Evaluation of the trade routes of Malawi

Samuel Williard Frank Mazunjo Chiwaula

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AN EVALUATION OF THE TRADE ROUTES OF MALAWI: A MODAL APPROACH

by

SAMUEL WILLIARD FRANK MAZUNJO CHIWAULA

A paper submitted to the faculty of the World Maritime University in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE

in

GENERAL MARITIME ADMINISTRATION

The contents of this paper reflect my personal views and are not necessarily endorsed by the University.

Signature: [Signature]
Date: 09-11-03

Supervised and assessed by:
Professor P.M. Alderton
World Maritime University

Co-assessed by:
Dr. C.S. Lalwani
University of Wales.
Dedicated to my beloved
mother, Hilda Amity Chiwaula and
late father, Alfred Manning Chiwaula
Transportation has played a major and almost legendary role in shaping national development in all the economies of the world. It has long been linked with the process of economic development, be it at the local or national level, and it is not surprising that transport policies have often, except in rare cases, been viewed as having development objectives. This shares the notion that by opening new markets and allowing access to raw materials, the cost of production could be reduced as a result of economies of scale reaped from the great abundance of inputs which make it possible to produce large quantities of commodities.

It goes without saying then that the very survival of Malawi, just like any other country, depends basically on the flow of commodities she produces and receives from other countries. The importance of transportation to Malawi is amplified by her landlockedness. Unfortunately, despite being landlocked, Malawi’s transport problems have been compounded by the insurgents in Mozambique. The mid eighties has seen the closure of some trade routes of Malawi and opening of others.

This paper has tried to give the background, present status, and future outlook of the transport industry in Malawi. A cross-examination of the transport modes and the trade routes has been given and an attempt regarding their economic operation has been made. The paper is not aimed at bringing radical changes to any established set-up in view of financial and other implications but to put forward some proposals which can form guidelines in the decision making process by the Government, transport
operators and users.

I am greatly indebted to Chris and Catherine Chiwaula, Lewin Chirwa, and Mama, Hilda Amity Chiwaula, who worked hard to see me become what I am.

I would like to acknowledge with thanks the patience and guidance my course professor, J. Mlynarczyk, rendered to me during my two years of study and also Professor P.A. Alderton of World Maritime University and Dr. C.S. Lalwani of University of Wales, Institute of Science and Technology for accepting to assess my thesis and providing guidance during the preparation. To all my teachers, lecturers, and professors, I only say you have been great to me.

I am most grateful to Mr. B.D. Chithila for the assistance he gave my family and me during the two years I spent abroad and my research. I would also like to make special mention of my dearest friends and colleagues; Mr. C. Masoo, Lupakisyo Kalambo, F. Mtonga, Albert Nkana, I.M. Phiri, Bhanu Vibhatabaedth, and everyone in the Ministry of Transport and Communications for the considerable support and assistance they gave me during my academic life.

I pay special tribute to my wife’s forebearance and enthusiasm during many a lost months. I would also like to thank my long suffering children for allowing me to be away from them for such a long time.

Lastly but not least, baba, you sowed a seed the fruits of which you have not seen. One of the things I can never forget is your advice.

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UNDP, Lilongwe.
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<tr>
<td>ADMARC</td>
<td>Agricultural Marketing Cooperation</td>
</tr>
<tr>
<td>CCE</td>
<td>Chief Civil Engineer</td>
</tr>
<tr>
<td>CME</td>
<td>Chief Mechanical Engineer</td>
</tr>
<tr>
<td>CTM</td>
<td>Chief Traffic Manager</td>
</tr>
<tr>
<td>DS</td>
<td>Dockyard Superintendent</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>MARPOL</td>
<td>Maritime Pollution Prevention (Convention 1978)</td>
</tr>
<tr>
<td>MK</td>
<td>Malawi Kwacha (national currency)</td>
</tr>
<tr>
<td>MR</td>
<td>Malawi Railways Limited</td>
</tr>
<tr>
<td>NCR</td>
<td>Northern Corridor Route</td>
</tr>
<tr>
<td>OS</td>
<td>Operations Superintendent</td>
</tr>
<tr>
<td>PTA</td>
<td>Preferential Trade Area</td>
</tr>
<tr>
<td>SADCC</td>
<td>Southern Africa Development Coordination Conference</td>
</tr>
<tr>
<td>SATCC</td>
<td>Southern Africa Transport and Communications Commission</td>
</tr>
<tr>
<td>SOLAS</td>
<td>International Convention for Safety of Life at Sea</td>
</tr>
<tr>
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CHAPTER 1

INTRODUCTION

1.1.0 OBJECTIVES

The main objectives of this paper are;

a) Evaluate the performance of the trade routes and transport modes available to Malawi and

b) Propose possible improvements for adoption by all those involved in the transport sector.

1.2.0 SCOPE OF THE PAPER

The paper gives a general picture of transport operation in Malawi. The approach used in the paper is that of how it has been done, how it is being done, and finally how it should be done. Air transport has not been included because of its insignificant contribution to the movement of Malawi's trade. The paper has been restricted to Malawi's international cargo flow mainly within her territory since outside this she cannot exercise any control of traffic movement apart from negotiating with her counterparts.

1.3.0 SOURCES OF INFORMATION

Information used in writing this paper was obtained from; library research, field research during which major
rural areas. It has been a Government policy to encourage rural settlement and discourage urbanization in order to reduce social and economic problems associated with the latter and promote agricultural production.

The unit of currency is the Malawi Kwacha Malawi has not joined mining industry because the mineral deposits exist in either small quantities or poorly located areas which would make their exploitation uneconomical. Industrial development has been sluggish and limited to light manufacturing industries among which are cloth, plastic products, shoe and cement. The dearth of mineral resources, the shape of the country, land-lockedness and distance from markets are some of the reasons for the slow industrial development. Having not gone into Mining and heavy industry, the Government then embarked on agricultural schemes. Agriculture has therefore, been the backbone of the economy contributing over 85% of the country's GNP. Major exports are tobacco, tea and sugar.

The government was subsidizing fertilizer prices until mid 1980s as a means of inducing agricultural produce. The withdrawal of these subsidies has increased the prices of fertilizers considerably. The increase in transport costs as a result of using longer routes is another factor among others which has led the prices of fertilizer as well as other imported commodities to go up.

The impact of using longer routes, hence increasing costs and transit period has been so heavy on the economy of Malawi that prices of commodities have escalated more than threefold and the Malawi kwacha has been devalued more than twice within the past six years. However, the decline of agricultural commodity prices at the international markets together with fluctuating agricultural produce due to unfavorable weather conditions have also affected the performance of the economy.
CHAPTER 2

EVOLUTION OF TRANSPORTATION
IN MALAWI

2.0.0. INTRODUCTION

Transport in Malawi as has been the case elsewhere in the history of the world, has passed through various stages and is still undergoing changes.

Transport is an essential facility for the exploitation or development of economic resources on a national or international scale. It permits articles or materials to be moved from places of low utility to those of high utility. Transport is that part of economic activity which is concerned with increasing human satisfaction by changing the geographic position of goods or people. It may bring raw materials to places where they can be manufactured more easily, or finished goods to places where consumers can make best use of them. Alternatively it may bring the consumer to places where he can enjoy/1. It is indeed not surprising to see finished products or raw materials moving from one area to another.

Many economists such as David Ricardo have also advocated the theory of comparative advantage, in other words specialization, and shown how countries or areas can benefit from such trade. Richard G. Lipsey in his book says that "without comparative advantage, there is no reallocation of resources within each country that will increase the production of both commodities". In order to reallocate resources and services, therefore 'It is the
function of transport to bridge the geographical gap between producers and consumers, so that goods and services may be exchanged to their mutual benefit. It must strongly be borne in mind that without a low-cost reliable and well-managed transport network, goods and services would not be exchanged to the detriment of the living standards globally. It can therefore be deduced that countries or areas cannot reap any advantage from specialization if the transport system is very poor or expensive. Instead of producing commodities or services cheaply, their landed costs would be very high.

Every transport mode embraces three essential elements: the way, the vehicle including motive power unit, and the terminal. The way is the route along which traffic moves such as waterways, oceans, roads, rails etc. and the vehicle is that part of the transport system where cargoes or passengers are accommodated but this needs a motive power to drive it. A vehicle can be in form of a ship, a truck or wagon etc. Lastly, the terminal is the interface where one transport ends and another begins. The provision of these transport elements arises mainly either for economic, social or political reasons, and are applicable in all countries regardless of the economic system or political ideology, a country may adopt. The evolution of the elements in Malawi are discussed below within three broader topics: Lake Service, Rail, and road transport.

2.1.0 INLAND WATER TRANSPORT SYSTEM

2.1.1 BACKGROUND

The history of water transport in Malawi goes a long
way back before the coming of the missionaries in the middle of 19th century. In those days dug-out canoes and rafts were used mainly for fishing and coastal transport. An improvement to these means of transport was the introduction of small wooden sail boats which were later developed into dhows. When dhows came into use, long range transport started along and across the lake.

The turn of 19th century saw the coming of the British missionaries and their pioneer, Dr. David Livingstone, who showed the possibilities of using the Zambezi and Shire Rivers in transporting cargoes between the coast of Indian Ocean and the Lake which they erroneously called Lake Nyasa (Nyasa in the native language means water hence the ambiguity of "lake lake"). The through navigation of this water system was rendered impossible, up to the current period, by the sixty four kilometre cataracts. Nevertheless, Ocean liner passengers and cargoes were moved from the mouth of the Zambezi on Indian Ocean Coast up to the foot of the cataracts by shallow draught river steamers. From there cargo was then dragged by porters overland past the cataracts to European missionary settlement areas. Seeing that the waterway was navigable immediately after the cataracts right to the northern end of the lake, the missionaries thought of operating small ships on this leg of the journey too. The first steam ship Ilala, reached the lake on October 12th, 1875 after being reassembled at Matope, see Lake Malawi Steamers. This was the beginning of a new era of steam and diesel engine powered ships. For a detailed inventory of ships, see Appendix 1.

