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ECONOMIC COMMISSION FOR LATIN AMERICA
Office for the Caribbean



OCEAN-BORNE CARGO MOVEMENTS

TURKS

and

CAICOS ISLANDS

Prepared

by

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C O N T E N T S

| | <u>page</u> |
|--|-------------|
| Summary | |
| List of Enclosures | |
| Introduction | - 1 |
| The Problem | 1- 2 |
| Present Situation | - 2 |
| Ships and Cargoes - 1972 | 3- 5 |
| Piers and Jetties | - 5 |
| Cargo Handling Equipment | 6- 7 |
| Cargo Handling Methods | 7- 8 |
| Availability of South Pier | - 8 |
| Future Traffic | 8-11 |
| Possible Improvements | -11 |
| Objectives | 11-12 |
| Administrative and Organizational Reform | -12 |
| Labour-Saving Equipment | -13 |
| Co-ordinated Use of Facilities and Equipment | 13-15 |
| New Equipment | -15 |
| New Facilities | -15 |

S U M M A R Y

The Regional Adviser in Ports and Harbours suggests that the Turks & Caicos Government should act as follows in order to reduce cargo handling costs at Grand Turk:

- (1) Establish a Port Department having as its function the handling of cargo between ship and shore.
- (2) Establish schedules of port charges for ship-to-shore movements of cargo and then revise from time to time so as to recover all costs operating on a non-profit basis.
- (3) Negotiate a firm basis for joint use of South Pier with the US Government, at local level, or if necessary by modification of the international base agreement.
- (4) Procure cargo handling equipment.
- (5) Establish a cargo aggregation depot adjacent to South Pier.
- (6) Empower the proposed Port Department to negotiate fixed-price contracts having incentives for superior performance.

ENCLOSURES

- (1) List of persons contacted at Grand Turk.
- (2) List of Ship Arrivals at Grand Turk - 1972.
- (3) Summary - Ocean Traffic - Grand Turk - 1972.
- (4) Number of Calls per Ship at Grand Turk - 1972.
- (5) Distribution of Ship Arrivals and Distribution of Ships Time - Grand Turk - 1972.
- (5a) Distribution of Ship Arrivals (day-by-day) - Grand Turk 1972.

Ocean-Borne Cargo Movements

Turks and Caicos Islands

Introduction

The Government of Turks & Caicos Islands invited the UN Regional Adviser in Ports and Harbours to observe the cargo handling situation at Grand Turk in view of the constantly increasing costs which are reflecting adversely on the local economy. The visit was scheduled to coincide with one of the infrequent occasions when a deep-water ship would call at Grand Turk to discharge cargo originating in Europe.

The Adviser observed the cargo-handling facilities and operations during the period 10 through 19 April, 1973. During this time he was able to observe typical ships and cargoes of all types, and to talk with responsible officials in the Government as well as with businessmen who are vitally concerned with the importation of cargo. He collected significant statistics and examined pertinent planning documents. Trips were made to Providenciales and to South Caicos to observe the harbour facilities available at those places. The various people contacted during the visit are identified in Enclosure (1).

The Problem

The Government has been justifiably concerned that the cost of food and other materials consumed at Grand Turk has been rising, probably more rapidly than at most places in the region. The Government has suspected that the cost of handling cargo, out of the ships and thence to the consumer, may be higher than it could be under more propitious circumstances, and there has been a particular concern that deep-draft ships bringing cargo from Europe

might refuse to do so in the future, due to the exceptionally long turnaround time experienced at Grand Turk. The Adviser's observations confirm that Government's concern is well founded; the cargo-handling costs are higher than reasonably may be expected; and the ship turnaround time is excessive. In this report the Adviser reviews the present situation, the possible future level of traffic, and offers suggestions for improving the overall effectiveness of the cargo-handling operations.

Present Situation

Turks and Caicos Islands consist of eight main islands and many lesser cays. The total population is said to be nearly 6,000, distributed throughout the islands. Nearly 2,500 people are said to live at Grand Turk Island, the remaining 3,500 people being distributed among seven other islands. Thus the amount of commerce at Grand Turk is far greater than at any one of the other islands.

