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A

PROPOSED PROCEDURE

for the

COLLECTION AND PROCESSING OF

REGIONAL PORTS AND SHIPPING

STATISTICS

Prepared

by

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THE COLLECTION AND PROCESSING OF REGIONAL
PORTS AND SHIPPING STATISTICS

A Proposed Procedure

Introduction

In November 1972, the Regional Adviser in Ports and Harbours, recognizing an urgent need within the Caribbean region, proposed a pilot procedure for the collection and processing of ports statistics on a regional basis. It was suggested that port managers of the region should be given valuable assistance through the services of a ports data processing bureau.^{1/} The service envisioned concerned the statistics required mainly by port managers in order for them to perform their functions effectively. The proposal presented in this paper extends the scope of the proposed concept to include ports and shipping statistics of all kinds that are of vital interest to all activities, organizations and institutions who are concerned with water-borne transport, including the shippers and shipping lines, the national and regional planners, and the development financiers, as well as the managers of the ports.

Reference works consulted during the evolution of the proposal contained in this document include the excellent paper by A.A. Walters of the London School of Economics entitled "A Method for Collecting Economic Statistics of Shipping". Also consulted is the paper by D. Koludrovic on the ECAFE Scheme of Economic Statistics of Shipping, pages 177-195 of the report of the international symposium, "Maritime Transport Data for Marketing, Research and Development" held from 11-14 September 1973 in the Hague convened by Maritime Research Centre, Institute for Shipping Research, Bergen, Norway, in which Mr. Koludrovic discusses three possible schemes for collecting shipping statistics. Documents produced by UNCTAD Secretariat on this subject were consulted: These include "PORT STATISTICS", identified as TD/B/C.4/79/Rev.1 and

^{1/} ECLA TEC 323/1(152-1).

a draft copy of Chapter 7 of Volume One of "Berth Throughput: Systematic Methods for Improving Cargo Operations". The proposal contained in this paper is believed to be wholly compatible with the concepts and requirements contained in the referenced documents although this proposal differs mainly with respect to:

- (1) Emphasis on the speed envisioned for processing and reporting the statistics; and
- (2) Scope of analyses that must be produced.

Present Situation

At the present time each port organization collects and processes statistics according to local concepts of their particular requirements and according to individual desires, and usually the extent of accomplishment is affected by budgetary limitations and the constraints of available skills. For the most part, the result fails to provide suitable and timely assistance to port managers within the Caribbean region, in the opinion of the Regional Adviser in Ports and Harbours.

Other activities, organizations or institutions that are concerned with statistics involving port traffic, collect data with respect to their own particular interests. The national and regional planners rely on the overall compilations of national trade statistics, and these reports are not timely nor are they in a form most useful for fully reflecting the character, magnitude, direction, origin and termination of cargo movements. The shippers and shipping lines collect data that is proprietary to their own business and usually such statistics do not reflect all of the traffic.

A procedure for the collection of ports and shipping statistics was undertaken by the Caribbean Free Trade Association (CARIFTA) beginning in 1970, upon the recommendations and guidance of the Caribbean Office of the Economic Commission for Latin America. Its scope was to include eleven countries of CARIFTA. Monthly summaries of ports and shipping statistics were to have been sent to the CARIFTA Secretariat for processing, and presumably, it was expected that useful information concerning the movement of ships and the flow of water-borne cargo would ensue. The reports were intended to contain basic data concern-

ing ships and cargo movements, but did not attempt to determine the origin and destination of cargo movements. After three years of operation this system has not been useful because:

- (1) Important parts of the traffic were never reported;
- (2) The information received was long delayed in submission; and
- (3) No useful analyses of data received were made, and indeed could not be made because the reported traffic represented perhaps no more than 18 percent of the traffic within the eleven-country part of the Caribbean region. 2/

The Need

The need for a rapid and effective system for collecting and processing ports and shipping statistics is two-fold:

First: Managers of ports need current analyses of data, comprising pertinent performance indices that reflect the port's operational effectiveness, month by month, or more frequently. This need is a local one that can be satisfied on a local basis; however, it is one that is generally not being met satisfactorily due to lack of skills, funds and inspiration. The need may be served more quickly and more efficiently on a regional basis by means of electronic data processing, a system that could not be economically justified by each port taken separately.

Second: National governments and regional planners, as well as the shippers and the managers of shipping lines, have a need to know the magnitude, direction, origin and destination of ship movements and the related flow of cargo, distributed by types and sizes of ships and classified by commodities and forms of cargo. This is a need

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that is not being satisfied on a total, accurate and timely basis. Regional summaries when produced, are deduced from national trade statistics that of necessity lag far behind the occurrences, sometimes by as much as three years.

