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E C L A

Economic Commission for Latin America

GUIDELINES FOR IMPLEMENTING THE UNIFORM SYSTEM  
OF MARITIME TRANSPORT STATISTICS \*/

\*/ Prepared jointly with the United Nations Statistical Office.

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## PREFACE

The countries of Latin America, like countries everywhere, depend for much of their economic well-being on foreign trade. Because the overwhelming majority of their trade is shipped by sea, they understandably have a vital interest in all matters related to maritime transport. This interest is reflected in the work programme of the United Nations Economic Commission for Latin America (ECLA), which has always been active in trying to improve transport conditions, especially with regard to institutional aspects -such as national shipping lines, cargo reserve legislation and the Code of Conduct for Liner Conferences- that are the subject of government decision making for shipping policy formulation. One important element of ECLA's work programme concerns the identification and management of information for decision making: what information to produce, where to obtain adequate, reliable and timely input data, how to store and process those data, and how to ensure that the information gets into the hands of those who can best make use of it.

Since statistical analysis constitutes a fundamental source of information to support decision-making processes, ECLA's support of efforts by the United Nations Statistical Office to promote the adoption of the Uniform System of Maritime Transport Statistics in Latin America is entirely consistent with its work programme. The present document has been prepared jointly by ECLA and the Statistical Office to provide guidelines that demonstrate not only the theoretical bases for the System, but also practical examples of efforts to implement it made by the United Nations Economic and Social Commission for Asia and the Pacific, and by a number of countries around the world. Using these guidelines, it should be feasible for almost any country to set up the System and thereby obtain the very substantial benefits that are outlined in the following pages.



## I. BACKGROUND

In general, the basic inputs required for statistical analyses of the shipping industry cannot be acquired directly from ship owners, but must rather be obtained statistically through the processing of Customs and port documents routinely filled out for import and export operations. Although most countries already employ these documents as sources of transport data, few extract from them all the information they are capable of supplying, nor process them in such a manner that the results are comparable from one country to the next. Comparability is especially important because it is the only practical means for tracing vessel operations from port to port so that liner conference activities can be analyzed.

The Uniform System is a scheme for linking shipments of goods to the vessels in which they are transported so that shipment and vessel information can be related. In order to avoid any possibility of ambiguity concerning what is being shipped, the goods must be classified according to their Standard International Trade Classification (SITC) categories, which can be determined by reference to the Customs Co-operation Council Nomenclature, or through the use of any other classification system compatible with or convertible to the SITC categories. As its sources of data, the Uniform System relies primarily on the Customs declaration, the cargo manifest, and documents related to the activities of ships in port. The System can produce more information than is normally available from other statistical systems, without the need for substantial investments in new methods of data collection and, in many cases, without even requiring important changes in present data processing procedures.

### 1. Objectives

The overall objective of the System is to provide governments and national shipping industries with comprehensive, accurate and up-to-date statistics about the operation and performance of merchant ships, both national and foreign, that use the port facilities of the countries concerned. Due to constraints on the availability of basic data required for the Uniform System, short-term objectives may have to be somewhat more modest, but they should include at least the ability to obtain a reliable perspective on demand patterns for maritime cargo transport and on the characteristics of ships engaged in such transport, by providing sufficient information to answer the following questions, which are of special interest to developing nations:

- What are the frequency and efficiency of liner and tramp services that carry a country's imports and exports?
- Who are the vessel operators and what are their market shares?
- What are the freight charges levied for shipping services?
- If the country has cargo reserve legislation in effect, how are its provisions being observed with respect to freight rates?

Subsequently, as the capabilities and practicability of the System become better known, the resources available for its support should increase. To the extent that this growth extends to the basic data inputs to the System, it will eventually be possible to analyze ship operations from either a macro- or a microeconomic point of view.

If shipping statistics are to be understood and used in many different countries, they must be comparable from one country to another. Ideally, this would necessitate a uniform international approach toward their compilation, with adherence not only to common basic principles but also to identical processing procedures. Nonetheless, there are many practical limitations on the uniformity that can be achieved when a statistical system must be implemented by individual countries having widely different administrative environments and practices. Recognizing that this constraint would inevitably make the system unworkable if absolute uniformity were demanded, the Uniform System does not pretend to lay down rules for procedural matters. Rather, it insists only on uniformity of two basic criteria: the use of a standard commodity classification to define what is being transported, and the linking of shipments to the vessels in which they are carried. The procedures described in these guidelines are thus presented as guidelines only, and not as norms that must be followed.

## 2. History of the System

The developing countries are important consumers of maritime transport services. In 1978, for example, they accounted for 97% of world-wide tanker cargo exports and 31% of dry cargo movements for exports and imports combined. With respect to ownership, however, their share of the world merchant fleet in that year constituted only 10% of the gross registered tanker tonnage and 14% of the dry cargo tonnage. They are thus frequently unable to exercise direct operative control over their foreign trade, and must rely on secondary mechanisms such as regulatory control to protect their national interests.

The marketing of shipping services has traditionally favored the seller. Shipping companies -especially those belonging to liner conferences- are for the most part free to set freight rates as they choose, and governmental protective policies aimed at enhancing their competitive positions make them largely immune to commercial, economic and political pressures. With such freedom, they have had a natural tendency to become monopolistic and secretive about their operations, and it is virtually impossible to obtain from them any of the basic data needed to evaluate fleet productivity, effective demand for various types of shipping space, freight rate structures and the like. Aside from impeding the efficient development of shipping services on a world-wide basis, this lack of information deprives consumers of effective means for judging the fairness of the rates they are being charged. It also prevents developing countries from determining whether it would be advantageous to acquire or expand their own national merchant fleets.



(a) The role of ESCAP

During the late 1960s, several member countries of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) became concerned about the costs of ocean transport for their external trade transactions, and requested the secretariat of ESCAP to provide them with basic statistical information in order that they might evaluate the effects of those costs on their economies. In response, the ESCAP secretariat proposed the development of a scheme for systematically collecting maritime transport statistics to support such analyses. In 1968, at its twelfth session, ESCAP's Committee on Trade endorsed the secretariat's proposal, thereby permitting work to proceed.

Aware that any attempt to gather statistics directly from the shipping lines would be fruitless, ESCAP engaged a consultant to suggest alternative strategies. His report presented three possible schemes, called L-1, L-2 and L-3:

- L-1 - Adaptation of existing trade statistics to incorporate simple freight movement data;
- L-2 - Analysis of ship movements from the statistics collected by port authorities, relating these movements to the trade statistics of scheme L-1, and
- L-3 - Sample surveys of cargo manifests to obtain data on freight charges, cargo volumes and the like.

These three approaches, together with comments on them by the Statistical Office of the United Nations, were discussed at the ninth session of the Conference of Asian Statisticians in 1969. Scheme L-2 was recommended for trial, and several of the ESCAP member countries subsequently attempted to implement it. Success with the scheme was limited, however, and progress generally was slow.

By 1975, it was apparent that little was being accomplished, so ESCAP -with the co-operation of the Statistical Office and the financial support of the United Nations Development Programme (UNDP)- undertook a special project in an effort to move forward more rapidly. A group of four experts toured 11 countries of the ESCAP region and found two primary reasons for the delay. One was that the recommendation for implementing scheme L-2, which contained only a statement of broad principle without the specific steps to be followed by each country, was inadequate for setting up a workable statistical system and was open to various interpretations. The other reason was that the role in the national economy of the statistical information to be generated by the scheme was not appreciated by the shipping industry in general, nor by those government officials responsible for achieving the close co-operation between Customs and port authorities that was necessary for satisfactory progress to be made.

In order to clarify procedures for implementing scheme L-2, the experts laid out a detailed plan for putting it into effect, and also suggested that it be given a proper name: the "Uniform System" for collecting economic statistics of shipping. The experts further recommended the convening of an annual workshop to solve such technical

problems as might be encountered by any country setting up the System, and also to serve as a forum through which its principles could be brought to the attention of senior government officials and of the shipping world in general. Three workshops have subsequently been held at ESCAP headquarters in Bangkok -the first in 1976, the second in April 1979 and the third in November 1980- and comparatively rapid progress has been made by some countries, especially in the period 1978-1980.

(b) The role of the Statistical Office

The United Nations Statistical Office had long been aware of the need for essential basic statistics about maritime transport. In the early 1970s, using the wealth of detailed international trade statistics reported by United Nations member countries, the Statistical Office conducted a pilot Maritime Transport Study to compile a comprehensive analysis of demand patterns during the period 1966-1968 for shipping services in terms of freight volumes for some 35 commodity categories.1/

When this study was published in 1976, it aroused great interest among students of shipping economics. In 1978, together with a newly-designed plan to support ESCAP's Uniform System, it served as the basis for obtaining financial support from the Government of Norway for a project to update the pilot study and to lay the groundwork for an effective programme to promote the Uniform System among developing countries. The Maritime Transport Study is now up to date, with time-series data available for the period 1969-1980, organized by countries of origin and destination for about 120 commodity categories in the maritime transport classification.2/

In 1979, at its twentieth session, the Statistical Commission of the United Nations discussed the Uniform System and commended the Statistical Office for providing a clear perspective on a new approach to shipping statistics. In this regard, the Commission:

- Directed the attention of all Member States to the importance of developing shipping statistics;
- Called the attention of Member States to the potential of the Uniform System in this connexion and invited interested countries to examine the possibility of adopting the framework of the System;
- Endorsed proposals for bringing up to date the pilot study for the years 1966-1968;
- Encouraged further promotional work on the Uniform System among the developing countries in extending it beyond the ESCAP region, and
- Recommended that the topic of shipping statistics be kept in the work programme of the Statistical Office.

The Statistical Office has also received the support of UNCTAD for its work on the Uniform System. At its ninth session, the UNCTAD Committee on Shipping adopted resolution 42 (IX) on the subject of merchant fleet development, which requested the Statistical Commission

-in collaboration with the regional economic commissions and the UNCTAD secretariat- to continue promoting the System.

The Statistical Office has made every effort to comply with these mandates, to the extent that resource limitations have permitted. In the interest of fostering further development and applications of the System, a fund-raising campaign was launched in 1981, to which the Government of Norway responded once again, this time with a pledge of one million kroner per year for the period 1982-1985. Other promotional activities have been carried out by the Office's Adviser on Shipping Statistics, who has been responsible for:

- Directing the second and third ESCAP workshops held in 1979 and 1980, as mentioned above;
- Visiting a number of countries in Africa and Latin America to determine the possibility of those countries' adopting the System, and
- Drafting the present guidelines, based on experiences gained in the ESCAP workshops, in visits to developing countries and in discussions with UNCTAD and the regional Economic Commissions.

### 3. Relation of the Uniform System to the Maritime Transport Study

The compilation of commodity flows published in the Maritime Transport Study is based mainly on existing international trade statistics, and so corresponds to ESCAP's L-1 scheme. Since Uniform System is just another name for scheme L-2, its relation to the Study is identical to the relation of L-2 to L-1, that is, a subset. This incorporation of freight movements into existing trade statistics is not an ideal approach to the production of shipping statistics. Existing trade statistics are reported on a country-to-country basis, in which the definition of partner countries is by no means uniform, and it is thus unclear in any given case whether a partner is a country of consignment, of production or consumption, or of purchase or sale. Freight movement statistics, on the other hand, should reflect simple port-to-port transport, without regard to such other considerations.

The data compiled in the Statistical Papers are for the most part regular trade statistics elaborately purified and heavily adjusted in an attempt to represent real transport flows. They are up to date and comprehensive, and are suitable for a variety of purposes including studies of demand patterns for shipping services. However, they include numerous conceptual weaknesses that cannot be eliminated by any conceivable method, since certain criteria used in developing the trade statistics from which they are derived are incompatible with criteria for transport statistics. The only way to improve upon this situation is to gradually replace the trade statistics with simple data on cargo movements between ports. These data will become available as the Uniform System comes into general use.

In this respect, it should be mentioned that the data inputs for the trade of the United States of America do represent port-to-port movements, since that country has been using a statistical scheme comparable to the Uniform System for decades. New Zealand is in the process of implementing the System, and should soon be able to supply true movement data. Canada is another country that is adopting the framework of the Uniform System. It is anticipated that the quality of the data contained in the Maritime Transport Study will markedly improve in the next five to ten years as other countries adopt the System, which will then make it possible to use the Study for applications such as microanalytical research at the lowest commodity level through a single port.

