Financial planning and management of ports in Liberia

Njepan J. Bropleh

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WORLD MARITIME UNIVERSITY
MALMÖ, SWEDEN

FINANCIAL PLANNING
AND

MANAGEMENT OF PORTS
IN

LIBERIA— A CASE STUDY

BY

NYEPAN J. BROPLEH

GENERAL MARITIME ADMINISTRATION

1987
WORLD MARITIME UNIVERSITY
MALMOE, SWEDEN

FINANCIAL PLANNING AND MANAGEMENT
OF PORTS IN LIBERIA—A CASE STUDY

BY

NYEPAN J. BROPLEH

A PAPER SUBMITTED TO THE FACULTY OF THE WORLD MARITIME UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF A MASTER OF SCIENCE DEGREE IN

GENERAL MARITIME ADMINISTRATION

The views expressed in this work are those of the author and are not necessarily endorsed by the WORLD MARITIME UNIVERSITY.

Assessed By:
Professor Ahmed Abdel Monsef
World Maritime University
Co-assessed By—
Prof. Captain E.K. Mangels
Economist, Deputy Head of Department.
Department of Maritime Studies, Bremen

1987
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DEDICATION

THIS WORK IS DEDICATED

TO

Celestine, Munah, Nma, Titi,
and

Sijlah.
The role of the NATIONAL PORT AUTHORITY of LIBERIA is an integral part of the transport system responsible for furthering economic and social development in the country. As Liberia's gateway to the world, the NATIONAL PORT AUTHORITY's activities directly influence the extent to which Liberia engages into foreign trade.

The National Port Authority manages three of the four major ports in Liberia, the Freeport of Monrovia, the port of Greenville, the Harper port, with the port of Buchanan being managed by LAMCO, an iron ore concessionaire.

The considerable increase in the size and type of ships do have a great influence upon the facilities of ports in order to promote speedy turnaround. Technological changes in types of equipment and working facilities do influence the design and flexibility of port services. Systems of application in terms of efficiency and productivity need to be more seriously considered. The variety of methods by which different types of cargoes are handled and distributed places an emphasis upon the need for closer co-operation between ports and their users. Management expertise and practice need to be of a high administrative order. The design and layout of ports to provide adequate and efficient services to meet shipping developments require effective organizational and administrative planning.
Technological developments in equipment and control systems, commercial and economic/financial considerations, changing labour patterns, and types and sizes of ships, all are subject to international and national competitiveness and create their own influence upon the position of our ports and their effectiveness. It is not a question of efficiency, but effectiveness which is more of a question of our ports being able to do what they are best suited for.

Ports are capital-intensive and require considerable financial outlay to provide the necessary facilities that are needed to ensure efficient services to the port users.

It is for these reasons and many others that this research work attempts to examine the financial aspect and structure of the NATIONAL PORT AUTHORITY, an autonomous body that manages our ports. This work took a closer look at port investment appraisal, financial planning and management of the NPA, and the financial implication of management decision making process. Incorporated into the work are suggested ideas as to how best the NPA can reap better financial benefits from port investments. It is hoped that the findings contained in this research paper will be of some benefit to the NATIONAL PORT AUTHORITY. Indeed, the incorporation of some aspects of the administrative machinery, thereby improving the financial situation of our ports.
ACKNOWLEDGEMENTS

There is an old proverbial adage that says "NO MAN IS AN ISLAND". Certainly indeed, this proverb has great significance for me because this work could not have been possible without the generous and tremendous assistance rendered to me by some renown personalities and organizations. In this public manner, I do want to express my deepest gratitude and appreciation to these individuals and organizations for their invaluable contributions towards the successful completion of my training program at the WORLD MARITIME UNIVERSITY to pursue a master's degree in GENERAL MARITIME ADMINISTRATION. These individuals and organizations have left an indelible mark on my life and they will be remembered. They are:

1. The Government of the Republic of Liberia for their secondment of me to WMU.

2. The NATIONAL PORT AUTHORITY for recommending me and for their continuous support during my study leave.

3. The CARL DUISBERG GESELLESCHAFT FOUNDATION for underwriting the financial expenses during my stay at the WORLD MARITIME UNIVERSITY.

4. Professor Monsef, my course professor for his guidance, advice, patience, and understanding.

IV
5. The Rector and Vice Rector for their invaluable assistance in solving my problems.

6. Mr. Richard Poison, the Librarian for his assistance in collecting my research materials.

7. Mr. Mats Johnsson for ably handling my student affairs problems.

8. The Director of Statistics at the Ministry of Planning, Republic of Liberia, Mr. A. Nimle Bropleh for supplying me with statistical data.

9. The port management of the Port of Greenville for generously assisting me during my visit to that port.

10. The port manager of the Harper Port for his cooperation during my visit to his port.

11. Celestine G. Dueh for her love, encouragement, understanding, the genuine care given the kids, and the able manner in which home affairs were handled during my absence from the country.

12. The Planning Department of NPA for supplying me with needed information.

13. The administrative staff and employees of the WORLD MARITIME UNIVERSITY for their help rendered me.
14. All who, in one way or the other, contributed to the successful completion of my study at the WORLD MARITIME UNIVERSITY.
FINANCIAL PLANNING AND MANAGEMENT OF PORTS IN LIBERIA
-A CASE STUDY.

CHAPTER I

INTRODUCTION—OBJECTIVES

Liberia has two deepwater ports, the port of Monrovia and Buchanan port, and two shallow water ports- the Greenville port and the port of Harper.

Modern port installations in Liberia started with the completion in 1948 of the port of MONROVIA under a United States —Liberia Lend-Lease Agreement growing out of the strategic needs of World War II.

The management of the port was entrusted to the Monrovia Port Management Company formed by the principal users of the port, with representation from the Government. Up to 1964 the United States Government, through its States Department, retained certain rights and obligations pertaining to the approval of management actions affecting financial matters, particularly the disposition of surplus revenue out of which amortization of US construction loan was to come.

The management contract vested wide latitude in the operating company to select its personnel, to initiate port charges, regulations, contracts and agreements with users of the port. Technical and Administrative personnel were brought in from abroad, with one position (Assistant to the port Director) being reserved for a Liberian. Subsequent to the Monrovia Port Management Company, the mana-
gement of ports in Liberia was entrusted to a public corporation, the National Port Authority, managing the ports of Monrovia, Greenville, and the port of Harper, while the Buchanan port is managed by the Liberian-American-Swedish Minerals Company—(LAMCO JOINT VENTURE OPERATING COMPANY). AN ACT repealing and adapting chapter six of the Public Authorities Law was enacted and approved on May 12, 1970. This 1970 Legislative enactment transferred the management functions from the Monrovia Port Management to the National Port Authority. Over the years, the port of Monrovia, which is the principal Liberian port, has been maintained and expanded to keep pace with increased usage, and changing technology with financing mainly from internal revenues and surplus balances on deposits. Greenville port and the port of Buchanan are the by-products of concession agreements where port facilities were a necessary adjunct to the marketing abroad of minerals and soil products. The port of Greenville in Sinoe County about ninety miles northwest along the coast from Harper was built to handle banana ships to serve a German fruit company. The banana project failed and was substituted by rubber with financial aid contributed by the West German Government. Presently, the port handles mainly forest products for export. The purpose of this study is to examine the financial planning and management policies of the National Port Authority in Liberia, examine the short-comings, and how best these short-comings can be remedied to contributed more meaningfully to the economically development of Liberia. It is a known fact that efficient ports play a very important role in the economic development and progress of maritime countries. Inefficient ports, on the other hand are a major drain on the economies of countries especially those of the developing economies where foreign exchange problems are acu-
te, and Liberia is no exception to this latter problem. The study will give an overview of Liberia's International trade with a brief analysis of Liberia's foreign trade. It will touch on the role of maritime transport and the vital role of the port industry in the chain of maritime transport. The need for a longterm national port development strategy cannot be overemphasized for a maritime country like Liberia. The study will therefore look at Liberia's longterm port development strategy, the role of Liberia's ports in her National Economic Development Programs. The importance of planning port investments with a view of making a healthy rate of returns on investment will be stressed. It is the intention of this study to examine the appraisal of port investment methods currently applied by the National Port Authority and make suggestions as to how best these methods can be improved upon to get the best returns on our port investments. The financial objectives of the ports will be examine and suggestions provided as to how these objectives can be met. The role of the National port Authority's management will be highlight and management problems at the nation's port authority will be sharply focussed with suggested methods of to tackle these problems. Budgeting, a systematic and formalized approach for accomplishing the planning, coordination, and control responsibilities of management, will be dealt with extensively as it is done at the National Port Authority, its importance stressed and recommended methods to improve the system. For it is thru budgeting that the long-range objectives of the ports are developed and applied, specific goals of the National Port Authority are identified, long-range profit plan is developed in broad terms; a short-range profit plan detailed by relevant responsibilities (responsibility centres); a system of periodic performance reports,
detailed by assigned responsibilities with follow-up procedures. Our budgeting system, therefore, must focus upon a rational and systematic approach to MANAGEMENT BY OBJECTIVES. These and other management related problems will be handled in this study. It is hoped that some, if not all, of the suggested recommendations will be utilized, so that the ports may play their proper role in the economic development of Liberia.
CHAPTER II

SEABORNE TRADE OF LIBERIA
AN OVERVIEW

Foreign trade plays a very significant role in the Liberian economy, rendering it highly susceptible to changes in international trade. The importance of foreign trade to the Liberian economy can be seen in the relationship of exports and imports to Gross Domestic Product (GDP).

Between the period 1973 to 1976, export earnings per annum averaged 66% of GDP at constant market prices, and expenditure on imports 51%. During 1977 to 1980 export earnings averaged 54% of GDP, whilst expenditure on imports amounted to 50%. These relative magnitudes indicate very clearly that the economy is highly sensitive to changes in the performance and prospects of foreign trade are inseparable from the performance and prospects of the overall development of Liberia. Between 1981 to 1983, the import-oriented sector earnings accounted for 35.9% of GDP at current prices, whilst export-oriented earnings accounted for 58.5% of GDP. Expenditure on imports accounted for a significant share of the Gross Domestic Product, amounting to 56.3% at market prices. We can therefore conclude that the performance of the Liberian economy is inextricably linked to international trade. It is a known fact that Liberia's balance of trade has traditionally enjoyed a surplus, but this trend has experienced a steady decline between 1982 and 1983 due to the low demand of Liberia's major exports and the depressed international economic situation. Between 1982 and 1983, exports earnings dropped by 10.4%, along with this is a
corresponding drop in the value of imported goods during the same period, reflecting the economic recession facing the country.

2.1 TERMS OF TRADE

The performance of the export sector must be assessed against the background of world economic developments in recent years; which has adversely affected the demand for Liberian exports. The prices of nearly all of Liberia’s major primary export commodities declined on the International Market. The appreciation of the US dollars which is Liberia’s medium of exchange, vis-à-vis other major currencies rendered Liberia’s export more expensive and less competitive during the period under review. High interest rates have also caused the western countries to reduce inventories thus generating a low demand for export commodities, coupled with this phenomena is the technological advancement in fiber optics and plastics which also reduced the demand for iron ore and other heavy industrial metals in Western industrialized countries. This was exacerbated by the commodity glut on the world market caused mainly by developing countries’ pressing need for debt repayment and economic development which has made it difficult to reduce their output of export commodities despite the pricing problems. Competition among producers of primary commodities also contributed in exerting downward pressure on prices.

The major factor responsible for the deterioration in export earnings was the decrease in iron ore earnings, which accounts for well over half of total export earnings. Export earnings in iron ore declined by 14% in 1983 as compared to the 1982 level. This seemingly, could be
Rubber, the second major export commodity has improved considerably during 1983, and earnings from rubber increased by 36.9% as compared to the 1982 performance. The up-turn in rubber earnings is linked to the simultaneous increase in both the unit price and volume exported. Consequently, rubber's share of total export earnings increased by 5.9 percentage points, from 11.2% of total export earnings in 1982 to 17.1 percent in 1983. Logs, the other major export commodity continued to perform poorly during 1983. The value of logs dropped by 24% in 1983. Since 1980 both the value and volume of logs exported declined by an annual average rate of 5.2% and 28.1% per annum respectively. The other commodities perform poorly except cocoa, which experienced a 30.7% rise in value during the 1981-1983 period. See table 1 for analysis of major export commodities. As can be seen from table 1 below, export earnings increased by 9% in 1980 as compared to 1979. However, it took a downward trend between 1981 and 1983.

2.2 IMPORTS

The Liberian economy has a high propensity to imports due to its great dependence on a wide variety of imported commodities. This dependence is reflected in the very limited number of basic necessities manufactured in the domestic economy, and the almost total absence of locally manufactured luxury and investment goods.

The pattern of Liberia's imports, when compared to exports, is much more diversified and it reveals the
total dependence of the economy on imports, not only for supplies of raw materials and equipments, but also for a wide range of consumer goods.

During the years 1977-1980, consumption goods averaged 25.7% investment goods 21.9% and raw materials 52.4% of total imports. In 1980, Liberia's international trade amounted to 1.1 billion dollars, and imports accounted for about 545 million dollars.

2.3 GENERAL CARGO

The import quantities of general cargo commodities handled thru the three ports of the National Port Authority amounted to 1.1 million metric tons in fiscal 1981/1982, 829,437 metric tons in fiscal 1982/83 and it increased to 1.2 million metric tons in 1983/84 fiscal year. This increase is mainly due to increase imports of consumption goods. It is expected that the trend will continue, for a major percentage of expenditure on imported food falls to the share of rice. Liberia will continue to import rice for the foreseeable future.

Liberia, being a developing country, with no broad industrial base, export mainly raw materials such as coffee, cocoa, rubber, logs/sawn timber, and palm products as her general cargo exports. During 1981/82, 1982/83 and 1983/84 fiscal years, 40% of the general cargo handled through our ports were exports.

2.4 DRY BULK

The export quantities of iron ore, by far the most important export commodity of Liberia, has taken a downward
trend due to the recession on the world steel market. During the fiscal years 1981/82 8.9 million metric tons were exported, while 8.1 million tons were exported in 1982/83 fiscal year and in 1983/84 7.9 million tons were exported. However, it is hopeful that if successful agreements have been reached for the operation of the Wologisi mine, then export may take an upward trend. These figures exclude LAMCO's export.

