A6.2 Public Transport Network

The basic public transport network in Phnom Penh is composed of inter-city bus/taxi-bus routes radiating from the inter-city terminals in the CBD, with river transport partly playing a role. However, the major public transportation mode in the city is the motodop. This is a motorcycle taxi, which serves any road and street in the city, except for Nordom Street. Because of its high level of service, in terms of frequency and door-to-door trips, the motodop is regarded as the trunk public transport mode in Phnom Penh. The cyclo, which is a traditional 3-wheel bicycle taxi, serves as a public transport mode in the CBD also. However, the number of cyclos has drastically decreased from more than 10,000 to just 1,200 in recent years due to speed concern and their influence on the other transportation modes on roads. On the other hand, the motorumok is the public transportation mode serving the suburban area. This mode is used mainly by factory workers to commute to/from work and by farmers to transport their goods to the market.

Public transport modes, which provide inter-city service, include air transport, river transport, railway and bus (ordinary and taxi-bus). As mentioned earlier, Royal Railways of Cambodia operates a 650-km railway network in the country. There are mainly two lines originating from the Phnom Penh central terminal: the Northern line to Battambang, and the Southern line to Sihanoukville. The weekly frequency of train operation is four trips for each line and there is no urban rail service in Phnom Penh Metropolitan Area. As regards river transport, its role has greatly diminished over the past years. Nowadays, mainly ferry services are available to the public, but there are 2 international inland freight ports, which are supported by Japan and ADB. Meanwhile, the country's air transport network consists of 9 international routes and 7 domestic routes, centered at the Pochentong International Airport.
A schematic public transport network is shown in Figure A6.2.1

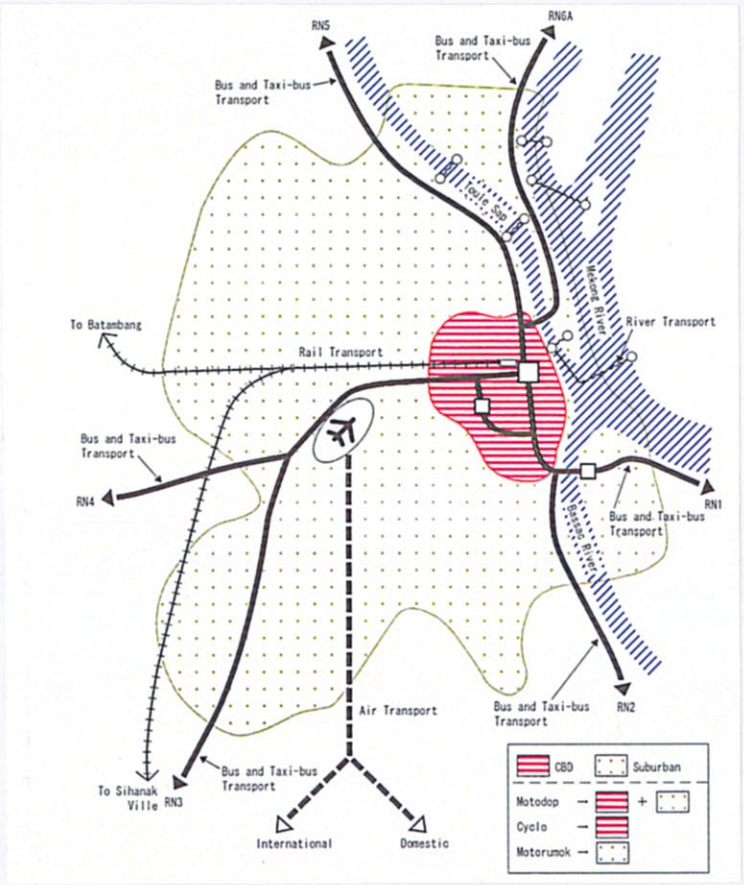


Figure A6.2.1 Schematic Public Transport Network

A6.3 Bus Transport

The bus transport, which is centered at Phnom Penh, is composed of ordinary buses and taxi-buses.

A6.3.1 Bus system

(1) Bus

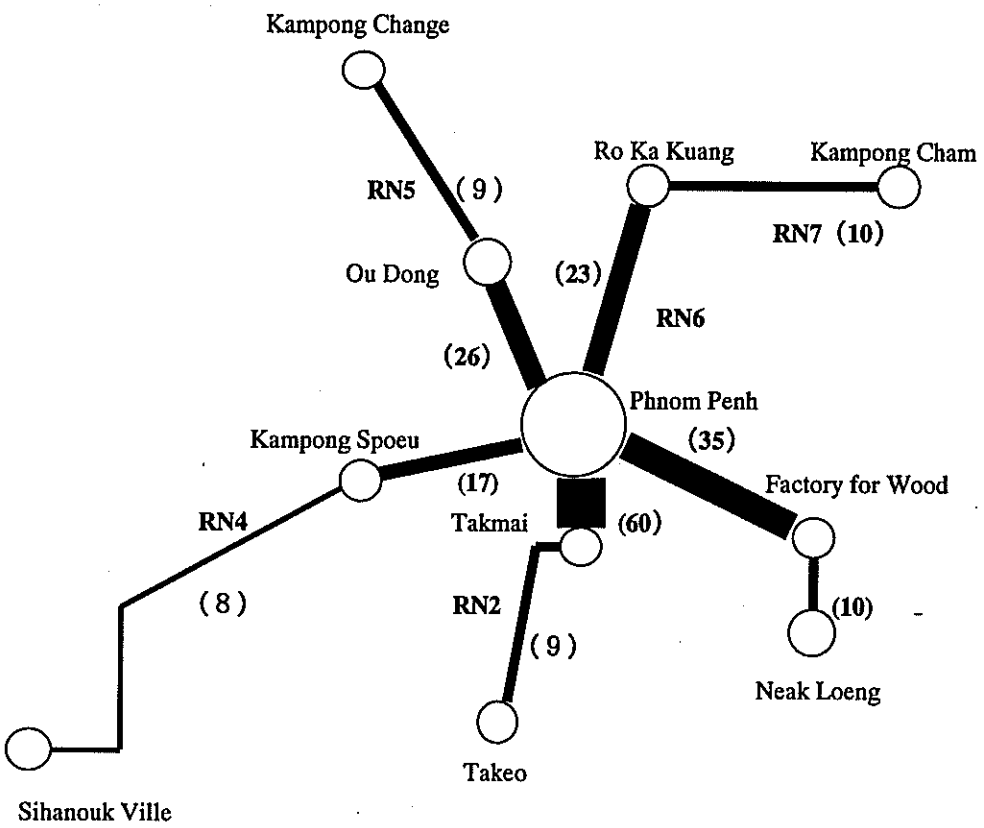
4 bus companies currently operate for inter-city/international services from/to Phnom Penh.

