

# Revival of Economy through Resurrection of Rail Services



Railways in countries in the South East Asia which were under colonial rule were constructed around one and half centuries ago. The Britishers who were instrumental in constructing railways in this region were of the opinion that railway network is a catalyst for a sound and sustainable economic growth. This has been proved without doubt in Sri Lanka when in the latter and early quarters of 19<sup>th</sup> and 20<sup>th</sup> centuries respectively, rail transport played a key role in the economic development in the absence of a good road transport system.

At that time railway was mainly used for the transport of tea and other minor products for the export market. By the year 1930 the railways made connectivity from the then Capital Colombo to major cities and other immobile areas up to then. Whilst opening up and steaming through the network, it created an upsurge of new cities enroute such as Ragama, Gampaha, Veyangoda, Polgahawela, Maho, Nawalapitiya, Nanuoya, etc. During the era the railway itself provided employment for no less than 25,000 persons throughout its network and at the same time opened up other self employment projects, such as hiring of rickshaws, carts for transport of people and goods, restaurant car services in trains, porters to carry luggage at stations and many other industrial and agricultural projects such as fertilizer, cement, tiles, coir products,

## SOCIETAL CHANGES

With the advent of motorized road transport in a major way in post 1930s and the World War II in 1940 there was a set back for the railway. However, again from the middle of the 20<sup>th</sup> century with the development of Colombo district and establishment of various government organizations and diversifying those organizations, which already existed, attracted many to educate their successive generations to take up white collar jobs in state sector. The reason being it enabled them to secure a firm and a fixed income while providing them with a status in society. Since by 1950 more people opted to work as state employees, a need for a good transport system was felt. The bus transport service, which was dominated by a few private entrepreneurs, did not cater much for intercity travel. On the other hand railway handled

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about 70% of the intercity passengers and 50% - 60% of freight. In late 1950s bus services were nationalized and catered for long distance travel. The train service too was improved with the dieselization, colour light signaling and running of a few express trains such as Ruhunu Kumari, Yaldevi, Udarata Menike etc., Things deemed not so bad for the railway as road transport was not strong enough to compete with the railway and was in a very rational means was complementing the rail by having services from hinterland to the rail head.

During this time many trunk roads and arterials leading to Colombo were widened and improved thus many migrated to suburbs of Colombo, at the same time generating urbanization and commercialization of the suburban areas. Although railway also catered for the increase in suburban traffic by deploying 45 diesel multiple units it had to sur-

render a major portion of its passengers and freight to the road which had an added advantage of door to door transport and such conveniences attracted a demand to increase the bus fleet al-

though economically it was not the best of decisions when the country as a whole is considered.

## CAUSE OF THE DOWNWARD TREND

The increase in price of oil in the World Market in 1970s and without a proportionate increase in rail fares, the rail losses were on an increasing trend. Most of the spares for railway rolling stock, materials for track and signaling were imported. The price of such essential items escalated in the world market and their freight charges too increased with the oil price hikes. There was an overall increase in cost of living and thus successive governments were compelled to grant wage hikes regularly to satisfy the working population. The railway with its large work force had to foot the wage and overtime increase. On the other hand due to economic constraints, the government's allocation to procure spares and materials did not proportionately increase and thus the railway had to purchase lesser spares than earlier. Sometimes the railway had to pay custom duty and various other taxes thus increasing the burden further. The regular depreciation of the rupee against the foreign currency aggravated the problem further, thus reducing purchasing power in the world market. Non availability of liquid cash at the appropriate time to clear shipping documents compelled the railway department to pay demurrage to the port and high interest to the State Banks for the borrowings. Further with the advent of open economic policy in 1977 a greater emphasis was made on road than rail in order to achieve rapid development. As such the standards maintained were eroding off due to budgetary constraints. (see Fig. 1)

## ROLLING STOCK

The railway possesses 110 main line locomotives and 50 diesel multiple units (in its fleet). Out of the 110 main line locomotives only 33 locomotives are less than 20 years old. The oldest category M 2 which are general electric locomotives are nearly 50 years old and poses difficulties in obtaining spares for this locomotive which are more or less produced specially for Sri Lanka Railways, at a very high price. There are altogether twenty different varieties of locomotives in the fleet and 60,000 different spares have to be stocked for their maintenance and upkeep. This is done within the limits stipulated in the stores advance account, which has been grossly insufficient due to high prices in the World Market and depreciation of Sri Lanka rupee against the US dollar. There is



paddy, vegetables fish etc., Railway was so involved with transport of parcel freight that even rail out agencies were created at various locations in the country.