2.5 LIQUID BULK

The quantities of liquid bulk handled via the ports of Liberia declined considerably between 1977 and now due to the shutdown of the Liberia Petroleum Refinery Company. Refined petroleum products are being imported which reduced the amount of liquid bulk handled via the Liberian ports from six hundred twenty-six thousand in 1976 to four hundred and seventy-eight thousand in 1981/82 and two hundred seventy-nine thousand metric tons in fiscal 1982/83 respectively. It is expected that this trend will continue until negotiations are completed for the re-opening of the Refinery.

FOREIGN TRADE FORECAST

2.6 RUBBER

Rubber production which has been stagnated especially due to replanting and the low price of natural rubber, has begun to move on an increasing trend. With the upward trend of the price of natural rubber, and the extensive replanting programs not only of the big rubber concessio-
naires, especially Firestone and Guthrie, but also of the Liberian-owned rubber farms, supported by the Government and the World Bank, give reasons to believe that the rubber production will continue to increase.

2.7 COFFEE

The production and export of coffee is expected to take a modest upward trend due to the considerable increasing world market prices. It is expected that this trend may not continue due to a stabilization in the world market prices for coffee, and also due to the fact that farmers tend to prefer the more remunerative and less labour demanding cocoa to coffee, only slow expansion is expected within the coming years.

2.8 COCOA

Much more intensively than the coffee price, the world market price for cocoa increased substantially within the last few years. Nevertheless, the expected export quantity is not expected to increase much.

2.9 SCRAP IRON

The export of scrap iron within the last years turned out to have a development- with fluctuations in both directions, since, at the moment, no changes of forecast factors can be observed which might affect the scrap iron export, the future export may probably continue to increase.
The primary objective for the creation of the Industrial Free Zone by the Government of Liberia is to encourage and promote foreign trade as a means of strengthening Liberia's export trade and foreign exchange position, of hastening industrialization, of reducing domestic unemployment and of accelerating the economic development of the country. It is envisioned that the Liberia Free Zone Authority will be a fully equipped, industrial estate where capital equipment, raw materials, spare parts and supplies may be stored, processed, assembled and manufactured into finished products for export. According to the Liberia Free Zone Authority's development plans dated 1979, five manufacturing companies were to have started operations in 1979, ten further factories were to be completed in each subsequent year until a total of sixty factories to be completed by 1985, reaching 100% operational capacity. The sad truth is that things have not worked as planned and the Free Zone Authority is still struggling to get itself operational. The export and import quantities of commodities to and from the Free Zone depend on the kind and number of companies established and working. The optimistic forecast by LIFZA of 20,000 revenue tons export in 1979 and an increase of 50% until the operational year of 1985 has not been met. This is due to strong competition with other large ports where free zone areas are planned or already in operation, as in Abidjan, the lack of adequately trained manpower, the instability factor, and the lack and insufficiency of further important conditions for the operation of a free zone lead to a considerable lower forecast for the free zone.
2.11 MISCELLANEOUS CARGO

The export forecast of the relatively unimportant general cargo is low. This is due to the general economic development of the country as reflected in the Gross Domestic product, and the general development trends of the Liberian export.

2.12 DRY BULK

Iron ore is by far the most important export commodity of Liberia. The peak of the Liberian iron ore export was an average of 25.4 million tons in 1973 and 1974; then the export took a downward turn in response to the slump experienced in the world iron ore market as a result of the world economic depression on the steel market.

Liberia, one of the largest iron ore producing countries in the world, could be well placed to maintain or improve her share of the international iron ore market in the 1990's if decisions are taken soon to bring one or more of the Wologisi, Bie and Putu deposits into production. All three new ore deposits were being investigated by foreign mining companies, but investigations and negotiations have been tabled due to further slump on the world steel market. It is hoped that with improvement in the world economies, these iron ore deposits would be extracted for export. With the huge deposits of iron ore, there is an optimistic forecast for the export of iron ore.
2.13 FOREST PRODUCTS

For the past few years, the export of logs and sawn timber decrease due to the decrease in the price of logs on the world market. It is expected that with the world economies gradually improving, the export of logs will also increase.

IMPORT

GENERAL CARGO

2.14 RICE

The importation of rice which stagnated between fifty thousand to sixty thousand metric tons in the late seventies, took an upward trend in the nineteen eighties, with the country importing eighty-one thousand metric tons in fiscal year 1984/85. Although the Government of Liberia made considerable efforts with crash programs for the production of swamp and upland rice in order to be self-sufficient in the production of Liberia’s staple food—rice. The production of rice has not reached the desired level, and therefore, it is expected that Liberia will continue to import a major part of rice she consumed.

2.15 FREE ZONE GOODS

The preconditions and general assumptions for the
forecast of import quantities in the industrial Free Zone of Liberia were mentioned in the export forecasts. It is not expected that larger import quantities will be imported due to the reasons mentioned supra.

2.16 MISCELLANEOUS GOODS

The import quantities of miscellaneous general cargo, including petroleum products amounted to six hundred and sixty-six thousand metric tons in fiscal year 1983/84 and seven hundred and eighty-three thousand metric tons in fiscal 1984/85. There is a considerable increase in fiscal 1984/85 as compared to fiscal 1983/84. It is hoped that a continuous increase is expected due to the expected economic recovery of the country as predicted by the Planning Ministry. It is assumed that there will be annual growth rate of about 2% in the 1990's.

2.17 CLINKER AND BENTONITE

The Liberia Cement Corporation, the only producer of cement in Liberia, and therefore, the only importer of cement, forecasted that beginning 1984/85, there would be an annual increase of about 7.5% based on the 1983/84 import quantity of one hundred and one thousand metric tons. The import of bentonite depend on the iron ore production, since it is almost entirely used for the production of iron ore pellets. The import of bentonite therefore, is based on the forecast of iron ore production and the expected degree of pelletization.

The development of Liberia's foreign trade is associated with, the development of seaports, an integral part of maritime transport. The fore-going analysis of Liberia's
foreign trade and the forecasted trade stressed the importance of maritime transport of which the port is a hegemoneous part.
### Value and volume of major exports

( Value in $ million )

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<td>290</td>
<td>19.9 mt</td>
<td>310.2</td>
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<td>20.7</td>
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<td>rubber (million kilogram)</td>
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<td>298.6</td>
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<td>logs (cubic feet)</td>
<td>50.1</td>
<td>322.5</td>
<td>65.3</td>
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<td>cocoa (million kilogram)</td>
<td>11.0</td>
<td>3.4</td>
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|                  | 505.6      | 554.7       | 501.2      | 451.6       |
Table 2.2 MONROVIA traffic in metric tonnes.

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<td>-</td>
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<td>cocoa</td>
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17
includes all dry bulk.

sources: 1981 / 82, 1982 / 83 and 1983 / 84 annual reports of the
NATIONAL PORT AUTHORITY of LIBERIA.

Liquid bulk

The quantities of liquid bulk handled via the ports of LIBERIA decreased considerably between 1977 and now due to the shutdown of the LIBERIAN PETROLEUM REFINERY COMPANY. Refined petroleum products are being imported which reduced the amount of liquid bulk handled via ports from hundred and twenty six thousands in 1976 to four hundred and seventy eight thousands in 1981 / 82 and two hundred seventy - nine thousand metric tons in fiscal 1982 / 83 respectively. It is expected that this trend will continue until negotiations are completed for the re-opening of the refinery.

See table 2,3,4 and 5 for LIBERIA's trade analysis between 1981 an 1984.
Total International Trade
Import / Export

1000 Metric Tons

Year
Passed through the port

78-79 79-80 80-81 81-82 82-83 83-84

15000
10000
5000

Imp/Exp.
3.2 MONROVIA PORT

The growth of LIBERIA's foreign trade and the associated economic growth is the result of the construction of modern deepwater ports in the country. LIBERIA's rapid economic development in the post WORLD WAR II era can rightly be associated with the completion, in the late 1940's, of the freeport of MONROVIA. This can be seen against the background that heavy equipment for infrastructural development could not be handled at the open roadstead ports that were handling LIBERIA's maritime trade.

Iron ore had been discovered at BOMI HILLS in the early 1930's but could not be mined due to the lack of a modern deepwater port. The completion of the port of MONROVIA, therefore served as impetus, because, heavy equipments for the building of railroads, and service roads could now be imported via MONROVIA, and the subsequent exportation of iron ore thru the port of MONROVIA.

The availability of a modern port in MONROVIA led to the exploitation and operation of the first iron ore mine in BOMI HILLS. This mine concession created a vibrant economic community in the BOMI HILLS area and its environs. The B.F.GOODWICH, a rubber plantation company, due to its proximity to the railroad and service road connections also benefited from the port development. Assured of road connection and a port via which exportation could take place, the B.F.GOODRICH started massive plantings of rubber. Together these two companies brought tremendous economic life to this part of the country, thereby improving the economic life of liberians. Firestone plantations company, a subsidiary of FIRESTONE.
RUBBER AND TIRE COMPANY, also utilized the port facilities at MONROVIA and expanded operations because of the road connection to the port of MONROVIA. With B.F. GOODRICH and FIRESTONE in rubber productions, rubber then became one of LIBERIA's major foreign currency earners.

It can rightly be said that the completion of the MONROVIA port set into motion LIBERIA's rapid economic development process and other events leading to LIBERIA becoming one of the world's major iron ore exporting countries. These developments also meant that MONROVIA's economic tenacles were now expanding to the north and the north west of the country. The first export of iron ore in 1951 began the next stage, after rubber, of LIBERIAN economic development, the iron ore era.

It is generally recognized that all requirements of development opportunities existed in LIBERIA, but adequate transport facilities had been the major problems. This problem has now been minimized thru the constructions of ports in the country and their wider hinterland connections.

3.3 BUCHANAN PORT

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Port development in BUCHANAN is associated with the massive high grade iron ore deposits discovered at MOUNT Nimba. The LIBERIAN AMERICAN SWEDISH MINERALS company ( LAMCO ) started construction of a deepwater port in BUCHANAN as a result of this discovery, and was involved, simultaneously, in three major projects, the port project, construction at the mine site, and the construc-
tion of a 267 km of rail line and service road connecting the mine with the port. The magnitude of LAMCO's projects had a profound impact upon LIBERIA, both socially and economically. The coming into operation of LAMCO's mines and the BOMI HILLS mine, iron ore replaced rubber as the principal export by value and YEKEPA, the mine site town became one of the largest cities in LIBERIA as a consequence.

The impact of this new multipurpose port on the agricultural export sector had made itself felt even earlier as well. The construction of the railroad required the building of a service road, and this road became the lifeline of the large LIBERIAN AGRICULTURAL company's rubber plantation, 45 km inland from the BUCHANAN port which started massive plantings as a consequence of the completion of the port of BUCHANAN. To the east near NEWCESS and about the same distance from BUCHANAN port, a large palm oil plantation operation. A port at BUCHANAN was in response to the need to export iron ore from NIMBA the port in turn influenced the location decisions made in some export agricultural sector. All have contributed to the economic, social and infrastructural development in the area, development hardly envisioned before the construction of the port.

The late 1950s saw other economic changes evolving on the LIBERIAN landscape, one which was destined to have a profound effect upon the country and its infrastructure was the extraction of timber. Approximately fifty percent of the country was at the time still a virgin forest, particularly in the east and northwest, there were few roads into those areas and timber operations were restricted to where there were road connections to the port. Thus it was that the BOMI HILLS project also stimulated
a sawmill for local needs, and later a large-scale operations for the exportation of logs. To the north-east of MONROVIA, along the axis of LIBERIA's principal trunk road and its extension to the south-east, from GANTA, timber firms were becoming more active. BUCHANAN due to its road connections to these timber concession areas, because a major timber exporting port. Not only were the port and railway stimulating development in an unforeseen sector, it also increase economic activities.

The timber yard and rail siding at tropic, NIMBA county, have given to this strategic location. The potential for stimulating a new dimension in LIBERIA economic development. Only 19 km from the important road-junction town of GANTA, which is the gateway to south-east LIBERIA, and 88 km and 61 km, respectively, from the county administrative and important regional towns of GBANGA and SANIGUELLIE, its rail connection to BUCHANAN and the port's commercial quay makes it an ideal location for an up-country fuel-distribution centre. This has eliminated the long overland haul to and from MONROVIA, where the LIBERIA PETROLEUM.REFINERY company is located. There is no question that transhipment fuel from MONROVIA to BUCHANAN by ship and then inland by rail is cheaper than the all-road-route.
3.4 GREENVILLE PORT

Even before the 1959 decision to build a port in BUCHANAN (1961–3) there had been port development in GREENVILLE. The construction of this port was necessitated by the export of bananas. The AFRICAN FRUIT company, which started this banana project, had its financial backing primarily from HAMBURG interests. Because of its HAMBURG connection, AFC was able to attract WEST GERMAN government assistance in developing port facility at GREENVILLE necessary for the export of its production. Construction of the port began in 1955 and this year might also be considered another benchmark for WEST – GERMAN – LIBERIAN relations for it was the beginning of a long – term role by WEST GERMANY in the infrastructural development of south – east LIBERIA.

Unfortunately, the banana trees that were planted had been wiped out by PANAMA disease at the completion of the port. The plantation was converted to rubber plantation and until 1967, aside from some general cargo imports and agricultural exports was the only commodity of consequence handled at the port. Technical assistance to the government’s FOREST AUTHORITY was also provided by the WEST GERMAN government, and there was awareness of the enormous timber resources in GREENVILLE’s potential hinterland. With a long – term financial credits from WEST GERMANY, a major road construction project was underway by the Government which in 1967 linked GREENVILLE to SWEDRU, then the centre of LIBERIA’s timber activity due to its road link to MONROVIA. This new road link between the port town of GREENVILLE and the timberland OF SWEDRU opened for development some of the best timberlands. It led directly
to GREENVILLE's emergence as LIBERIA's primary timber exporting port, and because of the nature of this industry, to the town becoming the principal destination for air traffic.

3.5 HARPER PORT

The port of HARPER is the smallest of the four deepwater ports in LIBERIA. As timber operations were spreading throughout the east and south-east, it was but a matter of time before the extreme south-east portion of the country was carved into timber concessions. Thus the need for a port was evidenced as the result of these timber concession and the operation of a major rubber plantation owned by firestone. However, due to her size and consequently her hinterland limitation, the HARPER port had not been of much economic benefit to the people in the area.

The expansion and rehabilitation of the HARPER port, will therefore have a definite economic and social impact on the lives of citizens living in the extreme southeastern LIBERIA. What is committantly important in south eastern port development is the road network in the port's hinterland. Government should therefore improve HARPER port hinterland's road connection in order to attract other port related economic activities.

It is obvious from the discussions above, that the existence of a seaport provides an enormous impulse for the economic development of LIBERIA. However, it must be realized that ports are no ends in themselves, they have only derivative economic activity. Ports will flourish
only as a result of the import or export oriented trade and industry in their immediate or remote hinterland with proper road connections.

