Rehabilitation / Reconstruction of
Royal Railway of Cambodia :
An Important Link of Trans-Asian Railway

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Prologue

The world is gradually becoming a global village. Connectivity, of which rail transportation is an important link, is increasingly becoming relevant. An exciting land link between Europe and Asia is becoming a reality, and the rehabilitation and reconstruction of Railways in Cambodia is one of the last links. The Author brings out lucidly, the rehabilitation of Royal Railways of Cambodia, and its importance in the country’s economy. This also has a great relevance for the region’s economic cooperation and sustainable development. There could be no better person than the present Author, with his background and understanding, to write on this topical subject.

- Editor

Backdrop

Cambodia’s history is full of turmoil right from its independence from the French colonial rule in November, 1953. After independence, King Norodom Sihanouk took over control of Cambodia’s armed forces, judiciary, and foreign affairs. His period in power from 1953 to 1970 was greatly affected by the US-Vietnam War, which resulted in destabilizing the economy of Cambodia. The two decades from 1970 to 1993 were full of civil war, genocide and mass destruction, so much so that in January 1994, Royal Railway of Cambodia had no electrical power supply and no water supply. The track connection between the Rolling Stock repair shop in Phnom Penh, the capital city, and the station yard had been uprooted and the main line track embankments were full of explosive mines planted by subversive elements, making it difficult to carry out inspection and repairs. Theft of Railway material was a common occurrence and the Railway had no funds to recoup the same. Only one mixed traffic train was operating on each side of the Railway Head Quarters (Phnom Penh) towards north and south on alternate days. RITES provided the much needed support through funding from The World Bank to rehabilitate the Railway’s rolling stock and suitably modify the wagons to carry ISO containers from the port town of Sihanoukville to Phnom Penh by Rail.
February 18, 2008, marked a red letter day in the history of Royal Railway of Cambodia (RRC), when it launched restoring a 652-kilometer stretch of its decades-old railway system to enhance domestic and international trade, reduce transport costs and ease road traffic. The launch was presided over by the Prime Minister of Cambodia, Hun Sen and Haruhiko Kuroda, president of the ADB.

“This is one of the last steps in the creation of a regional railway that will stretch from Singapore to Beijing”, Kuroda said at the inauguration ceremony in Sisophon near Cambodia’s border with Thailand. “Soon, trains will be running from Singapore to Sihanoukville.”

The US$73 million rehabilitation project was expected to be completed in 23 months. Of the total outlay, the Asian Development Bank had provided US$42 million in concessional loans, US$13 million came from the Organization of Petroleum Exporting Countries as a grant, US$2.8 million from Malaysia for iron materials and US$15.2 million from the Cambodian Government.

The project was to rehabilitate the two existing railways, 386 km from Phnom Penh to Poipet on the border with Thailand and another 266 km from Phnom Penh to Sihanoukville on the southwest coast. The two routes had been built in 1931 and 1960, respectively.

The history of Cambodia is full of devastation, civil war and unrest right from its independence from French Rule in November 1953. The period from 1970 to 1990 had taken a heavy toll of life and property in Cambodia. The US bombing of Cambodia in 1973, and the subsequent control of Cambodia from 1975 to 1979 by Khmer Rouge, had completely ravaged the civil infrastructure of Cambodia including that of RRC.

The experience of RRC demonstrates the resilience of railways and their loyal staff to keep going despite enormous odds. Considering the damage inflicted on the railway and the fact that many railway workers lost their lives during the civil war, it is a miracle that the railway is still running.

RITES provided assistance to RRC in a small way under the funding from UNDP and the World Bank between 1990 and 1996 in the areas of training, field surveys and rolling stock rehabilitation to keep its wheels rolling.
Earlier RRC Network

RRC consists of a 647 km of route made up of two lines, the ‘old’ line popularly known as ‘North Line’, connecting the capital city of Phnom Penh with Poipet on the NW frontier of Thailand, and ‘new’ line popularly known as ‘South Line’ connecting Phnom Penh with Sihanoukville (old name Kompongson), the port town in south. Their lengths are as follows:

1.  (i) Phnom Penh – Sisophon 337.31 km.
    (ii) Sisophon – Poipet 47.00 km.
2.  Phnom Penh – Sihanoukville 262.60 km.