The ships which were introduced at the turn of the 19th century were mostly shallow draught which restricted their activities to the coast. These ships were generally used for, anti-slavery campaign, spreading missionary
work, and patrol against the Germans and Portuguese. Otherwise the majority of passengers were colonial administrators and traders.

Although the dhows were finally phased out in the late 1960s, small sail boats are still providing daily services in some areas such as Likoma and Chizumulu Islands.

Despite the fact that the sizes of ships which have been operating on Lake Malawi have been small, as seen from the Appendix 1, there has been only one major casualty which involved the sinking of M.V. Vipya on 30th July 1946. Out of 194 passengers and crew on board, only 49 survived, see Lake Malawi Steamers.

2.1.2 CURRENT OPERATIONS OF WATER TRANSPORT IN MALAWI

Malawi Railways (MR) is the sole operator of passenger and cargo transport on Lake Malawi through their department called Lake Service Department. The Malawi Railways is a Government owned company based in Blantyre. The company was initially operating three modes of transport; road, rail and water but due to poor marketing and coordination the road transport did not survive. The water and rail have survived simply because of Government subsidies as discussed in the following sections and chapters.

As stated earlier on, the water transport is operated by a division of the Malawi Railways Lake Service, and is based in Monkey Bay. The head of the Lake Service is the Lake Service Manager and the organizational chart of MR is given in Diagram 2.0.

The Lake Service Manager is responsible to the
Assistant General Manager, Technical Services, on technical matters and Assistant General Manager,

DIAGRAM 2.0: MALAWI RAILWAYS ORGANIZATIONAL CHART

Source: Malawi Railways.
Operations, on operational matters who report to the Deputy General Manager and who in turn reports to the General Manager. Among the responsibilities of the Lake Service Manager are:

1) overall operations of Malawi railways Lake service department, all ports and shipyard at Monkey bay;

2) to ensure that all the vessels and related backup systems are operated efficiently and that spare parts are made readily available;

3) to ensure that ports are adequately equipped and operated efficiently; and

4) to ensure that suitable personnel is available in the department through training.

Below the Lake Service manager are two officers who can be considered as his "assistants" but not as assistant managers. One of these officers is called Dockyard Superintendent (DS) who is responsible for all engineering matters, shipyard, workshop at Chipoka, Chilumba and Nkhata Bay, scheduling refit programs of lake service and other Government vessels, crewing the vessels with engineers and the whole engineering staff on and off-shore.

However, the construction and maintenance of the quays, jetties, warehouses, offices and housing estates are done by the Chief Civil Engineer (CCE) but in liaison with the DS. The Chief Civil Engineer is also responsible for the construction and maintenance of rail permanent way. In a wider perspective, he does all the civil works for the entire company. He is based in Limbe (Blantyre),
where the head quarters of rail transport is, about 250 kilometers away from Monkey Bay. It is a strong feeling of the author that the rail is likely to get a higher priority than lake transport regardless the actual importance of work that may be involved in the two departments.

The other officer is the Operation Superintendent (OS) whose duties are to look into the operation of the entire Lake Service fleet, schedule vessels, allocate cargo, liaise with the Dockyard Superintendent on the scheduling of vessel refits, and man the ships with deck personnel, and look after the security of transport. Currently, Lake Service is responsible for the operations of the ports and the water transport itself. Each item is discussed below:

2.1.3 PORTS

Ports can be considered as a terminal from shipping point of view. The port plays an indispensable role in the shipping business since ships need a place to berth or anchor in order to load and discharge its cargo. In Malawi, there are three main ports; Chilumba, Chipoka and Nkhata Bay, see Fig 1.1. The ports of Chilumba and Chipoka are vital to Malawi’s international trade since the inception of the North Corridor Route (NCR). This project was introduced as a result of the Government’s diligence to reduce transport costs incurred on other routes. Chapter three gives a more detailed discussion on Malawi’s trade routes. Nkhata Bay, as has been the case with the other two ports before the introduction of the NCR, mainly serves domestic traffic. The only export commodity that passes through this port is tea although it is exported from Blantyre after further treatment,
processing and packaging. For this reason the transport leg between Nkhata Bay and Chipoka or Blantyre can be considered as a domestic one.

The capital for investment in the construction and maintenance of ports is financed by the treasury funds. The executing agency then for such a project becomes the Malawi Railways.'

This means that ports in Malawi, like in many other developing countries, are owned by the public sector.

The initial and prime objective for the provision of the ports in Malawi was part of the improvement of domestic transport. The ports were not handling any international trade until the mid eighties when the international routes through Beira and Nacala were closed. Since the ports were not designed to handle international traffic, the sudden shift of traffic to them caught the management by surprise. Container handling facilities were not available up to the time the author's research in February, 1989. At Chilumba, there was only one crane while at Chipoka they were using a rail breakdown crane which was bought for recovering derailed locomotives or other rolling stock. It is obvious then that first priority for the use of the latter goes to rail since the crane was bought for that sector. From the interviews the author conducted, the Lake Service Senior Personnel indicated that well over 80% of their demands for this crane were not met on time. At times it could take more than one month. There is a need for cranes for lifting containers to be used solely in the ports to improve the situation.

Another problem which international traffic brought about in the ports was congestion given small storage areas and warehouses designed for domestic traffic only. In view of the increasing traffic handled by the ports,
the Government made a provision for the expansion and improvement of the ports as part of the package of NCR development project. Some of the facilities to be provided are: new oil storage facilities, quays, handling facilities, warehouses and open storage areas.

Each port is manned by a portmaster, two assistant portmasters, drivers and loaders. The short research revealed the following problems which existed within the port personnel:

a) Portmasters had no formal training but got positions through long experience,

b) The Portmasters were not directly involved in the planning process, and

c) They had very limited authority over the ports they were responsible for.

There is no direct control of the ports by the Government. The operation of the ports is solely the responsibility of the MR. However, the major handicap to their improvement to keep pace with the changing and growing traffic movements has been the reliance on public funds release may be effected after long bureaucratic hurdles. This investment gap is one of the factors that have hampered the expedient and smooth flow of international as well as domestic cargo.

2.1.4 WATER TRANSPORT

The Lake Service runs two services; passenger and cargo, as pointed out earlier on. From the author's point
# LAKE TRANSPORT SYSTEM

## ANNUAL OPERATING COSTS AND ANNUAL OPERATING REVENUE

<table>
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* Includes Port expenses as well.

SOURCE: Malawi Railways: Limbe
of view, the operations of these two services can be seen is that of cross-subsidization. Although there are separate costings as shown in Table 2.0, the validity of these figures must be taken with caution since the figures may be misallocated erroneously or otherwise in which case the perceived picture might not be the true one. However, the figures provide a working ground. Freight operations have generally been doing well reaching a peak surplus of 94,000 MK in 1980 during the past ten years. The only period they had a deficit of 10,000 MK was in 1985/86.

The performance of the cargo operations has not been steady because of dependance on seasonal domestic agricultural inputs and produce, see Fig 2.0. In 1984, part of the international traffic started moving through NCR hence the big jump as depicted from the referred graph. From that year, cargo is either directly road hauled to Lilongwe or Blantyre, or through the other two corridors, see Chapter 3. The question is why should shippers prefer to pay more? Answers to this question are given in Chapter 4.

The performance of passenger operations shows a quite contrary picture. This service has been operating at a loss during the same period. This is generally true with similar services worldwide. In other countries' services, such as cruise and ferry, the operators earn profits from the catering services (duty free shops and pubs). The Malawian case is that of total reliance on passenger fares since the catering service is of low quality and lacks patronage due to the relatively low incomes of the majority of the passengers.

The passenger operations' deficits shot up in 1980 from 50,000 MK to 67,000 MK after the introduction of a
FIG 2.0  LAKE TRAFFIC VOLUME

1977–1987

TONNES (IN THOUSANDS)

YEAR


Source: Malawi Railways
new vessel, MV Mtendere in the same year. During the following year the situation slightly improved only to rise again in 1983. One of the reasons for the jump was the high fuel consumption of the new vessel. The other reasons are poor patronage and high fuel prices in Malawi. It is not the intention of this paper to discuss passenger service operations in details. However, the afore-going information has been incorporated because of its financial impact on the operations of the whole Lake Service and finally on MR.

Every ship operator, just like any other business person, must particularly be aware of the necessity to achieve maximum utilization of his vessels or assets. During the anticipated economic life of a ship he must recover the very high capital costs involved, the interest incurred, operating costs, and finally earn sufficient profits to make the venture worthwhile. His main concern must, therefore, be to see to it that as little time as possible is spent in port. Short turn-round time increases time available for additional voyages as well as reducing the very high costs incurred while the vessel is in port.

The research revealed that ships in Malawi are operated in a different way. It appears there is not much concern over maximum laytimes or laydays and this may be because demurrage does not exist. Sometimes it can take as long as two months for a container to be moved between Chipoka and Chilumba due to non-availability of ships at a port meanwhile a ship may be laying idle somewhere in another port. Unfortunately, there is no or very inactive marketing service in MR. It is difficult then, if not impossible, for MR, Lake Service in this case, to sell thoroughly well their services to potential customers and compete with the versatile road transport. With the
opening of the new Northern Corridor Route, there is urgent need for the creation of a Marketing Division within MR. The division would ensure a coordinated cargo flow and transport interchange. Without this, the present situation is most likely going to persist and road transport will continue to dominate the market share since no rational shipper can continue using a service which brings unnecessary delays of his cargo. What must be borne in mind is that customers such as cargo owners, want to be given the type of service that they want at a time they want it. Improvements in transportation must be associated with reduced transport costs, greater speed, and better quality of service. The question that lingers in the author's mind is 'which one of these have we so far achieved?', see Chapter 4.