Commerce involves mainly the importation of consumables, consisting of food, fuel, personal materials, and materials for construction. The outbound movement of cargo consists of the return of empty gas bottles, used equipment sent away for repair, personal and household effects of departing residents, and the re-shipment of imported cargo to other islands of the group. The only important commodity, exported in significant quantity is lobster, and this commodity presently is moving by air.

Most of the imported cargo is water-borne, although an important minor amount is carried by air. Inbound air cargo arriving at Grand Turk during 1972 is reported to have been 471 tons, amounting to about 2.73 per cent of the amount arriving by sea. Although virtually all passenger traffic is by air, the economy of Turks and Caicos is overwhelmingly dependent on ocean shipping for the movement of cargo from the rest of the world to the Turks and Caicos Islands and internally between the islands.

Ships and Cargoes - 1972

The 144 ships arriving at Grand Turk for the purpose of discharging or loading cargo during 1972 are listed on Enclosure (2), showing for each occasion:

- (a) Name of Ship.
- (b) Size of Ship.
- (c) Date Ship arrived.
- (d) Date Ship departed.
- (e) Estimated hours ship remained at Grand Turk.
- (f) Amount of cargo handled at Grand Turk.
- (g) Consignees of cargo, whether US Government or otherwise.
- (h) Class of cargo, whether liquid fuel or dry cargo.

This data was transcribed from documents seen at the Customs Office. The hour of the day when ships arrived and departed had not been recorded. For the purpose of this analysis, based upon discussions with the Harbour Master and others, the duration of ships' time at port was assigned in accordance with the following schedule:

- 18 hours when Ship departed on date of arrival.
- 36 hours when Ship departed one day after arrival.
- 60 hours when ship departed two days after arrival.
- 24 hours per day of elapsed time if the ship was present three days or more.

The traffic listed on Enclosure (2) has been summarized on Enclosure (3) where the amounts of cargo handled is summed separately by various categories thus:

- (a) Form of Cargo
 - (1) Bulk liquid petroleum fuel
 - (2) Dry general cargo
- (b) Users of Cargo
 - (1) US Government
 - (2) Turks & Caicos Government and Private Parties

(c) Sizes of Ships

- (1) Smaller than 100 (N.R.T.)
- (2) Between 100 and 1000 (N.R.T.)
- (3) Larger than 1000 (N.R.T.)

It is to be noted that the estimated amount of liquid fuel brought to Grand Turk during 1972 is 5,100 tons for the US Government and 1,682 tons for the remainder of the economy, a total of 6,782 tons, amounting to 37 per cent of the total cargo handled (18,299 tons).

It is also to be noted that the division of liquid fuel cargo between users is 75 per cent for the US Government to 25 per cent for the remaining users. The division of dry cargo is quite different, the US Government receiving 5,549 tons amounting to 48 per cent of the dry cargo while the remaining users received 5,968 tons (52 per cent).

It is particularly significant that most of the cargo was carried in ships between sizes 150 NRT and 622 NRT. The distribution of ship sizes is shown on Enclosure (3). There were nine visits by ships larger than 1000 NRT, these being all of the ships from Europe and these ships brought only 1,685 tons of cargo to Grand Turk in 1972. This portion of the traffic was entirely dry cargo and it amounts to 9.2 per cent of the whole traffic; 14.6 per cent of all of the dry cargo; and 28.2 per cent of the dry cargo used by the Turks & Caicos Government and private parties. Eleven different ships in sizes from 150 NRT to 622 NRT made 100 calls at Grand Turk, bringing 15,890 tons of cargo. This portion amounts to 87 per cent of the total traffic. Twenty-four different ships, boats and barges in sizes less than 100 NRT carried 724 tons of cargo, amounting to 4 per cent of the total traffic.

It is also pertinent to note that although there were 41 different ships called at Grand Turk during 1972, making a total of 144 visits,

there were four ships that brought 62 per cent of all the cargo, as shown below:

| <u>Ship</u> | <u>Number of Ship Calls</u> | <u>Volume of Dry Cargo (Short tons)</u> | <u>Estimated Amount of Liquid Fuel (Short tons)</u> |
|---------------|-----------------------------|---|---|
| CANAVERAL | 25 | 2,439) | 4,495 |
| LAKELAND | 28 | 3,109) | |
| ENRUS | 10 | 754 | |
| SANTA ANTONIO | <u>15</u> | <u>627</u> | <u> </u> |
| TOTAL | 78 | 6,929 | 4,495 |

The extent that ships revisited Grand Turk during 1972 is presented on Enclosure (4)

Existing Piers and Jetties

The facilities for landing cargo at Grand Turk consist of two finger piers, and one jetty. The principal pier is referred to in this report as South Pier. The other finger pier is called the Government Pier in this report. The third facility is a jetty, which in this report is called the Government Jetty.

