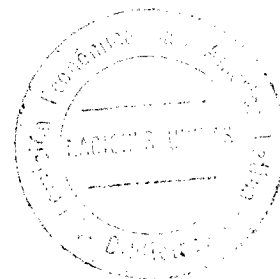


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ECONOMIC COMMISSION FOR LATIN AMERICA
OFFICE FOR THE CARIBBEAN

REPORT OF MISSION
ON
PORT ADMINISTRATION
IN THE EAST CARIBBEAN COUNTRIES
ST. VINCENT, ST. LUCIA AND DOMINICA

29 June 1971 to 28 September 1971

by

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I. INTRODUCTION

I. 1. This study was undertaken as part of a Special Service Agreement for a period of 3 months, the terms of reference being as follows:

Under the supervision of the Chief of the ECLA Regional Office in Port of Spain, and with the cooperation of the ECLA official in charge of transport and the U.N.P.D. regional advisers in maritime transport in said Office, the expert will be expected to:

- (i) examine and prepare proposals and recommendations related to problems and requirements concerning the improvement of port operation and administration, and cargo-handling methods and practices, in member countries of the Caribbean Free Trade Association (CARIFTA), taking into account the characteristics of present and future trade flows in regional and overseas trade of said countries; and
- (ii) when appropriate and necessary, in consultation with interested government and port authorities, cooperate with said authorities in the preparation of other measures for the improvement and modernisation of port operation and administration, taking into account future developments in regional and overseas maritime transport of the CARIFTA countries.

The Agreement commenced on 29th June 1971 and terminated on 28th September 1971.

I. 2. The study should be seen as continuing or supplementing that was carried out in several East Caribbean countries between 1st November 1970 and 31st January 1971 by Mr. H.W. Appel as Port Engineer Expert. In paragraph 2 of Mr. Appel's report ^{1/} it was pointed out that for

^{1/} ECLA/POS 71/2, dated 29th January 1971.

various reasons the originally planned investigation by a team of two experts into the problems in the ports of the countries referred to had had to be abandoned.

This report therefore deals mainly with problems of Port Operation and Administration.

- I. 3. Owing to the limited duration of the assignment and the large amount of work to be done, the terms of reference had to be defined in greater detail in order to achieve as many concrete results as possible during the allotted space of time.

After consultation with the Director of the ECLA office at Port of Spain, the requisite information was obtained by paying brief fact-finding visits in turn to the ports of Kingstown (St. Vincent), Castries (St. Lucia) and Roseau (Dominica).

As a result of reactions to basic suggestions, contained in two interim reports ^{1/} and formulated with the aid of impressions gained there and of recent information obtained, it was agreed after lengthy discussion to adopt the following method and priorities.

- (i) As a first priority, to create and introduce in the near future extra storage space and a transitional administration to bring about more efficient management and combat congestion in the ports of Castries (St. Lucia) and Roseau (Dominica) in order to promote the flow of goods through these traffic nodes;
- (ii) As a second priority, to prepare and introduce similar administrations in the ports (which are also to be extended in due course) of Grenada, St. Kitts, Nevis, Anguilla and Montserrat, all Member States of the Caribbean Free Trade Association (CARIFTA);

^{1/} ECLA/POS 71/12 and ECLA/POS 71/13, dated 2nd. September 1971.

- (iii) As a third and last priority, gradually to extend and transform/convert the said Transitional Administration into a permanent administrative body, the Port Authority in the ports mentioned.

I. 4. An important consideration when planning this study and establishing the aforementioned priorities was the need to promote integration and economic cooperation in the CARIFTA countries by introducing the same administrative and other standards in principle in the ports of the Member States for both inter-island and international shipping. The standards prevailing in the port of Kingstown (St. Vincent) have been chosen as the basis for the study in view of:

- (i) the favourable development, from the nautical, socio-political and management technique points of view, of the Transitional Administration introduced there and adapted to circumstances in the region;
- (ii) the opportunity afforded of training and instructing officials to be recruited locally and charged with the management of wharves and sheds.

I. 5. During the assignment, two journeys were made to the said islands in the Caribbean for familiarization and on-the-spot study, and for consultation with the authorities concerned and other interested parties.

It was decided that, unlike Mr. Appel, I was not to be accompanied by either the Regional Adviser for Maritime Transport or the Deputy Director of the Office.

Although this unusual decision raised some doubts, at the time it afforded great freedom of action, which led not only in many cases to a more rapid settlement of the various matters, but also to a different and in my opinion perhaps more objective approach to the problems concerned - advantages for which I owe a debt of gratitude to the Director of the Office.

The timetable I followed is appended as Annex 1.

I. 6. Literature and other data consulted

Beside the Appel report, I studied several other reports and publications, particularly on the political, social, structural, economic and other aspects of the countries and ports in question; they are listed in more detail in Annex 2.

2a: documents consulted

2b: officials met

The same annex also lists the several ministers or authorities and persons with whom I had discussions with regard to this study. During this exchange of ideas, all the requisite information and available particulars on organization, materials and equipment as well as on clerical, nautical and other matters concerning the ports were provided, and the help given in seeking and formulating a solution to the problems, many of which were very complicated, was beyond praise.

Lastly, I owe very many thanks, not only to the aforementioned members of the management and staff of the ECLA office, but also to the members and other employees of the Netherlands Diplomatic Missions in Port of Spain, St. Vincent, St. Lucia and Dominica for their valuable recommendations and cooperation in the study.

II. SUMMARY AND RECOMMENDATIONS

A. General

- II. 1. The developing countries generally, and those of the East Caribbean Common Market (ECCM) in particular, need good sea links and properly functioning ports if they are to make economic progress. Accordingly, the situation in the ports of these states is being closely observed by the ECLA office.
- II. 2. The ports of Antigua and St. Vincent, since their expansion and modernization ^{1/}, are functioning reasonably well, but those in the other member states are in more or less urgent need of improvement. Among those in the greatest need are Castries (St. Lucia) and Roseau (Dominica). During discussions at the office, therefore, it was decided to accord priority to the improvement of the latter ports.
- II. 3. In view of the short duration of the assignment and the possibility of bringing the problems under one denominator, thanks to the small differences between the islands and the existing economic cooperation agreements a determined effort was made from the outset to achieve an integrated solution (via CARIFTA or ECCM).
- II. 4. On the basis of priorities laid down in discussions at the ECLA office after a preliminary study of comparable problems in the port of Kingstown (St. Vincent), full attention was focused on the difficulties in the ports of Castries and Roseau, which were due partly to congestion.

^{1/} Carried out with foreign aid.

It was found from closer study of other reports on this subject and from on-the-spot inquiries and information obtained, that these difficulties are mainly attributable to the following causes:

(i) Faulty or bad management due to:

- the absence of a one-man management or a separate, government-controlled, autonomous or semi-autonomous managerial body (Port Authority or P.A.) with sole responsibility for the smooth running of the port; and consequently also
- the absence of a good, up-to-date system of management with the appropriate rules, regulations and by-laws;
- as a result of which the way had been laid open for incorrect interpretation of the duties and responsibilities of the Customs c.q. frequent over-zealous application of customs rules.

(ii) Bad handling of goods, due to:

- lack of mechanical aids (forklift trucks, tow-trucks, trailers etc);
- the bad state of wharves, floors and road surfaces, meaning that little or no use can be made of the existing aids.

(iii) Lack of outdoor and indoor storage space, due partly to:

- inefficient use of the spaces available in the port area;
- as a result of which any gradual increase on the movement of goods must inevitably lead to stagnation in transit and to accumulation on wharves and in the storage spaces, c.q. congestion of goods.

II. 5. In view of the serious direct and indirect results of this stagnation (chaotic stacking, theft, breakages etc.) for the economies of the countries referred to, priority has been accorded to relieving the congestion. Which in this instance is due not merely to lack of storage space but equally to the two other factors mentioned above.

Relief of the congestion therefore implies improvement of the entire situation with, for the time being, strong emphasis on the last-mentioned factor.

II. 6. As a first step towards improving the situation in these ports it was suggested to the authorities concerned, partly in the light of two interim reports ^{1/} compiled with the help of results obtained from the above study and from the investigations carried out in Castries and Roseau that the following measures be taken:

- (i) without delay, the promotion of immediate and efficient control of the congestion and more rapid handling c.q. improved flow of the goods, and
- (ii) in due course, the promotion of functionally sound use of the areas, and permanent efficient management of the ports.

II. 7. Besides provisions regarding materials and equipment, some temporary and some permanent, these measures mainly involve the institution, introduction development and perfecting of a managerial system for the ports, based on the present-day standards with respect to communications, administration, planning and environmental hygiene.

However, in view of the existing plans for extension of wharves, sheds etc., which seem unlikely to be implemented for another 3 or 4 years, and the present severe shortage of storage space, materials and equipment and well-trained personnel, it is recommended that the present managerial system be improved and modernized in phases, e.g.:

- (i) phase I, (estimated duration 1½ to 2 years), in which the changeover from the existing, highly Customs-dominated management to the Transitional Administration must be effected. (See Annex 3)

^{1/} ECLA/POS 71/12 and ECLA/POS 71/13, dated 2nd September 1971.

In view of the aforementioned shortages and the limited funds available, the initial set-up of this Temporary Administrative Structure of the Port Authority has been kept as simple as possible, partly by combining various functions.

It would be advisable, however to have this changeover and the related activities, such as the drawing up of the requisite instructions/regulations and by-laws, carried out under expert guidance.

This will call for temporary assistance from an expert, the duration of which will depend on circumstances. Much expense can be saved by arranging this integrally (via ECCM or CARIFTA, making it possible, for instance, for one expert to be recruited for several virtually identical activities or objectives).

In this connection, cooperation has been promised by the Port Authorities of Kingstown (St. Vincent) for the training, for instance, of middle and higher grade officials to be charged with the management of the wharves and sheds (terminal officials).

- (ii) phase II, (estimated duration 1 to 1½ years), in which, by continued training and specialization in practice, and by the development and differentiation to be introduced in the administrative system, an endeavour must be made to give it a more permanent form, as reflected in the Transitional Administration II (see Annex 4).

In view of the predominantly internal character of the changes to be introduced in the system (which include the institution of a budget and the defrayal of costs from the Administration's own resources), expert assistance will probably no longer be required. In this phase the Port Authority will have to consider its own future standpoint, and if possible the joint standpoint of CARIFTA, as regards the developments in the field of international goods transport (palletization, containerization, unification, etc.) and the consequences thereof for shipping in the Caribbean region (multipurpose ships, open

ships, Ferry/roll-on roll-off ships, etc.).

This is necessary owing to the extension (new building) of the port, which has now begun, and the resulting possibility of adaption to c.q. introduction of new techniques for cargo handling.

To prevent incorrect decisions it will be advisable to have inquiries made in advance about these points, or to prepare by making fact-finding visits to large international ports and pursuing complementary studies, for instance by attending special courses and doing fieldwork, organized by several countries, including the Netherlands, as part of International Technical Aid to Developing Countries.

- (iii) phase III, (estimated duration 6 months to 1 year), in which the Port Authority can be given its permanent form and constitution by making a sufficient number of well-trained and qualified personnel available and giving it the wider facilities obtained by then by new building (see Annexes 5 to 9).

- II. 8. In contrast to the arrangements made for the port of Kingstown, the draft management system for the other ports proposed that besides a Port Council a Board of Advisers be established, perhaps temporarily, on which all interested parties in the port, including therefore the workers, should be represented (see Annexes 3, 4 and 5).

In my opinion, provided the manager has reasonable managerial capacities, and there is temporary expert supervision, only such a system now affords the possibility of creating the conditions needed to establish sound management and a reasonably functioning administrative apparatus in these ports. Experience gained elsewhere in identical circumstances has proved this.

B. The cargo congestion

- II. 9. Generally speaking, congestion will arise in a port that functions as a junction in a transport chain when:

- great differences in transport capacity occur in the successive stages; and/or
- the accumulative capacity of the junction (temporary stacking site for goods) is inadequate; and/or
- the different phases and processes in trans-shipment and further transport are insufficiently or poorly coordinated.

In management terms this means that:

- more goods come in than can be dealt with and removed;
- a lasting shortage has arisen of space in general in the port which is needed for the handling and temporary storage of goods;
- the essential rapid dispatch of goods in the transit sheds ("Keep it moving!") cannot take place owing, for example, to stagnation in Customs clearance or in further transport to the various destinations c.q. warehouses.

II. 10. As is evident from further comparison with what was stated in II. 5., the congestion in the ports of Castries and Roseau is not only an accumulation phenomenon but is just as much a consequence of faulty equipment (mechanical aids, the bad state of wharves etc.) as, last but not least, of the two management systems working side by side which have intensified the difficulties and stagnation.

II. 11. The control and prevention of congestion, therefore, call for short-term measures (to temporarily increase the accumulation capacity and bring about the reorganization/modernization of the management system) and long-term measures (to bring about permanent efficient management of the port).

For the ports in question these may be summed up as follows.

(i) Short-term measures

- The creation of temporary extra outdoor and indoor goods storage areas of at least 30,000 and 15,000 sq.ft. respectively, on a suitable site, in order to be able to use the wharf sheds as transit sheds again as soon as possible and to normalize the flow of goods.

- The drawing up of special regulations and timetables according to which the goods must be supplied, stored, cleared, conveyed in transit/removed, for so long as there can be said to be congestion on the wharf and in the transit sheds.
- The creation of a Transitional Administration ^{1/}, responsible for the management of wharves, sheds, areas, materials and equipment in the port, the "manager" of which bears the sole responsibility for assigning berths to ships, for the mooring and for the loading, unloading and further handling of the goods.

(ii) Long-term measures

- A restructuring, improvement, and reappraisal of the entire port area with a view to achieving a functionally sound and more efficient use of wharves, sheds, buildings and areas.
- A restructuring, improvement and adaption of the entry and exit roads to and from the port area to new trans-shipment and transport techniques.

These measures are described in greater detail in the interim reports ECLA/POS 71/12 and ECLA/POS 71/13, as well as in chapters IV and V.

C. Port Operation and Administration

- II. 11. As already stated, the real cause of the difficulties, delays and congestions in the ports of Castries and Roseau is the bad management which results from the absence of a managerial body, the Port Authority, which, based on a reasonable administrative system, would bear the sole responsibility for the smooth running of these ports.

^{1/} As mentioned above and indicated in more detail in Annexes 3 and 4.

time in all probability the planned newly built extensions will also have been completed.

For a more detailed description of these temporary and permanent organizational plans the reader is referred to Annexes 3 to 10.

II. 16. These plans differ in an important respect from those drawn up for the port of Kingstown. In the former, it was recommended, with a view to relieving the congestion, that during the transitional period the manager be assisted by a Board of Advisers. This Board comprises all who have a direct interest in the port, e.g. the harbourmaster, the Customs, the harbour police, the fire brigade, the Government Cargo Superintendent and the port users, viz.: a Stevedore, a Merchant/Shipping Agent, and private port labour. Such an advisory body, as remarked under II. 8., was nevertheless considered to be necessary during the difficult familiarization period, despite the temporary expert assistance provided for. The fact that the urgency of the matter was likewise realized by the governments of St. Lucia and Dominica is evident from the more detailed interpretation, given in Annexes 10 and 11, of the Temporary Administrative Structure of the Port Authority, in which annexes the proposal was included in full.

II. 17. After some verbal explanation the basic proposals were accepted in principle by the governments of St. Lucia and Dominica and by representatives of industry at Castries and Roseau.

Although it is intended in due course to allow the Port Authority a high degree of autonomy, the said governments gave preference for the time being to a form of management to be supervised mainly by themselves, in view of the present shortage of well-trained personnel and of materials and equipment.

With the exception of a few senior officials, whose selection and appointment rests entirely with the governments in question, full agreement was likewise achieved in the succeeding discussions with representatives of the Departments concerned as regards the structure, organization and further staffing of the temporary

"Port Authority". By several combinations of function, moreover, a reasonable initial cost-benefit ratio was obtained.

All this is described and indicated in greater detail in chapters IV and V and in Annexes 10 and 11.

Differences in managerial forms

II. 18. As remarked under II. 7., the organizational form of a port is determined by many factors, which can be roughly subdivided into a general category and a local category. Similarities in the former have, for example, enabled the problems in Castries and Roseau to be approached/solved in an integrated way.

In addition, the local factors give these ports their distinctive character.

The latter factors include:

- the geographic constitution/conditions, which are of importance in determining the location, layout and equipment of the port;
and
- the social and sociological aspects, which affect the entire working atmosphere and consequently the mode of handling the goods (loading, unloading, storage and transit).

It is mainly these factors which, when the new system is carried into effect, lead to differences in interpretation or in the mode of operation.

Where the ports of Castries and Roseau are concerned, the result has been that:

- Castries, will most probably opt for the "Manager-cum-Warehouse man" system, whereby all functions of cargo handling on the wharf and in the sheds are vested in the "manager" and his staff;
and
- Roseau, on account of its defective equipment (very small jetty and trans-shipment using lighters) and severe shortage of well-trained and qualified personnel, will entrust the handling of the goods in the lighters and on the wharf or on shore to a Company of Port Users (stevedores, shipping agents and importers) to be

established later, until such time as effective improvement has been brought about in the situation.

Chapters IV and V go into this matter more closely.

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D. Cargo handling

II. 19. From the Port Warden's point of view, cargo handling covers all processes the goods have to undergo while in the port, from unloading from the ship to leaving the port area, and vice versa. These include unloading, temporary stacking on the wharf, further transport to the shed, storage in the shed in sections according to destination, and lastly transit/removal to warehouses or delivery to consignees.

Apart from damage due to breakage, loss and theft, which has more direct consequences for the accompanying documents, the efficiency of the handling is governed by the effectiveness with which each separate process is carried out, i.e. by the factors of space, personnel, materials and equipment.

The principal factor in this connection is personnel, since its share of the cost price is the largest.

Here, as in the great international seaports, an endeavour is made to promote mechanization of the cargo-handling as far as possible, not only by deciding to purchase more modern materials and equipment but also by introducing techniques for mass trans-shipment of pre-boxed, pre-slung and palletized cargo.

However, there are serious obstacles for a quick start, viz:

- the bad state (uneven and worn surfaces) of wharves/quays, aprons and areas, as a result of which little or no use can be made of forklift trucks and towtrucks with trailers;
- the great scarcity of outdoor and to an even greater degree indoor storage spaces (in both ports the transit sheds also serve as warehouses);

- faulty and inefficient use of personnel due to the fact that the two administrative systems work side by side and sometimes in opposition (Communication and Works against Customs/Finance), or owing to the absence of a one-man management;

but in addition,

- the social situation, viz. the local unemployment, which will increase as mechanization advances.

It can be stated quite simply that when the proposed measures are carried out there will be no more technical and organizational obstacles.

However, in the case of the last-mentioned obstacle - the only drawback of mechanization, and in my opinion one that should not be disregarded - the authorities concerned will have to take different measures.

III. ST. VINCENT

A. General

- III. 1. At the request of the ECLA-office in Port of Spain a brief visit was paid to the Port of Kingstown as a part of my mission.
- The purpose of my visit was to gain a better insight, by means of an investigation on the spot, into the difficulties and problems of the ports in the Caribbean area in general, and into those relating to port operation, administration and cargo-handling methods and practices in particular.
- The reports referred to in Appendix 2 served as a basis for the discussions with the authorities and individuals concerned.

Facilities and Lay-out of the Port

- III. 2. Although the port engineering expert is responsible for dealing with these aspects, I thought it necessary to include a general survey of the subject in this study in view of the fact that the general principles involved are a determining factor in port operation and cargo handling methods and consequently in the efficiency of the port.

B. The Fender System

- III. 3. My visit coincided with that of Mr. Girgrah, a Canadian port engineering expert, whose presence was requested by the CIDA expert Capt. John E.R. Seck in connection with the need to improve or alternatively renew the existing fender system.
- This system, whose ineffectiveness and the damage occurring as a result are also mentioned by Mr. Appel in his report ^{1/} as being

^{1/} See ECLA/POS 71/2 paragraph 116, page 45

one of the main causes of complaint and which consists of interconnected flexible greenheart fenders with rubber buffers, had been damaged at waterlevel by marine worms to such an extent that part of it had already been broken off and fallen into the sea, as a consequence of the changing stresses occasioned by ships moored alongside.

Temporary substitutes for these fenders (e.g. in the form of bunches of old car-tyres) to prevent more serious damage to the wharf ^{1/}, in places completely unprotected, were nowhere to be found.

- III. 4. An impression of the force of the buffeting which has to be absorbed by the fenderstructure in bad weatherconditions, can be obtained from the sometimes violent pitching and rolling movements of a ship, moored alongside this wharf, which incidentally were observed in fairly good weatherconditions (sunny with light sea-breeze).

The wave-absorbing slope, constructed in the first instance over the whole length of the jetty, obviously did not achieve what was expected of it. It would appear to me that the limited size of this rip-rap could hardly have any effect on the wave-pattern caused by the interference of refraction, diffraction and reverberation and the resulting irregular movements of the water in the bay concerned, whose dimensions are vastly greater than those of the wave-pattern.

Only an investigation with a model in a hydraulic laboratory would show what additional measures would have to be taken to ensure calm conditions for ships berthed alongside the wharf.

Apart from the cost of such an investigation, which could probably be met by some form of International Technical Assistance, it is likely that effective measures would be so expensive and so out of

^{1/} Already some damage to the upper and lower sides of the front support beam has been noticed.

proportion to the present possibilities of the port, that periodical renewal of the fenders would be more economical.

- III. 5. Mr. Girgrah therefore suggested the system of piles be replaced as soon as possible by a system of rubber fenders which are already used successfully at many places in the world and are easy to instal (and, if necessary, to replace).