There are a lot of operational problems which have been affecting the performance of the water transport in Malawi. Most of the ships are so old that their operation is purely for continuity of the existing operations which are mostly provided for social reasons. It is an indisputable fact that it is uneconomical to run an old equipment because of the high running and maintenance costs associated with such equipment. Another problem is lack of involvement by the Lake service personnel in the discussions leading into the procurement of a new building (ship). Purchasing a new vessel does not necessarily mean that it will be run economically. The masters and engineers become very useful when determining the economics and suitability of operating a particular ship. A ship's design plays a very important role in determining its fuel consumption and other variables which will affect the vessel's operation in her period of service. Where there is no direct involvement of the "actual" operators, procurement of an unsuitable vessel is likely to occur.
The author found out that the problem of non-availability of vessels is largely because of the non-existence of ships' schedule in the Department and to customers (shippers). Ships are run only when there is enough cargo for them to sail hence the operation can be considered as a tramp service. If there is not enough cargo the vessel is not allowed to sail. According to the existing operations, instructions relating to the dispatch of any cargo vessel must come from Monkey bay. With poor communication, this procedure is likely to hamper fast dispatch of a vessel thereby causing delay to cargo and in the final analysis shippers' loss of confidence in MR.

In every business discussions among members are vital in trying to find solutions to problems and making future operational plans. If employees are involved in the decision making process at different levels, they are bound to becoming industrious since there would be a feeling of them being part and parcel of the organization. It must be noted that commitment and dedication bring efficiency.

Unlike in the ports, water transport has a well trained personnel both on deck and engine. The only problem unveiled during the research period was non-availability of a coordinated training program in the Lake Service. The training program that is followed is the Government Program. This kind of arrangement can cause a lot of confusion in the Department such as manning problems and training personnel whose knowledge or training may never be utilized because of their job description.

Another interesting observation the author made was that the majority of the workers did not know their conditions of service. It is extremely important that every employee knows his condition of service.
In conclusion, it is important for any management to realize that it can earn the trust and respect of its employees (juniors) by providing fair wages and conditions of work, by keeping employees fully informed of any future developments and minimize any adverse effects of such developments through consultation. On the part of the employees, they can give the management an opportunity to make good the past mistakes by not regarding every new proposal as management's trick to extract more work, giving a fair day's work, and agreeing to greater flexibility in working arrangements.

2.2.0 RAIL TRANSPORT

2.2.1 BACKGROUND

The rail transport shares the same top management with the Lake Service. The rail transport head offices are in Blantyre and are sharing the same building with the MR headquarters. This fact in itself should give railways an added advantage over Lake Service.

As has been the case all over the world, the rail transport started in Malawi, then Nyasaland, long after the water transport was established. The coming of railways line form Beira to the Shire Highlands (Blantyre) in 1908 phased out the use of the river transport on Shire and Zambezi Rivers. In 1935 the railtrack was extended to Chipoka. It was after this extension when Nyasaland Railways, now Malawi Railways, took over freight and passenger operations on the lake. In 1970, the Nacala line came into operation which considerably cut down the
distance to the ocean. This corridor became the major trade route. The last extension was that between Salima and Malawi border with Zambia through the capital, Lilongwe. The total railway network stands at 830 kms.

The Organization of railway is slightly different from that of lake Service. Instead of combining the engineering and operations, these two are run by two heads of department, the Chief Mechanical Engineer (CME) and the Chief Traffic Manager (CTM) respectively.

The CME's duties are to maintain the locomotives and other rolling stock and all MR auxiliary vehicles. The CTM is responsible for the running of trains, locomotives, drivers and all personnel involved in the direct running of the trains.
2.2.2 OPERATIONS OF THE RAIL TRANSPORT

Prior to the disruption of Malawi's traditional transit routes through the Ports of Nacala and Beira, as discussed in Chapter 3, the rail transport was handling almost 96% of Malawi's international traffic. After the closure of the above two routes, rail transport was handling mostly domestic traffic and the financial effects of which can be seen in Table 2.1. The Northern Corridor Route, discussed in Chapter 3, is geared to using rail transport on a section of the whole corridor system. The introduction of this route has slightly improved the financial position of Railways giving it a surplus of 7,000 MK during 1986/87 period.

Rail transport has a fixed schedules of trains running between Blantyre and Lilongwe, Blantyre and Salima, and Blantyre and Balaka. The trains are operated in a quite different way from that of European and many other countries of the world. Passenger cars and cargo wagons are run within one block of train.

There are several problems associated with the rail transport in Malaw. The insufficient supply of cargo wagons. In most cases cargo stay at a station for weeks or months waiting for wagons while they might be laying idle somewhere else or under maintenance and repairs. This problem is similar to that discussed earlier on in section 2.1.2

The trains are too slow in the face of road transport competition. For instance between Lilongwe and Blantyre the distance is 752 and 351 kms by rail and road
<table>
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<th>Annual Operating Expenditure Index</th>
<th>Annual Operating Revenue Total</th>
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<td>21080</td>
<td>130</td>
<td>+7</td>
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</table>

**Source:** Malawi Railways: Compendiums
respectively. Cargo, for example, a container, will take only 3 to 5 hours on average to be moved between these two points by road and the same cargo can take about 34.5 hours by rail. In short the trains travel at about 30 km per hour. If one considers also the extended period cargo wait for transport, the railway cannot compete with road transport. For cost implications to the consumer or user see Chapter 4. There is only one rail track and rail break-down crane which is also being used by Lake Service for handling containers. Any derailment usually disrupts the movement of cargo and passengers for days. "...Unlike other SADCC countries locomotive availability is good (71.7 percent for the Bombardier units) although utilization is low (31.3 percent of total time), due mostly to lack of international traffic. Low utilization is also partly due to extended periods of delay from derailments because of the ineffectiveness of a single and very old breakdown crane. In 1987/88, approximately 80 days of lost operating time was due to line blockages."/7 These are some of the reasons the patronage of the railway in Malawi is generally that of demise in terms of market share in favor of road.

2.3.0 ROAD TRANSPORT

2.3.1 BACKGROUND

Road transport can be considered to be the oldest mode than any other mode of transport. There is almost nothing in the history of Malawi to trace any trends in the road transport development.

International road haulage did not exist in Malawi before the closure of the railway routes to the ports of
Beira and Nacala. When the two routes closed and in the absence of trucks capable of handling international traffic many foreign transport companies started hauling Malawi's imports and exports from and to the South African port of Durban. Since all transport costs were being paid in foreign exchange, the Government started encouraging domestic haulers' and businessmen to start international haulage through such incentives as soft loans, rebates on spare parts and tires. By the end of 1988, there were less than 200 Malawian registered units out of which less than 100 were owned by Malawians. Although this development has been slow due to the high capital costs involved, it is necessary to have an indigenous fleet large enough to cope up with a country's trade as this would ensure closely monitored and controlled traffic movement.

The general road condition for the international routes is good except for the Northern Corridor Route (NCR). The routes through Mwanza and Mchinji, see Fig 3.0 and Chapter 3, are completely tarred. Improvements to the NCR are under way and according to the Ministry of Transport and Communications plans, the whole project is expected to be completed in 1992.

2.4.0 ROLE OF MINISTRY OF TRANSPORT AND COMMUNICATIONS.

Although transportation forms the core of economic development, it is inherently perilous activity which causes at least 50% of the total accidents world wide. It has then become necessary for the governments, and Malawi is no exception, to control the quantity and quality of transport.

In some cases free competition especially free entry into the market has brought about over capacity and
misallocation of scarce resources as counter productive results. Due to lack of forecasting tools for transport demands and supply trends investors may risk quite a lot of money and because of this, The Government must come in to control those transport ventures which are of much interest to The Government.

Transport operators pay less or no attention to safety measures or standards. The increasing number of fatal accidents and pollution of the environment caused by the high level of toxic substances have necessitated governments to introduce stringent policies and regulations. In Malawi, there are several measures taken to reduce rail and road accidents and pollution but on the water transport not much has been done. Having joined IMO in January this year the author hopes that Malawi Government will ratify the SOLAS and MARPOL Conventions as soon as possible although some of the requirements of these conventions were adopted sometime back.

It can be said that MOTC is primarily responsible for formulating transport policies which are to be implemented by transport operators. It is important that the existing cooperation between MOTC and operators continues if the Government objectives are to be achieved. In summary these policies are geared to control;

1) quality of transport such as safety,

2) quantity (supply),

3) the organization of the transport sector, and

4) resource allocation.

The main objective behind these controls is to keep
transport moving at the safest and least possible cost.

In order to achieve the above objective MOTC issues road service permits and certificate of fitness to trucks, while ships are issued with certificate of seaworthiness. Road Service permits are issued for three or 12 months period at a fee of 35 MK per three months. The permits give a truck the right to perform transport on a specified route in Malawi. The certificate of fitness shows that a truck is road worthy. International haulage brings in safety problems because a country cannot generally check on road worthiness of a foreign truck unless it has been involved in an accident or the traffic officers are suspicious of a truck’s road worthiness. These certificates are issued for a year’s period.

The surveyor of vessels surveys all ships plying on Lake Malawi except patrol vessels. Every ship is surveyed once every year and a surveyor’s certificate is issued to a ship that has complied to all government requirements for seaworthiness.

2.5.0 THE LEGAL REGIME OF TRANSPORTATION IN MALAWI

The Ministry of Transport and Communications is the ministry responsible for deciding which international, regional or bilateral transport agreement The Government of Malawi should ratify. So far, Malawi is a member of the following international organizations:

1) International Air transport Association (IATA);

2) International Civil Aviation Organization (ICAO); and

4) World Meteorological Organization (WMO)

Apart from the above mentioned international organizations, Malawi is also a party to several bilateral and regional rail and road agreements and below is a list of some of these agreements:

1) Road Transport Agreements with the government of Zambia, Mozambique, Zimbabwe, Tanzania, and Botswana.

2) Rail Transport Agreement with the governments of Zambia and Mozambique.

The regional agreements on transport and communications are two; The Southern Africa Development Coordination Conference (SADCC) through its branch called Southern Africa Transport and Communications Commission (SATCC), and Preferential Trade Area (PTA). Member states of SADCC are all South African states viz: Botswana, Angola, Zambia, Zimbabwe, Mozambique, Lesotho, Swaziland, and Malawi. Namibia is expected to become the 9th member after her attaining independence. The PTA covers the above states and all the countries in East Africa, such as, Tanzania, Kenya, Burundi, Rwanda, Madagascar, and many others. The objective of these two regional organizations is the same, that is, to foster trade and development in the region by reducing barriers to trade, transport and communications.