South Pier is situated at the South end of the island, near the US Government Air Force Base. It was built by the US Government and is used primarily to serve ships rendering logistic support to the US Air Force Base situated at the South end of Grand Turk Island and to the US Naval Facility situated at the North end of the island. The pier structure has a wood deck on a steel frame, supported by steel piles. The maximum depth of water is about 12 feet, sufficient for berthing certain ocean-going ships up to 500 nett register tons, such as the CANAVERAL, ENRUS, and LAKELAND. Adjacent to the pier structure an inclined roadway serves roll-on/roll-off movement of cargo for ships and barges that have integral ramps as the MV CANAVERAL, the MV LAKE-LAND, and the self-propelled barge MARIFAX. The pier structure also

supports pipelines for the off-loading of petroleum fuel while a ship is berthed, and it also supports a pipeline which is the source of seawater for use at the US Air Force Base. The wood deck of the pier is about 15 feet wide although the steel superstructure is about 23 feet wide. Ships are berthed only at the South side of the pier.

The Government Pier is a finger type structure of flimsy construction extending to about 6 to 8 feet of water. It is barely wide enough for one vehicle and is not strong enough to support those that are heavily laden. It is used for handling cargo to and from small ships, boats and barges.

The Government Jetty is a stubby-type structure about 30 feet wide extending into 6 to 8 feet of water. The structure supports heavily laden vehicles and cranes while moving cargo ashore from a shallow-draft ship or barge when berthed at the pier.

Existing Cargo-Handling Equipment

Floating equipment for lightering cargo between ships and shore consists of two self-propelled barges and various non-propelled lighters. The Turks & Caicos Government owns one steel self-propelled barge of about 100 tons cargo capacity. There is another self-propelled steel barge of about 150 tons cargo capacity, the MARIFAX, which is privately owned. It is equipped with a ramp which permits roll-on/roll-off handling of cargo. The other barge is not so configured. These two barges are used for lightering cargo between ship and shore and for the movement of cargo between islands of the Turks & Caicos group. During the Adviser's visit, there were two small non-propelled lighters of perhaps 10 to 15 tons cargo capacity in use at Grand Turk. These were called "Salt Cay Lighters" and it was understood they had been brought from Salt Cay to augment the two large barges during the unusual concentration of shipping at that time.

Cargo-handling equipment on shore differs sharply with respect to the two main consignees, of the cargo. The US Air Force Base has modern

equipment comprising at least one heavy-duty mobile crane, a heavy-duty low-bed cargo trailer, and a forklift of 6-ton capacity. The Adviser observed these items in operation at the South Pier. The Turks & Caicos Government and the various private parties have virtually no equipment that is intended primarily for the handling of cargo. The Turks & Caicos Government has one crane that is used primarily in the Public Works Department for all kinds of services and this crane is used to handle cargo at Government Jetty and at South Pier. Private firms have various automotive trucks that are used to move cargo from the piers and the jetty. Neither the Turks & Caicos Government nor any of the private firms have any forklifts.

Present Cargo-Handling Methods

The present method of handling the cargo is dictated by the depth of water at the piers and jetty and by the availability of suitable cargo-handling equipment.

Cargo received by the US Government is handled with a minimum of hand labour, using the equipment described above. Liquid fuel is pumped ashore while the ship is berthed at the South Pier and dry cargo may be off-loaded either by lift-off or by roll-off methods, concurrent with the off-loading of liquid fuel.