The most important advantage of these rubber fenders, however, is their favourable price, which makes it possible, even for small ports, to arrange for the necessary periodical renewal without any difficulty.

Based on the results of an investigation carried out by Mr. Girgrah into the wharf structure, it was decided at a meeting at the Ministry of Communications and Works to use as much local labour as possible for the installation of the new fenders.

In this way local labour, possibly obtained from the Public Works Department, will be better able to maintain and replace the fenders in the future.

The total cost ^{1/}, including installation, was estimated at Can. \$35,000.-

C. The Lay-out of the Port

- III. 6. The design and construction of the present port-area extension, completed in 1966/67, was obviously based entirely on geographical, nautical and other technical data.

This is shown, amongst other things, by the siting of the sheds in relation to the wharf, a distinction having been made between St. Vincent's very important exports (bananas - Geest industries) and imports, which have been treated as being of secondary importance (see drawings in Appendix I and photographs in Appendix D).

^{1/} It was suggested that the rubber fenders of Japanese manufacture already tested by the Canadian Department of Public Works should be used.

- III. 7. The bananas shed intended exclusively for exports (Geest shed) was built as close as (financially?) possible to the wharf (about 200 ft. from the side of the berth) and is connected with it by two 6 ft. wide cat-walks, across which the bananas, which are packed in boxes, can be transported to the ship by means of conveyor belts.
- III. 8. On the other hand the transit shed used for the import and export of the other agricultural products, has been built about 400 ft. away from the side of the berth, close to the existing Queen's Warehouse, an arrangement which is certainly not in accordance with the standards required for rapid movements of goods (minimum horizontal transport) or indeed efficient operation of the port. Moreover, the section of the wharf concerned is connected with the mainland by only a single 24 ft. approach, which is inadequate for satisfactory mechanization of cargo handling according to the one-way principle.
- III. 9. The Second Five Year Development Plan (1971 - 1976) therefore rightly proposes that, in addition to the areas between the berth and upland of the terminal being covered over, both the Geest and the new transit sheds should be sited nearer the sea at a distance of 60 ft. from the side of the wharf. This would create a 60 ft. wide quay area, fully complying with modern requirements for the efficient mechanized handling of goods.
- III. 10. The latter demands first of all rapid loading/unloading of ships, in order to keep their stay in the port (still the most important factor in the transport cycle of a ship and therefore also in the total transport costs) as short as possible. This implies the availability of
- sufficient space for stacking goods temporarily on the quay, and
 - rapid (mechanized) transport to the transit shed.

In view of the need for rapid transport (to destinations outside the port area) an open storage for suitable goods is generally preferred, the alternatives being,

- a specially reserved area between the transitsheds, or if this is not possible,
- a separate area between the transitshed and the Queen's Warehouse.

Such an arrangement is not always possible, as indeed it may not be the case under consideration. A compromise will usually have to be made in the light of funds available or to be made available.

D. Cargo Handling

III. 11. The mooring and unloading of ships, the transport of goods to the transitshed, the handling of cargo inside and outside the shed, the planning of the bays, storage inside the bays, the recording/clerical work and the movement of goods through the port are proceeding satisfactorily under the constant supervision of the CIDA expert Capt. J. Seck (see photographs Appendix E).

This supervision, which extends to every detail of cargo handling and portmanagement and which at first necessitated the provision of the fullest theoretical and practical guidance, has produced excellent results. Spotchecks proved that both managerial and other staff know, and are fully conscious of, their duties and responsibilities.

The increasing use of automotive equipment, at present consisting of 10 forklifts (including four electric forklifts for use in ship's holds) 10 towcars and 29 trailers, and the strictly operated maintenance scheme have contributed to this situation.

E. Harbour Organization and Management

- III. 12. In view of what was stated in paragraph III. 3. and the complete state of corrosion, which Mr. Girgrah found the steel casing (former pipes) of the concrete piles of the wharf to be in, as a result of lack of maintenance, Capt. J. Seck and the Port Manager Mr. Fraser are trying to get a Port Authority with its own budget (income and expenditure account) established as soon as possible.

Detailed proposals in this respect have been put forward to the appropriate St. Vincent authorities by the CIDA expert referred to previously. These proposals provide amongst other things for a gradual transition from the present form of organization to the ultimate form in 1973. The Second Five Year Development Plan (1971 - 1976) of the Port of Kingstown, St. Vincent, dated 15th May 1971, served as a basis for these proposals.

- III. 13. With regard to the organization chart it should be mentioned that lack of sufficient staff with suitable training and ability has made it necessary to combine a number of functions during an interim period from two to three years.

During that time everything possible must be done to attract and train the personnel required to staff the Port Authority when it assumes its permanent form in 1973.

These proposals, both as regards the temporary and permanent forms of organization, envisage that the Port Manager will be responsible to the Port Council of a Board of Directors, consisting of a chairman and four members.

Who the chairman and members will be, has still to be decided.

The intention is that in 1973 the Port Manager and the Port Authority will be given the responsibilities and organization structure, respectively described in Appendix 12.

III. 14. It should be mentioned with regard to the organization chart referred to earlier that in my opinion, in order to ensure the availability of an objective judgment of a particular situation in the port and of suitable guidance for the Port Authority or Port Manager, at least one seat on the Council should be given to one of the main parties in this form of administration. In the event of this being agreed upon, the President of the Chamber of Commerce could, for example, be invited to join the Council.

In addition a Port Advisory Committee, composed of local representatives of all parties with an interest in the port (central and local government, private individuals including the dockworkers) and under the chairmanship of the Port Manager, could be very useful from the point of view of the day-to-day running of the port, particularly if a temporary hold-up in the flow of goods (congestion) or other difficulties should occur.

F. Harbour Development Scheme

III. 15. During the visit to the Port of Kingstown a part of the development plan, which also provides for an expansion of the port, the following construction work was seen to be in progress (see drawings Appendix I and photographs Appendix D):

- (i) On the north-west side of the port:
 - the creation of a "Commercial Area" (reclamation of an area of ca. 6 acres, protected by a rubble mounted dike)
 - improvement of the rivermouth/drain outlet, both situated on the eastern side of this area.
- (ii) On the south (east) side of the port:
 - construction of an inter-island jetty, some 375 ft. long, 25 ft. wide and with a draft of 20 ft. (see paragraph 118 of the Appel report).

III. 16. The Second Five Year Development Plan (1971 - 1976) for the port provides for more automotive equipment and an expansion of the present covered and open storage accommodation for import, export and transit cargoes, primarily to deal with the expected increase in imports.

It is hoped to achieve the last-mentioned expansion by covering the area between the wharf and upland of the terminal, enlargement of the existing wharf and by the construction of one or, if possible, two new transitsheds on a part of the wharf nearer to the discharging berth.

This would not only make it possible to cut down the first horizontal transport stage ^{1/}, but would also enable modern methods of rapid and efficient cargo handling to be introduced, a development made necessary by the continually increasing degree of mechanization in this field (see drawings Appendix I).

III. 17. With regard to the proposed expansion and the expected increase in the imports, the following should be noted.

In order to obtain a better idea of the transitshed capacity required and the length of the quay in 1975, the year by which the expectations of the Second Five Year Development Plan should have been realized, the figures contained in this plan and the appendix to it have been converted into total cargo throughput with and without bananas (see Appendix 11) and then plotted on a graph. The result shows the area required for transitsheds (see Appendix 12).

Since banana-exports pass exclusively through the Geest shed and the latter is big enough to fully meet requirements, the size of the transitarea depends entirely on imports and exports of the remaining agricultural products.

^{1/} Compare also remarks in paragraphs III. 9. and III. 10.

<u>Required</u>	<u>transit area</u>
	<u>transitshed area</u>

Appendices 11 and 12 show that:

- (i) the transitcapacity of the present shed was reached in 1970 and has now been exceeded.
This was also evident both from the measures taken to encourage direct removal of some types of cargo and from the overflow to the outdoor storage area during my visit (see photographs Appendix E);
- (ii) at least 5000 sq.ft. extra transitshed space is required to take care of increases in imports up to 1975 ^{1/};
- (iii) the new 250' x 100' transitshed referred to in the plan is sufficient to meet requirements until 1980 if the present rate of increase continues ^{1/}.

Length of quay required

The present length of the wharf is 900 ft. = 273.52 meters.

Estimated cargo throughput in 1972 = 110,000 tons (see Second Five Year Development Plan).

Per linear meter of quay

$$\frac{110,000}{273.52} \approx 402 \text{ tons will therefore be handled per year.}$$

In view of the fact that when designing a quay for handling general cargo the capacity is generally taken to be 600 tons per linear meter per year in the case of conventional methods of handling, and about 1000 tons per linear meter per year in the case of a "fully" mechanized system, the present length of the

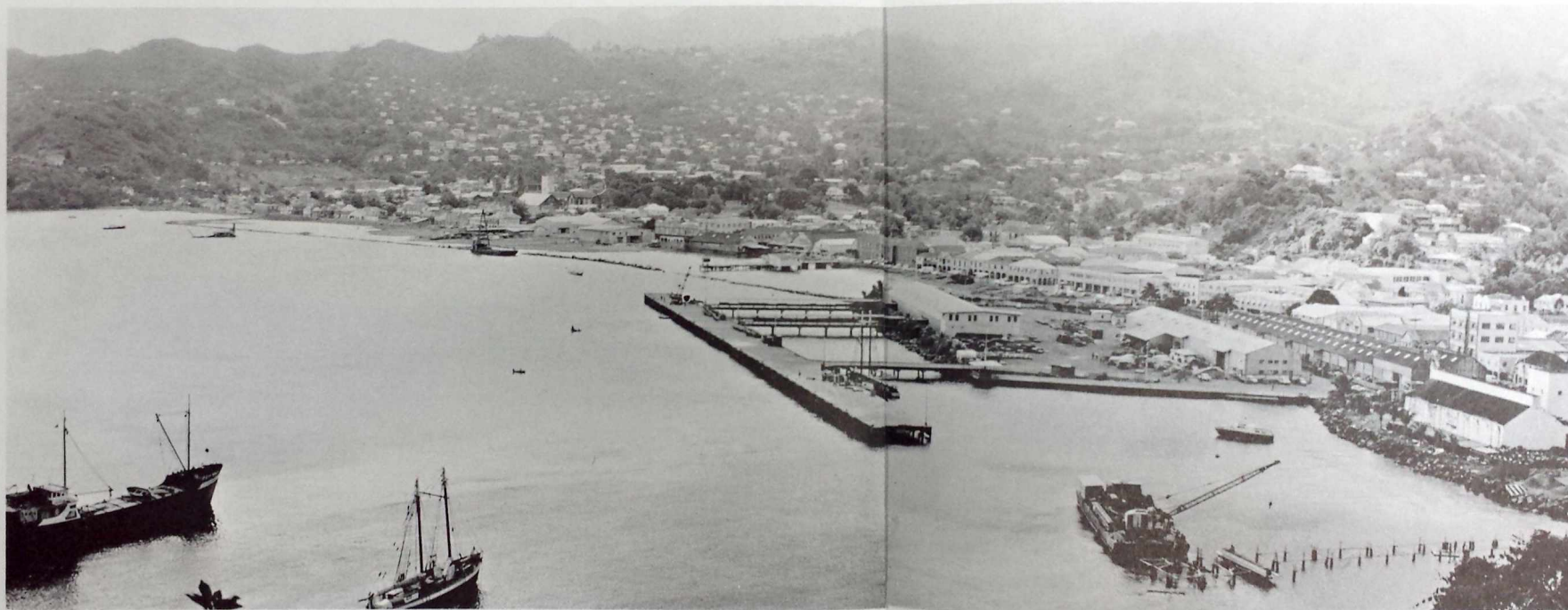
quay can be regarded as adequate for the time being (until at least 1990).

Appendix

1/ In order to get an idea of the amount of space required for sheds in the near future the estimates of future imports and exports in the Second Five Year Development Plan (see also Appendix 11) have been subjected to three extrapolations, these being least squares straight line and two computations according to exponential curves.

As the real numbers (in view of the gradual development) are probably situated in the area between the straight and the curved line, the straight-line progression has been deliberately used for future transit-space needs. From the management's point of view an excess of space must be preferred to a shortage of space.

THE PORT OF KINGSTOWN (ST. VINCENT)



General view

THE PORT OF KINGSTOWN (ST. VINCENT)





Storage of goods outside and inside the shed

IV. ST. LUCIA

A. General Remarks

IV. 1. The port of Castries in St. Lucia was visited twice during the assignment.

The first visit, like that to the above port, was devoted to fact-finding consultations and on-the-spot study with a view to gaining an idea of the port's possibilities and problems in general and the problems relating to administration, methods and practices and cargo handling in particular.

The fact-finding consultations with the relevant organisations, authorities and other persons were based on the reports referred to in Appendix 2.

The second visit was devoted exclusively to finding or creating the basis for a new, better administration of the port by modern standards, using the proposals contained in the interim report of 2 September 1971, No. ECLA/POS 71/13.

Equipment and layout of the port

IV. 2. Never was the importance of a port's equipment and layout to its administration more evident than it is in the case of the port of Castries.

In fact, all the problems this port has, such as congestion, shared responsibility and the inefficient use of yards and other amenities can be imputed to these two factors.

B. Equipment

IV. 3. As early as April 1969 Dr. J.A. Hempel, Regional Adviser on Maritime Transport, and Mr. Polland Moore, the then Acting General Manager of the Port Authority of Trinidad and Tobago, drew attention to the

bad condition of the surfaces of the wharves which was preventing the use of mechanised cargo handling gear during transshipment.

- IV. 4. In addition, a serious shortage of storage space was noted, both in the transit sheds and on the wharf outside, causing goods to be dumped rather than stacked.
- IV. 5. During my first visit, the urgently needed improvements to the Western Wharf were already being carried out but I found the Northern and Eastern Wharves in the same state as described above. The bad condition of the surfaces of these wharves and the dumping rather than stacking of goods can be clearly seen in the photograph in Appendix B. I observed some improvement during my second visit, presumably the result of stricter interpretation and application of certain regulations.
- IV. 6. The situation in the sheds can only be described as chaotic. The general complaint by businessmen (importers, etc.) that "new" loads are frequently stacked on top of "old" loads seems to me, in view of the serious lack of storage space, wholly plausible.

At first glance one would be inclined to ascribe the situation to incorrect handling of the cargo and/or bad administration ^{1/}. Investigation has shown, however, that the main cause is poor facilities, viz:

- the lack of warehouses to take the overflow from the transitsheds;
- the very cramped loading and parking space for lorries behind, i.e. on the landward side of the sheds.

The consequence is:

- that the sheds originally intended for transit are also being used as warehouses;

^{1/} See also paragraph II. 10.

- that the goods stored in these sheds cannot be taken away across the aprons behind them, as the aprons are full of parked lorries.

Apart from the direct dispatch of some types of goods under a special regulation, unloaded goods are therefore conveyed into and cleared goods are moved out of these sheds through the same doors, i.e. those facing the wharf.

Needless to say, such a system of supply and dispatch leads to stagnation and disorganisation, and any attempt at rationalisation on the part of the port's administration is bound to fail.

- IV. 7. If the Government of St. Lucia is really desirous of relieving the congestion in the short term and of permanently improving the situation in the port, the present equipment will have to be adapted as quickly as possible and in the best possible way to the new type of administration and organisation to be introduced. This subject is enlarged upon in the following chapters.

C. Layout of the port

- IV. 8. The port has scarcely been altered since it was designed and built about 90 years ago and apparently it has never been adapted to keep pace with the great changes in international cargo traffic.

Proof of this can be obtained by examining the location of the various industrial premises and sites in and around the port. It will be found that the layout, which was originally such as to make transport between them and the trade centre and its warehouses as efficient as possible, is the same as it was 90 years ago (see photograph in Appendix A and drawing in Appendix II).

- IV. 9. The port area has become L-shaped, the original width varying from 140 ft. to 200 ft. The wharf, the width of which varies between 30 ft. and 60 ft., could accommodate only one row of sheds of limited width (about 50 ft.) and one or two narrow loading and parking areas behind them.

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IV. 10. The widest and best equipped part of the port, the Western Wharf, is, like the port of Kingstown in St. Vincent, occupied by Geest Industries, the island's major exporter.

Although the manner of bringing in bananas, temporarily storing them in the sheds and then transshipping them, has over the years been adapted as well as possible to revolutionised shipping, the shifting of certain operations to points outside the port area ^{1/} has not occasioned any drastic change in the organisation of the port.

The greater need for space consequent upon mechanisation has therefore been completely compensated by the abovementioned rationalisation of the transport system. Total utilisation of the space concerned has been achieved by fencing off the wharf area.

IV. 11. In the rest of the port (the Northern and Eastern Wharf), which is mainly intended for the handling of import goods (general cargo and small consignments of bulk goods such as cement, flour, sawn timber etc.), the fence was pushed back, in the interest of public transport and probably also of tourism, about 30 ft., so that it was in line with the back of the customs sheds (1, 2 and 3) and the other buildings (Tourist Bureau, Customs Office etc.).

This not only intensified the already serious shortage of open storage and working space but also seriously hampered dispatch ^{2/}.

In fact, it is quite clear that no improvement can ever be made in the administration and organisation of the port under these circumstances.

IV. 12. Besides good management and modern administration, an efficient port requires an optimum layout for all movements of goods, all types of goods and all handling methods.

This means that theoretically there must be sufficient space and equipment at all times to take goods through this traffic node as quickly and efficiently as possible.

^{1/} Bananas are pre-boxed on the plantations.

^{2/} See also paragraph IV. 6.

IV. 13. In practise this means that there must be two types of closed storage sheds in the port area, viz:

- transit sheds, which, being located close to the ship's berths, are intended solely to expedite the first phase of of transshipment, thus reducing the ship's mooring time;
- warehouses, intended to take the overflow from the transit sheds or to be used for the second phase of transshipment, if any.

Paved areas for "open" storage should be available for the efficient handling of goods which by reason of their size, dimensions or other characteristics do not need to be stored in sheds.

Lastly in view of the ever increasing mechanisation of the handling of cargo and the size and amount of equipment that will have to be procured for the purpose, extra working and loading space will need to be obtained, quite apart from any extra space required for the separate supply and dispatch roads.

IV. 14. The amount of closed storage space will therefore need to be increased by at least 15% and of open storage space by as much as 100% to 200%, depending on the circumstances.

The rationalisation and modernisation of a port will in most cases not immediately involve any extension of the wharves ^{1/} but rather to very great extension of the working premises, i.e. wider or longer sheds and more yards extending outwards (if possible between 100 m and 150 m for the purpose, say, of receiving and handling palletised cargo, unit loads, containers or roll-on/roll-off cargo). This point is also made at the end of paragraph III. 17., with respect to the plans for the expansion of the Port of Kingstown, St. Vincent.

^{1/} Recent developments in shipping reveal a certain weakening of the tendency to pursue an economy of scale policy in respect of vessels intended for the general cargo sector.

IV. 15. The present difficulties in the port are largely attributable to the factors described in paragraphs IV. 13. and IV. 14.

The recommended temporary increase in the open and closed storage capacity ^{1/} as a means of relieving congestion will only remain effective if measures are also taken not only to ensure the gradual, permanent expansion of the working area but also to improve a lay-out of the port facilities in accordance with the foregoing proposals.

The matter is dealt with at length in the chapter entitled Port Development Scheme.

D. Port Organisation and Administration

IV. 16. The port of Castries is administered by two bodies, viz:

- the Office of the Harbourmaster, which comes under the Ministry of Communications and Works;
- the Customs, which is part of the Department of Finance.

The Harbourmaster is responsible for the entire maritime, nautical and technical administration of the port, including extensions to and maintenance of wharves, buildings and yards. The Customs Office deals exclusively with the administrative and financial side of incoming and outgoing goods.

IV. 17. This means that in effect all the open and closed storage facilities and almost all the cargo handling come under the jurisdiction of the Customs. Only the administration of the 5-meter wide concrete wharf serving as open storage is left to the Harbourmaster.

In most cases the Harbourmaster only issues permits for the temporary storage of bulk goods such as cement, flour, sawn timber, small consignments of profile steel or reinforcing steel etc., which owing to a shortage or lack of mechanised aids cannot be dispatched within

250 ^{1/} See report ECLA/POS 71/13 of 2 September 1971.

a certain time (e.g. one or two working days or full days, depending on the circumstances) after unloading (see photograph in Appendix C).

- IV. 18. A striking feature of the present situation, partly due of course to the serious shortage of storage space, is that the wharves proper always look clean and tidy whereas the aprons sometimes bear a strong resemblance to rubbish dumps (see Appendix B).

Although such situations only last for short periods (usually the last few months of the year), the economic and financial consequences are more serious than one would expect, to say nothing of the poor impression it makes on visiting foreign ships.

Nevertheless, since St. Lucia, like the other E.C.C.M. member states relies mainly on sea transport for its foreign trade, it is essential that it should have a well-equipped and efficiently-run port if it is to make any economic progress.

- IV. 19. The interim report ECLA/POS of 2 September 1971 gives guidelines for the improvement and modernisation of the port's administrative system. It describes the various working principles, viz. the autonomy, financial independence, administrative methods and authority of the administrative body (i.e. the Port Authority), laying particular stress on one-man administration, as this should ensure the smooth, uninterrupted flow of cargo through the port, no waiting time for vessels and no delay in the handling of cargo on shore.

- IV. 20. (a) Under the circumstances the introduction of a modern system of this kind, however, requires besides the complete reorganisation and rationalisation of the existing system, the creation of a new basis, namely the provision of sufficient material and financial resources to enable the new administrative system to get off to a successful if modest start.