Under these agreements, Malawians can perform transport in all those countries which are a party to the
agreements since they are legally binding. However, landing rights in case of air crafts, and road service permits for vehicles employed for hire or reward and own account are to be negotiated and obtained before entry can be given. MOTC negotiates with their counterparts for the aforementioned legal papers on behalf of the operators. These negotiations are easily accomplished because of the provisions found in the Articles of Agreements.

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/1 Don Benson and Geoffrey Whitehead, Transport and Distribution, page 1


/3 Don Benson and Geoffrey Whitehead, Transport and Distribution, page 11

/4 Malawi Government, Lake Malawi Steamers, 1987, page 1

/5 Ibid


/7 Regional Rail Systems Support Projects 690-0247,
CHAPTER 3

TRADE ROUTES

3.1.0 THE OPERATION OF TRANSIT ROUTES OF MALAWI

Prior to 1983, all Malawi's overseas trade was conveyed by rail through the ports of Beira (75%) and Nacala (25%) in Mozambique. At present, the trade is road hauled for transshipment to rail in Harare, Zimbabwe, or Lusaka, Zambia for further transport to the port of Durban in South Africa, if not direct by road. The additional cost burden on the economy of Malawi for using the South African Port has been estimated at US$ 140 million per year. These extra costs and long transport transit period are key elements in recent economic problems in Malawi and the main constraint on efforts to restore economic growth. This has caused insomnia in many people who are involved in the transport sector in their efforts to redress the situation.

These new challenges and problems which are emerging require the utmost insight, skill and competence to make transportation serve the future as well as it has the past before the above problems crept in - thanks to the ever enthusiastic and hard working officers in MOTC. In their efforts to lower the transport costs so as to boost exports and reduce prices of the imported goods, another trade route was opened through the Port of Dar-es-Salaam in Tanzania. This 1772 kilometre multi-modal route, The Northern Corridor Route (NCR), as it is called, comprises of lake, road, and rail modes of transport and is designed to provide a secure but still expensive route for Malawi's
trade. The trade routes of Malawi are shown in Fig 3.0 and Table 3.1 shows their variations in distances from two main towns in Malawi.

**Table 3.1 Trade Routes by Distances (km)**

<table>
<thead>
<tr>
<th>Port</th>
<th>Lilongwe</th>
<th>Blantyre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beira</td>
<td>1108</td>
<td>640</td>
</tr>
<tr>
<td>Dar-es-Salaam</td>
<td>1594</td>
<td>1772</td>
</tr>
<tr>
<td>Durban (via Zimbabwe &amp; Zambia)</td>
<td>3467</td>
<td>4085</td>
</tr>
<tr>
<td>Durban (via Mozambique &amp; Zimbabwe)</td>
<td>3709</td>
<td>2667</td>
</tr>
<tr>
<td>Nacala</td>
<td>389</td>
<td>807</td>
</tr>
</tbody>
</table>

Source: Ministry of Transport and Communications.

In the NCR, three modes of transport are used; rail, road and water starting from Dar-es-Salaam in Tanzania and ending in either Blantyre or Lilongwe in Malawi.

Cargo discharged at Dar-es-Salaam is railed by the Tanzania/Zambia Railways (TAZARA) for a distance of 750 km to Mbeya railhead, a town in Tanzania near the border with Malawi. From there cargo is shuttled by road to Chilumba Port, a distance of 250 kilometres, at the northern end of Lake Malawi, and then 450 km journey on Lake Malawi to Chipoka Port to link with a rail network leading to Malawi's southern industrial and commercial heartland (Blantyre) or Lilongwe, the capital.

3.2.0 Performance of the Trade Routes

The performance of every trade route of Malawi can be
FIG. 3.0 TRADE ROUTES OF MALAWI
determined by looking at the percentage traffic of the total that is transported through that particular route per annum.

The performance of the available three routes has not been steady, as depicted in Fig 3.1, partly because of lack of assurance by the shippers of a particular route and the decline of trade due to controls imposed on foreign currency.

From Fig 3.1, it is clear that the trends in performance by route have been difficult to predict except for Kaporo Route (NCR). The performance of Mchinji Route is declining while that of Mwanza and Kaporo are increasing. In 1983, Mchinji handled about 81% of total trade while Mwanza handled 19% and nothing was conveyed through Kaporo. Mchinji reached a peak in 1985 when 405.2 thousand tons, representing 48% of the total traffic was handled. During the same year, Mwanza handled 413.0 thousand tons which was about 48.9% of the total trade and since that year, Mwanza has dominated the traffic flow due to improved security in Mozambique and its proximity to the port of Durban and its direct conveyance of cargo to the consignees in Blantyre (since Blantyre is the largest commercial city in the country). In 1988, 632.7 thousand tons, representing 65.9% of the total tonnage, were moved through Mwanza, and 25.8% and 8.3% of the total traffic went through Mchinji and Kaporo, respectively. Kaporo is not gaining popularity as quickly as was initially envisaged because of the problems explained in Chapter 4.

However, it is a pity that the route is unable to gain the support of the shippers up to this date considering the amount of money involved in the development of the route. The question that remains unanswered is 'What is the future of this investment
FIG 3.1  IMPORTS & EXPORTS BY BORDER POST

1983--1988

TONS (Millions)

YEAR


TOTAL

Mwanza

Mchinji

Kaporo

Source: Ministry of Transport and Comm. 36
3.3.0 GOVERNMENT REGULATIONS ON ROUTES.

When the mode of transportation of cargo changed from rail to road, and later to the combination of three modes—road, water, and rail—it became inevitable for the Government to regulate the movement of traffic. One of the reasons for controlling the movement of traffic was to protect the roads of Malawi from damages caused by trucks. Generally, the roads were not designed for heavy trucking. The introduction of international road haulage has increased road maintenance expenditure considerably. The other reason for the control was to ensure that all available routes were operational and reserve cargo to rail and water transport.

There are two principle Government regulations on international traffic: Axle-loading and internal haulage distance limits.

3.3.1 AXLE-LOAD LIMITS.

Axle-load limit is one of many types of weight limitations used all over the world. In Malawi, the axle-load limit is imposed with the sole purpose of protecting highways but not making transportation unprofitable or driving traffic to railroads as seen in the internal haulage distance limit regulation.

Axle-load limit is used to control the concentration of loads and weight per centimetre of tire width to assure that vehicles are equipped with tires of sufficient size to sustain the load without damaging the highway. In Malawi, four weigh bridge stations have been built. One of such station is built on each of the three accessible
international routes some few kilometres from the borders with neighboring countries and the last one at Balaka on the MI road linking Blantyre and Lilongwe. The axle-load requirements in Malawi are as follows:

1) One wheel axle-loading maximum is 3.85 tons.

2) Double wheel axle loading is 7.7 tons.

3) 4 or more wheel axle loading is 8.2 tons.

Fines for overloading are as follows:

\[ \text{\textless=1 ton = 50 MK} \]

\[ >1 \text{ ton = 100 MK} \]

These fines are charged in order to recoup money for the road maintenance from those who damage it. The author has several reservations on the economic soundness of these fines:

1) Charging a fixed fine for overloading above or equal to 1 ton is unrealistic since road damage caused by trucks overloaded differently will not be the same. A truck which is more overweight causes more damage to the road than that with less overweight yet they will pay the same fine so long their over weight is above one ton.

2) The money received from these fines does not go directly into road maintenance but to the General Treasury. Although these monies are
minute compared to the total road maintenance expenditure, they would provide a stand-by budget for road maintenance if the monies were kept for that purpose only other than every year going to Treasury to seek funds for full maintenance cost. A good example to be copied is that of road toll system in Kenya which provides a special Road Toll Fund for the exclusive use of road maintenance.

3) How heavy the fines might be, the person who actually pays for these fines is the final consumer of the imported goods or will be reflected in the final price of exports. However, the effect of this on the economy as a whole is very negligible considering the number of trucks which are actually overloaded. Road maintenance costs per kilometre outstrip the above fines making the fines to be insignificant. It is for this reason the author deems it necessary to fine overloaded trucks according to the estimated damage caused by them. The financial effect of the damages might not be felt so much in the short-run but in the long-run these will be a heavy burden on the Government expenditure. What is needed is to set road user charges nearly equal to marginal social cost.
3.3.2 INTERNAL HAULAGE DISTANCE LIMITS

This regulation limits the road distance from border into Malawi on which an international road haulage vehicle can ply. Trucks coming or going from and to Durban, South Africa, through Zambia discharge or load cargo from Lilongwe even if the cargo’s destination is Blantyre. Cargo is then hauled from Lilongwe to Blantyre in case of that destined for Blantyre. Trucks entering or exiting Malawi through Mwanda off-load or load in Blantyre. Rail transport is used between Blantyre and Lilongwe just as in the first case. Trucks entering Malawi from Tanzania drop and pick cargo at Chilumba and this cargo is transported to or from the south by water transport and then rail, or rail and then water. The basic reasons behind these regulations were to minimize the extent of road damage caused by trucks and to reserve some cargo to Railways and Lake Service.

The author’s opinion is that Malawi can further reduce road damages considerably by ordering all vehicles entering or exiting Malawi through Zambia to off-load and load in Mchinji and let the railway pick the traffic between Mchinji and Lilongwe or Blantyre. This regulation if introduced would protect the 123 km run between Lilongwe and Mchinji and give railways more ton kilometres. Moreover, these trucks for international haulage are causing a lot of damage to roads and congestion in the City of Lilongwe.

3.3.3 ROAD TOLLS

Malawi has not introduced road tolls in her roads unlike some of her neighboring or transiting countries. Road toll fees vary from country to country
within the same region. These are primarily instituted in order to charge the road users for the use of the road. Dupuit in 1844 said, "the best tariff would be one which makes all users of communication pay a toll proportionate to the utility they derive from the passage".