Phnom Penh – Sisophon – Poipet line of 384.31 km. length was built between 1927 and 1942 in four stages:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Years</th>
<th>Route</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1923–1931</td>
<td>Phnom Penh – Pursat</td>
<td>166.00 km</td>
</tr>
<tr>
<td>II</td>
<td>1931–1932</td>
<td>Pursat – Battambang</td>
<td>107.60 km</td>
</tr>
<tr>
<td>III</td>
<td>1932–1933</td>
<td>Battambang – Mongkol Borey</td>
<td>57.10 km</td>
</tr>
<tr>
<td>IV</td>
<td>1941–1942</td>
<td>Mongkol Borey – Poipet</td>
<td>58.80 km</td>
</tr>
</tbody>
</table>

The section between Sisophon (337.31 km) and Poipet (384.31 km) is inoperative since 1979; this was destroyed in war and the connection had severed with Thailand.

Phnom Penh – Sihanoukville line of 262.60 km was constructed between 1960 and 1969 in three stages and branches off from Km. 9.40 of Phnom Penh – Sisophon line:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Years</th>
<th>Route</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1960–1966</td>
<td>Phnom Penh – Takeo</td>
<td>74.00 km</td>
</tr>
<tr>
<td>II</td>
<td>1966–1967</td>
<td>Takeo – Kampot</td>
<td>92.00 km</td>
</tr>
<tr>
<td>III</td>
<td>1967–1969</td>
<td>Kampot – Sihanoukville</td>
<td>96.60 km</td>
</tr>
</tbody>
</table>

The Railway was mostly used for carrying Passengers and Bulk commodities such as:

- Bagged Cement
- Bagged Rice
- Building Materials
- Diesel and other inflammable fuels
- Petrol and other flammable fuels
- LPG
- Containerized Goods
- Bagged Sugar
- Bagged Fertilizer

Most of these goods are imported and arrive through the port town of Sihanoukville, except building material and some oil, rice and cement which arrives through Sisophon. The destination of most of the goods is Phnom Penh, Siem Reap and Battambang.
The originating goods are mainly from Phnom Penh and are loaded in containers for export. Some local agricultural and forest produce are also loaded at Battambang and Phnom Penh for local distribution.

RRC, which had almost come to the verge of closure in 1991, revived to some extent through assistance from ADB, UNDP, French aid, OPEC and the World Bank. The latest figures of freight traffic are represented graphically below.

Passenger Traffic on RRC from 1998 to 2005 was highest during 1998 and, thereafter, it had come down gradually, the lowest being in 2004. It declined at a rate of about 27 per cent per year. The decline was more pronounced on the South Line than on the North Line, although the number of passengers traveling on the latter still fell rapidly (declining over the same period by about 23 per cent per year). As per the published figures of RRC in 2006, the number of passengers traveling by Rail was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Line</td>
<td>320038</td>
<td>302040</td>
<td>253226</td>
<td>282892</td>
<td>110999</td>
<td>81909</td>
<td>856</td>
<td>47768</td>
</tr>
<tr>
<td>South Line</td>
<td>117563</td>
<td>127171</td>
<td>82919</td>
<td>41023</td>
<td>22061</td>
<td>11825</td>
<td>3286</td>
<td>11</td>
</tr>
<tr>
<td>Both Lines</td>
<td>439599</td>
<td>431210</td>
<td>338145</td>
<td>325916</td>
<td>135062</td>
<td>95737</td>
<td>6146</td>
<td>49784</td>
</tr>
</tbody>
</table>

Reasons for continuous decline of Passenger Traffic is non-availability of passenger coaches and a large number of passengers traveling unauthorizedly on goods stock.

Every train on RRC carries a wagon in front of the locomotive to avoid damage to locomotive by explosive mines planted on track by subversive elements, but it is used by passengers for carrying material as well as for travel.

**Present Condition of RRC**

Present physical condition of RRC, as assessed from various reports published by RRC, is mentioned in the paragraphs that follow.