Shipping is analyzed on a current basis by particular shipping companies whose scope of interest is somewhat less than the whole traffic. Whilst the results of such analyses by shipping companies may be timely, they are not adequate for the purposes of national and regional planning because they do not reflect the total movement of ships and cargo within the region and its sub-regions.

The Problem

The basic problems involved in the collection and processing of ports and shipping statistics on a regional basis are mainly technical in nature and comprise three main aspects:

- (1) The physical collection of statistics;
- (2) Transmitting the collected data; and
- (3) Processing the data and disseminating the results quickly.

In addition to the technical aspects there are important financial implications: Who is to pay for the operation of a central processing operation, for the printing and for distributing the reports? A lesser problem is that of siting the operation and this has political implications. A special aspect of the problem is that of instilling personal motivations to the end that the people involved will strive to create and operate a system that will function effectively.

The Solution

The general solution to the problem of collecting and processing ports and shipping statistics is to use sophisticated equipment and technical expertise for the operation of a central service bureau, which in this paper is called a "Ports and Shipping Data Bureau", whose mission is precisely the collection, processing and dissemination of ports and shipping statistics. The object of this paper is to propose specific solutions to the separate aspects of the general problem.

Data Collection

General - Because a seaport's basic function is the transfer of cargo between sea modes and land modes of transport, the statistics that are vital to port management are largely the same statistics that are vital to national and regional planners and to the managers of shipping. Thus, in the interest of achieving efficiency in the process of collecting statistics at a seaport, the requirements of all who are concerned should be served by a single data collection operation, to the extent that there is a common use for the statistics. In general, all the data about ship movements and cargo movements are within the aforestated common-use category and these comprise the scope that it is proposed should be processed by a regional ports and shipping statistical service, initially, although its scope could be expanded. Many other data about a port and its operations need to be collected and kept up-to-date as the port performs its continuing function and as it evolves through stages of development. Such other data comprise mainly:

- (a) The physical inventory;
- (b) Statistics concerning cargo movements within the port other than the ship-to-shore movements; and
- (c) Data concerning the amount of effort expended by men and machines in the performance of the port's functions. (The kinds of statistics that need to be collected and how these may be collected and presented have been presented in the Manual, entitled "Port Statistics", prepared by the UNCTAD Secretariat.) 3/

Source of Data - It is proposed that all data concerning the movement of each ship and about the movement of cargo to and from that ship which may be required for the analysis of shipping and of port operation, shall be collected while the ship is in port. It is proposed that the data will be entered on a Ship Visit Report (SVR) to be prepared under the direction of the ship's master,

certified by him and delivered to the port harbourmaster as a prerequisite for clearance to depart.

Format and Content of Data Form -- The SVR should be convenient to fill up and should include all facts that may be required in order to devise data processing programmes that may produce all conceivable analyses desired by all who have any interest in ocean shipping. The format proposed is shown as Appendix A. The required data may be arranged in any convenient format, although the same form should be used by all ports participating in the data collection system in order to ensure speed and accuracy in the process of key-punching at the central data bureau.

The design for an SVR form, presented as Appendix A, is believed to include all items of information that would be needed in order to produce all of the important analytical requirements with respect to the movements of ships and of cargo; and the handling of cargo between ships and shore during ships presence at port. Some reviewers of a draft of this proposal questioned the need to collect certain items of information, however, each item fulfills a particular need for possible analyses. Nevertheless, the proposed form does not provide all of the data that is required to produce analyses of the component elements of a port's operations. For this latter purpose one or more specially designed additional source documents would be required if such analyses were to be performed by a central bureau.

An example of the recommended use of the SVR is illustrated in Appendix C. In the example an actual ship's visit provided the statistics shown.

Since the proposal here presented is offered for initial adoption by the Governments of the new Caribbean Community, as a replacement for the existing CARIFTA system, it is pertinent to compare the two systems. The data collection system proposed herein differs from the existing CARIFTA system in the following respects:

- (1) One source document provides all data required in the proposed system whereas in the CARIFTA scheme three separate report forms are employed.

- (2) There is a fundamental difference in concepts for collecting the required information. The information that is intended to be sent to CARIFTA is transcribed manually by port clerks from various source documents that come into existence at a port during and after a ship's visit, the clerical tasks being performed days or weeks after the ship departed, whereas under the proposed system the data source document (SVR) as shown in Appendix A, would be prepared solely by the ship's staff under the direction of the ship's Master while the ship is in port, and thus there would be no necessity for a delay in sending the information to a data processing center.

