National transportation system in the Republic of Zambia

Febby Mtonga

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WORLD MARITIME UNIVERSITY
Malmo - Sweden

THE NATIONAL TRANSPORTATION SYSTEM
IN THE
REPUBLIC OF ZAMBIA

by
Febby Mtonga
Zambia

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

MASTER OF SCIENCE DEGREE
in

GENERAL MARITIME ADMINISTRATION

The views and contents expressed in this paper reflect entirely those of my own and are not to be construed as necessarily endorsed by the University

Signed: Mtonga
Date: 05/11/90

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DEDICATION

To The Family:
My Father, Mother
Brothers and Sisters
Transportation is the basis of economic and social development of any country. The efficient operation of and proper documents for the transportation system in Zambia is essential especially in future because of the growing economic and social activities which involve movement of domestic and international trade.

At present, proper functioning of the transportation is hindered by the limited financial allocations in the form of government subsidies.

There is a general tendency by developing countries to give priority to import and export transactions without due consideration to the means of carriage.

Transportation and the relevant documents are as important as the commodities needed. Both domestic and international trade are dependent on the availability of means to reach the final destinations which are the markets.

This paper has discussed the need to improve documentation and efficiency in the operations of the road, rail and inland waterways in order to enhance the country's development.
ACKNOWLEDGEMENT

I wish to thank professors J. Mlynarczyk and P.M. Alderton who made some comments to the improvement of this paper. Other resident professors and visiting persons at the World Maritime University, also gave this paper a foundation.

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- Ms. C. Musiwa

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As is the case in most of the developing African countries, the data base system is still in the early stages of development and this factor hindered my collecting of detailed information for discussion on a number of issues in the paper.
ABBREVIATIONS

CHL  Contract Haulage Limited
TAZA  Truckers Association of Zambia
ZR  Zambia Railways
TAZARA  Tanzania-Zambia Railways
DPWF  Dar-es-Salaam Port Warehouse Facility
ZWF  Zamcargo Warehouse Facility
PTA  Preferential Trade Area of the Eastern and Southern African States
SADCC  Southern African Development Coordination Conference
SITPRO  Standard International Trade Procedures Board
UNCTAD  United Nations Conference on Trade and Development
MPTC  Ministry of Power Transport and Communications
USD  United States Dollar
UNDP  United Nations Development Programme
ZIMCO  Zambia Industrial Management Corporation
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CHAPTER 1

1.0.0 Profile of the Republic of Zambia

1.1.0 Geographical Location of Zambia

The Republic of Zambia is a landlocked country in South-Central Africa with an area of about 752,614 square kilometers. Zambia shares common boundary with eight neighboring countries, namely: Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zaire, and Zimbabwe.

1.2.0 Size of Population

By the 1987 census, the population of Zambia was estimated at 7.3 million with a growth rate of over 3 per cent per annum. Further census estimates were that over 78 per cent of the urban population is located in the large urban areas, near the "line of rail" with Lusaka as the largest single urban center but the copperbelt towns together constitute about 47.1 per cent of the total urban population. (1)

1.3.0 The Economy

1.3.1 Mining

For many years, the Zambian economy has been dominated by the mining sector even during the Colonial Administration. In the colonial era, great emphasis was placed on prospecting and production of minerals to the detriment of other important sectors such as agriculture, manufacturing,
transportation and others.

After independence, the government issued a white paper on the restructuring of the Zambian economy aimed at achieving diversification of the economy away from mining, thus, giving consideration to the development of agriculture, transport, manufacturing etc. However, the restructuring process has been slow and as such mining and its related service industries have remained important, facing little competition from the other sectors.

The production of minerals such as copper, cobalt, zinc, lead and coal have continued although the quantities of the resources are near depletion, see Table 1 on the declining mineral levels.

Table 1 Mineral Production (1,000 metric tonnes)

<table>
<thead>
<tr>
<th>Years</th>
<th>1970</th>
<th>1975</th>
<th>1981</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>683.3</td>
<td>640.3</td>
<td>560.1</td>
</tr>
<tr>
<td>Zinc</td>
<td>53.3</td>
<td>46.8</td>
<td>33.3</td>
</tr>
<tr>
<td>Lead</td>
<td>27.3</td>
<td>19.1</td>
<td>9.9</td>
</tr>
<tr>
<td>Coal</td>
<td>623.2</td>
<td>813.9</td>
<td>507.3</td>
</tr>
<tr>
<td>Cobalt</td>
<td>2.1</td>
<td>1.8</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>1,389.2</td>
<td>1,521.9</td>
<td>1,113.2</td>
</tr>
</tbody>
</table>

Source: Central Statistics Office, Lusaka.
The above Table shows that production of the internationally marketable minerals has been declining.

Although copper and coal are shown to have the largest production throughout the years, the minerals that earn the country foreign currency at the international metal exchange market are copper, zinc, lead and cobalt. Among the economically important minerals, copper is Zambia's main export commodity contributing about 80 per cent of foreign exchange earnings. (2)

Implementation of the economic policies with regards to restructuring of the sectors should be closely monitored by the legislative bodies in order to avoid a situation whereby policies are repeatedly made and kept on the shelves as reference material for future policies. This as one can see is costly in terms of the time policy makers spend on discussions, the money for publications, etc.

1.3.2 Agriculture

In Zambia, agriculture is still undeveloped despite several agricultural reforms intended to achieve self sufficiency in the production of staple food and to increase the export potential thereby earning the much needed foreign exchange for procurement of agricultural machinery as well as spare parts. Mechanization of agriculture though on an average scale can boost the economy and reduce the problem of
shortages of essential commodities which have currently been the basis for economic and political instabilities in the country.

In the author's opinion, long term solutions to the increasing levels of shortages of essential commodities and inflation in Zambia can be achieved by improved government allocation of funds to the agricultural sector in order to increase the sector's contribution to the GDP which was only about 12 per cent in 1987.(3)

The increased financial resources allocated to the agricultural industry can minimize the size of the subsistence sector which has inadequate funds for procurement of essential modern agricultural machinery and inputs such as fertilizer, seeds, pesticides, etc. Another important area where funds should be allocated is the transport infrastructure for fast transportation of the agro-produce in most rural areas because of the non-availability of proper storage facilities in the areas.

1.3.3 Manufacturing

In Zambia, manufacturing like the agricultural industry has received government attention in an effort to diversify the economy which is heavily dependant on mining and exporting of minerals.
Manufacturing has been based on the government policy of import substitution which emphasizes the need to use local raw materials, promote consumption of locally manufactured goods, increase employment opportunities as well as the country's export potential.

The manufacturing policy has achieved some of its objectives although on a small scale. With a GDP of about 22 per cent in 1987 (4), it is more likely that the contribution can be raised through rational management of the manufacturing sector and the relevant service industries.

The mushrooming of manufacturing industries in the urban areas particularly along transport infrastructures, see Map 1, is a clear indication of the role played by the transportation sector in promoting Zambia's imports and exports. The country imports a lot of industrial machinery and spare parts, foodstuffs, and other manufactured goods, while exports are mainly in the form of raw or semi-processed minerals and agricultural products.

The strategically located industries from Livingstone to the copperbelt as shown on the map have comparative advantage over those in the remote rural areas since the former have easy access to transportation services, the consumer and labour markets, etc.
Map 1 Major Industries

KITWE
1. Copper mining and copper extraction
2. Iron founding
3. Ornamental appurtenances
4. Batteries and acid accumulators
5. Electrical equipment
6. Plastic, harness, etc.
7. Malt whisky
8. Food and drink processing
9. Glazed clay pipes
10. Light engineering
11. Mining timbers
12. Broadcasting and T.V.