**North Line**

The Phnom Penh-Thai border line, which was built between 1929 and 1942, was laid with lightweight track consisting of 30kg/m rail in 12 m lengths. Minimum curve radius is
300m and the ruling gradient is 0.5%. The maximum axle load was 13 tonnes. Most of the track is now more than 60 years old and is in very poor condition. Passing loops are only 250 m long, which severely hampers train operation.

More than 200 km of track was damaged by land mine explosions, and 48 bridges out of a total of 137, plus 38 culverts and pipes 200 m long were destroyed. In addition, 47 station buildings were severely damaged. All the bridges have now been replaced by temporary structures with timber supports. The maximum speed on the line used to be 70 kmph, but speed restrictions of 5 or 10 kmph have had to be imposed on 30 bridges.

South Line

The Phnom Penh-Sihanoukville line was constructed in the 1960s using Chinese 44.65 kg/m rail, laid on untreated wooden sleepers. The line was designed for operation at a maximum speed of 90 kmph. Passing loops are 650 m long, which RRC believes should be adequate for the foreseeable future.

"Due to only light traffic on the line since it was completed in 1969, just before the start of the civil war, the rails are in very good condition", said Mr. Chan Samleng, RRC’s Deputy Chief of Ways and Works. “Although many spot replacements have been made, the general condition of the sleepers is now very poor. Many of the spike fastenings are missing. The line also suffers from worse formation problems than the north line. The quality of the embankments is very poor. The material used absorbs moisture that is retained and leads to flooding even in the dry season. The floods combine with rains to cause many erosion problems.” In all, about 100 km of the line has been damaged by civil war or flooding.

There are 94 bridges on the Sihanoukville line, of which 15 are badly damaged and have received temporary repairs. The line was designed for 20-tonne axle loads, but the present condition of the permanent way dictates a restriction of 15 tonnes.

Other Lines and Facilities

There is a 6 km branch line from Phnom Penh, close to the station, to a port on the River Sap. It was intended for river-rail transshipment, but this function has now ceased.

The branch line is still used by occasional freight trains that serve the CKC (Compagnie de Kampuchea des Carburants), which is State owned oil Company’s oil terminal at Km 4.5 and the warehouses by the river at Km 6. These warehouses now belong to the Ministry of Commerce, which has sub-let some of them.

Stations

The Stations are classified into three main types:

(a) 14 stations equipped with passing loops for the crossing of trains, and with sidings and/or other facilities for the handling of goods;
(b) 19 stations, with facilities for goods but no longer used for the crossing of trains;
(c) 3 halts, four of which are staffed. The halts are for passengers and luggage only.

**Locomotives and Rolling Stock**

<table>
<thead>
<tr>
<th>Type</th>
<th>1970</th>
<th>Current Situation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In-service</td>
<td>Awaiting Repairs</td>
</tr>
<tr>
<td>Steam Locos</td>
<td>74</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>Diesel Locos</td>
<td>42</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Shunters</td>
<td>9</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>DMUs</td>
<td>7</td>
<td>Converted to Ordinary Passenger Coaches</td>
<td></td>
</tr>
<tr>
<td>Passenger Coaches</td>
<td>93</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Freight Wagons</td>
<td>657</td>
<td>210</td>
<td>74</td>
</tr>
</tbody>
</table>

**Workshops**

Royal Railways of Cambodia has two workshops, one for locomotives and the other for wagons and coaches. These workshops were constructed around 1929 when the railway was started. The locomotive workshop was established for repairing and rebuilding steam locomotives. When diesels were introduced, some specialized equipment was installed in the same shops to maintain and test them. However, the workshop continues to be configured for steam locomotive operations.

Use of steam locomotives was officially discontinued in 1995-96. The lack of facilities and materials results in outsourcing substantial amounts of electrical and mechanical work to private sector contractors and the absence of in-house capacity in Cambodia for diesel repairs either within or outside of the RRC, places the railway in the position of complete reliance on the original equipment diesel manufacturers for spare parts and services.

France has fairly consistently provided assistance to RRC so that the fleet of Alstom main line locomotives have remained in service for the most part.