- (3) The proposed source document for collecting the data, Appendix A, collects all of the information that is now sought by the three collection forms under the CARIFTA system, plus significant additional items. The following information included on the SVR is not collected by the CARIFTA system:
 - (a) Name of the country where ship is registered. (Flag.)
 - (b) Ship registration number.
 - (c) When and where ship was built.
 - (d) Size of the ship by its length, breadth and maximum loaded draft.
 - (e) Size of the ship by Gross and Net Register Tonnage and by cargo carrying capacity in Deadweight Tons.
 - (f) Origin of the cargo discharged at the port.
 - (g) Destination of the cargo loaded aboard ship at the port.
 - (h) Total amount of cargo and ballast on board upon arrival at port.
 - (i) Amount of ballast, bunkers and stores taken aboard or removed at port.
 - (j) Precise identification of the ship's type.

- (k) Identification of the causes of ship delay.
- (l) Identification of type of shipping service and the name of the shipping conference, if any.

Differences in the respective scopes of the two data collection schemes are due to the different concepts for processing the data. The CARIFTA system intends that data will be processed manually, the first stage of processing being a partial segregation and summation performed at the separate ports, to be followed by a further manual processing at a central point. Manually processing the data has distinct practical limitations as compared with what is feasible through the use of electronic data processing methods, and thus, the latter concept can use beneficially a more extensive scope of input data than could be used by the manual method.

Data Collection Procedure - It is proposed that the SVR form will be delivered to the ship's Master by an officer of the port as a part of the ship arrival formality, and that when filled up it will be delivered to an officer of the port as a part of the ship departure clearance formality. Appendix B presents the specific instructions that should accompany the SVR form, possibly by printing on the reverse side of the form. Further, it is envisioned that the SVR form would be printed and produced on pressure sensitive paper such that one mark-up with a ball-point stylus will automatically produce the original and three copies. The original document would be sent to the central Ports and Shipping Data Bureau, one would be retained by the ship and two copies of it would remain at the port as source documents for local use.

Data Transmittal - It is proposed that the SVR's would be sent to the Ports and Shipping Data Bureau daily by airmail, except that small ports would send the reports whenever ten had accumulated. Thus, there would be a continuous and relatively stable flow of ports and shipping statistics arriving at the central data processing point.

Data Processing

The central data processing activity would receive the SVR's continuously and convert the information to a form that can be

processed by an electronic computer. Thereafter the data would be processed by various different computation programmes to produce the statistical summaries required or desired by the various different users of the service. The variety and extent of statistical summaries that could be produced from the data collected in the SVR's is very great indeed, although the extent that summaries and reports actually may be produced, would be determined by economic considerations. The summaries that probably would be most useful are identified in Appendix D where several different analyses are described according to categories of users of the proposed Data Bureau's services.

Inauguration of Proposed Service

There can be no doubt that the operation of a central bureau as envisaged in this proposal is technically feasible. Whether it may be practically feasible depends upon mandatory collection and transmission of data and realistic financing of the operation.

Data Collection Regulations - Successful achievement of the concept put forth in this proposal is dependent upon a system of data collection that ensures accurate and complete coverage of sea-borne shipping within a designated scope. Without complete coverage, the prime purposes of central data processing are negated, and thus a first step toward inaugurating such a service should be the taking of decisions by the respective National Governments. Such decisions should have the effect of adopting the regional concept of ports and shipping data collection and processing, and of implementing the decisions with the necessary regulations as applicable to each seaport. The essential element of such regulations is the provision that the submission of the proposed Ship Visit Report is an absolute requirement along with other accepted ships visit requirements, such as the port pratique and the payment of port dues. It is considered that a first move leading toward Governments taking the aforesaid decisions should be the favourable endorsement of the plan by those organizations having international interests within the Caribbean region; organizations such as the Caribbean Community (CARICOM), the East Caribbean Common Market, the Caribbean Development Bank and the Caribbean

Shipping Association. It is considered that if the aforestated institutions were to endorse the plan the several Governments could be expected to adopt the necessary port regulations, ensuring that Ship Visit Reports would be prepared and transmitted to a central Ports and Shipping Data Bureau.