## II. DESCRIPTION OF THE UNIFORM SYSTEM

As mentioned at the beginning of these guidelines, only two requirements are made concerning the implementation of the Uniform System: that commodities be identified by means of their SITC code or other code compatible with or convertible to the SITC, and that shipments be linked to the vessels in which they are carried. Apart from those two stipulations, it is expected that there will be some variations in data inputs, which will thus affect data file layouts and final information produced. It is nonetheless suggested that countries interested in adopting the System follow the scheme described below as closely as possible, in order to keep such variations to a minimum and so ensure that the statistics produced will be comparable from one country to the next.

### 1. Data collection

Information produced by the Uniform System is derived from basic data on commodity movements, ship movements and ships' characteristics. Data in each of these three categories are normally transcribed from a primary source document onto a worksheet that facilitates entry into the corresponding System file. Certain of these items are common to all sheets, and are used to establish the linkage between the three sets of data.

Note: In many cases the data items must be coded for entry into computer files. Coding may be done either when the worksheets are being filled out during data collection, or during the data entry process, depending on the particular circumstances of the organizations implementing the System. For purposes of these guidelines, sources of internationally-recognized codes are mentioned in this section on data collection, while details of code usage are deferred until the following section on data entry.

#### (a) Common data items

The following items provide the linkage mechanism:

(i) Ship's identification. The full name of the ship, which is entered on the ships' characteristics worksheet and may also be recorded on the other two worksheets, can normally be obtained from the Customs declaration or from the cargo manifest. The unique identifying code, which is entered on all worksheets, serves as the primary linkage element because several ships may have the same name. This code should preferably be the vessel's identity number as found in Lloyd's "Register of Ships,"<sup>3/</sup> although its radio call sign or any other arbitrary number or alphanumeric combination could also be used. If a special code is made up, it should be adopted on a regional basis to facilitate tracing the movement of ships from port to port.

(ii) National port. This element is common to the commodity movement and ship movement worksheets, and can be found in the Customs declaration. The name of the port should be entered, together with a code preferably taken from ECLA's list of port codes,<sup>4</sup> or from the United Nations Code for Ports and Other Locations (LOCODE).<sup>5</sup>

(iii) Dates of arrival and departure. The dates are also common to the commodity movement and ship movement worksheets, and establish the linkage to a particular voyage of the vessel in question, whether inward or outward bound. They may be obtained either from the Customs declaration or from the ship movement document.

(b) Commodity movement data items

The following items relate to the movements of individual consignments of commodities. They are obtained for the most part from the Customs declaration, supplemented where necessary by the ship's cargo manifest, and are recorded on a worksheet such as that shown in figure 1.

(i) Common data. The ship's identification, the national port, and the date the ship arrived (if inbound) or departed (if outbound), as described in paragraph (a) above.

(ii) Discharge/load. An indication of whether the consignment was discharged from the ship (inbound) or loaded aboard (outbound).

(iii) Consignment number. An arbitrary reference number that identifies the particular consignment being recorded, within the overall quantity of cargo discharged or loaded.

(iv) Customs status. An indication of whether the consignment was in cabotage, entering or leaving national trade (import or export), for reexport, in transit to or from a third country, or being transshipped to or from another vessel.

(v) Foreign port. The port of loading for consignments being discharged, or the expected port of discharge for consignments being loaded. The name of the port should be entered, together with a code taken from the same source as that used for the national port (see paragraph a.iii above). Since the foreign port identifies the country of consignment if the goods are not in transit or being transshipped, this information can be cross referenced with the partner countries described in paragraph (vii) below for use in trade-flow analysis.

(vi) Commodity classification. The SITC or compatible classification of the commodity being shipped.

Figure 1  
COMMODITY MOVEMENT DATA ITEMS  
Model worksheet

COMMODITY MOVEMENT WORKSHEET													
Ship's Identification				Date		Dischg.		National Port					
Name	Code			Arr./Dep.	/Load	Name	Code		Code				
Con- sign. No.	Cus- toms Status	Foreign Port Load/ Dischg.	Commo- dity Class.	Partner Countries Prod./Purch./Orig./ Consum./Sale/ Destin.			Gross Measure Weight   Volume		Net Measure Weight   Quant.		Pack- aging	Transaction Conditions Value   Term	Freight Charges   \$

@ - Units of weight, volume and quantity.  
\$ - Currency in which value is expressed.

(vii) Partner countries. The names and International Organization for Standardization (ISO) Alpha-2 country codes of the country of production or consumption of the goods, the country of purchase or sale, and the country of origin or destination.<sup>6/</sup> These three categories are recorded because, when compiling foreign trade statistics, a country may define its partners in whatever manner it finds most convenient or best suited to the types of statistics it wishes to produce. There is thus no single definition of what constitutes a trading partner, which often leads to serious problems of comparability among international trade statistics. This confusion can be avoided only by making all three possibilities available:

- Country of production or consumption, which is useful for its relation to the concept of national accounts;
- Country of purchase or sale, which is useful for monitoring trade agreements or cargo reserve laws and as an input to balance-of-payments analyses, and
- Country of origin or destination, which is not a well-defined term from the international point of view, since it may mean the country of consignment, of production or consumption, or of sale or purchase.

(viii) Gross measurements. The gross weight and gross volume of the consignment, together with the units in which those amounts are expressed. Common units of gross weight are metric tons, long tons, kilograms, pounds and the like, while gross volume may be expressed in units such as barrels, cubic meters, cubic feet or revenue tons of 40 cubic feet.

(ix) Net measurements. The net weight and net quantity of the consignment, together with the units in which those amounts are expressed. Common units of net weight are the same as those of gross weight, while net quantity may be expressed in terms such as number of pieces, dozens, square meters, or board feet.

(x) Packaging. The manner in which the consignment is packed for shipment. UNCTAD is presently developing a logical scheme to classify packaging and unitization of cargo, but until this code is published, each country may wish to set up its own or employ one of the ESCAP codes described in appendix A. The packaging classification is important because the manner in which goods are handled and stowed has an important effect on the cost structure of maritime transport. Therefore, sufficient data should be obtained to support analyses of cargo handling efficiency and of policy decisions regarding freight rates, ship types, and the adequacy of port infrastructure and handling equipment.

(xi) Transaction conditions. The amount of the commercial transaction represented by the consignment, together with the terms of trade, such as "free on board" (FOB), "cost, insurance and freight" (CIF), "cost and freight" (C&F) or in some other terms recognized by the International Chamber of Commerce (Incoterms).<sup>7/</sup> The ISO alphabetic code for the currency of the transaction should also be entered.<sup>8/</sup>



(xii) Freight. The freight charges for the consignment, together with the ISO alphabetic code for the currency of payment.

(c) Ship movement data items

The following data items relate to the movements of the vessels on which the commodity shipments are carried. They are found in documents maintained by the national port authority, or by the authority responsible for controlling the movements of merchant ships entering and leaving national waters, and are recorded on a worksheet such as that shown in figure 2.

(i) Common data. The ship's identification, the national port, and dates the ship arrived and departed, as described in paragraph (a) above.

(ii) Foreign ports of call. The previous and next scheduled ports of call. The names of the ports should be entered, together with their corresponding codes taken from the same source as that used for the national port (see paragraph a.iii above). This information gives a partial indication of the ship's route.

(iii) Cargo on board, discharged and loaded. The gross tonnages of cargo aboard the ship upon entering the national port, cargo left at that port and new cargo taken aboard. The physical amounts should be recorded in each case, together with the units in which those amounts are expressed, preferably in weight tons although revenue or manifest tons are acceptable. If the ship arrives in ballast, the cargo on board will be zero, the cargo discharged will be zero, and the data area reserved for the units of the later should be used to indicate this condition. If the ship departs in ballast, the cargo discharged will equal the cargo on board, the cargo loaded will be zero, and the data area reserved for the units of cargo loaded should be used to indicate this condition.

(iv) Shipping service type. The type of service provided by the ship, whether conference liner, nonconference liner, tramp or other.

Liners: Vessels that serve regular routes between groups of ports, charge set rates, and offer cargo space or passenger accommodations to anyone requiring them. Sailings are according to schedule, regardless of whether the vessel is full. There are two categories of liners:

- Conference liners, whose owners have banded together with others serving the same route to form a cartel, with the objective of limiting internal competition among themselves, countering external competition, fixing tariffs, and regulating traffic so as to provide a constant level of service, and
- Nonconference liners, whose owners act independently of any conference, and generally compete with the latter by providing some form of superior service or lower freight rates.

Figure 2  
 SHIP MOVEMENT DATA ITEMS  
Model worksheet

SHIP MOVEMENT WORKSHEET									
Ship's Ident. Code	Dates		National Port	Foreign Port		Cargo			Service Type
	Arrival	Departure		Previous	Next	On Arrival	Discharged	Loaded	
						@	@	@	

@ - Units in which cargo weight is expressed.

Tramps: Vessels that do not operate fixed schedules or routes, but rather trade in all parts of the world and carry primarily full loads of bulk cargoes between one or two loading ports and one or two discharge ports. They operate under contracts called "charter parties", which may be in force for a fixed length of time, or for a particular voyage or series of voyages.

Others: Vessels owned or operated by industrial firms for the transport of their own products (oil tankers or bauxite carriers, for example), and miscellaneous craft engaged in short-sea trades, irrespective of service regularity.

In the case of conferences, a regional code should be devised to facilitate data entry, based on information obtained from published sources such as "Croner's World Directory of Freight Conferences."<sup>9/</sup>

(d) Ships' characteristics data items

The following data items relate to the characteristics of the vessels on which the commodity shipments are carried. They are found primarily in Lloyd's "Register of Ships,"<sup>10/</sup> supplemented if necessary by direct inquiry of the ship's master when in port, and are semipermanent in nature. They are recorded on a worksheet such as that shown in figure 3.

(i) Common data. The ship's name and identification, as described in paragraph (a) above.

(ii) Owner. The name of the registered owner of the ship.

(iii) Manager. The name of the registered manager of the ship.

(iv) Flag. The name of the country and port in which the ship is registered, together with the ECLA port code or LOCODE location code (see paragraph a.iii above) of the port of registry.

(v) Gross tonnage (GRT). The volume of the ship's enclosed space (100 cubic feet equal one gross ton) available for passengers, crew, cargo, stores and fuel. The unit of measure should not be recorded.

(vi) Deadweight tonnage (DWT). The weight of the passengers, crew, cargo, stores and fuel when the ship is loaded to its maximum draught. The unit of measure is usually metric tons (1 000 kilograms), although long tons (2 240 pounds) may also be encountered.

(vii) Date of build. The month and year during which the registry survey was completed during the construction of the ship.

(viii) Length overall (LOA). The total length of the ship in meters or feet.

Figure 3

## SHIPS' CHARACTERISTICS DATA ITEMS

Model worksheet

S H I P S ' C H A R A C T E R I S T I C S W O R K S H E E T			
Ship's Identification			
Name			Code
Owner			
Manager			
Flag (country and port)	Code	Gross Tonnage (GRT)	
Deadweight Tonnage (DWT)	Units	Date of Build (year and month)	
Length Overall (LOA)	Units	Least Draught	Units
Maximum Draught	Units	Vessel Type	Code
Grain Capacity	Units	Bale Capacity	Units

(ix) Draughts. The least and maximum depths of water drawn by the ship when loaded for winter and summer sea conditions, respectively, measured in meters or feet. This information is usually included in a load-line disk (Plimsoll line) conspicuously marked amidships on both sides of the hull.

(x) Type. A description of the type of vessel, together with a numeric or alphabetic code representing the type in standardized form. The code developed by ESCAP, which is presented in appendix B, may be adequate for this purpose.

(xi) Cubic capacity. The volume of the ship's cargo space, in both grain and bale measure, in cubic meters or feet. Grain capacity represents the volume of all cargo spaces within the ship, including those that can be utilized only for loose bulk cargo such as grain, coal or liquid; bale capacity represents the volume of cargo space available for general dry cargo, which is less than the grain capacity.

## 2. Data entry

Once the three types of worksheets have been filled in, all data must be entered into computer files for processing. For implementing the Uniform System, it is recommended that each of the basic data groupings -commodity movements, ship movements and ships' characteristics- be stored in its own file. Cross references between files are established by the common data items, as shown schematically in figure 4. Descriptions of the data elements to be entered in each of these three files are given in appendix C, together with the number and type (alphabetic or numeric) of characters corresponding to each element, the format in which the element is written in the file, and the source of established codes or the contents of ad hoc codes, as appropriate.