MUFULIRA
1. Copper mining and copper extraction
2. Zn/Pb-smelting
3. Light engineering

MPULUNGU
1. Fishing and fish processing
2. Tapioca milling

CHINGOLA
1. Copper mining and extraction
2. Light engineering

MUYINILUNGA
1. Fruit and vegetable canning
2. Tobacco milling

LUSAKA
1. Steel construction plants
2. Pottery
3. Textiles
4. Furniture
5. Cedar
6. Steel pickling plant
7. Tractor and truck assembly
8. Brewing
9. Milling
10. Converted cardboard containers
11. Cotton spinning
12. Tobacco suctioning
13. Abattoir and meat processing
14. Publishing
15. Mica processing
16. Broadcasting and T.V.
17. Banking

KAPILI IMOUSHI

LIVINGSTONE
1. Motor car assembly
2. Radio and T.V. assembly
3. Blunder and textiles
4. Enamel factory
5. Candles
6. Blowers
7. Hardboard
8. Tourism
9. Curios

KAFUE
1. Textile mill
2. Fertilizer and blasting compounds
3. Plants
4. Boat building
5. Tamary

LUANSHYA
1. Copper mining
2. Sulphuric acid
3. Copper cables and wires
4. Glazed pipes and tiles
5. Plastic
6. Mine ventilation equipment
7. Steel piping
8. Trunk assembly

KASWE
1. Railway workshops
2. Textiles
3. Grasshopper and hamlet
4. Milling
5. Brewing
6. Milk and bleats
7. Light engineering
1.3.4 Transportation

1. Road (see Map 2)

Road transport infrastructure can be classified into two groups, namely:

(a) national network; and
(b) interstate network.

The national road network as the term suggests operates within the country's jurisdiction, conveying raw materials and manufactured goods from one town or province to another whereas interstate roads link Zambia with the roads and railways of the various neighboring countries. As can be deduced from Map 2 and the brief definitions of the roads, both national and interstate networks are part of the transport infrastructures used for conveying imports and exports through seaports of the neighboring countries.

So far, government's policy in the transportation sector has concentrated on the improvement of interstate road networks giving the national networks especially the roads in most rural areas less attention in terms of financial support for rehabilitation purposes. The overall picture of transport infrastructure in Zambia is satisfactory but there is need to constantly upgrade the condition of the roads by increasing budgetary allocations which have remained relatively low.
since the early 1980s, see the proposed expenditure programs for the sectors in Table 2.

Table 2
Development Plan
(Proposed expenditure, USD million, 1984-86)

<table>
<thead>
<tr>
<th>Sector</th>
<th>USD Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>212.8</td>
</tr>
<tr>
<td>Industry</td>
<td>500.7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>435.9</td>
</tr>
<tr>
<td>Energy</td>
<td>169.8</td>
</tr>
<tr>
<td>Transport</td>
<td>170.9</td>
</tr>
<tr>
<td>Communications</td>
<td>23.0</td>
</tr>
<tr>
<td>Tourism</td>
<td>7.5</td>
</tr>
<tr>
<td>Social</td>
<td>178.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,699.1</strong></td>
</tr>
</tbody>
</table>

Source: Africa Economic Digest, London.

Transport as can be interpreted from the above table is a less priority in government planning except when it involves movement of imports and exports as the economy owes its existence to such activities. Commodities of all kinds especially containerized and palletized are conveyed by road to distant areas which are not easily accessible by other forms of transport.
Road transportation is undertaken by Contract Haulage Limited which is a parastatal organization and by the private entrepreneurs who have organized themselves under an association known as the Truckers Association of Zambia. Details as to the operations of the road transporters will be discussed in the following chapters.
Zambia has two railway systems, Zambia Railways (ZR) and Tanzania-Zambia Railways (TAZARA) for conveying international trade in large bulk to and from the ports of the neighboring countries.

Zambia Railways is one of the colonial legacies inherited at independence. This railway system was purposely built to transport minerals mainly copper from the copperbelt towns through Zimbabwe, then Southern Rhodesia to South Africa and the overseas markets.

After independence, Zambia continued to use the Zimbabwe route for international trade until the border was closed in 1973 due to strong liberation movements in Zimbabwe. Zambia's traffic was diverted to Lobito Port in Angola but this was a temporary measure because of the inadequate capacity and handling facilities that were then in operation at the port.

To minimize congestion problems which cause delays the government with financial assistance from the Peoples Republic of China embarked on a joint venture with Tanzania; to build and operate a railway system that would withstand unfavourable political situations in the region. TAZARA became operational in 1975 as a result of the multilateral cooperation, and in Zambia the railway system was connected to Zambia Railways at Kapiri Mponshi while in Tanzania it
started at the Port of Dar-es-Salaam.

The advantages Zambia derives from using the TAZARA are already enormous and as the author will point out in the following chapters, the railways have to be improved to the required level of efficiency.
3. Inland Waterways (see Map 4)

In Zambia, the major inland waterway network comprises the Zambezi River with its two main tributaries—the Kafue and Luangwa, the Chambeshi and Luapula Rivers, and the following Lakes: Kariba mainly for hydro-electricity generation; Mweru lying between Zambia and Zaire; Bangweulu located completely within the boundaries of Zambia; and Tanganyika shared by Zambia, Tanzania, Zaire and Burundi.

The inland waterway network which mainly covers lakes and rivers plays an essential role in providing transportation services to the hinterland particularly which are inaccessible by surface transport such as rail and roads.

The islands on Lakes: Bangweulu, Mweru and Tanganyika with a significantly large population have only water as their means of transport.

For international lake shipping, Lake Tanganyika and its Port of Mbulungu are mainly used in the transportation of sugar, cement, steel and bitumen to Burundi, Rwanda, Zaire and Tanzania. There has also been a growing number of traffic from the neighboring countries principally, Malawi and Zimbabwe.

The economic activities on Lake Tanganyika have led to feasibility studies done by Uniconsult, aimed at exploring the possibility of using the Port of Mbulungu as a regional
port for member states of the Preferential Trade Area of the Eastern and Southern African Countries (PTA).

The recommendations given by Uniconsult in the 1984 study which were in favour of the development of M pulmonary Port have been integrated in the national transportation policy and practical steps have also been taken, for example, in order to improve efficiency, the port is now under the management of a parastatal, the Zambia Industrial Management Corporation (ZIMCO). In addition, the port infrastructure is presently being rehabilitated to promote carriage of raw materials and manufactured goods in the region.
FOOTNOTES

(1) Regional Surveys of the World: Africa South of the Sahara,
p 1113

(2) Ibid. p 1117

(3) Ibid. p 1117

(4) Ibid. p 1117
CHAPTER 2

2.0.0 Operations of the Transportation System

2.1.0 Introduction

In Zambia's economy, the performance of the transportation sector is influenced by developments in copper mining. Copper, the mainstay of the country's economy is currently facing problems in reducing its production costs and this situation is worsened by the low prices of copper at the international metal exchange market. As the foreign exchange earnings have considerably decreased in recent years, the various economic sectors have also been affected.

The transportation sector is geared to moving raw materials and manufactured goods generated from the other economic sectors, hence, the low production together with problems encountered in the maintenance of the entire transportation infrastructure and its facilities such as the vehicles have an effect on the performance of the various modes.

The general transportation system in Zambia is very slow, unreliable, infrequent and above all very costly, this aspect is discussed in detail in chapter three. The need to improve the system is, therefore, a necessity if economic and social prosperity are to be achieved.
The various modes of the transportation system serve as basic facilities for development of the national resources on a very moderate scale.