Considering the number of road vehicles and their weight and the fumes, noise, congestion and accidents they impose upon society, it becomes necessary to adjust road user charges where social costs outstrip social benefits. Practically, it is difficult, if not impossible, to equate social costs with social benefits, which are also called externalities as it is not easy to derive individual's or communities' social costs. Nevertheless, in its simplest terms road toll system is one way of seeking to raise in revenue from those who use the roads the costs imposed by them on other users, and community at large thereby making sure that those making journeys bear the full cost of those journeys.

Although Malawi has not introduced road tolls on her roads, it is important to consider the above costs caused by trucks.

In addition to ensuring additional financial resources for road maintenance, road tolls would at least provide Malawi with other advantages such as:

1) fiscal relief to the government by providing non-government financing for government-aid eligible projects.

2) near accurate cost-benefit allocation to users.

3) improved traffic management capability through the use of variable toll rates.
4) Safer travel.

The author strongly believes that if no action is taken to close the investment gap, deterioration of Malawi's highway infrastructure could accelerate which would be too expensive for the Government to maintain.

In summary, road tolls would ensure that road users pay for the use of and damage they cause to the roads. This would also help to divert traffic to water and rail since road transport would become more expensive and ensure energy conservation as a result of reduced travel distances and times.

3.4.0 GOVERNMENT SUBSIDIES

The first question that comes into one's mind is what are subsidies. A subsidy literally means financial support given to a government or private enterprise. In the transport sector, subsidies are given by Governments to meet social needs by securing a reasonable level of personal and cargo mobility, in particular by keeping public transport running.

The Government of Malawi has been giving different types of subsidies to Malawi registered international trucking companies and Malawi Railways. These subsidies range from rebates on duty paid on spare parts, tires and fuel to soft loans and grants. The subsidies given to the international trucking industry are aimed at giving the Malawian truckers at least a possibility of competing favourably with foreign truckers whose operating costs are very low. Although the rebates were introduced, there is not a significant reduction in operating costs because of the already high landed cost of fuel and spare parts.
The other question one may ask is that are subsidies corrective or not? The major problem of subsidies, as the author's experience has shown, is that once you start giving support you can never stop. The author feels that if those receiving subsidies are to improve the operations of their organizations, it is vital for them to be able to correct past errors and plan appropriate action for the future. Unfortunately, these steps cannot be undertaken if no basic knowledge of the locations of costs and revenues is available.

It is a pity that those parastatal organizations which are being heavily subsidized, tend to become too heavily dependent on the Treasury Funds and new investment is seen as a right rather than something which has to be earned by improved levels of service, better productivity and more efficient management decision-taking. As of now, however, withdrawal of subsidies would definitely result into more than double increase in fares and rates or increased operating deficits. It is important that the Government gives directives which would assist the operators such as MR to come out of the bondage of complete reliance on subsidies. For instance, given a suitable ship and good management, a ship should be able to contribute towards its replacement other than the Government keeping on bearing full cost of replacement of old vessels. Furthermore, it appears that MR feels reservation of cargo to them is a matter of right instead of working for it.

Fuel and spare parts duty rebates should be given to all carriers but this system of subsidies need to be integrated with the rest of transport policy to ensure that pricing and investment policies are consistent, the financial objectives of operators are consistent with the subsidy policy and that the subsidies do not themselves
introduce further bias into resource allocation.

/1 Regional Rail System Support Project, page 1

/2 Ibid, page 1
CHAPTER 4

MODAL CHOICE

4.0.0 INTRODUCTION

In every business one of the most difficult challenges which managers are faced with is to choose the most economical transport mode or route that is best suited for moving the traffic for which he is responsible. On the other hand, the Government's major responsibility is to ensure that a safe and efficient transport is provided. Generally, improvements in transportation should at least be associated with reduced costs of movement directly or increased speed, and improved quality of service to users. The achievement of any of these improvements tend to boost inter-regional, international as well as national mobility and commerce. As a matter of fact an increased scale of manufacturing or production inevitably requires longer distribution chains to market the increased output.

This chapter deals with some aspects which all those in the transport sector in Malawi may need to consider when making their decisions. However, it is important that any decision made should provide room for changes since rigid decisions usually end up with catastrophic results.

For it to be possible to put forward some proposals, it is necessary to analyse the pros and cons of each mode of transport and route. This chapter has therefore been dedicated to such analyses and is supposed to give guidelines to decision making in modal choice by all those
concerned.

4.1.0 TRANSPORT SELECTION

To choose the most economic transport system or route is not all that simple. If a transport choice is made hastily or through political background, it is mostly likely that an expensive means of transportation will be faced. The transport users should be guided in their decision by a knowledge of the advantages and disadvantages of the various transport modes or operation at their disposal. The following sub-sections show the advantages and disadvantages of each of the three modes under consideration as operated in Malawi and may as well form a working ground for the whole transport sub-sector.

4.1.1 ROAD TRANSPORT

(i) Advantages

a) The great advantage of road transport is its flexibility thereby making it ubiquitous which in turn permits door-to-door service.

b) It provides promptness and controlled delivery of goods. A fairly precise time for collection and delivery can be arranged and the importance of this lies in instances where labor must be arranged for loading and unloading, and the arrival of goods must be arranged for loading and unloading to suit the needs of manufacturers, constructors and consumers, for example.
c) Road transport requires less parking because of its capacity, and

d) It provides a most economic way of transporting small quantities of cargo.

(ii) Disadvantages

a) Its economic advantages taper very quickly beyond a 200-kilometre distance. This becomes more apparent when great volume of cargo is transported.

b) Roads are expensive to construct and maintain. The licence and road service permits paid by road users fall far below actual costs hence these are heavily subsidized by public funds.

c) Pilferage is common in road transport,

d) The carrying capacity is very low,

e) It is expensive in case of transporting less than full loads since the shipper must pay the minimum charge of the carrying capacity irrespective of the weight or quality of cargo transported,

f) Where a number of packages are involved there is bound to be misdeliveries, and

g) For it to be economic, prompt discharge is essential so that the vehicle and driver do
not lay idle.

4.1.2 RAIL

i) Advantages

a) The most noticeable advantage of rail transport is the economies of scale it reaps from its large carrying capacity, that is, it can transport large quantities of cargo in one move, and

b) Cheaper mode of transport as it requires only one or two persons on board and is a better mode for fuel conservation than road transport, and

c) It is economical mode of transport for distant cargo than road transport.

ii) Disadvantages

a) Rail transport has high fixed and maintenance costs. Such costs are incurred in purchasing, constructing and maintaining the permanent way, locomotives, rolling stock, viaducts, tunnels and cuttings. Therefore, although railway has a cheaper running costs per ton kilometre than roads, its overhead costs have tended to outweigh these advantages. These costs tend to increase rapidly with increased idle times,
b) Its provision is limited by both gradient and curvature which involve enormous engineering costs,

c) It requires large volumes of cargo and is very inflexible in its operation,

d) In Malawi, trains are very slow, and

e) Frequent derailments disrupts flow of traffic since there is a single track.

4.1.3 WATER TRANSPORT

i) Advantages

a) It is the most suitable mode for the movement of large bulk of cargo over long distances. The economies of scale of this mode tend to make it have the lowest cost per unit per mile compared to the other modes under consideration, and

b) It is ideal for energy conservation.

ii) Disadvantages

a) Although cheapest, water transport tend to have the greatest elapse time between placing of an order and receipt of cargo by the client,
b) Another problem of using water transport is that goods may be subject to stress caused by the burden of over stowage, rolling, pitching and yawing. The damage that can be caused to cargo may be enormous.

c) Water transport has also consolidation and distribution problems. The assembly of an economic sized cargo can take a great deal of time. This is because of both the volume dealt with and the methods employed, and

d) Shipping has very high capital investment and operating costs. Contrary to the general concept of a ship having low operating cost per ton in Malawi ships have high operating costs because of their age and underutilization. For a prudent shipowner, he will always try to minimize idle times for his vessels and ensure that the vessel is fully employed.

The aforesaid advantages and disadvantages are further discussed and related to the performance of the transport sector in Malawi in the later sections. The operators in Malawi and the Government should all be geared at improving transportation costs, speed and quality of service at the lowest possible operating cost. The attainment of these goals will most likely be beneficial to the country’s economic and social development.

Whitehead and Bug indicated that the limitation of
the various modes was just one of the factors which needed to be considered when choosing a route or mode for any consignment. Some of the limitations are:

a) The natural characteristics of the goods and the overall quantity of the consignment,

b) The time factor as regards both urgency of transit and seasonal movements,

c) The alternative scheduled route and modes available for any particular transit, their frequency, the need for transshipment and whether the carrier offers door-to-door service. Furthermore, with the increasing tendency nowadays to unitization in various forms, the sophistication of the transport infrastructure particularly at the destination end of the transit is important,

d) Costs on a total distribution cost basis,

e) Contractual obligations as laid down in a letter of credit or conference agreement,

f) Industrial relations, political and climatic factors,

g) Limitation of terminus, including relative effectiveness of agents, and

h) Limitations of the various transport modes.
Having pointed out some of the major merits and demerits of the three modes, a close look at the applicability of these to the operation and performance of Malawi’s trade routes is vital. The prime reason for this analysis is to at least try to provide enough basic information on the economics of these routes which should act as a guidance in the decision making.

4.2.0 EVALUATION OF MALAWI’S TRADE ROUTES AND TRANSPORT MODES.

This sub-chapter provides almost a bias free critique of the routes. The arguments are based on the author’s own experience, and both field and library research. The routes are going to be discussed under the following sub-titles; pilferage, delays, damages, and size of cargo. These have been chosen out of so many others because they form a large proportion of the ’real’ total transport cost. Unfortunately, in a real life situation, only the actual price paid by the transport user is taken as the only component of the transport cost.