City bus operation started in 1996. There were originally 7 routes consisting of 2 circular routes and 5 radial routes, which were operated by Ho Wah Genting Transport Co. Ltd., a Malaysian firm. However, city bus operation was suspended after just a few months owing to the deteriorated operational conditions brought about by the large volume of motodop traffic. Therefore, Ho Wah Genting shifted from intra-city bus service to inter-city.

Two other bus companies operate inter-city service to Sihanoukville and Compong Cham from on-street terminals near the Central Market.

There are presently 161 buses departing from the Central Market bus terminal every day and the number of departing passengers is approximately 5,500 per day, as shown in Figure A6.3.1.

There is also an international long distance bus service to Ho Chi Ming in Vietnam (2 trips/week), operated by the Department of Public Works and Transport in the Municipality of Phnom Penh.



Note: Figures in parenthesis is daily trips per route

Figure A6.3.1 Provincial Bus Route Network and Daily Trips by 3 Inter-city Bus Companies

(2) Taxi-bus

As mentioned earlier, the so-called taxi-buses (vans, pickups and sedans) have 6 terminals, including one in Central Market. These public transportation modes have fixed long distance routes but they are often changed depending upon the request of passengers; sometimes taxi-buses also serve in intra-city operation. Each taxi-bus terminal has a layout plan prepared by the Department of Public Works and Transport. Terminal facilities include a queuing space and a passenger loading/unloading area; however, the terminals are always congested because of the large number of participating taxi-buses.

A6.3.2 Terminals and Route Structure

The location of bus and taxi-bus terminals is shown in Figure A6.3.2. There are 3 bus terminals (1 off-street and 2 on-street terminals near the Central Market) and 6 taxi-bus terminals in the city. All of the buses depart and arrive from/to the Central Market. On the other hand, taxi-buses depart from terminals scattered in the CBD along major thoroughfares. Based on the terminal location and daily frequencies by type of bus and by route, shown in Table A6.3.1, the route structures of the bus and taxi-bus are depicted in Figure A6.3.3. The bus route structure has a radial pattern centered at the Central market while the taxi-bus has a radial-circumferential pattern based on its decentralized terminals. The heaviest section of bus and taxi-bus traffic volume (combined total of 635 vehicles/day) can be seen at Old Stadium Roundabout near the French Embassy and this is the entrance/exit from/to the northern provinces of Cambodia.

Legend

■	Bus/Taxi-bus (Location) Terminal
△	International Long Distance Bus Terminal
□	Bus Terminal
●	Taxi-Bus (Location) Terminal

Figure A6.3.2 Location of Bus and Taxi-bus Terminals

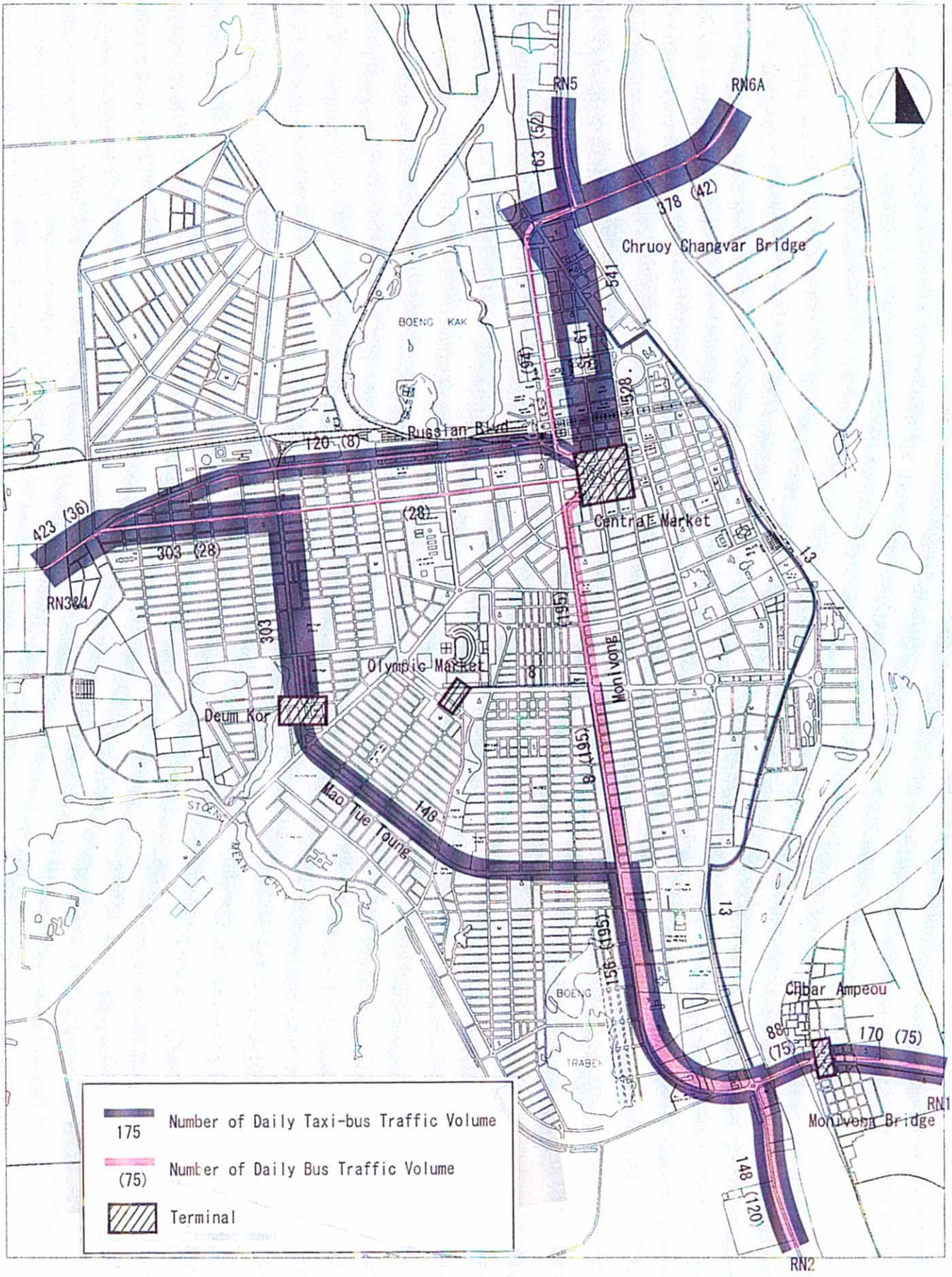


Figure A6.3.3 Bus and taxi-bus route structure

Table A6.3.1 (a) Daily frequencies, passengers and fare by bus terminal and by route

