih - Choir (195 km) and Choir - Sainshand (224 km). Those sections had an estimate of EIRR 9 %.

It is noted that road improvement programs in recent years are shown in a Table in Chapter 2. The Table is not sufficient to know a 10 year or 20 year plan. We have to wait for the coming new government development policies in which long period pavement and rehabilitation plans of roads are expected to be shown with approximated costs.

The road transport service such as bus lines, fares, frequencies have been administered by MID. Privatization has made free movements of private vehicles (auto, bus, trucks) which are virtually outside the regulation of MID. No transport data is available of those private ones.

The precise modal split analysis between railways and roads in the corridor of Ulaanbaatar-Sukhbaatar are not conducted in this study, with the critical reason of shortages of OD data on roads and modal combination transport data to/from the rail station and other data. An overall trend analysis was considered as in 5-3-3 of the main text.

Appendix 5-7 Airlines

The cargo transport by airlines in the country is very small in volume. In the case of passenger-km data, the relative share is height at 22 % because of longer distance travel than roads and railways. Persons traveled showed only 0.2 % of the total modes. Development prospects and constraints is shown in the Chapter 2. The transport volume is assumed to increase at a rate of 2 % per annum for the years upto 2005 and 2010, and 1 % upto 2020 by 1 %. Transport of cargo is also small, less than 1 % in volume because the planes used are in small sizes, and demand of transport through airlines has not developed in all aimags in various reasons. The same growth ratio to passengers are adopted.

AP. Table 5-8-20 Fare comparison between Railways and Buses, Passengers

Distance km	Railways			Buses
	Seat reserved	Seat free	Average	
30	190	190	190	200
60	635	328	482	500
90	789	482	636	800
150	1,381	767	1,074	1000
200	1,573	959	1,266	1200
300	2,072	1,228	1,650	2400
400	2,490	1,569	2,030	3250
560	2,386	1,914	2,375	4100
700	3,258	2,183	2,721	-

Source: Mongolian Railways, (August 1996)
 Tabulated through the bus fare table at Ulaanbaatar Bus Center and Dept. of Road Transport (August 1996). No difference between the paved and earth road.
 Only buses of Z r.t. are in operation daily between Ulaanbaatar and Darkhan on the paved road.

Notes: Assuming the distance of 60km, 200km and 400km, the following travel costs in Tugrik are calculated. (railway in average of "seat & free", and bus fare per person)

Distance km	Railway Average	Bus
60	482/person	500/person
200	1,228/person	1,200/person
400	2,030/person	2,250/person

The fare seems mostly same for 200 km, but the travel time is shorter for buses. Longer distance travel will be advantageous for railways in terms of the fare payment, but no official scheduled bus service is in operation on roads parallel to railways, except Ulaanbaatar-Darkhan. Travel time is much larger by railways.

Ap. Table 5-8-21 Fare Comparison between Railways and Road Truck, Cargoe

(Tug /km in 1996)

Distance km	Railways (capacity 20-30 tons)*			Truck (assuming 4 ton load capacity)**, Tug/km		
	2 Chemical, Elec. Appl	10 Coal	9 Cotton, Wool, Paper	Cargo I Floor, Coal Cement, Sand, Rice, Wheat	Cargo II Hay, Fodcotton, Wool, Fuelwood interior mat	Cargo III
5	-	-	-	58.95	76.98	103.4
10	-	-	-	45.36	60.89	81.41
30	7,594	2,520	4,452	38.57	51.86	69.24
60	12,570	4,057	7,857	34.00	45.52	60.67
90	18,594	5,929	11,888	29.89	40.17	53.22
150	32,473	9,912	20,582	28.15	37.01	51.64
200	45,043	12,385	25,874	28.15	37.01	51.64
300	61,278	18,551	39,228	28.15	37.01	51.64
400	85,632	25,632	54,626	28.15	37.01	51.64
560	113,914	34,369	72,487	28.15	37.01	51.64
700	141,935	42,768	89,664	28.15	37.01	51.64

Source: *Mongolian Railways, August 1996

** Dept of Road Transport, August 1996

Notes: Private truck owners do their own fare charge and service which are hard to know to what extent they do fare discount from the above rate. The same unit fares are said applied to paved and non-paved roads by trucks.

: The above nominal fare table shows the following exemplified calculation of transport per ton-km (a wagon at 20 ton load and a truck 4 ton load are used for tabulations, and unit is in Tugrik.)

: The calculation foris shown below

km	Wool, papper, etc.		Chemical, coal, etc.	
	Railway code 9	Truck code III	Railway code 2	Truck code I
200	25,874/20 =1,294/t	51.64x200x2/4 =5164/ton	12,385/20 =619/t	28.15x200x2/4km =2,815/ton
ratio		1 5164/1294=4.0		1 2815/619=4.6
400	54,626/20 =2,731/t	51.64x400x2/4 =10328/ton	25,632/20 =1,282/t	28.15x400x2/4 =5630/ton
ratio		1 10328/2.731=3.8		1 5630/1282=4.4

Although travel time is quite shorter than rail transport, fare charge by truck on roads is roughly 4 times higher. In reality truck owners do discount the rate, but practical figures are hard to identify. Owners/drivers of private vehicles say the fare depends on conditions changing month to month.

Ap Table 5-8-22 Industrial Production and Population by Aimag, 1990-96

SALES OF INDUSTRIAL PRODUCTION
by Aimag and capital city (mn tug. in current prices)

	1989	1990	1991	1992	1993	1994	1995	1996
Arhangai	37	47	82.2	160.8	647.3	823.8	627.4	1070.0
Bayan-Oligii	96.4	108.3	179.5	352.7	1109.2	1414.7	1429.4	1335.8
Bayanhongor	61.2	65.3	99.9	138.7	1466.9	1696.1	1596.1	1796.9
Bulgan	31.4	44.3	119.4	112.4	505.1	1269.1	1971.4	1833.5
Gobi-Altai	46.8	51.3	91.2	88.4	603.8	439.5	727.7	991.8
Dornogobi	50.1	51.5	80.8	135.1	966.7	368.6	392.7	594.3
Dornod	285	256.5	475	856.3	2646.8	3041.3	2263.8	3118.7
Dundgobi	37.9	43	78.7	130.3	562.7	869.2	319.5	338.7
Zavhan	120.2	118.9	186.8	271.1	294.1	1181.9	1289.1	1373.4
Ovorkhangai	98.8	99.6	162.5	387.3	1195.1	2410.6	3787.2	5314.6
Omnogobi	29	36.6	75.2	130.4	457.8	879.6	826.9	856.3
Subbaatar	34.6	38.4	83	102.7	482.7	812.3	1592.5	1232.5
Selenge	368.3	391.9	1496.5	637.2	2987	5305.2	10320.5	9356.6
Tov	55.2	70.1	217.7	431.9	1591.5	4330.9	8930.3	14169.6
Uvs	84.3	90.4	153.3	185.1	1269.5	1592.6	1628.3	1362.6
Hovd	70.1	80.6	119.3	119.2	236.8	903.1	536.7	703.0
Howsgol	82	98.3	160.2	279.6	978	2160.6	2754.9	2397.3
Hentii	73.8	88.3	161.7	307.3	760.4	1027.5	1584	1526.3
Darhan-Uul	903.1	816.9	966	1643.3	8365.3	13385	15368	18706.1
Ulaanbaatar	4669.4	4700.8	8098.9	16020	62272	95451	111687.5	109171.9
Orhon	1097	1127.2	1092.4	5227.4	66569	93151	124411.8	128064.3
Gobisumber	-	-	-	-	390.8	775.2	573.1	517.5
Total	8331.7	8425.4	14180	27717	156358	233289	294612.8	312103.0
In ratio	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Arhangai	0.004	0.006	0.006	0.006	0.004	0.004	0.002	0.003
Bayan-Oligii	0.012	0.013	0.013	0.013	0.007	0.006	0.005	0.004
Bayanhongor	0.007	0.008	0.007	0.005	0.009	0.007	0.005	0.006
Bulgan	0.004	0.005	0.008	0.004	0.003	0.005	0.007	0.006
Gobi-Altai	0.006	0.006	0.006	0.003	0.004	0.002	0.002	0.003
Dornogobi	0.006	0.006	0.006	0.005	0.006	0.002	0.001	0.002
Dornod	0.034	0.030	0.033	0.031	0.017	0.013	0.008	0.010
Dundgobi	0.005	0.005	0.006	0.005	0.005	0.004	0.001	0.001
Zavhan	0.014	0.014	0.013	0.010	0.002	0.005	0.004	0.004
Ovorkhangai	0.012	0.012	0.011	0.014	0.008	0.010	0.013	0.017
Omnogobi	0.003	0.004	0.005	0.005	0.003	0.004	0.003	0.003
Subbaatar	0.004	0.005	0.006	0.004	0.003	0.003	0.005	0.004
Selenge	0.044	0.047	0.106	0.023	0.019	0.023	0.035	0.030
Tov	0.007	0.008	0.015	0.016	0.010	0.019	0.030	0.045
Uvs	0.010	0.011	0.011	0.007	0.008	0.007	0.006	0.004
Hovd	0.008	0.010	0.008	0.004	0.002	0.004	0.002	0.002
Howsgol	0.010	0.012	0.011	0.010	0.006	0.009	0.009	0.008
Hentii	0.009	0.010	0.011	0.011	0.005	0.004	0.005	0.005
Darhan-Uul	0.108	0.097	0.068	0.059	0.054	0.057	0.052	0.060
Ulaanbaatar	0.560	0.558	0.571	0.578	0.398	0.409	0.379	0.350
Orhon	0.132	0.134	0.077	0.189	0.426	0.399	0.422	0.410
Gobisumber	-	-	-	-	0.002	0.003	0.002	0.002
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Statistical Yearbook, 1996 (SOM, 1997)

POPULATION, by Aimag and capital city, by permanent population
/ at the end of the year in '000

	1990	1991	1992	1993	1994	1995	1996
Arhangai	89.2	92.0	93.6	103.4	102.2	103.0	104.0
Bayan-Oligii	99.2	101.0	93.0	75.7	86.4	90.1	91.6
Bayanhongor	78.6	81.0	83.7	85.9	85.5	89.5	90.5
Bulgan	56.7	57.0	62.5	61.7	62.4	63.3	64.1
Gobi-Altai	65.1	67.7	71.7	72.4	73.3	74.1	74.8
Dornogobi	57.6	48.3	49.9	49.2	47.6	48.2	48.8
Dornod	76.6	79.6	80.7	85.0	83.4	84.6	85.5
Dundgobi	51.9	53.0	55.7	51.9	51.7	52.7	53.4
Zavhan	93.5	95.9	97.4	102.5	104.2	105.8	106.5
Ovorkhangai	100.3	104.8	106.6	110.4	111.0	112.9	113.8
Omnogobi	43.6	44.9	47.0	46.0	44.0	44.8	45.5
Subbaatar	53.5	55.6	56.1	57.0	58.7	59.1	59.5
Selenge	91.2	93.3	93.7	92.4	101.4	102.9	104.3
Tov	105.8	107.8	112.8	109.9	109.6	110.9	112.3
Uvs	91.5	91.6	93.5	99.0	99.7	101.9	102.9
Hovd	80.8	83.4	84.8	88.1	89.5	90.4	91.8
Howsgol	106.6	110.9	112.8	117.6	118.3	120.1	121.3
Hentii	74.2	75.0	77.6	73.9	73.9	75.2	76.3
Darhan-Uul	82.2	85.4	86.5	92.5	87.9	89.4	90.9
Ulaanbaatar	555.2	562.6	575.0	594.0	608.6	616.9	629.2
Orhon	50.0	52.3	53.0	62.9	63.8	64.6	67.3
Gobisumber	0.0	11.5	12.0	11.6	11.9	12.4	12.8
Total	2103.3	2154.6	2199.6	2243.0	2275.0	2312.8	2347.1
In ratio	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Arhangai	0.042	0.043	0.043	0.046	0.045	0.045	0.045
Bayan-Oligii	0.047	0.047	0.042	0.034	0.038	0.039	0.039
Bayanhongor	0.037	0.038	0.038	0.038	0.038	0.039	0.039
Bulgan	0.027	0.026	0.028	0.028	0.027	0.027	0.027
Gobi-Altai	0.031	0.031	0.033	0.032	0.032	0.032	0.032
Dornogobi	0.027	0.022	0.023	0.022	0.021	0.021	0.021
Dornod	0.036	0.037	0.037	0.038	0.037	0.037	0.037
Dundgobi	0.025	0.025	0.025	0.023	0.023	0.023	0.023
Zavhan	0.044	0.045	0.044	0.044	0.046	0.046	0.046
Ovorkhangai	0.048	0.049	0.048	0.049	0.049	0.049	0.049
Omnogobi	0.021	0.021	0.021	0.021	0.019	0.019	0.019
Subbaatar	0.025	0.026	0.026	0.025	0.026	0.026	0.026
Selenge	0.043	0.043	0.043	0.041	0.045	0.044	0.044
Tov	0.050	0.050	0.051	0.049	0.048	0.048	0.048
Uvs	0.044	0.043	0.043	0.044	0.044	0.044	0.044
Hovd	0.038	0.039	0.039	0.039	0.039	0.039	0.039
Howsgol	0.051	0.051	0.051	0.052	0.052	0.052	0.052
Hentii	0.035	0.035	0.035	0.033	0.033	0.033	0.033
Darhan-Uul	0.039	0.040	0.039	0.041	0.039	0.039	0.039
Ulaanbaatar	0.264	0.261	0.261	0.265	0.268	0.267	0.267
Orhon	0.024	0.024	0.024	0.028	0.028	0.028	0.028
Gobisumber	0.000	0.005	0.005	0.005	0.005	0.005	0.005
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Appendix Table 5-8-23 Link volume between the Stations, Passengers and Cargoes, 1995-2020

Direction	Year	N to S				S to N				Total				
		1995	2005	2010	2020	1995	2005	2010	2020	1995	2005	2010	2020	
Link	km	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	Total '000	
A. Passengers	Project sections	18	67.5	89	97.9	107.7	64.2	101.9	123.1	163.9	131.7	190.9	221.0	271.6
	10-70	104	217.8	289.9	318.8	350.8	262.8	365.0	411.0	477.5	480.6	654.9	729.8	828.3
	70-90	30	300.1	401.4	442.1	487.5	272.8	378.4	425.7	492.0	572.9	779.8	867.8	979.5
	90-130	74	440.5	590.6	651.2	718.7	393.3	539.5	602.8	685.9	833.8	1130.1	1254.0	1404.6
	130-170	83	547	736.7	814.3	900.9	563.5	772.3	862.2	975.1	1110.5	1509.0	1676.5	1876.0
	170-220	81	558.7	752.7	832	920.6	606.6	831.2	927.6	1048.0	1165.3	1583.9	1759.6	1968.6
	220-230	7	572.5	771.6	853.1	944.0	696.8	954.1	1064.4	1200.2	1269.3	1725.7	1917.5	2144.2
	230-270	48	305.1	408.1	449.8	496.2	358.4	479.5	528.2	582.5	663.5	887.6	978.0	1078.7
	270-310	59	276.1	368.5	405.7	447.2	354.3	473.8	521.8	575.3	630.4	842.3	927.5	1022.5
	310-350	140	221.1	294.8	324.5	357.2	299.6	400.4	440.9	486.0	520.7	695.2	765.4	843.5
350-390	103	195.7	260.6	286.7	315.8	272.9	364.5	401.2	442.1	468.6	625.1	687.9	757.9	
390-410	124	174.7	232.3	255.5	281.3	256.5	342.2	376.6	417.7	431.2	574.5	632.1	699.0	
410-450	235	149.1	197.9	217.5	239.2	213.4	284.5	312.9	344.5	362.5	482.4	530.4	583.7	
450-460	2	6.6	7.6	8.9	10.5	23.9	31.0	33.7	36.8	30.5	38.6	42.6	47.3	
Project aver.in '000 tot	445	376.0	504.4	556.6	614.7	392.2	538.7	602.3	685.5	768.1	1043.1	1158.9	1300.2	
Oth. Sect aver.in '000tc	663	186.1	247.7	272.5	300.0	260.0	347.1	382.0	421.6	446.1	594.8	654.5	721.6	
All Sect. aver.in '000tc	1108	262.9	351.5	387.3	427.3	313.4	424.6	471.1	528.3	576.3	776.1	858.4	955.6	
B. Cargoes	Project sections	18	908.9	1458.1	1725.6	1944.9	631.9	666.7	686.6	724.9	1540.9	2124.8	2412.1	2669.8
	10-70	104	980.5	1575.3	1873.5	2145.4	714.1	889.6	962.3	1031.9	1694.5	2464.8	2835.8	3177.3
	70-90	30	1837.5	2471.6	2871.4	3339.1	717.6	929.3	1016.0	1092.5	2555.1	3400.9	3887.4	4431.6
	90-130	74	1412.8	1893.0	2208.4	2605.6	483.9	879.3	1032.9	1181.6	1896.7	2772.3	3261.3	3787.2
	130-170	83	1398.8	1886.7	2203.8	2604.9	510.2	930.6	1115.3	1246.8	1909.0	2817.3	3319.1	3851.6
	170-220	81	1408.6	1903.6	2224.9	2631.9	542.8	988.7	1184.3	1323.5	1951.4	2892.3	3409.2	3955.3
	220-230	7	1271.2	1699.8	1987.5	2380.4	946.1	1994.4	2434.3	2725.9	2217.3	3694.2	4421.9	5106.3
	230-270	48	488.8	715.1	843.5	1044.9	3502.9	6543.1	7946.4	8759.2	3991.6	7258.2	8789.9	9804.0
	270-310	59	473.3	688.3	810.3	1003.7	3510.3	6556.7	7959.8	8774.1	3983.6	7245.0	8770.1	9777.8
	310-350	140	500.4	730.6	861.4	1061.8	563.2	1604.9	1972.9	2180.5	1063.6	2335.5	2834.3	3242.3
350-390	103	548.2	1036.8	1248.1	1477.9	285.0	385.2	438.4	491.6	833.2	1422.0	1686.5	1969.5	
390-410	124	463.9	716.3	845.9	1034.5	186.9	307.3	373.2	437.9	650.8	1023.5	1219.1	1472.4	
410-450	235	420.5	599.4	701.1	874.6	93.6	151.7	179.5	196.5	514.1	751.0	880.6	1071.1	
450-460	2	347.2	475.7	547.5	686.1	93.8	151.3	179.1	196.0	441.0	627.0	726.6	882.1	
Project aver.in '000 tot	445	1233.3	1737.1	2036.8	2385.3	914.0	1522.0	1794.4	1976.1	2147.3	3259.1	3831.2	4361.4	
Oth. Sect aver.in '000tc	663	465.5	708.0	835.6	1025.9	539.0	1089.9	1323.7	1467.0	1004.5	1797.9	2159.3	2492.9	
All Sect. aver.in '000tc	1108	775.9	1124.1	1321.3	1575.5	690.6	1264.6	1514.0	1672.8	1466.5	2388.7	2835.3	3248.4	