4.2.1 PILFERAGE

Literally, pilferage means to steal in small quantities but in this paper it also encompasses theft involving large quantities. When shipping cargo, the shipper who can be the consignee or consignor or both, has to be very careful in assessing the safety of his merchandise. A route, port or transport mode having high probability of pilferage will automatically invite high insurance premiums to the shipper. Although the insurers
pay for the theft or loss of cargo the cost that may be incurred by the claimant, the assured, may out-strip the actual remunerations and the time taken may be extremely long thereby making the whole exercise too expensive and not worth claiming. Furthermore, by the time another supply of goods is purchased and received by the assured, the latter might have lost most of his clients. The author considers a route with too much handling, i.e. too many loading and discharging points, as having the highest probability of pilferage. The only Malawi’s trade route that involves too much handling is the North Corridor Route which has Dar-es-Salaam, Mbeya, Chilumba, Chipoka, and Blantyre or Lilongwe as loading and off loading points. The use of a through transport on a route and the locking, labelling and securing systems, and transit period may greatly remedy this problem. However, the difference between freight paid for transporting cargo on a through transport route and that for a route with many loading and unloading points need to be weighted with the value of goods whose probability of pilferage has been calculated in order to derive the total estimated benefits of a route. The modal choice should therefore be partly based on a route’s and/or transport mode’s probability of pilferage.

4.2.2 DELAYS

Delay is used in this dissertation to describe the total time taken to perform transport beyond the reasonable time period required to perform that transport. Technology and fashion have the shortest dwindle time thereby requiring a fast delivery. In some instances, delays in receipt of goods or raw materials have delayed or disrupted the whole production process. For example,
if a spare part is not delivered at the appropriate time then production or operation may come to a complete halt and this can bring a lot of losses to the firm or enterprise. A route with the shortest transit period may be regarded as having a criterion, among many other economic and non-economic indicators, necessary for choosing an economical route. A route having so many transport interchange tends to have the longest transit period because of the time required for organizing transport and handling the cargo. This is apparent in the operation of Northern Corridor Route. It takes more than eight months on average for cargo shipped from Europe to arrive in Malawi through the above route, more than three quarters of the time being spent in transit between the Port of Dar-es-Salaam and Blantyre or Lilongwe compared to three to four days it takes to move cargo from Durban to Malawi. This problem also arises from the fact that this route, which is a multi-modal in operation, uses about 85% services of the slowest and inefficient transport modes; rail and water, between Dar-es-Salaam, and Blantyre or Lilongwe.

In order to see the impact of delays on the economy of Malawi some calculations are given below. Northern Corridor Route has been chosen simply to show how much Malawi would be saving if there was proper coordination of transport on this shorter route. However, the delay in Dar-es-Salaam and Mbeya (for exports only) has not been included because strictly speaking Malawi has no control over the leg of transport between Mbeya and Dar-es-Salaam. Containers have been used in the calculation because of their important role they play in a multi-modal transport system and their increased importance in Malawi’s trade.
IMPORT CONTAINERS

Assume hire price of a container is 2 US$ per day.
Assume that an import container spends the following durations in ports or depots on average either waiting for transport or lifting equipment to be:

Mbeya 21 days
Chilumba 12 days
Chipoka 11 days

Total delay time 44 days
Total money paid due to delays:

\[ 44 \times 2 = 88 \text{ US$ per container} \]

Assume that 70 containers are moved through the route per month.
Money paid per month then is:

\[ 70 \times 88 = 6160 \text{ US$} \]

In a year's period, Malawi loses:

\[ 6162 \times 12 = 73,920 \text{ US$} \]

These import containers are carrying goods for sale or use in the production process of other goods. In short, they represent capital which is tied-up. The opportunity cost for the purchase of these should include interest forgone. Assume that each container carries 60,000 US$ worth of goods.

Amount of imported containerized goods through the route will equal to:
60,000 x 70 = 4,200,000 US $

If this money was put in a bank it would have earned interest. In another case, if the goods were received in time they would have been sold and the money put in a bank to earn interest or re-cycled.

Taking the commercial interest rate of 13% per annum, the money lost in form of interest per month delayed period is:

\[
\frac{(4,200,000 \times 13 \times 44)}{(100 \times 12 \times 30)} = 66,733.33 \text{ US }$

In one year 66,733.33 x 12 = 800,799.96 US $ will be lost.

The total amount of money that Malawi would be saved if the delays were avoided would therefore be:

The cost of a container during the idle period plus the interest lost = 73,920 + 800,799.96 = 874,719.96 US $

EXPORT CONTAINERS

Total delay time can be calculated as follows,

Chipoka  9 days
Chilumba 15 days
Mbeya  21 days
--
Total   45 days

The cost of the delay US $ 45 x 2 = 90 US $
Assuming 60 containers are moved per month, the total cost for the delayed containers per annum would be:

\[ 60 \times 90 \times 12 = 64,800 \text{ US } \]

The opportunity cost of the exports is difficult to measure because they cannot be consumed locally and their prices are determined at the international market. Nevertheless, what is clear is that the quality of the commodities will be affected which in turn will affect their prices at the international market.

However, the actual money lost should be higher than the above calculated figures because the real number of containers and time they stay idle waiting for transport or equipment are generally more than those used in here.

These figures may be regarded as indicators, among many others, of how much Malawi is losing because of the delays.

In summary, it is clear from the above figures that merchants in Malawi will likely face higher costs due to capital being tied up in goods in transit for longer periods than necessary, higher insurance premiums will have to be paid since merchandise will have longer risk periods, and danger of orders of being lost through delays or inability to meet required supply times. The question is who actually pays for these costs? These increased costs in transportation will inevitably be transferred to the final consumer. Generally, the actual transport costs constitute between 15 and 30% of the final cost of a product and will be reflected in its selling price hence any increase in costs incurred at the interface will have a marked impact on the selling price.
4.2.3 SIZE OF SHIPMENTS

In Malawi, imports and exports are generally available in very small quantities which at times make the sailing of a vessel not economical. There could be only 4 containers on average ready for shipment for the whole week at a port. This is one of the reasons Lake Service does not sail the vessels at times but opt to wait for more cargo to make the operation feasible. In this case two conflicting interests can be identified. The shippers would like their cargo to be transported as quickly as possible whereas Lake Service would like to sail with at least a minimum economic load which might take weeks to obtain. The non-availability of cargo, from the author’s point of view, is a result of lack of liaison between MR on one hand and the shippers on the other brought about by the non-existence of Shippers Association or marketing services in MR. The problem of delays, in the author’s view, is mainly a result of inefficient and uncoordinated operations on the route. Individual shippers find it more convenient to ship through Durban or by road to Dar-es-Salaam. The only organization that gives MR sufficient load is The Agricultural Development and Marketing Corporation, ADMARC, because of their bulky agricultural inputs and produce.

It can therefore be said that the availability of substitutes to the water transport on Lake Malawi is due to small cargoes transported by importers and exporters and the time the water transport takes to convey cargo between two points.
4.3.0 ENERGY CONSUMPTION

When talking of modal choice, in other words most economic or viable route, it is important to focus on the mode(s) of transport that is/are used on various routes and their percentage share of kilometres of the whole route. It is after getting such information that a decision can be made regarding the route that saves a country from huge import bills. An economic route should have the lowest fuel consumption, as one of the criteria.

According to a certain confidential report after a survey, the available energy-efficient improvements fall into following main categories:

a) improved operational techniques, requiring little capital investment,

b) additional equipment, requiring moderate investment,

c) replacement of equipment, involving the purchase of stock which incorporates technical advances in energy-efficient, requiring substantial investment,

d) more energy-efficient modes of transport, and

e) infrastructure changes.

Considering the limited resources, it is recommendable for Malawi to adopt a and d. Nonetheless, the market barriers to the take-up of energy-efficient techniques and technology are:

a) the difficulty of changing driver behaviour,
b) lack of knowledge and information,

c) investment constraints, and

d) the diffuseness of the returns from infrastructural measures.

Therefore, to offset some of these problems, the current training programs for transport drivers and managers should be improved and continued.

Since transportation services rise with economic development, Malawi must take measures that will ensure efficient use of fuels. It is vital to bear in mind that price elasticity for transportation fuel consumption in Malawi is almost less than one which means that an increase in the price of fuel will result in a less than proportionate decrease in demand for the fuel. The implication of this is that as the country develops the demand for transport will increase.

The increase in supply of transportation services will increase fuel consumption which does not react very much to the increase of its price.

According to the Transport Performance Bulletin, in 1981, transport accounted for about 70.9 percent of total Malawi fuel demand leaving only 29.1 percent to other sectors - thanks to the use of hydro-electric power for the generation of energy for most of the other sectors. Road transport alone consumed about 55.8% of the total fuel imports in that year compared to only 0.9% and 4.5% demanded by water and rail transports respectively. Road transport's share of energy consumption must have increased because of the long hauls of cargo by trucks since 1982. One of the reasons for establishing the NCR
is to reduce fuel consumption by road transport through the reduced road haulage distance. This corridor is ideal for energy conservation since truckers are supposed to ply within their economic distance of 250 km. The longer part of the route consists of rail and water. Another advantage of using this route is that it makes the operation of road transport economical.

Malawi Government provides fuel subsidies to the international commercial road transport industry in order to increase the participation of Malawians in the movement of cargo since this helps them reduce their operational costs and permit competition with foreign truckers whose costs are lower. Nevertheless, this alters the normal effect of real prices and vehicle efficiencies on the demand for transportation services. The counter effect of these subsidies is the rapid growth in fuel consumption and a decrease in efficiency since the incentive to save, either through the purchase of more efficient trucks or improving the efficiency of operation, is decreased.

4.4.0 CONTAINERIZATION/PALLETIZATION

The coming of containers was expected to reduce some of the above problems but it seems that their use in Malawi is uneconomical. A quick look at the merits of using containers before discussing their disadvantages as observed in Malawi is necessary. Johnson and Garnett in 1971 noted the following merits of using containers;

a) More efficient use of capital equipment by improving the utilization of ships and marine terminals,

b) More rapid handling between the different
modes (i.e. at the interfaces) of transport and associated reductions in damage and pilferage,

c) Reduction of the time for which cargo is in transit since handling is speeded up,

d) Potentially lower packing and insurance costs,

e) Slight crew-cost savings in cellular ships and the prospects of using bigger liners, and

f) Much reduced direct labor costs through automatic-handling techniques.