No recommendations are made regarding procedures for entering data in the three files, because in general it is expected that the Uniform System will be implemented as an integral part of each country's existing data processing scheme for trade statistics. Many of the elements for the System will already be included in the trade data being collected, and the inclusion of other elements should be relatively simple. It would be pointless to recommend changes in data entry media, procedures and practices merely for reasons of standardization among countries adopting the System, when these aspects have no bearing on the uniformity and quality of the final results.

Figure 4

## SCHEMATIC STRUCTURE OF UNIFORM SYSTEM DATA FILES

Commodity Movement File (CMF)		Ship Movement File (SMF)		Ships' Charac- teristics File (SCF)
1.   Ship's Ident.	<--COMMON-->	Ship's Ident.	<--COMMON-->	Ship's Ident.
2.   Nat'l. Port	<--COMMON-->	Nat'l. Port		Name
3.   Date Arr./Dep.	<--COMMON+-->	Date Arrival		Owner
4.   Dischg./Load		Date Departure	+-->	Manager
5.   Consign. No.		Previous Port		Flag
6.   Customs Status		Next Port		Gross Tonnage
7.   Foreign Port		Cargo on Board		Deadweight
8.   Commod. Class.		Cargo Dischg.		Date of Build
9.   Ctry.Prd./Cns.		Cargo Loaded		Length Overall
10.   Ctry.Pur./Sale		Service type		Least Draught
11.   Ctry.Org./Des.				Max. Draught
12.   Gross Weight				Type
13.   Gross Volume				Grain Capacity
14.   Net Weight				Bale Capacity
15.   Net Quantity				
16.   Packaging				
17.   Transact.Cond.				
18.   Freight Charge				

### 3. Standard outputs

The three basic files of the Uniform System provide data from which a wide variety of statistical analyses can be drawn, with the help of the appropriate computer programs. Studies can be confined to a single ship, owner, shipping line, conference or flag, to name only a few possibilities, with respect to amounts and types of cargo carried, origins and destinations, freight charges, voyage frequencies, cargo space utilization and the like. Or they can be oriented toward a single port, country or region with a view to accounting for all commodity movements at individual or aggregate levels. Analyses by ship type can indicate the best vessel to choose for the carriage of a particular commodity. The patterns of maritime transport between specific pairs or ranges of ports can also be traced. In short, the statistics obtained from the System can be used as a basis for answering almost any question likely to be raised in relation to the transport of a country's or a region's imports and exports.

Each country is free to define its own needs and prepare the corresponding statistical tabulations. Nonetheless, during the late 1970s, a number of the countries of the ESCAP region that had been trying out the System or that were in the process of implementing it felt the need to design a set of basic tabulations that would represent typical outputs of the system and that could be used as a standard of accomplishment which all countries should strive to achieve. This idea was discussed during the second ESCAP workshop in 1979 and, as a consequence, following consultations with interested member countries, the ESCAP secretariat developed a such a set. These tabulations were examined by the third workshop in 1980, which amended them where necessary and finally adopted them as the standard outputs that every implementation of the System should be expected to produce. They are divided into basic tabulations, future additional tabulations, and optional tabulations for confidential use by government authorities. In every case, the primary level for the tabulation is the individual national port.

#### (a) Basic tabulations

Four sets of tables are included in this category: (i) cargo movements by port and type of vessel, (ii) cargo movements by commodity, port and type of service, (iii) cargo movements by commodity, port and flag, and (iv) arrivals of vessels by size and flag.

(i) Table 1. Inward and outward cargo movements in tons, by ports of loading and discharge and by type of vessel (one table per port, combining both inward and outward movements). Data on cargo movements are traditionally collected for every port because they provide a picture of port activities and changes in those activities from month to month and year to year. It should be noted that, in all cases, loaded ships must be listed separately from ships in ballast if the statistics are to be interpreted correctly.

(ii) Tables 2A and 2B. Inward and outward cargo movements, in terms of both quantity and value of commodities, by port of loading or discharge, commodity description, and type of service (two tables per port, one each for inward and outward movements).

(iii) Tables 3A and 3B. Inward and outward cargo movements, in terms of both quantity and freight charges, by port of loading or discharge, commodity description, and whether national or foreign flag (two tables per port, one each for inward and outward movements).

(iv) Table 4. Arrivals of vessels, in terms of both numbers and total tonnage, by port of loading or discharge, deadweight range and flag of registry (one table per port, combining both inward and outward movements).

(b) Future additional tabulations

This category includes six sets of tables: (i) cargo movements by commodity, port and type of vessel, (ii) cargo movements by port, commodity and type of service, (iii) cargo movements by port, commodity and flag, (iv) cargo movements by port, packaging and type of service, (v) arrivals of vessels by port, ship size and type of service, and (vi) ship capacity by port and flag. The first four sets contain virtually the same information as the four sets of basic tabulations, presented in a somewhat different order or degree of disaggregation.

(i) Tables 5A and 5B. Inward and outward cargo movements, in terms of number of ships involved, quantity and freight charges, by commodity description, port of loading or discharge and type of vessel (two tables per port, one each for inward and outward movements). These tables are similar to table 1, but their information is broken down into a greater level of detail.

(ii) Tables 6A and 6B. Inward and outward cargo movements, in terms of both quantity and value of commodities, by commodity description, port of loading or discharge and type of service (two tables per port, one each for inward and outward movements). These tables are identical to tables 2A and 2B, except for the order in which the information is presented.

(iii) Tables 7A and 7B. Inward and outward cargo movements, in terms of both quantity and freight charges, by commodity description, port of loading or discharge, and whether national or foreign flag (two tables per port, one each for inward and outward movements). These tables are identical to tables 3A and 3B, except for the order in which the information is presented.

(iv) Tables 8A and 8B. Inward and outward cargo movements, in terms of both quantity and value of commodities, by port of loading or discharge, type of packaging and type of service (two tables per port, one each for inward and outward movements). It is suggested that the following packaging types be shown:



1. Commodities in lift-off unit loads;
2. Packaged commodities, break-bulk type I, consisting of
  - Cases, boxes and cartons,
  - Crates,
  - Bags,
  - Bales,
  - Bundles, and
  - Flasks;
3. Packaged commodities, break-bulk type II, consisting of
  - Drums,
  - Bars,
  - Plates,
  - Rolls and reels,
  - Tubes, and
  - Tanks and bins;
4. Unpackaged or special commodities, break-bulk type III, and
5. Bulk commodities, consisting of
  - Liquid bulk,
  - Dry bulk, free flowing, and
  - Dry bulk, not free flowing.

(v) Table 9. Arrivals of vessels, in terms of both numbers and total tonnage, by port of loading or discharge, deadweight range and type of service (one table per port, combining both inward and outward movements). This table is similar to table 4.

(vi) Tables 10A and 10B. Inward and outward ship capacity by port of loading or discharge, and flag (two tables per port, one each for inward and outward movements). The following information is shown for each flag:

- Number of vessels;
- Total deadweight tonnage;
- Cargo on board in tons;
- Cargo on board as a percentage of total deadweight;
- Cargo discharged in tons;
- Cargo discharged as a percentage of total deadweight;
- Total CIF value of cargo discharged, and
- Total freight charges for cargo discharged.

(c) Optional tabulations for government use

Four groups of tabulations are included in this category: (i) cargo movements by port and shipping line, (ii) ship capacity by port and shipping line, (iii) ship capacity by port and liner conference and (iv) individual ship traffic. Note that all of these tabulations contain proprietary information regarding the performance of individual shipping lines, so great care must be taken to preserve their confidentiality.

(i) Tables 11A and 11B. Inward and outward cargo movements, in terms of both quantity and value of commodities, by port of loading or discharge, commodity description, and name of shipping line (two tables per port, one each for inward and outward movements). These tables are similar to tables 2A and 2B, 3A and 3B, 6A and 6B, and 7A and 7B, but they permit the analysis of comparative performance between lines.

(ii) Tables 12A and 12B. Inward and outward ship capacity by port and shipping line (two tables per port, one each for inward and outward movements). These tables contain the same items of information as tables 10A and 10B, but they will show any differences among lines in the freight rates charged for the same commodities and service types.

(iii) Tables 13A and 13B. Inward and outward ship capacity by port and liner conference (two tables per port, one each for inward and outward movements). These tables are similar to tables 12A and 12B, merely aggregating the information by liner conference.

(iv) Table 14. Individual ship traffic (one table per port), showing the following information for each voyage:

- Ship's name;
- Gross tonnage;
- Deadweight;
- Type of ship;
- Flag;
- Manager;
- Date and time of arrival;
- Date and time of departure;
- Cargo on board;
- Cargo discharged;
- Cargo loaded;
- Previous port;
- Next scheduled port, and
- Charterer (if applicable).

(d) Uses of tabulations

The standard tabulations are not directed toward any specific individual or group, and are important to any study dealing with the establishment of general national shipping policy. Nonetheless, certain types of users will be especially interested in particular sets of tables, as described below for each of the following categories: (i) cargo movements by commodity, port and type of vessel, (ii) cargo movements by port, commodity and type of service, (iii) cargo movements by port, commodity and flag, (iv) cargo movements by port, packaging and type of service, (v) arrivals of vessels by port, size and type of service, and (vi) ship capacity by port and flag.

(i) Cargo movements by commodity, port and type of vessel (tables 1 and 5) are of special interest to:

Port authorities and administrations, for estimating

- Types and numbers of ships calling at a given port,
- Average shipment sizes in terms of weight and cubic measurement,
- Numbers and 20-foot equivalent units of containers handled,
- Average servicing times required per vessel,
- Average resource requirements for vessel servicing, and
- Average overall length of stay in port;

Shippers, for generating statistics with respect to transport costs for each commodity and vessel type, and

Ship owners, for planning balanced services between ports.

(ii) Cargo movements by port, commodity and type of service (tables 2 and 6) are of special interest to:

Port authorities and administrations, for identifying

- Future demands with respect to port throughput,
- Facilities required to meet those demands,
- Potential volumes of containerizable cargoes,
- Requirements for complementary inland transport systems, and
- Supporting service industries;

Shippers and shippers councils, for determining

- Efficiency and availability of each type of shipping service, and
- Quantities and values of commodities shipped;

Ship owners, for determining

- Traffic volumes on different trade routes,
- Growth rates of individual commodity movements,
- Potential shipping service demands,
- Volumes of unitized and bulk cargoes,
- Volumes of cargoes that require specialized vessels, and
- Types of vessels best suited to carry anticipated traffic;

Economic analysts, in economic and fiscal policy-making studies, for determining

- Volumes and types of commodities traded with a particular foreign port or country, and
- Economic and seasonal trends related to commodity flows;

(iii) Cargo movements by port, commodity and flag (tables 3 and 7) are of special interest to:

Shippers, for estimating commodity transport costs on a port-to-port basis;

National shipping lines, for determining market shares of traffic to and from given countries or areas;

Shipping policy analysts, for determining national flag shares of the country's foreign trade in relation to

- Cargo reserve laws, and
- National fleet and shipping policies, and

Financial analysts, for monitoring foreign exchange flows derived from freight payments.

(iv) Cargo movements by port, packaging and type of service (table 8) are of special interest to:

Port authorities and administrations, for determining cargo handling and warehousing requirements;

Shippers, for comparing unit costs of transporting commodities in various types of packaging using different shipping services;

Ship owners, for estimating shipping capacities required to transport various types of commodities, and

Economic analysts, for identifying the most economical form of packaging and shipping service with respect to each commodity flow.

(v) Arrivals of vessels by port, ship size and type of service (table 9) are of special interest to:

Port authorities and administrations, for planning

- Allocation of existing berths,
- Channel dredging and widening,
- Maintenance of facilities and equipment,
- Construction of new berths,
- Construction of vessel repair facilities,
- Acquisition of support equipment (tugs, fire boats, etc.), and
- Administrative and operative manning requirements;

Shippers and shippers councils, for studying optimal ship types, tonnages and service frequencies to serve as a basis for negotiations with ship owners;

Ship owners, for analyses of service levels, and

Economic analysts, for monitoring the correct utilization of available shipping services, manpower and other resources.

(vi) Ship capacity by port and flag (table 10) is of special interest to:

Port authorities and administrations, for studying port throughput;

Shippers and shippers councils, for studying optimal ship types, tonnages and service frequencies to serve as a basis for negotiations with ship owners;

Ship owners, for analyzing service levels, and

Shipping policy analysts, for monitoring

- Cargo reserve laws and regulations,
- Average transport capacity available, and
- Effective utilization of available capacity.