In a developing country like Zambia, owing to both domestic and international economic constraints, transportation costs are extremely high which, therefore, requires well-defined governmental strategic policies as a guideline in resolving these severe social and economic constraints.

The envisaged policy guidelines are to be somehow flexible in order not only to permit state monopoly, but also, to enhance participation or involvement of the private transport sector to facilitate development planning of the economic resources in the national interest.

By means of the governmental policy guideline flexibility, a low cost, reliable and well-organized system will be achieved thus, enhancing intensive economic deployment of the entire transportation system.

The most essential elements of the transportation system under discussion embrace three main sectors, namely:

(a) The Road Transportation System;
(b) The Rail Transportation System; and
(c) The Inland Waterways Transportation System.
2.2.0 Road

2.2.1 Domestic and International Haulage

In Zambia, haulage activities both domestic and international are essential to the economy and as stated in the previous chapter, this important function is carried out by Contract Haulage Limited (CHL) and Truckers Association of Zambia (TAZA).

1. Contract Haulage Limited

CHL is a parastatal transport organization which became operational as a result of an urgent concern of central government to effectively participate in the overall efficient trafficking of both domestic and international trade. As a consequence, CHL now controls about 10 per cent of the domestic market commodities and has therefore managed to maintain this market share since 1985.(1)

However, in the domestic market CHL operates a large number of fleet of cargo trucks both in the urban and rural areas as shown in Table 3 below especially in areas where private truck owners are unwilling to operate owing to the unsuitable condition of the roads.
Table 3  Contract Haulage Fleet Position

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Heavy Trucks</th>
<th>Operational Heavy Trucks</th>
<th>Total Trailers</th>
<th>Operational Trailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>514</td>
<td>325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1982</td>
<td>414</td>
<td>228</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>351</td>
<td>185</td>
<td>203</td>
<td>179</td>
</tr>
<tr>
<td>1984</td>
<td>327</td>
<td>180</td>
<td>260</td>
<td>119</td>
</tr>
<tr>
<td>1985</td>
<td>291</td>
<td>171</td>
<td>198</td>
<td>128</td>
</tr>
<tr>
<td>1986</td>
<td>216</td>
<td>155</td>
<td>198</td>
<td>178</td>
</tr>
<tr>
<td>1987</td>
<td>268</td>
<td>166</td>
<td>276</td>
<td>205</td>
</tr>
<tr>
<td>1988</td>
<td>247</td>
<td>149</td>
<td>276</td>
<td>205</td>
</tr>
</tbody>
</table>

Source: MPTC, Lusaka

It is observed from the table that, there was a decline in the total available and operational trucks between 1981-86, a slight improvement in 1987 followed by a decline again in 1988.

As regards international haulage, the market share of CHL is about 15 per cent which is considered to be slightly more than its domestic haulage.(2) The international market's share includes import traffic and transit goods to such neighboring trading countries as Malawi, Zaire, Burundi and Rwanda.
The operations of CHL up to 1984 were below the profit margin as such the company was unable to declare dividends to the shareholders.\(3\) For the purpose of improving the performance of CHL, the government restructured its management which inter alia, involve:

(a) the reduction of manpower to an acceptable number;
(b) centralization of operational activities into two regional levels; and
(c) initiation of standardization and rehabilitation programs respectively.

2 Truckers Association of Zambia TAZA

The Truckers Association plays a leading role in the haulage of both domestic and international trade thereby accounting for about 80 per cent of the total market share.\(4\) TAZA as a private entity has its operational activities purely market oriented as the individual members seek to increase their haulage capacity in order to maximize profits.

In the domestic market, TAZA's role is most significant in the haulage of agricultural produce during the marketing season as it provides the bulk of the trucking capacity. Where the rural operations are not very profitable, TAZA undertakes major operations in the urban and international markets in order to cross-subsidize.
However, like CHL, the private haulers have experienced a decline in the number of their operational trucks due to such major factors as:

(a) poor condition of the roads;
(b) unavailability of spare parts

2.2.2 Availability of spare parts

In the operations of the road transport system, most of the vehicles are obtained from various dealers worldwide as such there are problems inherent in acquiring the much needed spare parts in their proper maintenance to ensure their road worthiness. The constant shortage of the essential spares are also attributed to insufficient allocation of foreign exchange by the financial institutions to the sector.

Zambia like any other developing country imports far much more than it exports which therefore means that the limited foreign exchange is expended according to the country's main priority areas so as to ensure a growth in the national balance of payments position.

As a result of the constraints on the spare parts with intermittent breakdowns of the trucks, there was a decline from about 325 vehicles in 1981 to 149 by 1988. (see Table 3)

This also affects transit time of the commodities which is often four to six days over a distance of about 2,000 kilometers but with vehicle break downs, however, the
number of days increase to about ten days and the extended transit time lowers the efficiency of road transporters.

As time spent in transportation of commodities is costly in terms of labour and the large capital tied in the vehicles and commodities, the author's view is that all vehicle requirements and specifications should follow a standardization policy.

By the above approach, freight revenue earnings would be enhanced thus leading to maximization of profit margins from the operations of the entire road transport infrastructure which also requires reorganization.

2.2.3 Condition of the Road Infrastructure

From a review of the national development policies undertaken in 1984 by the Ministry of Power Transport and Communications though Zambia has adequate national roads which link the major international roads of the neighboring countries, the roads are not in very good condition due to lack of regular maintenance and rehabilitation as a result of insufficient allocation of the required finance for the acquisition of essential materials.

As a consequence, traffic access to both the rural and urban areas are restricted thus affecting the road transportation efficiency. Since the various roads are totally dependent on each other for the movement of goods and passengers, in the opinion of the author, there is an urgent need for regular
allocation of funds to economically cater for the road infrastructure thereby improving their conditions durably towards provision of reliable and efficient transit facilities.

The effectiveness of the above approach is to be dependent on the basic maintenance schedules coupled with expertise and availability of materials.

2.3.0 Rail

Rail transportation plays a dominant role in the movement of domestic and international trade. The system requires large capital investment for its efficient operations, as such is regularly subsidized by the government.

Import traffic

The Port of Dar-es-Salaam route handled 36.4 per cent traffic in 1983 of which 87 per cent was carried by rail. In 1987, the total carrying capacity increased to 48.6 per cent with the rail conveying about 98.5 per cent of the total volume of the country's trade.

Export Traffic

With regard to the export traffic, the market share of the Dar-es-Salaam route was 59.2 per cent in 1983 while in the same year the railway mode carried 92.6 per cent. In 1987, the market share figures were 69.7 and 99.9 per cent respectively.
From our above analysis, it is to be observed that the rail mode conveyed a very high tonnage of the total volume of the trade and this is attributed to the fact that, the mode offered attractive services and economics of scale which enticed importers and exporters in selecting the mode in the transporting of their respective merchandise at reasonable costs thereby promoting their trading activities which in turn satisfies the supply and demand markets.

Zambia Railways ZR

Tracks

ZR operates a total range of 1,273 kilometers of 1,067 millimeters (3'7") gauge single track out of which 848 kilometers from Kitwe to Victoria Falls Bridge is mainline with the remaining 425 kilometers being branch lines.

With the exception of the 103 kilometer line running from Muzoka to Mukwela which is laid on prestressed concrete sleepers, the actual mainline is constructed on wooden sleepers which, at time present is in an unsatisfactory condition. This situation is mainly due to inconsistent deferments of the regular planned maintenance originating from the low revenue generated from operations and the inability of the government to allocate the much needed financial resources owing to budgetary constraints. As a consequence, the tracks were only able to accommodate a 40 kilometer per hour speed instead of the required 80 kilometer speed.
per hour thus, resulting in the trains sometimes operating contrary to the scheduled arrival times for delivery of goods to the demand markets.