(b) In addition, all interested parties (organisations and private individuals) will have to be requested to cooperate in the removal elsewhere of any services, establishments etc. that are not strictly connected with the port.

(c) Lastly, consultations will have to be held with private organisations and individuals (port users and worker's organisations) to secure their support for and cooperation in the new administrative system and all the measures to be taken and regulations, bylaws etc. to be created, whether of a temporary or permanent nature, by virtue thereof.

IV. 21. (a) To operate as efficiently as possible the P.A. must, by means of provisional arrangements, orders and regulations, be immediately placed in a position to act as the sole authority for the entire port. To achieve this it must possess from the outset a certain degree of autonomy as well as sufficient personnel, material and financial resources to deal effectively with pressing matters, such as:

- the expansion in the short term of the port's storage capacity so as to relieve congestion as quickly as possible and the gradual introduction of new methods and regulations for handling cargo;
- the improvement of the wharves (e.g. resurfacing of aprons) and yards, likewise in the shortest possible term, to facilitate mechanised cargo handling;
- the expansion and improvement of loading and unloading bays and parking space behind the sheds by removing such establishments as the tourist office and its adjoining public parking area to a place near the city centre to be decided in consultation with the organisations and parties concerned;
- closing the port area to the public by erecting a fence along Jeremy Street, thus enabling cargo to be dispatched on the landward side of the sheds (see figure II);
- the construction of entry and exit roads and entrances and exits and surveillance of the entire area, in accordance with Customs, fire and other regulations.

As both the relief of congestion and the introduction of the new administrative system depend on the extent to which the storage capacity can be increased, it was urged, during the second visit to the island, that first of all a temporary storage area be created without delay. Since shed I has been assigned as a store for liquor and therefore cannot yet be used as a transit shed, it was also urged that a shed of about 15,000 sq.ft. be built to serve as a temporary overflow from sheds II and III, which themselves are to be used for transit again as soon as possible.

The first condition was met in its entirety in a short space of time. A piece of land situated between Compton Highway and the area being dug up (see figure II) was made available and prepared for building.

Although theoretically there were no objections to the shed as such, its size had still to be discussed by the organisations concerned (Comm. & Works and Finance).

Speeding up the evacuation of other business premises in the port (named below) if possible, was considered as a means of achieving these objectives.

- IV. 21. (b) To relieve the serious shortage of space and to achieve a certain differentiation in cargo handling (necessary in the interests of efficiency and already practised by the Customs, as shown in the annual surveys on goods traffic), the cooperation of all interested parties will have to be enlisted, through negotiation or if necessary by other means, in the removal of premises occupied by them if they are not vital to the port
- The interim report recommends that the following be removed in the long term (see figure II):

- | | |
|---|-------------------|
| - the Tourist Office | |
| - the Curiosity Shop | |
| - the Printing Office (Government Store | } Northern Wharf. |
| - the Cable Depot | |
| - the kerosine depot | } Eastern Wharf |

The following should be added for attention in the longer term:

- the Fire Station
- the Police Station.

It was observed earlier that it was high time the kerosine depot in particular, situated as it is right next to a café in which working is done and in which people smoke, was removed to a place where it would not constitute a fire hazard to other buildings.

- IV. 21. (c) The cooperation of third parties (e.g. port users and worker's organisations), which can be obtained by allowing them to participate up to a point in decision-making on matters of common interest, is essential, not only to relieve congestion but also to create such conditions as will help the new administrative body, the Port Authority, to get off the ground and get through the initial familiarisation period, usually a difficult period, smoothly.

To this end it was proposed that a representative of port users should sit on the Port Council and that representatives of port users and dockers should sit on the Board of Advisers.

Such participation, especially in the initial period, seems to me to be of great value to both the Government, the "manager" and his temporary right-hand man, the expert.

The crux of most of the problems is cargo handling, which is the focal point of the various interests.

In view of the statement in the last part of paragraph IV. 18., efforts should be made to ensure that everything is done as efficiently as possible.

This requires consultation, especially when long-term plans are being prepared.

Experience has shown that participation, coupled with co-responsibility, is very effective when it comes to finding the right approach to the problems (which is different for every port).

The Government of St. Lucia not only emphasised the pressing need to secure participation; during a discussion on the organisation of the Port Authority it proved to be more progressive still by modifying the structure of the Port Council in favour of the central worker's organisation (see Appendix 13).

- IV. 22. Summarising, the various talks on the organisation and administration of the port revealed no essential differences of opinion on the basic issues, viz. one-man management, gradual autonomy (also in financial respects), etc.

Most of the time was devoted to the interpretation or implementation of the development scheme and the initial need for personnel and materials. A fair initial cost-benefit ratio was obtained (approx. W.I. \$300,000 to W.I. \$900,000) by combining functions and making a critical assessment of the need for mechanical aids (see Appendix 14).

The funds required for the gradual procurement of additional materials (estimated at approx. W.I. \$344,800) are of course not included (see Appendix 14e).

The items described above, as also the building scheme, would be financed if possible through bilateral or other loans.

E. Administration

- IV. 23. As stated in the foregoing, the Government of St. Lucia has deliberately chosen the manager-cumwarehouseman system for the administration of the Port of Castries.

Under this system the manager and his staff are solely responsible for cargo handling on shore and in the transit sheds.

The Government's preference for this type of administration must be regarded first and foremost as the logical outcome of the advice and recommendations given in the aforementioned interim report ECLA/POS 71/13, in which it is presumed that, in order to ensure an effective integrated approach to the problems during the difficult initial

period, it would be best if the central administration and responsibility were for the time being vested in the Government department concerned. In due course, for instance after the completion of the first part of the building project or after the Port Authority had assumed its final form (end of phase III, see paragraph II. 7.), the purely commercial activities, such as stevedoring or the special physical handling of cargo on shore, could once more be left to the shipping agents, according to type of ship or shipping line.

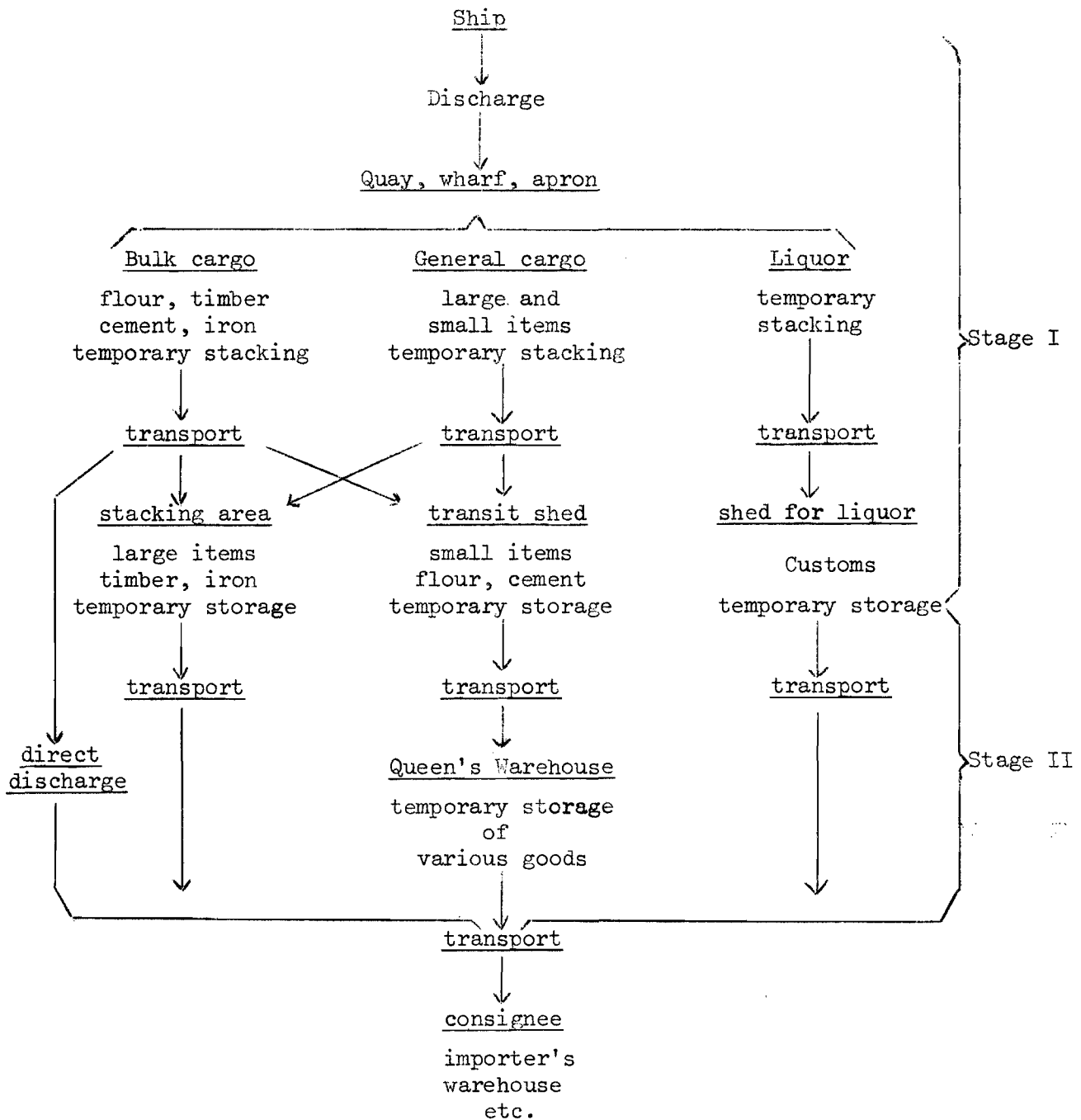
The intention to achieve an integrated approach can best be illustrated by the participation of third parties and the two most important bodies in the system, the Port Council and the Board of Advisers (see paragraph IV. 21. (c) and Appendix 13).

Secondly, the preference sprang from the possibility of transferring to the port's new administrative body the suitable Customs staff (who could become redundant as a result of the reorganisation).

F. Cargo Handling

IV. 24. Broadly speaking, cargo handling, i.e. the entire process to which cargo is subjected while it is in the port - from the time it is unloaded to when it is transported inland to its destination - is done in two or more stages (see chart below).

CARGO HANDLING



area, which in turn will lead to loss of time and finally delays in handling the ship and in the entire movement of goods.

If there is more than one hitch in the process the delaying effect will be heightened. Goods will accumulate and valuable time will be wasted. Cargo handling will become more labour-intensive, more time-consuming and more costly.

IV. 26. There are two main operations in the second stage:

- (i) transportation of the goods to their destination on completion of the clerical and financial processes;
- (ii) transportation of the cargo from the transit shed to the store or bonded warehouse (Queen's Warehouse) if after 7 to 14 days ^{1/} the relevant clerical and financial processes have not been completed.

For reasons of administration or efficiency, it might then be necessary to retain goods transferred in this way for another 10 to 14 days (duty is payable this time) to give the consignee a final opportunity to take the necessary steps.

Charges would of course be made for the extra handling and storage. The policy to be pursued, including the amounts to be charged, is a matter for the manager to determine in consultation with the Port Council and if necessary also with the E.C.C.M. or CARIFTA.

The said period of 10 to 14 days should be regarded as a fixed time which may only be altered by the manager in special cases and in consultation with the Customs, extra charges being imposed as penalties. When the period has expired, the goods would have to be removed without delay on pain of confiscation and public sale.

IV. 27. Cargo handling in the manner described above requires a certain space whose length is principally determined by the number and types of ships and whose width is determined by the amount of cargo

^{1/} See IV. 24. (iii).

to be handled.

The various sections, viz. wharves, transit and storage sheds, stacking areas, parking space, etc., must be in such positions relative to each other that goods can be brought in, passed through and dispatched as rapidly and efficiently as possible.

The equipment and layout of the port as set out in paragraph IV. 2. should be seen in this light.

I believe that, to ensure maximum efficiency, all ports, terminals or dockyards should from now on be designed in the light of these handling procedures, which are different for every type of cargo. Then there is the matter of flexibility, i.e. the adaptability of the system to suit any situation.

The latest developments have shown that reasonable flexibility can be guaranteed by reserving areas behind existing port complexes, particularly with a view to the further mechanisation of cargo handling and/or the possible future establishment of factories.

G. Congestion

IV. 28. The foregoing shows how important it is that the various premises in the port area be properly positioned. The diagram might be used to achieve this.

Each section will need a certain minimum area. As a rule, of course, this requirement can only be met when planning new port facilities. Consequently, most pre-war ports have to contend with the problem of congestion. As a result of the explosive development of shipping and international goods traffic the authorities are having to spend large sums on adapting their port facilities to the new situation, usually by erecting new buildings but sometimes by drastically altering old buildings.

It is quite obvious that small ports like Castries with their limited resources cannot keep up with developments in shipping unless they are given special financial and technical assistance; if they are not brought up to date, there will inevitably be stagnation and

congestion with all the resultant financial and commercial problems. The interim report ECLA/POS 71/13 of 2 September 1971 and paragraphs IV. 21. (a) and (b) state the manner in which congestion can be relieved.

In view of the circumstances, a distinction is made between short-term and long-term measures. In the final analysis, measures must be taken which will prevent congestion for good.

As such measures are in fact included in the port's development plans, they are elaborated in the next chapter.

H. Port Development Scheme

IV. 29. Two five-year plans have been drawn up for the urgently needed improvement of the Port of Castries. They may be summarised as follows:

- (i) The first plan was drawn up by the consultants Goode and Partners on the basis of a study they carried out of the development possibilities of St. Lucia's ports in general and Castries in particular, the results of which are recorded in the "Report on Harbour Development, 30 April 1970". The plan mainly involves the reconstruction and widening of the Western Wharf and the building, in two stages, of a new terminal for modern cargo handling (unit loads, containers, palletised cargo etc.) to the west of the mouth of the River Castries. Some of the proposed improvements are given in Appendix II.
- (ii) The second plan gives ECLA/POS's view, as recorded by Mr. Appel, on the port's physical problems and is an alternative to the first plan. It provides for the reconstruction of the Northern and Eastern Wharves, which is considered just as pressing, as well as the reconstruction and extension described above.

IV. 30. In addition to the improvement and extension of berthing facilities, there is of course the matter of mechanical equipment which is inadequate, both in quality and quantity, for reasonably effective mechanised cargo handling.

It is therefore essential that the existing equipment be completely overhauled and supplemented. To facilitate operation it is recommended that the required types of machine be obtained as far as possible from the same factory. The interchangeability of parts is a major point, since it enhances the reliability of the mechanical system as a whole, particularly in small ports with limited budgets. About twice as much cargo handling equipment (see details in Appendix 14e) will be needed as that described in Mr. Appel's report as being "immediately necessary". The amount needed must in fact be regarded as the minimum required at the end of the first five-year period, by which time the situation in the port should be such that all the equipment is used efficiently, as described in chapter D (Port Organisation and Administration).

IV. 31. The proposal that there should be a minimum depth of 30-32 ft. alongside the quay to accomodate international lines is quite sound from an administrative point of view.

The latest developments in shipping exhibit a significantly weaker tendency towards economies of scale (as a result of the initially somewhat underrated disadvantages, such as high operating costs, the need for deep and therefore costly approach channels, harbour basins, etc.) as well as a certain renewed appreciation of the merits of the smaller types of vessel (3,500 - 12,000 tons), especially in the unit loads sector.

This might be a corollary to the trunk-feeder line principle, though it is more probably an attempt to continue to involve as many ports as possible directly in international commerce by introducing smaller unit loads for shallower-draught ships (even small barges) and in other ways.

It might therefore be advisable to examine the possible advantages of the new systems to the CARIFTA or E.C.C.M. member countries. Roll-on/roll-off or multi-purpose open vessels in particular, which

are loaded and unloaded at the bow or stern or through the gateways at the side, require a minimum of wharf equipment in ports with small tidal movements such as Castries.

Although the capacity of these vessels is markedly lower than that of ordinary freighters, they are apparently more efficient and cheaper to run over short distances, because they can be loaded and unloaded more quickly and because they require a minimal amount of aids (no tugboats needed for berthing) and hence shorter berthing or turn-round times.

IV. 32. Lastly, I would make the following observations on the proposed improvements/extensions to and the anticipated increase in the flow of goods (mainly imports).

To obtain some idea of the transit shed capacity and wharf length needed now and in the future (up to about 1985), both the data in the report by Goode and Partners and the data made available to me by the Castries Customs have been converted into a statement on the total flow of goods including and excluding bananas (see Tables 2 and 3, Appendices 15 and 15a) and reproduced in a graph to show the area needed for transit sheds (see Appendix 16).

Since the export of bananas is effectuated solely by Geest Industries on the Western Wharf whose premises are more than large enough to satisfy the needs, transit shed capacity depends entirely on imports and exports of other agricultural products and goods.

As in the case of the Port of Kingstown, St. Vincent, the figures have been used as the basis for direct extrapolation, viz., a least squares straight line, and two exponential curves. In view of the future need for shed capacity, the administrative authorities again favoured straight progression.

On comparing the figures for 1967, 1968 and 1969, we see that there are great similarities between months but appreciable differences in the totals, although all the figures came from the Customs. The greatest differences are in 1970, the first year of Goode and Partners' forecasts based on developments between 1967 and 1969 (see Tables 2 and 3).

Despite the relatively high point (the most likely figures in Table 3) taken as the start for the right-hand curve in Appendix 16, the real figures, even those for 1969, are considerably higher.

Assuming average exports of bananas to be 45,500 tons per year, the Customs give the total amount of cargo that passed through the port in 1970 as 165,789 tons, whereas Goode and Partners had anticipated a maximum of only 133,500 tons.

These differences resulted in greater progression on the left-hand side of the graph and of course to differing conclusions as to the transit shed capacity required.

Transit shed capacity required

During the second visit to St. Lucia, Geest Industries assisted in alleviating the pressing need for extended storage capacity to combat congestion by making a number of sheds on the Western Wharf available to the Ministry of Communications and Works/the Harbourmaster.

Unfortunately, these sheds are scattered and do not link up with those on the Northern Wharf.

Of course, the fact that the sheds are scattered militates against their incorporation in a new, well-organised and efficient system of administration. In my view they are only suitable for passengers, provided the berthing of cruise ships does not hamper the island's export activities or the temporary storage of liquor under very special conditions laid down by the Customs.

The sheds available are:

Shed I	= 150' x 70' = 11,700 sq.ft.
Shed II	= 120' x 70' = 8,400 sq.ft.
Shed III	= 120' x 50' = 6,600 sq.ft.

Total	26,700 sq.ft.
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As shed I is used entirely for storing and handling imported and local liquor, the total space left over for cargo handling

proper is: $8,400 + 6,600 = 15,000$ sq.ft.

It is evident from the movement of goods shown in the graph in Appendix 16 that:

- (i) the currently available sheds (II and III) are only big enough for the handling/holding in transit of

$$\frac{15,000 \times 360 \times 0.25 \times 0.65}{7 \times 1.60} = 78,400 \text{ tons}$$

of cargo per year;

- (ii) if shed I could be utilised as a transit shed too, e.g. by storing the liquor on the Western Wharf instead, transit shed capacity would increase to approx. 139,300 tons per annum;
- (iii) if the capacity of sheds II and III could be doubled (for instance, by erecting a temporary 75' x 200' shed in the temporary stacking area in Compton Highway or a smaller shed combined with removal in the short term of the Tourist Bureau and Cable Depot) transit shed capacity could be increased to 156,500 tons per annum. According to the left-hand graph, this would satisfy the demand up to 1974, while Goode and Partners' forecasts extend the limit to about 1980;
- (iv) further extension of the shed capacity by 5,000 sq.ft. would be sufficient to meet the demand, as forecast by Goode and Partners, up to about 1986.

Wharf length required

Present lengths are:

Western Wharf	=	5000'	=	167 m
Northern Wharf	=	720'	=	240 m
Eastern Wharf	=	300'	=	123 m

Total = 520 m

Total length excluding Western Wharf = 363 m.

Table 2, Appendix 15, shows that in 1970

- the total flow of goods incl. bananas was 165,789 tons and
- the total flow of goods excl. bananas was 123,153 tons.

If present policy ^{1/} is maintained, $\frac{123,153}{363} = 340$ tons will be transhipped per running meter per year. This is a particularly low average which could easily be stepped up to 800 tons if the port were reasonably well equipped and administered (see also paragraph III. 17.).

Assuming that Castries reaches this capacity figure, the present length of wharf will remain adequate until about 1990, provided that:

- complete reconstruction of the Northern and Eastern Wharves can be achieved;
- a depth of at least 32' adjoining the Northern Wharf can be guaranteed;
- the floors of the sheds and the surfaces of yards and roads can be kept in good condition;
- the method of handling cargo conforms to that shown in the chart in paragraph IV. 24.;
- a reasonable system of administration on simple, modern lines can be instituted.

The conclusion we can draw is that, if from the outset enough space had been reserved for the handling of cargo, which at the moment takes place in a confined area,

- difficulties of the present nature would probably not have arisen (because it would have been possible to separate the duties of the relevant bodies completely by having room in which to keep the sheds and roads in good condition);

^{1/} The Western Wharf is solely intended for the export of bananas.

- the need to augment the equipment in the port (new terminal) would not have become acute until about 1985.