Financing the Cost of Initial Start-up - In order to establish the proposed Ports and Shipping Data Bureau certain initial costs would be incurred, partly in the nature of capital costs for providing a suitable office accommodation, but mainly for professional expertise to design the several different programmes required to process the data by use of electronic computers. The initial cost will be generally independent of the number of ports involved and of the volume of shipping entailed in the anticipated data processing operation. A rough estimate of the possible initial cost is presented in Appendix E.

It is considered that the initial start-up cost might be met by a grant-in-aid by an agency such as the United Nations Development Programme, the Caribbean Community, the Inter-American Development Bank, the International Bank for Reconstruction and Development or the Caribbean Development Bank.

Financing the Continuing Data Processing Operation - The cost of operation will be related directly to two separate factors:

- (1) The amount of shipping and cargo involved;
and
- (2) The number of, and the complexity of the analyses that will be required by the users of the Ports and Shipping Data Bureau's services.

It is considered that the proposed Ports and Shipping Data Bureau should be financially self-supporting once established. A schedule of service charges should be established and revised from time to time as necessary to recover all operating costs in the manner that schedules of port dues are revised. Such a tariff would establish appropriate rates for the various different analyses that would be available to clients, taking into account the respective amounts

of effort involved in performing the respective tasks. An equitable schedule of charges for reporting the various different analyses could be based upon the number of SVR's involved in producing the report. Thus, the users requiring lengthy complicated analyses would pay more for services than those requiring short and simple reports. A possible schedule of service charges is suggested in Appendix E, although the figures shown are tentative and do not represent firm estimates of cost.

Siting the Data Bureau - Political implications may have some influence on the selection of a site for the central data bureau. However, it should be realized that the function of the central data bureau is simply to collect facts and to assemble the facts according to the needs of various institutions, and therefore the opinions of the Data Bureau staff, and the policies of the host government should have no influence whatever on the production of the analyses. Two important considerations influence the siting of the proposed Data Bureau:

- (1) The site should be a city where computer time may be purchased on an existing machine. This consideration is important because the nature of the data-processing involved will require the use of a sophisticated computer, although the amount of work to be performed will not justify procurement of a computer solely for the Data Bureau's requirement.
- (2) The site should tend to minimize the time required for transmission of SVR's sent to the Data Bureau and for the distribution of reports emanating from the Bureau.

Staffing the Data Bureau - Since the service to be performed is international in scope, the host government should be willing to permit a person from any nation of the Caribbean region to work for the Bureau. However, the number of people involved is small and the question of nationality of the Bureau staff should not inhibit the inauguration of the proposed service.

Operation of the Proposed Service

Ideally, all ports and shipping lines sending data to the central data bureau will permit identification of the respective

ports and shipping lines with the related data. However, if certain shipping lines and port administrators should require that their respective performances not be revealed, then the Data Bureau will use confidential identification codes to the extent necessary in order to preserve the anonymity of participants. Appendix F illustrates how the anonymity of participating ports has been preserved in a world-wide study of port performance effectiveness. In that instance each port knows its own confidential identification number, and thus each port can compare its own performance with that of all others. Nevertheless, useful data is compiled and disseminated without compromising any participant. A similar approach could be employed, if necessary, in the handling of ports and shipping statistics in the Caribbean region. However, after a period of operation during which the data bureau has demonstrated its ability to respect the confidential restrictions imposed, the participants may come to realize that revelation of the facts is really beneficial for all concerned.

Recommendation

It is recommended that this proposal should be presented to the CARICOM Secretariat for consideration, urging that it be adopted by the member Governments as a first incremental implementation aimed at early expansion to include all maritime traffic of the greater Caribbean Basin.