**Telecommunication**

The telecommunications equipment on both lines has been completely destroyed. HF Radio transmitter is used for telecommunication.

**Traffic**

(i) Service Pattern

Three mixed-trains are scheduled every day: one on the northern line between Phnom Penh and Battambang, one on the southern line between Phnom Penh and
Sihanoukville, and one shuttle train between Battambang and Sisophon. The trains on the northern and southern lines are both due to leave Phnom Penh on the same day and return on the next. This procedure avoids crossing of trains on the lines.

Gross train weights are limited to 850 tonnes, with the trailing weight of the train normally limited to 700 tonnes. Maximum speed is 35 km/h, the average speed being around 20 km/h.

(ii) Volumes and Trends

Because of the various factors which reduce standards of service and security, including a problem of theft of goods in transit, present traffic figures cannot be considered to reflect the railway’s potential role in the transport market. Present market share is very low.

Economic Condition of Cambodia

From 2001 to 2004, the Cambodian economy grew at an average rate of 6.4%, driven largely by an expansion in the garment sector and tourism. The US and Cambodia signed a Bilateral Textile Agreement, which gave Cambodia a guaranteed quota of US textile imports and established a bonus for improving working conditions and enforcing Cambodian labour laws and international labour standards in the industry. With the January 2005 expiration of a WTO Agreement on Textiles and Clothing, Cambodia-based textile producers were forced to compete directly with lower-priced producing countries such as China and India. Better-than-expected garment sector performance led to more than 9% growth in 2007. Its vibrant garment industry employs more than 350,000 people and contributes more than 70% of Cambodia’s exports. The Cambodian government has committed itself to a policy supporting high labour standards in an attempt to maintain buyer interest. In 2005, exploitable oil and natural gas deposits were found beneath Cambodia’s territorial waters, representing a new revenue stream for the government, if commercial extraction begins. Mining also is attracting significant investor interest, particularly in the northeastern parts of the country, and the government has said opportunities exist for mining bauxite, gold, iron and gems. In 2006, a US-Cambodia bilateral Trade and Investment Framework Agreement (TIFA) was signed and the first round of discussions took place in early 2007. The tourism industry continues to grow rapidly, with foreign arrivals reaching 2 million in 2007. In 2007, the Government signed a joint venture agreement with two companies to form a new national airline. The long-term development of the economy remains a daunting challenge. Government of Cambodia is working with bilateral and multilateral donors, including the World Bank and IMF, to address the country’s many pressing needs. The major economic challenge for Cambodia over the next decade will be fashioning an economic environment in which the private sector can create enough jobs to handle Cambodia’s demographic imbalance. More than 50% of the population is less than 21 years old. The population lacks education and productive skills, particularly in the poverty-ridden countryside, which suffers from an almost total lack of basic infrastructure.

Cambodia’s Plans for Economic Development

The Government of Cambodia has been following the development plans for economic growth and poverty reduction under various Socio-Economic Development Plans
since 1996. In 2003, the Government introduced a Rectangular Strategy for overall development of Cambodia to enhance economic growth, employment for Cambodian workers and equality and social justice. The Rectangular Strategy is visualized as a structure of interlocking rectangles, as follows:

- **First**, the core of the Rectangular Strategy is good governance focused at four reform areas: (1) anti-corruption, (2) legal and judiciary, (3) public administration, including decentralization and deconcentration, and (4) armed forces, especially demobilization;

- **Second**, the environment for the implementation of Rectangular Strategy consists of four elements: (1) peace and stability, (2) partnership with all stakeholders, including the private sector, the international community and civil society, (3) favorable economic and financial environment; and (4) regional and international integration.

- **Third**, the four strategic “growth rectangles” are: (1) agricultural productivity, diversification and competitiveness; (2) private sector growth and employment; (3) continued rehabilitation and construction of physical infrastructure; and (4) capacity building and human resource development.

- **Fourth**, each strategic growth rectangle has four sides:
  - Rectangle 1: Agricultural Productivity, Diversification and Competitiveness
  - Rectangle 2: Private Sector Growth and Employment
  - Rectangle 3: Continued Rehabilitation and Construction of Physical Infrastructure
  - Rectangle 4: Capacity Building and Human Resource Development.