In the case of the Turks & Caicos Government and private parties operations, when cargo arrives on a ship that is too large for berthing at South Pier, the ship is anchored off-shore. Ships' cranes lift cargo from the holds into lighters at shipside and thence the lighter moves to either South Pier or Government Jetty where the cargo is lifted off the lighter by a crane on shore. Although the cargo may have been stowed on pallets on the ship, it is removed from the pallets by hand for stowage on the lighter, subsequently it is moved by hand to cargo slings or nets for lifting onto shore. Thence it is again stowed by hand onto vehicles for movement to the Customs storehouse or in some infrequent cases it moves directly to the consignee's premises. In any case it is finally unloaded from the vehicle by hand. Similarly when

cargo has arrived on ships that can be berthed directly at South Pier or at Government Jetty the cargo is moved by hand, as described above for the discharge of lighters. But in all cases of the smaller ships, as with the larger ones, when the cargo is destined to the Turks & Caicos Government or to private parties it is moved by hand labour without the benefit of pallets and forklifts.

Availability of South Pier

It is understood that the South Pier is the property of the US Government under the terms of an international agreement. Nevertheless, the pier is made available to the Turks & Caicos Government when it is not required by the US Government. During the 10-day period of the Adviser's observations, South Pier was available to the Turks & Caicos Government only, (1) when it was not occupied by ships delivering cargo to the US Government, or (2) when maintenance work was not in progress on the pier structure. Maintenance work was being performed during normal day-shift hours, Monday through Friday, and thus the South Pier was available only at night time and then only if it was not occupied by one of the ships supplying the US Government. The Adviser was informed that this situation has been common for several months, beginning with the inception of a programme for repairing the pier. Repair work on the pier apparently is suspended whenever a ship is present to deliver cargo to the US Government, but it is not suspended when there is a ship or barge with cargo for the Turks & Caicos Government or private parties. The Adviser was informed that the US Government policy concerning availability of South Pier for non-US Government uses has varied with the different Commanders of the US Air Force Base. It was indicated that the present policy has resulted in less availability than was sometimes enjoyed previously.

Future Traffic

A realistic estimate of the probable amount of cargo to be handled in the future is necessary for planning purposes. The Adviser was shown

two recent planning studies:

- (1) "Turks and Caicos Islands Outline Development Plan, Planning and Policy Report" by Shankland Cox and Associates, December 1971.
- (2) "Ministry of Overseas Development, Turks and Caicos Report on Harbour Facilities, Sea Defences and Water Supply" by Sir Bruce White, Wolfe Barry & Partners, Consulting Engineers, February 1969.

Neither of these reports makes specific projections of the future tonnages of ocean cargo. The Shankland Cox report foresees the development of tourism as the only growth industry, and it indicates an increase in population, nation-wide, of roughly 100 per cent by 1985, including the tourists.

The Adviser was informed that serious negotiations are in progress toward the establishment of a large petroleum refinery at West Caicos. This possibility seems to have emerged subsequent to the Shankland Cox study. A large refinery at West Caicos would no doubt increase the population of West Caicos and of the adjacent Providenciales especially, and it would cause some increase in the population at the seat of Government, Grand Turk. The Adviser considers that a refinery development at West Caicos would of necessity require the construction there of a wharf capable of serving ocean-going ships. During the refinery construction there would be large tonnages of construction materials and of machinery inbound, and later, during the operation of the refinery, there would be large amounts of solid petroleum products moving outbound. It is quite possible that such a deep-water shipping facility could become a transshipment point for distribution of cargoes within the Turks & Caicos islands. However, these considerations have little impact on the port requirements at Grand Turk because the amount of cargo to be handled at Grand Turk, in the Adviser's judgement, is mainly linked to the population of Grand Turk, and will not include sig-

nificant amounts of refinery-related cargoes to be transhipped.

It appears to the Adviser that the future volume of cargo to be handled at Grand Turk will increase or decrease approximately in proportion to the total population, including tourists, because the anticipated activities of the populace apparently will not create outbound cargo movements to a significant extent.