Appendix Table 5-8-24 Arrival and Departure by Station, Passengers and Cargoes, 1995-2020

Station N to S	(In '000 tons)																											
	Domestic Passengers				Out going				Come in				Transit				N to S Arr&Dep											
	95	05	10	20	95	05	10	20	95	05	10	20	95	05	10	20	95	05	10	20								
00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.4	84.9	93.8	103.6	4.1	4.1	4.1	4.1	67.5	89.0	97.9	107.7								
100	178.5	238.2	262.1	288.6	0.0	0.0	0.0	0.0	28.3	37.3	41.2	45.3	0.0	0.0	0.0	0.0	206.8	275.6	303.3	334.1								
700	256.0	342.3	376.9	415.3	0.0	0.0	0.0	0.0	11.5	15.4	17.1	18.8	0.0	0.0	0.0	0.0	267.5	357.8	395.9	434.1								
710	56.4	73.0	82.4	90.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.4	73.0	82.4	90.6								
900	22.1	29.5	32.4	35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1	29.5	32.4	35.6								
910	250.1	334.5	368.3	406.0	0.0	0.0	0.0	0.0	2.6	3.5	3.8	4.2	0.0	0.0	0.0	0.0	252.7	338.0	372.2	410.2								
1300	222.5	302.3	335.6	372.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	222.5	302.3	335.6	372.9								
1700	21.6	29.4	32.7	36.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.6	29.4	32.7	36.4								
2200	83.9	114.4	127.2	141.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.9	114.4	127.2	141.6								
2210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
2300	818.0	1102.5	1218.8	1348.7	0.0	0.0	0.0	0.0	21.0	28.7	31.7	33.0	0.0	0.0	0.0	0.0	839.0	1131.1	1250.5	1383.6								
2700	30.7	41.8	46.5	51.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.7	41.8	46.5	51.7								
3100	48.4	64.8	71.4	78.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.4	64.8	71.4	78.7								
3110	12.6	16.9	18.6	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	16.9	18.6	20.3								
3500	37.8	50.6	55.7	61.3	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.9	50.7	55.8	61.5								
3900	17.2	22.8	25.0	27.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.2	22.8	25.0	27.3								
3910	18.0	24.1	26.5	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	24.1	26.5	29.2								
4100	65.6	87.1	95.6	103.1	0.3	0.3	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.9	87.4	96.0	103.5								
4110	18.0	23.9	26.2	28.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	23.9	26.2	28.7								
4500	144.8	193.4	212.9	234.3	3.5	3.5	4.3	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	148.3	196.9	217.2	240.3								
4600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
SUM	2302.0	3093.4	3414.8	3772.9	7.8	7.8	9.5	12.8	126.9	169.8	187.5	207.1	8.2	8.2	8.2	8.2	2444.9	3279.3	3620.0	4001.1								
Station S to N	Domestic Passengers												Out going				Come in				Transit				S to N Arr&Dep			
00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	205.3	273.8	301.0	331.2	10.7	10.7	13.1	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	4.4	4.4	4.4	101.9	101.9	123.0	163.8				
700	266.3	355.8	391.6	431.3	9.6	9.6	11.7	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	216.1	284.5	314.0	348.7				
710	47.2	62.9	69.0	75.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.2	62.9	69.0	75.9				
900	24.6	32.8	36.1	39.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.6	32.8	36.1	39.7				
910	203.5	272.0	299.4	330.0	6.3	6.3	7.9	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	210.0	278.5	307.4	340.6				
1300	239.3	332.8	391.9	435.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239.3	332.9	392.0	435.8				
1700	45.1	61.5	68.4	76.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.1	61.5	68.4	76.1				
2200	105.5	143.8	159.9	178.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	105.5	143.8	159.9	178.0				
2210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
2300	964.5	1302.0	1440.5	1593.3	70.6	70.6	83.9	115.4	17.8	24.3	26.8	29.6	0.0	0.0	0.0	0.0	1052.9	1396.9	1553.2	1740.3								
2700	13.2	17.9	19.9	22.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	17.9	19.9	22.1								
3100	42.4	56.6	62.4	68.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.4	56.6	62.4	68.8								
3110	24.5	32.9	36.2	39.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.5	32.9	36.2	39.9								
3500	39.4	52.6	57.9	63.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.4	52.6	57.9	63.8								
3900	17.3	23.0	25.2	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	23.0	25.2	27.7								
3910	19.3	25.9	28.5	31.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	25.9	28.5	31.4								
4100	71.8	95.5	104.9	115.4	0.0	0.0	0.0	0.0	1.7	2.3	2.5	2.8	0.0	0.0	0.0	0.0	73.5	97.8	107.5	118.2								
4110	15.1	20.0	22.0	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	20.0	22.0	24.2								
4500	189.3	253.5	279.2	307.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	189.3	253.5	279.2	307.7								
4600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
SUM	2553.9	3435.3	3794.0	4194.1	195.1	195.1	237.3	318.9	39.0	53.1	58.7	64.8	8.7	8.7	8.7	8.7	2786.7	3692.2	4098.7	4586.6								

(in '000 tons)

Station	Domestic Others						Domestic Coal						Export Others						Import Petro					
	95		10		20		95		10		20		95		10		20		95		10		20	
	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	
00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	102.6	172.7	215.0	267.6	66.6	196.2	242.3	266.5	43.4	56.9	68.8	83.6	191.4	22.7	326.9	39.3	589.6	724.4	862.3	57.5	48.3	54.3	64.7	10.4
70	324.4	551.4	686.5	854.7	382.8	319.8	326.0	358.6	53.6	53.6	87.4	106.3	219.3	24.7	4.1	7.1	7.1	8.7	10.4	4.0	2.7	3.3	4.0	117.0
71	42.3	70.7	88.0	109.6	4.9	6.0	7.0	7.7	7.2	11.4	13.9	16.6	36.5	46.4	79.9	98.2	117.0	10.2	12.1	0.0	0.0	0.0	0.0	0.0
90	105.6	177.8	221.3	275.5	316.6	441.4	515.1	566.6	5.0	7.9	9.6	11.7	142.5	139.6	8.3	10.2	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	67.6	113.5	141.3	175.9	55.1	81.2	95.9	105.5	13.1	20.7	25.2	32.6	44.4	48.8	8.3	10.2	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	22.5	38.2	47.6	59.2	5.6	13.5	16.6	18.2	2.3	3.6	4.4	5.4	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220	99.7	170.3	212.0	264.0	325.4	823.6	1017.8	1119.5	30.6	0.0	0.0	0.0	62.5	139.6	258.6	317.8	378.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
221	222.5	384.1	478.2	595.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230	483.7	830.0	1033.4	1286.6	3044.9	5027.2	6029.0	6631.9	68.4	114.5	139.4	144.3	344.3	46.2	84.7	104.1	124.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
270	19.4	33.3	41.5	51.7	20.1	36.1	46.7	51.4	0.4	0.8	0.9	0.9	0.0	0.4	0.7	0.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
310	19.1	32.2	40.1	49.9	3.0	6.1	7.5	8.2	0.4	0.7	0.8	0.8	1.3	7.0	12.1	14.9	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
311	28.5	48.0	59.8	74.4	2954.9	4963.8	6000.0	6600.0	7.2	11.5	14.0	17.6	37.6	5.0	8.6	10.6	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
350	72.5	121.5	151.3	188.4	363.9	1590.0	2000.3	2200.3	4.4	7.0	8.5	10.3	22.6	10.3	17.8	21.9	26.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
390	114.5	191.3	238.2	296.6	9.3	26.0	32.2	35.5	1.9	3.0	3.7	4.4	10.6	3.5	6.1	7.5	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
391	154.6	258.1	321.4	400.1	65.5	278.1	349.9	384.9	16.7	26.4	32.1	37.7	83.3	3.5	6.1	7.5	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
410	105.7	176.6	219.9	273.8	33.7	98.8	123.2	135.5	0.2	0.4	0.5	0.5	1.3	0.2	0.4	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
411	13.3	22.3	27.8	34.6	6.6	12.3	15.2	16.8	0.5	0.8	0.9	0.9	2.3	0.9	1.6	1.9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
450	64.8	108.8	135.5	168.6	7.9	14.0	17.1	18.8	0.5	0.8	0.9	0.9	2.3	0.9	1.6	1.9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
460	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2091.2	3547.4	4416.5	5498.6	8631.0	14737.1	17643.0	19407.3	519.2	845.7	1028.9	1182.2	1452.6	656.8	1182.2	1452.6	1729.4							

Station	Cooper & Filivente						Import OTH						Total											
	95		10		20		95		10		20		95		10		20		95		10		20	
	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	05	Total	
00	133.8	133.8	133.8	133.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
270	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
310	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
311	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
390	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
391	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
410	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
411	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
450	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
460	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	133.8	133.8	133.8	133.8	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6

Notes: Intra-zone short movements are not included.

Chapter 6

APPENDIX

- APPENDIX 6-1 Passenger Car's Utilization and Number of Formation
- APPENDIX 6-2 Train Formation and Nominal Passenger Capacity
- APPENDIX 6-3 Monthly Passenger Traffic Volume
- APPENDIX 6-4 Monthly Passengers Boarding Efficiency
- APPENDIX 6-5 Passenger Train's Delay Time (1994)
- APPENDIX 6-6 Passenger Train Operation Time and Commercial Speed
- APPENDIX 6-7 Monthly Freight Traffic Volume (1995)
- APPENDIX 6-8 Train Operation Time and Hauling Capacity (1996)
- APPENDIX 6-9 Summary of Fare System
- APPENDIX 6-10 Hauling Capacity and Track Capacity etc. (1996)
- APPENDIX 6-11 Load Curve
- APPENDIX 6-12 Occurrence of Serious Accidents in MR (1991 - 1995)
- APPENDIX 6-13 Track Layout of Rolling Stock Depot
- APPENDIX 6-14 Transport Plan (passenger Train formation and Nominal Passenger Capacity)
- APPENDIX 6-15 Passenger Train Utilization Chart (1996, 2005, 2010, 2020)
- APPENDIX 6-16 Hauling Capacity and Net ton
- APPENDIX 6-17 Passenger Transport Plan
- APPENDIX 6-18 Freight Transport Plan
- APPENDIX 6-19 Transport (Number of Train by Section)
- APPENDIX 6-20 Example of Train Diagram (2020)
- APPENDIX 6-21 Example of Locomotive Utilization Chart (2020)


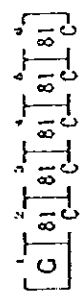
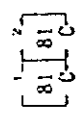
Appendix 6-1 Passenger car's Utilization and Number of Formation (1996)

Coach Depot	Utilization		No. of Formation	Cars / Formation	Total No. of cars
1 Sukhe-baatar	Station : U.B. S.B. Irku. U.B. E-3 U.B. Train No.: 263 → 272 → 278 → 277 U.B. Train No.: 263 → 272 → 282 → 281 U.B. Choir U.B.	U.B. Airag S.S. Z.U. U.B.	3	1 4 S: 6 C: 7	4 2
2 Erdenet	U.B. A Shar, gol 273 → [962,3 971,2] → 274 → 276 → [276 → 275 --273 G Z.B. 924-921] [312,1] F. Boron. 952,951	U.B. Airag S.S. Z.U. U.B.	4	1 5 (+3) G: 1 D: 1 S: 5+1 C: 8+2	6 3
3 Darkhan-1	U.B. 6W Darkhan-1 U.B. 211 → 264		1	5 S: 1 C: 4	5
4 Mandal	17W Mandal U.B. Mandal 702 → 701		1	6 G: 1 C: 5	6
5 Ulaan-baatar	U.B. 5 Mosco U.B. → 6		2	1 8 G: 2 D: 1 S: 15	3 6
6 Zamyn-ood	U.B. 45W Z.U. Beijin Z.U. U.B. 24 → 23		1	1 2 G: 2 D: 1 S: 10	1 2
7 Erenhot	U.B. Erenhot U.B. 216 → 215		1	7 G: 1 S: 6	7
Number of cars in use		U.B. Erenhot U.B. 22 → 21	1	1 3 G: 2 D: 1 S: 10	1 3
Number of cars owned			1 4		1 8 4
					2 3 3

Note. Compiled on the basis of data provided by the MR.

Appendix 6-2 Train formation and Nominal passenger capacity (2)

No. 2

Train Number	Operating section	Operat. date	In use	Formation	Nominal pass. capacity
211	Darkh.1 ↔ Ulan-b.	Daily		211 : to Ulaanbaatar : couple to 204	5c : 360pers.
			→ 264		[1 Formation]
701	Mandal ↔ Ulan-b.	Daily			6c : 405pers.
702	Mandal → Ulan-b.	Daily	2~7		[1 Formation]
702"	Mandal ↔ Ulan-b.	7	Insted of 702	Same	
				Only Sun day	
963	Darkh.1 ↔ Shar-g. (A)	Daily			2c : 162pers.
964	Darkh.1 → Shar-g. (A)	Daily			(included in train 273)
961	Darkh.1 ↔ Shar-g. (A)	Daily		Same	(included in train 273)
962	Darkh.1 → Shar-g. (A)	Daily		Same	(included in train 273)
971	Sukhe-b. ↔ Darkh.1	Daily		Same	(included in train 273)
972	Sukhe-b. → Darkh.1	Daily		Same	(included in train 273)

Appendix 6-3 Monthly Passenger Traffic Volume (1995)