For transport sector development and operation, the strategy emphasizes the following Objectives and goals:

(i) Support sustained economic growth and promote external trade and foreign direct investment. Transport is an integral part of the production of nearly all goods and services. Good transport infrastructure and cost-effective transport is a precondition for Cambodia’s export drive and for successful development of its tourism potential, and is also a major factor in containing the cost of living and improving rural livelihoods. Increased diversity in transport supply and improved transport logistics using multimodal transport chains are needed to improve Cambodia’s international competitiveness and its attractiveness to direct foreign investors.

(ii) Support poverty reduction and integration of the country. By enabling new productive activities in areas not previously open to economic exchange, transport creates the foundations for more inclusive and pro-poor economic growth. Transport achieves this by providing cost-effective and reliable access to economic opportunities and social services, thereby enabling the poor to participate more fully in society. Accessible and dependable transport networks,
especially provincial roads, are needed to link the provinces and to integrate rural areas into the mainstream economy.

(iii) Streamline and focus sector institutions and expand private sector involvement in infrastructure provision. The Government emphasizes strengthening sector institutions, especially the creation of clear mandates for their activities, as the basis for institutional reform and strengthening. The Government recognizes that given the human resources constraint, reform requires flexibility in implementation with the focus on efficiency, transparency, and, whenever efficient, reliance on the private sector. In the past, the Government has shown a readiness to involve foreign and domestic investors in the financing, development, and management of transport infrastructure. The Government intends to pursue this avenue further, and also strongly supports the development of national contractors to undertake infrastructure construction and maintenance services.

(iv) Secure the sustainability of transport. Fuel taxation is a major source of revenue for the Government, and charging for the use of infrastructure has been introduced in most sub sectors. But with a few exceptions, the scope for charging full user costs is limited by low traffic loads. As the scope for direct Government funding is equally limited, meeting the funding requirements for infrastructure development and maintenance in the short to medium term will require supplementary funding from the private sector and development partners.

(v) Improve safety and enforcement. The Government is aware of the rapidly growing social and economic costs of poor traffic safety and recognizes that inefficient enforcement, because of a weak legal foundation, inadequate resources, and corrupt practices, is the root cause of the problem.

**Importance of RRC for Trans-Asian Railway Network**

Railways in Cambodia are expected to be part of the Trans-Asian Railway (TAR) Network through linkage with the railway network in Thailand and Vietnam. To this end, it is necessary to link Sisophon with Poipet, and Phnom Penh with the Vietnam/Cambodia border. Sisophon-Poipet rail link is the part of ADB project for rehabilitation of railway of Cambodia. This project (cost US$ 73 million) is progressing and expected to finish by 2010. The Project had a ground breaking ceremony at Sisophon, on 18 February 2008, by Cambodian PM and ADB President. At the time of the ground breaking ceremony it was announced that the rail line, Batt Doeun-Loc Ninh, necessary to provide rail link to Vietnam, will be completed by 2015 (the estimated cost of this reconstruction is US$ 600 million).

The Trans-Asian Railway is expected to boost trade, providing much-needed quicker and easier movement of freight. The impetus of Asian trade, growing at an average of 13% annually, compared with 9% in the rest of the world, will accelerate completion of the missing links. Besides, railways are being increasingly accepted as a better freight-movement option than the polluting road transport, pirate-infested seas and inadequate port facilities.
UNESCAP says its long-term hopes are of developing joint border stations, with TAR-corridor-based organizations, authorized to act on behalf of their constitutive national railways, to promote and facilitate trade among neighbouring countries. In the long-term, trans-Asian transportation projects could sow the seeds of a much closer and much needed pan-Asian identity along the lines of the European Union.