It is noted that the Shankland Cox study anticipates an increase in the total Turks & Caicos population of roughly 100 per cent by 1985, although the projection for Grand Turk alone is roughly ten per cent. For the immediate considerations of the future cargo handling problems it matters little whether Grand Turk's population, and its related volume of cargo, may increase by 10 per cent, 100 per cent or even 200 per cent, for the reasons discussed in this section of the report. The Adviser assumes that the future volume of cargo to be handled at Grand Turk by 1985 will be at least a 100 per cent increase over the 1972 volume and not more than a 200 per cent increase, and that the division between fuel and other cargo will remain about the same as in 1972. It is further assumed that growth will be lineal. These assumptions produce the forecast that is tabulated below:

PROJECTED VOLUME OF CARGO (Short Tons)

| YEAR | MINIMUM GROWTH (100%) | | | MAXIMUM GROWTH (200%) | | |
|------|-----------------------|-------------|-----------|-----------------------|-------------|-----------|
| | FUEL | OTHER CARGO | ALL CARGO | FUEL | OTHER CARGO | ALL CARGO |
| 1972 | 6,782 | 11,517 | 18,299 | 6,782 | 11,517 | 18,299 |
| 1975 | 8,347 | 14,175 | 22,522 | 9,912 | 16,833 | 26,745 |
| 1980 | 10,956 | 18,604 | 29,560 | 15,129 | 25,692 | 40,821 |
| 1985 | 13,564 | 23,034 | 36,598 | 20,346 | 34,551 | 54,897 |

It is the Adviser's opinion that the volume of cargo to be handled at Grand Turk within the foreseeable future does not justify any serious consideration with respect to the construction of a deep-water port facility capable of serving large ocean-going ships, i.e. those larger

than 100 NRT. It is pertinent to note that the Sir Bruce White Report, mentioned above, estimated the capital costs of a minimum one-berth deep-water berth at three alternative sites, two at Grand Turk, the other at South Caicos, and concluded that the minimum cost would be approximately 4.5 million pounds sterling. The capacity of a one-berth deep-water facility may be considered to be at least 100,000 tons of cargo per year when the cargo is all of the break-bulk form. When cargo is packed in containers a one-berth deep-water berth may be considered to have an annual throughput capacity of roughly 1,000,000 tons. The smallest increment of a deep-water facility that can be constructed is one to serve a single ship and such a facility would be capable of handling at least 100,000 tons of dry cargo annually and probably up to 200,000 tons if part of the cargo were to be packed in containers. It is obvious that if the amount of dry cargo to be handled at Grand Turk is to be in the magnitude of 23,000 tons (minimum projection) or 35,000 tons (maximum projection) per year, a deep-water facility having a capacity four to seven times greater than is required cannot be economically justified. (The Adviser believes that a useful deep-water facility could be achieved at somewhat less cost than is shown in the Sir Bruce White report, but this opinion has no effect because at any reasonable cost a deep-water facility would not be economically attractive unless the projected volume of cargo were to be sharply increased).

Possible Improvements

The Adviser believes that significant cost reductions may be achieved through the combination of various actions that might be taken. These are identified and discussed in this section.

Objectives: Economic handling of cargo at Grand Turk will be favourably influenced by achieving the following objectives:

- (1) Reducing ships time at port;
- (2) Reducing the labour-hours expended to handle cargo between ship and shore;

- (3) Reducing the loss of cargo by breakage and theft;
- (4) Increasing the utilization of South Pier;
- (5) Acquiring suitable cargo-handling equipment;
- (6) Coordinating the handling of all sea cargoes;
- (7) Coordinating the use of special cargo-handling equipment; and
- (8) Creating direct incentives for achieving the more effective transfer of cargo between ship and shore.

Administrative and Organizational Reform

The existing situation, in which one or two major importers serve also as the principal retailers of the imported goods and as the Agents for the ocean carriers bringing most of the cargo, is not conducive to economical handling of cargo because a fiscal incentive is absent. The costs of handling the cargo and of absorbing the losses due to breakage and theft are presently included in the landed cost of goods and passed on to the consumers who have no alternative source of goods. It seems that the importer-retailer-carrier agent's profit margin is not impaired by high cargo handling costs, and possibly it may tend to be enhanced. This situation might be improved significantly by creating a Port Department within the Government whose mission would be the non-profit handling of cargo between ship and shore. Such a Port Department would own and operate the cargo-handling equipment and it would establish schedules of charges to be paid by the consignees, such schedules to be adjusted from time to time as required to recover all costs of operation. As envisaged by the Adviser, the Port Department would be closely coordinated with the Customs Department so as to avoid duplication of effort. It would not have full-time stevedores and/or longshoremen, but instead it would negotiate fixed price contracts for the off-loading of each ship. Such contracts should be based upon the Port Department furnishing the cargo handling equipment and the contracts should provide incentives for rapid accomplishment. Specifically, such fixed-price contracts should stipulate the agreed completion time and should provide deductive adjustments for late completion and for damaged cargo, and should provide additive adjustments (i.e. bonus payments) for completion ahead of time. Thus an incentive would be given the cargo-handlers for working effectively.