#### 4. General applications of the System

The previous section identified certain types of users likely to be interested in particular sets of standard tabulations. It should not be forgotten, however, that data from the three basic files of the Uniform System can be combined in many different ways, not only for tabulations that are produced regularly and distributed to a more or less fixed list of recipients, but also for special studies that may be undertaken periodically or as required in order to meet specific objectives. Examples of such studies are identified below in the categories of economy and finance, foreign trade, shipping, and ports.

##### (a) Economy and finance

Maritime transport has an important impact on the economy of almost every country in the world. Some areas of study in which statistics provided by the System can be of particular importance are the following:

(i) Balance of payments. Flows of foreign exchange related to "invisible" imports and exports such as shipping services may range from 10% to 18% of total trade payments or even more in some cases. In many balance of payments studies, differences between FOB and CIF valuations are based on very fragmentary data or even on "rules of thumb". The systematic collection of data on maritime freight charges provides a much better source of information for analyzing these flows, and can lead to the formulation of more precise economic policy options.

(ii) Cargo reserve. Many countries have enacted cargo reserve legislation to ensure that they receive a fair share of the "invisible" trade they generate. The effectiveness of such provisions can only be judged in the light of detailed statistical analyses of all freight revenues generated by those countries' imports and exports.

##### (b) Foreign trade

Closely allied to economic and financial studies are those related to the development and conduct of foreign trade, in which once again data from the System can be used to advantage. For example:

(i) Transport costs. Particularly in respect of primary products, transport costs can be the deciding factor in determining their commercial viability in foreign markets. Cost studies are indispensable for choosing combinations of service frequency and vessel type that tend to minimize overall shipping costs.

(ii) Trading patterns. Trade relations with other countries are an important aspect of every government's foreign policy. Origin and destination studies at the detailed commodity classification level, together with the value represented by such traffic, accurately indicate the relative importance of relations with each of the country's trading partners.

(c) Shipping

Development of the national shipping industry can also be promoted through analyses of statistics provided by the System, such as the following:

(i) Shipping patterns. Studies of routes, frequencies, costs and types of shipping services available to a country are essential to the formulation of national shipping policies. Data for such studies should include the age, speed and tonnage of vessels calling at the country's ports, tonnages and types of cargoes discharged and loaded, and origins and destinations of voyages.

(ii) Supply and demand. Plans for developing national merchant fleets require regular and reliable data on the supply and demand of shipping to and from particular countries and regions, to ensure that traditional markets are adequately served, to identify possible new markets, and to identify structural changes that might require different types or sizes of vessels from those employed in the past.

(iii) Freight traffic. A thorough understanding of a liner conference's actual operations can be extremely advantageous during freight rate negotiations. Statistics concerning port-to-port cargo movements broken down by commodity categories, types of services offered, fleet composition, utilization of ship space, and the like tend to maximize the bargaining power of shippers and shippers councils in an area where they have traditionally been at a considerable disadvantage.

(d) Ports

In both the planning of new port facilities and the operation of existing ones, it is important to base decisions on studies that make use of the time series data obtainable from the system, such as those related to:

(i) Import/export trends. Projections of trends in the shipment of commodities imported and exported can aid in determining the types of port installations required to serve future traffic.

(ii) Packaging trends. Projections of trends in the types of packaging -containerization, palletization, bulk shipments, etc.- used for commodities passing through ports are important for decisions about the acquisition of new handling equipment.

(iii) Vessel trends. Projections of trends in the types and sizes of vessels calling at ports are necessary for the design of new installations and improvements to existing installations, in order to increase capacity both of berth space and of maintenance facilities.

(iv) Operating trends. Projections of trends in vessel operations while in port -rates of arrival and departure, total time of stay, tonnages of cargo handled, etc.- have a bearing on port operational and manpower planning.

It should be noted that there are certain complementary data regarding vessel operations in port that can be considered part of the Uniform System, since they are very closely related to the data stored in the three basic files and can significantly increase the latter's usefulness for port planning. These complementary port data and their associated file are described in appendix D.

## 5. Confidentiality

The completeness of the data collected makes the Uniform System susceptible to abuse with respect to the confidentiality of information. Groups such as shippers councils, trade associations and national shipping lines may have commercial interests in the data, so extreme care must be taken to preserve the privacy of the files, especially in countries whose trade policies attempt to balance the interests of national groups with those of international shipping.

Insofar as shippers are concerned, there is no intention of recording the names of consignees, so to this extent confidentiality should not be a problem. In the case of vessels, however, their names and those of their owners and managers are recorded, and access to detailed analyses of individual performances must thus very strictly controlled. For the most part, published information should be limited to aggregated analyses by route, liner conference or commodity.





### III. IMPLEMENTATION OF THE UNIFORM SYSTEM

No country in the world has yet been able to implement all the inputs that go to make up the complete set of data in the three basic files of the Uniform System. For example, the United States of America, which has gone further than any other country in producing maritime transport statistics according to the principles of the System, is still unable to incorporate complete information on freight charges, packaging and cubic measurement. Malaysia, which implemented the System in 1973, has only achieved an adequate level of detail with respect to commodity movement data in the last few years. Naturally, complete collection of all data is the ultimate objective, but it is not the primary goal at this moment. Rather, each country should establish the principle that the System is the fundamental tool for producing statistics of vital concern to the performance and development of its shipping industry, and should strive to carry out any future improvements in the production and dissemination of such statistics within the framework of the System.

In recognition of the fact that initial implementations are likely to be incomplete, the Uniform System has been designed to be as flexible as possible, so that it may usefully be employed irrespective of the extent to which any particular data items are available. The only point on which flexibility cannot be permitted is in the use of the SITC or other compatible commodity code, which should hardly ever present a problem since almost all countries now follow this standard. Provided basic information is available about commodities and the ships on which they are carried, the System can be implemented. Once it is in operation, the results obtained will almost certainly encourage the government to expand the coverage of data items in order to make those results even more useful.

#### 1. Data sources

Three alternative methods of implementation may be chosen, depending on whether the source of data for the commodity movement file is the Customs declaration, the cargo manifest, or a combination of the two.

##### (a) Customs declaration

In most countries, the national Customs service administers the policies that govern export and import operations. The basic document used for this purpose is the Customs declaration. While its exact contents vary from country to country, the following essential items of information are generally included for each commodity:

- Description, usually including the SITC or compatible classification;
- Quantity, usually on a net basis;
- Country of origin or destination;

- Name of vessel on which shipped;
- Date of vessel's arrival or departure, and
- Name of the national port through which shipped.

(i) Malaysia is a country that uses the Customs declaration as its primary source of commodity movement data for the Uniform System. The agencies directly responsible for implementation of the System are the Shipping and Freight Study Unit of the Ministry of Trade and Industry, the Department of Customs and Excise, the port authorities of the principal ports, and the national Department of Statistics. In order to obtain data on ship movements, they jointly decided to issue two forms that each vessel of over 75 net register tons must fill out on arrival and departure, respectively. These forms contain most of the items required for the ship movement file and many of those for the ships' characteristics file as well.

Beginning with data for the year 1973, Malaysia has been publishing a number of important statistics bearing on its four major export commodities, as well as selected imports, including information on distribution by liner conference, by type and size of vessel, by type of service and by flag. Commodity weight data were often not reported in the Customs declaration, however, and the lack was soon apparent in the light of the possibilities for more extensive analyses that the System would permit were this information to be made available. Therefore, revised Customs and ship reporting forms were gradually introduced in the period 1979-1981 that included not only gross weight or measurement tonnage, but also the port of loading or discharge, the type of packaging, and the costs of freight and insurance. Collection of this added information is reported to have been put into effect, and statistics should be available as early as 1983.

(ii) Indonesia is another country that has seen the need to improve its Customs documentation as part of the process of adopting the System. The import declaration is being expanded to include the type of packaging and the foreign port of loading, while the bank document used for export will include the type of packaging, the foreign port of discharge, freight charges and insurance. Once these improvements are fully operational, the commodity movement file will be complete and easily linked to the ship movement and ships' characteristics files for a complete implementation of the System.

(iii) Peru, although not yet committed to adopting the Uniform System, could do so with the greatest of ease, since its Customs declarations for both imports and exports contain virtually all the necessary data, lacking only the quantity in cubic measurement to be complete (see figures 5 and 6). Furthermore, the Customs service ensures that all information required on the declaration is fully and accurately filled out. The data are already being coded and entered into computer files for processing, so implementation of the system should be largely a matter of setting up the other two files and arranging for their processing to be coordinated with that of the Customs declarations.

Figure 5

PERUVIAN CUSTOMS DECLARATION - IMPORT

SERIE "B" N° 3516541

ADUANA: **MIRAFLORES DEL CAJALLO** <sup>492</sup>  
<sub>0118</sub>

**POLIZA DE IMPORTACION** <sup>650 daily</sup>  
<sub>12/11/59</sub>

**N° 789**

<b>DESPACHO</b>		<b>INDIVIDUALIZACION DE PERSONAS PARTICIPANTES</b>		<b>FECHA DE PRESENTACION</b>		<b>NUMERO DE FOLIA</b>	
VISTA AFORADOR		VISTA REVISOR		005-0333		094366	
DESCRITO:		I. E. M. 11223		TPO O CALIDAD DE LA IMPORTACION		(A)	
<b>DILIGENCIA DEL VISTA</b>		AGENCIA AGENCIA DE ADUANA		ESTUPELA INMEDIATA N°			
RECONOCIDOS Y DESPACHADOS:		BULTOS		BOLETIN QUINCE N°			
FIRMA VISTA REVISOR		FIRMA VISTA AFORADOR		FOLIA			
RESUMEN LIBRATORIO		<b>TRANSPORTE</b>		FECHA DE EMBAQUE		CONFORMIDAD DE DATOS Y DOCUMENTOS	
		UNIDAD DE TRANSPORTE		022		NOMBRE Y FIRMA	
		MAYE					
		MAYE					
		VIA DE TRANSPORTE					
		MARITIMA					
		NOMBRE O MATRICULA DE LA UNIDAD DE TRANSPORTE					
		"PRIMERA"					
		RANFA					
		"PRIMERA"					
		FECHA DE EMBAQUE					
		"PRIMERA"					
		EMBAQUE O CARGA					
		"PRIMERA"					
		N° MATRÍCULA O REGISTRO					
		"PRIMERA"					
		N° CONDOMINIO CHIA ADUNA POSTAL					
		"PRIMERA"					
		N° FACTURA COMERCIAL					
		"PRIMERA"					
		N° FACTURA CONSULAR					
		"PRIMERA"					
		PAIS DE PROCEDENCIA					
		"PRIMERA"					
		PAIS DE ADQUISICION					
		"PRIMERA"					
		USUO LUGAR DE EMBAQUE					
		"PRIMERA"					
		FECHA DE EMBAQUE					
		"PRIMERA"					
		RESUMEN DEL VALOR DECLARADO					
		CANTIDAD Y CLASE DE MONEDAS					
		Dólares U.S.					
		F.O.B.					
		3,093.00					
		FLETE					
		950.00					
		SEGURO					
		103.14					
		C.I.P.					
		4,146.14					
		AJUPE DE ADUANA					
		VALOR AJUPE					
		FORMA DE PAGO AL EXTERIOR					
		"PRIMERA"					
		FECHA					
		12/11					
		LUGAR					
		CAJALLO					
		FIRMA DEL DESPACHANTE					
		"PRIMERA"					
		TPO DE CAMBIO					
		"PRIMERA"					
		MONTTO POR FOLIA					
		"PRIMERA"					
		CANTIDAD DE TARJETAS					
		"PRIMERA"					
		CANTIDAD DE COPIAS					
		"PRIMERA"					
		INDICACION DE LOS MULTOS DEBIDO DEL ALMACEN					
		CANTIDAD DE BULTOS DEPOSITADOS					
		PESO BRUTO					
		BULTOS RECONOCIDOS O CON OBSERVACIONES					
		MOTIVAS, MEDIDAS, AVERIAS, ETC.					
		OBSERVACIONES					
		VOLANTE S.N. No. 32826					
		FECHA					
		NUMERO Y FIRMA					
		TARIFAS Y REINTEGROS					
		TARIFA 84					
		TARIFA 85					
		REINTEGRO DE FOLIA					
		PORCENTAJE DE MULTA CONSULAR					
		MONTTO AFECTADO					

0. 11-79 Ingreso del REG.