Many of LIBERIA's ports stagnated in the past few years, not only of management problems, but because they are subject to the influence of economic activities in general which they cannot influence. While it is true that generally speaking our ports must accept the consequences of technological and politico-economic developments as they made themselves felt, instability and not-well-planned political decisions lower economic activities and thereby adversely affecting port productivity.
CHAPTER IV

NATIONAL PORT POLICY

Because of the role which seaports in the LIBERIAN economy have had in attracting industry, and because of the fact that seaports have become important growth centers. The mainstay of the LIBERIAN economy, there is a tendency on the part of our national government to intervene in port policy. Seaports are the crossroads of various partial policies, and consequently seaport policy is a complex business which normally involve every aspect of the LIBERIAN economic policy. Agricultural, social, energy, transport, economic and fiscal policies, all affect the seaports.

The government of LIBERIA has set broad policy guidelines for the development of ports in the country. Sea transport is vital to LIBERIA's foreign trade. Accordingly, the policy and programs to be pursued will be designed:

(1) To provide efficient and cheap outlets for agricultural and mineral commodities of the nation. This encompasses the following elements:
   a) Ensuring safe resource base and cheap water-borne commerce for domestic and international trade.
   b) Promoting and stimulating regional dispersion of industries.
   c) Improving investment and employment opportunities.
In order to put these goals into effect, the government created an autonomous public corporation - the NATIONAL PORT AUTHORITY, as the central policy making authority and gave her wider scope in LIBERIAN port development.

4.1 THE ACT

An act creating the NATIONAL PORT AUTHORITY empower her to carry out the following in addition to other activities:

1) To plan design, construct and engage in the development, maintenance and operation of all ports within LIBERIA, to carry out this function, the NPA has been given the greatest degree of financial and administrative autonomy.

2) To institute a comprehensive system of tariffs and charges for the services and facilities it provides.
   a) NPA shall levy and collect said tariffs and charges without granting any exemption to any person, department or agency of government.
   b) NPA shall ensure that the rates fixed for said tariffs and charges are adequate to provide sufficient revenue to cover operating expenses, including adequate maintenance and depreciation, interest borrowings if any; and to provide cash funds for debt amortization to such borrowings; to provide adequate working capital and to set aside reasonable reserves for contingencies and for financing a reasonable part of the cost for future expansion including replacement of assets.

According to the act, the NATIONAL PORT AUTHORITY shall have a BOARD, an EXECUTIVE OFFICER and other officers and
staff to perform such duties as NPA may determine.

(1) All powers of NPA shall be vested in the BOARD consisting of 11 members. They shall include
   a) Six representatives of the government.
   b) Four representatives of a cross-section of the port users.
   c) One representative of labour.

The representatives of the government on the BOARD shall be ex-officio.

(2) The BOARD shall outline the general policy of the NATIONAL PORT AUTHORITY.

(3) The BOARD shall select the EXECUTIVE officer who shall be the highest executive officer of NPA, and on such terms and conditions as the BOARD may think fit.

(4) The EXECUTIVE officer shall be responsible for the conduct of the general operations of NPA, and for that purpose shall exercise all powers delegated to him by the BOARD.

4.2 OBSERVATIONS ON PORT POLICY

It is fair to say that the creation of the NATIONAL PORT AUTHORITY was in the right direction and the wider scope given her in the port policy making process, should be commended. The creation of the NATIONAL PORT POLICY as the central policy making agency has many advantages. These include but not limited to:

(a) A unified plan for all ports in the country.
(b) The authority is able to concentrate and specialize in the optimum location of capital and in assessing the different projects for ports development.
Standardization of port charges, port practices and procedures.

Enables the authority to manage the three important tasks of training, research and statistical information on wider and advance scales.

This policy of creating a port authority has two fundamental aims:

1. To reduce ship turn-round time.
2. Operation of the port on commercial basis.

4.3 TURN-ROUND TIME.

In order to reduce the turn-round time in our ports there is a dire need to increase port productivity through more effective administrative methods and developing the quality of our labour. It is a fact that great time is lost complicated customs procedures and documentations which must be simplified and made faster. For the port to be able to meet the requirements of increasing traffic the physical capacity must also increase parallel to the traffic increase.

The objective of the total transport system is to minimize the real cost of moving materials. To achieve this, it is necessary for the optimization of the transport system system. Generally speaking, as ships increase in size, the cost per ton of goods transported by sea decreases. Conversely, the cost of ships’ time in port increases unless matching capacity is provided along with efficient and effective management techniques. Thus, if a ship is held in port due to inadequate facilities and or inefficiency,
total costs start to rise. However, if the NPA attempts to provide all the capacity required for the biggest vessel, the port and cargo handling costs may, as a result of port investment, begin to increase rapidly than the ships time is decrease as a result of port improvements. It follows therefore, that while further economies of scale can be obtained from larger ships, it would require increasing port handling by up to perhaps as much as 50% to maintain turnaround times.

Developing and or increasing patterns of trade do not necessarily imply larger ports. The converse may be the case. Roll-on/roll-off services can substantially increase the volume of traffic moving over a berth in a given period of time. Similarly is this so with container movements, while the developments in cargo packaging gives to similar results. It is the provision of adequate facilities and efficient services that will reduce ships’ time in port and measure our ports’ effectiveness. Dr. Richard Goss, Professor of Maritime Economics at the University of Wales’ Institute of Science and Technology states and I quote,

"general cargo liner spends on an average about 60% of its time in port and 40% at sea and if the proportion of the time spend in port could be reduce to 20% the cost of sea transport in a cargo liner could be reduced by 18% and 35% depending on route length." 17

The point to be borne in mind is that both turnaround time and handling costs can be substantially reduced by investments in modern port facilities with sophisticated handling techniques and efficiency.
4.4 COMMERCIAL OBJECTIVES

The NATIONAL PORT AUTHORITY has been given a free hand by the act to manage her financial resources and operate with a profit. This must be seen against the background that the NATIONAL PORT AUTHORITY must be in a strong financial position so as to be able to continue her expensive port development in line with technological advancement in the shipping world.

With the board policy guidelines by the government as promulgated in the ACT creating the NATIONAL PORT AUTHORITY, one would expect the minimum of intervention by central government in the management of the port authority. One would expect that the BOARD members would be appointed as stipulated in the ACT. One would also expect that the EXECUTIVE officer is selected by the BOARD. Indeed, the BOARD seems not to be appointed in accordance with the provisions of the ACT; and the EXECUTIVE officer and senior officers are not appointed in the accordance with the act. Political considerations come to play in both the appointment of the BOARD EXECUTIVE officer and senior officers. The selection of the BOARD members, the executive officer and senior officers of the AUTHORITY play a decisive role in the effective and efficient management of the port authority. The statute in creating the NATIONAL PORT AUTHORITY, provided the AUTHORITY with sufficient legal provisions aimed at the avoidance of political and bureaucratic bottlenecks.

If the NATIONAL PORT AUTHORITY is to remain commercially and economically viable then intervention by the central government in the operation of ports must, of necessity,
be kept at its barest minimum. The statutory provisions of the ACT are sound and with many advantages, it is but fair to say that implementation of these provisions should enliven to satisfy the requirements of the policy as contained in the legislative enactment. For non-adherence may destroy the sound commercial base, consequently, making our ports non-competitive in the WEST AFRICAN region.

4.5 NATIONAL PORT PLAN - WHY PLAN?

Adequate and efficient ports play an important part in the economic life of a nation and improves a nation's relationship with other states, because of the volume of international trade that is carried by sea, the port is an important and fundamental part of LIBERIA’s transport investments. The construction of primitive ports are of past times, for as society became more complex, the greater is the cost of its services and infrastructure so that the problem and cost of providing and maintaining port facilities today still remains an important factor in delaying or preventing port improvements.

In spite of this problem, it is indeed, important to invest sufficiently in ports, to serve the transport needs of LIBERIA so that our economy, and through this the living standards of our citizen, can be improved. The national importance of adequate port facilities lies in the transport economics which we can achieve, thereby reducing the cost of imports and increasing the competitiveness of our exports. The national and regional effects of an efficient well planned system are therefore considerable and because of the growth of international.
industry,
sound well located ports can attract developments which
will make fundamental changes to the prosperity of its
hinterland.

The effect of the high capital outlay for port investment,
its importance to our national economy and the need to
obtain the best results from the allocated resources,
make the proper planning of our ports one of the most
important aspects of our government's development strategy.
The need for planning extends into every faucet of port
development from the original choice of locations and
extent of investment, to operation, future expansion,
manpower development and equipment planning.
The planning of ports in LIBERIA is entrusted with the NATIONAL PORT AUTHORITY, an authority created by an ACT of the NATIONAL LEGISLATURE of the REPUBLIC OF LIBERIA, approved May 12, 1970. This autonomous body entrusted with management and operations of ports, has the added responsibility of designing a national port development plan.

In the second National-Social-Economic Development Plan of Liberia, the port authority is required by Government to implement national port policy by designing plans to improve upon the present port facilities, undertake training programs for port personnel and overall port studies to determine the economic feasibility of expanding some of the ports and their facilities, and construct new ports as the needs arise. It is also embodied in government policy that the possibility of providing sea transport for the movement of people between the country’s four ports that lie on the 350 miles coastline. Based on these requirements, the National Port Authority formulated a long-term port development plan that calls for the:

1. Rehabilitation and Extension of the Freeport of Monrovia with an estimated capital outlay of 51.2 million dollars.

2. Purchasing of equipment estimated to cost
1 million dollars for the port of Greenville.

3. Rehabilitation of the port of Harper and south-eastern port studies estimated to cost 8.6 million dollars.

The financing and implementation of these projects call for an initial estimated capital expenditure of 60.8 million dollars. Considering the scarce resources of the country and the competing developmental demands made on these resources, it can clearly been seen that an allocation of 60.8 million dollars to national port development stress the importance of ports and the government's commitment to the development of her ports. Also included in the plan is a manpower development package. An appeal has been made by the Port Authority to donor countries and agencies to assist with our manpower development programs, by providing training facilities, experts and fellowships to port employees.
An economically attractive project is one that represents a high-priority use of resources at the present stage of Liberia’s economic and infrastructural development. A judgement of a project which represents a high-priority use of resources requires a combination of macro-economic and project perspectives based on several considerations. The selection of development projects in the country needs sound and matured judgement based of course, on two analysed alternatives—either to construct new ports or to rehabilitate and expand existing ports.

In the framework of a systematized budget program for capital expenditures are the central problems of management choice between numerous capital additions and the allocation of resources to them. The "needs" for capital expenditures developed by executive management, plus those provided by managers of the various responsibility centers require more funds than is available. Thus, instrumental in planning and controlling capital additions is the selection by management of the more promising alternative port investment initiatives. These decisions are critical because once capital is invested in a long-lived port project, management’s opportunities to change the program are limited as sunk costs are normally recoverable through the use of the asset rather than through their sale. In view of these considerations, it is quiet obvious that management must utilize systematic and reliable approaches in evaluating proposed capital additions. In rationing funds among capital port...
projects, management must necessarily impose an overall budget limitation. Within this limitation, expenditures for each of the proposed projects should and must be on the basis of an objective evaluation of their INVESTMENT WORTH. It is incumbent upon management to identify and choose those projects having the highest potential investment-worth — that is, the highest rate of return on the investment without outside interference. Major capital additions like the Rehabilitation and Expansion of the Freeport of Monrovia, the expenditure of 1 million dollars on equipment purchase for the port Greenville, and the Rehabilitation and Expansion of the port of Harper and the purchase of 4.5 million dollars dredger must be accorded special analysis, management evaluation and sound judgement. Approaches to determine their investment worth —their economic evaluation and viability must loom large in the decision-making process.

5.1 COSTS AND THEIR SOCIAL BENIFITS

Proposals to rehabilitate and deepen our ports, to reconstruct berths for accelerated turnaround of cargo liners and unitization techniques (containerization) all rang as important investment projects involving millions of dollars. There seems to be no commonly accepted method of appraising proposals for investment in port facilities. In some instances this lack of systematic appraisal techniques may have led to misplaced and mis-timed investments in some port facilities. This situation is described by Mr. Thorburn and I quote "Large investments in harbours throughout the world appear to be made to a large extend intuitively and not on the basis of rational economic calculations; In fact many of them have been
made as a result of representations from vague parties and stem from vague and unqualified considerations of public need rather than from any explicit calculations of economic advantages. This, no doubt, in my opinion is largely due to the difficulties involved in estimating the net advantages of any given proposal in our port development program, or the economic difference between the situation which would exist with the investment and that which would exist without it. (e.g. buying a dredger for the NPA)

The National Port Authority is a public authority and has a remarkable diversity of powers, practices and forms. Her revenue is obtained from leasing land, buildings and equipments to shipowners, traders and other firms operating within the port area, commercial services e.g. quayside services, and dues on ships and cargoes. These dues show diversity of form and amount.

The method of charging for ships in our ports is a fixed scale per net registered ton, covering a stated period of time stayed in the port. The dues on cargo usually take the form of charges per ton weight. This system of charging bears no necessary relationship to either the average or the marginal costs involved, and therefore effectively prevents the use of discounted cash flow techniques in the analysis of port investment projects, except buildings and equipment for rent or leasing and provision of direct services like cranage and cargo handling. If a proposal to deepen the Freeport of any of our ports is considered, it will enable larger ships to be used at, very likely, lower costs. Unless, there is a significant diversion of cargo from other competing ports, or a significant generation of cargo from lower
freight rates, there will be fewer of the larger ships, and roughly the same tonnage of shipping using our ports in any given period as there would have been if the expansion and the rehabilitation had not taken place. At any given level of charges, therefore, the port authority's revenue from charges on both ships and cargo may be unchanged.

Again, given that port dues are levied on a fixed scale and for fixed periods, it follows that, if it is decided to construct or rehabilitate sheds and quays, or to install new cargo handling equipment at the port of Greenville so as to improve ships' turnround time, the port authority may still receive the same revenue as before. If the periods for which ship dues are levied are short so that ships after the investment is completed some ships become liable for fewer such periods, NPA's revenue may even be reduced. Yet, the investment may well be producing net benefits to the trading community and ultimately to industrial consumers.