The Royal Railway of Cambodia has nominated a total of six TAR links, four of which provide connections with Thailand, Lao People’s Democratic Republic, and Vietnam. The first, designated Link C.1, is the existing main north-west line from Phnom Penh to Poipet, a distance of 385 km. Prior to 1975, the line was intact over its entire length and trains from Phnom Penh and Bangkok could meet at the joint border station of Poipet. Then in 1980, the 48 km section between Poipet and Sisophon was closed to traffic, and most track materials were removed, leaving only the right-of-way remaining. At present, there are regular train services between Phnom Penh and Sisophon, albeit on an alternate day schedule. Link C.1 constitutes a capital-to-capital link which could play a significant role in promoting international trade and tourism within the sub region, especially between Cambodia and Thailand.

The second TAR link proposed by Cambodia is the Phnom Penh-Sihanoukville line, designated Link C.2. The line is relatively new, having been built in 1969 and is 263.4 km in length. It links the capital with the major deep-sea port and with the important provincial centers of Kampot and Takeo. Sihanoukville Port has had, and will continue to have, an important role in supporting the economic rehabilitation and development of Cambodia.

The third and fourth TAR links in Cambodia, designated Link C.3 and Link C.4, have been proposed as alternatives for the provision of inter-capital rail links between Phnom Penh and Ho Chi Minh City, Vietnam. These two routes were studied by UNDP in 1968. The longer route of the two, C.3, would pass through Loc Ninh, a border town in Vietnam, before reaching Ho Chi Minh City, covering a distance of about 450 km. The shorter route, C.4, with
a length of 240 km, would connect Phnom Penh with Ho Chi Minh City, via Svay Rieng and low-lying areas of the Mekong Delta in Vietnam.

Although longer and expensive, link C.3. is preferred as it provides safety from flooding and frequent traffic disruptions and also merges with the existing embankment available up to certain lengths on both sides.

India and TAR

As one of the most economically and culturally important transport links in modern history, the TAR project will connect India with China in the east and Europe in the west. Eighteen countries, including Cambodia, China, India, Indonesia, Iran, Kazakhstan, Mongolia, Nepal, South Korea, Russia, Sri Lanka, Tajikistan, Thailand, Turkey, Uzbekistan and Vietnam, have signed the agreement. The Inter-governmental Agreement on the Trans-Asian Railway was signed in November, 2006 during the Ministerial Conference on Transport in Busan, South Korea, bringing the operational reality of the TAR closer. India’s Minister for Parliamentary Affairs had remarked in the ministerial conference: “The intergovernmental agreement will formalize the coordinated development of Trans-Asian Railways. This will help the movement of rail traffic, and the improvement of trade and tourism among Asian countries.” This also satisfies requirements of the initiative taken by the Prime Minister of India in the 2nd India-ASEAN Business Summit for a New Delhi-Hanoi rail link.

For its part in the TAR project, Indian Railways is expected to begin constructing a 350 km link between Jiribam in northeastern India to Moreh in Myanmar, with that country’s impoverished military regime sharing part of the estimated US$ 678 million bill project cost. India’s North-east Frontier Railway (NFR) is likely to construct this link through some of the toughest terrain in South Asia.

No date has been fixed yet to start the work, as the Home and Defence Ministries have to work out the exact modalities. Awareness of the Trans-Asian Railway is moderate in this region, and those who are aware of it are excited about its enormous potential.
17.12 Rehabilitation / Reconstruction of Royal Railway of Cambodia:
An Important Link of Trans-Asian Railway

**Singapore-Kunming Rail Link**

Apart from TAR, RRC also forms an important component of Singapore-Kunming Rail Link (SKRL).

The proposed route, which would connect Cambodia, Lao PDR, Vietnam and China, was selected by the ASEAN Transport Ministers as preferred Route for SKRL due to its high social and economic impact. It will cost an estimated US$1.8 billion to construct. Its 5,382 km length includes the missing links from Poipet to Sisophon, and from Phnom Penh to Loc Ninh and Ho Chi Minh City, as well as the spur lines from Ho Chi Minh City to Vung Tau and from Vientiane to Vung Anh.

**Developments of SKRL**

- Cambodia’s construction of the missing links, guided by the Inter-Ministerial Committee for SKRL, is on schedule. Construction of the rail link between Poipet and Sisophon is expected to be completed by the end of next year or early 2010. For the 225 km missing link between Phnom Penh and Loc Ninh, a border town between Cambodia and Vietnam, a feasibility study on the missing link, funded and conducted by China, has been completed.