Figure 6

PERUVIAN CUSTOMS DECLARATION - EXPORT

ADUANA: **TALARA** 6239 020

**POLIZA DE EXPORTACION**

**DECLARACION**  
ADUANA DE TALARA

RECONOCIMIENTO O APROBACION

DECLARACION DEL VISTA  
**EMBARCADO CHEFONES: 347,285 BARRILES O UNAS 45,979.870 TONELAJAS  
NETICO'S DE "POLY OIL N°.6".-**

TALARA, 13.09.82. ALEJANDRO ZOLA A GALVEZ  
ZOLA, ALEJANDRO  
CONTROL DE EMBARQUE

EMBARCADO: **CON OQUEL**

FECHA EN ELAS: **15.09.82**

FECHA Y HORA DE EMISION DEL DOCUMENTO: **15.09.82**

FECHA Y FIRMA: **[Signature]**

**INDIVIDUALIZACION DE PERSONAS PARTICIPANTES**

NOMBRE Y DIRECCION DEL DESPACHANTE  
**GRUPO EMPRESARIAL COMP. DE PERU  
AGENCIA ADUANERA ENCARGADA DE  
SERVICIOS ADUANEROS EN TALA...**

NOMBRE Y DIRECCION DEL OMBINATARIO  
**DEAR DECH & CO.  
INTERNACIONAL  
A.O. S.O. SUITPORTLAND.**

**TRANSPORTE**

UNIDAD DE TRANSPORTE: **NAVE**

EMPRESA DE TRANSPORTE: **[Signature]**

VIA DE TRANSPORTE: **MANITENA**

NOMBRE O MATRICULA DE LA UNIDAD DE TRANSPORTE: **CHICHA**

BANDERA: **GRECIA**

**EMBARQUE O CARGA**

N° FACTURA COMERCIAL: **08-82**

N° DE INVOICEM: **[Signature]**

N° DE EMISIÓN: **13.09.82**

N° DE REGISTRO INDUSTRIAL: **[Signature]**

N° DE CERTIFICADO DE ENSAYE: **[Signature]**

N° CONOCIMIENTO, GUIA AEREA, POSTAL: **S/N**

FUENTE DE EMBARQUE: **TALARA**

ULTIMO LUGAR DE EMBAJADANTE: **PUERTO BOCA CHICHO, USA**

PAIS DE CONSIGNACION O DESTINO: **USA**

PAIS ORIGINARIO: **USA**

FECHA DE EMISION: **10 SET 1982**

NUMERO DE POLIZA: **041**

TIPO O CARACTER DE LA EXPORTACION: **COMUNO EN EL EXTERIOR.**

FECHA DE EMISION: **10 SET 1982**

RESUMEN DEL VALOR DECLARADO

Embr. USA	Transacciones	Salvo Oros
11' 519,257.60	766,578.00	577' 248,275.00
865,428.80	766,578.00	292' 492,049.00
11' 704,088.40		8,970' 695,024.00

BANCO O INSTITUCION INTERVENIENTE: **[Signature]**

FORMA DE PAGO: **3** TIPO DE CAMBIO: **4,766.578**

COTIZACION OFICIAL

SEMANAL: **[Signature]** MENSUAL: **[Signature]**

UBICACION DE LA ZONA DE PRODUCCION/FABRICACION: **PIURA**

DEPARTAMENTO: **PIURA**

PROVINCIA: **TALARA**

DISTRITO: **TALARA**

CENTRO PRODUCTOR - FABRICA: **SOCALCO CONTINENTAL**

CANTIDAD DE COPIAS: **9 ESTIPELA NEG.**

DESDE: **13.09.82**

HORA: **09:35**

**LIQUIDACION - CAJA**

RESUMEN DE LIQUIDACION		RESUMEN DE RE-LIQUIDACION	
Imp. Exportación	Imp. Importe	Imp. Exportación	Imp. Importe
10	11' 519,257.60		
54	865,428.80		
84	865,428.80		
<b>TOTALES:</b>	<b>2,850,115.20</b>	<b>1' 836,094.70</b>	

FORMA DE PAGO AUTORIZADA: **[Signature]**

CONTROL DE LIQUIDACION: **[Signature]**

CONSTANCIA DE PAGO - CAJA: **[Signature]**

HABILITADO S/ SERVIDOR  
D.S. N° 014-76-82  
8 FEBRERO DE 1979

OR DECLARADO  
VISIONAL

idad: 1,000 BALS  
132.63  
VAL: 410,000.00  
TALARA

NO 0512411

EX PORTACION

Figure 6 (concluded)

DECLARACION DEL CONTENIDO DE LOS BULTOS

Nº	Marca	Muestra	Cantidad y peso neto	Peso en libras	Partido Armador	Nº de Bulto	Descripción de los contenidos en términos precisados	Tipo	Clasificación	Unidad y cantidad declarada	Imp. Extern. - Imp. Interna	VALOR FOB		Unidades Fiscales	
												Original	Según certificado		
1	GRANEL	G/M.	CANTIDAD NETO	27.19.00.00	PETROLIO CRUDO NEGRO	2709000042	35° A 39° API.-	99	M.B.	CANTIDAD	25.019.478	ESPECIFICO	SOLES ORO	11666.793	CANTIDAD
			CLASE BRUTO	2709000042						AD-VALOREM	SOLES ORO	237.226	CANTIDAD		
			CLASE BRUTO	2709000042						DOLARES USA	DOLARES USA	22' 319.267.00	CANTIDAD		
			CLASE BRUTO	2709000042						IMP. INTER	DOLARES USA		CANTIDAD		
			CANTIDAD NETO	2709000042						ESPECIFICO	SOLES ORO		CANTIDAD		
			CLASE BRUTO	2709000042						AD-VALOREM	SOLES ORO		CANTIDAD		
			CLASE BRUTO	2709000042						DOLARES USA	DOLARES USA		CANTIDAD		
			CLASE BRUTO	2709000042						IMP. INTER	DOLARES USA		CANTIDAD		
			CANTIDAD NETO	2709000042						ESPECIFICO	SOLES ORO		CANTIDAD		
			CANTIDAD NETO	2709000042						AD-VALOREM	SOLES ORO		CANTIDAD		
<p><b>TOTALES:</b> CANTIDAD NETO 27.19.00.00            VALOR P.O.B. 2709000042            VALOR P.O.B. 2709000042            IMPORTE CONVENCIONAL LEY N° 14020: 22' 319.267.00</p>												CANTIDAD	22' 319.267.00	CANTIDAD	
<p><b>TOTALES:</b> CANTIDAD NETO 27.19.00.00            VALOR P.O.B. 2709000042            VALOR P.O.B. 2709000042            IMPORTE CONVENCIONAL LEY N° 14020: 22' 319.267.00</p>												CANTIDAD	22' 319.267.00	CANTIDAD	
<p><b>AMPLIACION PARA PRODUCTOS MINERALES Y PETROLIO</b></p>												<p><b>LANAR Y OTRAS FIBRAS</b></p>			
<p>Descripción: Clase A 60 F 44' 503.412            Clase A 7.1. 36.8            60 F 44' 503.412            60 F 44' 503.412</p>												<p>Clasificación: 60 F 44' 503.412            60 F 44' 503.412            60 F 44' 503.412</p>			

El Bando que respectivamente certifica la autenticidad del crédito documentario N° 1186 pagadero a 30 días y se compromete a la entrega de las libras correspondientes dentro de los 5 días de haberlas recibido e igual modo a entregar al Banco Central de Reserva del Perú copia no negociable de los documentos de embarque de conformidad con las normas legales vigentes.

Lima, 6 de Setiembre de 1982  
 BANCO WIR  
 RICHARD...  
 ANEXO...

(b) Cargo manifest

Unlike the Customs declaration, the ship's cargo manifest does not contain all the data required to fully implement the Uniform System. Until such time as processing of the Customs declaration can be undertaken, however, an effective partial implementation can be based on the manifest, which usually contains the following items:

- Description of each consignment;
- Gross weight, cubic measurement or both;
- Type of packaging;
- Name and flag of ship;
- Port of loading or expected port of discharge, and
- For those countries requiring them, freight charges.

(i) Brazil uses the cargo manifest as the source document for its present system of maritime statistics, which since the mid-1970s has provided information regarding freight revenues earned by national and foreign-flag ships engaged in Brazilian trade, together with annual tonnages and freight revenues corresponding to 28 commodity categories for imports and 34 for exports. In addition to these published statistics, substantial amounts of information are compiled for internal use, including details of individual commodity movements between national and foreign ports classified according to tonnage, freight charges and flag of carrier. With little additional effort, Brazil could convert this system into a full implementation of the Uniform System by

- Identifying each commodity by its SITC or compatible classification code, and
- Linking commodity data to information about the movements and characteristics of vessels.

(ii) Sri Lanka is another country that decided to use the cargo manifest as its source of information, which so far applies only to exports. For each vessel, data are collected regarding the quantities and destinations of all commodities loaded, and these data are accumulated to show totals for all vessels serving a particular area during a particular month. This information in turn leads to a calculation of overall volumes of commodities exported. Sri Lanka intends to set up the same sort of scheme for its imports as well.

(iii) India has been making a similar effort to produce maritime transport statistics. It has designed a form called a "ship card", which is processed manually, for collecting all the important data elements required for the Uniform System that appear on the cargo manifest. Lacking, however, are the following essential items:

- Current value of the cargo;
- Freight charges;
- Owner or operator of the vessel, or both;
- Shipping service type, and
- SITC-compatible commodity description.

(c) Combination of sources

When a consignment is to be exported, an export declaration is filled out and filed with the Customs authorities. When the consignment is loaded aboard ship, it is covered by an ocean bill of lading, from which the master makes up a manifest listing all cargo destined for each port of call that the ship will make. Thus the Customs declaration and the manifest deal with the same goods, but do not necessarily contain exactly the same information, especially with respect to details of the transport arrangements. Rather, they are generally complementary, which makes it logical to ask why both documents should not be processed as sources of data for the Uniform System. Indeed, if the administrative environment of the country is conducive to such an arrangement and the cost is reasonable, the combined approach should be recommended.

In adopting a combination of sources, two points should be considered: (i) how to establish a linkage between the manifest and the Customs declaration, and (ii) how to prorate data from a single item in the manifest to multiple Customs declarations.

(i) Linkage. If the cargo manifest and the Customs declaration are to be used as complementary sources of data, a mechanism must be established for linking consignments listed in the manifest to their corresponding Customs documents, in order to permit the cross referencing of data between the two sources. For instance, the Customs declaration would not normally specify the gross weight of the consignment, which is available on the manifest, while the SITC or compatible commodity classification that is required for the Customs declaration does not appear on the manifest. If each item on the manifest gave rise to a single Customs declaration, the mechanism would be simple to handle. In practice, though, one item on the manifest may be disaggregated into an arbitrary number of Customs declarations, which means that a one-to-many relationship must be provided for, with the consequent complications of ensuring completeness of the data records and of setting up procedures to handle partial and missing data. For imports, the Customs declaration usually makes specific reference to the item number in the manifest, so the linkage between the two sources is in effect preestablished. In the case of exports, no such linkage is normally maintained, but a number of investigations into the subject make it apparent that a suitable mechanism can be set up. Its specific functioning, however, will depend entirely on arrangements that must be worked out between port and Customs authorities in each country.

(ii) Prorating data. An additional complication arising from the one-to-many relationship of the cargo manifest to the Customs declarations is how to prorate data from one item in the manifest to multiple declarations. For example, gross weight and freight charges are usually aggregated for an entire consignment, rather than being specified individually for each commodity category when two or more are included in the consignment. The only way to obtain the information directly would be to require traders to include it in their declarations. In the case of importers, this would at the very least impose significant additional expenses on them for weighing all



commodities separately and prorating freight charges, which are invariably calculated for an entire consignment. The situation with exporters shipping FOB would be even more difficult, since they would have to ask the shipping agent representing the consignee in the country of embarkation for the freight charges.

One means of circumventing the problems of both linkage and proration, while at the same time avoiding the added costs imposed on the shippers, would be to have the proration performed by computer during data processing. The gross weight and freight charges could be allocated according to the net weight, volume, quantity or value of each commodity in the consignment, provided appropriate algorithms could be formulated. This would be a major task that would have to be based on a detailed study by a group of commodity experts to determine, among other things, how data from shipments not requiring proration could best be applied to those cases in which proration would be necessary. Furthermore, application of the algorithms would have to be monitored constantly by trained statisticians to ensure that changing circumstances did not adversely affect the calculations.