Locomotives

The entire fleet operated by ZR is about seventy one diesel electric locomotives of which fifty nine are for the mainline with twelve for the branchlines. Of these, twenty one are between the ages of 10 - 16 years, thirty are between the ages of 18 - 21 and the remaining ten are below the age of 10. With deferred maintenance, on average only forty one locomotives are operational which is below the company's requirement of 75 per cent.

Wagons

ZR operates 3,800 wagons and additional 2,800 ones which belong to the Unitary Railway System of Zambia and Zimbabwe. Out of the 3,800 wagons, about 2,000 are less than 10 years old and in good condition. On the other hand, and comparatively, the wagons of the Unitary Railway System are even though over 30 years old, yet they are in good condition. It is however envisaged that, for ZR to achieve its efficient operational requirements and subsequent target, Zambia Rails will require another 2,500 wagons more.
Tanzania Zambia Railways TAZARA

Locomotives

The number of locomotives by TAZARA is as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFH2</td>
<td>39</td>
</tr>
<tr>
<td>DFH2 Repowered</td>
<td>27</td>
</tr>
<tr>
<td>Diesel Engines</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>79</strong></td>
</tr>
</tbody>
</table>

Wagons

The wagons for TAZARA are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>1,316</td>
</tr>
<tr>
<td>Tanks</td>
<td>109</td>
</tr>
<tr>
<td>Special</td>
<td>38</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>1,463</strong></td>
</tr>
</tbody>
</table>

Source: MPTC, Lusaka
In order to meet traffic requirements, TAZARA will therefore require additional 600 wagons. In its efficiency aspects, the railway system, therefore should procure adequate and reliable facilities such as locomotives, wagons and the essential accessories for maintenance purposes to facilitate easy conveyance of the bulk of the country's trade so as to counter the monopoly of the road transport system which is a major competitor in the carriage of the goods to and from the hinterland.

2.4.0 Inland Waterways

Inland waterways are natural ways which are available for easy and economical conveyance of commodities and passengers from one place to another. Transportation by waterways is generally meant for bulk low value commodities because they need the cheapest means to reach the final destination.

In the transportation of domestic commodities, small commercial boats are engaged in moving fish and other commodities from the areas solely dependent on water transport to the large urban areas and vice versa.

For international trade purposes as already highlighted previously, Lake Tanganyika and the Port of Mpulungu handle commercial activities with a fleet of ships from the neighboring countries which are supplemented with other smaller river crafts operated by the local boat-owners.
The general cargo and passenger ships of Tanzania Railways Corporation run a regular service on the lake to and from Mpulungu - Kigoma - Bujumbura. In addition, ARNOLAC which is a Bujumbura based shipping company offers regular calls to Mpulungu by carrying such commodities as cement, butimen, construction materials, steel and iron bars.

A significant development on the inland waterways is the rehabilitation of the Port of Mpulungu by means of an EEC funded program for the purpose of making it a regional port in order to respond to the expected cargo handling capacity of 1,200 tonnes per day for both PTA and SADCC member countries international trade.

In Zambia, transportation on the inland waterways is very often affected by navigational constraints such as the lack of adequate navigation charts, aids (buoys and lights) and port or terminal infrastructures. Besides the navigational constraints in terms of equipment, there are also some natural factors, for example, low water level during the hot dry periods of the year, strong currents from the tributaries, rapids and outcrops in certain areas of the waterways. Regular rehabilitation of the traffic ways with respect to dredging should be carried out on economically viable waterways such as Lake Tanganyika in order to improve handling of international traffic. At the Port of Mpulungu, infrastructures such as the transit warehouses, cargo handling equipment and navigational equipment should be upgraded.
2.5.0 Impact on Economic and Social Development

2.5.1 Introduction

In Zambia, transportation promotes basic economic and social activities by changing the geographical position of commodities from areas where they are less required according to demand statistics to areas where their full utility is significantly important.

The effect of the transport modes under discussion on the Zambian economy takes the form of opening up of undeveloped areas of the country to the business world for investment projects which generate the country's much needed revenue for procurement of manufactured goods from the industrialized nations.

Generally, the business community demands the use of an efficient transportation system in order to reduce costs and improve productivity. As such, Zambia should develop her transportation system to ensure even distribution of the industrial establishments and other economic infrastructures.
2.5.2 Road Transport Sector

During the 1980s, the road transport sector in Zambia faced considerable difficulties in its operational activities due to insufficient allocations of foreign exchange for the procurement of maintenance equipments for the roads, spare parts required for efficient operation of the vehicles and other varieties of essential inputs for the sector.

Owing to the low availability of the needed spare parts and other constraints, performance of the transportation system declined with the total tonnage conveyed by the CHL dropping from 362,000 in 1984 to 248,000 in 1988. Kilometers travelled in the same period declined from 9.6 million to 6.7 million.

As a consequence, truck haulage of essential commodities suffered a great deal and that created problems especially high transportation costs and finally consumer prices. Despite the constraints, road transportation has and will continue to make a profound impact on the economic and social life of the country. It largely facilitates the movement of commodities, passengers, and the setting up of employment avenues as well as investment opportunities.

Road transportation is a very serious competitor to the other integrals of the transportation system. It is generally able to offer more flexible and convenient form of transportation for possible door-to-door deliveries.
The business community derives advantages from using the transportation network. For instance, manufacturers and commercial organizations find road transport convenient when handling small sizes of commodities over short distances. The road transport sector is also a powerful factor in the location and distribution of manufacturing industries because it permits a greater degree of direct contacts with shippers and enables a substantial amount of trade to be conveyed within a relatively short time.

With regards to the foregoing, it suffices to mention that the government embarked on industrialization development plan as a strategy in order to rehabilitate and modernize the roads.

The following are the major interstate roads already asphalted as part of the main rehabilitation programme:

(a) the Great East Road;
(b) the Great North Road; and
(c) the South Road.

To give the expected impact on the economic and social development in Zambia, the national roads have been upgraded in certain areas by means of tarring and graveling.

In some rural areas, roads have made a breakthrough in agriculture as they link inaccessible areas with the urban markets.
These roads act as catalysts thus, encouraging grouped settlements which consequently makes it easier for the government to carry out rural development plans in the form of providing social amenities such as health and employment facilities, postal and mail services, education and recreational services etc.

Road transportation has also encouraged rural-urban migration with its positive and negative consequences. It is not the intention of the author to detail the repercussions of rural-urban cultural diffusion but to highlight the general effect on agriculture.

Generally, agricultural development has been slow due to the following main factors:

(a) the poor condition of roads in most of the rural areas during and immediately after the rainy season;
(b) a high proportion of rural-urban migration which mostly involve the energetic and educated population; and
(c) lack of adequate financial resources by the large subsistence farming community for procurement of modern agricultural machinery and inputs like fertilizers, seeds, pesticides and many others.
The improvement of agriculture and other sectors of the economy can be enhanced by increasing investments in the road transportation system. Although subsidized by the government, agricultural inputs are expensive and the supply is not reliable because of delays in the chain of transportation.

2.5.3. Rail Transport Sector

In Zambia, rail transport with its economic operational costs, large carrying capacity as well as its suitability for long distance bulk carriage plays dual role by serving the domestic and international trade in the delivery to and distribution from the manufacturing centers and ports.