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also a misconception to minimize holding of capital in stocking spares, however, when maintaining a comparatively old fleet of locomotives it is difficult to predict when the spares would be really necessary and as such certain spares although may not required to be used immediately or in the non distant future have to be necessarily stocked in case of emergency to prevent long down times of locomotives, which will again affect the service and thus the economy. Such failures of locomotives are one of the main causes for non reliability, cancellation and delays which have caused intensive damage to the reputation of railways, and the

cure at least another 12 diesel multiple units to strengthen the suburban service. With every increase of Rs. 2.00 per litre of diesel, the railway loses Rs. 60 Million per year.

There is a need for 1,000 carriages to form trains in the categories of long distance, suburban service, night mails, freight trains, and material trains. The lifespan of a carriage is twenty years, and as such purchase of 50 carriages is required every year. However, after the last purchase of carriages in 1992 no new carriages have been purchased although frequent requests have been made to allocate funds to purchase at least 200 carriages to maintain the service without removal of carriages for repair, which are in service, thereby inconveniencing passengers. The output of carriages repaired at Ratmalana workshops has been increased to overcome the present shortage of carriages. However, how much it is economical to repair and put to service carriages, which are nearing 20 years in service, is a decision to be taken after careful consideration.

There is a fleet of around 1,800 wagons, which are used for transport of raw products for cement, oil and petroleum, flour and other food products, finished cement, containers, materials for track and building works. (see Fig. 3) Out of the above fleet around 1,000 are four wheel wagons which are over 40 years old and subject to derailments specially when lightly loaded. There is a proposal to phase them out from service, but due to inadequacy of wagons this is being done only at a very slow space. In 1996 Ratmalana workshops were partly rehabilitated with new machinery, from donor-funded project at a cost of Rs. 800m. This has reduced the down time of rolling stock, which is taken up for major overhauls.

#### TRACK

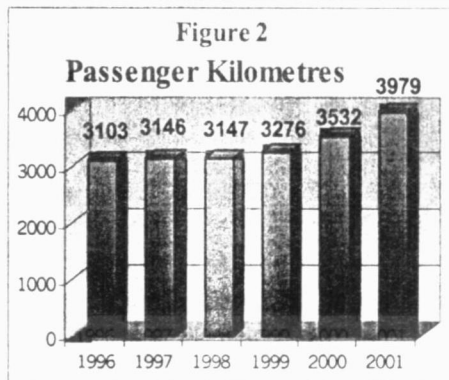
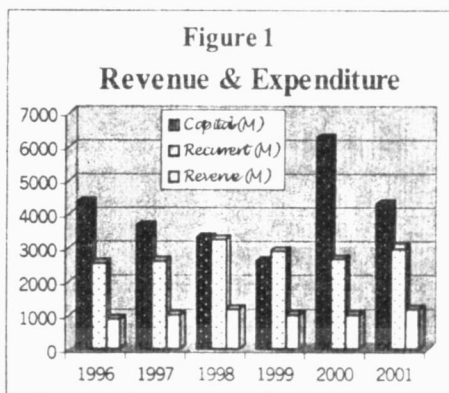
The railway network in Sri Lanka is 1449 route kms, out of which 305 kms are non-operative due to removal of track during the disturbances in the North and East. 115 kms of the network is with double line and 14 kms with treble line. In the entire network, around

160 kms are laid with concrete sleepers and the rest with wooden sleepers. The main line Colombo to Badulla was laid with 88 lbs / yd section

and more recently replaced with a higher section 90 lbs / yd up to Rambukkana to facilitate heavier axle loads. Similarly rest of the network is laid with 80 lbs / yd section and recently replaced by 90 lbs / yd section from Colombo to Wadduwa. There are around 250 speed restriction in the network due to weak sleepers, rails and inadequate ballast. The tracks are deficient of around 800,000 sleepers the position has aggravated over the years due to inferior quality of sleepers offered by State Timber Corporation. The concrete sleepers are used in the flat country and in curves more than 500 m in radius. The insertion of concrete sleepers is curtailed due to absence of sufficient funds to procure the fastening system that has to be imported. Annual requirements of wooden sleepers are around 200,000 but funds are sufficient to purchase only 135,000 sleepers, due to other urgent purchases of track materials and equipment. However, during the last two years invariably the amount set aside for purchase of sleepers has not been paid to State Timber Corporation and railway owes around 400 million to State Timber Corporation. The requirement of rails is around 6000 Nos. 60 feet rails per year ( to be replaced every 30 years) and around 40,000 cubes of ballast per year. (1,000 cubes of ballast per mile to be replaced every 25 years).