- Vietnam completed a feasibility study on the Ho Chi Minh City–Loc Ninh missing link and is negotiating with Cambodia for the location of rail connection points. A feasibility study for a spur link from Vung Ang to Tan Ap-Mu Gia for further linking with Vientiane is also being undertaken. Vietnam and Cambodia were working to finalize the connecting rail point near Loc Ninh. Once the two countries have decided on the exact connecting point, Vietnam will start construction of the 145-kilometer missing link between Loc Ninh and Ho Chi Minh City.

- In December 2006, the ADB approved a US$ 60 million loan to Vietnam to assist in the rehabilitation of the Hanoi-Lao Cai section, and a US$ 42 million loan to...
Cambodia to assist in the rehabilitation of Cambodia railways that include sections of the SKRL route. The ADB is also undertaking a detailed design study on the Phnom Penh–Loe Ninh sector with financing from China.

- China has made progress on the Chinese sectors of the SKRL, including the Yuxi-Hekou route (Eastern portion), the Yuxi-Mohan (Middle portion) and the Dali-Ruili (Western portion). Construction of the Yuxi-Mengzi railway is scheduled to be completed in 2009. The feasibility study of the Dali-Ruili railway has been completed.

- The Republic of Korea has completed a US$1.2 million feasibility study on the SKRL portion linking Bangkok to Yangon.

**Economic Importance of Rehabilitation / Reconstruction of RRC**

The Cambodia Transport Sector Strategy Study conducted by ADB in 2005 had concluded that, as a result of many years of war, the railway was in poor condition and would need to be rehabilitated before the full benefits from rail traffic could be realized. Access to safe and regular regional railway traffic would benefit Cambodia in several ways: (i) by reducing heavy truck traffic on the road network, thus reducing future maintenance and expansion costs; (ii) by reducing the transport of fuel and other dangerous cargoes by road, thus reducing road traffic risks; (iii) by providing cheap transport for bulk cargoes such as cement and fuel, thus reducing the cost of importing and distributing such basic products; and (iv) by increasing the competitive pressure on existing transport systems, primarily road transport and the port in Sihanoukville through the establishment of alternative routes and means of transport, which would help to reduce the scope for monopoly pricing. The study suggested that railway operations in Cambodia could become financially viable, if the railway were rehabilitated and restructured with decisive private sector involvement. Finally, the strategy study noted that railway operations were not financially viable under current circumstances, and could not generate the funds required for rehabilitation.

**Likely Increase in Rail Traffic as a Result of Rehabilitation / Reconstruction of RRC**

During 1994, the total volume of cement imported in bags, from Thailand through the Poipet checkpoint amounted to 39,500 tonnes. Had this traffic been moved in containers, it would currently provide a volume of about 5,000 TEU per year, i.e., 20 ft. long containers (TEU = Twenty foot Equivalent Units), (2,500 TEU loaded and 2,500 TEU empty or re-loaded with other commodities).

Customs regulations do not now permit Thai vehicles to operate inside Cambodia, so that this traffic must be transshipped by Cambodian trucks for movement to the rail head at Sisophon, where it is loaded into railway wagons for movement to Phnom Penh. Tearing of bags and damage to contents is reported to be high, and through movement of the product in containers in future, from the point of origin in Thailand to the destination in Phnom Penh,
could be expected to be attractive to the shippers. Among the other major commodities imported overland from Thailand are steel, sugar, chemicals and soft drinks. There is the possibility of another 1,000 TEU of this traffic being generated, provided the through rail connection could be restored, giving a potential total volume of 6,000 TEU per year. If the same growth were assumed for this traffic as was assumed for container traffic through Sihanoukville Port, then the total container traffic which might be expected to cross the border by rail in the event of a restoration of through service would reach 31,100 TEU by 2010. If this traffic were to be handled in block container trains, each conveying 60 TEU, then the number of train pairs required to run would be 259 per year in 2010.