It is probable that the anticipated investments in port facilities may lead to the cost of sea transport to and from our ports being lower than it otherwise would have been, and if this cost reduction is passed on to the consumers in the form of lower freight rates, there will be cargo generated and diverted from other ports. But there is no reason to suppose that this will produce sufficient revenue on the existing system of charges to make the result of discounted cash flow calculations socially optimal. This is even less likely where an improvement in our port facilities can be expected to lead to changes in ships' load factors as well as in their sizes and speed.
The answer to this problem does not lie in the raising of port charges all round, for it is highly probable that some of the ships using the port will have obtained no benefit at all. These ships may have been trading on short routes where the optimal ship size has been reached before any improvement was done. Their size may be limited by facilities in other ports. It can also be argued that a sliding scale of tonnage dues should be introduced so as to discriminate between ships according to the extent to which they use the facilities.

The use of some of these facilities involves no social costs at all, and their socially optimal price is zero. This can be seen in the use of uncongested dredged approach channel; no matter what the size of the ship is, the costs to the community are exactly the same whether the ship uses the approach channel or not; therefore the socially optimal answer is that when the channel is not congested, the charge should be zero and that when it is congested the charge for any given ship should equal to the increase in congestion costs that the ship imposes on all other ships using the channel. Larger ships mean fewer ships, the expansion and rehabilitation of our ports may mean a reduction in congestion costs; If it were not that, first large ships are less manoeuvrable than smaller ones, and secondly, the capital cost of harbour works varies as something like the cube of the depth of water, it might be that large ships should be encouraged by the pricing system rather than otherwise.

The problem of the appraisal of investments in port development is therefore, ultimately related to the problem of charging for the services that they provide. The present system does not equate the charges actually levied...
with the social costs of either ships or cargo, and tonnage and cargo dues take little or no account of differences in costs to either the shipowner or the port authority. The existing system may possibly be of some use in the appraisal of investments designed to handle increases in the physical volume of trade.

5.3 OVER ALL SOCIAL COST APPROACH

Discounted cash flow involves taking account of the revenues and the cash costs over the life of the project, discounting them to a base year and subtracting the capital cost of the project resulting into what is called the "net present value". This method takes account only of the advantages of the project to the National Port Authority, the investor; maximizing "net present value" therefore would lead to the optimal result for the Authority. This method will lead to a socially optimal result only if the pricing systems employed for inputs and outputs, and also for competing inputs and outputs fully reflect the social costs involved.

It is presumed that where the discounted cash flow is not a satisfactory method of port investment appraisal, social cost-benefit analysis may be the logical method to employ. Calculations must therefore take account of all the changes in social benefits and social cost which would result from the rehabilitation of our ports, reducing them to monetary terms, in addition to the cash flow, and discounting them to a present value from which the capital cost may be subtracted in order to obtain the net present value.
5.4 SHADOW PRICE CONCEPT

In tramp or cargo-liner trades, it is not possible to employ observed market prices to predict freight rates. Since the whole point of our port investment program is to permit the use of different types of ships including larger ships, and improved performance of the port, it follows that it is not possible to confine the effects to economies in operating costs. Thus, the method proposed in this paper centers around the shadow price concept.

If for any given type and size of ship operating under any given conditions, say of cargo and route, the initial and operating costs can be estimated, and a discounted cash flow calculation performed, discounting at the opportunity cost of capital, with various assumed average rates of freight per ton of cargo. Each will produce a different "net present value", and one such freight rate will produce an NPV of zero, meaning that the "internal rate of return" will be equaled to the opportunity cost of capital. At any freight rate higher than this, shipping will provide more profitable investments than could reasonably be expected in other industries. It may be assumed therefore that shipowners will then order more ships and that competition will force both freight rate and internal rate of return downwards. Conversely, at any lower freight rate shipowners will be less willing to invest in ships, the supply of ships will reduce and both freight rate and the internal rate of return on ships will rise. The freight rate which provides an internal rate of return equaled to the opportunity cost of capital is therefore the long-term equilibrium rate for the assumed shipping techniques. This concept which is referred to as the "shadow price"
is that level of price at which the discounted revenue, on the specified level and pattern of outputs, exceeds the discounted cash operating costs for the same level and pattern of outputs by the capital cost involved minus the discounted scrap value, if any. A shadow price takes account of any variations over the life of the ship in either costs or output. It may of course take account of the savings in packing and pilferage costs claimed for containerization.

There is no necessary relationship between the shadow price and the level of freight rates at any particular time. The former reflects long-term costs; the latter reflects both the highly variable supply-demand position of world shipping and also the considerable opportunities which currently exist, for example, by way of cheap export credit, for shipowners to obtain capital at less than its private opportunity cost. Given the long life of most ships, the inelastic short-run supply and the short-run inelastic demand, market freight rates will often be very different from shadow price levels. High or low market rates, however, will not necessarily affect the differences in net social benefits between ships operating, as a result of investment in ports, at improved levels of efficiency; and it is the differences in shadow prices associated with these improvements in efficiency which can be used to estimate the benefits from investments in ports. The difference between the price in the conditions which would have existed without the investment and the shadow price in the conditions which are estimated to exist with investment is a preliminary measure of the change in social costs per ton of cargo.

If Liberia's international trade is to expand at the
desired rate expected by the country, investment in port facilities is needed. To some extent this can be either in the form of rehabilitation and replacement of obsolete quays and warehouses so as to raise the productivity of the labour employed in loading and unloading the ships which would be reflected both in ships' turnaround times and in cargo handling costs.

The use of parallel exchange rates in countries where there is an evident discrepancy between the official and the parallel rate is an example. Another case in point is that of the reduction in handling costs by the replacement of inefficient labour-intensive methods with mechanized methods. In a situation where foreign exchange has a scarcity value in Liberia, the net foreign exchange earnings from investment in ports will have to be taken into account. In order to determine the real profitability of the enterprise, the conversion of all flows of foreign exchange should be effected not on the basis of official exchange rate, but on the basis of a "shadow" rate, where the latter reflects the real scarcity of foreign exchange to the country.

5.5 ECONOMIC APPRAISAL

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Economic appraisal of a project consists in comparing the cost with the benefits to be derived from it, leading to the selection of the project that will provide the maximum returns.

There are differing school of thought as to which method of economic appraisal of port projects is best. One school of thought expouses the engineering approach which
consists in conducting an engineering appraisal of which facilities are necessary to accommodate traffic, including peak traffic, thereby satisfying the needs of the port user. This approach stresses that the port has an obligation to provide a continuous and permanent service to the users and to adapt to the development and technological advancement in shipping. This approach emphasizes the public character of the port authority, and has some positive aspects: it serves to remind port officials that they are to serve the public interest, not themselves. Economic and financial returns on investments are not a considered priority.

Another school of thought insists on the role of ports as centres of regional development and the economic impact of port investments on the life of the local community. In such an approach, the profitability of port investments is not considered in isolation from the broad economic environment; social effects such as the creation of employment are taken into consideration. Employment creation is a complex process, in appearance, the choice of labour-intensive rather than of capital-intensive methods in cargo handling, for example, is commonly believed to generate more employment. This can be true in the short run, in the long run and at national level, however, it is not necessarily true, because infant manufacturing industries suffers with possibly greater negative effective on employment than the positive effect felt at the port.

The World Bank, who spent 3 billion dollars on one hundred and fifty port development projects by 1985 in one hundred and twenty countries, prefer this latter approach, the macro-economic method by which all costs
and benifits of the project are allocated to the user; the ship and the cargo.

The optimal port project does not necessarily consist of physical facilities alone. It must be remembered that physical development alone is no panacea for the problems of our ports. More economic benifits may derive from managerial and administrative improvements and the provi­sion of adequate maintenance.

Tests of economic viability of World Bank-financed port projects are the economic rate of return and the net present value, based on a discounted cash flow of costs and benifits. The benifits considers by the Bank, which is the major financier of port projects in the developing countries, are the socio-economic benifits to the Liber­rian community and the shipowner. It follows therefore, that the test of economic optimality of port projects must take into consideration the World Bank cretiria. This approach has already been discussed earlier in this work.

Economic benifits or savings resulting from investment in ports accrue mainly to shipping; in Liberia, shipping is foreign; it is therefore important that the benifits are passed back to the country in the form of reduced freight rates and or the elimination of congestion surcharges. There rate of returns are therefore, powerful safeguards against over investment.

5.6 FINANCIAL APPRAISAL

Financial appraisal must be conducted after the economic
appraisal, because tariffs, an essential element of port finance, can, in principle, be determined only after the ports' economic objectives are established. Tariffs are, or should be, the economic rate of return expressed in financial terms.

There are three objectives with regards to port tariffs:

1. Tariffs should be set at a level that would ensure the ports' overall financial viability.

2. Tariffs should be related to costs.

3. Tariffs should be economically effective and optimize the use of facilities.

Financial objectives at the entity level have become more and more linked with economic objectives at macro-economic level. The setting of tariffs at a level which makes the port financially viable should not meet with major difficulties, because port tariffs amount to between 5 to 10% of the final cost of merchandise.
6. FINANCIAL OBJECTIVES FOR THE PORTS

In a port industry, as in any other business entity, clear financial objectives are a must, in order to ensure the availability at all times, of adequate liquid resources to meet all cash liabilities as they fall due. The setting of clear financial objectives need not be overemphasized, and will at best aid management in setting realistic incentives to efficiency and maintain morale within the port industry. Whatever objectives one adopts, be it cash flow or return on capital objectives, each system has its own advantages and disadvantages.

The end result and ultimately, the most important element in setting financial objectives must be the "principle of sufficiency of cash flow". This enables management to meet maturing liabilities, and an element of capital replacement and an expansion that is essential for the survival of the port industry which is faced with everchanging technological development in the shipping. Whatever objective one selects, must relate to the overall performance of the port industry in its range of activities.

It can be argued that the National Port Authority did not lose sight of this very important aspect of port management— the setting of a sound and effective financial objective. Based on sound business principle, the management of the NPA set as her financial objectives the generation of sufficient cash flow to meet her
\begin{align*}
    i=n \\
    (P_1-P_2)Q_1 + \frac{1}{2}(P_1-P_2)(Q_2;-Q_1;)(1+r)^{-1}
    \\
    \text{i=1}
\end{align*}

Where \( n \) is the life of the project. Assuming therefore that the life investment port project is 50 years, and the price per ton of cargo before the investment is $20$ dollars and after the investment is $14$ US dollars, and the total tons per year is 10 million metric tons. Total benefit to consumers as the result of new investment in port will be:

\begin{align*}
    (20-14)10m + \frac{1}{2}(20-14)(10m.-10m.) (1+.1)-50 \\
    (6)10m + 3) (1+.1)-50 \\
    (60m +3) (1+.1)-50= \\
    63.1m*0085 =536.350.
\end{align*}

Total benefits to consumers as the result of the investment is US dollars. Assuming further that the average time ship spent in port is 60% and the shadow price per ton of cargo is 20 dollars and if the time in port is reduced by 20% the shadow price becomes 16 dollars. Thus, there is a saving of 4 dollars per ton of cargo which inevitably must be passed on to consumers.
The foregoing arguments can be reduced to the following mathematical formula suggested by R.O. Goss in his Book "Studies In Maritime Economics"

In the graph, the figure D_1&D_1; represents the demand curve relating to the shadow price of moving a ton of cargo on a given route through the port at which investment is being considered to the cargo tonnage for year 1. P_1 represents the shadow price and Q_1; the cargo tonnage for year 1 if investment is not made. P_2 and Q_2 represent the same if the investment is made. P_1 A, P_2 BC, CQ_2 and ABQ_1 are construction lines parallel to their respective ordinates.

The change in shadow price is there (P_1-P_2) and the diverted and generated cargo flows are Q_2-Q_1.

The change in consumers' surplus in respect of the cargo which would flow through the Liberian ports anyway is thus the diagonally shaded area P_1ABP_2=(P_1-P_2)Q_1; and the change in consumers' surplus in respect of the diverted and generated cargo flows is the vertically shaded triangle ABC. Since AB = (P_1-P_2) and BC = (Q_2-Q_1; ) the area ABC = 1/2(P_1-P_2)(Q_2-Q_1;).

The present value of change in consumers' surplus for year 1 is therefore:

(P_1-P_2)Q_1; +1/2(P_1-P_2)(Q_2-Q_1;)(1+r)-1.

The present value of the total flow of net benefits to consumers considered thus far is: 52
commitments that fall due and some capital expansion programs coupled with this, the management has set 12% rate of return on capital invested. It is also NPA’s objective that return on capital must cover interest on borrowed capital and make a reasonable profit.

The attainment of these various corporate objectives is no small task. It needs planning and control, with adherence by all management personnel to corporate regulations regarding control principles. It also requires dedicated and responsible personnel who would work hard for the attainment of these company objectives.

The following should, therefore, be pursued to satisfy the condition of "sufficiency of internally generated cash flow in each year" to meet:

A. Interest and any taxes due government.

B. The redemption of capital debt actually falling for repayment in the financial year and provision towards the redemption of capital debt fall due for repayment in future years, subject to the following:

1. Where temporary borrowings are used to finance net current assets, the same proportion of such borrowings to total net current assets.

2. Where long-term assets have been financed by short-term borrowings, re-borrowings (at current interest rates) for not more than the expected life of such assets.

3. Where loans are repayable on an annuity basis the interest will already have been included in (a) above and it
follows that only the element in the annual repayment which relates to the principal should be included in the redemption of capital debt.

Fifty percent of all capital expenditure (excluding any capitalized interest) subject to the understanding either that where capital expenditure falls unevenly in a given financial year, the proportion may be applied to the average of the current year's expenditure and that of the preceding three years or that where a major new project estimated to cost, say, more than 20% of capital employed is being construction, capital expenditure on such project may be or can be averaged over such future period of years as may be determined by the port undertaking concerned at the project's inception.

6.1 FUNCTIONS AND ROLE OF FINANCIAL MANAGEMENT

The survival of any business entity depends on her ability to mobilize and maintain liquid assets-money. The NPA is no exception. The management of money therefore is crucial to the successful operation and development of our ports. Many businesses fail not because they are not profitable but because their executives lack the art of financial management. This stresses the importance of the art of financial management.
The comptroller of NPA who is the chief financial executive is primarily concerned with the acquisition, investment, and management of money or capital. It is the responsibility of the comptroller to help NPA achieve her objectives as regards finance. The organizational success is measured in terms of survival and profits, and the comptroller is the key player. It is incumbent upon the comptroller to maintain liquidity and ensure that NPA has enough cash on hand to meet her outstanding obligation. To obtain these financial objectives, the comptroller must perform the following functions:

1. HE MUST PLAN FOR CONTROL: This entails establishing, coordinating, and administering, as an integral part of management, an adequate plan for capital control and operations. Such a plan would provide profit planning, programs for capital investment and financing, sales forecast, expense budgets and cost standards, together with the necessary procedures to effectuate the plan.