The influence of railways on the social and economic development is widespread because the rail mode pioneered the carriage in bulk and the economic as well as the social activities from the copperbelt towns up to the southern border. This rail line served as a facility for conveying goods or raw materials such as copper from the mining areas through Zimbabwe to South African ports for the international markets.

The other rail line, TAZARA was inaugurated in 1975 because the country needed to diversify the trade routes. This rail line has led to the growth of towns like Kapiri Mponshi, Mkushi, Serenje, Mpika and Kasama. In these towns emergent and commercial farming activities are commonly practiced.
Although the two railway systems initiated significant social and economic activities in the country as a whole, they generally suffered major disadvantages as follows:

(a) insufficient funds for maintenance of the infrastructure, resulting in speed limitation and delays in order to avoid derailments; and
(b) shortage of wagons and locomotives.

The performance of railways has been affected by the aforementioned constraints. For instance, TAZARA only showed a small increase in the tonnage handled between 1983 and 1987, while "Zambia Railways which was designed with an annual capacity of 8.5 million tonnes was only able to carry 4.7 million tonnes". (7)

The railways are now under rehabilitation and the programme is financed by international bodies though in phases which take a number of years to be effected.

2.5.4 Inland Waterways Sector

Zambia's inland waterways are still in the early stages of development. Apart from problems of accessibility in certain areas of the waterways, the country has no ships to carry its own international trade.
The inland waterways are separated by geographical barriers and as such, they differ in their contributions to the economic and social development process.
Some of the principal activities served by the waterways are namely:

(a) transportation;
(b) port operation;
(c) fisheries;
(d) agriculture; and
(e) manufacturing.

Through the use of waterways, both domestic and international trade are conveyed from areas of production to the markets. Trade among some regional member countries such as Zambia, Tanzania, Zaire, Burundi, Rwanda, Uganda, Malawi and Zimbabwe has been promoted although a greater portion of this trade is unidirectional with Zambian exports dominating the market.

The facilities for efficient operations on the inland waterways are inadequate due to budgetary constraints and should therefore, be rehabilitated in order to offer some advantages as follows:

(a) convenience when loading and unloading at the Port of Mbulungu;
(b) cheapness as a result of large carrying capacity of the transport mode;
(c) increased speed of the vessels; and
(d) proper coordination when transferring commodities from one mode of transport to another.
Inland waterways have contributed to the development process of Zambia in spite of the several problems they encounter in the transportation of commodities.

In international trade, the waterways have provided inexpensive access to the markets of the neighboring countries and are inter alia a source of foreign exchange earnings.

The port infrastructure and facilities are priced in foreign currency and this is important for a country that is trying to diversify the sources of foreign exchange earnings in order to meet increasing demands of various imports.
FOOTNOTES

(1) Review of National Policies Development Targets 1985-95
by the Ministry of Power Transport and Communications,
MPTC, Lusaka - Zambia, p 36

(2) Ibid. p 36
(3) Ibid. p 35
(4) Ibid. p 23
(5) Ibid. p 36
(6) Ibid. p 36
(7) Ibid. p 19
CHAPTER 3

3.0.0 Costs of the Transportation System

3.1.0 Introduction

Transportation costs and efficiency of the mode are among the principal aspects importers/exporters consider when they intend to convey commodities. Generally, any organization that is involved in importing and exporting of commodities require an efficient and less expensive transportation system.

The objective, however, is to have successful operations in the organization which are threatened by the following risks:

(a) the sources of finance for the business;
(b) the flow of income and expenditure;
(c) the budgetary control of (b) above;
(d) the controls of costs; and
(e) the return on the capital invested.
3.2.0 Transportation Costs

The real costs involved in the physical movement of commodities from one point to another are dependent on a number of variables such as:

(a) the nature and quantity of commodities;
(b) the time factor;
(c) storage and handling facilities; and
(d) the mode of transport and distance

3.2.1 The Nature of Commodities

This is important in so far as determining transportation costs of the various transport modes are concerned. It mainly relates to the type and size of commodities conveyed. For example, commodities that require special handling and refrigeration, have to be transported at a relatively higher charge.

The value is another main aspect to be considered when examining the nature of the commodities because it is uneconomical to use the most expensive mode of transport for the bulk, low value commodities.

Generally, it is this economic consideration which has influenced Zambia to use the railways in the transportation of copper, coal and many other bulk as well as low value commodities.
3.2.2 The Time Factor

The time factor as to the scheduled arrival and departure of the commodities is vital in so far as transportation costs are concerned and for importers and exporters to carry out profound planning. In certain instances, they require adequate time for consolidation purposes in the form of containerization and palletization.

Generally, unitization reduces the amount of capital that importers and exporters require when undertaking transportation of commodities. Some of the factors which are likely to reduce working capital are the low costs because of the shorter time for loading and unloading.

The other aspect concerns warehousing charges. The longer the commodities stay in warehouses, the more the costs are incurred by the entire business community. As such, loading and transportation are to be fast to reduce warehouse charges and insurance premium which is a result of reduced risks associated to delays, damage and pilferage.

Commodities have to be delivered just at the right time because early delivery of commodities can often lead to over supply and low consumer prices as a result of reduced demand. On the contrary, late delivery of the
needed commodities can increase the demand and the related consumer prices.

Moreover, maintaining good reputation in the import and export business is an important element for any supplier especially where competition is strong as late deliveries can ruin the business in the long term.

3.2.3 Storage and Handling Facilities

The total transportation costs include among others auxiliary services as follows:

(a) collection and storage of raw materials and manufactured goods;
(b) handling and transfer of commodities; and
(c) delivery of commodities to the final destination.

To reduce the costs of storage, handling and transportation of commodities, consolidation is essential. In-transit warehouse facility offers shippers the privilege to consolidate cargo and other advantages as follows:

(a) reducing delays to vehicles because they do not have to wait for commodities for longer times;
(b) protecting commodities against damage.
caused by weather conditions; and

(c) minimizing pilferage of commodities while in transit.

It is, however, important to bear in mind that in-transit warehousing can be costly especially when commodities are kept for longer periods.

An outline of the charges at the Port of Dar-es-Salaam compiled by Zamcargo of Lusaka used as a reference, are as follows:

1. Dar-es-Salaam Port Warehouse Facility (DPWF)

(a) break bulk cargo has a grace period for the first 14 days after which a fee of USD 1.00 per 1,000 kg is imposed per day. The time allowed for this rate is up to 30 days. Thereafter, USD 2.00 per 1,000 kg is to be paid each day.

(b) Containers are given a free period of 14 days from the first day of storage. After the 14 days, a charge of USD 20.00 per 20 foot and USD 43 per 40 foot containers are levied on a daily basis.
2. Zamcargo Warehouse Facility (ZWF)

(a) Zamcargo offers break bulk a grace period of 21 days from the date of storage. After the free days, USD 6.000 per 1,000 kg is charged weekly.

(b) Containers are also given a grace time of 21 days and thereafter, they are charged a fee of USD 100.00 per week for a full container load and USD 10.00 per 1,000 kg for a less container load.

Source: Zamcargo, Lusaka.

ZWF was established at the Port of Dar-es-Salaam to handle imports and exports for Zambia at a relatively cheaper rate. The main objectives of the government when setting up ZWF was to minimize unnecessary delays for commodities bound or from Zambia at Dar-es-Salaam Port thereby saving the country's limited foreign currency. As the transportation system is inadequate to convey commodities efficiently especially imports through the Port of Dar-es-Salaam, delays of about 90 days are sometimes experienced.