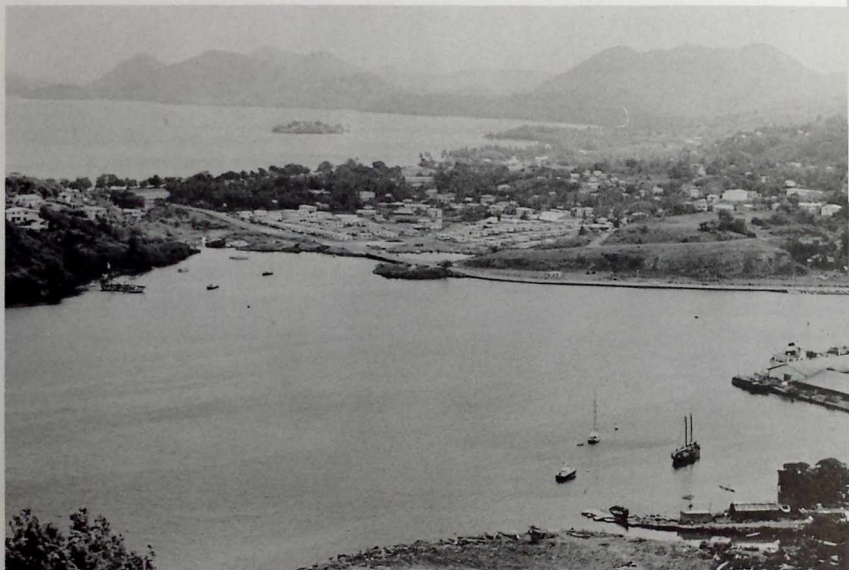
It seems to me, however, that the traditional central location of the port should be maintained as far as possible, not only from the point of view of efficiency (the gradual splitting up of functions in the port establishments as a result of separating the handling of international shipping and other shipping) but also on sociological, economic and touristical grounds.

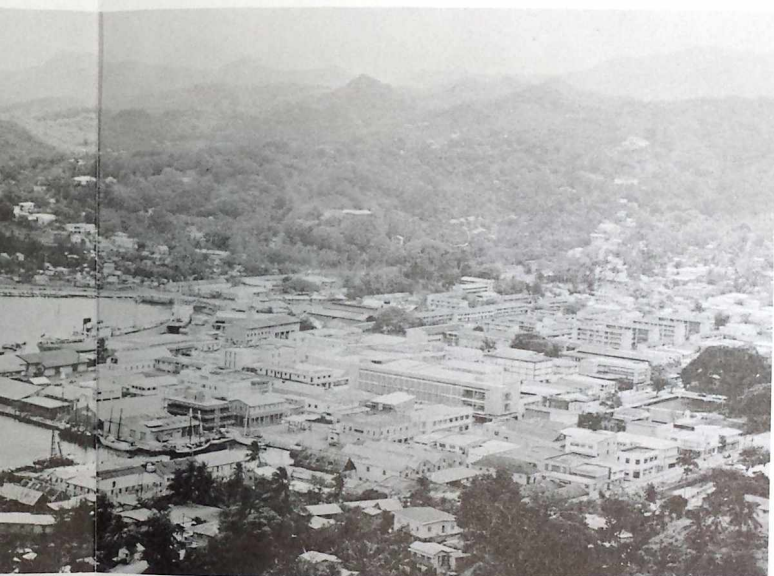
Consequently, the port facilities will need to be adapted and improved.

This could be done in two ways, by expansion landwards or by expansion seawards.

The first expedient is not practicable if only on account of the cost of expropriating property. The second is worth considering in combination with the new building programme prepared by Goode and Partners (see Appendix II), which might possibly be cut down to stage I only.

THE PORT OF CASTRIES (ST. LUCIA)





General view

THE PORT OF CASTRIES (ST. LUCIA)





Storage of goods on the wharf/quay

The chaotic situation as a result of the congestion

dated 22th September 1971

THE PORT OF CASTRIES (ST. LUCIA)





Discharge and transit of flour

dated 23rd September 1971

V. DOMINICA

A. General remarks

- V. 1. The Port of Roseau in Dominica was also visited twice during the assignment.

As in the case of the Port of Castries, the first visit was mainly devoted to fact-finding consultations and on-the-spot study with a view to gaining an idea of the port's difficulties and problems in general and the problems relating to administration, methods and practices and cargo handling in particular. The fact-finding consultations with the relevant organisations, authorities and other persons were based on the reports referred to in Appendix 2.

The second visit was devoted exclusively to preparing measures for the relief of the increasing congestion and to creating the basis for a more modern and more efficient administration of the port on the lines of the proposals contained in the interim report of 2 September 1971, No. ECLA/POS 71/12.

B. Facilities

- V. 2. The port of Roseau is not a harbour providing more or less sheltered berths for ships but an open roadstead exposed to winds and waves from a westerly direction.

There is a shortage of equipment and therefore a shortage of facilities.

General cargo movement, now amounting to more than 120,000 metric tons per annum, is by lighters using an L-shaped jetty about 100 feet long, the water along the front of which varies in depth from 14' at the N.W. end to 18'6" at the S.E. end (see Appendix III). Both the 28' wide jetty and the 51' wide approach to the upland take the form of a pier and offer facilities for berthing and the

handling (loading and unloading) of lighters and schooners on three sides, viz. the N.W. side and the seaward and landward sides of the jetty proper.

Of course, the facilities can only be used under favourable weather conditions.

- V. 3. The country's major products, i.e. bananas, timber and pumice, are exported with the aid of private equipment and via separate jetties built and maintained by the relevant companies and undertakings in the coastal area to the north of the mouth of the Roseau River. Extensions to the port including berthing facilities for ocean-going vessels and the necessary buildings, etc. as designed by Goode and Partners are planned for the adjacent area. As the aforementioned undertakings bear sole responsibility for the relevant transshipment and for the necessary premises, etc. no further reference is made to them in this report.

The upland part of the facility consists of:

- a sea wall with a top width of 5 or 6 ft on which there are two small buildings, the Bagage Room-cum-Customs Office and the Tourist Booth, overhanging the water, one on either side of the pier;
- three one-storey buildings with areas of 60' x 75', 60' x 65' and 60' x 100', between which there are open storage areas of 60' x 50' each (see Appendix III).

Of these buildings only the one measuring 60' x 100' (Transit shed I) is being fully utilised for cargo handling. The other two are being used as Government offices (housing the Government Marketing Department and the Tariff Department).

According to Appendix III and information received on the subject the total space available for cargo handling is:-

- (i) transit sheds \approx 16,500 sq.ft.
(16,070 sq.ft. net)
- (ii) warehouse \approx 3,900 sq.ft.
- (iii) stacking area \approx 6,000 sq.ft.

Using the formula adopted for Castries, a cargo movement of about 120,000 tons would require at least

$$\frac{120,000 \times 7 \times 1.60}{360 \times 0.25 \times 0.65} \approx 23,000 \text{ sq.ft. of transit shed space.}$$

The present shortage of transit sheds would therefore amount to some 40% or 50%. That there is a serious shortage of transit accomodation is only too obvious from the fact that optimum use is being made of the jetty and all the other temporary stacking areas (aprons or roads in front of the sheds) and that arrangement has had to be made for the direct dispatch by lorries of almost all bulk goods such as flour and cement (see Appendix F). This subject is dealt with at length in the chapter on congestion (chapter F).

- V. 4. The sheds are always congested and at times conditions are chaotic when the flow of incoming goods is heavy.

The available storage space, which is divided into compartments by pillars and staircases, is so full that little or no use can ever be made of mechanical aids. In fact, delays in the handling of goods are largely attributable to the poor transit process which in its turn springs partly from the shortage of space, even though separate dispatch is possible via the landward side of the sheds.

The landward side of the sheds is not however provided with a loading platform to facilitate the dispatch of goods, nor is there an apron on which lorries can be marshalled or parked. The public road running along the landward side of the sheds is so narrow that two lorries can barely pass each other. Consequently, the dispatch of goods has to be done almost entirely by hand, which is very

time-consuming and causes increasing delay as more and more goods have to be handled.

- V. 5. At first, extensions in the short term were not considered pressing in view of the plans for new buildings to the north of the Roseau River ^{1/}. It seems that the Government of Dominica intends in due course to move all the harbour activities to the new buildings and use the present buildings, etc. for other purposes. This would seem wholly plausible considering the nature and position of the premises in relation to the old, densely built up centre of the town of Roseau.

The general complaint by businessmen (importers, shipping agents, etc.) that the Government is promoting congestion by withdrawing warehouse space from the port for office use (Govt Marketing Dept Tariff Dept, Post Office) should be seen in this light.

It should be borne in mind however that if extensions are completed according to plan (i.e. in 3 to 4 years),

- (i) it will be impossible to complete the first stage until after 2 or 3 years at the earliest;
- (ii) it is unlikely that the area will at once be adequate to accomodate all the existing enterprises (International Lines, WISCO, and W.I. schooners), which means that
- (iii) presumably the amount of space required for efficient administration will only be available after 4 or 5 years.

As congestion is however already a very real problem which grows more serious every day, additional measures will have to be taken in the short term to mitigate serious economic and financial consequences and combat congestion effectively during the transition period. These measures are described in detail in the chapter on congestion (Chapter F).

^{1/} See also Mr H.W. Appel's report No. ECLA/POS 71/12 of 29 January 1971.

Lighters

- V. 6. The port's equipment includes lighters. As major items of equipment for use in the water they constitute, like the sheds on shore, the basis of a separate or extra stage in the water-to-land or land-to-water transshipment of goods. Lighters can be viewed as extensions of the jetty or wharf and their carrying capacity considerably increases the port's transit and storage capacity.

In many ports all over the world lighters are actually used as "buffers" to cushion surges in the quantity of cargo arriving by sea. As an integral part of a port's equipment the lighter is therefore a major instrument in the port's administration, particularly when no direct ship-to-wharf and wharf-to-ship transshipment is possible, as in the present case.

Roseau's lighters do not belong to shipping agents but are privately owned, each lighter being separately operated and hired out to the various importers, shipping agents and other interested parties.

Although this arrangement would seem quite satisfactory at first sight, it is recommended that the lighters be placed in a single pool from which interested parties can draw as required; this would simplify maintenance, ensure greater safety and efficiency and improve the service obtained from them.

In view of the form of the future port administration, lighters will, of course, eventually be placed under the central control of the autonomous or semi-autonomous Port Authority. Where necessary, it would be advisable to replace, if possible, the present lighters; which are made of wood, by steel lighters; greater adaptability would be one of the advantages.

C. Layout of the port

V. 7. As there are no berthing facilities for ocean-going vessels there is little to be said about the port's layout.

All the facilities have been adapted to the draught and transport capacity of lighters and similar vessels. The gradual increase in cargo movements, whether imports or exports, gave rise first of all to longer berthing periods, then to the expansion of the lighter fleet but, since goods can be temporarily stored in the lighters, only much later to a greater need for storage capacity on land. Another consequence of the shortage of facilities and of transhipment by means of lighters is that the emphasis in mechanisation is mainly on vehicles and lifting devices (tractors, trailers and cranes).

Owing to shortage of space most of the stacking and storage of goods in the warehouses has to be done in the conventional way, i.e. by hand. Consequently, the only purpose the preslinging of loads serves is to increase the speed of loading and unloading and so reduce berthing time.

Information received on the subject shows that the port's layout has remained unchanged for several decades. Although nothing can be found to support my view, this is most probably attributable to:

- the position of the old city centre with its mass of buildings (warehouses, offices and shops) right next to the port area, making any extension to the port a very costly business;
- economic and technical factors such as navigation, planning, and the difficulty of building in coastal waters, which have caused schemes to build new, modern premises on the coast north of the mouth of the Roseau River to be dropped.

Perhaps all plans to improve the existing premises were postponed until a more suitable time when it was realised what the financial implications were.

V. 8. Mr H.W. Appel, the Port Engineer, suggested in his report that the storage capacity be enlarged, either by roofing in the open storage space between the sheds or by extending the second floor of the adjacent buildings.

The extra 5,900 sq.ft. (gross) of storage space thus obtained would not however completely make up the shortage of roughly 7,000 sq.ft. (net) as calculated in paragraph V. 2., so congestion would not be wholly relieved.

Moreover, it is doubtful whether the figures for the movement of goods given by word of mouth and on which the shortage is determined are completely accurate and whether this solution to the problem of space, which is actually not recommended because of the fire hazard, is the most efficient and cheapest.

Since the new building project is to be implemented in another 3 or 4 years and congestion is only temporary, I believe we should endeavour to find a temporary solution to the problem at the least possible expense. The matter is dealt with in greater detail in the chapter on congestion (chapter F).

As regards the layout of the new complex we should from the outset endeavour to secure a site that extends far enough back to provide ample room for the buildings (sheds and offices) and other spaces (aprons, car parks etc.) along the lines given in the chart on cargo handling in paragraph IV. 24.

D. Port organisation and management

V. 9. The port of Roseau is mainly administered as a division of the Ministry of Finance under the supervision of the Collector of Customs.

The civil engineering side of the management, e.g. the construction and maintenance of wharves, buildings, aprons and roads, is the only part of the work that comes under a technical body, viz. the Public Works Department of the Ministry of Communications and Works.

The head of the Ministry of Finance division is the Senior Port Officer and harbourmaster who has an administrative staff consisting of 3 Officers, 1 Wharf Supervisor, 4 Operators (one of whom is a Mechanical Operator) and 7 Port Attendants. They carry out their duties, such as the assessment and collection of port revenues, the paper work pertaining to cargo and the storage of cargo and the hiring out and maintenance of facilities, in conjunction with the Customs.

One might well ask what made port staff and customs combine, since the essential differences in the work the two groups do must necessarily give rise to difficulties.

In his Report on the Commission of Enquiry into the Conditions at the Roseau Harbour, dated 12 November 1969, Mr C.E. Neblett summarises these difficulties as follows:

"Steamship Agents in Dominica make arrangements for the discharge of cargo by stevedores into lighters where it is landed at Roseau Jetty and received by longshoremen and taken into the sheds or open storage as the case may be under the supervision of Customs.

Although the cargo is generally tallied ashore, Customs accept no liability for custody of the goods, nor responsibility for losses or damages evident on delivery to the consignee. Deliveries are made under the supervision of the Customs and consignees are expected to go personally into the Customs sheds, search for and physically remove cargo to their own transport. They are given a landing-certificate in respect of cargo delivered indicating shortages for which the importer is entitled to claim a drawback of duties."

- V. 10. Since the economic progress made by the country is mainly determined by the efficiency of its port, it is of the utmost importance that the problem of congestion and other difficulties be solved, both in the short term and permanently, by rationalisation and the introduction of a simple, modern system of administration.

The interim report No. ECLA/POS 71/12 of 2 September 1972 gives guidelines for the improvement and modernisation of the port's administrative system. It describes the various principles on which the new administrative body, the Port Authority, will work, laying particular stress on one-man administration, as this should ensure the smooth, uninterrupted flow of cargo through the port, no waiting time for vessels and no delay in the handling of cargo on shore.

- V. 11. (a) Under the circumstances the introduction of a modern system of this kind, however, requires, besides the complete reorganisation and rationalisation of the existing system, the creation of a new basis, namely the provision of sufficient material and financial resources to enable the new administrative system to get off to a successful if modest start.
- (b) In addition, all interested parties (both organisations and private individuals) will have to be requested and persuaded to cooperate in bringing about the more efficient utilisation of facilities, for instance, by the removal elsewhere or the making temporarily available of any services, establishments etc. that are not strictly connected with the port.
- (c) Lastly, consultations will have to be held with private organisations and individuals (port users and workers' organisations) to secure their support for and cooperation in the new administrative system and all the measures to be taken and regulations, bylaws etc. to be created, whether of a temporary or permanent nature, to facilitate the operation of the system.
- V. 12. (a) To operate as efficiently as possible the P.A. must, by means of provisional arrangements, orders and regulations, be immediately placed in a position to act as the sole authority for the entire port. To achieve this it must possess from the outset a certain degree of autonomy as well as sufficient

personnel, material and financial resources to deal effectively with pressing matters such as:

1. the extension in the short term of the port's storage capacity so as to relieve congestion as quickly as possible and the gradual introduction of new methods and regulations for handling cargo;
2. the improvement of the floor (surface) of Shed III;
3. altering the fencing to suit the extended port area;
4. the construction of access and exit roads, the introduction of special traffic regulations for users of these roads wishing to reach different places, the construction of entrances and exits and surveillance of the entire area in accordance with Customs, fire and other regulations;
5. the acquisition of:
 - one 6,000 lb. forklift truck;
 - one 4,000 lb. forklift truck;
 - three 17 hp pneumatic towtrucks and
 - eight 2-ton trailers.

As both relief of congestion and the introduction of the new administrative system depend on the extent to which the storage capacity can be increased it was urged, during the second visit to the island, that first of all a temporary storage area be prepared and a shed be built without delay, if possible in the immediate surroundings of the port. To obtain some idea of the size and dimensions of the extra open and closed storage space required, the Customs were requested to supply more detailed information on cargo movement in the past years.

According to the 1964 to 1968 annual figures made available to us on the basis of the customary cargo-handling processes:

- (i) a total of 130,014 tons of cargo were transhipped in 1967, which would put the shortage of transit space even then at 9,000 sq.ft. or more, i.e. about 1.3

- times as much as was originally calculated, while
- (ii) in addition about 4,500 sq.ft. of extra open storage space will be needed for the temporary storage of certain bulk goods (reinforcing steel, zinc roofing, etc.) and other goods (cars, machines etc.) that can be stored in the open air.

The total extra storage space needed is therefore about 15,000 sq.ft. At the moment only about 1/3 of this pressing need can be met.

At a special meeting of the Port Advisory Committee convened on 15 September 1971, the chairman promised on behalf of the Government that a new warehouse would be built on the empty plot owned by E. Nassief & Co. (see point 6 of the relevant report).

A decision on the other two-thirds had to be solicited from the relevant bodies (Comm. & Works and Finance).

- (b) In view of the urgency of the matter and its importance to the country as a whole, we may in my opinion not only expect all interested parties to understand the position but also insist on their cooperating in trying to find a solution.

To achieve the necessary extension of present storage capacity in the short term and at the least possible expense, so that the new administrative system can be introduced and congestion relieved, the Government and port users will have to be prepared to join forces in dealing with port problems.

Accordingly,

- (i) the premises occupied by the Government Marketing Dept. and the Tariff Department should be made available to the new administrative body without delay (the Post Office premises should if possible also be evacuated, a move which many private individuals deem desirable);

- (ii) the port users, viz. importers, shipping agents and stevedores, will have to be prepared to share responsibility for the handling of cargo in the port and so lessen the effects of the shortage of qualified staff.

Such an arrangement would:

- entirely relieve the present shortage of transit space and even meet the total needs until 1975;
- improve the administration of cargo handling on the jetty and in the sheds.

- (c) The cooperation of third parties (e.g. port users and workers' organisations), which can be secured by allowing them to participate up to a point in decision-making on matters of common interest, is vital, not merely to relieve congestion but also to create such conditions as will help the new administrative body, the Port Authority, to get off the ground and get through the initial period, usually a difficult period, smoothly.

To this end it was proposed that a representative of port users should sit on the Port Council and that representatives of port users and dockers should sit on the Board of Advisers.

Such participation, especially in the initial period, would seem to me to be a great help to both the Government as the "manager" and his temporary right-hand man, the expert.

The crux of most of the problems is cargo handling, which is the focal-point of the various interests.

In view of the statement in the first part of paragraph V.10,, efforts should be made to ensure that everything is done as efficiently as possible.

This requires consultation, especially when long-term plans are being prepared.

Experience has shown that participation coupled with shared responsibility is very effective when it comes to finding the right approach to problems (which is different for every port).

As in St. Lucia, the Government emphasised the pressing need to secure participation and modified the structure of the Port Council in favour of the central workers' organisation (see Appendix 17).

V. 13. Summarising, the various talks on the organisation and administration of the port revealed no essential differences of opinion on the basic issues, viz. one-man management, gradual autonomy (in both financial and other respects), etc.

Much of the time was devoted to preparing a development schedule and determining initial personnel and material requirements. A fair initial cost-benefit ratio was obtained (approximately W.I. \$197,610 to W.I. \$430,500) by combining functions and making a critical assessment of the need for mechanical aids (see Appendix 18).

The figures do not of course include the funds required for the improvement and expansion of the existing facilities (sheds, aprons, fences etc.) and for the procurement of additional equipment such as:

- one 20-ton crane;
- two tractors;
- twelve trailers;
- one forklift truck with telescopic mast, capacity:
4,000 lb. or 6,000 lb.

These items, as also the building scheme, would be financed if possible with bilateral or other loans.

Administration

V. 14. After a number of separate talks with the parties concerned both the Government and private parties (importers, shipping agents, workers etc.) agreed to the reorganisation and rationalisation of the port and the introduction of an administrative system with separate powers and responsibilities.

Henceforth, authority and responsibility for the handling of cargo:

- (i) in the lighters and on shore will be vested in the Company of Port Users/Contractors, to be set up by port users and employers (e.g. stevedores, importers and shipping agents);
- (ii) in the sheds and other storage areas will be vested in the Port Authority.

The Government's preference for this type of administration springs primarily from the enormous shortage of qualified and capable staff and the poor equipment.

It is probably the fact that the equipment is bad and that the lighters are privately owned that has caused the Government to disclaim responsibility for the first stage of cargo handling, since taking over the administration of this equipment would give rise to immense staff and financial difficulties, which should be avoided on account of the limited funds available.

In due course, for instance after the completion of the first stage of the building project or when the Port Authority, having assumed its final form, possesses sufficient qualified and capable staff (end of phase III, see paragraph II. 7.), the manager-cum-warehouseman ^{1/} system might be chosen as the final administrative set-up for the expanded port of Roseau. Purely commercial activities, such as stevedoring or the special physical handling of cargo on shore, could of course be left to the shipping-agents, importers etc.

^{1/} See paragraph IV. 23.

The participation of these interested parties in the administration through the Port Council and the Board of Advisers will be guaranteed.