Malawi does not enjoy fully these advantages because of the following reasons;

a) Small sizes and types of ships employed on the lake,

b) Type of cargo transported. Only imports generally qualify for containerization while the bulk of exports do not. "...The problem of 'an imbalance of trade' in containerisable cargo. This leads to the unprofitable movement of empty containers."/3 For instance, sugar which is exported in large quantities require pallets and not containers. This means that import containers carry full load whereas export containers are usually less than full load or
empty, and

c) Non-availability of container handling facilities at the ports and inland terminals has also slowed in containerization.

4.5.0 REAL TRANSPORT COSTS

In the daily business life, shippers only regard the ostensible or nominal price they pay for the movement of their cargo. All the above discussed problems which may accrue a lot of invisible costs are generally turned with a blind eye. One can definitely be misled into jumping to a conclusion that a particular route is more cost saving than others yet in reality that route might be the most expensive. In order to come up with a more realistic price of transport to the society, here-in called users, than the ostensible or nominal price currently set upon the carriage of a ton per kilometre, shadow prices are required. The point is that the overall price for the whole transport (total distribution costs) and the invisible costs are the key factors for the route decision of the user. A discreet transport user will consequently strive for a transport mode or route that offers the least total distribution costs.
4.6.0 MODAL CHOICE

The modal choice concept can be viewed from three angles; the Government (public), transport operator and shipper. The interests of these three bodies may vary.

The Government has the general public’s interest (the consumers) in focus when making policies to regulate the transport industry. The most important factors the Government will or should consider when formulating policies which may affect modal choice by users are;

a) Safety of cargo and public. A good transport mode should have less probability of pollution, accidents and damages to cargo.

b) Cost of transportation. Overall cost of transportation involves payment in foreign and local currency and social costs. The Government is or should be interested in encouraging operators and users to use modes of transport and routes which have lower overall costs.

c) Reliability of transport mode and route. This concerns mainly continuity of transport.

d) Speed of transport. Efficient route or transport is that which has minimum unnecessary delays and moves commodities within a considerable short time period.

The transport operator will mainly be interested in making as much profits as possible even if it might be at the cost of safety. Operators tend to improve on speed when there is a threat from their competitors and might go
to an extent of undercutting prices. The Government should come in to check the activities of the operators when imperfect market conditions prevails. There is need for continued Government control in the transport sector in Malawi due to the existence of monopolistic transport operation.

The shippers main interest is fast receipt of his commodities. He will choose that mode of transport which is speedy. The other factor he will consider when choosing transport mode is the overall distribution cost. However in Malawi, shippers hardly think of overall costs of transport because they simply shift these costs to the consumers. The Government, which works for the interests of the public, should come in to regulate these exploitations by encouraging operators to operate on less expensive routes. On reducing costs of transportation the Northern Corridor Route is the most appropriate but there are several things that must be done in order to make it attractive and these are discussed in chapter 5.

This chapter has shown that factors affecting freight modal choice are many and the decision makers are faced with onerous problems. The public officials and carrier managers must clearly understand both the important factors and the process by which modes are selected and it is by doing so, can they attempt to change the factors. The public officials, carrier managers should work towards providing transport which promises rapid, on-time, less costly, and damage free delivery of commodities. This will maximize shippers profits while the prices of commodities will be reduced. This is because when shipments take long in transit the probability of the consignee running out of the commodities in question increases, consequently he lose present and future revenues.

It can therefore be summed up that when choosing
modes of transport factors such as; cost of transport, the average transit time for each of the available modes, the value of the commodity, safety of the transport to the environment and society, the cost of storing the commodity in transit, and the rate of reduction in value per unit of time and desired level of protection against stock-outs and theft are to be ranked highly.

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/1 Ralph Bugg and Geoffrey Whitehead, Elements of Transportation and Documentation, page 57.


/3 Patrick M. Alderton, Sea Transport Operation and Economics.
CHAPTER 5

PROSPECTS OF THE TRANSPORT SECTOR IN MALAWI

5.0.0 INTRODUCTION.

Having discussed how transport has been and is being performed, this chapter's main objective is to see how it should be carried out. It is clear from the proceeding chapters that international transport in Malawi is operated in uncoordinated manner which has resulted in increased total transport costs. To make transport in Malawi cheaper especially when transporting through NCR, reorganization of the operation of rail, water and road transport is indispensable. The author has made several recommendations which might appear costly to undertake at the first glance but would be beneficial to the country in the long run. The recommendations are discussed below:

5.1.0 AUTONOMOUS WATER TRANSPORT OPERATION

The author feels that some of the problems Lake Service is facing are because of its dependance on MR. Decision making is done in Blantyre very far away from where the actual operations are taking place. This kind of organization may bring a lot of communication and bureaucratic problems which need to be avoided as much as possible.

The Lake Service Manager should be given powers to
run the ships without being subordinated to MR in decision making. Lake Service should be run purely on commercial basis especially the cargo operations. The passenger service can continue its current operation, providing social service, but improve on catering services and tourist class and Government should subsidize only this operation. The extreme case will be to let the two services cross-subsidize each other but this cannot work because of the extremely low revenues earned from passenger service.

The major advantage with Lake Services gaining autonomy will be the reduction of problems associated with centralization. Lake Service will have chance to voice their own problems or requests to the Government other than going through a chain of administrative procedures. The Malawi Railways Ltd should only hold shares in the Lake Service but avoid too much intervention in its operations. The form of organizational chart that may be adopted is beyond the scope of this paper. Nevertheless, the present chart can be adopted but with increased responsibilities.

This restructuring or reorganization cannot pay the intended dividends unless firstly the working conditions are improved so that every employee contributes fully towards the company’s development. There should be openness among all employees, and be willing to share ideas, listen to and learn from others. In short they should work as a team with the same goal.

Secondly, there should be clear expected standard of performance given to the company by the Government. The main objective of the company should be the provision of reliable and self-funding services or operations. This should include re-investment program.

The other important condition is the procurement of
new vessels which should be bought/purchased under the recommendation of the operators themselves. The ships specifications should be made by the operators who are in a better position to know the type of vessel that would suite their needs and operate economically. What the public officials must know is that it is neither meaningful nor feasible to compare investments in transport let alone shipping with that in other sectors of the economy on the criterion of direct returns on investment because the other sectors depend on a good transport network to accrue benefits from allocation of resources. The inverse of this is that the growth of transport sector absolutely ties in with the development of other sectors, as seen in Malawi in recent years. Moreover, 'for a state run ship profit need not be a primary motive'/

Lastly, but not least, it is important to establish a marketing department in the company. The department will be responsible for attracting shippers and travellers to use water transport and make medium and long terms operational and development plans for the company. In any business, marketing plays a vital role in selling the firm's services or products and making forecasts.

5.2.0 AUTONOMOUS PORT AUTHORITY

Right now the ports are operated by the Lake Service. Productivity is relatively low and their condition has been deteriorating at a far much faster rate while maintenance has been very poor. Thanks to the NCR which is going to fund the development and expansion of two of the ports—Chilumba and Chipoka.

The author feels that ports in a country like Malawi should be treated as purely public investment just like
roads and airports. The ports must be operated by entirely independent body formed by statutes which may be called Ports Authority. The main task of these ports will be to serve all those involved in maritime activities on the lake and charge for the services they will be rendering accordingly. The operation of the ports should be that of semi-commercial. The ports revenues should be used for further port development/investment and maintenance. They should not be established with an objective of funding the treasury budget. On the Government side the main objectives with respect to ports should be to:

a) Handle existing traffic efficiently, and

b) Develop adequately to cope with demand changes and to promote a more efficient through transport.

P.M. Alderton cites the following advantages of a state owned port:

a) A proper national port policy can be thought out, implemented and integrated with the road, rail and canal transport systems which are state owned or government controlled in the majority countries,

b) Adequate funds can be made available. Ports require considerable capital to develop, maintain and modernize and it is usually difficult to raise this amount of money by the normal methods of private enterprise because the profitability of most large modern ports is very small, and

c) Uniformity in port charges and methods of employment can be maintained. /2

It is crucial for the public officials and operators
of transport to understand that the ultimate results of failure to meet the above objectives are higher costs for trade, difficulties for export expansion and import based development, and subsequently, a general brake on both development and trade. Since the port development project is already included in the NCR development package what is needed is only to create a body with a well trained personnel to efficiently run the ports.

These proposals have been propounded in the face of the ports’ current operational and maintenance conditions and increasing demand for shipping services. If ports were charging the users for the services rendered to them, the onus to Government of providing subsidies would have been reduced. This would also help force ships not to stay idle in one port for days or weeks because of the port charges thereby increasing efficiency of transport and ship utilization.
5.3.0 FUTURE OF RAIL AND ROAD TRANSPORTS

Rail transport is generally cheaper than road transport if well managed. Wherever there is a possibility of use of rail this must be encouraged. Once a railway is established and well managed there is no economic justification for cargo to be transported by road. If planners in Malawi want to have a cost optimizing solution then they should utilize roads and rails for short and long distance traffic respectively.

The railway and road construction investment is through Government funding. For the railways to operate economically they require sufficient cargo. The diversion of cargo to road transport over long distances has resulted in deterioration of road condition at a rate faster than forecasted since the design of the roads of Malawi is generally not to the standard of affording the pressure exerted by heavy trucks. The damage to roads require regular maintenance which is a heavy burden to the government. Opening three routes which consist a considerable length of road usage, will obviously more than triple the current road maintenance and repair costs.

If cargo continues to be transported by road, and Nacala and Beira remain inaccessible to Malawi, future of rail operation is very precarious and the road condition will continue to deteriorate at a rate that will make maintenance very difficult. The author has put forward the following recommendations which might help to curb the occurrence of the aforementioned problems in the future;

a) All vehicles entering or exiting Malawi through the North Corridor Route must discharge or load their cargo at Chilumba. The other part of transport within Malawi should be performed by
water and rail transport. Trucks can be used for local collection and distribution from the inland ports in Blantyre and Lilongwe,

b) All vehicles entering or exiting Malawi through Zambia must discharge or load their cargo in Mchinji at the Railway depot and leave the rest of transport within Malawi to be performed by Rail. This will require positioning of a crane or a fork lift truck there and improving the existing storage facilities. The cost of this investment would be offset in the long-run by savings from road maintenance and increased revenues of MR and a repercussion of this is the reduced Government subsidies to MR,

c) The heavy trucks must not be allowed to rove around Blantyre (in case of trucks using the South West Corridor through Mwanza). They must be given specific routes which they can use when going to or coming from the container depots, and

d) Only those vehicles carrying commodities for relief and medical purposes or urgent public projects can be exempted from the above.