Bus Route	Destination		Distance (km)	Fare (riels)	From PP to Province		From Province to PP		Via
					Frequency	No. of pax	Frequency	No. of pax	
Ho Wah	Route No.4				14				Kampuchea-Russia-RN4
Genting		Sihanoukville	220	10,000	5				
Transport		Kampong Spoeu	48	4,500	9				
Co.	Route No.6A				21				Monivong-RN6
(250 staff		Kampong Cham	125	5,000	8				
including		Ro Ka Kaung	35	3,000	13				
65 drivers)	Route No.5				26				Monivong-RN5
		Ou Dong	37	2,500	17				
		Kampong Chnang	91	4,500	9				
	Route No.2				60				Monivong-RN2
		Ta Keo	77	4,500	9				
		Ta Kmau		1,200	51				
	Route No.1				35				Monivong-RN1
		Neak Loeng	60	4,000	10				
		Koki Market		2,000	25				
	Total				156				
G.S.T.	Route No.6								Monivong
Express		Kampong Cham	125	5,000	2		2		
Bus	Route No.4								Russia
(25 staff &		Sihanoukville	220	10,000	1		1		
12 drivers)	Total				3	0	3	0	
D.H.	Route No.4								Russia
Cambodia		Sihanoukville	220	10,000	1		1		
Group									
(15, 6)	Total				1	0	1	0	

Source: Department of Public Works and Transport in MPP

Table A6.3.1 (b) Daily frequencies, passengers and fare by taxi-bus terminal and by route

Bus Route	Destination	Distance (km)	Fare(riels)			From PP to Province		From Province to PP		Via
			Van	Pickup	Limousine	Frequency	No. of pax	Frequency	No. of pax	
Central Market	Route No.6					168	2169	197	2494	St.61-France
	Ro Ka Kaung	35	2000	2000	3000	29	336	36	405	-Oknha Khleang-RN6
	Prek Po	49		5000		16	240	19	265	
	Kampong Cham	125	4000	4000	7000	49	573	55	636	
	Soung	150	10000	10000		19	285	23	345	
	Kampong Thom	165	6000	6000	7000	27	315	33	378	
	Seam Reap	328		15000		28	420	31	465	
	Route No.5					75	837	88	978	St.61-France
	Pour Sat	183	6000	4000	12000	22	249	26	291	-Oknha Khleang-RN5
	Batdambang	296		20000	25000	40	438	45	495	
	Poy Pet	394		30000	35000	13	150	17	192	
	Route No.4					53	488	67	628	Vivadhapura-Russia-RN4
	Srae Ambel	161	4000	4000	7000	22	222	29	300	
	Kampong Som	240	6000	4000	10000	31	266	38	328	
	Total					296	3494	352	4100	
Chba Ampao	Route No.1					88	1375	74	1246	RN1
	Neak Leung	68	2000	2000	3000	47	659	41	612	
	Svay Rieng	125	7000	7000	7000	25	428	19	354	
	Kamchay Mar	140	7000	7000	7000	10	180	7	140	
	Oring Ove	135	7000	7000	7000	6	108	7	140	
	Route No.6A					5	90	8	40	Monivong Bridge-Nordom
	Kampong Popil	60	3000	3000		5	90	8	40	-Sothearos-Sisovath
	Total					93	1465	82	1286	-So Theavong-Fance
Deum Kor	Route No.2					68	544	80	542	Mao Tse Toung-Monivong
	Ang Tasoum	74								-RN2
	Ta Keo	82	2000	2500	5000	36	288	36	252	
	Kampong Chrey	100				12	88	17	108	
	Tonleup-Kiri Vong	137		7000	10000	20	168	27	182	
	Route No.3					122	1327	130	956	Mao Tse Toung-Kampuchea
	Ang Tasoum	74				35	426	35	237	-Russia-RN3&4
	Ta Keo	82	2500	2500	5000	12	168	13	91	
	Tram Kak	101	3000	3000	5000	14	140	16	128	
	Tany Tuk Meas	120	5000	5000		6	84	7	63	
	Chouk	107				13	114	14	98	
	Kampot	148	5000	5000	10000	32	265	34	238	
	Kampong Trach	160				2	28	3	21	
	Kaeb	175								
	Slab Leng	65	2500	3000		3	42	3	30	
	Basedth	73	2500	3000		5	60	5	50	
	Route No.4					24	186	27	118	
	Kampong Speu		3000	3000		9	81	10	50	
	Srae Ambel		5000	5000		15	105	17	68	
	Total					214	2057	237	1616	
Olympic Market	Route No.1									Sihanouk-Monivong-RN1&2
	Prey Veaeng	90				4	48	4	48	
	Svay Rieng	125	6000	6000	10000	19	165	19	156	
	Baryeut	165				22	201	22	175	
	Total					45	414	45	379	
Chark Angrae	Route No.2									Sihanouk-Monivong-RN1&2
	Angkor Borey	96				6	72	6	60	
	Prey Lvea	75				12	120	12	108	
	Punley	78				5	55	5	50	
	Char	65				4	52	4	48	
	Svay Prey	64				4	44	4	52	
	Sorm	73				3	27	3	21	
	Ta Keo	78						14	182	
	Total					34	370	48	521	
Choam Chau	Route No.3/4									RN3&4
	Srae Ambel					6	58	24	274	
	Sihanoukville	220				2	24	20	219	
	Total					8	82	44	493	

Source: Department of Public Works and Transport in MPP

A6.4 Taxi Transport

There are a total of 82 taxis operating in the city of Phnom Penh, all of which function as airport taxis. The fare between the airport and the city center is about 7 dollars. Each of them has an identification number and the words 'Taxi' painted on the body. In addition, there are illegal taxis waiting near hotels. It is difficult to obtain the fleet size and characteristics of these taxis.

A6.5 Para-transit Transport (Motodop, Cyclo and Motorumok)

A6.5.1 General

In general, the term of 'para-transit' is defined as supplemental transportation means to the trunk transport system. However, the main public transportation modes in Phnom Penh are the para-transit such as motodop, cyclo and motorumok, because of the absence of a mass transit system, such as buses, in the Municipality of Phnom Penh. There was a city bus system before, however, it was suspended because of mainly two reasons: (1) the size of the city was deemed too small to operate a bus system and (2) the large volume of motodops. Among the three para-transit modes, the motodop is the dominant mode of public transport in Phnom Penh.

A6.5.2 Motodop

As motorcycles drastically increased in the 1990's, the motodop became a popular and convenient transportation mode, because of its high level of service in terms of cheaper fare, frequency and door-to-door trips. They were used to transport people, with the passengers (2 to 3 maximum, sometimes) sitting on the back seat. Number of motorcycles and motodops are 76,225 and 6,098 in 1999, based on the survey done by the Department of Public Works and Transport in the Municipality of Phnom Penh.

The motodops provides important service to the city and supports the urban activities in Phnom Penh. It may not be the most efficient system for the city, as it contributes to congestion and traffic problems, but it provides a substantial income for thousands of marginal families, including many students who support themselves by working as motodop drivers.

It is easy to get into the motodop business; all it takes is capital between US$300-450 to purchase a second-hand motorcycle. Most of the motodop drivers borrowed either the full amount or part of the cost from their relatives to purchase a motorcycle. And many participants are still entering this business, because there is no need to get licenses for the operation of this business.

A6.5.3 Cyclo

In the early 80's, the common form of public transport system in the city was the cyclo. This is a three-wheeled cycle with the driver on a high seat behind the passenger seat (see picture in Figure A6.1.1 (a)).