Month	1	2	3	4	5	6	7	8	9	10	11	12	Total	Average																																																																																																																																																																																																																																																																																																																																																																																						
Aver. Operating km	261	241	239	250	249	228	198	221	244	245	254	264		241																																																																																																																																																																																																																																																																																																																																																																																						
Number of Stations	37	37	37	38	38	38	38	38	38	38	38	38		38																																																																																																																																																																																																																																																																																																																																																																																						
Train-km (x10 ³ km)	195.0	170.4	188.7	181.2	193.5	214.7	222.0	227.2	219.6	213.3	209.2	203.9	2438.7	203.2																																																																																																																																																																																																																																																																																																																																																																																						
Car-km (x10 ⁶ km)	2.2	1.8	2.0	1.9	2.1	2.1	2.3	2.3	2.2	2.2	2.2	2.3	25.6	2.1																																																																																																																																																																																																																																																																																																																																																																																						
No. of passengers (x10 ³)																																																																																																																																																																																																																																																																																																																																																																																																				
	<table border="1"> <tr> <td>Arrive From Russia</td> <td>13.3</td> <td>7.1</td> <td>7.7</td> <td>0.1</td> <td>11.3</td> <td>0.5</td> <td>6.9</td> <td>2.6</td> <td>2.4</td> <td>3.4</td> <td>3.0</td> <td>2.8</td> <td>61.1</td> <td>5.1</td> </tr> <tr> <td>From China</td> <td>0.2</td> <td>6.7</td> <td>5.2</td> <td>1.0</td> <td>1.4</td> <td>1.0</td> <td>1.1</td> <td>0.9</td> <td>1.2</td> <td>1.9</td> <td>1.5</td> <td>0.6</td> <td>22.7</td> <td>1.9</td> </tr> <tr> <td>Total</td> <td>13.5</td> <td>13.8</td> <td>12.9</td> <td>1.1</td> <td>12.7</td> <td>1.5</td> <td>8.0</td> <td>3.5</td> <td>3.6</td> <td>5.3</td> <td>4.5</td> <td>3.4</td> <td>83.8</td> <td>7.0</td> </tr> <tr> <td>Depart. To Russia</td> <td>7.1</td> <td>6.4</td> <td>6.6</td> <td>6.2</td> <td>4.3</td> <td>4.0</td> <td>3.8</td> <td>4.2</td> <td>4.0</td> <td>4.1</td> <td>5.1</td> <td>5.1</td> <td>60.9</td> <td>5.1</td> </tr> <tr> <td>To China</td> <td>3.4</td> <td>2.2</td> <td>2.6</td> <td>2.2</td> <td>3.6</td> <td>4.2</td> <td>2.3</td> <td>4.9</td> <td>4.4</td> <td>3.8</td> <td>3.4</td> <td>2.6</td> <td>39.6</td> <td>3.3</td> </tr> <tr> <td>Total</td> <td>10.5</td> <td>8.6</td> <td>9.2</td> <td>8.4</td> <td>7.9</td> <td>8.2</td> <td>6.1</td> <td>9.1</td> <td>8.4</td> <td>7.9</td> <td>8.5</td> <td>7.7</td> <td>100.5</td> <td>8.4</td> </tr> <tr> <td>Transit To China</td> <td>0.6</td> <td>0.6</td> <td>0.3</td> <td>0.3</td> <td>0.5</td> <td>0.3</td> <td>0.2</td> <td>0.3</td> <td>0.4</td> <td>0.4</td> <td>0.3</td> <td>0.2</td> <td>4.1</td> <td>0.3</td> </tr> <tr> <td>To Russia</td> <td>0</td> <td>0.8</td> <td>0.3</td> <td>0.5</td> <td>0.5</td> <td>0.3</td> <td>0.1</td> <td>0.6</td> <td>0.3</td> <td>0.5</td> <td>0.3</td> <td>0.2</td> <td>4.4</td> <td>0.4</td> </tr> <tr> <td>Total</td> <td>0.6</td> <td>1.4</td> <td>0.6</td> <td>0.8</td> <td>1</td> <td>0.6</td> <td>0.3</td> <td>0.9</td> <td>0.7</td> <td>0.9</td> <td>0.6</td> <td>0.4</td> <td>8.5</td> <td>0.7</td> </tr> <tr> <td>Domestic</td> <td>223.8</td> <td>183.9</td> <td>186.9</td> <td>181.8</td> <td>208.2</td> <td>228.7</td> <td>238.6</td> <td>267.2</td> <td>220.1</td> <td>233.2</td> <td>234.4</td> <td>227.6</td> <td>2634.4</td> <td>219.5</td> </tr> <tr> <td>Domestic Fluctuation</td> <td>101.9</td> <td>83.8</td> <td>85.1</td> <td>82.8</td> <td>94.8</td> <td>104.2</td> <td>108.7</td> <td>121.7</td> <td>100.3</td> <td>106.2</td> <td>106.8</td> <td>103.7</td> <td></td> <td>100.0</td> </tr> <tr> <td>Grand Total</td> <td>248.4</td> <td>207.7</td> <td>209.6</td> <td>191.8</td> <td>229.8</td> <td>239</td> <td>253</td> <td>280.7</td> <td>232.8</td> <td>247.3</td> <td>248</td> <td>239.1</td> <td>2827.2</td> <td>235.6</td> </tr> <tr> <td>Transp. Volume Fluctuation %</td> <td>105.4</td> <td>88.2</td> <td>89.0</td> <td>81.4</td> <td>97.5</td> <td>101.4</td> <td>107.4</td> <td>119.1</td> <td>98.8</td> <td>105.0</td> <td>105.3</td> <td>101.5</td> <td></td> <td>100.0</td> </tr> <tr> <td rowspan="4">Passenger-km (pars. -km) (mill-km)</td> <td colspan="14"></td> </tr> <tr> <td>Come-in</td> <td>2.2</td> <td>4.5</td> <td>2.4</td> <td>0.7</td> <td>3.6</td> <td>0.9</td> <td>1.5</td> <td>1.1</td> <td>1.5</td> <td>2.5</td> <td>1.9</td> <td>1.3</td> <td>24.1</td> <td>2.0</td> </tr> <tr> <td>Go-out</td> <td>4.2</td> <td>3.4</td> <td>3.7</td> <td>3.1</td> <td>3.8</td> <td>4.3</td> <td>2.7</td> <td>4.8</td> <td>4.4</td> <td>4.0</td> <td>4.1</td> <td>3.5</td> <td>46.0</td> <td>3.8</td> </tr> <tr> <td>Transit</td> <td>0.7</td> <td>1.6</td> <td>0.6</td> <td>0.5</td> <td>0.9</td> <td>0.7</td> <td>0.3</td> <td>1.1</td> <td>0.8</td> <td>1.0</td> <td>0.7</td> <td>0.5</td> <td>9.4</td> <td>0.8</td> </tr> <tr> <td>Domestic</td> <td>57.7</td> <td>40.6</td> <td>43.6</td> <td>43.7</td> <td>48.9</td> <td>48.6</td> <td>45.8</td> <td>54.9</td> <td>50.2</td> <td>53.2</td> <td>56.4</td> <td>57.8</td> <td>601.4</td> <td>50.1</td> </tr> <tr> <td>Total</td> <td>64.8</td> <td>50.1</td> <td>50.3</td> <td>48.0</td> <td>57.2</td> <td>54.5</td> <td>50.3</td> <td>61.9</td> <td>56.9</td> <td>60.7</td> <td>63.1</td> <td>63.1</td> <td>680.9</td> <td>56.7</td> </tr> <tr> <td rowspan="4">Income (mill-Tug)</td> <td colspan="14"></td> </tr> <tr> <td>Come-in</td> <td>27.4</td> <td>47.5</td> <td>22.2</td> <td>7.0</td> <td>34.5</td> <td>13.1</td> <td>25.4</td> <td>20.4</td> <td>19.7</td> <td>31.1</td> <td>2.4</td> <td>22.6</td> <td>273.3</td> <td>22.8</td> </tr> <tr> <td>Go-out</td> <td>93.4</td> <td>85.5</td> <td>93.4</td> <td>82.0</td> <td>81.5</td> <td>102.5</td> <td>96.2</td> <td>113.5</td> <td>103.3</td> <td>97.0</td> <td>101.3</td> <td>94.7</td> <td>1144.3</td> <td>95.4</td> </tr> <tr> <td>Transit</td> <td>6.9</td> <td>19.5</td> <td>10.7</td> <td>5.2</td> <td>9.2</td> <td>7.2</td> <td>3.6</td> <td>10.9</td> <td>7.9</td> <td>10.0</td> <td>6.8</td> <td>7.3</td> <td>105.2</td> <td>8.8</td> </tr> <tr> <td>Domestic</td> <td>228.8</td> <td>180.7</td> <td>195.4</td> <td>187.8</td> <td>217.8</td> <td>228.7</td> <td>228.6</td> <td>271.7</td> <td>220.4</td> <td>237.2</td> <td>246.3</td> <td>264.3</td> <td>2705.7</td> <td>225.5</td> </tr> <tr> <td>Total</td> <td>356.5</td> <td>333.2</td> <td>321.7</td> <td>282.0</td> <td>343.0</td> <td>349.5</td> <td>353.8</td> <td>416.5</td> <td>351.3</td> <td>375.3</td> <td>356.8</td> <td>388.9</td> <td>4228.5</td> <td>352.4</td> </tr> </table>														Arrive From Russia	13.3	7.1	7.7	0.1	11.3	0.5	6.9	2.6	2.4	3.4	3.0	2.8	61.1	5.1	From China	0.2	6.7	5.2	1.0	1.4	1.0	1.1	0.9	1.2	1.9	1.5	0.6	22.7	1.9	Total	13.5	13.8	12.9	1.1	12.7	1.5	8.0	3.5	3.6	5.3	4.5	3.4	83.8	7.0	Depart. To Russia	7.1	6.4	6.6	6.2	4.3	4.0	3.8	4.2	4.0	4.1	5.1	5.1	60.9	5.1	To China	3.4	2.2	2.6	2.2	3.6	4.2	2.3	4.9	4.4	3.8	3.4	2.6	39.6	3.3	Total	10.5	8.6	9.2	8.4	7.9	8.2	6.1	9.1	8.4	7.9	8.5	7.7	100.5	8.4	Transit To China	0.6	0.6	0.3	0.3	0.5	0.3	0.2	0.3	0.4	0.4	0.3	0.2	4.1	0.3	To Russia	0	0.8	0.3	0.5	0.5	0.3	0.1	0.6	0.3	0.5	0.3	0.2	4.4	0.4	Total	0.6	1.4	0.6	0.8	1	0.6	0.3	0.9	0.7	0.9	0.6	0.4	8.5	0.7	Domestic	223.8	183.9	186.9	181.8	208.2	228.7	238.6	267.2	220.1	233.2	234.4	227.6	2634.4	219.5	Domestic Fluctuation	101.9	83.8	85.1	82.8	94.8	104.2	108.7	121.7	100.3	106.2	106.8	103.7		100.0	Grand Total	248.4	207.7	209.6	191.8	229.8	239	253	280.7	232.8	247.3	248	239.1	2827.2	235.6	Transp. Volume Fluctuation %	105.4	88.2	89.0	81.4	97.5	101.4	107.4	119.1	98.8	105.0	105.3	101.5		100.0	Passenger-km (pars. -km) (mill-km)															Come-in	2.2	4.5	2.4	0.7	3.6	0.9	1.5	1.1	1.5	2.5	1.9	1.3	24.1	2.0	Go-out	4.2	3.4	3.7	3.1	3.8	4.3	2.7	4.8	4.4	4.0	4.1	3.5	46.0	3.8	Transit	0.7	1.6	0.6	0.5	0.9	0.7	0.3	1.1	0.8	1.0	0.7	0.5	9.4	0.8	Domestic	57.7	40.6	43.6	43.7	48.9	48.6	45.8	54.9	50.2	53.2	56.4	57.8	601.4	50.1	Total	64.8	50.1	50.3	48.0	57.2	54.5	50.3	61.9	56.9	60.7	63.1	63.1	680.9	56.7	Income (mill-Tug)															Come-in	27.4	47.5	22.2	7.0	34.5	13.1	25.4	20.4	19.7	31.1	2.4	22.6	273.3	22.8	Go-out	93.4	85.5	93.4	82.0	81.5	102.5	96.2	113.5	103.3	97.0	101.3	94.7	1144.3	95.4	Transit	6.9	19.5	10.7	5.2	9.2	7.2	3.6	10.9	7.9	10.0	6.8	7.3	105.2	8.8	Domestic	228.8	180.7	195.4	187.8	217.8	228.7	228.6	271.7	220.4	237.2	246.3	264.3	2705.7	225.5	Total	356.5	333.2	321.7	282.0	343.0	349.5	353.8	416.5	351.3	375.3	356.8	388.9	4228.5
Arrive From Russia	13.3	7.1	7.7	0.1	11.3	0.5	6.9	2.6	2.4	3.4	3.0	2.8	61.1	5.1																																																																																																																																																																																																																																																																																																																																																																																						
From China	0.2	6.7	5.2	1.0	1.4	1.0	1.1	0.9	1.2	1.9	1.5	0.6	22.7	1.9																																																																																																																																																																																																																																																																																																																																																																																						
Total	13.5	13.8	12.9	1.1	12.7	1.5	8.0	3.5	3.6	5.3	4.5	3.4	83.8	7.0																																																																																																																																																																																																																																																																																																																																																																																						
Depart. To Russia	7.1	6.4	6.6	6.2	4.3	4.0	3.8	4.2	4.0	4.1	5.1	5.1	60.9	5.1																																																																																																																																																																																																																																																																																																																																																																																						
To China	3.4	2.2	2.6	2.2	3.6	4.2	2.3	4.9	4.4	3.8	3.4	2.6	39.6	3.3																																																																																																																																																																																																																																																																																																																																																																																						
Total	10.5	8.6	9.2	8.4	7.9	8.2	6.1	9.1	8.4	7.9	8.5	7.7	100.5	8.4																																																																																																																																																																																																																																																																																																																																																																																						
Transit To China	0.6	0.6	0.3	0.3	0.5	0.3	0.2	0.3	0.4	0.4	0.3	0.2	4.1	0.3																																																																																																																																																																																																																																																																																																																																																																																						
To Russia	0	0.8	0.3	0.5	0.5	0.3	0.1	0.6	0.3	0.5	0.3	0.2	4.4	0.4																																																																																																																																																																																																																																																																																																																																																																																						
Total	0.6	1.4	0.6	0.8	1	0.6	0.3	0.9	0.7	0.9	0.6	0.4	8.5	0.7																																																																																																																																																																																																																																																																																																																																																																																						
Domestic	223.8	183.9	186.9	181.8	208.2	228.7	238.6	267.2	220.1	233.2	234.4	227.6	2634.4	219.5																																																																																																																																																																																																																																																																																																																																																																																						
Domestic Fluctuation	101.9	83.8	85.1	82.8	94.8	104.2	108.7	121.7	100.3	106.2	106.8	103.7		100.0																																																																																																																																																																																																																																																																																																																																																																																						
Grand Total	248.4	207.7	209.6	191.8	229.8	239	253	280.7	232.8	247.3	248	239.1	2827.2	235.6																																																																																																																																																																																																																																																																																																																																																																																						
Transp. Volume Fluctuation %	105.4	88.2	89.0	81.4	97.5	101.4	107.4	119.1	98.8	105.0	105.3	101.5		100.0																																																																																																																																																																																																																																																																																																																																																																																						
Passenger-km (pars. -km) (mill-km)																																																																																																																																																																																																																																																																																																																																																																																																				
	Come-in	2.2	4.5	2.4	0.7	3.6	0.9	1.5	1.1	1.5	2.5	1.9	1.3	24.1	2.0																																																																																																																																																																																																																																																																																																																																																																																					
	Go-out	4.2	3.4	3.7	3.1	3.8	4.3	2.7	4.8	4.4	4.0	4.1	3.5	46.0	3.8																																																																																																																																																																																																																																																																																																																																																																																					
	Transit	0.7	1.6	0.6	0.5	0.9	0.7	0.3	1.1	0.8	1.0	0.7	0.5	9.4	0.8																																																																																																																																																																																																																																																																																																																																																																																					
Domestic	57.7	40.6	43.6	43.7	48.9	48.6	45.8	54.9	50.2	53.2	56.4	57.8	601.4	50.1																																																																																																																																																																																																																																																																																																																																																																																						
Total	64.8	50.1	50.3	48.0	57.2	54.5	50.3	61.9	56.9	60.7	63.1	63.1	680.9	56.7																																																																																																																																																																																																																																																																																																																																																																																						
Income (mill-Tug)																																																																																																																																																																																																																																																																																																																																																																																																				
	Come-in	27.4	47.5	22.2	7.0	34.5	13.1	25.4	20.4	19.7	31.1	2.4	22.6	273.3	22.8																																																																																																																																																																																																																																																																																																																																																																																					
	Go-out	93.4	85.5	93.4	82.0	81.5	102.5	96.2	113.5	103.3	97.0	101.3	94.7	1144.3	95.4																																																																																																																																																																																																																																																																																																																																																																																					
	Transit	6.9	19.5	10.7	5.2	9.2	7.2	3.6	10.9	7.9	10.0	6.8	7.3	105.2	8.8																																																																																																																																																																																																																																																																																																																																																																																					
Domestic	228.8	180.7	195.4	187.8	217.8	228.7	228.6	271.7	220.4	237.2	246.3	264.3	2705.7	225.5																																																																																																																																																																																																																																																																																																																																																																																						
Total	356.5	333.2	321.7	282.0	343.0	349.5	353.8	416.5	351.3	375.3	356.8	388.9	4228.5	352.4																																																																																																																																																																																																																																																																																																																																																																																						

Compiled on the basis of data provided by the MR.

Appendix 6-4 Monthly Passengers Boarding Efficiency (1995)

(Domestic Train)

Train No.	Dep.	Ariv.	1	2	3	4	5	6	7	8	9	10	11	12	Total
271	23 U.B.	--	61.6	81.0	74.0	56.4	66.0	71.2	78.0	74.1	63.0	56.1	54.1	51.0	65.5
276	23 U.B.	--	98.5	100.4	97.2	96.8	98.0	98.5	102.0	100.0	99.0	97.6	98.3	99.4	98.8
273	23 U.B.	--	92.0	99.0	95.0	96.0	95.6	93.6	98.5	96.2	92.0	93.4	92.5	91.0	94.6
701	23 U.B.	--	51.4	98.0	48.4	52.2	55.6	61.0	90.6	60.1	55.6	48.0	45.0	41.0	58.9
263	23 U.B.	--	92.3	96.5	93.3	94.0	95.5	98.2	98.6	98.0	95.0	94.3	91.0	90.6	94.8
22	23 U.B.	--	93.3	81.7	91.0	94.0	95.0	94.0	88.4	91.0	96.0	93.1	96.0	98.3	92.7
278	23 U.B.	--	76.2	85.2	74.1	70.0	74.2	76.7	91.0	84.6	79.0	73.0	71.0	71.4	77.2
282	23 U.B.	--	75.0	84.0	73.0	72.0	73.2	75.6	89.0	83.5	79.2	72.8	69.0	73.6	76.7
272	1. S.B.	--	93.5	97.0	95.0	95.6	96.2	98.0	99.6	98.0	96.6	95.1	94.0	93.0	96.0
264	1. S.B.	--	93.5	97.0	95.0	95.6	96.2	98.0	99.6	98.0	96.6	95.1	94.0	93.0	96.0
275	45 Z.U.	--	99.0	100.0	98.9	100.0	99.0	99.0	100.0	100.0	99.8	100.0	99.8	100.0	99.6
277	E-3. Baga.	--	78.7	83.0	74.0	70.1	41.8	80.2	91.7	80.0	81.3	78.4	75.4	80.2	76.2
281	35 Choir	--	74.0	83.0	75.0	73.1	72.0	74.8	88.0	84.5	80.0	73.0	70.0	72.6	76.7
274	B-6 Erd.	--	92.3	98.0	96.1	96.8	94.8	92.6	98.3	95.8	93.8	93.0	93.7	92.6	94.8
702	17 Mand.	--	96.5	95.1	93.0	98.0	94.6	95.1	92.0	99.2	90.0	91.6	95.0	80.0	93.3
21	46 Eren.	--	93.0	82.0	91.8	96.0	94.3	93.0	90.6	91.4	96.1	92.5	96.5	98.2	93.0
211	23 U.B.	--	6. D.H.I	-	-	-	74.0	75.6	81.0	64.0	72.6	79.1	75.0	73.0	74.3

Compiled on the basis of data provided by the MR.