Appendix A

SHIP VISIT REPORT (SVR) (to be completed before ship leaves the port)		
<u>1/ Name of the port</u>	<u>2/ Port's serial number of the SVR</u>	<u>3/ This block blank</u>
<u>4/ Name of the ship</u>	<u>5/ Country where ship is registered</u>	<u>6/ Ship register number</u>
<u>7/ Origin and destination of voyage</u> Port of origin: Final destination:	<u>8/ Size of the ship</u> LENGTH BEAM MAX. DRAFT	<u>9/ Capacity of the ship</u> GWT NRT DWT
<u>10/ Origin of the ship</u> Where built When built	<u>11/ Indicate the type of ship</u> () passenger () containership () tanker () ro-ro () break-bulk () drybulk () lash bulk	<u>12/ When ship arrived at port</u> DAY MONTH YEAR TIME
<u>13/ Time and place ship first berthed</u> DAY TIME PLACE	<u>14/ Time and place next berthed</u> DAY TIME PLACE	<u>15/ When cargo handling was completed</u> DAY TIME PLACE
<u>16/ Draft of the ship</u> Upon arrival () Upon departure ()	<u>17/ Tons of cargo on board</u> Upon arrival () Upon departure ()	<u>18/ Tons ballast/bunkers/stores aboard</u> Upon arrival () Upon departure ()
<u>19/ Indicate principal form of cargo(x)</u> () liquidbulk () container lift-on-off () drybulk () ro-ro () lash () breakbulk () other	<u>20/ Name of last port of call</u>	<u>21/ Name of intended next port of call</u>
<u>22/ Indicate category of service (x)</u> () cargo liner () regular passenger () tramp () other () cruise	<u>23/ Name of shipping conference</u>	<u>24/ Name of ship operator</u>
<u>25/ Indicate hours of ships time:</u> Waiting for a berth () Berthing and departing () Waiting for cargo () Waiting for labour () Waiting for equipment () Waiting for weather () Other causes of delay () Hours handling cargo () Total hours ship in port ()	<u>26/ Tons of material discharged</u> Ballast, bunkers & stores () Cargo ()	<u>27/ Tons of materials taken aboard</u> Ballast, bunkers & stores () Cargo ()
	<u>28/ Name of main commodity discharged</u> Place where commodity was loaded	<u>29/ Name of main commodity loaded</u> Destination of main commodity
	<u>30/ Indicate definition of tons (x)</u> of material discharged () 1000 kg () 2000 lb () one c.m. () 2240 lb () 40 c.f. () other	<u>31/ Indicate definition of tons (x)</u> of material taken aboard () 1000 kg () 2000 lb () one c.m. () 2240 lb () 40 c.f. () other
<u>32/ When ship departed</u> DAY MONTH YEAR TIME	<u>33/ Indicate the number of passengers</u> Aboard on arrival () Terminated voyage here () Embarked here ()	<u>34/</u>
REMARKS		
Signature by a ship's officer		

Appendix D

DESCRIPTIONS OF SOME POSSIBLE ANALYSES

The analyses that may be computed by electronic data processing methods, using regional ports and shipping statistics, are identified and described briefly in this Appendix. The descriptions are grouped according to the assumed needs of the principal activities, organizations and institutions that are likely to find such analyses useful. Three user categories are defined below:

Category A. Analyses that would be especially useful to Port Authorities or Port Managers.

Category B. Analyses that would be especially useful to Owners and Managers of Ships and Shipping Services.

Category C. Analyses that would be especially useful to National Governments, Regional Planners and Development Financing Institutions.

Of course, any of the potential users of the contemplated service might use any of the analyses described under other categories.

Analysis A-1, List of Ships

A listing of ship arrivals would be available for each port. Ships would be listed in the order of arrival, showing selected items of information which could, in the extreme, show all items appearing on the Ship Visit Report. Such a listing would be made periodically, such as each month. It is anticipated that such a summary might include no more items than the date and time of arrival and of departure and the amounts of cargo discharged and loaded, since other data would be included on other analyses that port Management might elect to receive.

Analysis A-2, Basic Performance Indices

A summary of the ships and cargo movements would be available for each port for the purpose of showing basic performance indices. The analysis would be made periodically, such as monthly or annually and would show the performance indices in comparison with those of preceding periods. The summary would show the number of ships, the amount of time spent at port, the amount of cargo handled, the average cargo handling rate based on total ship time in port, all items being segregated according to basic cargo forms, whether liquid bulk, dry bulk, container lift-on/lift-off, container roll-on/roll-off, and break-bulk, as identified in item 19 of the SVR. Appendix F illustrates the type of information that would be contained in Analysis A-2.

Analysis A-3, Detailed Performance Indices

A summary of basic data would be available for each port, as in the case of Analysis A-2, and additionally, the analyses would show the cargo handling rate based upon the time ships occupied a berth (Berth Performance Index), and further showing the cargo handling rate based upon the gross cargo handling time (Cargo Performance Index.) Also, an analysis of the entire ships time in port would show the distribution of time for each of the operations or delays identified in item 25 of the SVR, all segregated into the basic forms of cargo as identified in item 19 of the SVR. The summary would be made periodically, such as monthly, quarterly or annually as desired and would compare the current results with performances in earlier periods.