If these recommendations were to be legally binding and work should become statutes and incorporated in the Road Traffic Act but not just adopted as regulations. Any violations of these laws should be met with heavy fines. Although it is if not impossible to calculate the actual damage vehicles can cause to the roads, the fine should be set at such a level that will discourage any temptation to violate the laws.
The enforcement of these recommendations will have the following benefits:

a) Reduced road maintenance cost,

b) Reduced national fuel imports,

c) Lower transport costs,

d) Reduced road accident rate which is increasing at an alarming rate,

e) Policing of traffic movement will be lowered in the long-run,

f) Assurance of cargo to MR which will at least help to utilize rail facilities more especially between Lilongwe and Mchinji, and

g) Reduced traffic congestion in the cities.

What must be done by the government to achieve the above at the same time ensure fast transportation of cargo?

It is recommended below that:

a) The Government should enact the above recommendations to give them legal status so as to strictly police them,

b) Seek funds for maintenance and repairs of the locomotives, and wagons some of which require replacement. A multi-modal transport system is efficient when containers are used. When considering rail transport, even road,
efficient container transport require wagons which are capable of carrying two TEUs per wagon and not the current operation. Therefore, it is necessary to invest in such wagons. It appears MR has sufficient locomotives to cope with Malawi's trade. "Up to 1994/95, Malawi will have sufficient locomotives to cope with estimated traffic levels because the present fleet is under-utilized. The analysis of Malawi Railway's future locomotive needs... assumes that the present high standards of maintenance will continue and that availability of 75 per cent will be sustained".3

c) Purchase a modern break down crane capable to speed up repair and maintenance work and derailment,

d) Advise MR to provide a reliable daily transport between Blantyre and Mchinji and vice versa. If this is not done then the after effect could bring unacceptable results,

e) Advise MR to form a strong marketing division, and

f) Continue the road operators training program but should include items such as economic operation of a road fleet and energy conservation measures.

5.4.0 ESTABLISHMENT OF A SHIPPERS ASSOCIATION

It is very necessary to establish shippers association in Malawi whose main responsibilities will be to:

a) Coordinate traffic flow between different modes of
transport especially the Northern Corridor Route,

b) Negotiate for freight rates and other charges with transport operators within and outside Malawi, and

c) Advise the Government on problems faced on each transit route.

The establishment of Shippers Association will permit members to act collectively in moving traffic. The primary objectives of the Shippers' Association should be to promote and protect the concerns of its members and take appropriate action, nationally and internationally, to achieve that end. It should be a voice of all members but not directly getting involved in the commercial activities of individual firms. It should seek a climate in which transport can best serve trade. A continued absence of a strong Shippers Association to liaise with transport operators in Malawi, will continue to promote movement of traffic by road whose demerits have been discussed already. The individual shippers with an exception of ADMARC in Malawi are very reluctant to trust their cargo to MR for various reasons some of which are not soundly based. It would be unfair to outright put all the blame of inefficient movement of cargo on MR, but perhaps too much distrust has been cast upon MR and it is up to them to sell their service and revert the situation.

/1 P.M. Alderton, Sea Transport Operation and Economics, page 24.

/2 Ibid, page 186.
SUMMARY

Transport is a vital element in economic development as it is required to move goods, develop commercial networks and integrate market structures. If the transport sector’s performance proves to be inadequate and inefficient, economic development will be hampered by the restricted flow of the agricultural produce to the domestic and international markets.

Malawi has been experiencing severe transport problems since her traditional routes were rendered inaccessible in 1982. Different efforts have been made to lower the transport costs and reduce foreign currency payments. One of the ways of achieving this objective was the opening of a multi-modal route, the Northern Corridor Route, through the Port of Dar-es-Salaam. However, the opening of this new route, which is supposed to be cheaper than the South Western and Western Corridors, and creating own storage facilities at the Port of Dar-es-Salaam to avoid congestion in that port does not guarantee the achievement of the intended results unless the Lake Service and Railways have the capacity and realize the importance of fast and reliable transport to shippers, and the Government puts up stringent regulations on the movement of vehicles handling international traffic and strictly polices such regulations. Otherwise the objectives which were initially intended to be developmental might end up staggering the whole economy.

It is then important also for the parastatal organizations...
to be given clear objectives about what they are supposed to achieve together with measures of performance which they should be required to meet.

Nevertheless, regulations on transport industry and firms can either hamper the optimal use of transport capacity or stimulate it. The public officials should strive for allowing operators achieve optimum use of transport capacity. As a matter of fact, the government should primarily be responsible for transport policy formulation but in the end the industry should implement the policies hence the necessity of formulating policies which are conducive to the health of the economy. It is therefore essential that there should be cooperation between the Government and transport operators and there should be mutual understanding and awareness, in more than one meaning of the words, of problems and ways of solving them.

Stringent laws must be enacted to protect the roads of Malawi, reduce congestion and fuel import bills. However, it is important to focus very much on the quality of transport other than quantity because sometimes quantity controls reduce efficiency while giving no compensating benefits.

Last but not least all those involved in the transport sector should have similar objectives, same if possible. These should include the provision of speedy, safe, efficient and convenient transportation of goods and passengers at the lowest feasible cost taking adequate consideration of the impact on the environment and the nation's resources.
BIBLIOGRAPHY

Patrick M. Alderton, Sea Transport Operation and Economics, (Thomas Reed Publications Ltd, 1984)
Don Benson and Geoffrey Whitehead, Transport and Distribution, (Longman, 1985)
Ralph Bugg and G. Whitehead, Elements of Transportation and Documentation, (Woodhead-Faulkner Ltd, 1984)
Ignacy Czranowski, An Introduction to Shipping Economics, (Fairplay Publication, 1985)
Johnny Johnson, International Freighting (Kogan Page, 1980)
D. Philip Locklin, Economics of Transportation, (Richard D. Irwin, INC, 1972)
John H. Mahoney, International Freight Transportation, (Eno Foundation for Transportation INC, 1985)

OTHER PUBLICATIONS
National Transportation Policy Study Commission, National Transportation Policies through the year 2000, (United States of America, 1979)
Regional Rail Systems Support Project 690-0247 (Malawi Component, August 1988)
SOERNI, Study of passenger traffic and facilities on lake Malawi, Jan, 1986
UNCTAD, UN Convention on International Multi-modal Transports of Goods 1980
**APPENDIX 1**

**SHIPS ON LAKE MALAWI**

<table>
<thead>
<tr>
<th>NAME</th>
<th>DISPLACEMENT</th>
<th>TYPE</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ilala 1</td>
<td>21</td>
<td>Passenger/cargo</td>
<td>1875</td>
</tr>
<tr>
<td>Charles Janson</td>
<td>25</td>
<td>Passenger</td>
<td>1885</td>
</tr>
<tr>
<td>Domira</td>
<td>67</td>
<td>Military</td>
<td>1890</td>
</tr>
<tr>
<td>Dove</td>
<td>25</td>
<td>Patrol boat</td>
<td>1891</td>
</tr>
<tr>
<td>Adventure</td>
<td>35</td>
<td>Patrol boat</td>
<td>1893</td>
</tr>
<tr>
<td>Livingstone</td>
<td>42</td>
<td>Military</td>
<td>1894</td>
</tr>
<tr>
<td>John Bowie</td>
<td>90</td>
<td>Cargo</td>
<td>1894</td>
</tr>
<tr>
<td>Herman Von Wissman</td>
<td>73</td>
<td>Passenger/cargo</td>
<td>1894</td>
</tr>
<tr>
<td>Pioneer</td>
<td>35</td>
<td>Patrol/passenger</td>
<td>1895</td>
</tr>
<tr>
<td>Monteith</td>
<td>57</td>
<td>Patrol/passenger</td>
<td>1896</td>
</tr>
<tr>
<td>Queen Victoria</td>
<td>177</td>
<td>Passenger/cargo</td>
<td>1896</td>
</tr>
<tr>
<td>Stairs</td>
<td>74</td>
<td>Passenger</td>
<td>1898</td>
</tr>
<tr>
<td>Guendolen</td>
<td>340</td>
<td>Gun boat</td>
<td>1899</td>
</tr>
<tr>
<td>Ship</td>
<td>Tons</td>
<td>Type</td>
<td>Year</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>--------------------</td>
<td>------</td>
</tr>
<tr>
<td>Vera</td>
<td>-</td>
<td>-</td>
<td>1900</td>
</tr>
<tr>
<td>Chauncy Maples **</td>
<td>250</td>
<td>Passenger</td>
<td>1901</td>
</tr>
<tr>
<td>Mpasa</td>
<td>225</td>
<td>Passenger/cargo</td>
<td>1936</td>
</tr>
<tr>
<td>Viphya *</td>
<td>470</td>
<td>Passenger/cargo</td>
<td>1944</td>
</tr>
<tr>
<td>Ilala 2 **</td>
<td>620</td>
<td>Passenger/cargo</td>
<td>1951</td>
</tr>
<tr>
<td>Nkhwazi **</td>
<td>295</td>
<td>General cargo</td>
<td>1955</td>
</tr>
<tr>
<td>Karonga **</td>
<td>545</td>
<td>General cargo</td>
<td>1975</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>1975</td>
</tr>
<tr>
<td>Viphya Pontoon **</td>
<td></td>
<td></td>
<td>1975</td>
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<td>Mtendere **</td>
<td>924</td>
<td>Passenger</td>
<td>1980</td>
</tr>
<tr>
<td>Ufulu **</td>
<td>424</td>
<td>Product tanker</td>
<td>1983</td>
</tr>
</tbody>
</table>

Source:

* Sank in 1946

** Still in operation