(International Train)

Train No.	Dep.	Ariv.	1	2	3	4	5	6	7	8	9	10	11	12	Total
5.6	1. S.B.	--	61.9	86.4	70.6	76.1	55.4	72.6	72.9	91.7	86.2	83.0	98.3	80.3	78.0
MR															
5.6	1. S.B.	--	43.4	84.3	61.8	72.4	77.1	67.7	51.3	68.6	75.7	79.8	95.0	85.7	71.9
Russia															
23.24	23 U.B.	--	-	-	-	-	60.0	62.0	68.0	61.9	60.5	58.0	55.2	52.8	59.8
MR															

Compiled on the basis of data provided by the MR.

Appendix6-5 Passenger train's Delay time(1994)

Month	No. of trains A	Delayed trains B	(A/B) (%)	Delay time (min)	Rate min/train (min)
1	919	827	90.0	878	9.5
2	881	783	88.9	843	8.6
3	926	852	92.0	1156	15.6
4	924	862	93.3	98	1.6
5	956	894	93.5	402	6.5
6	928	869	93.6	252	4.3
7	973	919	94.5	248	4.6
8	970	893	92.1	1,246	16.2
9	910	867	95.3	210	4.9
10	961	912	94.9	564	11.5
11	928	862	92.9	756	11.5
12	923	834	90.4	504	5.7
Total	11,199	10,374	-	-	-
Average	933	865	92.6	596	8.4

Notes. 1. Based on the data of the MR.
2. Delay cause: Delay of customs inspection, car trouble etc.

Appendix6-6 Passenger train Operation time and Commercial speed(1996)

T. No.	h:m	km/h	Section	km	T. No.	h:m:m	km/h
3,23	20:24	53.3	1 Sukhe-baatal ~ 45 Zamyn-uud	1,088km	4,24	20:50	52.2
5	7:03	53.8	1 Sukhe-baatar ~ 23 Ulaan-baatar	379	6	7:40	49.4
263	8:15	45.9	" ~ "	"	264	9:10	41.3
271	9:25	40.2	" ~ "	"	272	9:50	38.5
21	14:48	47.9	23 Ulaan-baatar ~ 45 Zamyn-uud	709	22	13:43	51.7
215	15:45	45.0	" ~ "	"	216	14:30	48.9
273	6:20	44.2	6 Darkhan ~ 23 Ulaan-baatar	280	274	5:47	48.4
275	17:35	40.3	23 Ulaan-baatar ~ 45 Zamyn-uud	709	276	18:00	39.4
277	4:35	43.9	23 Ulaan-baatar ~ E-3 Baga-nuur	201	278	4:40	43.1
281	6:00	41.2	23 Ulaan-baatar ~ 35 Choir	247	282	5:20	46.3
311	5:00	39.8	6 Darkhan-1 ~ D-6 Erdenet	199	312	5:14	38.0
313	4:00	49.8	" ~ "	"	-	-	-
701	2:20	37.7	17 Mandal ~ 23 Ulaan-baatar	88	702	2:45	32.0
921	1:20	35.3	41 Sain-shand ~ G Zuun-bayan	47	922	1:20	35.3
923	1:20	"	" ~ "	"	924	1:20	"
951	1:40	36.0	39 Airag ~ F Borondor	60	952	2:00	30.0
961	2:15	32.4	6 Darkhan-1 ~ A Sharyn-gol	73	962	2:30	29.2
963	2:22	30.8	" ~ "	"	964	2:30	"
971	2:05	47.5	1 Sukhe-baatar ~ 6 Darkhan-1	99	972	2:01	49.1

Note. Based on MR's Time table and Train diagram.

Appendix 6-7 Monthly Freight traffic volume (1995)

Month	1	2	3	4	5	6	7	8	9	10	11	12	Total	Average
Traffic-Volume (x10 ³) ton	76.0	66.6	75.5	73.7	83.4	69.5	60.3	70.6	63.8	70.4	74.3	78.3	862.4	71.9
Export	56.8	37.9	80.8	53.8	89.8	60.1	51.5	68.5	86.5	81.1	108.0	90.9	868.7	72.4
Import	3.1	2.2	4.5	5.5	10.3	5.0	14.8	15.7	11.1	19.0	16.8	25.8	133.8	11.2
Transit	547.0	546.8	566.9	417.2	445.9	254.0	370.0	388.5	427.6	473.5	482.2	540.7	5460.3	456.0
Domestic	120.2	120.2	124.6	91.7	98.0	55.8	81.3	85.4	94.0	104.1	106.0	118.8	100.0	100.0
Domestic fluctu. %	682.9	653.5	727.7	550.2	629.4	388.6	499.6	543.3	589.0	644.0	681.3	735.7	7325.2	610.4
Total	111.9	107.1	119.2	90.1	103.1	63.7	81.8	89.0	96.5	105.5	111.6	120.5	100.0	100.0
Export	43.2	39.9	47.7	56.1	51.5	41.5	38.6	47.3	41.7	46.4	42.2	44.5	541.6	45.1
Import	23.4	15.7	32.6	21.3	30.2	22.0	19.4	25.5	31.7	26.5	40.2	32.7	322.2	26.9
Transit	3.4	2.4	5.0	6.1	11.4	5.6	46.4	47.4	12.3	21.4	18.6	28.7	208.7	17.4
Domestic	133.9	129.0	134.8	102.5	99.3	54.1	81.2	93.6	94.8	113.8	111.0	123.9	1271.9	106.0
Total	205.9	187	229.1	186	192.4	123.2	185.6	213.8	180.5	208.1	212	229.8	2344.4	195.4
Transp. Volume fluctu. %	105.4	95.7	112.7	95.2	98.5	63.1	95.0	109.4	92.4	106.5	108.5	117.6	100.0	100.0
No. of Car Total	1557	1434	1456	1259	1464	1150	1290	1500	1572	1589	1646	1701	17618	1468
(car/day) Loaded car	761	789	767	679	834	696	810	887	906	983	900	970	9985	832
Empty ratio %	50.9	45.0	47.3	46.1	43.0	39.5	37.2	40.9	42.4	38.1	45.3	43.0	43.3	43.3
Run-km	3006.9	3395.8	4004.6	3494.7	3579.6	2672.7	3238.0	3557.0	3493.4	3996.8	3923.0	4399.9	43362.4	3613.5
Loaded-car km	157	143	174	172	143	128	133	134	129	136	145	151	145	145
# km/car/day	3139.5	2713.6	3143.5	2569.8	2716	1931.5	2212.2	2477.1	2633.6	2569.5	2870.4	3136.7	32113.4	2676.1
(x10 ³) Empty-car km	132	140	152	148	144	142	154	135	132	141	128	143	143	143
(km/month) # km/car/day														
Operation Ave. run. times	14.8	14.3	15.3	16.1	14.6	15.2	14.4	15.8	14.2	14.7	13.8	14.9	178.1	14.8
Inspection	3.4	3.3	3.2	3.4	3	3.2	3	3.6	3.2	3	3	3.1	38.4	3.2
Get on/off	47.1	48.7	47.8	42.5	49.8	42.8	42.3	48.6	49.4	49.5	40.9	46.9	656.3	46.4
Shunting	39.0	25.1	27.8	35.2	35.4	51.3	42.8	48.7	39.3	44.7	42.6	37.7	469.6	39.1
Total	104.3	91.4	94.1	97.2	102.8	112.5	102.5	116.7	106.1	111.9	100.3	102.6	1242.4	103.5
Turn-around day	4.3	3.8	3.9	4.1	4.3	4.7	4.3	4.9	4.4	4.7	4.2	4.3	51.8	4.3
Turn-around running-km	697.2	579.8	621.6	649.0	593.9	625.4	581.8	630.4	593.0	600.1	574.8	611.2	7268.2	605.7
Weight (ton/train)	1744.8	1675.1	1740.5	1699.7	1796.6	1706.7	1667.9	1688.9	1714.8	1830.4	1777.7	1783.1	20827.2	1735.6
Speed (km/h)	41.1	40.5	40.5	40.4	40.7	41	40.3	40	41.7	41	41.6	41.1	489.9	40.8
Carmer. Sp. (km/h)	33.4	32.9	33.5	33.4	33.7	33.9	33.4	32.6	34	34.1	34.2	34	403.1	33.6
Net ton (ton/car)	29.8	27.6	31.6	27.0	25.2	18.6	20.6	20.4	21.7	21.8	25.2	25.3	294.8	24.6

Compiled on the basis of data provided by the MR.

Appendix 6-8 Train operation time and Hauling capacity (1996)

North → South			Section	South → North			Distance (km)	
Operation Time		Hauling Capacity		Operation Time		Hauling Capacity	Each Section	Station km
P C	F C			P C	F C			
15/8	40	4500	Dozorn -- Shkhe-baatar	9/17	40	4600	23	23
23	34	4500	Shkhe-baatar -- Dulaan	22	32	3400	26	49
13	14	4500	Dulaan -- Yeroo	17	14	4500	13	62
12	14	4500	Yeroo -- Orkhon	13	13	4500	11	73
24	29	3000	Orkhon -- Enkhtal	23/20	24	3400	26	96
22	29	3700	Enkhtal -- Darkhan-1	22	25	4500	26	122
11	12	3000	Darkhan-1 -- Darkhan-2	11	13	4500	5	127
17	27	3000	Darkhan-2 -- Tsaidan	18/16	17	3400	17	144
13	15	3000	Tsaidan -- Salkhit	14	14	3400	13	157
13/12	15	3000	Salkhit -- Erkhēt	13/12	13	4500	11	168
36/34	40	3000	Erkhēt -- Baruunharaa	34/31	36	3400	33	201
23/21	27	3000	Baruunharaa -- Berkh	20/17	21	3400	20	221
12/10	17	3000	Berkh -- Zuunharaa	9/10	13	4500	10	231
22	36	2800	Zuunharaa -- Unegt	23	23	4500	22	253
21	35	2800	Unegt -- Tunkh	19	22	4500	21	274
22	34	2800	Tunkh -- Shatanga	20	20	4500	21	295
21	28	2800	Shatanga -- Mandal	18	19	4500	19	314
23/21	36	2800	Mandal -- Nogoontolgoi	18	19	4500	20	334
25/15	36	2800	Nogoontolgoi -- Arshaant	18/15	19	4500	20	354
22/15	36	2800	Arshaant -- Dawaany	14/12	15	4500	15	369
11/8	17	2800	Dawaany -- Emeelt	11/8	15	1400	9	378
21/18	22	4500	Emeelt -- Tolgoit	24/20	33	1400	17	395
12/8	15	4500	Tolgoit -- Ulaanbaatar	11	14	4500	7	402
45	52	1000	Salkhit -- Hotol	36	34	1000	29	29
18	13	1000	Hotol -- Belendalai	23	27	1000	13	42
45	49	1000	Belendalai -- Orkhon-tuul	44	53	1000	40	82
40	40	1000	Orkhon-tuul -- Khangal	39	47	2600	39	121
30	40	1000	Khangal -- Ulaantolgoi	25	26	4500	24	145
30	33	1000	Ulaantolgoi -- Erdenet	20	21	4500	19	164
97	104	1200	Darkhan-2 -- Sharvn-gol	97	104	1200	68	68
-	35	3800	Tolgoi -- Sogino	-	35	3800	15	15
10/13	16	2600	Ulaanbaatar -- Amgalan	10	11	4500	10	412
8/10	16	2600	Amgalan -- Tuul	8/9	8	4500	7	419
11/15	26	2600	Tuul -- Honkhor	10/11	11	4500	11	430
22/25	47	2600	Honkhor -- Bayan	21/23	22	2600	20	450
20/24	46	2600	Bayan -- Hoolt	18/20	20	4500	18	468
10/11	17	2600	Hoolt -- Tsagaan-hvar	10/13	18	2600	9	477
18/20	20	4500	Tsagaan-hvar -- Hangai	17/28	55	2600	20	497
11/12	13	4500	Hangai -- Bagakhangai	15/16	24	2600	12	509
10/11	12	4500	Bagakhangai -- Maaavyt	12/13	17	2600	12	521
42/44	47	2600	Maaavyt -- Naranelgen	47/50	56	2600	52	573
44/47	54	2600	Naranelgen -- Lun	46/50	62	2600	51	624
26/28	27	2600	Lun -- Choir	27/29	31	2600	25	649
18	18	2600	Choir -- Shivee-ovoo	21/24	20	2600	22	671
14/15	20	2600	Shivee-ovoo -- Shivee-govi	16	26	2600	12	683
33	36	2600	Shivee-govi -- Olon-ovoo	35	51	2600	35	718
30/33	35	2600	Olon-ovoo -- Airag	34	55	2600	34	752
60/62	69	2600	Airag -- Ulaan-ovoo	60/62	77	2600	67	819
53/58	70	2600	Ulaan-ovoo -- Sain-shand	53/55	74	2600	57	876
58	90	2600	Sain-shand -- Orgon	49	88	2600	63	939
49/46	57	2600	Orgon -- Ulaan-uul	53	55	2600	47	986
57/61	100	2600	Ulaan-uul -- Algiin-gol	60	78	2600	60	1,046
69/52	77	2600	Algiin-gol -- Zamyv-ud	70	95	2600	65	1,111
42	52	2600	Bagakhangai -- Bulagtai	49/43	70	2600	42	42
42	44	2600	Bulagtai -- Gungaluut	46/41	52	2600	40	82
16	20	2600	Gungaluut -- Baga-nuur	12	19	2600	12	94
120	100	2000	Airag -- Borondor	100	90	2400	60	60
75	75	4500	Sain-shand -- Zuun-bayan	75	75	4500	47	47

Based on the data of the MFR (Operat Time: AA: Domestic train, BB: International train)

Appendix6-9 Summary of Fare system

1. Passenger fare and charge

(1) Domestic passenger's fare and charge table (unit:Tug./person)

Distance (km)	Fare and Charge							
	More than 12 years old				5~12 years old			
	Seat	Sleep	Sleep(G)	Express	Seat	Sleep	Sleep(G)	Express
1~10	75	75	75	75	0	0	0	0
11~20	113	113	113	113	36	36	36	36
21~30	190	190	190	190	36	36	36	36
31~40	228	535	740	1,508	75	382	484	612
41~50	267	574	779	1,547	75	382	484	612
---~---								
381~400	1,569	2,490	3,924	4,692	417	1,338	1,748	1,876
401~430	1,646	2,567	4,103	4,871	417	1,338	1,748	1,876
431~460	1,722	2,644	4,180	4,948	455	1,377	1,786	1,914
461~490	1,799	2,721	4,359	5,127	455	1,377	1,786	1,914
---~---								

(2) International passenger's fare and charge table (unit:SwF/person)

Distance (km)	Fare		Charge			
	Hard seat	Soft seat	Reserved	Sleep(1p)	Sleep(G)	Sleep(2p)
1~5	.20	.30				
6~10	.43	.63				
11~15	.63	.95				
---~---	--	--				
26~30	1.28	1.91				
31~35	1.48	2.22	.78	1.31	1.56	2.36
36~40	1.70	2.55	.78	1.31	1.56	2.36
---~---	--	--	.78	1.31	1.56	2.36
91~100	3.78	5.67	.78	1.31	1.56	2.36
101~110	4.11	6.16	2.01	3.35	4.02	6.05
111~120	4.44	6.66	2.01	3.35	4.02	6.05
121~130	4.77	7.15	2.01	3.35	4.02	6.05
131~140	5.10	7.65	2.01	3.35	4.02	6.05
---~---	--	--	2.01	3.35	4.02	6.05
191~200	7.09	10.63	2.01	3.35	4.02	6.05
201~220	7.61	11.40	3.59	5.99	7.18	10.78
221~240	8.13	12.19	3.59	5.99	7.18	10.78
241~260	8.65	12.96	3.59	5.99	7.18	10.78
---~---	--	--	3.59	5.99	7.18	10.78

2. Cargo fare

(1) Domestic Cargo fare (unit:Tug.)

Distance (km)	Classification : 1			Classification : 2		
	Non ferrous metals			Chemical materials, Bottle, Electric goods, Bottle etc.		
	1~20ton	21~30	31~66	1~20ton	21~30	31~66
1~ 30	20,408	31,503	62,106	4,452	7,594	9,427
31~ 40	23,067	34,604	69,201	5,238	8,380	10,998
~						
1,251~1,300	637,005	955,218	1,903,335	172,574	255,850	342,530
1,301~1,350	661,848	993,069	1,976,381	179,644	265,540	356,148

Distance (km)	Classification : 3			Classification : 4		
	Steel, Ingot, Scrap etc.			Wood		
	1~20ton	21~30	31~66	1~20ton	21~30	31~66
1~ 30	7,228	11,000	21,997	9,728	12,464	14,861
31~ 40	8,170	12,255	30,167	11,194	14,298	16,498
~						
1,251~1,300	225,631	338,340	674,166	303,393	378,720	454,075
1,301~1,350	234,428	351,748	700,040	315,490	393,581	471,476

Distance (km)	Classification : 10			Classification : 11		
	Foodstuff, Vegetable oil, Mixed feed, Soap etc.			Coal		
	1~20ton	21~30	31~66	1~20ton	21~30	31~66
1~ 30	2,592	3,969	7,934	1,655	2,520	5,401
31~ 40	2,944	4,438	8,836	1,872	2,808	6,097
~						
1,251~1,300	81,388	122,476	244,522	51,769	77,522	166,949
1,301~1,350	84,572	127,272	254,068	53,858	80,593	173,309

Distance (km)	Classification : 12			Classification : 13		
	Constraction materials, Cement, Gravel, Brick etc.			Livestock, Vegetables, Chips etc.		
	1~20ton	21~30	31~66	1~20ton	21~30	31~66
1~ 30	2,722	4,088	8,170	2,096	2,096	3,088
31~ 40	3,040	4,612	9,062	2,252	2,252	3,402
~						
1,251~1,300	83,694	125,226	250,662	63,218	63,218	94,744
1,301~1,350	87,048	130,096	260,404	65,626	65,626	98,464

Notes : 1. Based on NR's fare table.