Secondly, the preference sprang from the fact that the temporary administration to be introduced is basically not very different from the present one, which opens the possibility of transferring to the port's new administrative body all personnel who could become redundant as a result of the reorganisation.

- V. 15. As regards the private interested parties, it was only after two separate talks on 17 September 1971, one with the shipping agents and the other with the Chamber of Commerce of Dominica, that they agreed to the formation by the shipping agents and the Chamber of Commerce of a Company of Port Contractors, which would coordinate and administer centrally the entire port except the stores run by the Government.

The object of this is to put an end to the individual operations of the various businessmen on the wharves and the adjacent buildings and to loss through damage, the mislaying of goods or theft.

In the Report on the Port of Castries Dr Hempel, Regional Adviser on Maritime Transport, and Mr Polland Moore, formerly General Manager of the Port Authority of Trinidad and Tobago, give directives on the functions and responsibilities of the Company of Port Contractors on the basis of the facilities that Castries offers. They are prompted to a greater or lesser degree by the systems operating in Port of Spain and other Caribbean ports.

Although the situation at Roseau is different from that in the above ports and although there are decidedly fewer facilities, I believe enough information can be obtained from the description of these functions and responsibilities (and if necessary also from the details on the P.A. of Trinidad and Tobago which we have been sent) to enable us to determine the set-up of the Company of Port Contractors at Roseau.

This is evident when we compare the situations in Castries and Roseau, both ports handling about the same amount of cargo annually.

Despite the fact that Roseau has much fewer facilities, cargo in that port is more efficiently transhipped and despatched or stored in the sheds than it is in Castries. This gives the false impression that the situation in Roseau is less serious than it is in Castries.

One of the features of cargo handling in Roseau is that the various businessmen operate individually either alongside one another or in criss-cross fashion. One of the reasons for this is the fact that the lighters are privately owned (ownership therefore being widely spread), that each has to be hired separately each time it is used and that no lighter has a permanent crew.

The unloading of cargo on the wharf, its temporary stacking, direct despatch or further transportation and storage in the transit shed is done entirely by casual gangs of labourers hired by the Seamen and Waterfront Workers' Union.

- V. 17. Although the Custom's standpoint as to answerability for storage and responsibility for loss or damage ^{1/} as described by Mr Neblett seems wholly plausible, it will be quite unacceptable once the new administrative system has been introduced. Under the new system the consignee will as is customary in all ports, be able to demand compensation for any loss suffered through the mislaying of goods, damage or theft from:
- the Company of Port Contractors, if the loss occurred during the handling of the goods in the lighters and on the jetty or other temporary stacking place;
 - the Port Authority, if the loss was noticed when the goods were delivered after storage in the open or closed stores.

^{1/} See paragraph V. 9.

- V. 18. Cargo handling as described in paragraphs IV. 24., IV. 25 and IV. 26. could of course never be done in the present establishment with its limited facilities.

Even the temporary extension of storage capacity to relieve congestion would not provide the answer.

It will only be capable of achievement when the proposed new buildings have been completed.

In view of the ever-increasing mechanisation of cargo handling and the unification of cargo accompanying it, it is recommended that a check be made at some time in the future to ascertain whether the equipment in the new buildings as planned is still up to date. A number of things point to the fact that small ports, too, will in the future have to make provisions for the establishment of industrial enterprises in port areas to make the ports pay their way. To this end, ports should pursue a flexible policy so that they can adapt themselves to any situation.

The latest developments (e.g. pier to pier consignments/containers) have shown that reasonable efficiency can be assured by using reserved areas in combination with movable sheds.

Such sheds, preferably made of steel, enable the layout and structure of the establishment or terminal to be modified as required, at any time and at a minimum expense, to ensure that cargo will be efficiently handled. The area of the site required will of course depend on the size of the units to be handled. In large, modern ports with a correspondingly large movement of cargo and infrastructures to match a wharf length together with an area extending inland of at least 250 m per ship is deemed necessary for the handling and storage of roll-on/roll-off loads.

F. Congestion

- V. 19. Congestion in the Port of Roseau is of course, like that in Castries, attributable to the absence of a modern administrative system headed by one man.

Owing to lack of coordination and foresight, steps were not taken in time to make up the ever-increasing shortage of storage space.

As stated in paragraph V. 12. (a) the total shortage of space has already reached 15,000 sq.ft., about 10,000 sq.ft. of which is closed space (for sheds) and 5,000 sq.ft. open space for the storage of large articles, building materials, etc.

Relief of the congestion will therefore require extension of the port's storage capacity to include the facilities mentioned above as well as the introduction of the new administrative system headed by one man. This could be achieved in the following ways:

- (i) By roofing over the open storage space between the sheds. I do not believe this expedient, which is also put forward in paragraph V. 8., can be recommended because:
 - Goods in transit can only be handled with maximum efficiency if all the operations are carried out on the same level;
 - Sufficient space should be kept open between the different buildings, etc. to reduce the fire hazard.
- (ii) By building a steel shed ^{1/} on the premises of E. Nassief & Co. to the south of Transit shed no. 1 (see Appendix III). If the area is used to the best advantage, about 5,000 sq.ft. net of storage space can be obtained. Moreover, the advantage of steel sheds is that they can be moved to the new premises very easily and at comparatively little expense.
- (iii) By the removal elsewhere of services, offices etc. that are not strictly connected with the port. Such a course of action and the reorganisation and reallocation of premises that it entails will have to be resorted to if no site can be found in the immediate

^{1/} The Government agreed to this in principle at the meeting with the Port Advisory Committee on 15 September 1971.

vicinity of the port which would be suitable for one open and one closed store, each of 5,000 sq.ft.

The statement in paragraph V. 12. (b) should be seen in this light.

The premises to be reallocated would be:

- The floor and the top area of Shed II (2 x 3,900 sq.ft.).

This shed was considered as a warehouse and therefore not listed with the other sheds in the section dealing with the shortage of transit sheds;

- The top area of Shed III (4,500 sq.ft.);
- The floor and top area of the Post Office, the area of which I do not know exactly but which according to information received was part of the port's facilities.

I believe that matters could be considerably improved if some of the services/enterprises and offices not connected with the port were moved elsewhere.

In fact, if the floor area of Shed III as well as that of the shed referred to in (ii) above becomes available, this would almost completely make up the shortage of transit sheds.

Other arrangements might be made, in consultation with importers and shipping agents, which would render the removal of some of the above services, etc. unnecessary (e.g. by temporarily making private warehouses in the vicinity of the port available in exchange for other premises elsewhere; efforts to arrange matters in this fashion had to be abandoned, however, owing to lack of time).

If no contribution is forthcoming from private parties, the loss of warehouse space can only be compensated by securing the top area of Shed II. If this happens, the top area of Shed III will of necessity also have to be made available as temporary accommodation for the overflow from both the transit sheds and the stacking areas so as to make good the lack of other space and to prevent any further splitting up of accommodation. The Post Office would not then have to be removed.

G. Port Development Scheme

V. 20. Two plans have been drawn up for the improvement of the Port of Roseau. They may be summarised as follows:

- (i) The first plan, drawn up by Goode and Partners, consultants, on the basis of a study they made of the possibilities for developing the port, comprises various layouts, the last of which, supplemented and improved in 1970, has much in common with that of the Port of Kingstown, St. Vincent, and with the designs for the extension of the Port of Castries, St. Lucia. It is a non-sheltered, marginal, multi T-type open wharf on piles, protruding from the coastline to reach the 33 feet depth line and connected by short approach jetties to the back of the filled-in harbour area.
- (ii) The second plan gives ECLA/POS's view, as recorded by Mr Appel on the port's physical problems and is a variation on the first plan. Besides the construction of new buildings, it comprises the extension of the jetty and sheds.

V. 21. In addition to the improvement and extension of berthing facilities for ships and lighters there is the matter of machinery, which at the moment is inadequate, both in quantity and in quality, for reasonably effective mechanised cargo handling.

It is therefore essential that the existing equipment be completely overhauled and new machinery added. To facilitate operation it is recommended that all the types of machine required be obtained if possible from the same factory. The interchangeability of parts is a major point since it enhances the reliability of the mechanical system as a whole, particularly in small ports with limited budgets.

V. 22. The proposal that there should be a minimum depth of 33 ft. (possibly to be extended to 36 ft.) alongside the new quay to accomodate international lines is approved from the point of view of administration.

It has already been noted that the latest developments in shipping exhibit a tendency to re-assess the merits of the smaller types of vessel (3,500 - 12,000 d.w.t.), especially in the general cargo and unit load sectors. This may be a corollary to the trunk-feeder line system though it is more probably an attempt to continue to get as many ports as possible directly involved in international trade by introducing smaller unit loads (even small barges) for these shallower-draught ships, and in other ways.

It might therefore be advisable to examine the possible advantages that might be derived from this system by the CARIFTA or E.C.C.M. member countries.

Roll-on/roll-off or multi-purpose open vessels (with passenger accomodation) in particular, which are loaded and unloaded at the bow or stern or through the gateways at the side, require a minimum of quay installation in ports with small tidal movements such as Roseau.

Although the capacity of these ocean-going vessels is markedly lower than that of ordinary freighters (with limited passenger accomodation) they have proved to be more efficient and cheaper to operate on short routes because they can be loaded and unloaded more quickly and because they require a minimal amount of assistance (no tugboats needed for berthing) and hence shorter berthing or turn-round times.

- V. 23. Lastly I would make the following observations on the planned extensions to the port and the expected increase in the flow of goods.

To obtain some idea of the transit shed capacity and wharf length needed now and in the future (up to about 1980), both the data in the Report by the British Development Division and the data made available to me by the Roseau Customs (although incomplete) have been converted into figures for normal transshipment on the quay (see Appendices 19 and 20). The conclusion we can draw from this statement is that in spite of a good beginning actual developments are less favourable than the above-mentioned report anticipated.

However, it is difficult to examine the problem in detail without up to date information and in the absence of a deep water wharf, especially in view of the many differences between the two periods under review.

The developments represented by the graph do however give an indication of the present shortage of transit capacity, the extensions needed up to 1975 and the capacity required after the completion of the new port in 1980. The curve steers a middle course between the low growth path and the Customs data.

Another important indication which the graph gives is the levelling down effect that the lighters have on the irregular flow of incoming goods. (The proposed increase in transit capacity A is smaller than B, the latter being needed if goods are unloaded directly from ship to shore.)

Future shed capacity required

- V. 24. The transit shed capacity required up to 1980 which was specified earlier in this report and which is also given in Appendix 20 is based on semi-mechanised cargo handling, the method still employed in most ports. This also applies to the chart referred to in paragraph IV. 29.

These specifications could be used as the basis for the accommodation and arrangement of the various sheds and other facilities. This would mean that both the location and size of the different facilities and the storage and transit capacity of the installation would be fixed.

New transportation methods (larger cargo-carrying units, such as containers) and new loading and unloading techniques using mechanical aids on a larger scale could then only be introduced at the cost of great financial sacrifices, if at all.

It was observed in paragraph V. 18., in connection with requirements in the immediate future, that even small ports, for reasons of

self-preservation, should adapt to the continual technological advances made in navigation and transportation.

This implies that more space must be made available, not so much in length as in width, so that general unit cargoes can be handled as efficiently as possible.

The effect of this on the new installations will be that by the time they are built the planned warehouses will fail to reach the standards then prevailing. The handling of the frequent consignments of larger unit cargoes with larger mechanical equipment will require larger loading and unloading bays and larger storage and parking space. To this end areas extending inland should now be reserved. Pier to pier cargo units in particular, which, to all appearances, are going to be brought into such ports as Roseau in greater quantity, need a great deal of room for storage and handling purposes.

It is therefore advisable that all the sites behind the quay or jetty extending to a depth of at least 250 m be appropriated for purposes of augmenting storage and other facilities.

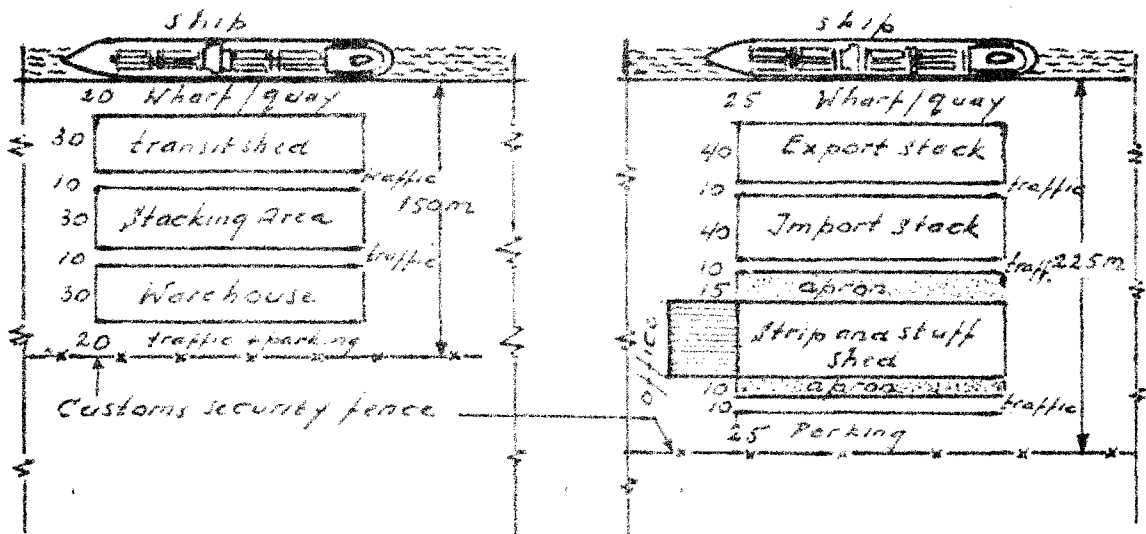
Another consequence of this development is that, if possible, sheds and other buildings should not have fixed positions on the site, in other words they should be movable or easily taken down. This has given rise to the use of steel in the design of sheds, allowing the available site to be arranged at all times according to the requirements of the cargo to be handled.

In addition the specific differences between transit and storage sheds become blurred when the modern mechanised system of cargo handling is applied. Only one strip and one stuff shed is then needed, in which to pack and unpack respectively unit cargoes passing through as imports or exports. In small and medium-sized ports these functions are frequently combined in the one shed, so that there is only one building on the entire premises in which all the necessary cargo handling as well as paper work can be done. Since the containers in which unit cargoes are packed also serve as a temporary storage facility for the goods contained in them, the

sheds need only contain storage capacity for 1 or 2 weeks.
As things are at present the location of the sheds in relation to the berths depends on the space needed for stacking, which is usually provided by the apron in front of the sheds (see below).

Division of working areas per berth

Land required



for the present semi-mechanized transshipment and handling of general cargo, small unit loads and small consignments of bulk cargo

for fully mechanized transshipment and the handling of various kinds of cargo, ro/ro and large consignments of general cargo

Imported goods or goods for export would then be brought in and collected at the back of the sheds in the normal way, i.e. by lorries.

Wharf length required

- V. 25. If the new port is to be built in accordance with the latest design there will probably be a 1200 ft. (= approx. 366 m) quay by about 1975 or 1976, serving ocean-going vessels with a draught of up to 32 ft. Assuming a type of development based on the Customs data the annual flow of cargo by about 1975/76 will be approx. 155,000 tons ^{1/}, which would work out to an average transshipment of

$$\frac{155,000}{366} = 425 \text{ tons per running metre per year.}$$

This is an extremely low average which could easily be raised to 800 tons if the port were reasonably well equipped and administered. (See also paragraph III. 17.)

Assuming Roseau reaches this figure, which it easily can, the wharf length stated above will suffice until at least the year 2000.

In conclusion I would make one or two observations with respect to a question I have been asked many times, viz. what is to be done with the present port complex once the new one is built.

It must be said in the first place that in the interests of efficiency general preference should be given to a type of administration embracing differentiated cargo handling in separate zones within a single enclosed area.

In certain special cases differentiated cargo handling in a number of areas could be more advantageous to the parties concerned (businessmen, consumers and Government).

The present port could in my opinion adopt this role in the future. Local trade and as far as I know also the trade in consumer and other goods (fruit, sweet potatoes, some textiles etc.) carried on in the other islands (regional trade) is concentrated in the vicinity of the present port, viz. in the Government Marketing Department.

^{1/} See Appendix 20.

Transferring these goods, which are carried largely by schoooners, to the new building complex would involve a longer voyage and hence extra expense, which would create difficulties for the businessmen and consumers concerned and give rise to opposition and antipathy. In the present instance it might be advisable to confine the operations of the existing port to the handling of schooners, after reorganisation, rationalisation and the provision of additional facilities, of course.

To improve the efficiency of the transshipment service, which is a one-way loading and unloading system, the L-shaped jetty could, if desired be converted into a U-shaped berthing facility.

(See Appendix III)

THE PORT OF ROSEAU (DOMINICA)

(View from the Customs-office)



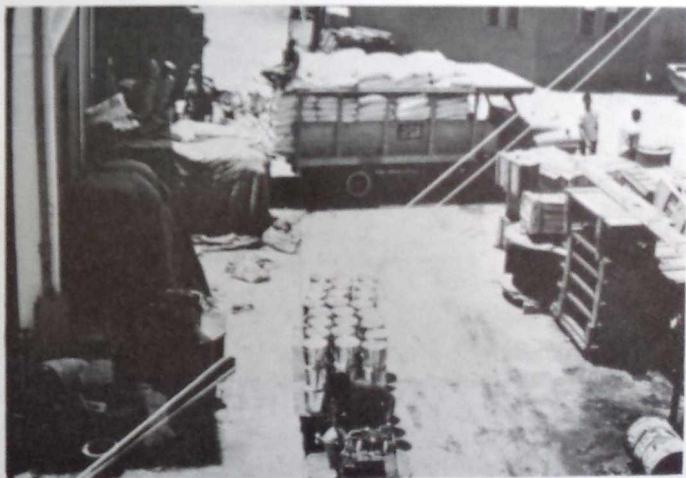
The open roadstead with a part of the lighter-fleet



The lighterage



The L-shaped jetty overloaded with cargo



The apron/quay in front of the sheds overloaded with cargo as well

ITINERARY OF ACTIVITIES

(Connected with the travel to the Islands of the East
(Caribbean))

- 30 June - 18 July 1971 : Port of Spain
Discussion and appointment study - also drawing up of urgent program for the improvement of the ports in the Caribbean. Study of existing reports and documents (partly made available by ECLA/POS and partly by other authorities, industries etc.).
- 18 July - 20 July 1971 : Informative visit to St. Vincent; familiarisation, discussion and exploration of the port and environment.
- 20 July - 26 July 1971 : Informative visit to St. Lucia; familiarisation, discussion and exploration of the port and environment.
- 26 July - 29 July 1971 : Informative visit to Dominica; familiarisation, discussion and exploration of the port and environment.
- 29 July - 5 September 1971 : Study of reports, documentation and other data compiled during the first visit to the ports.
Elaboration, drafting and typing of the Interim reports ECLA/POS 71/12 and 71/13, intended for the ports of resp. Dominica and St. Lucia.
- 5 Sept. - 12 Sept. 1971 : Second visit to St. Lucia.
Introduction and discussion of the various proposals and recommendations (mentioned in the Interim report ECLA/POS 71/13) for improvement of the situation in the port of Castries with several representatives of the Government and representatives of industrial life and workers' organisations.
- 12 Sept. - 19 Sept. 1971 : Second visit to Dominica.
Introduction and discussion of the various proposals and recommendations (mentioned in the Interim report ECLA/POS 71/12) for improvement of the situation in the port of Roseau with several representatives of the Government and representatives of industrial life and workers' organisations.

20 Sept. - 28 Sept.1971 : Discussion of results of second visit and drawing up the outlines of final report. It was agreed on having the composition and elaboration done in Holland as a result of lack of time and technical equipment.

28 September 1971 : Return flight to Holland.

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A. OFFICIALS AND BUSINESS-PEOPLE METSt. Vincent

Hon. J.F. Mitchell	- Minister of Trade and Industry
Hon. H.K. Tannis	- Minister of Communications and Works
Mr. C.I. Martin	- Cabinet Secretary
Mr. M.V. Williams	- Permanent Secretary Ministry of Communications and Works
Mr. S. Joshua	- Comptroller of Customs
Mr. A.W. Dalrymple	- Chief Technical Officer Ministry of Communications and Works
Mr. G.L. Fraser	- Port Manager
Capt. J.E.R. Seck	- CIDA-expert
Mr. Girgrah	- Engineer, Department of Public Works of Canada
Mr. C.G. Hoggins	- Secretary Honorary Consul of the Netherlands

St. Lucia

Hon. J.G.M. Compton	- Premier
Hon. J.R.A. Bousquet	- Minister of Communications and Works
Dr. G. Louisy	- Cabinet Secretary
Mr. F. Louisy	- Permanent Secretary Ministry of Communications and Works
Mr. G. Girard	- Permanent Secretary Ministry of Finance
Mr. C. Cadet	- Permanent Secretary Ministry of Planning
Mr. V. Girard	- Comptroller of Customs
Mr. L. Monplaisir	- Deputy Comptroller of Customs
Mr. C.C.B. Crick	- Ass. Perm. Secretary Ministry of Communications and Works - Harbour Master
Mr. L. Duboulay	- Chief Pilot

Mr. A. Valmont	- President Chamber of Commerce
Mr. J. Deveau	- Honorary Consul of the Netherlands

Dominica

Hon. R.O.P. Armour	- Deputy Premier and Minister of Finance, Trade and Industry
Hon. P.R. John	- Minister of Communications and Works
Mr. D.K. Burton	- Permanent Secretary Ministry of Communications and Works
Mr. C.A. Sorhaindo	- Permanent Secretary Ministry of Finance
Mr. N. Watty	- Permanent Secretary Ministry of Planning
Mr. C.A. Severin	- Assistant Secretary Ministry of Communications and Works
Mr. A.B. Lazare	- Deputy Financial Secretary
Mr. E. André	- Deputy Comptroller of Customs
Mr. A. Royer	- Senior Port Officer and Harbour Master
Mr. W.A. Lawrence B.Sc.	- Chief Technical Officer Ministry of Communications and Works

Chamber of Commerce Dominica

Mr. C.A. Maynard	- President
Mr. J.N. Liburd	- Secretary
Mr. W.O.M. Pond	- Assistant Secretary
Mr. P. Nassief	- Manufacturers' Ass.
Mr. C.A. Bellot	- Manufacturers' Ass.
Mr. T.E. Coulthard	- Manufacturers' Ass.