In considering the problems that arise when shipping information is prorated among a number of commodities, a fundamental question is the degree to which commodity classifications must really be disaggregated for statistical purposes. In most economic analyses that can reasonably be foreseen, the complete SITC level of detail appears to be unnecessary. Gross weight and freight charges for a classification so fine as "cotton yarn put up for retail sale" (SITC 651.35 or CCCN 55.06) are unlikely to be important for anything other than a highly specialized study to compare that specific item with the entire range of textile products (SITC division 65). If a less detailed classification is adequate for all regular statistical purposes, the scheme developed by the United Nations Statistical Office for the Maritime Transport Study, as described in appendix E, might be a reasonable alternative. Care must be taken, however, to ensure that any alternative classification chosen is capable of supplying enough detail to serve not only the needs of the shipping industry, but also those of general economic analysts as well.

## 2. Comparison of sources

Generally speaking, the Customs declaration is the preferred source of data for the commodity movement file. It is almost universally relied upon for the compilation of regular external trade statistics, since it can supply most of the information related to commercial transactions that constitutes the principal component of trade statistics. Only moderate additional effort would be required to obtain the name of the vessel, the date of arrival or departure and the name of the national port, the three items necessary for linking the commodity movement file to the other two basic files of the Uniform System. While the resulting data set would still fall short of the full complement necessary for a complete implementation of the System, collection of the remaining items could be undertaken at a later date, as resources permit.

It is important for shipping statistics to be classified by Customs status, such as direct imports and exports, goods in transit, goods being transshipped from one vessel to another, and any other status that may be applicable in the country concerned. These distinctions are immediately evident in Customs documents. Also important is the value of the goods, which must be stated for Customs clearance but which is often specifically excluded from the bill of lading and so cannot be reported in the cargo manifest.

Among additional data items that should be obtained in a full implementation of the System are the countries of production or consumption, purchase or sale, and consignment of the goods. These items are included mainly so that origin and destination analyses of commodity flows can be performed without risk of misinterpretation. In current practice, the country of origin may be taken as that in which the commodity is produced, purchased or loaded, while the country of destination may be that of consumption, sale or discharge. If all these items are available, a more accurate idea of commodity movements can be obtained.

The cargo manifest nonetheless does have certain advantages over the Customs declaration as the primary source of data for the commodity movement file, the greatest of which is simplicity. The manifest is complete when the ship arrives or departs and can be processed immediately, whereas Customs declarations may suffer considerable delay in preparation and may even, on occasion, never be filled out at all if the consignee for some reason is unable to accept the goods. The difficulties of ensuring completeness of the data obtained from the Customs declaration are not insurmountable, but they should not be minimized because they represent a significant cost increase for data processing.

Offsetting this advantage in favor of the cargo manifest is the problem of coding commodity classifications. With the Customs declaration, responsibility for coding rests with the shipping agent, who follows the coding scheme specified in the Customs regulations. Verification is performed indirectly by the Customs agent who inspects the goods to be sure that they conform to the description given. On the other hand, the manifest contains a reasonable description of the goods that should be sufficient to permit coding, but it does not include the code itself. This must be supplied by personnel of the responsible statistical service during processing of the manifest, at a considerable cost. Furthermore, there is no opportunity to compare the description to the goods themselves, so the likelihood of miscoding is increased.

Each approach to data collection thus has its pros and cons, which must be judged with respect to the administrative arrangements prevailing in the country when a decision must be made regarding implementation of the Uniform System, if only one of the approaches can be adopted. Whenever feasible, however, the combined approach should be preferred if administrative and statistical condition permit. The specific details must be worked out in each country individually, but to the extent possible, the cargo manifest should be considered a

supplemental source of data. It is especially useful as a control on the Customs declarations associated with a particular voyage, to ensure that none have been missed, and it can supply the necessary data in place of any declarations that may never have been filled out. There will be technical problems with this approach, to be sure, as has already been mentioned in connection with the proration of data, but its potential for providing accurate information about a country's shipping industry and that industry's effects on the national economy should be very carefully considered.

Regardless of the means of data collection finally chosen, the Uniform System offers a significant step forward in the production of shipping statistics, when compared with most existing procedures. Maritime transport is the principal mode of shipment for as much as 90% of the trade of many continental countries, and it approaches 100% for insular countries. Clearly, then, every government is vitally interested in how this fundamental activity affects the overall national economy. Since such knowledge can only be obtained through statistical means, a good method for collecting the basic data is essential if the statistics are to be adequate, timely and accurate. Any country adopting the Uniform System of Maritime Transport Statistics can be assured that it will have at its disposal the best possible means for acquiring the knowledge it needs to formulate sound shipping policies and to judge the effects of such policies on the economic well-being of the nation.

## NOTES

- 1/ "Results of a Pilot Study in Maritime Transport for the Years 1966-1968", United Nations Statistical Papers Series D, No. 2, Vol. XVI-XVIII.
- 2/ Available on tape only. Data published in the United Nations Statistical Papers, Series D, No. 2, relate only to cargo flows of 37 commodity categories among 32 geographical regions.
- 3/ London, Lloyd's Register of Shipping.
- 4/ "Código de Puertos" (E/CEPAL/G.1222). Santiago, 14 October 1982 (Spanish only).
- 5/ See Economic Commission for Europe, Committee on the Development of Trade, Working Party on Facilitation of International Trade Procedures. "Recommendation No. 16" (TRADE/WP.4/INF.66; TD/B/FAL/INF.66), Geneva, 18 December 1980.
- 6/ International Organization for Standardization. "Code for the Representation of Names of Countries" (ISO Standard 3166), Geneva, October 1974.
- 7/ "Guide to Incoterms" (ISEN 92-842-1005-4), Paris.
- 8/ International Organization for Standardization. "Codes for the Representation of Currencies and Funds" (ISO Standard 4217), Geneva, November 1978.
- 9/ New Malden, Surrey, Great Britain; Croner Publications Limited.
- 10/ Op. cit. Note that Lloyd's "Register" now reports almost all vessel weights and measures in metric units.

## Appendix A

## ESCAP PACKAGING CLASSIFICATION CODES

I. Single-level code

<u>Code</u>	<u>Description</u>	<u>Definition</u>	<u>Example</u>	<u>Typical use</u>
1	Cartons, cases and crates	Any box or container made of paper or plastic material, or open-work case of wood bars or wicker	Boxes, cartons, cases, chests, crates, packs	Canned goods, cigarettes, electrical goods, fruits, textiles, spare parts
2	Barrels and drums	Cylindrical structures made of wood or metal, including casks and kegs	Barrels, cans, carboys, casks, cylinders, drums, kegs	Latex, lubricating oil, tobacco, wine
3	Bales	Package of merchandise usually wrapped in a flexible material such as burlap or canvas and bound with cord or rope	Bales	Cotton, hemp, jute, rubber
4	Bags and sacks	Sack or receptacle of a flexible material such as burlap, paper or plastic, with opening at top	Bags, sacks	Cement, chemicals, fertilizer, flour, polyvinyl chloride, rice, sugar
5	Coils, rolls and reels	Sheet merchandise handled in cylindrical rolls/cables, ropes and wires in coils or on reels	Coils, rolls, reels	Newsprint, steel sheets, wire rope
6	Unitized	Merchandise packed together on pallets or other devices to facilitate mechanical handling	Pallets, skids	Bags of sugar or boxes of canned goods on pallets, open machinery on skids

<u>Code</u>	<u>Description</u>	<u>Definition</u>	<u>Example</u>	<u>Typical use</u>
7	Bundles	Goods tied or strapped together	Bundles	Logs, metal channels, pipes, tubes strapped with steel bands
8	Bulk	Unpackaged grains or liquids		Crude oil, natural gas, wheat
9	Containers	Boxes of metal or other materials, whose sizes normally conform to ISO or other standards	Closed, half-height, open-topped, tank, refrigerated, etc.	Any commodity in any other form of packaging, or unpackaged, stowed within a freight container; also, empty containers
0	Others	Any form of packaging not otherwise defined		Automobiles, personal baggage, refrigerated meats, fruits and vegetables

## II. Two-level code

### 1 - Commodities in lift-off unit load

- 10 ISO containers, 20 feet long
- 11 ISO containers, 40 feet long
- 12 Other containers
- 13 Pallets
- 14 Packed or preslung into standard loads

### 2 - Commodities in roll-off unit load

- 20 ISO containers, 20 feet long
- 21 ISO containers, 40 feet long
- 22 Other containers
- 23 Not containerized, with prime mover (rigid or articulated)
- 24 Not containerized, without prime mover

### 3 - No commodities, empty containers

- 30 Empty ISO containers, 20 feet long
- 31 Empty ISO containers, 40 feet long
- 32 Other containers, empty

4 - Packaged commodities, break-bulk type I

- 40 Boxes, cartons, cases, chests, hampers
- 41 Crates, frames
- 42 Bags, pouches, sacks
- 44 Nets, slings (natural fibers, plastic or similar)
- 45 Mats, sheets (nonrigid)
- 46 Bundles, bunches not elsewhere specified
- 47 Bottles, flasks, jars, jugs, vials (glass and porcelain)
- 48 Bottles, flasks, jars, jugs, vials (metal, plastic and similar)

5 - Packaged commodities, break-bulk type II

- 50 Barrels, casks, drums, kegs, tins
- 51 Bars, ingots and similar
- 52 Cylinders (gas)
- 53 Plates, sheets (rigid)
- 54 Coils, reels, rolls
- 55 Girders, pipes, rods, tubes (bundled and loose)
- 56 Bins, tanks
- 57 Frames, structural members (complex shapes)

6 - Unpackaged or special commodities, break-bulk type III

- 60 Vehicle and locomotive consignments, not roll-off loads or prime movers
- 61 Special packaging (such as containers of radioactive materials)
- 62 Unpacked loose items not elsewhere specified, unsuitable for individual handling
- 63 Live animals

9 - Bulk commodities

- 97 Liquid bulk
- 98 Dry bulk, free flowing
- 99 Dry bulk, not free flowing





Appendix B  
 ESCAP SHIP TYPE CODES

<u>Code</u>	<u>Vessel type</u>	<u>Description of vessel</u>
11	Conventional cargo	Equipped for the carriage of general, break-bulk cargo in hold and on deck; holds may be refrigerated
21	Passenger	Permitted to carry more than 12 passengers; includes ferries
22	Passenger/cargo	Equipped for carrying both passengers and cargo
31	Semicontainer	Conventional vessel modified to carry containers; includes vessels carrying containers as deck cargo
32	Container	Fitted with cell guides for holding containers; includes conventional vessels so fitted when carrying only containers
41	Barge carrier	Fitted for picking up and carrying barges or lighters (LASH or SeeBee)
51	Roll-on/roll-off	Fitted with bow, stern or side ramps for loading and discharging of cargo by means of wheeled vehicles; includes car and vehicle carriers
61	Oil tanker	Designed to carry crude petroleum
62	Gas carrier	Designed to carry liquified gas
63	Chemical carrier	Designed to carry liquid chemicals in bulk
64	Product carrier	Designed to carry liquid bulk products not elsewhere specified
71	Ore carrier	Designed solely to carry bulk ore
72	Dry bulk carrier	Designed to carry any dry bulk cargo; ore may be carried only in alternate holds
73	Ore/bulk/oil carrier	Designed to carry either dry bulk cargo or crude petroleum (commonly called "OBO" vessels)
81	Barge or lighter	Wooden or steel craft used for carrying cargo between ship and dock
89	Other	Any other vessel not elsewhere specified; includes tugboats, research vessels, ice breakers, survey ships, supply ships, cable ships and naval vessels



## Appendix C

## ELEMENTS OF UNIFORM SYSTEM DATA FILES

1. Commodity movement file

Element 1 - Ship's identification: 8 characters

Code for source of identification: 1 alphabetic character  
 Code = L if source is Lloyd's Register number  
 = R if source is radio call sign  
 ... other, as required

Ship's identification code: 7 numeric characters if source is  
 Lloyd's Register

Format NNNNNNN

Ex.: 6400111 = Lloyd's Register number for the ship  
 "El Mexicano"

Example of complete element: L6400111

Element 2 - National port: 3 alphabetic characters

Format PPP, where  
 PPP = ECLA port code or LOCODE location code,  
 without country prefix

Ex.: BUE = port of Buenos Aires

Element 3 - Date of arrival or of departure: 6 numeric characters

Format YMMDD, where  
 YY = last two digits of year  
 MM = month  
 DD = day

Ex.: 830228 = 28 February 1983  
 (Alternative format YYDDD - 5 numeric characters,  
 where DDD = days elapsed in year  
 Ex.: 83059 = 28 February 1983)