2. Other commodities are omitted.

(2) International Cargo fare

① Classification by commodities

No. I Classification : Livestock, Marine products, Dairy products etc.

No. II Classification : Wheat flour, Grains, Vegetables, Rail etc.

No. III Classification : Automobile, Locomotive, Wagon etc.

② Commodities Fare

Distance (km)	Fare (Switzerland-Centime)		
	/100kg		/1Axle
	No. I Clas.	No. II Clas.	No. III Clas.
5~ 14	5	3	50
15~ 24	9	5	99
25~ 34	11	8	149
~	--	--	--
395~ 404	185	93	1,976
405~ 414	189	95	2,024
415~ 424	191	98	2,073
~	--	--	--
705~ 714	327	165	3,506
715~ 724	333	167	3,555
~	--	--	--
6,801~7,000	3,180	1,539	31,059
7,001~7,200	3,272	1,637	35,046
7,201~7,400	3,365	1,682	36,035
~	--	--	--

Note: Based on the data of the RR.

③ Reshipment

a. Bulk cargo --- 100kg : 100 centime

b. Fuel oil etc. --- 100kg : 80 centime

d. Container --- less than 2.5ton: 8.8 Swi. Franc
more than 2.5ton:17.6 Swi. Franc

④ Customs charge

Carload --- 4 SwF

Less than carload--- 2.2SwF

Appendix 6-10 Hauling capacity and Track capacity etc. (1996)

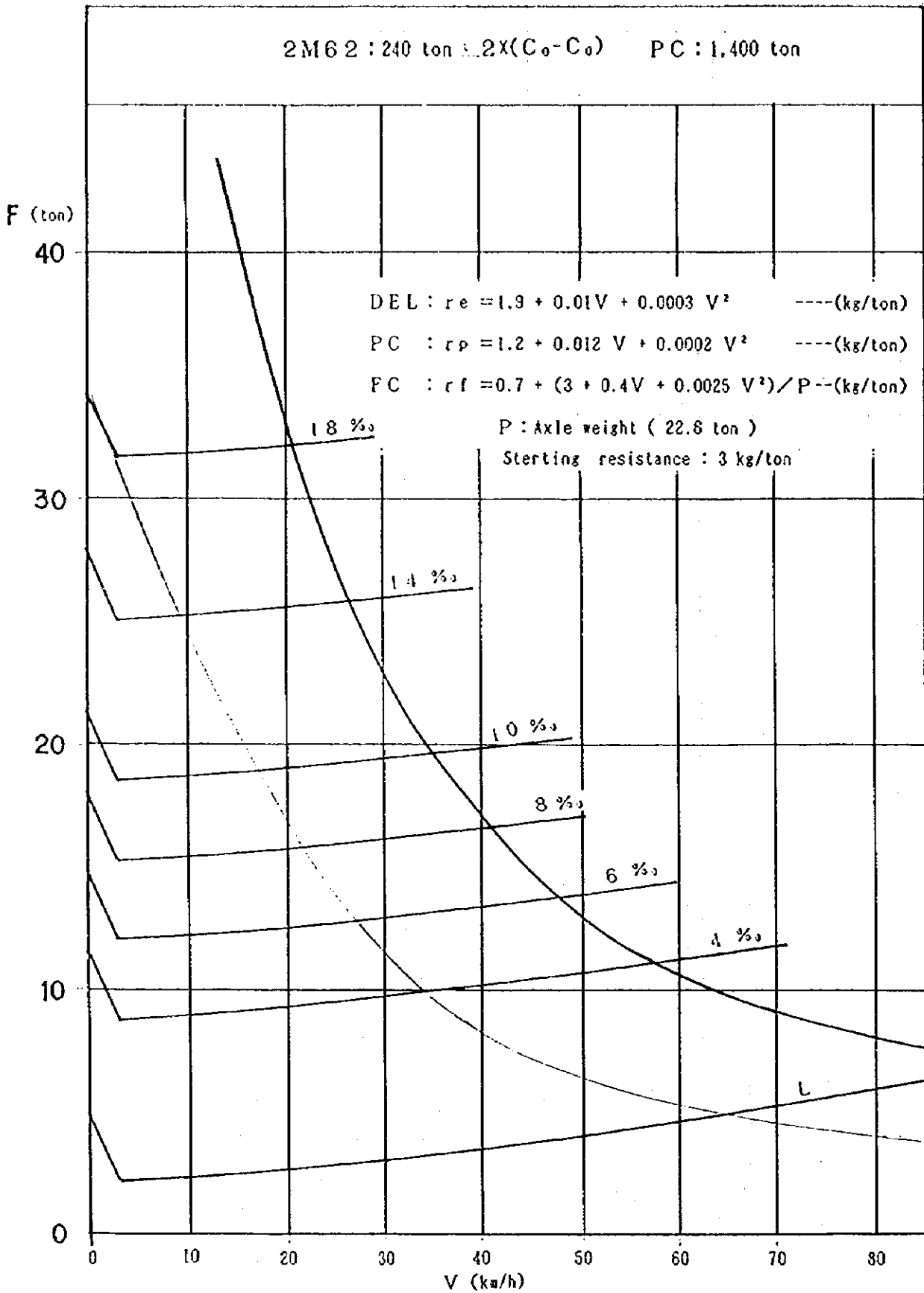
(1)

No. Station name	A Line										B Line									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Boorin	33	26	19	13	8	3	22	17	14	11	8	7	6	5	4	3	2	1	0	
Sukh ba	23	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Inhuan	49	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Terou	82	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Orkhon	75	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Enkhial	96	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Barthun I	127	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Barthun II	127	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Esaidam	144	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Saikhit	157	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Erzhet	168	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Karunaha	201	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Zuunhara	221	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Ungel	253	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Tush	274	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Shalamba	285	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Mandal	314	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Sevcento	334	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	

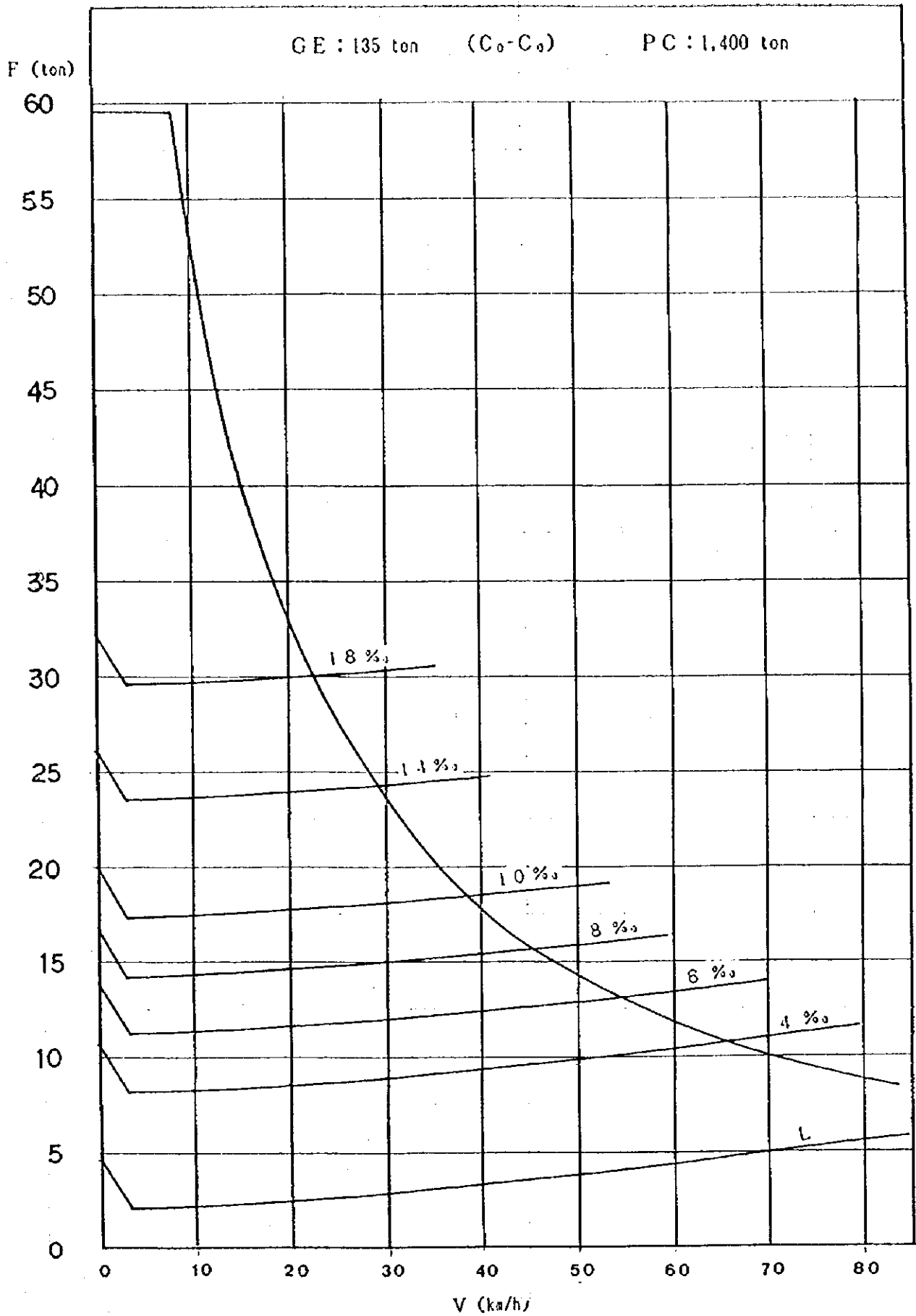
No. Station name	C Line										D Line									
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	
Arshant (ready)	351	369	378	385	392	402	412	419	425	430	438	448	457	469	481	497	511	521	533	
Arshant	15	9	17	17	7	7	10	7	8	8	8	8	8	8	8	8	8	8	8	
Arshant (ready)	351	369	378	385	392	402	412	419	425	430	438	448	457	469	481	497	511	521	533	
Arshant	15	9	17	17	7	7	10	7	8	8	8	8	8	8	8	8	8	8	8	
Arshant (ready)	351	369	378	385	392	402	412	419	425	430	438	448	457	469	481	497	511	521	533	
Arshant	15	9	17	17	7	7	10	7	8	8	8	8	8	8	8	8	8	8	8	

Note: Indicate a sphere of handle. Compiled on the basis of data provided by the MR.

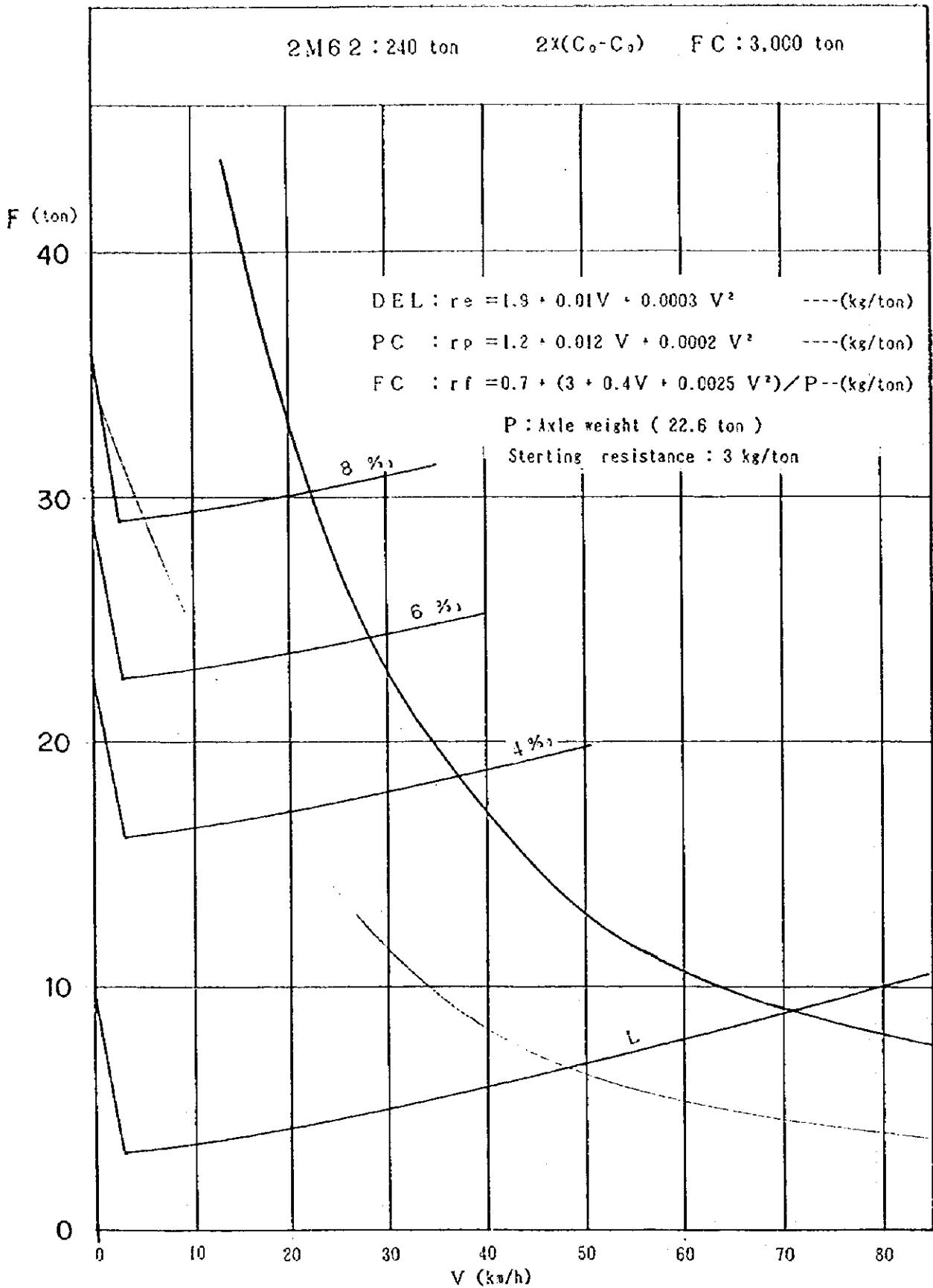
Appendix6-11 Load curve (1)



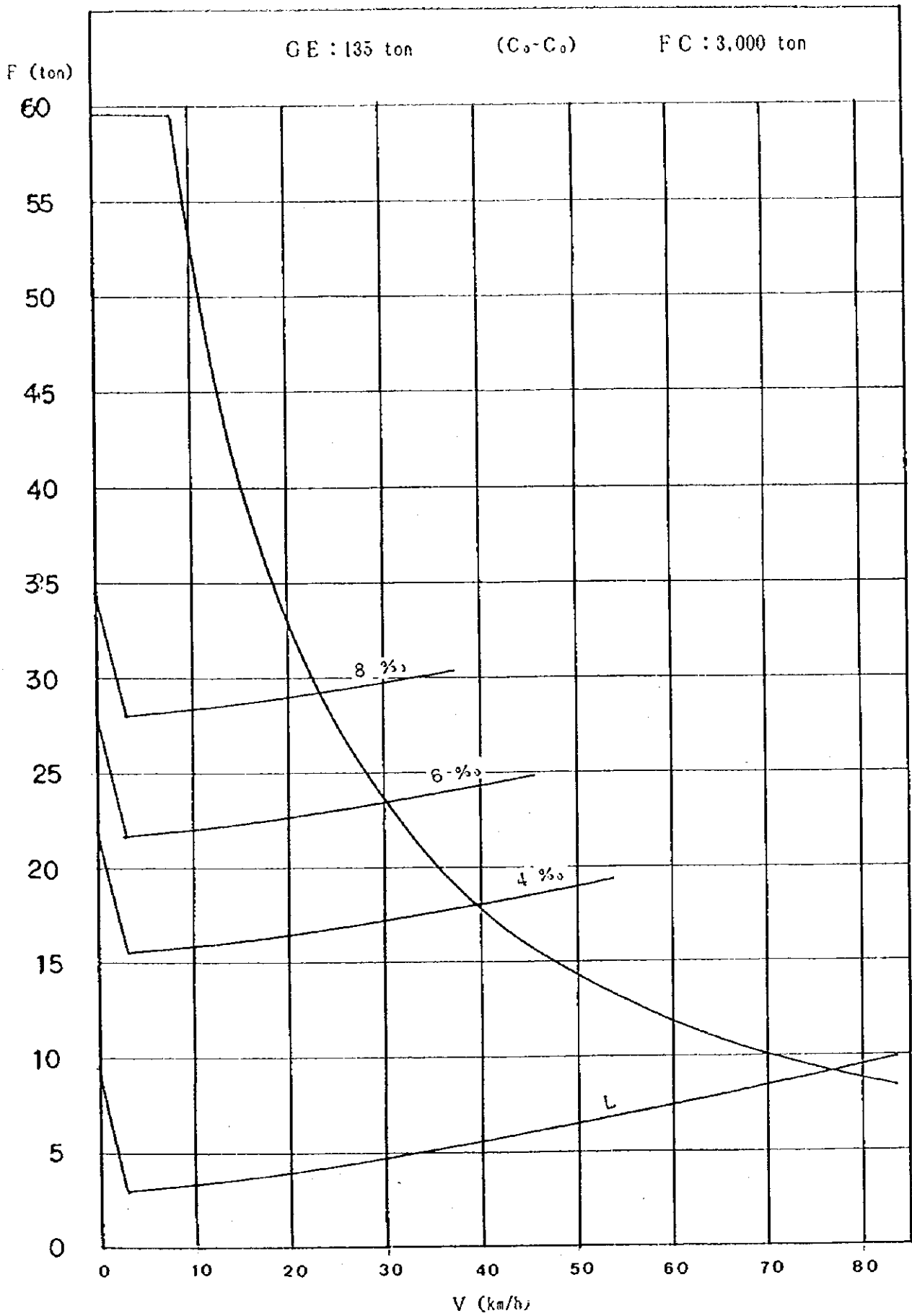
Appendix6-11 Load curve (2)