Shipping Agents/Group, Dominica

- | | |
|-------------------|--|
| Mr. J. Chambers | - Messrs. A C. Shillingford & Co.
Ltd.
Saguenay Shipping |
| Mr. T. Cuffy | - Messrs. T.S. Shillingford
Agents - Booth Steamship Co. |
| Mr. R.T. Delauney | - H.H.V. Whitchurch & Co. Ltd.
Agents R.N.S.S. Co. (K.N.S.M.) |

Union

- | | |
|---------------|--|
| Mr. L. Benoit | - President Seaman and Waterfront
Workers' Union. |
|---------------|--|

B. DOCUMENTS CONSULTED

i. General

- UN, Yearbook of International Trade Statistics
- UN, Port Administration and Legislation Handbook
- UN, The turn-around time of ships in ports.
- UN, Unitization of Cargo
- Report of the Tripartite Economic Survey of the Eastern Caribbean
- UNCTAD, Developments of Ports
- Feasibility Study of Shipping Services in the Commonwealth Caribbean by Royal Netherlands Steamship Co.
- Analysis of steps for reorganisation of the West Indies Shipping Service (ECLA/POS 71/14)
- Feasibility Studies for Inter-island and Feeder ship services
 - (a) Small Vessels, ECLA/POS 70/6/Rev.
 - (b) CARIFTA Area, ECLA/POS 70/1/Rev.
- CARIFTA and E.C.C.M. Agreements
- Developments in the process of integration among the CARIFTA Countries (ECLA/POS 70/2)
- Report of Mission on Ports and Harbours Development and planning in East Caribbean Countries (ECLA/POS 71/2)

ii. Countries

St. Vincent

- St. Vincent Development Plan 1969-1971
- Second Five Year Development Plan 1971-1976, by Capt. J.E.R. Seck

St. Lucia

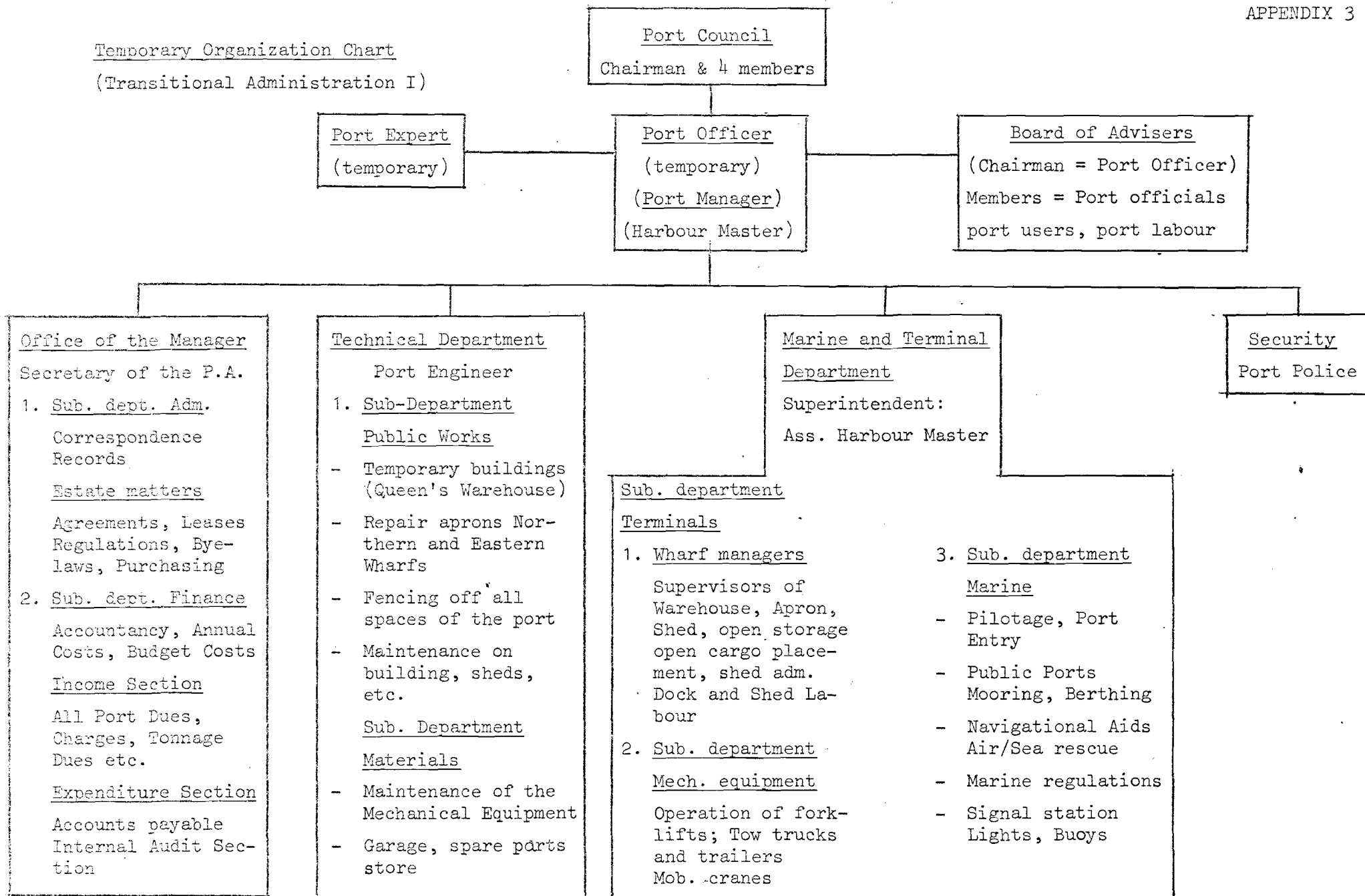
- Report on Harbour Development by Coode and Partners/Robson, Morrow & Co., dated 30 April 1970
- St. Lucia Five Year Development Plan 1966-1970
- Report on the Port of Castries, by Dr. J.A. Hempel and Mr. Polland Moore

Dominica

- Report on the Development of a Deepwater Harbour,
by Coode and Partners/Robson, Morrow & Co.
- Comments and Alternatives prepared by the Dominican Government
- Deep Water Harbour Project, Preliminary Appraisal prepared by
British Development Division in the Caribbean for the Government
of Dominica, September 1966
- Report of the Commission of Inquiry into the conditions at the
Roseau Harbour by C.E. Neblett.

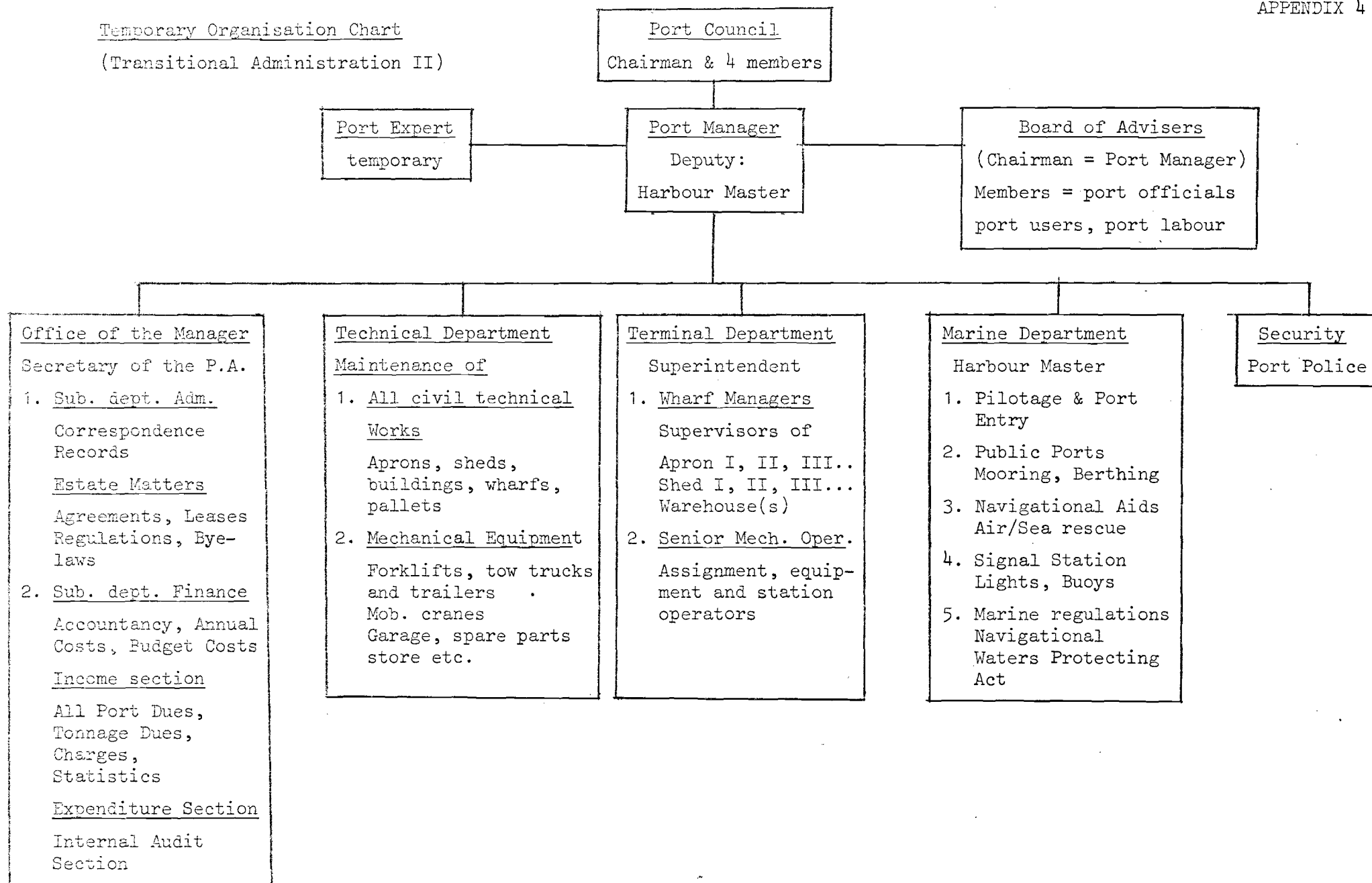
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Temporary Organization Chart
(Transitional Administration I)



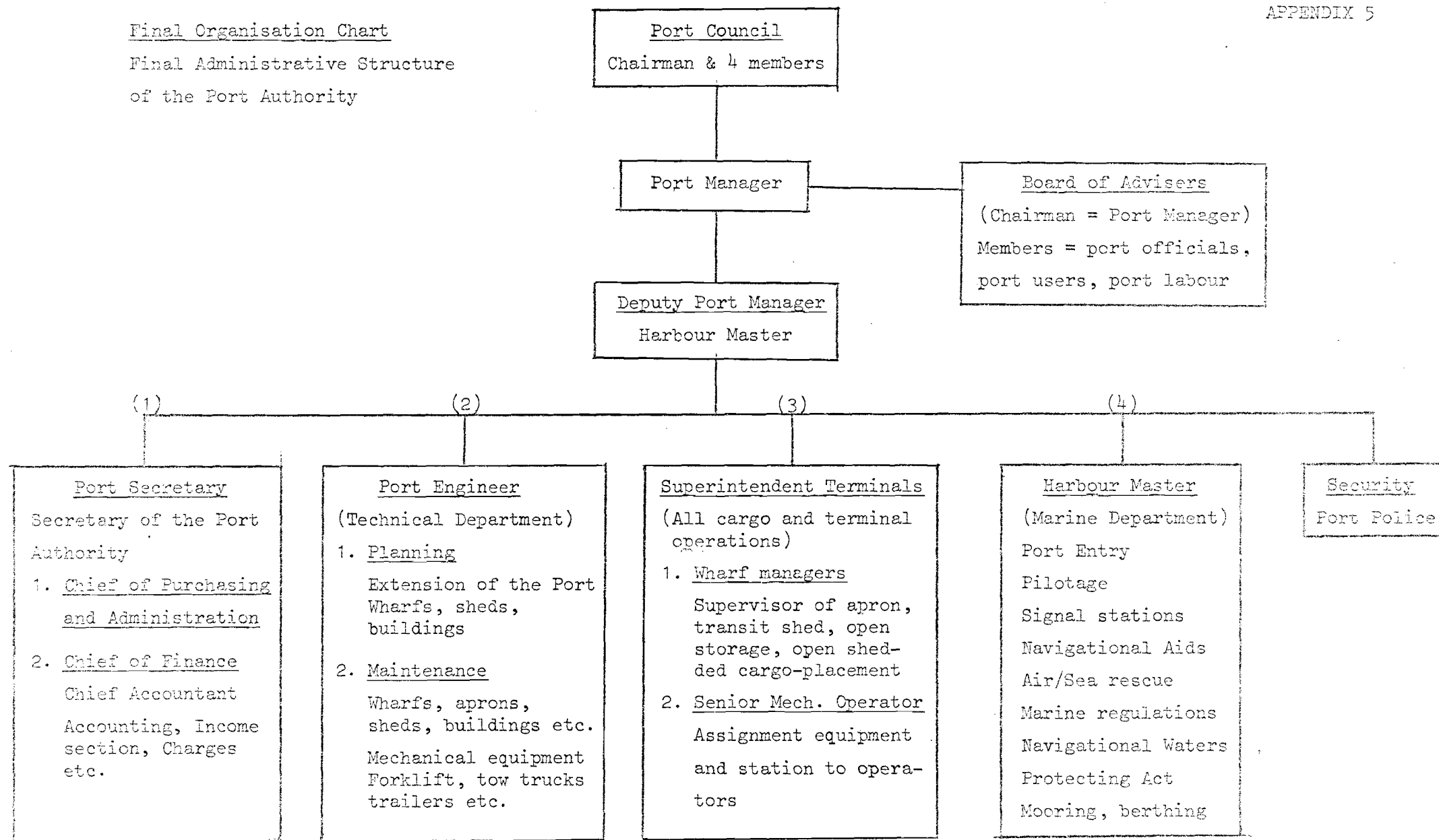
Temporary Organisation Chart

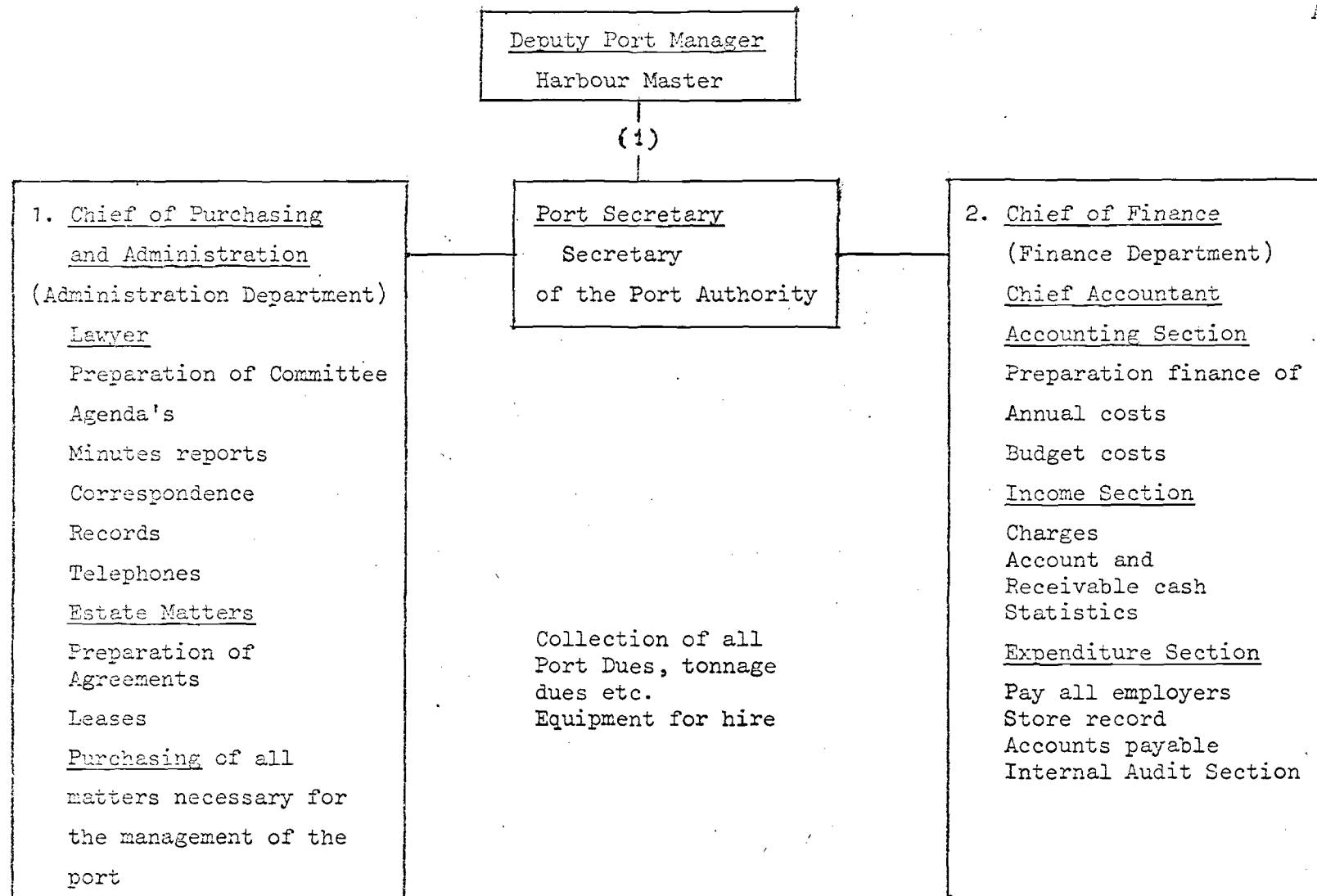
(Transitional Administration II)



Final Organisation Chart

Final Administrative Structure
of the Port Authority





Deputy Port Manager

Harbour Master

(2)

Port Engineer

(Technical Department)

Sub-Department Planning

Planning of the extension
of the port

1. Civil Engineering

Designing of new
wharves, sheds,
buildings etc.