Cyclo drivers are among the low-income groups in Phnom Penh. Most of them originally come from provinces outside the capital. They usually have a number of dependents, but have few skills to afford them higher incomes.

Driving a cyclo is hard work, and the income is not enough. Most cyclo drivers rent their cyclos for approximately 2,000 riels a day.

The number of cyclos has drastically decreased from more than 10,000 to just 1,203 in recent years due to speed concern and their influence on the other transportation modes on roads.

A6.5.4 Motorumok

On the outskirts of the city, trailers are attached to the back of motorcycles to transport people and goods for journeys longer than those taken by motodops and cyclos. These are called motorumoks and can transport 12 or 15 persons at a time. This mode is used mainly by factory workers to commute to/from work and by farmers to transport their goods to the market. In 1999, the number of motorumoks in the city was 227.

A6.5.5 Countermeasures of the Department of Public Works and Transport for Para-transit Transportation

The Department of Public Works and Transport has ideas of countermeasures for anticipated problems in the future concerning para-transit transportation. These are as follows:

a. Introduction of a registration system for motodops together with the wearing of uniform, and
b. Operation of cyclos only in a tourist zone, which will be designated by the Municipality in the future.

A6.6 Railway Transport

A6.6.1 Railway Network and Infrastructure

Royal Railways of Cambodia operates two (2) lines: the Northern line and the Southern line.

The Northern or old line, which was constructed by four stages from 1929 to 1942, runs 385 km from Phnom Penh to the Thai border at Poipet. However, its connection to Thailand's railway system has been non-existent since 1961 owing to a gap of 15 km between Poipet station and the Thai station of Aranyaprathet. (The distance from Phnom Penh to Bangkok is 655 km.) There are 174 bridges on the line, of which 46 have damages caused by war, particularly land mines, and have received temporary repairs.

The Southern line or new line takes off at a bifurcation 9.4 km from Phnom Penh station, and continues for 254 km to the port of Sihanoukville, 263 km from Phnom Penh. The line was built from 1960 to 1969 in three stages. There are 94 bridges along this line, and the rails are in very good condition.

The two lines have a total of 71 stations, which are classified into the following: 14 main stations, 19 stations and 38 halts.

There is a branch line that stretches 6 km, from Phnom Penh station to the riverside, which leads to warehouses. Other sidetracks that exist are for special purposes, e.g. to transport ballast quarry production.

Figure A6.6.1 shows the network of Royal Railways of Cambodia.

A6.6.2 Rolling Stock

Royal Railways of Cambodia has 29 locomotives (8 are steam engines unused since mid 1993). Until recently, there were 22 passenger coaches in use, all old and long overdue for replacement, although repairs are still possible. Consequently, a large number of passengers are carried in goods wagons. As to freight wagons, there are 126 at present.

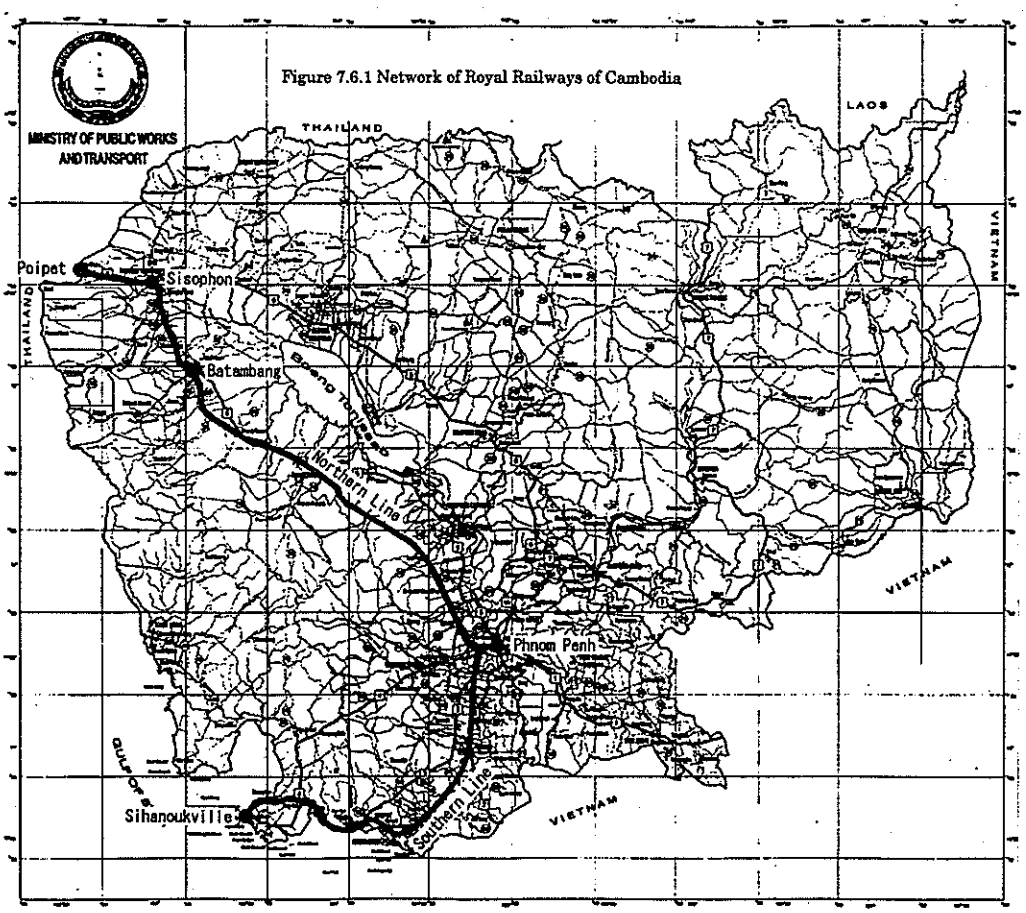


Figure A6.6.1 Network of Royal Railways of Cambodia

A6.6.3 Present Operation and Situation of the Tracks

Four trains are scheduled on even days and eight trains on odd days, which are distributed as follows: four (two each for freight and passenger) on the Northern line between Phnom Penh and Battambang; four on the Southern line between Phnom Penh and Sihanoukville; and four shuttle trains between Battambang and Sisophon. Both trains of the Northern and Southern lines leave Phnom Penh on an even day, and return the next day, an odd day. For Battambang-Sisophon line, the train leaves on an odd day and returns the same day. Some extra trains may operate during the week to clear any remaining traffic.

There are ongoing destructions of railway tracks by acts of terrorism. Aside from these armed attacks on trains, there are technical breakdowns and flooding, which have prevented, at one point, at least 60% of trains from operating, particularly on the Northern line. In fact, in 1995, the trains could be operated only for a month because of a number of technical problems, and more than half of the cancellations were due to security reasons.