Element 4 - Discharge/load: 1 alphabetic character

Code = D for vessel discharging  
 = L for vessel loading

Element 5 - Consignment number: 3 numeric characters

Format NNN

Ex.: 028 = twenty-eighth consignment of voyage identified  
 by combination of data elements 1, 2 and 3

Element 6 - Customs status: 1 alphabetic character

Code = C for consignment in cabotage  
 = N for consignment entering or leaving national trade  
 (import or export)  
 = R for consignment to be reexported  
 = T for consignment in transit to or from a third  
 country  
 = X for consignment being transshipped to or from  
 another vessel

Element 7 - Foreign port of loading or discharge: 5 alphabetic  
 characters

Format CCPPP, where  
 CC = ISO Alpha-2 country code  
 PPP = port location  
 (Combination is ECLA port code or LOCODE location code)  
 Ex.: MXTAM = Tampico, Mexico

Element 8 - Commodity classification: 9 characters

Code for source of classification: 2 alphanumeric characters  
 Code = CC if source is CCCN  
 = NA if source is NABALALC  
 = NC if source is NABCA  
 = SI if source is SITC  
 = S1 if source is SITC1  
 = S2 if source is SITC2  
 .... others as required

Commodity classification code: 7 numeric characters  
 Format NNNNNNN  
 Ex.: 1801001 = cacao beans, whole or broken, green

Example of complete element: NA1801001

Element 9 - Country of production or consumption: 2 alphabetic  
 characters

Format CC, where  
 CC = ISO Alpha-2 country code  
 Ex.: PE = Peru

Element 10 - Country of purchase or sale: same as element 9

Element 11 - Country of origin or destination: same as element 9

Element 12 - Gross weight: 10 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00000123 = 123 (metric tons)

Units: 2 alphabetic characters  
 Code = LT for long tons (2240 pounds)  
 = MT for metric tons (1000 kilograms)  
 = ST for short tons (2000 pounds)  
 = KG for kilograms  
 = LB for pounds  
 .... others as required

Example of complete element: 00000123MT

Element 13 - Gross volume: 10 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00125000 = 125 000 (barrels)

Units: 2 alphabetic characters  
 Code = BL for barrels  
 = CF for cubic feet  
 = CM for cubic meters  
 = RT for revenue/manifest tons (40 cubic feet)  
 .... others as required

Example of complete element: 00125000BL

Element 14 - Net weight: 10 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00000456 = 456 (kilograms)

Units: 2 alphabetic characters  
 Code = LT for long tons (2240 pounds)  
 = MT for metric tons (1000 kilograms)  
 = ST for short tons (2000 pounds)  
 = KG for kilograms  
 = LB for pounds  
 .... others as required

Example of complete element: 00000456KG

Element 15 - Net quantity: 10 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00022500 = 22 500 (board feet)

Units: 2 alphabetic characters  
 Code = BF for board feet  
       = DZ for dozens  
       = LB for pounds  
       = LF for lineal feet  
       = LM for lineal meters  
       = SF for square feet  
       = SM for square meters  
       .... others as required

Example of complete element: 00022500BF

Element 16 - Packaging: 1 or 2 numeric characters

Alternative 1: ESCAP single-level code  
 Format P  
 Ex.: 9 = consignment packaged in container

Alternative 2: ESCAP two-level code  
 Format PP  
 Ex.: 11 = consignment packaged in ISO 40-foot container

Element 17 - Transaction conditions: 14 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00155250 = 155 250 (U.S. dollars)

Currency: 3 alphabetic characters  
 Format CCC, where  
       CCC = ISO alphabetic code for the representation of  
           currencies  
 Ex.: USD = U.S. dollars

Terms of trade: 3 alphabetic characters  
 Format TTT, where  
       TTT = Incoterms code for terms of trade  
 Ex.: FOB = "free on board"

Example of complete element: 00155250USDFOB

Element 18 - Freight: 11 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00003525 = 3 525 (U.S. dollars)

Currency: 3 alphabetic characters

Format CCC, where

CCC = ISO alphabetic code for the representation of  
currencies

Ex.: USD = U.S. dollars

Example of complete element: 00003525USD

## 2. Ship movement file

Element 1 - Ship's identification: 8 characters

Code for source of identification: 1 alphabetic character

Code = L if source is Lloyd's Register number

= R if source is radio call sign

... other, as required

Ship's identification code: 7 numeric characters if source is  
Lloyd's Register

Format NNNNNNN

Ex.: 6400111 = Lloyd's Register number for the ship  
"El Mexicano"

Example of complete element: L6400111

Element 2 - National port: 3 alphabetic characters

Format PPP, where

PPP = ECLA port code or LOCODE location code, without  
country prefix

Ex.: BUE = port of Buenos Aires

Element 3 - Date of arrival: 6 numeric characters

Format YYMMDD, where

YY = last two digits of year

MM = month

DD = day

Ex.: 830228 = 28 February 1983

(Alternative format YYDDD - 5 numeric characters,  
where DDD = days elapsed in year

Ex.: 83059 = 28 February 1983)

Element 4 - Date of departure: same as element 3

Element 5 - Previous port of call: 5 alphabetic characters

Format CCPPP, where

CC = ISO Alpha-2 country code

PPP = port location

(Combination is ECLA port code or LOCODE location code)

Ex.: BRRIO = Rio de Janeiro, Brazil

Element 6 - Next scheduled port of call: same as element 5

Element 7 - Cargo on board on arrival: 10 characters

Amount: 8 numeric characters  
 Format NNNNNNNN  
 Ex.: 00005247 = 5 247 (metric tons)

Units: 2 alphabetic characters  
 Code = LT for long tons (2240 pounds)  
 = MT for metric tons (1000 kilograms)  
 = RT for revenue/manifest tons (40 cubic feet)  
 = XX for vessel arriving in ballast  
 .... others as required

Example of complete element: 00005247MT

Element 8 - Cargo discharged: same as element 7

Element 9 - Cargo loaded: same as element 7

Element 9 - Shipping service: 5 characters

Service type: 1 alphabetic character  
 Code = C for conference liner service  
 = N for nonconference liner service  
 = T for tramp service  
 = O for other service

Conference code (for service type code C): 4 alphanumeric characters, provisionally, pending definition of code structure  
 Hypothetical Ex.: PS02 = Latin America/Pacific Coast Steamship Conference

Hypothetical example of complete element: CPS02

### 3. Ships' characteristics file

Note: The information in this file is recorded in the same order as found in Lloyd's "Register of Ships".

Element 1 - Ship's identification: 8 characters

Code for source of identification: 1 alphabetic character  
 Code = L if source is Lloyd's Register number  
 = R if source is radio call sign  
 ... other, as required



Ship's identification code: 7 numeric characters if source is  
Lloyd's Register

Format NNNNNNN

Ex.: 6400111 = Lloyd's Register number for the ship  
"El Mexicano"

Example of complete element: L6400111

Element 2 - Name: 48 alphanumeric characters  
Format is free text, left justified in field  
Ex.: EL MEXICANO

Element 3 - Owner: same as element 2

Element 4 - Manager: same as element 2

Element 5 - Flag (country and port of registry): 5 alphabetic  
characters  
Format CCPPP, where  
CC = ISO Alpha-2 country code  
PPP = port location  
(Combination is ECLA port code or LOCODE location code)  
Ex.: MXGYM = Guaymas, Mexico

Element 6 - Gross tonnage (GRT): 6 numeric characters

Format NNNNNN

Ex.: 008967 = 8 967 (gross tons)

Note: Units are always gross tons of 100 cubic feet,  
and are not entered in file

Element 7 - Deadweight (DWT): 8 characters

Tonnage: 6 numeric characters

Format NNNNNN

Ex.: 013120 = 13 120 (metric tons)

Units: 2 alphabetic characters

Code = MT for metric tons

= LT for long tons

Example of complete element: 013120MT

Element 8 - Date of build: 4 numeric characters

Format YYMM, where

YY = last two digits of year

MM = month

Ex.: 6410 = October 1964

Element 9 - Length overall (LOA): 6 numeric characters;  
implied decimal point between  
fourth and fifth digits

Format NNNNNN

Ex.: 014550 = 145.50 (meters)

Note: Units are common for elements 9, 10 and 11, and are  
entered after element 11

Element 10 - Least (winter) draught: 5 numeric characters;  
implied decimal point between  
third and fourth digits

Format NNNNN

Ex.: 00794 = 7.944 (meters), rounded to nearest hundredth

Note: Units are common for elements 9, 10 and 11, and are  
entered after element 11

Element 11 - Maximum (summer) draught: same as element 10

Common units for elements 9, 10 and 11: 1 alphabetic character

Code = F for feet

= M for meters

Example of complete elements 9, 10 and 11: 0145500079401220M

Element 12 - Ship type: 2 numeric characters if source is ESCAP  
type code

Format TT

Ex.: 11 = ESCAP code for general cargo vessel

Element 13 - Grain capacity: 7 numeric characters

Format NNNNNNN

Ex.: 0018675 = 18 675 (cubic meters)

Note: Units are common for elements 13 and 14, and are  
entered after element 14

Element 14 - Bale capacity: same as element 13

Common units for elements 13 and 14: 2 alphabetic characters

Code = CF for cubic feet

= CM for cubic meters

Example of complete elements 13 and 14: 00186750016850CM

## Appendix D

## PORT OPERATIONS FILE

The port operations file is used to store data concerning the manpower and equipment resources used in the discharging and loading of cargo aboard vessels in port. This information is of special interest as a basis both for planning current port operations and for projecting future investments in equipment and infrastructure.

Conceptually, shipping activities should include port operations, which are intimately related to the entire range of information managed by the Uniform System. Therefore, including a port operations file in the System greatly extends its scope of application because many elements of the three basic files that are often not taken into account in port planning become available for analysis. For example, cross references to the type of shipping service (conference, nonconference or tramp), groupings of commodities by value, or average freight rates according to commodity classification could very well shed significant new light on the efficiency of loading and discharge operations and of types of equipment used.

The same common data elements used for linking the three basic System files also constitute the linkage mechanism with the port operations file, as shown schematically in figure D-1.

Figure D-1

SCHEMATIC RELATION OF THE PORT OPERATIONS FILE  
TO THE UNIFORM SYSTEM DATA FILES

Port Operations File (POF)	Commodity Movement File (CMF)	Ship Movement File (SMF)	Ships' Charac- teristics File (SCF)
1.   Ship's Ident.	<-->   Ship's Ident.	<-->   Ship's Ident.	<-->   Ship's Ident.
2.   Nat'l. Port	<-->   Nat'l. Port	<-->   Nat'l. Port	Name
3.   Date Arrival	<-->   Date Arr./Dep.	<-->   Date Arrival	Owner
4.   Tot. Port Time	Dischg./Load	+>   Date Departure	Manager
5.   Berth Time	Consign. No.	Previous Port	Flag
6.   B. Time Worked	Customs Status	Next Port	Gross Tonnage
7.   Gr. Gang Hours	Foreign Port	Cargo on Board	Deadweight
8.   Nt. Gang Hours	Commod. Class.	Cargo Dischg.	Date of Build
9.   Equip. Res.(R)	Ctry. Prd./Con.	Cargo Loaded	Length Overall
10.	Ctry. Pur./Sale	Service type	Least Draught
11.	Ctry. Org./Des.		Max. Draught
12.	Gross Weight		Type
13.	Gross Volume		Grain Capacity
14.	Net Weight		Bale Capacity
15.	Net Quantity		
16.	Packaging		
17.	Transact. Cond.		
18.	Freight Charge		

Data element descriptions

Descriptions of the data elements to be entered in the port operations file are given below, together with the number and type (alphabetic or numeric) of characters corresponding to each element, and the format in which the element is written in the file.

Element 1 - Ship's identification: 8 characters

Code for source of identification: 1 alphabetic character  
 Code = L if source is Lloyd's Register number  
       = R if source is radio call sign  
       ... other, as required

Ship's identification code: 7 numeric characters if source is  
   Lloyd's Register

Format NNNNNNN

Ex.: 6400111 = Lloyd's Register number for the ship  
                   "El Mexicano"

Example of complete element: L6400111

Element 2 - National port: 3 alphabetic characters

Format PPP, where  
             PPP = ECLA port code or LOCODE location code,  
                   without country prefix

Ex.: BUE = port of Buenos Aires

Element 3 - Date of arrival: 6 numeric characters

Format YYMMDD, where  
       YY      = last two digits of year  
       MM      = month  
       DD      = day

Ex.: 830228 = 28 February 1983  
 (Alternative format YVDDD - 5 numeric characters,  
 where      DDD = days elapsed in year  
 Ex.: 83059 = 28 February 1983)

Element 4 - Total port time: 5 numeric characters

Total number of hours the ship is in port, from the time it is  
 boarded for reception by the port authorities until the time  
 the authorities clear it for departure.