Analysis A-4, Ship Congestion

A periodic analysis would be available for each port monthly, quarterly, or annually as desired, showing the distribution of ship arrivals and the distribution of ships present in port. In the case of ship arrivals the analysis would show the total number of ships arrived and the percent of days during the period when none, one, two, three and so on ships arrived. In the case of ship congestion, the analysis would show the total number of ship arrivals, the total

hours those ships are in port and the percent of the whole time when there were none, one, two, three and so on numbers of ships present at the same time. The summary would compare the results for the current period with those of the preceding report period or with that of the similar period of the preceding year, or both.

Analysis A-5, Ship Classes and Sizes

A periodic report would be available, for each port monthly, quarterly or annually as desired, showing the total number of ship arrivals and the distribution by ship types, (item 11 of the SVR), ship capacity (item 9 of the SVR) and ship draft (item 16 of the SVR). The summary would compare the statistics of the current period with those of the last preceding report period, or with those of a similar period of the preceding year, or both.

Analysis A-6, Cargo Classes and Quantities

A periodic report would be available, monthly, quarterly or annually as desired, showing the distribution of quantities of cargo separately for each basic form of cargo as identified in item 19 of the SVR, and including a further analysis showing amounts loaded onto ships and amounts removed from ships, and the sum of both, according to major commodity classes as reported at items 28 and 29 of the SVR. The summary would compare the current period with earlier periods.

Analysis A-7, Commodity Origin and Destination

A periodic report, quarterly, annually, or as desired, would be available showing the quantity in tons of cargo received from each other port in the Caribbean Basin and from each major world sector beyond the Caribbean Basin, according to major cargo commodities; and a similar summary would be included for cargo shipped from the port. This information would be taken from items 28 and 29 of the SVR. The analysis for the current period would be compared with analyses for earlier periods. Appendix G illustrates the type of information that would be available in Analysis A-7, although the example is more restrictive in scope than would be produced by the electronic computer.

Analysis B-1, Comparative Port Performances

A periodic summary of selected performance indices would be available showing separately for each port:

- (a) Number of ship visits;
- (b) Average ship turnaround time;
- (c) Average tons of cargo per ship visit;
- (d) The port performance index (tons per hour of total ship time in port);
- (e) The berth performance index (tons per hour of ship time at berth);
- (f) The cargo performance index (tons per hour of gross cargo working time); and each of these six items would be given separately for each of five basic cargo categories:
 - (1) liquid bulk;
 - (2) dry bulk;
 - (3) container lift-on/lift-off;
 - (4) container roll-on/roll-off; and
 - (5) break bulk.

The analysis would compare performance in the current period with that of prior periods.

Analysis B-2, Ship Voyage Histories

A summary report would be available for selected ships, on occasions as desired, showing for each ship by name:

- (a) The date and hour of arrival at first port of call within the Caribbean region;
- (b) The hours ship remained at first port;
- (c) The hours of travel to the second port;
- (d) The hours ship remained at second port;
- (e) The hours of travel to the third port;
- (f) The hours ship remained at third port;

and so forth for all ports visited within the region on the particular voyage, and finally the date and hour of departure from the last port of call within the region. Similar summaries would be made for subsequent voyages by the same ship. This analysis would probably be made not more frequently than annually. It would probably be responsive to requests by particular shipping companies for special summaries. However, in the extreme, it could include all ships engaged in shipping within the region, summarized according to separate shipping conferences (item 23 of the SVR), and/or by categories of shipping service (item 23 of the SVR), and/or by types of ship (item 11 of the SVR), and/or by name of ship operator (item 24 of the SVR).

Analysis C-1, Ship Movements, Within and Beyond the Region

A periodic report of ship movements would be available monthly, quarterly, or annually, as desired, showing the numbers of ship trips between each pair of ports within the region, and likewise the number of ship trips between each of these regional ports and the principal other regions or sectors of the world during the period analyzed, distributed by ship capacity (item 9 of the SVR), by ship type (item 11 of the SVR), by category of shipping service (item 22 of the SVR), and by name of shipping conference (item 23 of the SVR). The summary would compare the analysis for the current period with analyses for previous periods.

Analysis C-2, Cargo Movements Within and Beyond the Region

A periodic report of cargo movements would be available monthly, quarterly or annually as desired, of precisely the same phasing used for Analysis C-1. It would show the quantities of cargo (items 26 and 27 of the SVR), the forms of cargo (item 19 of the SVR) and the major commodities (items 28 and 29 of the SVR) that moved between each pair of ports within the region, and likewise the quantities of cargo that moved between each of these regional ports and principal other regions or sectors of the world during the period analyzed. The summary would compare the analysis for the current period with analyses for previous periods. "This analysis would be similar to but more extensive than Appendix G".