Appendix6-11 Load curve (3)



Appendix 6-11 Load curve (4)



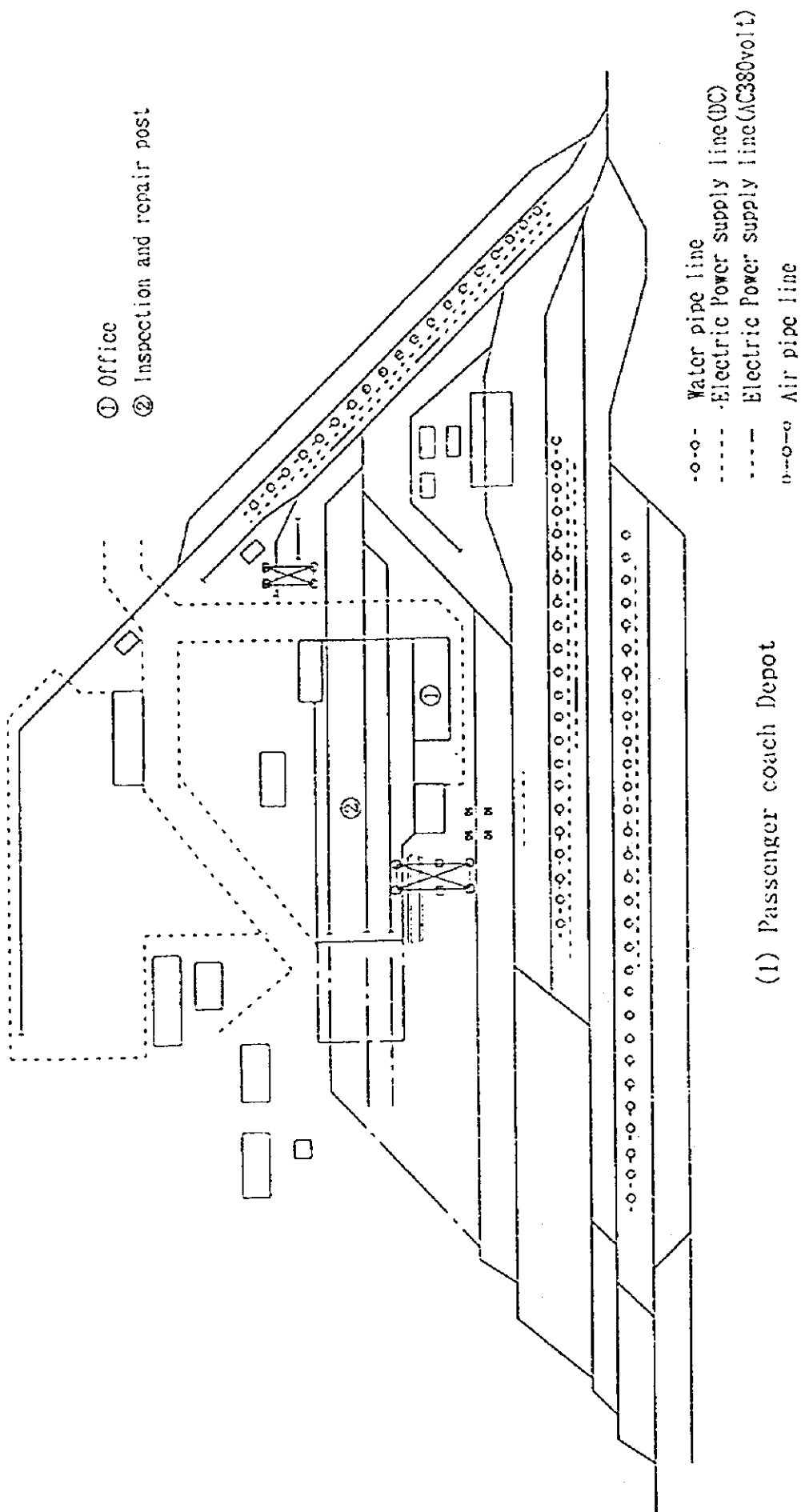
Appendix 6-12 Occurance of Serious accidents in MR (1991~1995)

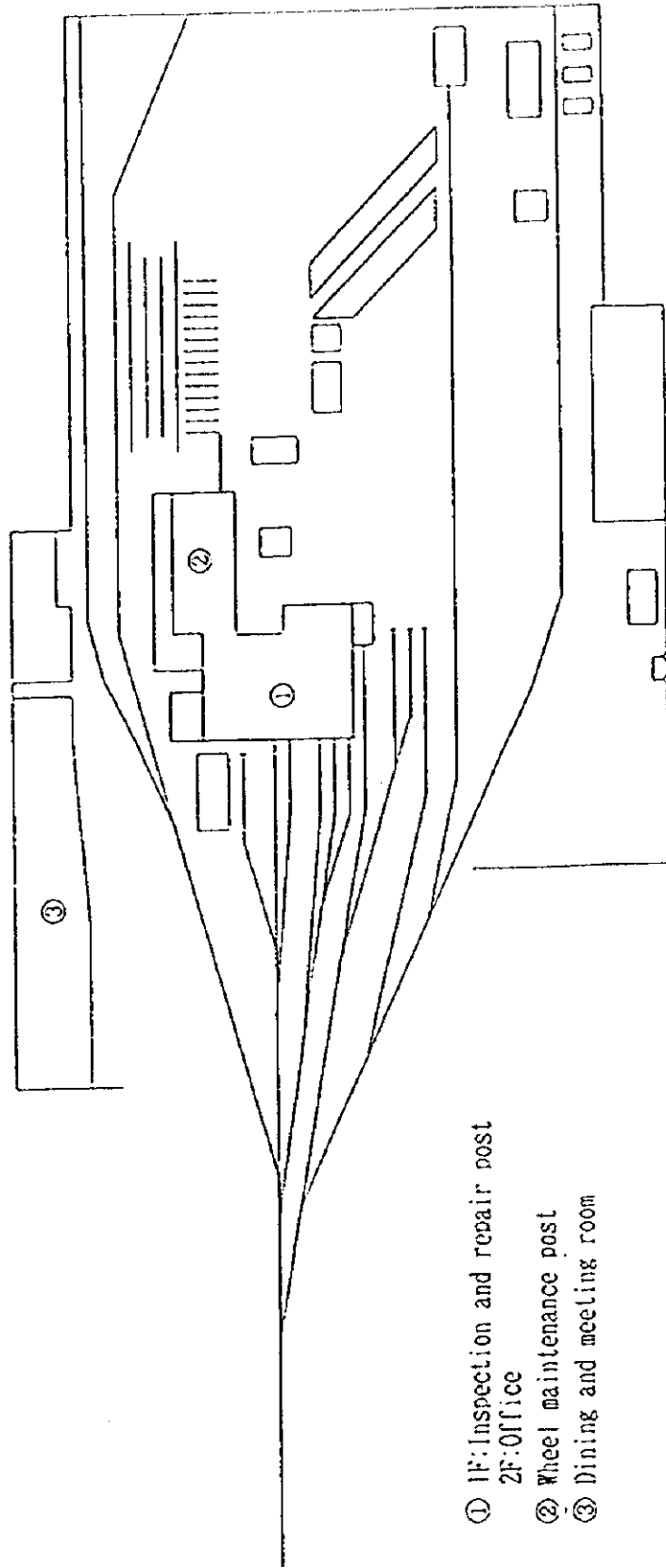
No.	Date and time	Place	General situation	Cause	Delay time	Amount of damage
1	Nov. 7, 1991 10:50	Between Bayan ~ Honkhor	Six coaches of a passenger train derailed. There were no casualties of passengers.	Some dog spikes were temporarily removed for track improvement work, and were not re-driver after the track work.	8 hours and 50 minutes	Tug. 150,000
2	Aug. 24, 1992 16:00	Lumber Company's sidetrack in Sukhe-baatar	Three wagons in strage ran away, derailed, and fell sideways.	Sufficient measures were not taken to prevent runaway of wagons.	---	Tug. 900,000
3	Jan. 3, 1993 6:20	Sidetrack in Ulaan-baatar	Some wagons collided with stopping wagons, and one wagon fell sideways.	When light wagons were coupled to 32 wagons, brake pipes were not connected.	---	Tug. 380,000
4	July 19, 1993 4:05	Airag station	In shunting, some wagons collided with stopping wagons, and two wagons were damaged.	The engine driver did not confirm the stop signal given by the yardman.	---	Tug. 430,000
5	Oct. 19, 1994	Eastern Line	A mix train consisting of three coaches and four wagons derailed. (Two coaches and one wagon derailed.)	The gauge expanded due to poor conditions of sleepers.	9 hours	----
6	Sept. 30, 1994 4:35	Erdeneet station	In shunting, an engine operated by an assistant engine driver collided with another engine, and was seriously damaged.	The assistant engine driver operated the engine without permission.	---	Tug. 2 million

No.	Date and time	Place	General situation	Cause	Delay time	Amount of damage
7	Aug. 4, 1994 16:05	Between Bayan ~ Ilonkhor	Five wagons of a dedicated train for coal derailed and fell sideways, at a curve with a radius of 299m.	The quality of the inner rail at the curve was poor.	18 hours	Tug. 8.8million
8	Sept. 4, 1995	Darkhan station	In shuntings, the engine collided with coaches in storage. Two coaches were damaged (one seriously and the others slightly), and ten passengers were slightly injured.	The engine driver operated the engine while dozing.	--	Tug. 2.44million

Note. Compiled on the basis of data provided by the MR.

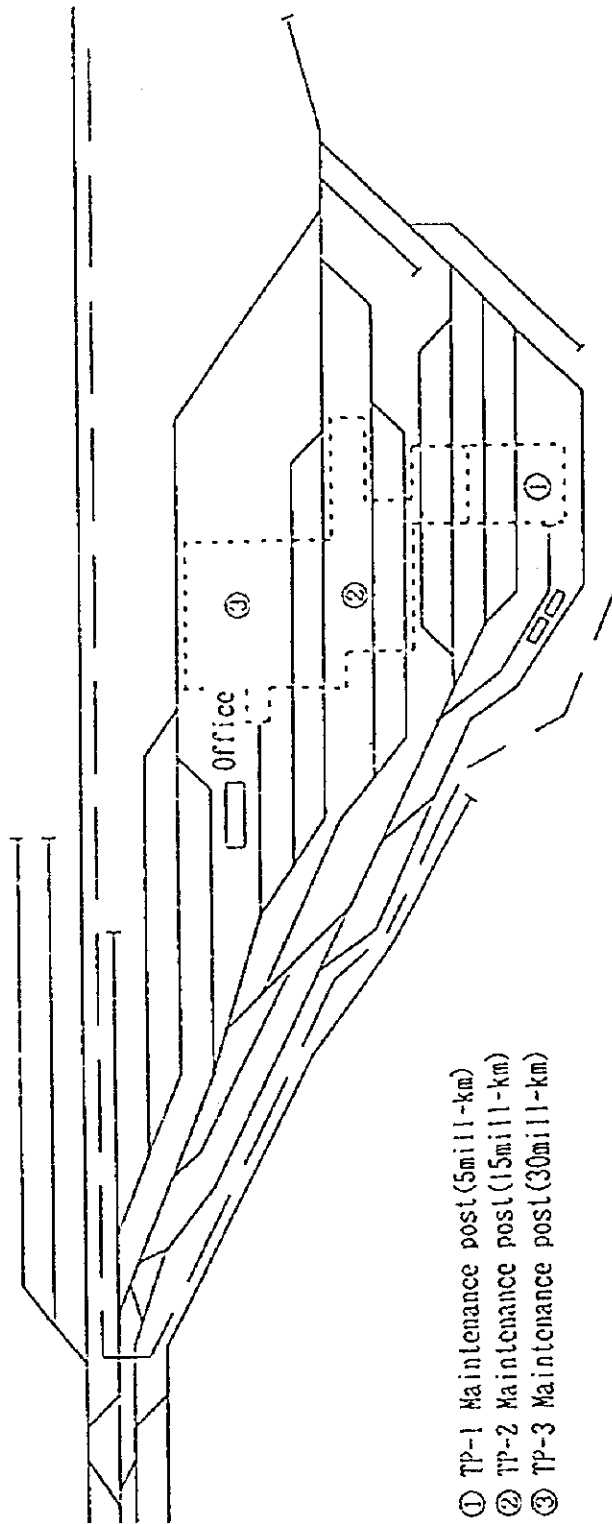
Appendix 6-13 Track layout of Rolling stock Depot





- ① 1F: Inspection and repair post
2F: Office
- ② Wheel maintenance post
- ③ Dining and meeting room

(2) Freight wagon Depot



- ① TP-1 Maintenance post (5mill-km)
- ② TP-2 Maintenance post (15mill-km)
- ③ TP-3 Maintenance post (30mill-km)

(3) Locomotive Depot

Appendix 6-14 Transport Plan (Passenger train formation and Nominal passenger capacity)

(1)

2005

North Region

Train No.	Section	Train/week	Coaches											Total	Persons / Train			Total	C	S	C	Total	Remark
			F	G	S	C	D	H	Total	S	C	Total	S		C	Total							
3	0. Naush. 46. Zamy.	1	0	3	16	0	0	2	1	22	450	0	450	0	450	0	450	7-4					
5. Russia	0. Naush. 6. Dar. -1	1	0	1	16	0	0	1	0	18	523	0	523	0	523	0	523	1-1					
5. Russia	6. Dar. -1 23. U. B.	1	0	1	14	0	0	1	0	16	460	0	460	0	460	0	460	1-1					
5. MR	0. Naush. 23. U. B.	1	0	2	15	0	0	1	0	18	520	0	520	0	520	0	520	2-6					
313	6. Dar. -1 B. Erde.	1	0	2	7	0	0	0	0	2	72	0	72	0	72	0	72	1					
Total		5	0	7	63	0	0	5	1	76	2,025	0	2,025	0	2,025	0	2,025	0-1	1,953				

Train No.	Section	Train/week	Coaches											Total	Persons / Train			Total	C	S	C	Total	Remark
			F	G	S	C	D	H	Total	S	C	Total	S		C	Total							
263	0. Nausi. 23. U. B.	7	0	1	6	7	0	0	0	14	216	567	783	1,512	3,969	5,481	1-7						
211	6. Dar. -1 23. U. B.	7	0	0	1	4	0	0	0	5	36	321	360	252	2,268	2,520	1-7						
271	1. S. B. 23. U. B.	7	0	0	2	5	0	0	0	7	72	405	477	504	2,835	3,339	1-7						
273	6. Dar. -1 23. U. B.	5	0	1	5	8	1	0	0	15	180	648	828	900	3,240	4,140	1,2,3,5,6						
273		2	0	1	6	10	1	0	0	18	216	810	1,026	432	1,620	2,052	4,7						
701	17. Mand. 23. U. B.	7	0	1	0	5	0	0	0	6	6	405	405	0	2,835	2,835	1-7						
Total		35	0	4	20	39	2	0	0	65	720	3,159	3,879	3,600	16,767	20,367							
311	6. Dar. -1 B. Erde.	8	0	1	5	6	1	0	0	13	180	486	666	1,440	3,988	5,328	2,3,5,6						
311		4	0	1	6	8	1	0	0	16	216	648	864	864	2,592	3,456	4,7						
961	6. Dar. -1 A. S. G.	7	0	0	0	2	0	0	0	2	0	162	162	0	1,134	1,134	1-7						
963		7	0	0	0	2	0	0	0	2	0	162	162	0	1,134	1,134	1-7						
971	1. S. B. 6. Dar. -1	7	0	0	0	2	0	0	0	2	0	162	162	0	1,134	1,134	1-7						
Total		33	0	2	11	20	2	0	0	35	396	1,620	2,016	2,304	9,882	12,186							

x 2
x 2

Nominal passenger capacity by section

Inter N.	Section	F	G	S	C	D	H	Total	S	C	Total	Remark
0. Nausi.	6. Dar. -1	3	0	6	47	0	0	4	58	1,493	1,493	0
6. Dar. -1	23. U. B.	3	0	6	45	0	0	4	56	1,430	1,430	0
9. Salkhilib.	Erde.	1	0	2	2	0	0	0	2	72	72	0
Domes.	1. S. B. 6. Dar. -1	21	0	1	8	14	0	0	23	288	1,134	2,016
	6. Dar. -1 7. Dar. -2	54	0	5	31	52	4	0	92	1,116	4,212	5,904
	7. Dar. -2 9. Salkhilib.	40	0	5	31	48	4	0	88	1,116	3,888	5,904
	9. Salkhilib 13. Zuun.	28	0	3	20	34	2	0	59	720	2,754	3,474
	13. Zuun. 17. Mand.	28	0	3	20	34	2	0	59	720	2,754	3,474
	17. Mand. 23. U. B.	35	0	4	20	39	2	0	65	720	3,159	3,600
	7. Dar. -2 A. Shar. -8	14	0	0	0	4	0	0	4	0	324	324
	9. Salkhilib. Erde.	12	0	2	11	14	2	0	29	396	1,134	1,530
Total		12	0	2	11	14	2	0	29	396	1,134	1,530

Notes: F:Wagon, G:Goods wagon, H:Mail car, D:Dining car, S:Sleeping car, C:Seat car.