Slow documentation in the form of customs clearance at the above port is another major cause of delays, see
The costs of delays at the port to the country are enormous even when one considers the small calculations on containerized cargo which are as follows:

**Containers at DPWF**

Assuming that 50 containers of Twenty Equivalent Units are delayed for a period of about 91 days after grace period and the storage charge is USD 20, the cost to the country can be:

\[ 50 \times 20 \times 91 = \text{USD 91,000} \]

**Containers at ZWF**

For 50 full load containers of Twenty Equivalent Units delayed for 91 days after a grace period, at a fee of USD 100 per 7 days the costs can be:

\[ 50 \times 13 \times 100 = \text{USD 65,000} \]

A comparison of the warehouse charges with respect to delays shows that ZWF is less expensive but considering that the country has insufficient foreign currency, there is great need to improve efficiency in order to save the money for other development activities.
3.2.4 Mode of Transport and Distance

Generally, there is a relationship between the mode of transport and distance as well as the costs of transportation. For example, road transport with its low carrying capacity is expensive especially beyond distance of about 200 kilometers, while rail and waterways are the most suitable for movement of the large bulk commodities over long distances. The economics of scale offered by these modes tend to make them have low costs per ton-mile although water transport is the least expensive compared to the other modes.

For example, to transport commodities from Dar-es-Salaam to Lusaka or Kitwe which are far apart but have almost the same distance from Kapiri Mponshi:

By road the cost is about USD 3,500 for a 30 tonne truck whether full load or not which means that if five trucks are engaged one has to pay

\[ 3,500 \times 5 = \text{USD 17,500} \]

By rail the cost is about USD 2,700 per wagon capable of stacking two containers of Twenty Foot Equivalent Units and if one hires five wagons, therefore, it is relatively cheaper than road as the calculations below will show:

\[ 2,700 \times 5 = \text{USD 13,500} \]

Source: Zamcargo, Dar-es-Salaam.
CHAPTER 4

4 0.0 Transportation Documents

4.1.0 Functions

In dealing with domestic and international trade by use of any of the transport modes, proper records covering the characteristics and specifications of the commodities are essential.

Basically, transportation documents provide adequate definition of the terms and conditions under which the goods are dispatched and received thereby establishing an evidence of contract between the exporter and the importer. (1)

Transportation documents serve as evidence of contract of the carriage and receipt of commodities by the carrier to the consignor. (2)

Although there are many general definitions and functions of the transportation documents, the author wishes to emphasize that any transport undertaking should be accompanied with proper documents in order to regulate the trading activities among parties concerned.

For instance, payments for import and export transactions are usually settled by means of a documentary letter of credit which has to conform with certain established commercial rules and regulations.
Another important function of documentation is for avoidance of intermodal transfer risks of the goods. Any claim against a foreign partner is always accompanied by the risks that although the partner may be willing to arrange the payments for the goods, currency transactions may render the payment in question impossible. With proper documents therefore, commodities have the needed security and this reduces the aforementioned risk.

4.2.0 Types of Documents

There are several documents needed in the international movement of commodities. In Zambia, the basic documents required for import and export ventures are as follows:

(a) import and export licences;
(b) commercial invoice;
(c) certificate of origin;
(d) bills of lading; and
(e) rail and road consignment notes.

1. Import/export licence

Before undertaking any international transaction, the parties are to ensure that they have valid import and export licences. These documents are issued by the Ministry of Commerce and Industry after approving that the commodities are essential to the Zambian economy.
This is attributed to the country's limited foreign currency which demands that proper allocations be executed.

2. Commercial invoice

This document describes the nature of the transaction between the parties. Several details about the commodities are given of which a few are the description of the commodities, the unit and total price, the payment terms, discounts, names and addresses of the parties, the date, and the port of departure and so on.

3. Certificate of origin

This document certifies that the commodities are really produced or manufactured in the exporting country. In order to trust the declaration of origin, an independent foreign chamber of commerce and industry is used for a fee which is reflected in the cost of obtaining the certificate of origin.

4. Bill of lading

The negotiable bill of lading is mainly used because of the security advantage that the commercial enterprises enjoy. Financial institutions are not willing to risk their money hence, they demand for security.
Other functions of the document are thus:

(a) it evidences the defined terms and conditions of the contract of carriage between the carrier and the exporter;

(b) it acts as a receipt for the commodities and is issued by the carrier to the exporter; and

(c) it is evidence of ownership of the commodities and when endorsed transfers title to the named party.

5. Rail and road consignment notes

These consignment notes are used in conveying international trade by rail and roads, and as such are governed by international conventions. Both consignment notes are neither documents of title nor negotiable.

4.3.0 Documentation

Documentation which is as important as the act of conveying commodities from one place to another has undergone some light transformation in Zambia's international trade activities. With UNCTAD/UNDP sponsored workshops, seminars and meetings, the authorities involved in the preparation and the issuing of transportation documents have become quite
flexible in their approach although bureaucratic inefficiency still exists on a moderate scale. Despite the fact that, most of the documents have been streamlined and simplified, there is significant number which needs to be changed to suit the developments in the field of transportation. By improving the cumbersome documentation procedure, time and money can be saved which otherwise is unnecessarily spent on massive and repetitive processing of information.

It is important to note that the time wasted is money in the form of labour as more people are required to do one person's job, as such the remuneration costs are multiplied.

The money for purchasing stationary materials is enormous and yet can be usefully deployed in areas which need funds to effectively perform their basic functions.

Zambia's position in the documentation process is further weakened by the slow customs clearance at the Port of Dar-es-Salaam which handles the majority of the country's imports and exports. It usually takes between four to six days before commodities are cleared by the customs. The rigid customs procedures are not only tedious but they delay the development process in the region. In order to facilitate traffic and documentation Zambia should play a prominent role in regional conferences on trade.
and development so as to discuss the possibilities of streamlining, simplification and harmonization of customs and trade procedures.

4.4.0 Harmonization of Documents

The main purpose of harmonization of documents in the field of transport is to achieve a common understanding and interpretation of the concepts thereby integrating the various regional countries and accelerating the general movements of the transport modes by prevention of unnecessary delays at frontiers.

As countries differ in economic, social and political settings, even the documents are different in terms of the type and number required in the transportation of commodities. In light of these factors, a large number of documents is being used in the PTA and SADCC member countries. The multiple documents required at customs frontiers in the region have made the operations of the transportation system inefficient and costly.

There is no doubt that the region requires simplified and uniform documents especially nowadays when international trade has increased and is highly competitive.

Under the regional cooperation approach, however, members of the PTA and SADCC have convened several conferences in
trying to ensure that documents for trading activities within the groups should be uniform with standardized specifications. In view of this, they unanimously accepted protocol provisions to grant freedom of transit in respect to commodities carried by rail, road and inland waterways which are either originating from or bound to another member country.

Although the present picture in the region as regards documents to be examined by the customs office requires improvement in the form of simplification, uniformity standardization and streamlining, the actual implementation of the provisions and consequently the speed of traffic have been slow.

The effect of unnecessary delays on the transportation system and the economy as a whole have already been discussed in the previous chapters.

To streamline the various documents which provide the same information is not an easy task as it can lead to loopholes, thereby, reducing the security of the commodities.

The author is of the opinion that the above mentioned risk can be minimized if the region adheres to the guidelines set up by the Standard International Trade Procedures Board (SITPRO), see Appendices.
SITPRO system of aligned documentation offers the flexibility and simplicity needed for developing countries to promote trade among themselves and with the rest of the world.

With the aligned documentation procedure there is quicker production of standard and reliable documents because only one master form which has been carefully checked is used for reproducing several copies on the Rank Xerox Automatic Overlay Device. Due to the basic lay out of the aligned forms, the same information on the master document is transferred on all the copies within a short period.