The track maintenance includes attending to minor defects as well as replacement of assets periodically. When periodical replacement of assets are hindered, the number of defects rises remarkably and attention by the available labour force is not possible and gradually gets out of control. The number of vacancies of track gangs has also affected the position further. In such circumstances the only remedy is to impose restrictions and reduce the speed of trains, in order to reduce the vulnerability of derailments. Rehabilitation cost per Km of track is around Rs. 3 million. Rehabilitation was carried out using donor funding in 1996 when sections were improved and rehabilitated at a cost of Rs. 1,600 m (including purchase of machinery and equipment and rehabilitation of quarry and permanent way shop).

Hence, systematic allocations of funds are vital for asset replacement and sustainable maintenance of track network. In order to improve the efficiency of system the railway has been required to construct double tracks in suburban sections and extend lines in the east, which has been carried out with difficulty and compromising on materials that are otherwise used in track maintenance in running lines. Such extensions will create further burdens when it comes to maintenance specially if adequate resources cannot be procured in time with the provision of allocations. Track equipment and machinery such as the Tie-tamper imported under donor funding in 1996 has greatly facilitated track maintenance. The quality of track done by the Tie-tamper remains good for around one year in compari-



decline of revenue, in both long distance passenger service and the freight service.

The suburban passenger service is mainly handled by the diesel multiple units. Out of the 50 diesel multiple units again only 33 units are less than 20 years old and with recent price hikes in diesel and increase in bus fares there is an unprecedented demand in suburban passenger service. It has been found that 39 multiple units which is the daily average availability, is grossly insufficient to transport the 250,000 office workers who are transported daily to Colombo and back. With recent diesel price hikes and increase in bus fares and not rail fares, has entailed more people to travel by rail. (See Fig. 2). Hence proposals have been made to pro-

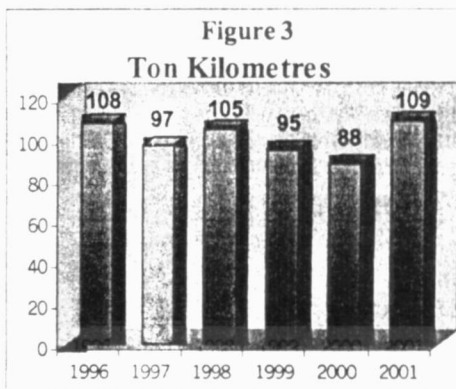
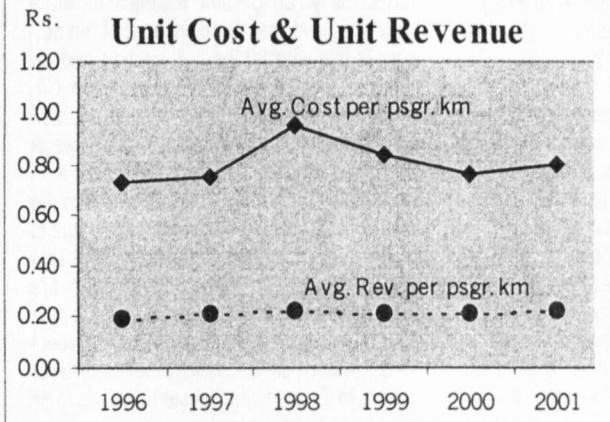


Figure 4



son with what is attended manually the quality diminishes after 4 months. This is the reason why most of the developed countries have mechanized their maintenance system to ensure quality. In certain countries where even replacement of assets are mechanized the machinery to labour ratio is 80 : 20 in comparison 20 : 80 in Sri Lanka. It has to be noted at this stage it is timely that a decision be taken as a policy what ratio Sri Lanka is trying to achieve in the next 20 years or so, understanding the fact that it is necessary to strike a balance between quality and labour input. This will also surface a relationship to the speed of travel, for which parameter, the policy makers have to take a decision, what the maximum speed of travel should be in our small country, where maximum distance between North and South is approximately 600 km. Presently at a time when the system is saddled with limited resources it is prudent that the lines be classified according to traffic density and speed, so that available resources are used more advantageously.