(2)

2005

South Region

Train No.	Section Nominal pas. cap.	Coaches						Total	S	C	Total	S	C	Total	Remark
		F	G	S	C	D	M								
3	0. Naush. Bejiin	0	3	16	0	2	1	22	450	0	450	450	0	450	7-4
23	23 U.B. Bejiin	0	1	10	0	1	0	12	344	0	344	344	0	344	4-7
21	23 U.B. 46 Erenh.	2	0	2	10	0	0	13	360	0	360	720	0	720	1-3, 4-6
Total		4	0	6	36	0	1	47	1,154	0	1,154	1,514	0	1,514	

Train No.	Section Nominal pas. cap.	Coaches						Total	S	C	Total	S	C	Total	Remark
		F	G	S	C	D	M								
215	23 U.B. 46 Eren.	2		1	9	1	0	11	324	81	405	648	162	810	
281	23 U.B. 35 Choir	2		2	5	2	1	10	72	405	477	144	810	954	1-2, 4-5
277	23 U.B. E. Baga-n.	3		2	2	2	1	10	72	405	477	216	1,215	1,431	7-1, 3-4, 6-7
275	23 U.B. 39 Airag	7	1	1	8	10	1	21	288	810	1,098	2,016	5,670	7,686	1-7
275	39 Airag 41 Sain-s	7	1	1	7	9	1	19	252	729	981	1,764	5,103	6,867	1-7
275	41 Sain-s 45 Z. U.	7	1	1	5	9	1	17	180	729	909	1,260	5,103	6,363	1-7
951	39 Airag F. Boron.	7		1	1	1	1	2	36	81	117	252	567	819	1-7
921	41 Sain-s G. Zuun-b.	7		2	2	0	0	2	72	0	72	504	0	504	1-7
923	"	7		2	2	0	0	2	72	0	72	504	0	504	1-7
Total		49	3	4	38	40	7	94	1,404	3,321	4,808	7,308	18,630	25,938	

Nominal passenger capacity by section

Inter N.	Section	F	G	S	C	D	M	Total	S	C	Total	Remark	
23 U.B.	46 Erenh.	4	0	6	36	0	4	47	1,154	0	1,154	1,514	3L, 23L, 21L

Train No.	Section	F	G	S	C	D	M	Total	S	C	Total	Remark			
Domes.	23 U.B. 31. Bagakh	14	1	2	21	21	5	52	756	1,701	2,457	3,024	7,857	10,881	
	31. Bagaki 35. Choir	11	1	2	19	16	3	42	684	1,296	1,980	2,808	6,642	9,450	
	35. Choir 39. Airag	9	1	2	17	11	1	32	612	891	1,503	2,564	5,832	8,496	
	39. Airag 41. Sain-s	9	1	2	16	10	1	30	576	810	1,386	2,412	5,265	7,677	
	41. Sain-s 45. Z. U.	9	1	2	14	10	1	28	504	810	1,314	1,908	5,265	7,173	
	31. Bagaki E. Baga-n.	3	0	0	0	2	5	10	72	405	477	216	1,215	1,431	277L, 278L
	39. Airag F. Boron.	7	0	0	1	1	0	2	36	81	117	252	567	819	951L, 952L
	41. Sain-s G. Zuun-b.	14	0	0	4	0	0	4	144	0	144	1,008	0	1,008	921-924L

Notes: F: Wagon, G: Goods wagon, H: Mail car, D: Dining car, S: Sleeping car, C: Seat car.

(3)

North Region
2010

Train No.	Section	Train/week	(Coaches)							(Person/Train)							Total (Pers./week)	Total	Remark
			F	C	S	C	D	M	Total	S	C	D	M	Total					
3	0. Naush. 46. Zaun	1	0	3	16	0	2	1	22	450	0	0	0	0	450	0	450	7-4	
5	Russia 0. Naush. 6. Dar.	1	0	1	16	0	1	0	18	523	0	0	0	523	0	523	1-1		
5	Russia 6. Dar. - 23. U. B.	1	0	1	14	0	1	0	16	460	0	0	0	460	0	460	1-1		
5	HR 0. Naush. 23. U. B.	1	0	2	15	0	1	0	18	520	0	0	0	520	0	520	2-6		
313	6. Dar. - 1 B. Erde.	1	0	2	2	0	0	0	2	72	0	0	0	72	0	72	1		
Total		5	0	7	63	0	5	1	76	2,025	0	0	0	2,025	0	2,025			

Train No.	Section	Train/week	(Coaches)							(Person/Train)							Total (Pers./week)	Total	Remark
			F	C	S	C	D	M	Total	S	C	D	M	Total					
263	0. Nausi. 23 U. B.	7	0	1	6	7	0	0	14	216	567	0	0	0	783	1,512	3,969	5,481	1-7
271	0. Nausi. 23 U. B.	7	0	1	3	4	0	0	8	108	324	0	0	0	432	756	2,268	3,024	1-7
271	1. S. B. 23. U. B.	7	0	0	2	5	0	0	7	72	405	0	0	0	477	504	2,835	3,339	1-7
273	6. Dar. - 1 23. U. B.	5	0	1	5	8	1	0	15	180	648	0	0	0	828	900	3,240	4,140	1.2.3.5.6
273	2	0	0	1	6	10	1	0	18	216	810	0	0	0	1,026	432	1,620	2,052	4.7
701	13. Zaun. 23. U. B.	7	0	1	0	5	0	0	6	405	0	0	0	405	0	2,835	2,835	1-7	
Total		35	0	5	22	39	2	0	68	792	3,159	0	0	0	3,951	4,104	16,767	20,871	
311	6. Dar. - 1 B. Erde.	9	0	1	5	6	1	0	13	180	486	0	0	0	666	1,820	4,374	5,994	1.2.3.5.6
311	4	0	0	1	6	8	1	0	16	216	648	0	0	0	864	2,592	3,456	4,7	
961	6. Dar. - 1 A. S. G.	7	0	0	2	2	0	0	2	162	162	0	0	0	324	0	1,134	1,134	1-7
963	7	0	0	0	16	2	0	0	16	162	162	0	0	0	324	0	1,134	1,134	1-7
971	1. S. B. 6. Dar. - 1	7	0	0	2	2	0	0	2	162	162	0	0	0	324	0	1,134	1,134	1-7
Total		34	0	2	11	20	2	0	35	396	1,620	0	0	0	2,016	2,484	10,368	12,852	

Nominal passenger capacity by section

Inter N.	0. Nausi. 6. Dar.	3	0	6	47	0	4	1	58	1,493	0	0	0	1,493	1,493	0	1,493	
	6. Dar. - 23. U. B.	3	0	6	45	0	4	1	56	1,430	0	0	0	1,430	1,430	0	1,430	
	9. Salkhi B. Erde.	1	0	2	2	0	0	0	2	72	0	0	0	72	72	0	72	
Domes.	1. S. B. 6. Dar. - 1	28	0	2	11	18	0	0	31	396	1,458	0	0	1,854	2,772	10,206	12,978	
	6. Dar. - 1 7. Dar. - 2	55	0	6	33	52	4	0	95	1,188	4,212	0	0	5,400	6,588	23,166	29,754	
	7. Dar. - 2 9. Salkhi	41	0	6	33	48	4	0	91	1,188	3,888	0	0	5,076	6,588	20,898	27,486	
	9. Salkhi 13. Zaun.	28	0	4	22	31	2	0	62	792	2,754	0	0	3,546	4,104	13,932	18,036	
	13. Zaun. 17. Mand.	35	0	5	22	39	2	0	68	792	3,159	0	0	3,951	4,104	16,767	20,871	
	17. Mand. 23. U. B.	35	0	5	22	39	2	0	68	792	3,159	0	0	3,951	4,104	16,767	20,871	
	7. Dar. - 2 A. Shar.	14	0	0	0	4	0	0	4	0	324	0	0	324	0	2,268	2,268	
	9. Salkhi B. Erde.	13	0	2	11	14	2	0	29	396	1,134	0	0	1,530	2,484	6,966	9,450	

Notes: F: Wagon, G: Goods wagon, H: Mail car, D: Dining car, S: Sleeping car, C: Seat car.

(4)

South Region

Train No.	Section	Train/week	2010											Remark		
			F	C	S	C	D	H	Total	S	C	Total	S		C	Total
3	0. Maush. Bejin	1	0	3	16	0	2	1	22	450	0	450	450	0	450	7-4
23	23 U. B. Bejin	1	0	1	10	0	1	0	12	344	0	344	344	0	344	4-7
21	23 U. B. 46. Zany	2	0	2	10	0	1	0	13	360	0	360	720	0	720	1-3, 4-6
Total		4	0	6	36	0	4	1	47	1,154	0	1,154	1,514	0	1,514	

Train No.	Section	Train/week	2010											Remark		
			F	C	S	C	D	H	Total	S	C	Total	S		C	Total
215	23 U. B. 46. Eren.	2		1	9	1	0	0	11	324	81	405	648	162	810	
281	23 U. B. 35. Choir	2		2	2	5	0	0	7	72	405	477	144	810	954	1-2, 4-5
277	23 U. B. E. Bagan	3		2	2	5	0	0	7	72	405	477	216	1,215	1,431	1-3-4, 6-7
275	23 U. B. 39. Airag	7	1	1	8	10	1	21	288	810	1,098	2,016	5,670	7,686	1-7	
275	39. Airag 41. Sain-	7	1	1	7	9	1	19	252	729	981	1,764	5,103	6,867	1-7	
275	41. Sain-45. Z. U.	7	1	1	5	9	1	17	180	729	909	1,260	5,103	6,363	1-7	
951	39. Airag F. Boron	7		1	1	1	1	2	36	81	117	252	567	819	1-7	
921	41. Sain-G. Zuun-B	7		2	2	0	0	2	72	0	72	504	0	504	1-7	
923	"	7		2	2	0	0	2	72	0	72	504	0	504	1-7	
Total		49	3	4	38	40	3	88	1,368	3,240	4,608	7,308	18,630	25,938		

Nominal passenger capacity by section															
Inter N.	23 U. B.	46. Ereni													
	4	0	6	36	0	4	1	47	1,154	0	1,154	1,514	0	1,514	3,214

Domes.	23 U. B.	31. Bagak	14	1	2	21	1	0	46	756	1,701	2,457	3,024	7,857	10,881	
	31. Bagak	35. Choir	11	1	2	19	16	0	39	684	1,296	1,980	2,808	6,642	9,450	
	35. Choir	39. Airag	9	1	2	17	11	0	32	612	891	1,503	2,664	5,832	8,496	
	39. Airag	41. Sain-	9	1	2	16	10	1	30	576	810	1,386	2,412	5,265	7,677	
	41. Sain-45. Z. U.		9	1	2	14	10	1	28	504	810	1,314	1,908	5,265	7,173	
	31. Bagak	E. Bagan	3	0	0	2	5	0	7	72	405	477	216	1,215	1,431	277, 278
	39. Airag	F. Boron	7	0	0	1	1	0	2	36	81	117	252	567	819	951, 952
	41. Sain-G. Zuun-B		14	0	0	4	0	0	4	144	0	144	1,008	0	1,008	921-924

Notes. F: Wagon, G: Goods wagon, H: Mail car, D: Dining car, S: Sleeping car, C: Seat car.

(5)

North Region															
Train No.	Section	Train/week			Coaches			Persons/Train			Total			Remark	
		F	G	C	S	C	S	C	S	C	S	C	Total		
3	0. Naush. 46. Zamy. d	0	3	0	16	0	22	450	0	450	0	450	0	450	7-4
5:Russia	0. Naush. 6. Dar. -1	0	1	0	16	0	18	523	0	523	0	523	0	523	1-1
5:Russia	6. Dar. -1 23. U. B.	0	1	0	14	0	16	460	0	460	0	460	0	460	1-1
5:HR	0. Naush. 23. U. B.	0	2	0	15	0	18	520	0	520	0	520	0	520	2-6
313	6. Dar. -1 B. Erde.	0	0	0	2	0	2	72	0	72	0	72	0	72	1
Total		0	7	0	63	0	76	2,025	0	2,025	0	2,025	0	2,025	1.953

Train No.	Section	Train/week			Coaches			Persons/Train			Total			Remark
		F	G	C	S	C	S	C	S	C	S	C	Total	
263	0. Nausi. 23. U. B.	7	0	0	6	7	14	216	567	783	1,512	3,969	5,481	1-7
211	0. Nausi. 23. U. B.	7	0	0	2	7	15	262	486	738	1,764	3,402	5,166	1-7
271	1. S. B. 23. U. B.	7	0	0	2	2	7	72	405	477	504	2,835	3,339	1-7
273	6. Dar. -1 23. U. B.	5	0	0	1	5	8	180	648	828	900	3,240	4,140	1.2.3.5.6
273		2	0	0	1	6	10	216	810	1,026	432	1,620	2,052	4.7
701	13. Zou. h. 23. U. B.	7	0	0	1	0	6	6	405	405	0	2,835	2,835	1-7
Total		35	0	0	26	41	75	936	3,321	4,257	5,112	17,901	23,013	
311	6. Dar. -1 B. Erde.	10	0	0	5	6	13	180	486	666	1,800	4,860	6,660	1.2.3.5.6. × 2. (overhead)
311		4	0	0	1	6	16	216	648	864	864	2,592	3,456	4.7.8.9. × 2. (overhead)
961	6. Dar. -1 A. S. G.	7	0	0	0	2	2	0	162	162	0	1,134	1,134	1-7
963		7	0	0	0	2	2	0	162	162	0	1,134	1,134	1-7
971	1. S. B. 6. Dar. -1	7	0	0	0	2	2	0	162	162	0	1,134	1,134	1-7
Total		35	0	0	2	11	35	396	1,620	2,016	2,664	10,854	13,518	

S+6. C+2

Nominal passenger capacity by section														
Inter N.	Section	Train/week			Coaches			Persons/Train			Total			Remark
		F	G	C	S	C	S	C	S	C	S	C	Total	
	0. Nausi. 6. Dar. -1	3	0	0	6	47	0	58	1,493	0	1,493	0	1,493	
	6. Dar. -1 23. U. B.	3	0	0	6	45	0	56	1,430	0	1,430	0	1,430	
	9. Salkhit B. Erde.	1	0	0	0	2	0	2	72	0	72	0	72	
Domes.	1. S. B. 6. Dar. -1	28	0	0	3	15	20	38	540	1,620	2,160	11,340	15,120	
	6. Dar. -1 7. Dar. -2	56	0	0	7	37	54	102	1,332	4,374	5,706	24,786	32,562	
	7. Dar. -2 9. Salkhit	42	0	0	7	37	50	98	1,332	4,050	5,382	22,518	30,294	
	9. Salkhit 13. Zou. h.	28	0	0	5	26	36	69	936	2,916	3,852	15,066	20,178	
	13. Zou. h. 17. Mand. 17	35	0	0	6	26	41	75	936	3,321	4,257	17,901	23,013	
	17. Mand. 23. U. B.	35	0	0	6	26	41	75	936	3,321	4,257	17,901	23,013	
	7. Dar. -2 A. Shar. -6.	14	0	0	0	4	4	4	324	0	324	0	324	
	9. Salkhit B. Erde.	14	0	0	2	11	14	29	396	1,134	1,530	7,452	10,116	

Notes: F:Wagon. G:Goods wagon. H:Mail car. D:Dining car. S:Sleeping car. C:Seat car.

(6)

2020

South Region

Train No.	Section	Train/week	Coaches			Total	S	C	D	H	Total	S	C	Total	S	C	Total	Remark
			F	G	S													
3	0. Naush. 46. Zamy. u	1	0	3	16	0	2	1	22	450	0	450	0	450	7-4			
23	23. U. B. Beijin	1	0	1	10	0	1	0	12	344	0	344	0	344	4-7			
21	23. U. B. 46. Zamy. u	2	0	2	10	0	1	0	13	360	0	360	0	720	1-3, 4-6			
Total		4	0	6	36	0	4	1	47	1,154	0	1,154	0	1,514				

Train No.	Section	Train/week	Coaches			Total	S	C	D	H	Total	S	C	Total	S	C	Total	Remark
			F	G	S													
215	23. U. B. 46. Eren.	2	0	1	9	1	0	0	11	324	81	405	648	162	810			
281	23. U. B. 35. Choir	2	0	0	2	5	2	1	10	477	405	477	144	810	954	1-2, 4-5		
277	23. U. B. E. Baga-n.	3	0	0	2	5	2	1	10	477	405	477	216	1,215	1,431	7-1, 3-4, 6-7		
275	23. U. B. 39. Airag	7	1	1	8	10	1	1	21	288	810	1,098	2,016	5,670	6,888	1-7	(+2)	
275	39. Airag 41. Sain-s.	7	1	1	7	9	1	1	19	981	729	981	1,764	5,103	6,867	1-7	(+1)	
275	41. Sain-s. 45. Z. U.	7	1	1	5	9	1	1	17	180	729	909	1,260	5,103	6,363	1-7	(+1)	
951	39. Airag-f. Boron.	7	1	1	1	1	1	1	2	36	81	117	252	567	648	1-7	(+1)	
921	41. Sain-s. C. Zuun-b.	7	0	0	2	0	0	0	2	72	0	72	504	0	504	1-7		
923	"	7	0	0	2	0	0	0	2	72	0	72	504	0	504	1-7		
Total		49	3	4	38	40	7	2	94	1,404	3,321	4,608	7,308	18,630	25,938			

Inter N.	Section	F	G	S	C	D	H	Total	S	C	Total	Remark
4	23. U. B. 46. Erenhot	0	0	6	36	0	4	47	1,154	0	1,154	1,514 3v. 21v

Domes.	Section	Train/week	Coaches			Total	S	C	D	H	Total	S	C	Total	S	C	Total	Remark
			F	G	S													
14	31. Bagakh.	14	1	2	21	21	5	2	52	756	1,701	2,457	3,024	7,857	10,881			
11	31. Bagakh. 35. Choir	11	1	2	19	16	3	1	42	684	1,296	1,980	2,808	6,642	9,450			
9	35. Choir 39. Airag	9	1	2	17	11	1	0	32	612	891	1,503	2,564	5,832	8,496			
9	39. Airag 41. Sain-s.	9	1	2	16	10	1	0	30	576	810	1,386	2,412	5,265	7,677			
9	41. Sain-s. 45. Z. U.	9	1	2	14	10	1	0	28	504	810	1,314	1,908	5,265	7,173			
3	31. Bagakh. E. Baga-n.	3	0	0	2	5	2	1	10	72	405	477	216	1,215	1,431	2,771	2,781	
7	39. Airag. F. Boron.	7	0	0	1	1	0	0	2	36	81	117	252	567	648	819	951	952
14	41. Sain-s. C. Zuun-b.	14	0	0	4	4	0	0	4	144	0	144	1,008	0	1,008	921	924	

Notes: F:Wagon, G:Goods wagon, H:Mail car, D:Dining car, S:Sleeping car, C:Seat car.