Improved documentation will offer the region some other advantages as follows:

(a) reduced irregularities, especially delays caused by typing errors;

(b) increased security for the commodities while in transit as the system permits proper documentation;

(c) promotion of rational operations of the various modes of transport (rail, road and inland waterways); and

(d) facilitation of international trade and socio-economic development.
1. Reduced typing delays

The aligned system requires that the master form should be typed while the rest of the copies are to be reproduced on the overlay device.

By allowing only the master form to be typed, the aligned system minimizes the risk of making mistakes or errors. This system is also ideal for saving money which would otherwise have been spent on labour costs in the form of typing, and on the procurement of accessories such as paper, ink etc.

2. Increased security for commodities

While in transit, the security or safety of the commodities is very important. The documents enable those handling to know the nature and destination of the commodities. Correct information usually leads to careful handling, easy identification and fast transit of the commodities.

3. Rational operations of the transport modes

The operations of any transport system is dependent on the availability of the commodities as well as the documents for those commodities.
The quicker preparation of documents means that the vehicles do not have to idle for a long time before loading or unloading.

The presence of documents at the earliest convenient time helps transporters to operate a frequent, reliable and fast service.

4. Facilitation of international trade

Every country has national regulations governing all transportation activities within the jurisdiction. Transit commodities are to comply in so far as documents are concerned with the relevant applicable national law of the country en route. It is upon examining the documents that safer and faster transit is given to commodities. This situation increases international trade, social and economic development.

The aspect of uniform documents in the region will take long to be achieved unless close cooperation is exercised among all the member countries.
FOOTNOTES

(1) A. Murr, Export / Import Traffic Management
    (Cornell Maritime Press, Centrevill, 1979) p 138

(2) A.E. Branch, Elements of Export Practice
    (Chapman and Hall Ltd., London, 1985) p 254

(3) D. Benson and G. Whitehead, Transport and
CHAPTER 5

5.0.0 Summary

Transportation like any other vital economic sector is indispensable to the strategic development process of a country.

The various modes of transport discussed so far in this paper have and will continue to contribute greatly to the economic and social development of Zambia.

As the country is not self sufficient in the production of raw materials and manufactured goods due to the uneven endowment of natural resources, climatic conditions and coupled with the fact that international specifications as well as division of labour allow certain commodities to be produced at a high cost in Zambia, international trading activities are, therefore, the alternative means of procurement of essential commodities which requires transportation in order to meet the supply and demand conditions of the markets.

The impact of the transportation system on the economic and social development process of Zambia is positively great as it encourages the growth of towns, hence grouped settlements and trade activities both within and outside the national jurisdiction.
However, there is need for improved transportation system in Zambia to enable the country increase the volume of traffic and achieve relatively lower charges for conveying commodities to the markets. In addition, this can raise consumption levels and the general social well-being of the populations.

The advantages that transportation can offer the country are limited owing to several constraints which generally take the form of limited financial resources such as foreign exchange allocations for the following purposes:

(a) acquiring inputs such as spare parts for maintenance of vehicles and industrial machineries;

(b) replacement of the aging fleet to optimize haulage activities; and

(c) regular rehabilitation of the transport infrastructure to avoid unnecessary delays to traffic;

Promotions of the above listed and rational management of transportation ventures can lead to economical movement of commodities by offering the following advantages:

(a) fast and frequent transportation services;

(b) low cost transportation; and
In order to improve the availability of financial resources for the transportation sector, Zambia has to identify viable projects that international donors would be willing to finance. Negotiations for foreign aid or assistance in this aspect is a difficult task since international agencies are nowadays interested in projects that can be beneficial in the long term.

In any transportation system, commodities conveyed are accompanied with the relevant documents to verify the legal ownership of the commodities. In Zambia as well as the entire PTA and SADCC regional groupings, transport documents for a single consignment are massive and hence, require streamlining and simplifications in order to improve efficiency of the modes.

Harmonization of transport documents in the region is very important especially for landlocked countries who are extremely distant from the seaport facilities of the neighboring countries. There is a close relationship between the physical movement of commodities and the documents representing the respective commodities since in the absence of documents, the latter can be delayed clearance by port custom authorities.
Speedy delivery of transportation documents particularly the ocean bill of lading to Zambia and the hinterland of the neighboring partners can be a reality if there is implementation of simplified and harmonized documents to suit the economic, social and political environment of the regional countries.

On a suitable model for improved documentation in Zambia and the region, this paper has argued for SITPRO guidelines for simplified and harmonized documentation which have already proved useful in the industrialized countries. The assumption, however, is that the simplified and harmonized transportation documents in the region can lead to facilitation of maritime and surface traffic crossing frontiers, cost savings and increased traffic handled.

Unfortunately, though, the region has unique problems in implementing the policies on simplified and harmonized documents due to the fact that those responsible for the exercise are not often adequately briefed on the conference resolutions.

This barrier to implementation of improved transportation documents in the field of transportation can be curtailed by conducting workshops for those involved in enforcement of policies. The workshops should be organized in such a way as to allow the policy implementation team to freely
discuss ways and means of enforcing regional documents.

In this way unnecessary delays in the implementation of transportation policies can be largely reduced resulting in huge developments in the overall economy and in the social environment.
5.1.0 Recommendations

1. Road Transport

- the Ministry of Transport should strengthen CHL and TAZA by encouraging the personnel to attend short courses within and outside the country in order to update their knowledge in this important sector.

- there is great need to improve the cooperation between the road transporters and the Ministry of Transport through regular meetings to discuss operational problems in transportation of domestic and international trade.

- there should be a government policy covering standardization and improvement of the availability of vehicles and spare parts.

- sufficient allocation of funds to improve the quality of the road infrastructure in rural and urban areas in order to enhance Zambia's import and export traffic.

- the government should implement the proposed road transportation strategy to achieve economic and social development
2. Rail Transport

- the government should maintain the existing cooperation with international agencies in order to obtain financial assistance for rehabilitation and maintenance of the rail infrastructure.

- More wagons and locomotives should be procured to increase the tonnage carried by rail.

- the government should establish a plant for local assembly of rail components and essential spare parts.

- the rail management should attend courses intended to improve utilization of existing capacity design of the vehicles.

3. Inland Waterways Transport

- there is need to develop the infrastructure at the Port of Mpulungu and install navigational equipment along the international traffic lanes to fully exploit the economic potential of the Waterways.

- ZIMCO should improve the efficiency of the port in order to handle increased traffic from the neighboring countries so as to earn foreign currency for Zambia's diverse economic activities.
4. Documentation

- there is need to streamline the number of transportation documents in Zambia and the member states of PTA and SADCC to facilitate traffic.

- the regional member states should simplify the documents with SITPRO guidelines as reference to improve efficiency in the transportation system.