Trade between Cambodia and Vietnam is dominated by the shipment (from Vietnam) of petroleum products, totaling about 350,000 tonnes per year, in small river vessels. Consumer goods shipped from Southern China via Vietnam, are also moved on the river system, but the volume is believed to be relatively small. Trade with the Lao People’s Democratic Republic is negligible and is not suitable for containerization.

Freight Traffic Projections

Asian Development Bank had carried out a study on ‘Assessment of Modal Competitiveness of Traffic Potential of a Rehabilitated Railway in Cambodia’ in the year 2004. It has drawn the future freight traffic scenarios based on rehabilitation and reconstruction of RRC, i.e., with connection to Thailand via Poipet and rehabilitation of both North and South lines. It has also taken into account upgrading of port facilities at Sihanoukville. Its estimates of Freight, mainly consisting of Cement, Diesel and Sugar from Thailand and other bagged and containerized products from Singapore, were as below:

<table>
<thead>
<tr>
<th>mill.ton.km.</th>
<th>2003</th>
<th>2028 (Low Growth)</th>
<th>2028 (High Growth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail</td>
<td>164</td>
<td>975</td>
<td>4,635</td>
</tr>
<tr>
<td>Road</td>
<td>521</td>
<td>415</td>
<td>2,356</td>
</tr>
<tr>
<td>Total</td>
<td>685</td>
<td>1,391</td>
<td>6,991</td>
</tr>
<tr>
<td>Modal Share</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail</td>
<td>24%</td>
<td>70%</td>
<td>64%</td>
</tr>
<tr>
<td>Road</td>
<td>76%</td>
<td>30%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Therefore, in the year 2028 Rehabilitated/Reconstructed RRC may carry as much as 70% of the Freight by Rail, which will, however, also depend on other factors, i.e., its competitiveness vis-à-vis Road, movement efficiency, and availability of sufficient Rolling Stock.

This will also result in substantial savings to Cambodia in the road haulage cost, due to less investment on Trucks and Diesel as well as savings in Road maintenance cost.
Passenger Traffic

No clear cut trends can be predicted for Passenger Traffic, as it is highly dependent on availability of passenger coaches, fare structure, frequency of trains and travel time. However, even after Rehabilitation of RRC, modal share of passenger traffic by Rail may be only 5% for the South Line and 10% for the North Line.

Conclusion

The Rehabilitation/Reconstruction of RRC is important to develop transport infrastructure in Cambodia. It is necessary for national integration and maintaining balanced development among various regions and also crucial for facilitating Cambodia’s regional and international integration. It will facilitate connection with ASEAN’s Singapore Kunming Rail Link and Trans-Asian Railway. The railway link through Cambodia is also an integral part of the Greater Mekong Sub-region (GMS) southern economic corridor, which is one of 11 flagship programs under the GMS sub regional economic cooperation. Access to safe and regular regional railway traffic would benefit Cambodia in several ways: (i) by reducing heavy truck traffic on the road network; (ii) by reducing the transport of fuel and other dangerous cargoes by road; (iii) by providing cheap transport for bulk cargoes such as cement and fuel; and (iv) by increasing the competitive pressure on existing transport systems, primarily road transport and the port in Sihanoukville through the establishment of alternative routes and means of transport. As a result, it will narrow the gaps of both sustainable economic growth and poverty reduction.

Trade among ASEAN countries has grown from US$ 44.2 billion in 1993 to US$ 140 billion in 2006 of which the share of Cambodia was only 0.45%. Rail connectivity will certainly help in improving this share by bridging the economic development gap between Cambodia and other ASEAN countries.

Another interesting development has taken place in ASEAN Economic Ministers Consultations held with India in Singapore in August 2008, where trade representatives from India and ASEAN concluded a Free Trade Agreement (FTA).

India-ASEAN trade reached US$ 38 billion in 2007 and a target of US$ 50 billion has been set for 2010. Rail connectivity of Cambodia with ASEAN countries, and cultural affinity of India with Cambodia, will help Cambodia in taking extra advantage of this FTA.

References


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*However beautiful the strategy, you should occasionally look at the results.*

– Winston Churchill

*Willing cooperation produces enduring power,*
*while forced cooperation ends in failure.*

– Napoleon Hill