Appendix 6-16 Hauling Capacity and Net ton

(MIR)

Hauling Cap. A (Ton/tr.)	Coal etc.			70ton			Fuel oil			58ton			Gene. Cargo.		
	Net ton	No. of Wagon		Net ton	No. of Wagon		Net ton	No. of Wagon		Net ton	No. of Wagon		Net ton	No. of Wagon	
		Total	Load.		Empty	Total		Load.	Empty		Total	Load.		Empty	Total
3,500	2,634	38	-	2,446	42	-	2,022	65	39	26					
3,200	2,409	34	-	2,236	39	-	1,849	59	36	24					
3,000	2,258	32	-	2,096	36	-	1,716	55	33	21					
2,800	2,108	30	-	1,957	34	-	1,618	52	31	21					
2,600	1,957	28	-	1,817	31	-	1,502	48	29	19					
2,400	1,806	26	-	1,677	29	-	1,387	44	27	18					
2,000	1,505	22	-	1,398	24	-	1,156	37	22	15					
1,400	1,054	15	-	978	17	-	809	26	16	10					
1,200	903	13	-	839	14	-	693	22	13	9					
1,000	753	11	-	699	12	-	578	19	11	7					

Double Locomotive traction

5,100	3,850	55	-
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Cross-sectional traffic volume of Passenger (2020)

Pers./week		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
C.S.T.V. Inter-Na.	0-1	1,392	1,117	0	754	82	673	0	673	0	0	0	0	0	0	0	0	0	0
C.S.T.V. Coming in	S-N	0	0	0	0	0	0	0	0	570	570	0	570	570	0	570	0	827	523
C.S.T.V. Inter-Na.	R-S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
C.S.T.V. Coming out	S-N	3067	2730	0	2428	205	2221	2220	2220	0	0	0	0	0	0	0	0	0	0
C.S.T.V. Inter-Na.	R-S	79	79	0	79	0	79	79	79	79	79	79	79	79	79	79	79	79	79
C.S.T.V. Transit	S-N	84	84	0	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84
C.S.T.V. Inter-Na.	R-S	2,071	1,936	0	833	82	752	752	752	79	79	79	79	82	82	82	82	82	91
C.S.T.V. Total	S-N	3,151	2,814	0	2,511	205	2,304	2,304	2,304	654	654	654	654	654	654	654	654	654	707

Inter-Na. (pers./week)		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
Tr. Cap. (pers./week)	Total	1,493	1,493	0	1,493	1,493	1,493	0	1,493	1,514	1,514	0	1,514	1,514	0	1,514	0	1,514	1,514
Tr. Cap. C.S.T.V.	R-S	1,000	1,000	0	1,493	1,514	1,514	0	1,514	1,514	1,514	0	1,514	1,514	0	1,514	0	1,514	1,514
Tr. Cap. C.S.T.V.	S-N	0.38	0.42	0	0.48	0.28	0.52	0.52	0.52	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85

Domestic (pers./week)		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
Tr. Cap. (pers./week)	Total	5,550	4,449	0	5,550	13,070	16,952	0	17,403	9,461	8,521	400	6,706	5,990	5,627	5,327	548	4,510	0
Tr. Cap. C.S.T.V.	R-S	1,753	1,753	0	1,753	16,447	17,847	0	20,775	10,542	10,410	763	8,891	7,849	6,641	7,325	474	3,918	0
Tr. Cap. C.S.T.V.	S-N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Domestic (pers./week)		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
Tr. Cap. (pers./week)	Total	15,120	2,268	30,294	10,116	20,178	29,013	0	23,013	10,881	10,881	1,411	9,450	8,436	8,191	7,677	1,008	7,173	8,101
Tr. Cap. C.S.T.V.	R-S	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2
Tr. Cap. C.S.T.V.	S-N	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9

Inter-National - Domestic (pers./week)		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
Tr. Cap. (pers./week)	Total	1,090	1,090	0	833	82	752	0	752	79	79	79	79	82	82	82	82	82	82
Tr. Cap. C.S.T.V.	R-S	2,071	2,071	0	2,511	205	2,304	0	2,304	654	654	654	654	654	654	654	654	654	654
Tr. Cap. C.S.T.V.	S-N	3,151	2,814	0	2,511	205	2,304	0	2,304	654	654	654	654	654	654	654	654	654	654
Tr. Cap. C.S.T.V.	R-S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tr. Cap. C.S.T.V.	S-N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Inter-National - Domestic (pers./week)		7-9	7-9	7-9	9-11	11-17	17-22	22-C	22-23	23-27	27-31	31-F	31-35	35-39	39-F	39-41	41-C	41-45	45-46
Tr. Cap. (pers./week)	Total	9,391	10,013	2,268	31,787	10,381	24,506	0	24,506	12,355	12,355	1,431	10,964	10,010	9,191	1,008	8,687	2,124	2,124
Tr. Cap. C.S.T.V.	R-S	1,7	2,0	1,3	2,1	1,3	1,1	0	1,1	1,2	1,2	2,3	1,3	1,3	1,2	1,4	1,3	1,3	3,2
Tr. Cap. C.S.T.V.	S-N	1,1	1,1	1,4	1,0	2,7	1,0	1,0	1,0	1,0	1,0	1,5	1,1	1,1	1,1	1,0	1,7	1,2	2,6

(4)

Train-km and Car-km (2005)

Station No.	0-1	1-6	6-7	7-A	7-9	9-B	9-13	13-17	17-22	22-C	22-23	23-27	27-31	31-E
Train No. km	23	99	5	68	30	164	74	83	81	20	7	48	48	94
Train No. Int. No. (No./week)	3	3	3	0	3	3	1	3	3	0	3	4	4	0
Car No. Int. No. (No./week)	56	56	54	0	54	2	54	54	54	0	54	60	60	0
Train km (One way) (km/week)	69	297	15	0	90	164	222	249	243	0	21	192	192	0
Car km (One way) (km/week)	1,288	5,544	270	0	1,620	328	3,996	4,482	4,374	0	378	2,880	2,880	0
Train No. Domestic (No./week)	7	21	25	14	32	13	25	25	32	0	32	14	14	3
Car No. Domestic (No./week)	42	161	408	28	390	181	293	293	335	0	335	204	204	21
Train km (One way) (km/week)	161	2,079	225	952	960	2,132	1,850	2,075	2,592	0	224	672	672	282
Car km (One way) (km/week)	966	15,939	2,030	1,904	11,700	29,684	21,682	24,319	27,135	0	2,345	9,792	9,792	1,974

Train km & Car km C. Total (One way) (km/week)

Train km (One way) (km/week)	230	2,376	240	952	1,050	2,296	2,072	2,324	2,835	0	245	864	864	282
Car km (One way) (km/week)	2,254	21,483	2,300	1,904	13,320	30,012	25,678	28,801	31,509	0	2,723	12,672	12,672	1,974
(Doub. way) (km/week)														
Train km (Doub. w.) (km/week)	460	4,752	480	1,904	2,100	4,592	4,144	4,648	5,670	0	490	1,728	1,728	564
Car km (Doub. w.) (km/week)	4,508	42,966	4,600	3,808	26,640	60,024	51,356	57,602	63,018	0	5,446	25,344	25,344	3,948
(Doub. way) (km/year)														
Train km (Doub. w.) (km/year)	23,920	247,104	24,960	99,008	109,200	238,784	215,488	241,696	294,840	0	25,480	89,856	89,856	29,328
Car km (Doub. w.) (km/year)	234,416	2,234,232	239,200	198,016	1,385,280	3,121,248	2,670,512	2,995,304	3,276,936	0	283,192	1,317,888	1,317,888	205,296

Train km & Car km

Station No.	31-35	35-39	39-F	39-41	41-C	41-45	45-46	Total
Train No. km	140	103	60	124	47	235	5	1,558
Train No. Int. No. (No./week)	4	4	0	4	0	4	4	-
Car No. Int. No. (No./week)	60	60	0	60	0	60	60	-
Train km (One way) (km/week)	560	412	0	496	0	940	20	-
Car km (One way) (km/week)	8,400	6,180	0	7,440	0	14,100	300	-
Train No. Domestic (No./week)	11	9	7	9	14	9	9	-
Car No. Domestic (No./week)	183	183	14	155	28	141	141	-
Train km (One way) (km/week)	1,540	927	420	1,116	658	2,115	45	-
Car km (One way) (km/week)	25,620	18,849	840	19,220	1,316	33,135	705	-

Train km & Car km

Train km (One way) (km/week)	2,100	1,339	420	1,612	658	3,055	65	25,879
Car km (One way) (km/week)	34,020	25,029	940	26,660	1,316	47,235	1,005	323,407
(Doub. w.) (km/week)								
Train km (Doub. w.) (km/week)	4,200	2,678	840	3,224	1,316	6,110	130	51,758
Car km (Doub. w.) (km/week)	68,040	50,058	1,680	53,320	2,632	94,470	2,010	646,814
(Doub. w.) (km/year)								
Train km (Doub. w.) (km/year)	218,400	139,256	43,680	167,648	68,432	317,720	6,760	2,691,416
Car km (Doub. w.) (km/year)	3,538,080	2,603,016	87,360	2,772,640	136,864	4,912,440	104,520	33,634,328

(km/day)
7.374
92.149

Train-km and Car-km (2010)

Station No.	0-1	1-6	6-7	7-A	7-9	9-8	9-13	13-17	17-22	22-C	22-23	23-27	27-31	31-E
km	23	99	5	68	30	164	74	83	81	20	7	48	48	94
Train No. Int. No. (No./week)	3	3	3	0	3	1	3	3	3	0	3	4	4	0
Car No. Int. No. (No./week)	56	56	54	0	54	2	54	54	54	0	54	60	60	0
Train km (One way) (km/week)	69	297	15	0	90	164	222	249	243	0	21	192	192	0
Car km (One way) (km/week)	1,288	5,544	270	0	1,620	328	3,936	4,482	4,374	0	378	2,380	2,380	0
Train No. Domestic (No./week)	14	25	45	14	32	14	25	25	32	0	32	14	14	3
Car No. Domestic (No./week)	63	217	427	28	417	194	314	314	358	0	358	204	204	21
Train km (One way) (km/week)	322	2,475	225	952	960	2,298	1,850	2,075	2,592	0	224	672	672	282
Car km (One way) (km/week)	1,449	21,483	2,135	1,904	12,510	31,816	23,236	26,082	28,836	0	2,492	9,792	9,792	1,974

Train km & Car km G. Total (One way) (km/week)

Train km (One way) (km/week)	391	2,772	240	952	1,050	2,460	2,072	2,324	2,835	0	245	864	864	282
Car km (One way) (km/week)	2,737	27,027	2,405	1,904	14,130	32,144	27,232	30,544	33,210	0	2,370	12,672	12,672	1,974
Train km (Doub. w.) (km/week)	782	5,544	480	1,904	2,100	4,920	4,144	4,648	5,670	0	490	1,728	1,728	564
Car km (Doub. w.) (km/week)	5,474	54,054	4,810	3,808	28,260	64,288	54,464	61,088	66,420	0	5,740	25,344	25,344	3,948
Train km (Doub. w.) (km/year)	40,664	288,288	24,960	99,008	109,200	255,840	215,488	241,696	294,840	0	25,480	89,856	89,856	29,328
Car km (Doub. w.) (km/year)	284,648	2,810,808	250,120	198,016	1,469,520	3,342,976	2,832,128	3,176,576	3,453,840	0	298,480	1,317,888	1,317,888	205,296

Train km & Car km

Station No.	31-35	35-39	39-F	39-41	41-C	41-45	45-46	Total
km	140	103	60	124	47	235	5	1,558
Train No. Int. No. (No./week)	4	4	0	4	0	4	4	-
Car No. Int. No. (No./week)	60	60	0	60	0	60	60	-
Train km (One way) (km/week)	560	412	0	496	0	940	20	-
Car km (One way) (km/week)	8,400	6,180	0	7,440	0	14,100	300	-
Train No. Domestic (No./week)	11	9	7	9	14	9	9	-
Car No. Domestic (No./week)	183	183	14	155	28	141	141	-
Train km (One way) (km/week)	1,540	927	420	1,116	658	2,115	45	-
Car km (One way) (km/week)	25,620	18,849	840	19,220	1,316	33,135	705	-

Train km & Car km

Train km (One way) (km/week)	2,100	1,339	420	1,612	658	3,055	65	26,600
Car km (One way) (km/week)	34,020	25,029	340	26,660	1,316	47,235	1,005	337,626
Train km (Doub. w.) (km/week)	4,200	2,678	840	3,224	1,316	6,110	130	53,200
Car km (Doub. w.) (km/week)	68,040	50,058	1,680	53,320	2,632	94,470	2,010	675,252
Train km (Doub. w.) (km/year)	218,400	139,256	43,680	167,648	68,432	317,720	6,760	2,766,400
Car km (Doub. w.) (km/year)	3,538,080	2,603,016	87,360	2,772,640	136,864	4,912,440	104,520	35,113,104

(km/day)

7,579

96,200

Train-km and Car-km (2020)

Station No.	0-1	1-6	6-7	7-8	7-9	9-8	9-13	13-17	17-22	22-C	22-23	23-27	27-31	31-E
Train No. (No./week)	3	3	3	0	3	1	3	3	3	0	7	48	4	0
Car No. (No./week)	56	56	54	0	54	2	54	54	54	0	54	60	60	0
Train km (One way) (km/week)	69	297	15	0	90	184	222	243	243	0	21	192	192	0
Car km (One way) (km/week)	1,288	5,544	270	0	1,620	328	3,996	4,482	4,374	0	378	2,880	2,880	0
Train No. Domestic (No./week)	14	28	49	14	35	14	28	35	35	0	35	14	14	3
Car No. Domestic (No./week)	63	233	427	28	417	194	363	405	405	0	405	204	204	21
Train km (One way) (km/week)	322	2,772	245	952	1,050	2,296	2,072	2,905	2,835	0	245	672	672	282
Car km (One way) (km/week)	1,449	23,562	2,135	1,904	12,510	31,816	26,862	33,615	32,805	0	2,835	9,792	9,792	1,974

Train km & Car km C. Total (One way) (km/week)

Train km (One way) (km/week)	391	3,069	260	952	1,140	2,460	2,294	3,154	3,078	0	266	864	864	282
Car km (One way) (km/week)	2,737	29,106	2,405	1,904	14,130	32,144	30,858	38,097	37,179	0	3,213	12,672	12,672	1,974
Train km (Doub. w.) (km/week)	782	6,138	520	1,904	2,280	4,920	4,588	6,308	6,156	0	532	1,728	1,728	564
Car km (Doub. w.) (km/week)	5,474	58,212	4,810	3,808	28,260	64,288	61,716	76,194	74,358	0	6,426	25,344	25,344	3,948
Train km (Doub. w.) (km/year)	40,664	319,176	27,040	99,008	118,560	255,840	238,576	328,016	320,112	0	27,664	89,856	89,856	29,328
Car km (Doub. w.) (km/year)	284,648	3,027,024	250,120	198,016	1,469,520	3,342,976	3,209,232	3,962,088	3,866,616	0	334,152	1,317,888	1,317,888	205,296

Train km & Car km

Station No.	31-35	35-39	39-F	39-41	41-G	41-45	45-46	Total
Train No. (No./week)	4	4	0	4	0	4	4	-
Car No. (No./week)	60	60	0	60	0	60	60	-
Train km (One way) (km/week)	560	412	0	496	0	940	20	-
Car km (One way) (km/week)	8,400	6,180	0	7,440	0	14,100	300	-
Train No. Domestic (No./week)	11	5	7	9	14	9	9	-
Car No. Domestic (No./week)	183	183	14	155	28	141	141	-
Train km (One way) (km/week)	1,540	927	420	1,116	658	2,115	45	-
Car km (One way) (km/week)	25,620	18,849	840	19,220	1,316	33,135	705	-

Train km & Car km

Train km (One way) (km/week)	2,100	1,339	420	1,612	658	3,055	65	28,323
Car km (One way) (km/week)	34,020	25,029	840	26,660	1,316	47,235	1,005	355,196
Train km (Doub. w.) (km/week)	4,200	2,678	840	3,224	1,316	6,110	130	56,646
Car km (Doub. w.) (km/week)	68,040	50,058	1,680	53,320	2,632	94,470	2,010	710,392
Train km (Doub. w.) (km/year)	218,400	139,256	43,680	167,648	68,432	317,720	6,760	2,945,592
Car km (Doub. w.) (km/year)	3,538,080	2,603,016	87,360	2,772,640	136,864	4,912,440	104,520	36,940,384

(km/day)
8,070
101,207