- there is urgent need for harmonization of transportation documents in the region to facilitate traffic at frontiers and consequently promote economic and social development.
REFERENCES

BOOKS


PAPERS


### COMMON SHORT FORM BILL OF LADING

**Shipper's Reference**

**F/R Agent's Reference**

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<td>Gross Weight</td>
<td></td>
</tr>
<tr>
<td>Number and kind of packages</td>
<td></td>
</tr>
<tr>
<td>Description of Goods</td>
<td></td>
</tr>
<tr>
<td>Place of Receipt by Pre-Carrier</td>
<td></td>
</tr>
<tr>
<td>Place of Delivery by On-Carrier</td>
<td></td>
</tr>
<tr>
<td>Vessel</td>
<td></td>
</tr>
<tr>
<td>Port of Loading</td>
<td></td>
</tr>
</tbody>
</table>

**Freight Details, Charges etc.**

**Received for Carriage as above in apparent good order and condition, unless otherwise stated hereon, the goods described in the above particulars.**

**In Witness whereof the number of original Bills of Lading stated below have been signed, and at the time and date, one of which being accompanied by the others to stand void.**

- **Ocean Freight Payable at**:  
- **Place and Date of issue**:  
- **Number of Original Bills**:  
- **Signature for Carrier, Carrier’s Principal Place of Business**:  

III. Common short-form bill of lading
# Non-negotiable Sea Waybill

**Shippers Reference**

**Agent's Reference**

### Consignor

**Name of Carrier**

**Northy Party and Address (leave blank if stated above)**

<table>
<thead>
<tr>
<th>Pre-Carriage by</th>
<th>Place of Receipt by Pre-Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel</td>
<td>Port of Loading</td>
</tr>
<tr>
<td>Port of Discharge</td>
<td>Place of Delivery by On-Carrier</td>
</tr>
</tbody>
</table>

**Marks and No.:** Container No.  
**Number and kind of packages:** Description of Goods  
**Gross Weight**  
**Measurement**

**Freight Details: Charges etc.**

**RECEIVED FOR CARRIAGE as above in apparent good order and condition, unless otherwise stated herein, the goods described in the above particulars.**

**Ocean Freight Payable at**  
**Place and Date of issue**

**[Signature for Carrier; Carrier's Principal Place of Business]**

---

**GCBS SWB 1979**

**Authorized and Licensed by the General Council of British Shipping ©1979**

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**IV Non-negotiable sea waybill**
**DANGEROUS GOODS DECLARATION, SHIPPING NOTE & CONTAINER/VEHICLE PACKING CERTIFICATE**

**DG**

### DG CONTAINER/VEHICLE PACKING CERTIFICATE

<table>
<thead>
<tr>
<th><strong>DANGEROUS GOODS DECLARATION</strong></th>
<th><strong>CUSTOMS REFERENCE STATUS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Xenon Limited</td>
<td>PRE-ENTRY C273</td>
</tr>
<tr>
<td>18 Young Street</td>
<td></td>
</tr>
<tr>
<td>Redhill</td>
<td>Exporter's Reference</td>
</tr>
<tr>
<td>Surrey RH 3HL</td>
<td>Speaker In GALPORT</td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
</tr>
<tr>
<td><strong>COMPONENTS</strong></td>
<td></td>
</tr>
<tr>
<td>Esquillito S.A.</td>
<td></td>
</tr>
<tr>
<td>Avenida Trujillo 809</td>
<td></td>
</tr>
<tr>
<td>Marella de Calamocha</td>
<td></td>
</tr>
<tr>
<td>Burgos</td>
<td></td>
</tr>
<tr>
<td><strong>SOLENT FORWARDING LIMITED</strong></td>
<td></td>
</tr>
<tr>
<td>18 Brooks Road, Seven Elms Trading</td>
<td></td>
</tr>
<tr>
<td>Estate, Southampton SO3 2BR</td>
<td></td>
</tr>
<tr>
<td><strong>RECEIVING DATE</strong></td>
<td></td>
</tr>
<tr>
<td>Name of Receiving Authority</td>
<td></td>
</tr>
<tr>
<td>Espanair</td>
<td></td>
</tr>
</tbody>
</table>

**Packing Details**

- **Name of Container Vehicle**
  - ABCU.312588
g

- **Container Type**
  - 1 X 20FT

- **Manifest & Numbers, No. & Kind of Packages, Description of goods**
  - **INDICATE HAZARD CLASS, UN NUMBER, FLASHPOINT °C**
  - **Hydrofluoric Acid Solution 50% w/w**
  - Class 8, UN no. 1790 in: 200 x 25kg net polythene lined steel drums
  - Name of Shipper preparing this note & tel ref: Xenon Limited 9187348

- **Cost**: 16140.00

- **Shipment to**: Santander, United Kingdom

- **Import Authority**: Port Charlestown

- **Container Details**
  - **ABCU.312588 GGH 6546666 1 X 20FT**
  - **Type**: ABGU.312588
  - **Dimensions & Weight**: 1724 | 17864

- **Precautionary Advice**
  - **Correct technical name. Proprietary names alone are not sufficient.**

- **Container Loading Instructions**
  - **Container must be closed tight to avoid spillage.**

- **Declarant**
  - **Name**: HA Evans, Export Clerk
  - **Signature & Date**: Redhill 2 Nov 1983

---

**V Dangerous goods note**
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emetteur (Nom, adresse, pays)</td>
</tr>
<tr>
<td>2</td>
<td>Destinataire (Nom, adresse, pays)</td>
</tr>
<tr>
<td>3</td>
<td>Lieu et date de livraison (lieu, pays)</td>
</tr>
<tr>
<td>4</td>
<td>Lieu et type de transport (lieu, pays)</td>
</tr>
<tr>
<td>5</td>
<td>Document joint (numéro, date)</td>
</tr>
<tr>
<td>6</td>
<td>Mentione de marchandise</td>
</tr>
<tr>
<td>7</td>
<td>Numéro du paquet</td>
</tr>
<tr>
<td>8</td>
<td>Quantité et condition de paquet</td>
</tr>
<tr>
<td>9</td>
<td>香水 en la marchandise</td>
</tr>
<tr>
<td>10</td>
<td>Poids brut (kg)</td>
</tr>
<tr>
<td>11</td>
<td>Carton (nombre)</td>
</tr>
<tr>
<td>12</td>
<td>Volume (m³)</td>
</tr>
<tr>
<td>13</td>
<td>Instructions de l'expéditeur</td>
</tr>
<tr>
<td>14</td>
<td>Formations d'acheminement</td>
</tr>
<tr>
<td>15</td>
<td>Temps et date de départ</td>
</tr>
<tr>
<td>16</td>
<td>Destinataire (Nom, adresse, pays)</td>
</tr>
<tr>
<td>17</td>
<td>Contenu des déclarations de transport</td>
</tr>
<tr>
<td>18</td>
<td>Signature et cachet de l'expéditeur</td>
</tr>
</tbody>
</table>

VIII, CMR international road consignment note
# INVOICE AND CERTIFICATE OF VALUE FOR EXPORTS TO ZAMBIA

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Value of outside packages/containers</td>
</tr>
<tr>
<td>2.</td>
<td>Labor in packing goods into outside packages/containers</td>
</tr>
<tr>
<td>3.</td>
<td>Insured transport and insurance charges (net)</td>
</tr>
<tr>
<td>4.</td>
<td>Dock and Port charges</td>
</tr>
<tr>
<td>5.</td>
<td>Overland freight</td>
</tr>
<tr>
<td>6.</td>
<td>Overseas insurance</td>
</tr>
<tr>
<td>7.</td>
<td>Details of any other charges relating to delivery of goods</td>
</tr>
<tr>
<td>8.</td>
<td>Duty or taxes paid on selling price</td>
</tr>
<tr>
<td>9.</td>
<td>Repairs (net or full particulars)</td>
</tr>
<tr>
<td>10.</td>
<td>Commission and similar charges (net or full particulars)</td>
</tr>
</tbody>
</table>

**Clauses Printled Overleaf:** The undersigned, being duly authorized in that behalf by the above exporter and having made the necessary inquiries, hereby certify that the information given in the above invoice, including continuation sheets, if any, is made in accordance with the value and origin clauses.

Form 10-840 (continued). Export Forms, Hazardous Materials Labels, etc. can be purchased from Unz & Co., 190 Baldwin Ave., F.O. Box 306, Jersey City, N.J. 07303.