2. HE MUST REPORT AND INTERPRET: To compare performance with operating plans and standards, and to report and interpret the results of operations to all levels of management and to outside interested parties. This includes the formulation of accounting policy, the coordination of systems and procedures, the preparation of operating data and of special reports as required.
3. HE MUST EVALUATE AND CONSULT: It is essential that the comptroller of NPA consults with all segments of management responsible for policy or action concerning any phase of the operation of NPA as it relates to the attainment of company objectives and the effectiveness of policies, organization structure, and procedures.

4. HE MUST ESTABLISH AND ADMINISTER TAX POLICIES AND PROCEDURES.

5. HE MUST SUPERVISE AND COORDINATE THE PREPARATION OF REPORTS TO GOVERNMENT AGENCIES.

6. HE MUST PROTECT NPA ASSETS: He must assure the protection for the assets of the NPA through internal control, internal auditing, and assuring proper insurance coverage.

7. HE MUST CARRY OUT ECONOMIC APPRAISAL: He must continuously appraise economic and social forces and government influences, and interpret their effect upon the port industry in the country.

In addition to the above outlined functions of the comptroller, the comptroller must establish and execute programs for the provision of the capital required by the NPA, including negotiating of capital and maintaining the
required financial arrangements. These tasks must be performed with zeal and sincerity of purpose in order to keep the port industry healthy and ensure development in the port industry. It is incumbent upon him to maintain adequate liaison with investment bankers, financial analysts, and port users. Maintenance of adequate sources for the NPA’s borrowings from commercial banks and other lending institutions for short-term financing is imperative. Banking arrangements must be made properly by the comptroller, the collection of receivables must be one of the comptroller’s top priorities. He must provide adequate investment in employees’ pension schemes. These functions require dedicated personnel with integrity and his chief lieutenants must have qualities also. Honesty should be the hallmark of these personnel so that our financial resources can be usefully managed. The two basic functions of financial management—using money and acquiring assets—would be incomplete if the numerated tasks above are not diligently performed. All these stressed the role and importance of financial management in a complex organization like the NATIONAL PORT AUTHORITY.

6.2 PORT PRICING

On cost and charges, as part of our marketing strategy, it is fundamental to expect that the NATIONAL PORT AUTHORITY should operate as a purely commercial undertaking of viable status, within which it should determine its pricing and development policies, because it is through pricing procedures that the NPA is able to maintain a satisfactory revenue and enable the correct
utilization of assets. It is basic to the NPA that those who use the ports should pay for the use of facilities they require, for the time that they are in use. A pricing policy need, or, indeed, should not be a rigid inflexible procedure of price for job. There is a serious need for a positive use of cost-based charges policy; it is not enough for port charges to be cost reflecting. It is the cost-based charges approach which encourages better utilization of services. Port users in my judgement are not entirely influenced by costs, but take into account also the considerations of service provided. Costing and charges procedures, and related services, can be used as an incentive to faster turnaround time by being applied on an overall system to the port as a whole. Revenue generated would then partly be used to increase the effectiveness of all facilities, better able to encourage the use of the berths, quays and transit sheds which may, on occasions, be under-utilized, and add to the importance of the through transport concept of total distribution.

In determining the charges to be made for various port services provided, an overall assessment must be made of facilities available and the types of trades being accommodated. Within such a pattern charges must be evolved to suit particular circumstances. Rigid adherence to inflexibility could have unfavorable reactions to all parties, but it must not be forgotten that in the port industry, facilities have a high capital content to which charges must reflect sensible financial return.

There is need to work out what is a sensible cost-based charge. It is necessary also to ensure that if a facility is under-utilized ships should not be frightened away by
unnecessarily high port charges. In such situations past capital expenditures, and charges, can go below costing elements, and this could benefit the NPA.

Pricing policies, with which is included the procedures of raising costs and charges, must not be viewed in isolation as a straight financial exercise, since the whole aspect of recovering the cost of the use of assets of the ports and the facilities provided, are contiguous and any pricing to this end must be looked at in terms of the overall objectives relative to the manner by which our ports are to be developed and operated. Costs and charges must have relevance to what our ports have, and is able to offer.

Port charges are the means by which revenue is obtained in return for services provided. They also, however, enable a financial structure to be developed out of which the overall utilization of the port can be determined and within which there can be available effective capacity and flexible use of facilities. It is not good business to charge for the use of one piece of asset or one area of service; it is not unrealistic to expect the user of the port to pay a fair figure as will enable the NPA to cover the direct cost of his usage, but at the same time, not unreasonably contribute to the total effectiveness of our ports. In these conditions a greater flexibility of space can be available within the ports, so reducing delays in ships having to wait for berths. As such there must be strong influence upon the marketing approach of "quick turnaround". The "relative" aspect of differentiation in port charges - higher as against normal is noticeable and acceptable where specialized vessels such as container ships, ro/ro ships require immediate entry and
working. Berths require for these contingencies may be
under-utilized over periods of time but this can be
acceptable, provided charges are realistic. Both effi-
ciency and financial self-sufficiency are goals for ports
to achieve.

I believe that the development of appropriate port
charges structure is of real importance to ports in
relation to the achievement of their financial
objectives. Port users are interested in port charges as
much as in their other costs, as has shown for instance by
the interest of shipowners.

If port undertakings are to be able effectively to use
charges techniques as a means of reducing costs, they
must have a sufficiently wide degree of freedom in this
respect.

A marketing research policy, its strategies, tactics and
pricing procedures cannot be considered in isolation, but
must be related to the total manner by which the NPA is
organized and administered. The NATIONAL PORT AUTHORITY
must be viewed as a commercial undertaking and encourage
its trade in such a way that costs involved, and revenue
obtained, achieve this end. Revenue generated from
marketing procedures; eg. the costs and charges imposed,
must be such as to enable the ports to make full use of
all their assets, irrespective of the under or over
utilization of any part at any time. The time aspect of
different trades influencing ships to remain in port for
short or long periods should similarly influence
tactics of pricing. Cost and charges must reflect the use
to which port facilities are put and to the services
provided, show differentiation between direct costs to
ships using the berths, quays and water and those which apply associated services, such as warehouses, pilotage and wharfage in general, often in danger of being misused. Marketing for trade must take into consideration that not only will this be required to pay for the use of the ports, as such, but that also the high cost of overheads must be taken into consideration. Where high volume of trade can be attracted, this reflect favorably in this direction.
Despite the multitudinous ramifications of port's structures according to their size and trades, they exist to transfer goods and/or people from one mode of transport to another. Within the overall transportation mode, cost analysis is paramount, not to the least of which is the contribution made by the port.

Bulk cargo handling by comparison, is less costly than general conventional cargo operations; large vessels incur higher costs while in port than smaller ones—hence the need for quick turnaround—particularly of large size vessels. Labour is expensive and because our ports handle a variety of trades, have the need for broad facilities and equipment and a widely balanced labour force.

The location of our ports relative to seaways and water approaches influence the provision of safe navigational facilities; whereas tidal factors call for our port system to maintain deep water. All of the foregoing examples among others, are cost factors to the National Port Authority. Our ports attractiveness to "SHIPS" is by the manner the NPA can ensure acceptability within the overall organisational structure and management it provides to operate effectively, the NPA organisational and management structure must provide:

(1) Operating facilities according to the envisage or current trades with which it will be, or is concerned.
(2) Back up facilities of supporting disciplines within the port.

(3) Environmental associated facilities and influences.

Within these factors three main areas the NPA has need to receive and service ships, handle cargoes of a variety of kinds, provide for warehousing and transit facilities, maintain engineering and maintenance factors, provide for marine and hydrographic safety, have resources to commercial and marketing services, depend upon appropriate financial guidance, deploy labour and staff to the best advantage and be always aware of the international and national trading movement and appropriately applicable business requirements.

It must also provide for investment and favorable return on capital invested. Within such a broad remit, the NPA must always have a flexible outlook, since its major purpose and aim is frequently subjected to unpredictable circumstances. Somewhat peculiar to the port industry.

Within the back up and environmental areas, the financial disciplines must be concerned not only with the overall viability of the port, but also have the need to examine the specialness of management, financial, costing and audit accounting, all of which have significant bearing upon the capital, revenue and general charges systems necessary to sound financial operating. The economics of the port are largely dependent upon the commercial functions, both internally within operating and externally with trading sources, to which marketing is a major function.

Estate is equally broad in application, since much of
the physical assets of our ports are dependent for their contribution to its viability in the manner by which they are acquired, used and developed. Estate is a strong financial factor, and should properly be managed. In the wide competitive area of port availability to service trading patterns, its "image" must be considered to be important both within and outside of itself. Emphasis must therefore be placed on public relations.

Ownership of ports - irrespective of their type - is not a conditioning factor of administrative efficiency. Seldom this be with a service industry, and particularly so with ports, the very existence of which depending upon the effectiveness of service provided for the user. Shippers and shipowners have considerable influence upon the manner by which the NPA endeavours to maintain its viability. In the modern competitive era of marine transportation, it is these customers who are unlikely to maintain trading to our ports, if the services are ineffective. A sound management structure is therefore, a basic requirement for the NATIONAL PORT AUTHORITY.

THE NATIONAL PORT AUTHORITY's management should be left free to manage. Void of political interference and the wider its autonomy this direction, the more is it lively the end will be achieved. The Board of Authority should and must settle policy - control and direct the needs of the business - the implementation should move as far down the management line as organisation permits.

The practicalities this approach can be seen where the NPA receives the necessary support from her board in the areas of annual revenue, capital budgets, and financial
assistance if need be, leaving the NPA management free to make her own contracts with customers and for securing business for the ports. This serves to indicate that responsibility and accountability must be clearly defined in orders that management can be applied where the work of the port can be seen realistic.

Efficiency and effectiveness can be developed by the extent to which the following areas are stimulated:

1. The communication or organisation and administration.
2. The economic backgrounds to the work of the ports including marketing procedures.
3. The financial, revenue applications by which the ports exist.
4. The examination of the relevant and necessary key operational functions and their inter-relationships.
5. The utilization of human and material resources and their planning.
6. The impact of conservancy matters.
7. The legalities of our port administration.
8. The maintenance and safety functions.
9. The engineering functions of our ports suitability to meet trading requirements.
10. The technological impacts on equipment and from ships.

The stimulation of these above mentioned functional areas of the port business activities will go a long way in providing efficient and effective management.

7.1. MANAGEMENT STATISTICS
Modern statistics is highly refined and it is making a great contribution to the solution of many problems of decision making in the face of uncertainty. One of the most remarkable phenomena of the past few years has been the introduction into our port system of the UNCTAD - Developed Uniform System of statistics.

In the NPA management set up, statistics are needed to aid in the long-range planning of our ports, in sales forecasting and their effort on consumer markets must be analysed. In research and engineering, costs must be estimated for various projects, and manpower, skill equipment utilization, berth occupancy and ship time in port must be anticipated. In the area of finance, the profit potentials of port capital investments must be determined, overall financial requirements must be projected, and capital markets must be studied so that sound long-range financing and investment plans can be developed. All these require statistical information.

The importance of management statistics cannot be overemphasized. The collection, compilation, analysis and presentation of port statistical data must be done to enable management to take corrective measures in port operations where necessary. A long lapse in the presentation of statistical data may breed inefficiency as can be observed in the 1985 and the 1986 reports of the Planning Department of the NATIONAL PORT AUTHORITY.

According to the 1985 report average gross gang hours per gang availability were seven hours and forty-six minutes while average net gang hours meaning actual hours worked were only five hours and twenty minutes. One would have expected improvement of the situation in 1986.
but on the contrary, Planning Department's 1986 annual report indicated that average gross gang hours worked per gang availability was eight hours twenty three minutes, while the actual hours worked were only five hours and forty-four minutes, thus giving an average delay hours of almost two fifty-five minutes, while 1985's delay hours were two hours and twenty-four minutes.

There is therefore a need for prompt reporting of statistical data and an intelligent interpretation of the data to management for correction action where there is inefficiency.
The need and importance of management accounting was stressed by Thomas Sutherland, a British businessman in 1875 when he said and I quote; "The present system of bookkeeping in the Accountant's Department is admirably suited for the end it has in view, viz., that of ascertaining once a year or oftener the profits upon the company's transactions; but it is evident that in a business of this kind much detailed information is necessary regarding the working of the company, and this information should be obtained in such a practical form, as to enable the Directors to see readily and clearly the causes at work in favor of or against the success of the company's operations. To this end Supplementary Books are necessary and the question is what kind of Supplementary Books are most suited for the purpose. It appears to that the supplementary books formerly kept in the Accountant's Department were ill qualified for any practical use."1

Management accounting is useful to management in the operation of the National Port Authority. This accounting process facilitate the preparation of regular internal reports that influence management decisions. For this purpose, the NATIONAL PORT AUTHORITY's Finance Division has a Management Accountant Department headed by an Assistant Accountant.
Management control is closely associated with management accounting. Management control is the process of assuring that resources are obtained and used effectively and efficiently in the accomplishment of NPA's objectives.

To institute any effective management control, there must be available statistics and cost data to facilitate management reports for control and decision-making purposes. These statistics and cost data can be found in cost accounting.

If NPA is to successful, her management must have access to an information system clarifying the cost structure of the various operational units. The purpose of cost accounting the in our port system should consist of correctly identifying and charging the costs. Costs must be evaluated according to the varying needs of the departments. It serves for the calculation of prices, the control and management operations and for operations planning.

Cost accounting is the basis for profitability considerations; and a device for evaluating the achievements of the various departments. Basically, there are two cost systems available to enable cost accounting to achieve its purpose. They are the full cost system and the partial cost system.

However, I will concern myself with the partial cost system because it is supposed that the NATIONAL PORT
AUTHORITY follows this system according to her costing pattern.

The partial cost system presupposes that only part of the costs can be directly added to the costs of services as NPA is a service institution. The remaining costs must be covered by taking the difference between revenue and itemized costs. These costs should be passed on, in accordance with their origin to service cost centres, to operating cost centres or to management cost centres. This system of cost accounting enable us to establish a fixed budget for each cost centre and to project future overhead costs as well as to analyse differences and control profitability.

If we determine the itemized costs per ton handled and the corresponding revenue, we get the contribution figure. -(contribution figure=revenue less itemized costs). This type of cost accounting enables NPA to check the short-term profitability.