### SIGNALLING AND COMMUNICATION

At the inception of the railway, the signaling system, which was introduced, was the system with the train dispatching being done by tablet token system for single line, and lock and block system for double line sections. These systems could not cope up and did not have the capacity to cater to higher densities of trains and as such it was replaced with a colour light system in 1964 where the movements are controlled by the control office at Maradana. This system is also now obsolete as there are difficulties encountered in obtaining spares. Recently the colour light system in the coastline was extended to Hikkaduwa under donor funding utilizing a system, which is compatible to the existing system. This will be again extended from Hikkaduwa to Matara on the stage 2 of the project, at a total cost of Rs. 2400 million. The Sri Lanka Railway also has taken steps to extend the colour light system on their own on the third line from Maradana to Ragama, Polgahawela to Rambukkana both lines, and has installed colour light system for the new

double line project between Panadura and Wadduwa and Ragama to Kandana. The present system involves a large space in control office and may not be economical considering the fact that the system is outdated, hence proposals are being finalized to go in for a more compact modern system initially to be installed in the Fort, Maradana and loco junction areas.

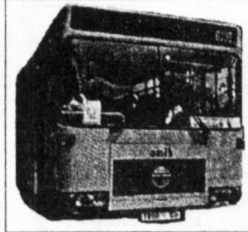
Communication between stations was with Morse code and control phones through wires drawn along the railway network. However the systems was not reliable due to breakage of wires and the difficulty in maintaining the Morse code equipment. Hence the system was done away with and from early 1980s radio communication was installed. This has been later extended to some of the trains as well. The present equipment is over 20 years old and original manufacturer has closed down and as such there is a difficulty in obtaining spares and as such it is now required to go in for a modern communication system, which would incorporate Data Communication as well.

Level crossing gates although every one of them were protected earlier by having bamboo barriers and operator, after a thorough study it was decided to withdraw bamboos and operators from some of the crossings where the traffic was less. This was done because there were accidents at crossings in the absence of operators to close the bamboo barriers during the passage of trains. On either side of the crossings where bamboos were removed are installed with conspicuous boards to warn the motorists of the crossings. However, there is a programme to install permanent barriers or bell and light on pre identified 240 gates on priority basis. Such a gate will cost the Railway Department a minimum of Rs. 700,000 depending on the place of installation.

### OPERATIONS

It costs railway approximately Rs.1 per passenger km (see Fig. 4) although by legislature it is allowed to charge only 25cts per passenger km (fares being fixed in 1996) while doing so it also provides further concessionary tickets to working population and schoolchildren, supposing these concessions are withdrawn the employees who travel to work daily from distant places such as Matara, Maho, Puttalam, Kandy may opt to reside in Colombo and in the vicinity of work places. Thus Colombo will be a congested and polluted area and the Government will have to spend on medicine and hygiene. These unnoticed benefits the Railway is offering to the society at large should be given credit in monetary terms. Further railway is not charging GST on passenger ticket, but

on the reverse the railway is compelled to pay GST on the goods purchased and services obtained.



### RECOMMENDATIONS & CONCLUSIONS

In any country the economy depends on the transport system and in Sri Lanka too it is so. Hence, emphasis has to be made to invest in a more economical and a reliable system. Most countries have opted for the railways and have invested on Mass Rapid Transit system for transport of office workers to the city centres. Railways have many advantages over other modes, it is energy efficient in that it consumes much less energy per passenger km, than other land modes, its emission of toxic gases to the environment is much less and could be minimized if electrified. The number of passengers transported by the operating crew is much more than road transport.

In many countries railways are developed along with its property, so that its self-sustenance does not depend only on the passenger and freight transport. In most countries where there is long distant haul, the freight transport can be run at a profit, but in Sri Lanka where the haulage is not so great, even with lower rail freight charges, there is competition by road due to door to door service, and once loading and unloading. It is necessary that the present system of transport should be modified to a greater extent by strengthening the railways with more frequent and punctual trains, specially during peak hours and buses feeding the passengers to the rail head. There could be much attraction to this system if an integrated ticketing system could be introduced to travel by bus, train and bus. In order to reduce congestion on road, proposals have been already made to create and Internal Container Depot (ICD) facilities at various locations, so that container transport from Colombo Port to ICD can be done by rail. Further running of a value added dedicated service to Bandaranayake International Airport from Colombo Fort will attract tourist to patronize the rail. Bicycle parks, car parks and bus circulating areas shall be provided at stations along with commercial development in stations such as Internal container Depots, Airport line for tourists, Super Markets, Shopping complexes, Banks, Post office etc are proposed. It is suggested even value added services such as air conditioned coaches be provided in office trains to provide comfortable travel to those who could afford same, "Hotel on wheels" for tourists, and holiday makers. Such development and novel features are essential for the railways survival or in the alternative the railways present services to the public should be evaluated in a more rational way and monetary credit should be provided, to improve services further.