Gross train weights are limited to 850 tons, with the trailing weight of the train normally limited to 700 tons. Maximum speed is 35 km/h, but the average speed is around 20 km/h. Time schedules are difficult to keep, as the trains are very crowded and require some time at each station for loading and unloading of people and luggage.

There are 93 steel bridges and 81 concrete bridges in this sector, and a number of them have been damaged by war. In 48 different locations, an accumulated total length of 1,160 m has been destroyed by land mines. At present, all of the bridges have been temporarily supported by wooden sleepers. Culvert boxes and pipes, small station buildings, and signaling and communication facilities can also be found along the two lines, but they have been damaged by war as well.

A6.6.4 Traffic Volume

In 1999, the total freight and passenger traffic were 269,000 tons (Northern line: 189,000 ton and Southern line: 80,000 tons) and 429,000 passengers (Northern line: 302,000 passengers and Southern line: 127,000 passengers), respectively. The trend of freight traffic smoothly increased during the 1990's (2.3 times from 1990 to 1999); on the other hand, passenger traffic drastically decreased within the same period. Annual number of passengers in 1999 was 429,000, representing only 31% out of 1,384,000 passengers in 1992.

Freight-km and passenger-km in 1999 were 50,209 thousand freight-km and 77,386 thousand passenger-km, respectively. And average travel distances for freight and passenger were 288 km and 117 km, respectively. The average travel distance in the Northern line is longer than the Southern line. These operational characteristics are summarized in Table A6.6.1.

The transportation of containers by rail is the major objective of Royal Railways of Cambodia, and this has not been highly appraised for the near future, as well as the needs for loading and unloading facilities. The policy of commodity flow in the Cambodian Government is to switch from the damaged National Road No. 4 and No. 5 to rail.

The railway is still suffering many operational difficulties, and playing only a very small role in the national economy at present. It handles only 5% – 10% of the market between Phnom Penh and Sihanoukville. To illustrate this point, in 1996, the port traffic was approximately 650,000 tons, but the railway carried only 26,000 tons (4% of total port traffic), including non-port traffic.

On the other hand, the passenger and freight traffic at Phnom Penh Central Terminal are shown in Figure A6.6.2 and Table A6.6.2, respectively. Annual rail passengers at Phnom Penh Central Station in 1999 are 131,532 (360 passengers/day) and 80% out of total passengers use Northern line. Peak month in 1999 can be seen in April due to the New Year movement in Cambodia. Annual freight transport from/to the Central Station are approximately 239 thousand tons. 77% out of total freight tons are carried by Northern line and 73% out of total tons are cement and other construction materials.

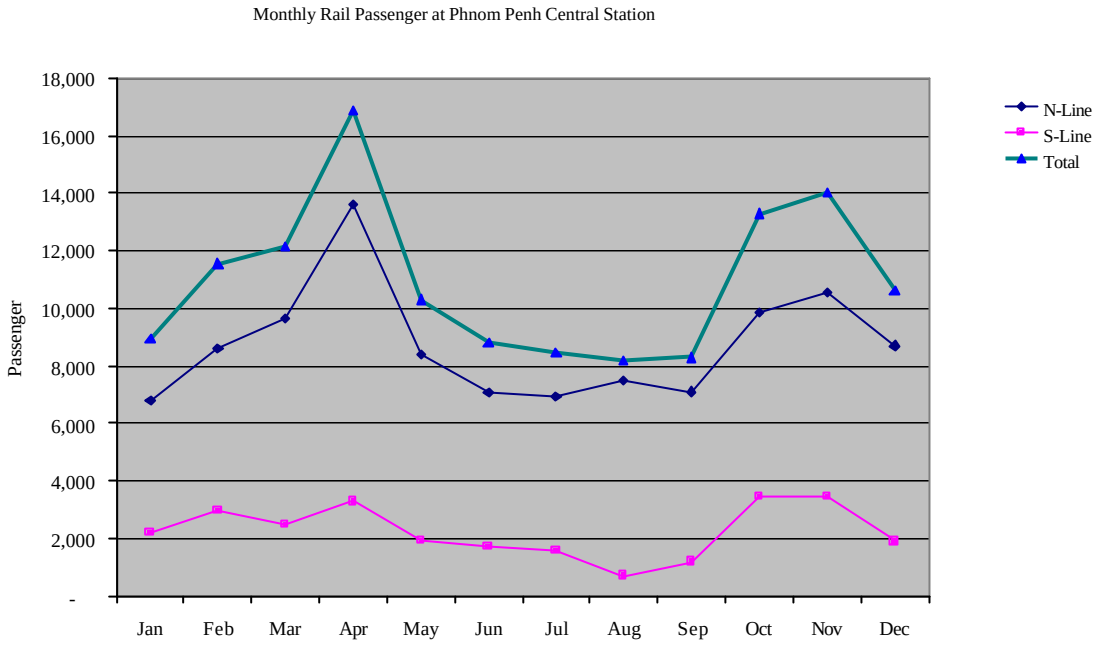
Table A6.6.1 Railway Traffic (1990 – 1999) in Cambodia

Item	Route	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Passenger	South	186,000	212,000	531,000	270,000	220,000	287,500	396,000	147,084	118,065	127,171
	North	278,000	405,000	853,000	611,000	294,000	236,200	200,000	383,175	319,539	301,940
	Total	464,000	617,000	1,384,000	881,000	514,000	523,700	596,000	530,259	437,604	429,111
Freight	South	51,000	26,400	23,700	15,600	12,600	16,500	25,807	67,149	86,441	80,272
(tones)	North	64,900	38,000	90,800	114,200	48,200	33,290	50,180	102,334	208,010	189,268
	Total	115,900	64,400	114,500	129,800	60,800	49,790	75,987	169,483	294,451	269,540

Item	Route	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Passenger	South	14,200,000	16,900,000	18,300,000	22,300,000	20,300,000	21,045,000	26,752,500	18,452,057	10,645,000	11,994,224
km	North	19,400,000	25,000,000	94,400,000	58,000,000	18,300,000	17,398,600	14,500,000	34,683,806	33,214,789	38,215,010
	Total	33,600,000	41,900,000	112,700,000	80,300,000	38,600,000	38,443,600	41,252,500	53,135,863	43,856,789	50,209,234
Freight	South	10,400,000	4,700,000	3,500,000	3,900,000	2,700,000	2,490,900	3,396,500	11,474,119	10,675,772	17,101,116
km	North	13,700,000	7,700,000	24,100,000	30,100,000	11,400,000	5,306,700	6,303,300	24,620,469	65,109,238	60,284,421
(tone kms)	Total	24,100,000	12,400,000	27,600,000	34,000,000	14,100,000	7,797,600	9,699,800	36,094,588	75,785,010	77,385,537