2. Mechanical matters

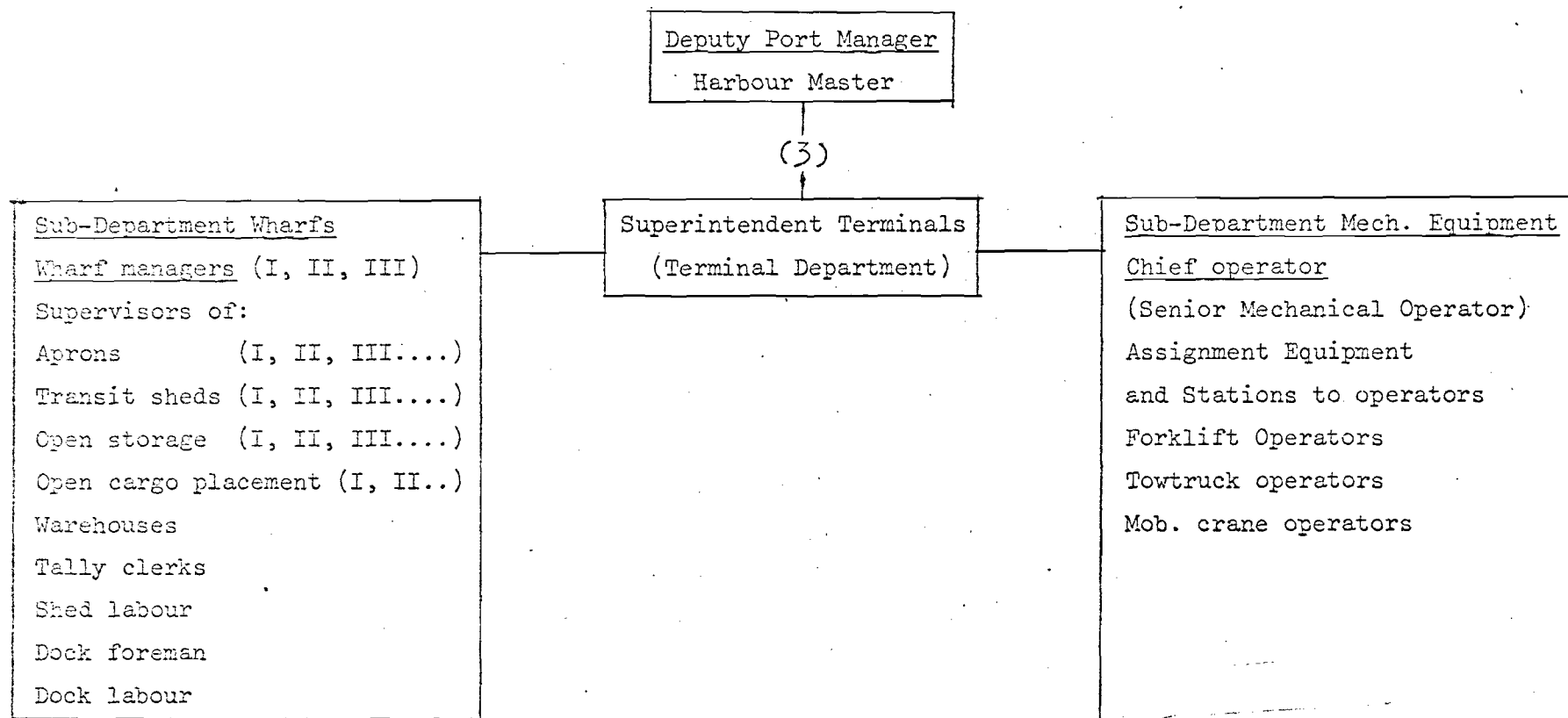
Gather information and
prepare purchasing of
new equipment

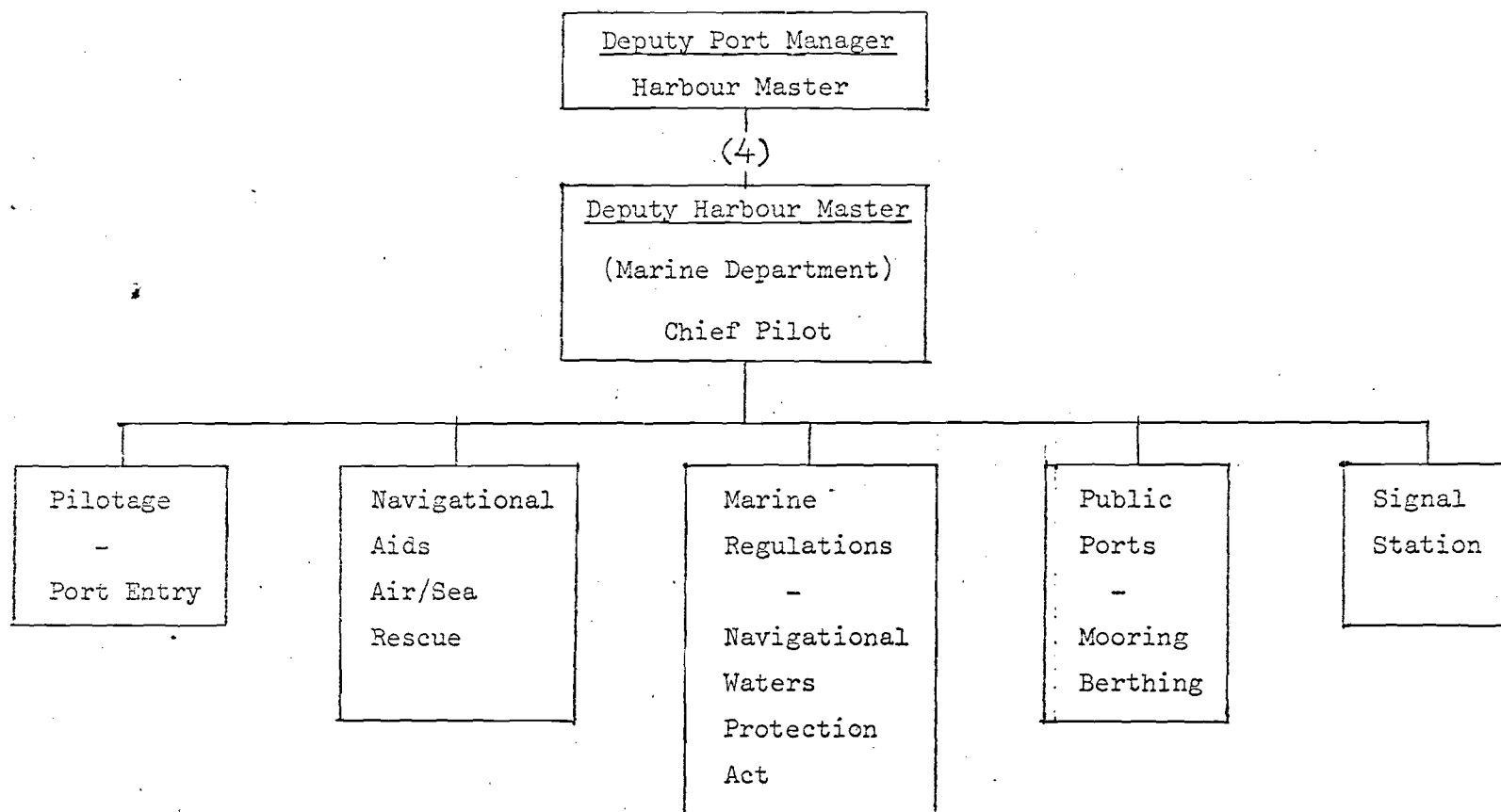
Sub-Department Maintenance

1. Maintenance of wharfs,
aprons, sheds etc.
2. Maintenance of the
mechanical equipment

Forklifts
towtrucks and trailers
mobile cranes etc.

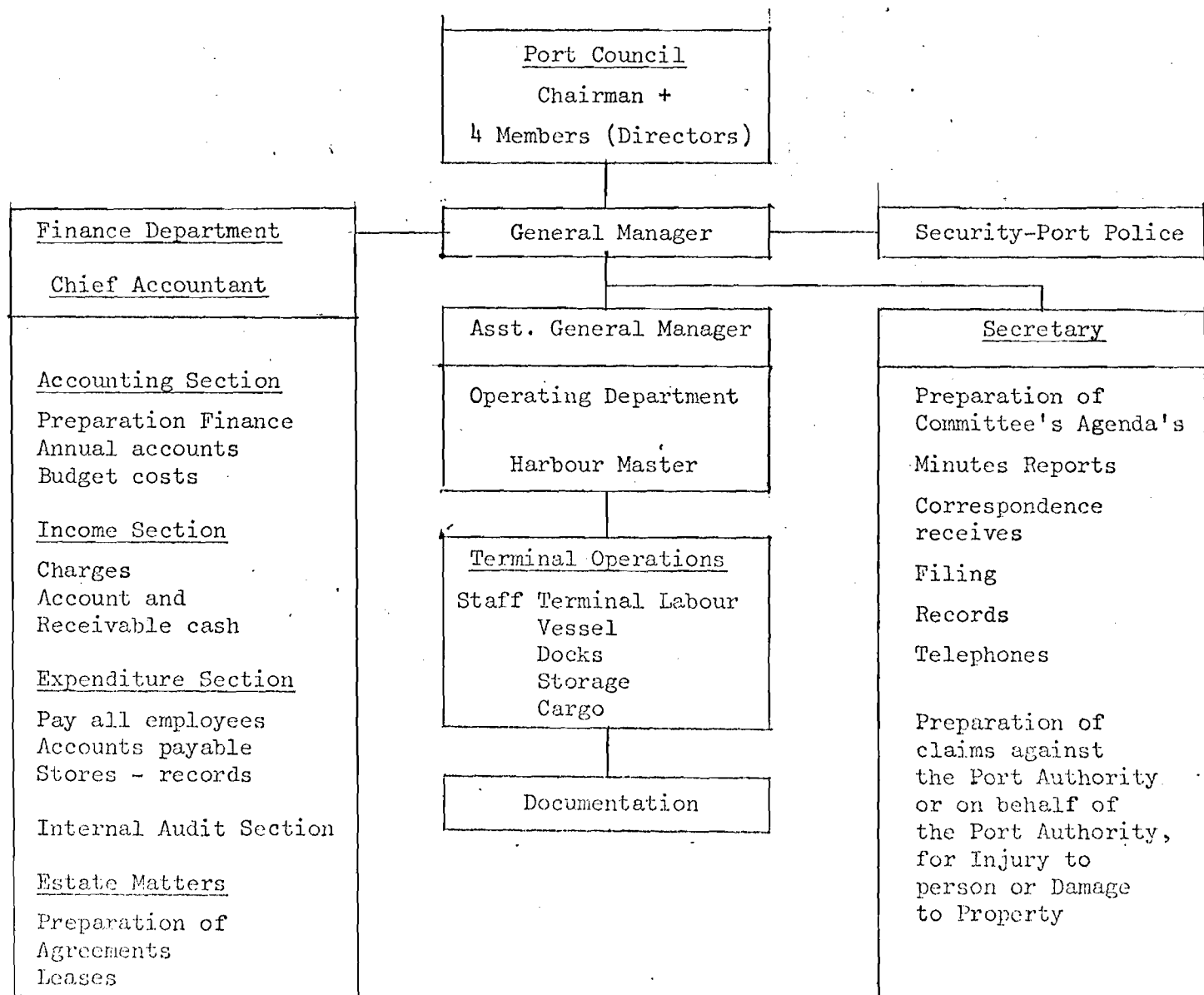
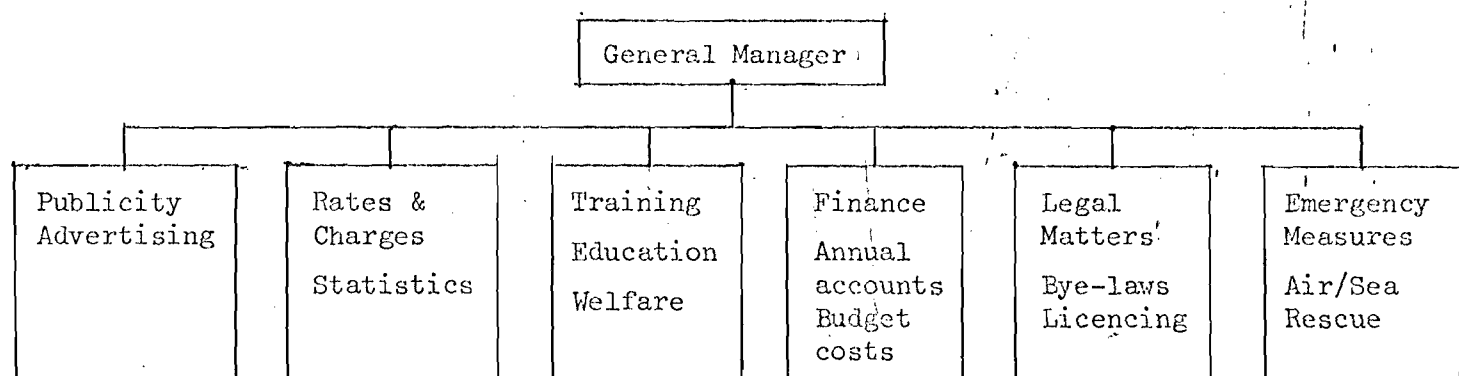
Garage, spare parts
store





ST. VINCENTOrganization Chart 1973

Port Authority



PORT OF KINGSTOWN, ST. VINCENTTOTAL CARGO THROUGHPUT

Year	Export (Agricultural products)			Import	Total Imp. + other prod.	Remarks
	Total	Bananas	Other products			
- 1966	40,214	29,283	10,931	49,988	60,919	Expectations deduced from data Second Five Year Development Plan from 1971-1976
- 1967	38,750	26,533	12,217	48,460	60,677	
- 1968	45,076	30,201	14,875	42,187	57,062	
- 1969	45,193	33,503	11,690	46,784	58,474	
- 1970	45,290	27,870	17,420	60,317	77,737	
Average/year			Average/year	+ 7.4% Av. incr./year		
- 1971		29,400	13,000	68,000	81,000	
- 1972		"	"	74,400	87,400	
- 1973		"	"	78,000	91,000	
- 1974		"	"	84,200	97,200	
- 1975		"	"	89,600	102,600	

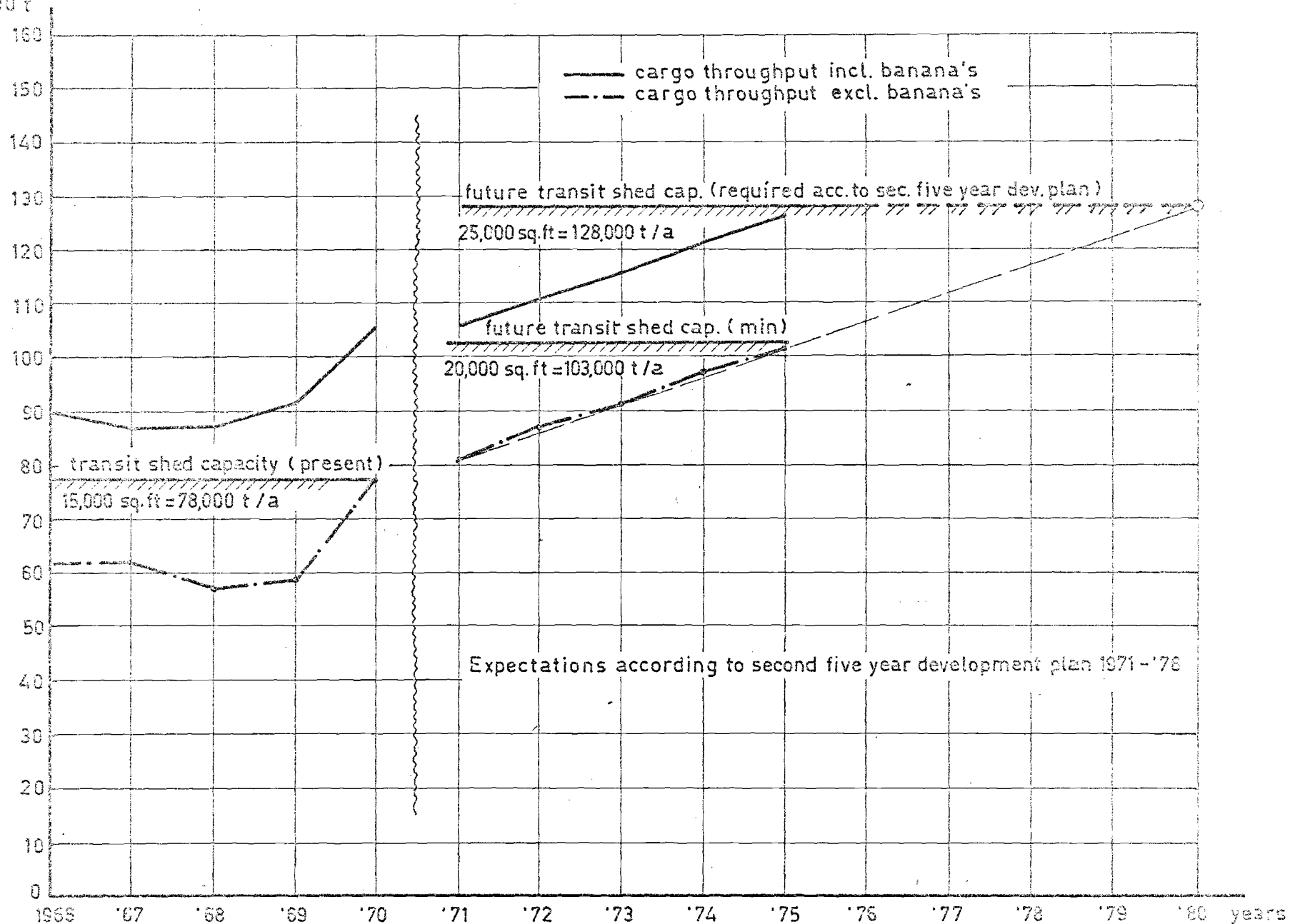
Required minimum transitshed space for general cargo (according to Basic Operational Criteria)^{1/}

$$\text{anno 1975: } S = \frac{C \times d \times s}{360 \times t \times f} = \frac{102,600 \times 7 \times 1,60}{360 \times 0,25 \times 0,65} = \approx 20,000 \text{ sq. ft.}$$

^{1/} See Report ECLA/POS 71/2 dated 29-1-1971

TOTAL CARGO THROUGHPUT

Cargo throughput
x 1000 t



Temporary Administrative Structure
of the Port Authority
Castries - St. Lucia

Port Council

Chairman: P.S. Min. of Finance
 Member : P.S. Min. of C. & W.
 Member : Nominee of Chamber
 of Commerce
 Member : Nominee of Union
 Nominee : Shipping Agents

Board of Advisers

Chairman: Port Manager
 Member : Importer
 Member : Port Engineer
 Member : Comm. of Police
 Member : Nominee of Seamen &
 Waterfront Union

Port Manager/Harbour Master

Office of the Manager

Temporary located
 Ministry of Communi-
 cations & Works -

1 Typist
 1 Accountant
 1 Cashier
 1 Clerk

Technical Department

Port Engineer
 Executive Engineer,
 Min. of C. & W.
 Drafting, drawing
 & Maintenance of
 Buildings, Wharves,
 Aprons, etc.

Mechanical Equipment

Maintenance and
 Operations of all
 Equipment,
 Forklifts, Cranes,
 Trucks, Tow Trucks,
 Trailers
 2 Crane Operators
 4 Forklift Operators
 1 Truck Driver
 1 Footman
 2 Wharf Cleaners
 1 Maintenance Man

Materials

2 Cranes
 6 Forklifts -
 2 à 6,000 lbs.
 2 à 4,000 lbs.
 2 à
 1 Truck

Marine & Terminal
Department

Superintendent
 2 Wharf Managers
 (Ex. Custom
 Officers)
 4 Senior Terminal
 Officers
 2 Junior Officers
 9 Porters

Security

Port Police
 Commander: Ex.
 Sergeant
 + 20 Port Constables
 in uniform

PROPOSED STAFF STRUCTURE

1	Port Manager/ Harbour Master	
2	Wharf Managers P \$5,400 \$5,400 - \$7,320 LW-13	\$10,800
4	Senior Terminal Officers \$1,920 \$1,920 - \$3,420 L37-27	\$ 3,840
1	Accountant P \$6,300 \$6,300 - \$7,320 L16-13	\$ 6,300
1	Stenographer à \$3,600 - \$4,800 L26-21	\$ 3,600
1	Clerk at \$1,920 \$1,920 - \$3,420 L37-27	\$ 1,920
1	Cashier à \$3,600 \$3,600 - \$4,800 L26-21	\$ 3,600
1	Messenger à \$1,380 \$1,380 - \$2,160 L45-35	\$ 1,380
1	Allowances for Council Members etc.	\$ 1,500
1	Office Cleaner \$2.00 - \$2.50 6 days (5½ week) per day Part time work	\$ 624
8	Porters \$4.20 - \$6.30 per day 5½ day week - Overtime	\$12,500
1	Chief Porter \$4.75 - \$7.00 per day Overtime 5½ day week	\$ 1,800 \$ 600
20	Port Constables \$4.50 - \$5.00 per shift 6 hours shift - 6 days a week	\$ 8,200

1	Maintenance Man for cargo handling equipment	\$ 5,600
	L28-20 \$3,240 - \$5,100	
2	Maintenance assistants	\$3,744
1	Electrician	\$3,240
	Replacement parts, tyres, spare parts etc.	\$7,500
	Gas, oil, gasoline, etc.	\$7,000

See note under "Cargo handling equipment required with the above".

OFFICE FURNITURE

3	Desks Executive, Steel	à \$600.00	:	\$ 1,800.00
3	Chairs " "	à \$200.00	:	\$ 600.00
2	Desks	à \$400.00	:	\$ 800.00
2	Chairs	à \$175.00	:	\$ 350.00
2	Desks	à \$250.00	:	\$ 500.00
2	Chairs	à \$100.00	:	\$ 200.00
1	Typist Desk	à \$400.00	:	\$ 400.00
1	Typist Chair	à \$100.00	:	\$ 100.00
8	Tables, Steel for Transit Shed Officers	à \$200.00	:	\$ 1,600.00
8	Chairs, Steel do.	à \$100.00	:	\$ 800.00
36	Dips, Wood, for desks	à \$ 5.00	:	\$ 180.00
6	Side Chairs, desk	à \$ 75.00	:	\$ 450.00
4	do. do. do.	à \$ 50.00	:	\$ 200.00
11	do. do. do.	à \$ 25.00	:	\$ 275.00
12	Chairs for conference- table	à \$ 25.00	:	\$ 300.00
1	Conference table	à \$300.00	:	\$ 300.00
10	Filing Cabinets	à \$200.00	:	\$ 2,000.00
40	Hanging Files	à \$ 25.00	:	\$ 1,000.00
1	Safe		:	\$ 2,000.00
1	Book Cabinet, Steel		:	\$ 175.00
3	Book Shelves	à \$100.00	:	\$ 300.00
2	Adding Machines	à \$400.00	:	\$ 800.00
2	Calculating Machines	à \$500.00	:	\$ 1,000.00
1	Photostat Machine		:	\$ 1,000.00
1	Water Cooler		:	\$ 650.00
4	Drinking Water Cans	à \$ 50.00	:	\$ 200.00
1	Typewriter		:	\$ 600.00
1	Duplicating Machine		:	\$ 2,000.00
1	Cardex		:	\$ 300.00
10	Fans		:	\$ 1,000.00
1	Cupboard, Steel		:	\$ 300.00
12	Waste paper baskets		:	\$ 75.00
	Stapling machines, paper punches, reference books (including dic- tionaries), etc.		:	\$ 1,000.00
				<hr/> \$23,255.00

- 2 -

Total amount	\$23,255.00
Plus Miscellaneous 10%	\$ 2,345.00
	<hr/>

SAY

\$25,600.00

=====

Uniforms

3 each for the first six months
and 2 each for the following six months

1 pair of shoes and 1 pair half sales for
each six months

Gloves 2 pairs per year

Caps for Constables, Messengers 1 pair a year

Whistles, Baton, Notebooks etc.