Costs occur separately according to types and only the total amount of same can originally be determined. It is therefore, important when analysing the costs, distinction must be made between two different aspects of accounting. Cost centre accounting refers to a specified operation unit, and unit cost accounting relates to the type of goods handled. Cost centre accounting emphasizes the total results of an independent unit and the overall costs are identified at cost centre level. These costs are divided into three types:
1. **COST CENTRE ACCOUNTING**

a) Management overhead costs; These include Administrative, Technical, Finance, Purchasing, Planning Training, M.I.C., personnel.

According to our present practice, these costs are not apportioned to the various revenue generating departments. There is a need for these costs to be apportioned using the following formula.

Apportionment % = \frac{\text{revenue of the operating unit}}{\text{total revenue of NPA}} \times 100

b) Operating overhead costs are costs occurring at operation centre which are not passed on to the operating unit.

c) Cost centre overhead cost are costs occurring at the cost centre, not in connection with the supply of services, but due to the fact that the operation unit must always be in a situation of readiness to provide the services as require. (standby costs).

2. **UNIT COST ACCOUNTING**

The objective of unit cost accounting is to book the costs to the corresponding unit. In order to systematise the revenue aspects of the variety of services provided by the
NPA, these costs are grouped into three main headings.

1. Transfer of goods from she to hatch and vice versa.
2. Loading and unloading of land transport vehicle.
3. Other services—stuffing and stripping containers, warehousing, grading, marking sampling and other manipulations.

These cost accounting methods are intended for control purposes.

Management control may be classified into two broad groups of a) short-term and b) long-range planning.

With reference to the short-term, the system is concerned with daily weekly and monthly statistics. These facts are compared with the target values previously set and the necessary corrective actions taken if needs be. The ways in which targets are set depend on the sort of control required and from these efficiency indices are made.

Efficiency indices should be calculated for all purposes in the following areas:

a) Budgetary control—expenditure against target.
b) Labour performance—achievement of output against that evaluated by work measurement.
c) Equipment performance—running hours against capacity.
d) Delay—eg isolation of major causes compared to forecast.
e) Materials handling—utilization of ratios.
against maximum capacity or floor utilization ratios.

Unfortunately, many of these efficiency indices are not being calculated at the NPA. For efficiency and better management control the above listed efficiency indices must be calculated and prompt presentation and interpretation must be made to management to ensure sound business decision.

The long-range planning, because of its nature require other tools, even though the control element is still essential, and since the time component is long the need for forward planning is important.

The program of forward planning which was, in the seventies, part of NPA's planning activities, had for some reasons, not been receiving management's proper attention in the eighties. However, according to the Planning Department of the NPA's 1986 annual report, a four year forward budget is being drafted for approval, and if this is done, a step in the right direction would have been taken.

One would suppose that the technique term "programme Evaluation Review Technique" would better help the Planning Department in the preparation of the "Forward Budget".

This technique also called the "Critical Path" provides a useful guide in the monitoring of financial expenditure during the project. It consists of constructing a diagram or "net-work" representing the logical sequence of events in the project. The activities are first listed and then
a diagram drawn to show which activity follow which, and which must run concurrently. Having constructed the network diagram, the time element can now be considered. Time estimates for each activity are found and then applied progressively through the network. Two values of time are calculated at each node. First the earliest time at which that node will be reached and hence the earliest time that the next activities will be able to start.

This method provides a very easy method of finding the overall project time and enables the identification of critical areas, thus concentrating management resources effectively.

One of the most important ways of tailoring controls to the needs for efficiency and effectiveness is to make sure that they are designed to point up exceptions. By concentrating on exceptions from planned performance, controls based on the time-honored exception principle allows management to detect those places where their attention is required and should be given.

7.4 MOTIVATION

Because managing involves the creation and maintenance of an environment for performance of individuals working together in groups toward the accomplishment of the company of common objectives it is obvious that management cannot do this job without knowing what motivates people. The necessity of building motivating factors into NPA's organizational roles, staffing of these roles, and the entire process of directing and
leading people was built on knowledge of motivation.

This knowledge led NPA to formulate the following personnel policy aimed at motivating her employees:

1. That NPA considers its employees as its most valuable assets, as such, management will strive to maintain at all times, a cadre of qualified and competent personnel.

2. Management will also strive to create an atmosphere that will be conducive to producing and maintaining the level of performance demanded from such individuals.

3. Merit increment: The motivating philosophy behind granting of merit increment is to improve employees' level of performance.

4. To encourage employees who have rendered invaluable contributions and services to the NPA, an annual NATIONAL PORT AUTHORITY PRIZES AND AWARDS PROGRAM has been instituted.

But the sad story is that there is a flaw in management's perception of what motivates employees. Human motives are based on needs, whether consciously or subconsciously felt. Some are primary needs, such as water, air, food, sleep, and shelter, while others are secondary, such as self-esteem, status, affiliation with others, affection, job security, accomplishment, giving, self assertion, and satisfactory compensation. This means, of course, that all those who are responsible for the management of NPA must build into the entire system factors that will induce employees to contribute as effectively and efficiently as possible.
7.5 BUDGETING—PROFIT PLANNING AND CONTROL

Budgeting is the formulation of plans for a given period, usually a year, in numerical terms. Budgets are statements of anticipated results, in financial terms— as in revenue, expense and capital budgets, or in non-financial terms as in direct labour-hours, materials etc. Financial budgets are sometimes said to represent the "dollarizing" of plans.

Through numerical statement of plans and breaking of these plans into components consistent with the organization structure, budgets correlate planning and allow authority to be delegated without loss of control. Reducing plans to definite numbers forces a kind of orderliness that permits managers to see clearly what capital will be spent by whom and where, and what revenue, expense, or units of physical input or output plans will involve.

7.6 NPA BUDGET PROCEDURE AND PRACTICE

The budget process starts with the promulgation of budget guidelines by the Budget Section as provided by the Budget Committee. Department heads are then requested to prepare their budget estimates and have same forwarded to the Budget Section. These estimates are compiled and transmitted to the Budget Committee for review. The Committee then reviewed and make adjustments where
prepared for onward transmission to the Managing Director, who after his perusal and satisfaction, forward same to the Board for approval. After approval by the Board prior to July 1, of each year, the budget takes effect on July 1 of each year. The approved budgets are distributed to the various responsibility centers. These budgets include:

1. Manpower
2. Cost Center
3. Revenue
4. Cash
5. Capital
6. Funds flow statement
7. Budgeted financial statements.
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1. Manpower
2. Cost Center
3. Revenue
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5. Capital
6. Funds flow statement
7. Budgeted financial statements.
The preparation of these various budgets begin with the promulgation of budget guidelines in March and should be approved by end of June of the current fiscal year to operation July 1, of the the next fiscal year.

There are several problems, not with the system, but with implementation process. Some of these problems are:

1. The planning Department, who is responsible for trade forecast have been apparently non-committal to a firm forecast of trade to the ports for one year. This creates difficulties when estimating ports operating costs.

2. Department heads treat financial information given by the Finance Department for budget purpose as suspects.

3. Finalization of the budget is always a difficult procedure. Expenditure invariably exceeded revenue and cuts were made indiscriminately across the board of all departments. This in a way made nonsense of the forecast procedure.

4. When presenting their budgets, department heads tended to overstate expenditure on the assumption that these would be cut back.

5. Because of the abovementioned points, managers tend to have shrugged off
differences which arose from over-spending on the grounds that their originaly budget had be cut without their approval.

6. Departamental budgets are compiled from an examination of past costs and expenses amended to reflect estimated rises or falls in expenditure. But these past costs could hide past inefficiencies due to poor control or bad working conditions.

The problems can be tackled through the following actions:

1. That since the Government is returning back to the calendar year fiscal year, the Planning Department should submit forecasts of anticipated tonnages and gross revenues expected during the calendar year in August. This forecast should detail tonnages and revenues for each class of cargo whether for loading or unloading and the times that these are expected to arrive at the ports.

2. Base on this forecast all other departments would submit estimates of their costs and expenses given the level of activity indicated by the Planning Department. All managers of sub-areas of responsibility and control whether operational or service, should participate in estimating their needs in terms of men, equipment and services required to handle the anticipated
level of work.

3. Income, costs and expenses of operating departments should be related to the cargo handled to see whether the rates charged to customers are sufficient to produce an acceptable gross margin or contributions to overheads.

4. The Budget Committee should examine the financial forecasts at the end of September to see whether they indicated an acceptable surplus. Any estimate amendments would need discussion and approval by the managers concerned and the Budget Committee.

5. On the basis of the agreed forecasts and estimates for control areas, budgets would be compiled showing relevant income and expenditure on a quarterly basis for the calendar year.

In order for the NPA to prepare a realistic and intelligible budget, the planning (budget) process should begin with:

1. TARGET ANALYSIS: Target analysis involves vision. It is also concerned with the analysis of markets. Considerations must be given to what our neighbouring ports are doing and see how best we can improve our ports to generate more traffic.

When target analysis have been made,
TABLE 4.1
DUPONT SYSTEM.

Market Analysis → Target Analysis → New areas to be considered.

January – August
Sept. – Nov.

COMPANY GOALS.

Goals are sent to Profit Centres and Cost Centres.

Budget Preparations

Budget Approval → BOARD
TABLE 4.2.
DUPONT SYSTEM
Budget Operation.

Information and Control System.

COMPANY GOALS

Goals:
Profit Centre & Cost Centre.

BUDGET.

Interaction between Budget and Accounting Report and Decision Support.

Projection Analysis.

Result and Output.

Closing of books.

Accounting.

Operations.

Changing Operations.

External Factors.
company goals are set, and these goals should filtered down to various profit and cost centers. Discussions must then be held with the responsible personnel in these centers. Each manager must be made to believe and have confidence in the plan. They should feel part of the budget in order to make it functional.

2. THE BUDGET PROCESS:-(OPERATION)

See chart.

7.7 MANPOWER BUDGET

The manpower budget of the NATIONAL PORT AUTHORITY takes a sizeable percentage of the expenditure budget. During the fiscal year 1982/83, 76% of the expenditure budget represented manpower costs while actual personnel costs accounted for about 79% of actual expenditure, and other expenditure accounted for about 21%. The 1983/84 actual manpower cost accounted for 84% of total expenditure while other expenditure accounted for only 16%. The 1984/85 personnel budget accounted for 81% of total expenditure budget while other operating cost accounted for 19%, and actual personnel cost accounted for 87%.

Eventhough, there has been some improvement in reducing personnel costs, it is obvious that there still a lot to do in reducing personnel costs.

As can been seen from the figures in table 4.3 the operating costs of the NPA is etremely high, and the major component, the personnel costs need to be cut say, by 20%. It is true that some effort have been made in
controlling costs, but we need to redouble our efforts if the NPA is to meet her goals and attain her financial objectives.

7. 8. COST CENTER BUDGET

The cost center budget of the NATIONAL PORT AUTHORITY is relatively small as compared with the personnel services budget. This account for between 18% and 24%. This budget includes staff training, motor vehicle maintenance, plant and equipment maintenance, insurances, stationery, lubricants and other miscellaneous expenses necessary for the operation of the ports under NPA control.

7. 9. REVENUE BUDGET

The preparation of manpower budget, cost center and capital budgets are based on revenue projections. The first step in the preparation of the revenue budget begins with the Planning Department ascertaining the amount of traffic likely to pass through the ports during the twelve months of the fiscal year. This traffic is normally expressed in commodities, volumes, tonnages etc by the Planning Department who is responsible to see the services of the ports to port users.

The performance of the revenue budget of the NPA for the fiscal year 1982/83 and 1984/85 were not satisfactory as revenue dropped by 2.3 million dollars in fiscal 1982/83 as compared to 1981/fiscal year, and a net loss of 1 million dollars. This is due to the decline of activities in all areas, such as operations, marine and others bought about by the general political
instability in the country, affecting all avenues of economic activities in the country.

In comparison with the 1982/83 estimates, the actual operating revenue dropped by 7.1 million dollars.

The following are ratios for the fiscal year 1981/82 and fiscal year 1982/83 for comparison purpose:

1981/82:

Profit margin: sales 18,200,000 US dollars less: cost 17,900,000 = 300,000

PM: = 300,000 divide by 18,200,000 = 1.6%

Capital turnover= sales 18,200,000 divided by: capital employed 91,000,000= 2times.

Return on capital=2 multiply by 1.6 = 3%

1982/83:

PM. sales 16,199,000
less costs 15,300,000 equaled 899,000

PM: = 899,000 divide by 16199000 = 6%

capital turnover:

sales 16,199,000 divide by 86,562,000 = 1.9 times.

return on capital: 85
1.9 times 6% = 11%

Growth margin. =
less: 1982/83 sales 16,199,000
1981/82 sales 18,200,000
(2001)

GM: = 2001 divide by 16,199,000 = 12% negative.

1983/84:
PM. =3993000 divide by 17393 = 23%
capital turnover = 17393000 divide by 88684000 = 1.9
return on capital= 1.9 times 23% = 44%

1984/85:
PM. 2,700,00 divide by 15,500,000 = 5%
capital turnover = 17400000 divide by 85,577,000=2.0
rate of return on capital. =2.0 times 5% = 1%

A closer examination of the above ratios suggest that the NATIONAL PORT AUTHORITY is viable, with satisfactory performance of rates of return ranging from between 3% and 44% during the years 1981/82, 1982/83, 1983/84, and 1984/85.

As promising as these figures may look, there is a fallacy in these figures. The NATIONAL PORT AUTHORITY has, for several years now, not provided amenities to employees, has not given increments, bonuses, and transportation as contained in NPA's personnel. If these were provided, the ratios would have shown an ugly
picture.

In addition to these nonpayments to employees, the monthly income tax deductions, 25% deduction made from employees, 16 2/3% deductions for reconstruction taxes are in arrear for the period under review. If these are taken into consideration, then the ratios would be considerably low, rendering the NPA nonviable and not economically and financially sound. Also included in the areas are employees and management pension contributions that have not been paid.

Actual revenue generation must be brought up to or exceed the 1979 level of 21 million dollars, and expenses be brought down, especially personnel cost, from about 11 million dollars to the 1979 level of about 7 million dollars or less.

The NATIONAL PORT AUTHORITY has experienced a declined in revenue generated during the nineteen eighties. To correct this situation, management must ensure that the following actions are taken in the preparation of the revenue budget:

1. A technical projection of potential customer demand for a specified time horizon and with specified underlying assumptions must be made.

2. Sales forecasts must be prepared by staff technically trained and employing numerous sophisticated analyses such as trend fitting, correlation analysis, mathematical models, exponential
smoothing, and operations research techniques.

3. Forecasts must be revised in the planning process to take into account management objectives, strategies, and resource commitments so that a realistic sales plan results.