Item	Route	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Pax Ave	South	76.3	79.7	34.5	82.6	92.3	73.2	67.6	125.5	90.2	94.3
km	North	69.8	61.7	110.7	94.9	62.2	73.7	72.5	90.5	103.9	126.6
	Total	72.4	67.9	81.4	91.1	75.1	73.4	69.2	100.2	100.2	117.0
Freight	South	203.9	178.0	147.7	250.0	214.3	151.0	131.6	170.9	123.5	213.0
Ave. km	North	211.1	202.6	265.4	263.6	236.5	159.4	125.6	240.6	313.0	318.5
	Total	207.9	192.5	241.0	261.9	231.9	156.6	127.7	213.0	257.4	287.1

Source: Royal Railway of Cambodia



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annualy	Daily
N-Line	6,791	8,589	9,667	13,598	8,392	7,094	6,916	7,466	7,105	9,849	10,569	8,701	104,737	287
S-Line	2,179	2,962	2,499	3,285	1,901	1,714	1,569	697	1,184	3,439	3,479	1,887	26,795	73
Total	8,970	11,551	12,166	16,883	10,293	8,808	8,485	8,163	8,289	13,288	14,048	10,588	131,532	360

Source :Royal Railways of Cambodia

Figure A6.6.2 Monthly Rail Passengers at Phnom Penh Central Station in 1999

Table A6.6.2 Rail Freight Transport from/to Phnom Penh Central Station in 1999

Items		Rice/ Foods	Fuel	Cement/ Construction Materials	Others	Total
North Line	Arrival From Batambang to P P.	24,550	0	136,531	5,840	166,921
		14.7%	0.0%	81.8%	3.5%	100.0%
	Departure From P.P to Batambang	5,830	8,205	710	1,465	16,210
		36.0%	50.6%	4.4%	9.0%	100.0%
South Line	Arrival From Sihanoukville to P.P	5,347	11,745	35,816	509	53,417
		10.0%	22.0%	67.0%	1.0%	100.0%
	Departure From P.P to Sihanoukville	0	0	1,985	0	1,985
		0.0%	0.0%	100.0%	0.0%	100.0%
Total		35,727	19,950	175,042	7,814	238,533
		15.0%	8.4%	73.4%	3.3%	100.0%

Source: Royal Railway of Cambodia

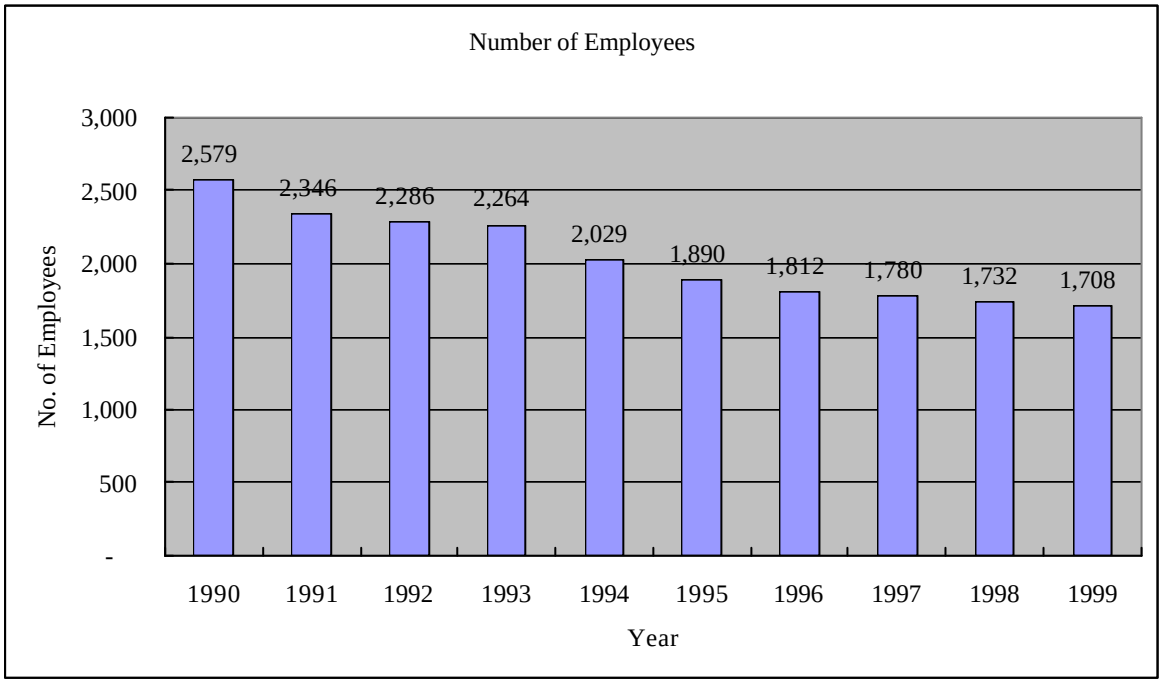
A6.6.5 Employees

In 1999, the number of employees of Royal Railways of Cambodia was 1,708. This figure was a mere 34% of the 2,579 employees in 1990, as shown in Table A6.6.3.

Table A6.6.3 Number of Employees (1990 – 1999)

Items		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total		2,579	2,346	2286	2264	2029	1890	1812	1780	1732	1708
Administrative		485	422	442	220	328	310	305	304	304	300
Track and Bridge		331	305	292	424	262	246	239	235	226	224
Rolling Stock		492	466	456	292	471	434	414	404	296	390
Operations		580	534	504	458	466	433	410	398	390	389
District		467	471	548	693	365	528	510	501	479	519
	Kampot	179	187	177	181	124	113	109	109	109	73
	Sihanoukville	97	95	112	95	79	77	73	73	73	149
	Pursat	27	25	256	232	3	184	179	174	157	157
	Battambang	164	164	3	185	159	154	149	145	140	140

Source: Royal Railways of Cambodia



A6.6.6 Revenues and Expenses

Total revenue of Royal Railways of Cambodia in 1998 was 5,820 million riels, broken down as follows: exploitation revenue of 4,610 million riels (79%), exploitation subsidy of 1,205 million riels (21%), and others. About 82% of exploitation revenue was freight. On the other hand, operating expenses totaled 7,183 million riels. The break down of the expenses is as follows: materials and supplies is 2,149 mils. Riels (30% of total expenses), personnel expense is 1,140 mils. Riels (16%), fuel cost is 1,953 mil. riels (27%), depreciation is 548 mil. riels (8%) and others are 1,394 mil. riels (19%). Based on the above conditions, operating ratio in 1998 was 123.6%. This is considered an improvement compared to 1996 and in 1997; however, Royal Railways of Cambodia is still under debt management.
Revenues and expenses of Royal Railways of Cambodia are summarized in Table A6.6.4.