Uniforms

Constables 3 for 21 = 63
2 for 21 = 42

105
Messenger 5

Uniforms 110

Shoes

2 for 21 = 42
2 for 1 = 2

Shoes 44
Half sales 44
Caps 22

Operators Crane Drivers

Fork Lift Drivers

Truck Drivers

Postmen

Maintenance Man

Assistants

7 Uniforms, 26 pairs of shoes, 26 pairs half sales, 13 caps

Gloves for (to include Wharf Cleaners) 2 pairs per year
26 pairs

Office equipment, Furniture, Stationery, etc.
See tentative list attach

- \$25,000

Repairs and Maintenance to Buildings, Warehouses,
Wharves and Wharf areas and installations

- \$50,000

HARBOUR RECURRENT CHARGES

Pilots, Boatmen etc.	:	\$ 81,400.00
Other Charess		\$ 15,000.00
Maintenance of boats, uniforms, maintenance of lights and buoys Transport and Subsistence allowance		

REVENUE

Warehouse Rents	:	\$175,000.00
Non-Removal Charges (Wharf Rent)	:	\$100,000.00
Port Dues	:	\$ 75,000.00
Cargo Dues	:	\$425,000.00
Pilotage Fees	:	\$ 60,000.00
Charges for Running Lines	:	\$ 12,500.00
Yachts Licence	:	\$ 5,000.00
Charges for Beacon Lights	:	\$ 2,000.00
Charges for Carenning	:	\$ 100.00
Pilots Boatmen (Overtime Fees)	:	\$ 1,500.00
Admission Fees - Vessels other than Yachts (Pratique)	:	\$ 15,000.00
Handling and Removal Charges (Cargo)	:	\$ 5,000.00
Admission Fees - Yachts (Pratique)	:	\$ 5,000.00

STOCKS OF CARGO HANDLING EQUIPMENT

(approximate present value)

2	Conveyance Fork Lift Diesel 6,000 lbs.	:	\$35,000.00
2	Yale Fork Lift 4,000 lbs.	:	\$40,000.00
1	Conveyance Fork Lift, electric 2,000 lbs.	:	\$14,000.00
1	H Fork Lift 2,000 lbs.	:	\$10,000.00
1	Truck	:	\$ 8,000.00
1	4-Ton Crane	:	\$25,000.00
1	10-Ton Crane	:	\$45,000.00
1	7-Ton Crane	:	\$20,000.00

CARGO HANDLING EQUIPMENT REQUIRED WITH THE ABOVE

Sheds	(2	Fork Lifts 8,000 lbs.	:	\$65,000.00
	(2	Fork Lifts 6,000 lbs.	:	\$50,000.00
Warehouses	(3	Fork Lifts for warehouses 2,000 lbs. - 1 ton	:	\$45,000.00
	(1	Fork Lift 4,000 lbs.	:	\$20,000.00
	4	Fork Lifts 4,000 lbs. for Ships Holds	:	\$80,000.00
	3	Tow Masters	:	\$18,000.00
	5	Trucks	:	\$50,000.00
	12	Trailers	:	\$16,800.00

TABEL 2

APPENDIX 15

Tonnage of cargo handled at Castries, St. Lucia					
Imports/Exports	Class of ship	1967 tons	1968 tons	1969 tons	1970 tons
<u>Imports</u>	International Lines	48,048	45,609	60,860	57,824
	West Indian Steamships	32,484	26,610	38,406	52,904
	Schooners	6,341	4,414	6,342	4,254
	Total	86,873	76,633	105,608	114,982
<u>Exports</u>	International Lines	45,418 $\frac{2}{3}$ 314 $\frac{3}{3}$	44,240 $\frac{1}{2}$ 68,594 $\frac{2}{3}$ 257 $\frac{3}{3}$	48,624 $\frac{1}{2}$ 45,368 $\frac{2}{3}$ 141 $\frac{3}{3}$	42,636 $\frac{2}{3}$ 1,116 $\frac{3}{3}$
	West Indian Steamships	1,329	1,522	832	2,425
	Schooners	5,330	3,590	3,297	4,630
	Total	52,391 $\frac{2}{3}$ 6,973 $\frac{3}{3}$	49,352 $\frac{1}{2}$ 73,963 $\frac{2}{3}$ 5,369 $\frac{3}{3}$	52,773 $\frac{1}{2}$ 49,638 $\frac{2}{3}$ 4,270 $\frac{3}{3}$	50,807 $\frac{2}{3}$ 8,171 $\frac{3}{3}$
<u>Total</u>	International Lines	93,780 $\frac{2}{3}$ 48,362 $\frac{3}{3}$	89,849 $\frac{1}{2}$ 114,460 $\frac{2}{3}$ 45,866 $\frac{3}{3}$	109,484 $\frac{1}{2}$ 106,369 $\frac{2}{3}$ 61,001 $\frac{3}{3}$	101,576 $\frac{2}{3}$ 58,930 $\frac{3}{3}$
	West Indian Steamships	33,813	28,132	39,238	55,329
	Schooners	11,671	8,004	9,639	8,884
	Grand Total	139,264 $\frac{2}{3}$ 93,840 $\frac{3}{3}$	125,985 $\frac{1}{2}$ 150,596 $\frac{2}{3}$ 82,002 $\frac{3}{3}$	158,381 $\frac{1}{2}$ 155,246 $\frac{2}{3}$ 109,878 $\frac{3}{3}$	165,789 $\frac{2}{3}$ 123,153 $\frac{3}{3}$

Source: Customs Department, Castries

 $\frac{1}{2}$ Acc. to rep. Goode & Partners; $\frac{2}{3}$ Bananas; $\frac{3}{3}$ Others

TABEL 3

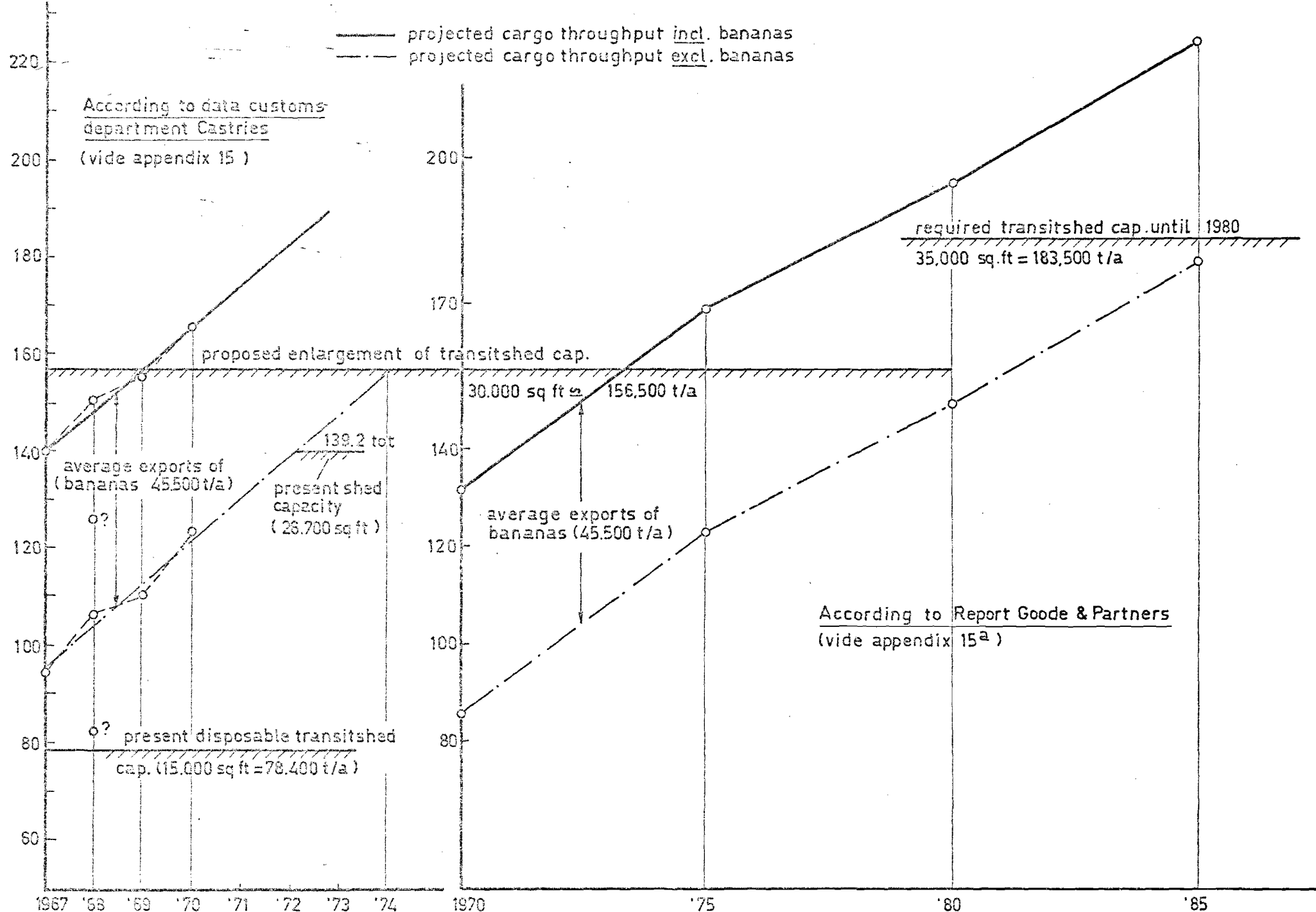
Projected exports and imports through Castries in revenue tons ^{1/}					
Type of cargo	Projection	Year			
		1970	1975	1980	1985
Exports	High (3% p.a.)	54,300	63,000	73,100	84,800
	Most likely (2%)	53,800	59,200	65,100	71,600
	Low (0% p.a.)	52,750	52,750	52,750	52,750
Imports	High	79,200	115,200	146,700	187,400
	Most likely	77,800	109,600	129,700	152,300
	Low	76,900	106,600	116,800	128,000
Total	High	133,500	178,200	219,800	272,200
		(88,000) ^{2/}	(132,700) ^{2/}	(174,300) ^{2/}	(226,700) ^{2/}
	Most likely	131,600	168,800	194,800	223,900
		(86,100) ^{2/}	(123,300) ^{2/}	(149,300) ^{2/}	(178,400) ^{2/}
	Low	129,650	159,350	169,550	180,750
		(84,150) ^{2/}	(113,850) ^{2/}	(124,050) ^{2/}	(135,250) ^{2/}

^{1/} From the Goode & Partners-report dated 30th April 1970

^{2/} Excluding bananas. (For the periods previously mentioned 45.500 tons, the average export during the period of 1967 - 1970, has been deducted.)

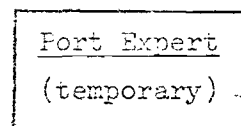
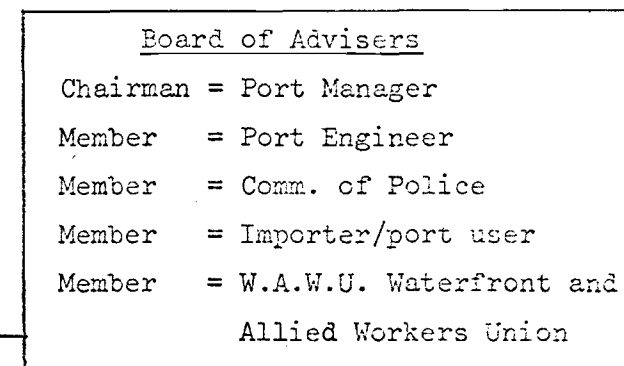
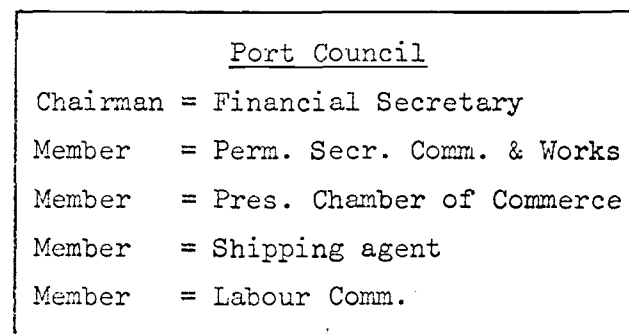
cargo throughput
x 1000 t

Projected Cargo throughput for the Port of Castries, St. Lucia

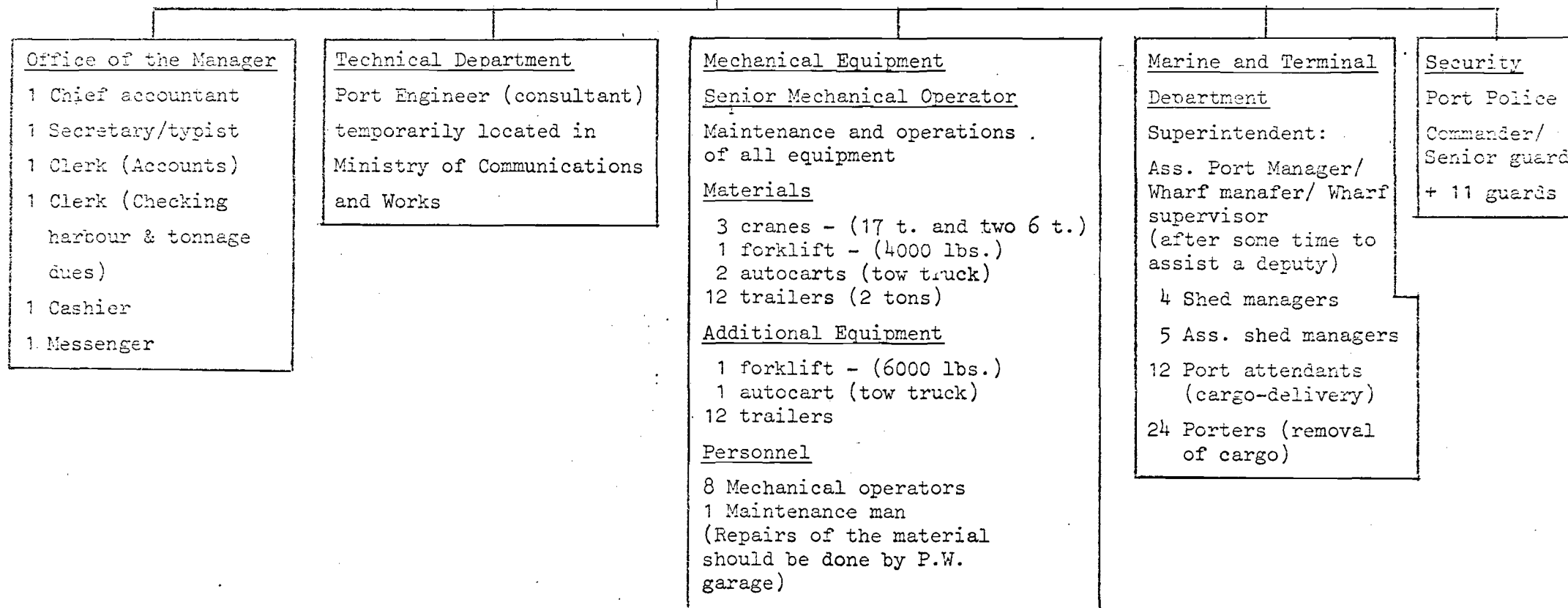


Temporary Administrative Structure
of The Port Authority

Roseau - Dominica



Port Manager/Harbour Master



S T A F FTEMPORARY ADMINISTRATIVE STRUCTURE OF THE PORT AUTHORITY

ROSEAU - DOMINICA

1 Port Manager	\$10,920.
1 Assistant	6,960.
1 Chief Accountant	6,300.
1 Secretary/Typist	2,400.
1 Executive Officer - 1 Clerk Checker	5,100.
1 Cashier	2,400.
1 Clerk - Accounts	2,400.
1 Senior Mechanical Operator	3,780.
8 Mechanical Operators	22,800.
1 Mechanical Man (Maintenance)	3,300.
4 Shed Managers	20,400.
5 Assistant shed managers	18,900.
12 Port Attendants	23,030.
24 Porters (\$6/day)	40,000.
1 Senior Guard	3,120.
11 Guards	24,300.
1 Messenger	1,500.
<hr/>	
Total Costs:	\$197,610.
<hr/>	

Revenues . \$430,500.
(estimated)

TABLE 4

Tonnage of cargo handled at Roseau, Dominica					
Imp./Exp.	1964 tons	1965 tons	1966 tons	1967 tons	1968 tons
Imports	65,042	64,899	61,780	65,758	62,917
Exports	51,914	58,784	45,865	64,256	65,024
Total	116,956	123,683	107,645	130,014	127,941

Source: Customs Department,
DOMINICA

Projected Exports and Imports through Roseau in tons ^x										
Type of cargo	Projection	year								
		1963	1964	1965	1966	1967	1968	1969	1970	1971
Imports	H. Gr. Path	—	—	—	—	—	—	58,540	63,233	68,281
	L. Gr. Path	37,009	46,087	53,522	47,150	50,189	52,197	54,285	56,456	58,714
Exports	High	—	—	—	—	—	—	69,063	73,207	77,599
	Low	35,522	44,839	53,508	49,540	63,516	66,152	69,063	73,207	75,463
Total	High	—	—	—	—	—	—	127,603	136,430	145,880
	Low	72,531	90,926	107,030	96,690	113,705	118,329	123,348	129,663	134,117

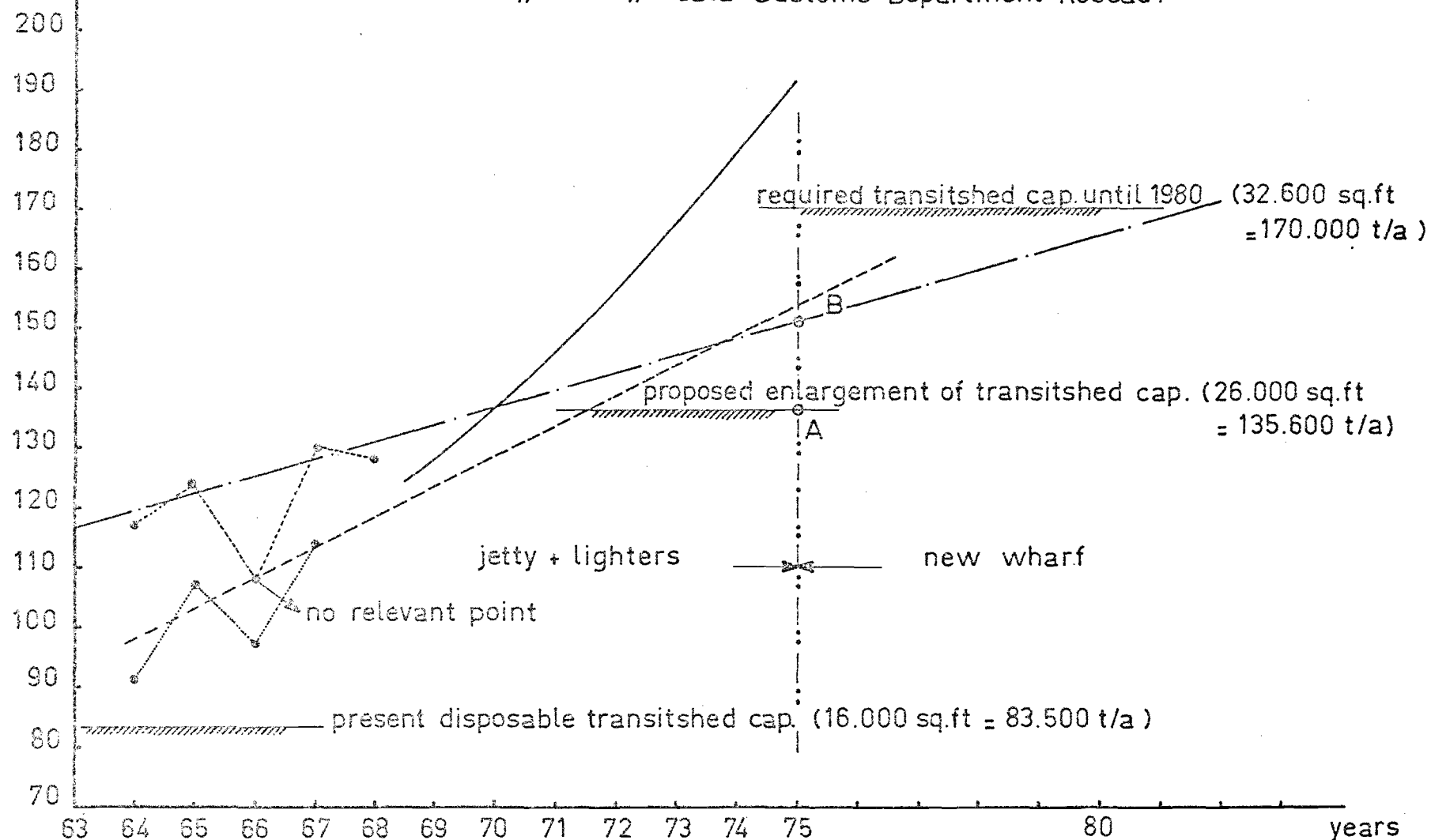
^x Continued on page 2

Projected cargo throughput for the Port of Roseau, Dominica

cargo throughput

x1000 t

- according to Rep. Brit. Dev. div in the Carib. (high growth path)
 --- " " " " " " " " " " (low growth path)
 -.- " " data Customs Department Roseau.



Projected Exports and Imports through Roseau in tons

Type of cargo	Projection	year			
		1972	1973	1974	1975
Imports	High	73,743	79,642	86,014	92,895
	Low	61,063	63,506	66,045	68,687
Exports	High	82,255	87,191	92,422	97,968
	Low	77,665	79,995	82,395	84,867
Total	High	155,998	166,833	178,436	190,863
	Low	138,728	143,501	148,440	153,554

Source: Report of British Development
Division in the Caribbean