4. There must be promotion and advertising plan to sell the port to potential customers.

5. A sound and workable pricing policy is required - acceptable both to the port users and the NATIONAL PORT AUTHORITY, for pricing strategy is a vital part of sales planning.

6. Evaluation of relevant variables affecting the NPA.

7. Establishment of broad objectives and specific goals.


9. Economic analysis and appraisal of the future economic conditions on a national and international basis.

7.10 PLANNING CAPITAL ACQUISITION

The long-range and short-range profit plans must include the plans of management for expansion and contraction of ports infrastructure, superstructures, equipment,
improvements, major renovations, replacements, and other resource-demanding decisions. These are the major components of the capital expenditure budget. They involve "sunk" and "fixed" costs, which are difficult to amend or retrieve once the initial decision is implemented. Each capital addition preferably should be viewed as an identifiable project having its own unique time dimension. Some capital additions projects involve a time dimension of two or three years whereas another project may require a ten-year time horizon. The basic approach, therefore, to planning capital additions should be on a project basis; those projects tentatively approved by management should then be reflected in the long-range profit plan, and the next annual phase of each project should be reflected in the annual profit plan.

The capital expenditures budget expresses the detail plans of management concerning asset additions, improvements, replacements, and funds set aside for these purposes.

The capital expenditures budget has considerable significance from management planning and control viewpoints. Top management is constantly faced with the problem of how much funds to invest in capital projects to prevent (1) idle operating capacity, (2) overinvestment in operating capacity and (3) investment in assets that will produce a low or no "return on the funds committed".

There are important objectives of a budget program for capital expenditure. These objectives include:

1. PLANNING: provides for sound planning
2. COORDINATION.- provides for coordination of capital expenditures related to:
   a) financing needs.
   b) Investment committed to the various operational activities.
   c) Sales potentials
   d) profit potential
   e) Return on investment potentials
   f) control-provides for control of both minor and major capital additions.

These objectives must be borne in mind when preparing the capital expenditure budget. Since the ports must operate on a commercial basis, and have to shoulder the amortization of her loans for major capital investments for both infrastructural and superstructural developments, every effort should be made to avoid outside pressure when it comes to making major capital expenditures decisions.

Because capital expenditures generally involve the more or less permanent commitment of large sums of money, decisions concerning them have a significant, long-term effect on the economic health of the port authority. This fact suggests the need for careful analysis and planning on the part of top management. An ill-advised decision concerning capital expenditure frequently cannot be reversed before it seriously affects the financial health of the NATIONAL PORT AUTHORITY. Because of its importance, systematic procedures and time tables are necessary for effective planning of capital expenditures.
The capital budget of the NATIONAL PORT AUTHORITY includes two principal types of items:

1. THE MAJOR PROJECTS: These involve the expenditure of large sums of funds on such items as cargo handling equipments, buildings, plants, tugs, launches, dredger, and rehabilitation and expansion of our ports. Such projects generally should be considered and planned over a number of years before final decision is reached.

2. The second type of capital budget includes the minor capital expenditures that need not be planned in detail far in advance. These include purchases of office furniture, office equipment, low cost machines and tools, small renovations to buildings and other miscellaneous items that are essential to the operations of the NPA.

7.11 RESPONSIBILITY FOR BUDGETING CAPITAL EXPENDITURES:

The primary responsibility for capital additions should rest with all members of management, including divisional and departmental heads.

For MAJOR capital expenditures, the primary responsibility should rest with top management. For proposals involving major expenditures, definite procedures must be established to assure appropriate analysis and evaluation. Procedures must be established for the originator of a proposal to express his proposal in writing including a description of the proposal, reasons for the recommendation, sources of relevant data,
advantages and disadvantages of the proposal, and recommended starting and completion dates.

The importance of control of capital expenditures cannot be overemphasized. Control is not solely, nor even primarily, downward pressure on expenditures. Control must rest upon sound management planning that restricts expenditures to economically justifiable additions, yet guards against stagnation in the maintenance, replacement, and acquisition of essential capital items. Control must not be used as a tool against other managers in an effort to frustrate them thereby harming the NATIONAL PORT AUTHORITY financially.

7.12. CASH BUDGET

Cash budgeting, which involves projection of cash inflows, outflows, and financing needs coupled with cash control, is vital to the NATIONAL PORT AUTHORITY. Cash budgeting is directly concerned with the lag between transactions and the related cash flows, with cash needs, and with excess cash. Excess cash involves an opportunity cost that is, the interest that could be earned on excess cash. Of course, at present, NPA does not have the problem of excess cash, but it existed in the late 70’s and early 80’s. The timing of cash flows can be effectively controlled by management, if the proper machinery is set into motion.

A comprehensive profit planning and control program establishes the foundation for a realistic cash budget. There must be a proper balance between available cash and the cash-demanding activities.
While it is true that cash budgets are prepared at the NATIONAL PORT AUTHORITY, there seems to be a problem with the implementation of the cash budget.

Determination of probable cash inflows and outflows permits and evaluation of the probable cash position for the budget period. This evaluation of cash position will indicate to management: the need for financing to cover projected cash deficits, and the need for management planning to put excess cash, if there is any, into profitable use.

Clearly, indeed, the cash budget is closely related to the sales budget, expense budget, and capital expenditure budgets. Nevertheless, planning and control of these factors do not automatically establish an optimum cash position. The cash budget is concerned with the timing of cash inflows and outflows, whereas the other budgets are concerned with the timing of the basic transactions.

The timing of cash inflows and the timing of the basic transactions according to plan (budget), the observation of which is vital, seem not to be followed at the NPA. The timing of cash inflows and outflows, must as a matter of priority, be followed to target dates to avoid the situation where the need for additional cash is not realized until the situation becomes critical.
The principal purposes of the cash budget may be outlined as follows:

1. To indicate the probable cash position as a result of planned operations:

2. To indicate cash excess or shortages.

3. To indicate the need for borrowings or the availability of idle cash for investment.

4. To coordinate cash with 1) total capital, 2) sales, 3) investments and 4) debt.

5. To establish a sound basis for credit.

6. To establish a sound basis for continuing control of the cash position.

A good system of cash control is especially important because of the potential consequences it can have on operations. Frequently, it is possible for management to make decisions or alter existing policies so that the cash position is enhanced. An unexpected change in operations may create a serious cash shortage, but management may be able to avoid, or at least to minimize, the undesirable situation by taking the following actions:

1. Increasing efforts to collect receivables.

2. Reducing out-of-pocket expenses.

3. Deferring capital expenditures.
4. Deferring payment of selected liabilities.

5. Altering timing of operations that affect cash.

Obviously, the effect of these decisions on the cash position is contingent upon their timing, oftentimes the earlier the decision, the greater the potential effect on the ultimate cash position. Therefore, it is essential that management be fully informed as far in advance as possible about the PROBABLE cash position.

Assuming adequate planning, continuing control of the cash position should be based generally upon two procedures:

1. First, an adequate and continuous evaluation of both the present and the probable cash position should be made. This involves a periodic evaluation and reporting of the actual cash position to date. This report is coupled with a REPROJECTION of the probable future cash flows for the remainder of the period, taking into account budgeted conditions affected by unexpected developments not originally anticipated.

Let us assume, for example, that at the end of June 1985, the NPA had an actual cash balance of 350,000 U.S. dollars, whereas the original budgeted balance was in fact 450,000 U.S. dollars. The factors causing the US 100,000 dollars unfavorable variation in cash should be carefully analyzed, with particular emphasis given to the probable future effect. The next step would be that, the budgeted
cash receipts and payments for the remainder of the year should be carefully evaluated and adjusted for any new conditions that may affect them. The final step, then, in evaluating the probable future cash position is to start with the 350,000 US dollars actual cash balance at the end of June 1985, by adding to it the reprojected budget receipts for each time period during the rest of the budget year and by deducting the reprojected budget payments for the same period. In this way a completely new evaluation of the probable future cash position would be developed for top management. This would give management a continuous budget evaluation of the cash position. Continuous monitoring gives control through policy decisions that, by the very nature of the situation, must be made some time in advance to have the maximum effect on the cash position.

The other procedure of cash control maintains data on the day-to-day cash position. This needs not be elaborated on for it is already in use at the NPA.

7.13 FUNDS FLOW STATEMENT

Financial planning affects a company’s future financial structure as well as its sources and uses of funds, and NPA is no exception. In order to plan the management of NPA’s financial resources, we need to understand how funds flow through the company.

Funds flow cycle is sometimes referred to as a working capital cycle, but it encompasses a wider range than working capital, for depreciation, is included. Fund statement involves classifying the changes in balance sheet items that occur between two dates into categories—sour-
CONTROL PROCESS SUMMARIZED.

- Approved plans (tactical & strategic)
  - Feedforward (planned objectives & goals communicated)
  - Current controls (supervision, inspection, performance reports)
  - Feedback (communication of differences & causes of actual performance with planned performance)
  - Corrective action (designed to reduce differences between planned and actual performance)
ces and uses. The first step in preparing a funds flow statement is to calculate the change in each of the balance sheet items, noting whether is an increase or a decrease and then determine whether these changes are sources or uses of funds.

The sources of funds grouped into three major categories; a) internal operations, b) changes in liabilities, and c) decreases in assets. Uses of funds are grouped into increases in assets and decreases in liabilities.

7.14 BUDGET CONTROL METHODS

Performance Report

Performance reports for internal management use constitute an important part of a comprehensive profit planning and control system. The performance reporting phase of a comprehensive budget program may determine the extend to which planned goals and objectives of the NPA are attained. It is for this reason that the Budget Section of the NATIONAL PORT AUTHORITY does prepare monthly performance statements. These reports comprise carefully selected series of data related to responsibility centres. They facilitate internal control by management.

These reports constitute an important phase of the control process. In order to be useful to management, this accounting information must be communicated to management personnel who should be able to understand the nature and significance of the material contained in the reports he receives. When communication is genuinely effective, mana-
gement's actions and decisions are to be based on the facts which they receive rather than on untested impressions and guesses.

At NPA, there is reason to believe that accounting reports to management have not always achieve their intended purpose because the reports are not understood, recipients lacked time required to grasp the meaning.

The NATIONAL PORT AUTHORITY issues monthly performance statements covering all major aspects of operations. These reports indicate favorable and unfavorable variations between actual performance and planned performance for the month just ended and, cumulatively, for the year to date. The control process does not stop at this stage, there is follow-up-procedures which constitute a key aspect of effective control.

7.15 IMPROVING THE FINANCIAL SITUATION

The management of the NATIONAL PORT AUTHORITY by the decisions and actions, influences the quantity of resources consumed to accomplish management objectives. In the modern technological shipping world, with the port as an integral part of the maritime transport chain, the emphasis on bigger organizations, more sophisticated equipment, modern techniques and general pressure to speed up the pace of operations is one that can daunt the ablest management into feeling that any contribution she can make to the better running of the NPA must be minimal.

Management, in her decisions and actions, influences the
satisfactory performance of the NPA in recent years, the following steps can be taken by which management can beneficially influence the financial situation of the NPA.

The need for an acceptable return on assets employed is one of NPA's commercial objective, and it has been determined that a return on assets employed of 12% is considered acceptable. Assuming that, unlike fiscal years 1983/84 and 1984/85, when net profit was negative, the NPA came out with a profit of 3 million dollars in 1985/86 fiscal. Return on capital employed can be measured by profit with net assets employed. If the current profit is too low when measured against capital employed, which it is in this example, there are two areas that need investigation. The return can be improved by:

1. Increasing profit
   or
2. Decreasing the capital.

Assuming further that capital employed is 72 million, our return on capital would therefore be:

3 million dollars divided by 72 million dollars = 4% return on capital. Considering that management's objective is a 12% return on capital, the 4% return must be improved. Either management increase profit to 8.7 million dollars giving a net return of 12% or decrease capital to 25 million dollars to get the desired 12%.

It is not realistic to expect NPA to reduce her capital employed to 25 million dollars, but she can pursue the fol-
lowing course:

1. Experience has shown that a thorough scrutiny into income, costs and expenses which make the revenue surplus, and into the net asset employed, invariably yields benefits in both areas. Management should therefore make: a) Rigorous examination of all the capital or fixed assets belonging to the ports to ascertain as to whether all the fixed assets are needed to service the ports’ traffic. Those that are not necessary to service the ports’ traffic should be sold. Capital employed in our ratio would be reduced and funds would flow into the business. b) This exercise should prompt management to question and investigate decisions which are currently being taken and which could lead to a reduce flow of expenditure by the ports in the future. To control costs in the future it is necessary to evaluate their impact on our ports now and before decisions are made. In this cost saving exercise, communication and co-operation between managers of different departments of the NPA is vital. c) After a rigorous examination of the capital assets employed by the port authority and the promotion of better inter-departmental communication, the attention of management must be towards stock levels and the purchasing procedures of the NATIONAL PORT AUTHORITY.

2. Stock represents money that has been spent on goods ranging from spare parts of machinery
to stationery. This area can generate losses to NPA by:

a) Pilferage of stocks
b) investment in materials and spares no longer needed.
overstocking due to poor buying and poor stocking techniques.

Pilfering of materials is very costly to the NPA and procedures should be enforced that prevent unauthorized withdrawing of supplies. It is not unusual for a thorough examination of spare parts for plant and machinery to reveal spares being held for equipment no longer in use at the NPA.

Standardization of plant and equipments saves money. A proliferation of different makes of the same type of machine means that a greater number of records have to be kept by store-keepers, and purchasing agents spent more time buying from several suppliers rather than one or two. Maintenance engineers have to work on several different machines which makes it difficult for them to use their skills and time in the best way possible. Standardization assists in the level of stocks carried since a smaller quantity of each item need be carried.

Debtors can absorb a very large proportion of the total funds of the corporation as reflected in her receivables in the 1984/85 balance sheet. Management policy in respect of these outstanding debts must be clearly formulated, known to staff and port users and be adhered to. Management should employ a variety of ways to speed up collection of receivables and thereby keep debts at a minimum.
Cash surplus to immediate requirements should be placed on deposit. Accurate cash planning and budgeting enables management to assess the balance they need from week to week and then find the proper use of the surplus funds.

Many costs are mandatory and other costs arise from past policy decisions taken by management. The critical are in which management should exercise vigilance is when expenditure is presented for approval and before the money is spent. New developments in modern sea transport systems have imposed heavy expenditure for the acquisition of the available sophisticated equipment, from container berth to computers. These acquisitions are individually appraised by the usual discounted cash flow techniques and in themselves may justify their cost.