Table A6.6.4 Revenues and Expenses in 1999

Items		Riel 000	%
Operating Revenues		5,799,908	100.0
	Exploitation Revenues	4,596,945	79.2
	Freight	3,795,172	82.5
	Passenger	681,303	14.8
	Others	120,470	2.6
	Exploitation Subsidies	1,197,192	20.6
	Others	5,467	0.1

Items		Riel 000	%
Operating Expenses		7064450	100
	Materials Supply	1630838	23.1
	Personnel Expenses	1116060	15.8
	Fuel Cost	1964112	27.8
	Depreciation	577630	8.2
	Others	1325810	18.8

Operating Revenues-Expenses and Operating Ratio

Fiseal Year	Operating Revenues (Riel 000)	Operating Expenses (Riel 000)	Operating Ration (%)
1993	2580146	3047746	118.1
1994	4614074	5363648	116.2
1995	4594948	5306583	115.5
1996	4326561	5692940	131.5
1997	3968951	5844696	147.3
1998	5799908	7064480	121.8

Source: Royal Railways of Cambodia

A6.6.7 Program for Rehabilitation of Royal Railways of Cambodia

To solve the problems that have been described above and to improve management, Royal Railways of Cambodia has developed a program for rehabilitation of the rail transport as summarized in Table A6.6.4. The program schedule is from 2000 to 2003, with an estimated total cost of 61.45 million dollars. The financial source of the program has not been decided as yet.

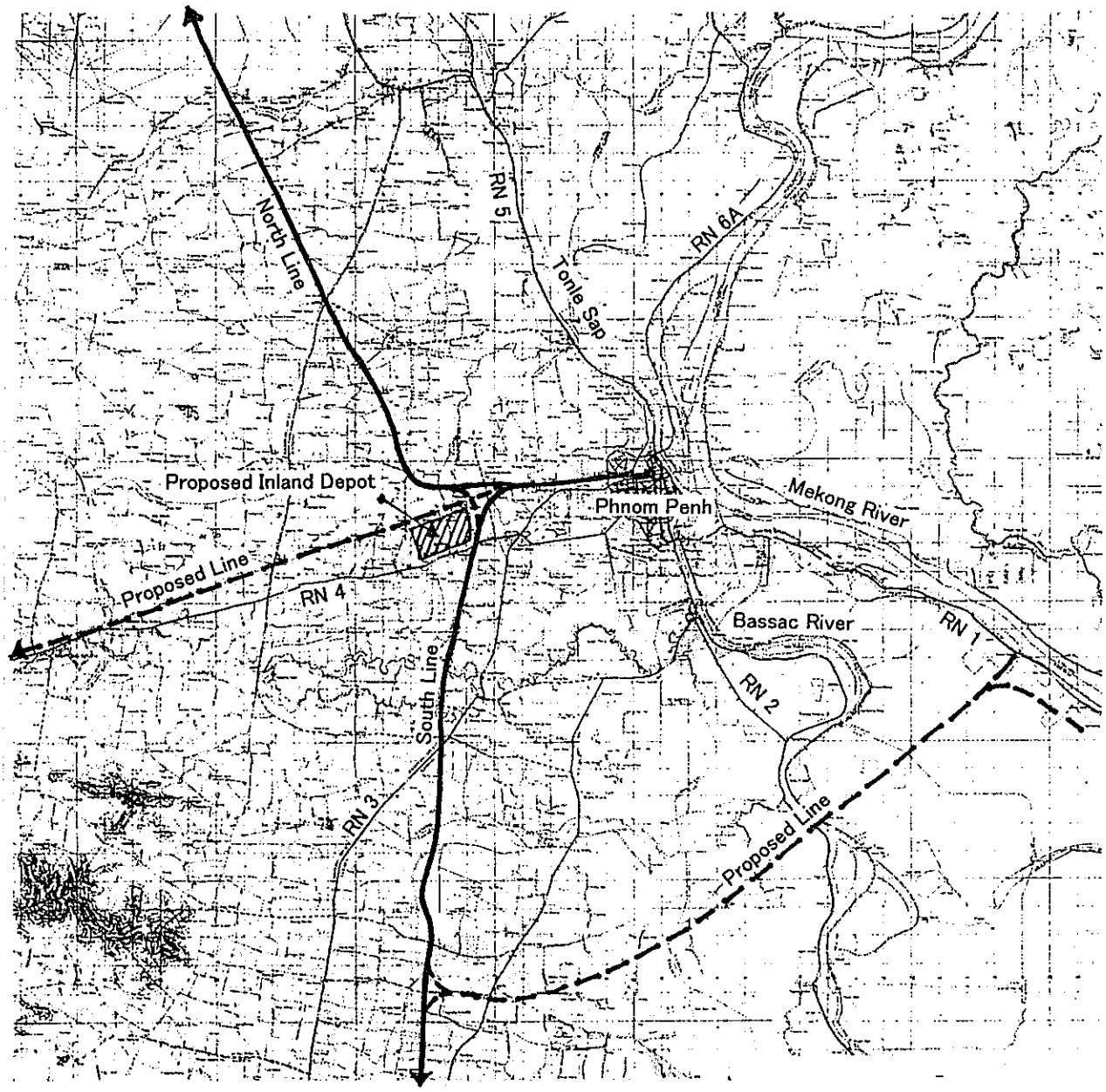
Table A6.6.4 Program for Rehabilitation of Royal Railways of Cambodia

No.	Description of Works	Year				Estimated Cost (Mil. US$)
		2000	2001	2002	2003	
1 The Southerm Line (Phnom Penh - Sihanoukville)						
	a Track					
	Track rehabilitation (Rals + Switches)	1.500	1.000			2.50
	Wooden sleeper and fastening supply	3.000	3.000	1.500		7.50
	Ballast supply	0.130	0.130	0.140		0.40
	Formation upgrading	1.400	1.400	1.400	0.700	5.60
	Drainage and channel ditch	0.050	0.050	0.050	0.050	0.23
	Welding equipments	0.150	0.015	0.015	0.015	0.06
	b Bridges and culvert boxes	0.500	0.360			0.86
	Total	6.595	5.955	3.105	0.765	17.15
2 The Northerm Line (Phnom Penh - Battambang)						
	a Track					
	Track rehabilitation (Rals + Switches)	2.000	2.000	1.000		5.00
	Ballast supply	0.140	0.140	0.140	0.140	0.56
	Formation upgrading	1.400	1.400	1.400	0.700	5.60
	Drainage and channel ditch	0.040	0.040	0.040	0.040	0.20
	b Bridges and culvert boxes	0.495	0.495	0.495	0.495	2.75
	Total	4.075	4.075	3.075	1.375	14.11
3 Rolling Stock						
	Wagons of all types	0.140	0.140			0.28
	To supply new wagons and coaches	6.370	3.430	2.450		12.25
	To supply for new locomotives	3.000	3.000			6.00
	To buy force lift and flat truck	1.700				1.70
	Total	11.210	6.570	2.450	0.000	20.23
4 Truck Maintenance and Equipments		1.000	1.000	1.000	1.000	5.00
5 Signaling and Communications, Building Station		1.000	1.000	1.000	1.000	5.00
Grant Total		23.880	18.600	10.630	4.140	61.49

Source: Royal Railways of Cambodia

A6.6.8 Future Railway Extension Plan

The Bureau of Urban Affairs (BAU) in the Municipality of Phnom Penh has a schematic long-term comprehensive development plan for Phnom Penh and its surrounding area within a 50-km radius. The plan showed proposed railway extensions towards to east and west. And it is proposed new inland depot at the strategic junction between northern and southern line as shown in Figure A6.6.3.