Format NNNNN

Ex.: 00073 = 73 hours

Element 5 - Total berth time: 5 numeric characters

Total number of hours the ship is tied up at berth.  
 Format same as element 4

Element 6 - Berth time worked: 3 numeric characters

Total number of hours during which discharge and loading operations are actually being carried out.

Format NNN

Ex: 045 = 45 hours

Element 7 - Gross gang hours worked: 3 numeric characters

Total number of hours during which stevedore gangs are assigned to the ship.

Format same as element 6

Element 8 - Net gang hours worked: 3 numeric characters

Number of hours during which stevedore gangs actually work aboard ship.

Format same as element 6

Element 9 - Equipment resources utilized: 6 characters, repeatable

Identification of types of handling equipment used during discharge and loading, together with the total number of hours each is in use. This is a repeatable field, since the number of different types of equipment may vary; one entry is required for each type.

Type: 3 alphanumeric characters

Code = BDZ for bulldozer  
 = CRG for gantry crane  
 = CRP for portal crane  
 = FLS for small fork lift  
 = FLM for medium fork lift  
 = FLL for large fork lift  
 = STR for straddle truck  
 ..... others as required

Hours: 3 numeric characters

Format same as element 6

Example of three repetitions of complete element:

CRG025  
 FLS013  
 FLL007

## Appendix E

## COMMODITY CLASSIFICATION (MTC) FOR MARITIME TRANSPORT STATISTICS

Code	Group description Commodity	SITC coverage	
		Rev.	Rev. 2
0	ALL COMMODITIES		
1	BULK, DRY		
101	GRAINS		
10101	WHEAT AND MESLIN, UNMILLED	041	
10102	RICE	042	
10103	CEREALS N.E.S., UNMILLED	043-045	
102	SUGAR		
10201	RAW SUGAR, BEET AND CANE	0611	
10202	REFINED SUGAR, ETC.	0612	
103	OIL SEEDS, NUTS AND KERNELS		
10301	GROUNDNUTS, GREEN	2211	2221
10302	SOYA BEANS	2214	2222
10303	OIL-SEEDS ETC. N.E.S.	2212-2213; 2215-2219	2223-2226; 223
104	TIMBER		
10401	PULPWOOD	2421	24601;24602
10402	LOGS, CONIFER	2422	2471
10403	LOGS, NONCONIFER	2423	2472
10404	LUMBER, SHAPED	243	248
10405	OTHER WOOD N.E.S.	2424;2429	2479
105	ORES		
10501	IRON ORES		281
10502	COPPER ORES	2831	2871
10503	BAUXITE	2833	28731
10504	MANGANESE ORES	2837	2877
10505	NONFERROUS ORES N.E.S.	2832; 2834-2836; 2839;286	286; 2872; 2874-2876;2879
106	METAL SCRAP		
10601	IRON AND STEEL SCRAP		282
10602	NONFERROUS METAL SCRAP	284	288;68633

Code	Group description Commodity	SITC Rev.	coverage Rev. 2
107	COAL, COKE, ETC.		
10701	COAL	3214	3221;3222
10702	COKE	3218	3232
10703	OTHER SOLID FUELS N.E.S.	241; 3211-3213; 3215-3217	245;24603;3223; 3224;3231
108	FERTILIZERS		
10801	NATURAL PHOSPHATES	2713	
10802	NATURAL FERTILIZERS N.E.S.	2711-2712;	2714
10803	FERTILIZER, MANUFACTURED	561	562
109	FERROUS BASE METALS		
10901	PIG IRON	6712	
10902	OTHER FERROALLOYS N.E.S.	6711; 6713-6715	6713;6716
10903	PRODUCTS OF FERROUS BASE METAL	672;679	
110	ANIMAL FEEDS		
11001	ANIMAL FEEDS	081	
111	OTHER BULK, DRY		
11101	GYPSUM, PLASTERS, ETC.	2732	
11102	MINERAL SANDS	2733	
11103	SULPHUR	2741	
11104	IRON PYRITES, UNROASTED	2742	
11105	SALT	2763	2783
11106	ASBESTOS, CRUDE	2764	2784
11107	OTHER CRUDE MINERALS N.E.S.	2731;2734; 276 LESS 2763-2764	2731;2734; 2782;2785-2786; 2789 LESS 27895
2	BULK, LIQUID		
201	CRUDE PETROLEUM, ETC.		
20101	CRUDE PETROLEUM, ETC.	331	3
202	ENERGY PETROLEUM PRODUCTS, LIQUID		
20201	GASOLINES	3321	3341
20202	KEROSENE AND JET FUELS	3322	3342
20203	DISTILLATE FUELS	3323	3343
20204	RESIDUAL FUEL OILS	3324	3344
203	FUEL GASES, LIQUEFIED		
20301	FUEL GASES, LIQUEFIED	341	341
204	OTHER BULK LIQUIDS		
20401	MOLASSES	0615	
20402	OILS DISTILLED FROM MINERAL TARS	5214	3352 LESS 33521



----- Group description -----		----- SITC coverage -----	
Code	Commodity	Rev.	Rev. 2
3	REFRIGERATED FOODS		
	-----		
301	REFRIGERATED FOODS		
30101	MEAT FRESH, CHILLED OR FROZEN	011	
30102	MILK AND CREAM, FRESH	0223	
30103	BUTTER AND CHEESE	023-024	
30104	EGGS, FRESH	025	
30105	FISH FRESH, CHILLED OR FROZEN	0311;0313	034;036
30106	CITRUS FRUITS	0511	0571
30107	BANANAS, FRESH	0513	0573
30108	POTATOES, FRESH		0541
30109	OTHER FRESH FRUITS & VEGETABLES	0512;0514; 0515;0519; 0544-0546	0544-0546; 0572;0574; 05751;05792-05798
4	GENERAL CARGO, DRY		
	-----		
401	COFFEE		
40101	COFFEE	071	
402	TEA AND MATE		
40201	TEA AND MATE	074	
403	OTHER FOODS		
40301	MEAT, DRIED, SALTED OR SMOKED	012;013	012;014
40302	MILK AND CREAM, NONFRESH	0221;0222	0224
40303	FISH, DRIED, SALTED OR SMOKED	0312	035
40304	FISH N.E.S., TINNED OR PREPARED	032	037
40305	CEREAL MEALS AND FLOURS	046;047	
40306	CEREAL GRAINS, PREPARED	048	
40307	EDIBLE NUTS, FRESH OR DRIED	0517	0577
40308	DRY FRUITS, ETC.	052;053	05752;05799; 0576;058
40309	DRY LEGUMINOUS VEGETABLES		0542
40310	VEGETABLES N.E.S., PRESERVED	055	056
40311	SUGARS N.E.S., CONFECTIONERY, ETC.	0616;0619;062	
40312	COCOA AND CHOCOLATE	072;073	
40313	SPICES	075	
40314	MARGARINE, COOKING FATS	091	
40315	FOOD PREPARATIONS N.E.S.	099	098
40316	VEGETABLE PRODUCTS, FRESH OR DRY		0548
404	BEVERAGES		
40401	NONALCOHOLIC BEVERAGES	111	
40402	ALCOHOLIC BEVERAGES	112	

----- Group description -----		----- SITC coverage -----	
Code	Commodity	Rev.	Rev. 2
405	TOBACCO		
40501	TOBACCO, UNMANUFACTURED	121	
40502	TOBACCO, MANUFACTURED	122	
406	CRUDE RUBBER		
40601	CRUDE RUBBER	231	232;233
407	TEXTILE FIBRES		
40701	WOOL AND ANIMAL HAIR	262	268
40702	COTTON		263
40703	JUTE		264
40704	HARD FIBRES		2652;2654;2655
40705	OTHER FIBRES N.E.S.	261;266 267;2651; 2653;2658	261;266;267;269; 2651;2659
408	OTHER CRUDE MATERIALS		
40801	FURS AND SKINS, UNDRESSED	212	
40802	CORK, RAW AND WASTE	244	
40803	CRUDE ORGANIC MATERIALS N.E.S.	291;292	
409	NONENERGY PETROLEUM PRODUCTS		
40901	NONENERGY PETROLEUM PRODUCTS	3325-3329; 5211;5213	3345;3351;3353; 3354;33521
410	OILS AND FATS		
41001	OLIVE OIL	4215	4235
41002	PALM OIL	4222;4224	4242;4244
41003	OTHER OILS AND FATS N.E.S.	411;431; 421 LESS 4215; 422 LESS 4222 AND 4224	411;431; 423 LESS 4235; 424 LESS 4242 AND 4244
411	CHEMICALS		
41101	CHEMICALS, N.E.S.		59
41102	ORGANIC CHEMICALS	512	51
41103	INORGANIC CHEMICALS	513;514	28732;522;523
41104	RADIOACTIVE MATERIALS	515	524
41105	DYEING, TANNING AND COLOURING MATERIALS		53
41106	MEDICINAL & PHARMACEUTICAL PROD.		54
41107	ESSENTIAL OILS AND PERFUMES		55
41108	PLASTIC MATERIALS		58

----- Group description -----		----- SITC coverage -----	
Code	Commodity	Rev.	Rev. 2
412	PAPER, ETC.		
41201	PAPER AND PAPERBOARD	641	
41202	ARTICLES OF PAPER, ETC.	642	
413	TEXTILES		
41301	TEXTILES	65	
414	MACHINERY		
41401	ELECTRICAL MACHINERY	72	716;73732;74131; 761;762; 764 LESS 76499;77
41402	OTHER MACHINERY N.E.S.	711;714; 717;719	71 LESS 716; 72348;724; 728 LESS 7283 AND 72841;7368; 7369;74 LESS 74131;75 LESS 75182 AND 75919
415	OTHER MANUFACTURES		
41501	LEATHER, RUBBER MANUFACTURES	61;62	
41502	VENEER SHEETS AND PLYWOOD	6311;6312	6341;6342
41503	WOOD AND CORK MANUFACTURES N.E.S.	63 LESS 6311 AND 6312	6343-6349;635
41504	CEMENT	6612	
41505	NONMETAL. MINERAL MANUFACTURES	66 LESS	6612
41506	MISC. METALLIC PRODUCTS	694-698	694-699
41507	MISCELLANEOUS MANUFACTURES	8	75182;75919;763; 76499; 8
5	OTHER DRY CARGO		
501	WOODPULP AND PAPER WASTE		
50101	WOODPULP AND PAPER WASTE	251	
502	CRUDE MINERALS N.E.S.		
50201	CRUDE MINERALS N.E.S.	275;285	277;27895;289
503	NONFERROUS BASE METALS		
50301	COPPER	682	
50302	ALUMINUM	684	
50303	TIN	687	
50304	NONFERROUS BASE METALS N.E.S.	681;683; 685-686; 688-689	68 LESS 682, 684,68633 AND 687

----- Group description -----		----- SITC coverage -----	
Code	Commodity	Rev.	Rev. 2
504	METAL MANUFACTURES		
50401	FINISHED STRUCTURES AND PARTS	691	
50402	METAL CONTAINERS, WIRE PRODUCTS	692-693	
505	MACHINERY AND EQUIPMENT		
50501	AGRICULTURAL MACHINERY	712	721-722
50502	METAL WORKING & SPECIAL MACHINERY	715;718	723 LESS 72348; 725-727;7283; 72841;7361-7367; 737 LESS 73732
50503	PASSENGER MOTOR CARS, ETC.	7321;7326	781
50504	MOTORCYCLES AND PARTS	7329	7859
50505	OTHER ROAD MOTOR VEHICLES N.E.S.	7322-7325; 7327-7328	782-784
50506	RAILWAY AND NONMOTOR VEHICLES	731-733	7852-7853;786;791
50507	AIRCRAFT, BOATS AND THEIR PARTS	734-735	792-793
506	MISCELLANEOUS		
50601	LIVE ANIMALS	001	
50602	HIDES AND SKINS, UNDRESSED	211	
50603	EXPLOSIVES AND PYROTECH. PRODUCTS	571	572
50604	COMMODITIES N.E.S.	9	