It is in the back-up and ancillary services which tend to get overlooked, that the danger of wasting resources occurs. Unless managers have the necessary expertise to evaluate staff requirements and supportive resources, expenditure can increase and persist unnecessarily, even alarmingly, and will need prompt action.

7.16 IMPORTANCE OF FINANCIAL STATEMENTS.

Financial statements are prepared and issued to communicate useful financial information to interested parties. If this objective is not met, then the statements serve no useful purpose. But careful analyses and interpretations of the financial statements will often clarify and add to the usefulness and thus aid communication.
ments are intended to shed light on how well the NPA is performing and achieving its commercial objectives.

In so far as it can be measured quantitatively, the overall objective of a business, with NPA no exception, is to earn a satisfactory return on funds invested in it, consistent with maintaining a sound financial position. It should however, be noted that there are nonmeasurable objectives such as personnel satisfaction, public responsibility, ethical considerations, social responsibility, that may be important and must be taken into account whenever relevant in appraising the overall success of the NPA.

The following are the financial analyses and interpretations of NPA’s 1982/83 financial statements.

Liquidity test: = current assets divide by current liabilities = 13793 divide by 6752 = 2 times.

This means that NPA’s current assets are 2 times current liabilities. This is a measure of the debt-paying ability of the corporation. As shown by this result, NPA is capable of liquidating her current liabilities.

Acid test: = Quick assets divide by current liabilities = 10543 divide by 6752 = 1.6.

This is a measure of the extent to which liquid resources are immediately available to meet current obligations.

Receivables to Sales: = Net receivables divide by net sales = 9276 divide by 15555 = 61%. 15.
This indicates that 61% of NPA's net sales is tied down in receivables.

Average collection period = RECEIVABLES TO SALES MULTIPLY BY DAYS IN THE PERIOD = COLLECTION PERIOD = 61% multiply by 365 = 223 days.

A rule of thumb should be that the collection period should not exceed one and half times the regular payment-period which in the case of NPA is forty-five days.

Nevertheless, it is important to mention that it is not recommended to study these ratios separately but to consider them as a whole, and, of course, ratios only have meaning at all if there is a link or relationship between them. Obtaining ratios for a single year, although of some use, is incomplete and the interpretation can be misleading. Studying these figures for several consecutive years will help in defining the trend the NPA is following. It is important to identify the facts that are transitory and those that are permanent, this will improve the picture of the trend. Comparisons must also be made with the different ratios obtained in several successive accounting periods allowing a better judgement of the financial situation of the ports. The utilization of this financial information in conjunction with operational and other types of information will provide a better basis for the long-term planning of our ports.

Financial statement analysis is the activator element for further investigation of causes and effects. When these financial analyses are done, it is required that corrective actions are taken if needs be, to avoid the danger of wastage of effort and resources. Using the
proper ratios and forecasting techniques, the port management can predict, with a reasonable margin, the solvency and profitability of the NPA, and apply these changes of policies and practices in such areas as pricing which will improve the ports' financial situation.
Table 4.3.  

<table>
<thead>
<tr>
<th></th>
<th>1981/82 Actual</th>
<th>1982/83 Actual</th>
<th>1982/83 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages &amp; Salaries</td>
<td>10561</td>
<td>9674</td>
<td>10755</td>
</tr>
<tr>
<td>Overtime</td>
<td>1911</td>
<td>307</td>
<td>43</td>
</tr>
<tr>
<td>Travel &amp; per diem</td>
<td>223</td>
<td>225</td>
<td>392</td>
</tr>
<tr>
<td>Plant &amp; equipment</td>
<td>591</td>
<td>561</td>
<td>914</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>226</td>
<td>137</td>
<td>282</td>
</tr>
<tr>
<td>Fuel &amp; lubricants</td>
<td>1226</td>
<td>116</td>
<td>1440</td>
</tr>
<tr>
<td>Stationery &amp; postage</td>
<td>235</td>
<td>176</td>
<td>324</td>
</tr>
</tbody>
</table>

Total: 14,984

Table 4.4.  

<table>
<thead>
<tr>
<th></th>
<th>1983/84 Actual</th>
<th>1984/85 Actual</th>
<th>1984/85 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages &amp; salaries</td>
<td>9747</td>
<td>9597</td>
<td>9749</td>
</tr>
<tr>
<td>Staff training</td>
<td>60</td>
<td>32</td>
<td>80</td>
</tr>
<tr>
<td>Plant &amp; equipment maint.</td>
<td>464</td>
<td>379</td>
<td>828</td>
</tr>
<tr>
<td>Building &amp; residence maint.</td>
<td>36</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>Motor vehicle maint.</td>
<td>140</td>
<td>102</td>
<td>237</td>
</tr>
<tr>
<td>fuel &amp; lubricants</td>
<td>977</td>
<td>656</td>
<td>770</td>
</tr>
<tr>
<td>Canteen &amp; foodstuff</td>
<td>25</td>
<td>21</td>
<td>81</td>
</tr>
<tr>
<td>Advertisement</td>
<td>26</td>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td>Misc. expense</td>
<td>160</td>
<td>149</td>
<td>148</td>
</tr>
</tbody>
</table>

Total: 11635

106
All figures in $'000

Table 4.5  A comparative flow of revenue:

<table>
<thead>
<tr>
<th></th>
<th>1981/82 Actual</th>
<th>1982/83 Actual</th>
<th>1982/83 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo handling</td>
<td>8109</td>
<td>7816</td>
<td>9850</td>
</tr>
<tr>
<td>Demurage</td>
<td>3098</td>
<td>2473</td>
<td>3037</td>
</tr>
<tr>
<td>Sub-total</td>
<td>11207</td>
<td>10289</td>
<td>12887</td>
</tr>
<tr>
<td>MARINE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>2898</td>
<td>2193</td>
<td>3548</td>
</tr>
<tr>
<td>Facilities</td>
<td>2758</td>
<td>2673</td>
<td>4682</td>
</tr>
<tr>
<td>Equipment Hire</td>
<td>124</td>
<td>38</td>
<td>474</td>
</tr>
<tr>
<td>Rentals</td>
<td>327</td>
<td>332</td>
<td>244</td>
</tr>
<tr>
<td>Stevedoring</td>
<td>386</td>
<td>320</td>
<td>506</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>459</td>
<td>354</td>
<td>832</td>
</tr>
<tr>
<td>Sub-total</td>
<td>6952</td>
<td>5910</td>
<td>10286</td>
</tr>
</tbody>
</table>

Ground total          | 18159         | 16199         | 23173         |

107
Accounting information assists the NPA management in judging whether the financial objectives are met or not. One of these objectives is a satisfactory net surplus of income over operating and administrative costs. One of the tools for the financial viability of the NPA is the study of costs. The Finance Division must supply management with information regarding costs so that appropriate action can be taken to correct any abnormal situation and put the authority back in the blue. Clearly the NPA needs to study carefully the net yield from its traffic, ships' dues, handling or storing of cargo charges and costs in order to develop a realistic tariffs for the ports.

According their behaviour in relation to activity evaluated, they can be classified into fixed and variable costs. In order to evaluate the different operations in relation to their contribution to the profit or loss, the NPA management must break down the activities of the ports into parts, these are referred to as SERVICE COST CENTRES and PRODUCTIVE COST CENTRES. The process of breaking down the whole of NPA into centres is important because it enables management to allocate the cost of resources consumed to the section which incurred them, and places the person in charge with the responsibility of using these resources as effectively as possible.

The various operating sections of the ports have little difficulty in calculating the income they have earned during the year. Revenue from marine services, operations, rentals and miscellaneous income can be readily ascertained from the bills, but it is difficult
to identify the actual costs incurred in providing the resources necessary to satisfy customers' requirements. Management must know these costs, because if they are not known, management may inadvertently be handling or storing cargo at a loss and so running down the assets of the corporation.

The service cost centres are essential to the running of the ports, they incur costs as a result of their activities but earn little or no income. In financial terms, the income generated by the service centres are usually minor transactions.

We need to identify the costs incurred in operating the facilities of the ports, and to do this, management must understand the nature of costs. Costs fall into four main categories:

1. Direct costs- these may be;
   a) fixed costs
   b) variable costs

2. Indirect costs- also;
   a) fixed costs
   b) variable costs

Some costs can be allocated directly to the facility or service concerned and some cannot directly be allocated. It is vitally important that the significance of the nature of costs is understood by top management, for one of the most important function of management is to control costs. All costs have to be controlled in the long-term, but the variable costs need prompt and regular scrutiny. Cargo handling costs, power and materials change everyday as the services of the ports respond to the traffic brought in by the port users. It
is in this area that costs can get out of hand very quickly and close control is necessary here.

Management needs to know the income and direct costs of each centre and relate these to the throughput of cargo. It is also essential to breakdown this information in respect of different commodities, when the costs of different commodities are known for discharging, loading, delivery or transporting to transit sheds, this information is the basis upon which tariffs should be calculated.

When a number of different ships discharging say, rice, fruit, bentonite, have been observed and the necessary resources needed to perform this task have been measured, STANDARD cost to the NPA can then be calculated for each commodity. Costs should be set up for groups of cargoes which have similar handling characteristics. Standards should be based on work study and must be calculated for each group of commodities, and should be quantified in money terms, so that a standard cost would be known for all commodities that regularly pass through the ports, so as to ascertain the cost of services and facilities provided by the ports for their customers, it is necessary to analyse the TOTAL NPA incomes and expenditures and allocate them to the centres where they were generated.

To maximize his contribution (profit), the cost centre manager must have details of the incomes, costs and expenses generated by his operations. To do this, the activities of his centre must be analysed and summarized in financial terms so that income, costs and expenses can be allocated for vessel or parcel of cargo handled, and
this information should be communicated to the manager concerned. For management planning and control purposes, the Finance Division should analyse, summarize, and allocate the financial information to the relevant productive and cost centres. (control centres.)

Managers of control centres, with the assistance of the management accountant, should use the information in the system, and relevant information outside these records, to forecast income, costs and expenses for future operations of their departments. Taking into consideration fixed costs and variable costs, an effective and realistic budgets can be prepared for each department. With this, management can control costs, improve the financial position of the NPA, thereby meeting her operating, commercial, economic, and financial objectives.
CONCLUSION

Within the context of modern transport techniques, there is increasing emphasis on the port, not generally as the terminus or end of a transport movement, but a point through which goods and passengers pass. In acting as link in a transport chain, the port makes provisions for the concept of the through transport operation. Ports exist as an important and fundamental part of the overall pattern of trade and transport.

It is this importance that led to the development in Liberia of deepwater ports. Port development in Liberia have had a tremendous economic impact on the lives of the Liberian citizenry. Ports development generated more international trade, increased foreign currency earnings, and accelerated our economic and infrastructural developments.

The efficient and effective management of our ports, therefore, require dedication and sound financial planning, judgement and management, thereby making them economically viable and producing an acceptable financial returns. There is and increasing recognition that the part management have to play in making the port efficient, is not one of sitting in the office, however, excellent a landlord they may have been trained to be. Port authority must take the lead, she must recognize that it has a major part to play in the national economy of Liberia.

For the NPA to be financially sound, management must institute proper and sound financial planning and management techniques, buttress with a sense of honesty, that will, in the long run, provide an acceptable rate of
returns on investments and sufficient cash flow to settle long and short terms maturities and current liabilities.

The tool to proper financial planning and management of our ports is budgeting. Effective budgeting is the key to maximun profitability in the port industry, which in turns, helps attract investment that is vital to the long term future of the port authority, thereby fulfilling her social responsibility. There are several ways in which the existence of an effective budget can be advantageous:

1. The forecast of revenue and expenditure expressed in the budget enables management to predict the cash flow during the year and hence make the best use of monthly cash surpluses.

2. The budget acts as a yardstick against which performance is judged at regular intervals and hence allows management to adapt to their policies to changing events.

3. The targets that a budget necessarily implies encourage the development of an ESPIRIT DE CORPS among managers, who are then better able to win the support of their. It also encourages cost consciousness.

4. The budget facilities the formulation of tariff increases in line with predicted rises in expenditure and ensures that company's profitability remains adequate.

It is a known reality that the implementation of NPA's
budgets is burdened with problems. To tackle these problems, it is recommended that management take the following actions:

1. That since the Liberian Government is returning back to the calendar year as the fiscal year, the Planning Department should submit forecasts of anticipated tonnages and gross revenues expected during the year in August. This forecast should detail tonnages and revenues for each class of cargo whether for loading and unloading and the times that these are expected to arrive at the ports.

2. Based on these forecasts, all other departments must submit estimateds of theirs cost and expenses given the level of activity indicated by the Planning Department no later than the second week in August. All managers of sub-areas of responsibility and control must participate in estimating their needs in terms of men, equipments and services required to handle the anticipated level of work.

3. Income, costs and expenses of operating departments must be related to the cargo handled to see whether the rates charged to customers are sufficient to produce an acceptable gross margin.

4. Financial forecasts should be examined by the Budget Committee at the end of September to see whether they indicated an acceptable surplus. Any amendment in the
estimates should be discussed with the manager concerned and approve by him.

5. A rigorous examination of all capital assets should be made by management to ascertain whether all the capital assets are needed to service the ports' traffic. Those that are not necessary should be sold.

6. Better inter-departmental communication must be promoted.

7. Management must review the stock levels, have them reduced if necessary, and improve the purchasing procedures.

8. That many costs are mandatory and other cost arise from past policy decisions taken by management, management should therefore, exercise vigilance when expenditure is presented for approval and before the money is spent.

9. Management should institute a vigorous budget education so as to enable managers understand the preparation, operations, and meaning of the budgets.

It is further recommended that:

1. A Commercial Department be created. This department will handle trade promotion activities, market research, tariffs, costs and charges, and public relations.
2. The Training Department be raised to a Department of Manpower Planning and Development. This will facilitate and ensure the systematic and sound planning of our actual long-range manpower requirements.

3. Planning Department be incorporated into the Engineering Division as a section.

4. A Port Development Section be created under the office of the Port Manager to deal with port development problems and initiate port development programs.

5. The NATIONAL PORT AUTHORITY seems to be a bit too centralized, the operation and management of the ports of Harper and Greenville should be left with the senior staff of those ports with the HEAD OFFICE of NPA AS THE POLICY maker, and providing guidance. The HEAD OFFICE should monitor the progress of these ports to see whether targets are met.

6. A concerted effort must be made by the Finance Division to collect our receivables as the receivables figure seems to be high and the collection period be reduced. An aging analysis should be made of the receivables to ascertain those that have been on the books for a very long time in order to have them eliminated, if necessary, so that the true picture of the receivables can be shown.
Proposed Organizational Chart For NPA.
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