Source: The Bureau of Urban Affairs
Source: Ministry of Public Works and Transport

Figure A6.6.3 Future Railway Extension Plan

A6.7 River Transport

River transport was the main means of travel in the past. Phnom Penh played an important role; being strategically located at the waterway junction of the rivers Mekong, Tonal Sap and Basic. In recent years, there has been a continuing shift from river transport to vehicular transport as the main mode of travel.

However, for the people living along the river in Phnom Penh, river transport has remained the most important public transportation mode. There are now ferry routes and jetties, as shown in Table A6.7.1 and Figure A6.7.1, serving the northeastern area of the city, which has difficulty in accessing vehicular transport. The Department of Public Works and Transport in the Municipality of Phnom Penh supervises 5 ferry jetties, 7 ferry routes and 2 river goods ports. Most of them are located in the northeastern area of the city except for one, which is located in the southeastern area.

Operation of the ferry jetties and routes are consigned to the private sector, due to operational difficulties encountered by the public sector. The business fees of the operation rights are between a million riels to 50 million riels a year depending on the operational conditions.

Among the 7 ferry routes, 3 are for intra-city service, which crosses the Tonle Sap, and 4 are for inter-city, which mainly cross the Mekong River. Total daily ferry passengers are approximately 2,800.

Table A6.7.1 Profile of the River Goods Ports and Ferry Jetties

No.	Jetty/Ferry Route	No. of Gov't Employees	Area (sq. m.)	Capacity of the Jetty	Schedule of Investment	Period (Year)	Contract Fee/Year	Ferry Fare (riels)	No. of Ferry Boats	Monthly Passenger	Remarks
1	Sokile Jetty (Goods port)	4		16		1					
2	Mean Chey Jetty (Goods port)	1		14		1					
3	Kao Sou Kreb - Preak Ta Sek Ferry		720	1	01.01.99-31.12.03	5	1 mil. riels	300	1	11,220	
4	Chrang Chamres - Preak Ta Kov Ferry		300	1	01.01.97-31.12.01	5	3 mil. riels	300	1	8,700	
5	Phom Penh - Chrouy Chang Va Ferry		1,227	1	01.01.97-31.12.01	5	10 mil. riels	300	1	8,160	
6	Phom Penh - Akreiy Ksatr Ferry			3			25 mil. riels	500	3	30,600	
7	Khtor - Kaoh Dach Ferry		3,50	2	01.01.97-31.12.01	5	3 mil. riels	300	1	3,240	
8	Chrouy Changvar - Svay Chrum Ferry		300	2	01.01.96-31.12.00	5	51,504,000	500	3	28,200	Many vehicles
9	Preak Lieb - Kaoh Okha Tei Ferry		600	3	01.01.96-31.12.00	5	33,504,000	500	3	46,800	Recreational Area
	Total								13	136,920	

Source : Department of Public Works and Transport

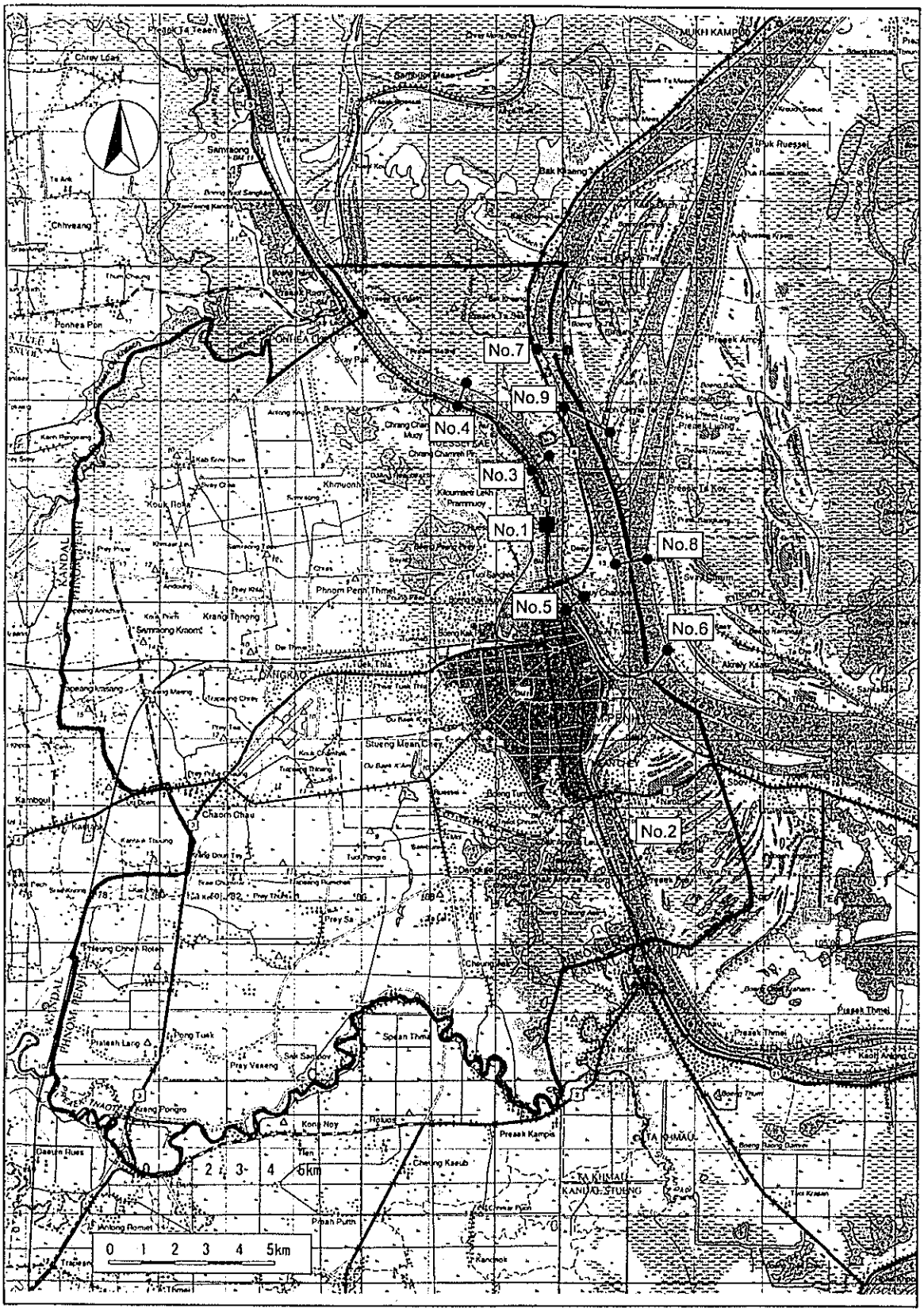


Figure A6.7.1 Location of River Goods Ports and Ferry Jetties