Labour-Saving Equipment

An advantage to be realized by creating a Port Department, as suggested in the preceding section, is that it makes feasible the optimum use of cargo-handling equipment. Under the existing situation where there are several different importers, even though only a few major ones, it would be difficult to achieve good use of equipment either if it were all owned by one importer, or if ownership were distributed among various importers. The Adviser has no doubt that the advent of labour-saving machines has been delayed at Grand Turk because of the cited difficulty. It is suggested that the proposed Port Department should acquire the following equipment initially:

- 100 standard-size cargo pallets
- 1 6,000-pound forklift
- 1 13,000-pound forklift
- 1 20-ton mobile crane
- 1 self-propelled barge of 150 tons cargo carrying capacity having roll-on/roll off ramp.

Later, whenever cargo moves to Grand Turk in containers as large as 20-foot size, one 20-ton forklift should be made available for all users. It could be owned by the Port Department, or it might be owned by the US Government under an arrangement for cooperative use of cargo-handling facilities, as discussed later in the report.

The self-propelled barge that is presently owned by the Government is not suitable because it does not accommodate roll-on/roll-off operations. It should be disposed of and replaced by the barge listed above. The proposed new barge should be designed to have a full-loaded draft no greater than the depths of water to be encountered while operating between the various islands of the Turks & Caicos group.

Coordinated Use of Facilities and Equipment

South Pier: One pier should be entirely adequate for handling all of the cargo that presently comes to Grand Turk. Also, with relatively

minor improvements, the existing South Pier could handle all the cargo that is likely to come to Grand Turk in the foreseeable future, as projected earlier in this report. Even if all of the ships of all sizes calling at Grand Turk during 1972 were to have been served at South Pier, and under the extremely low cargo-handling rates that were experienced, the berth would have been occupied only 62 per cent of the time, as may be seen on Enclosure (5).

It is to be expected that the average amount of cargo per ship call will trend upward through greater use of unit-loads and containers. It is also to be expected that the rate that cargo moves between ship and shore will increase, thereby reducing ship turnaround time and berth occupancy. The average turnaround time at South Pier during 1972 for the two principal ships, CANAVERAL and LAKELAND, was about 33 hours and the handling rate, based on the turnaround interval, was about 3.2 tons of dry cargo per hour and about 2.6 tons of liquid cargo per hour, less than 6 tons per hour for all cargo handled over the pier.

It is evident to the Adviser that significantly greater cargo transfer rates at the South Pier can be achieved. The overall cargo transfer rate for all operations, including South Pier and the Government Jetty was barely 4 tons per hour based on ship turnaround intervals during 1972. (See Enclosure (3)). This rate can be increased greatly by the use of pallets and forklifts in combination with the coordinated use of South Pier within the framework of the following operating principles:

- (a) Berth space is allocated to all ships having cargo to discharge or load on a first-come-first-served basis.
- (b) Berth space is occupied only while necessary for the purpose of handling cargo. (Ships desiring to remain at Grand Turk for their own convenience after completing cargo operations vacate the berth and drop anchor off-shore).
- (c) Cargo handling operations commence as soon as possible upon berthing of the ship and continue without interruption until completed.

- (d) Cargo destined to Turks & Caicos Government or to private parties usually will move by means of forklifts directly from South Pier to an adjacent transit shed and open cargo aggregation yard to be established by the Turks & Caicos Government. Cargo destined to the US Government usually will move directly to the adjacent US Air Force Base.

The Adviser makes the foregoing observation with the full realization that the use of South Pier for the common good of all activities on Grand Turk may not be possible under the terms of the existing agreement with the US Government. However, the Adviser expects that the discretionary powers of the Governor and of the US Base Commander respectively probably permit them to reach accord concerning joint use of South Pier. If necessary, the Turks & Caicos Government should seek modification of the international base agreement in order to avoid uneconomical duplication of facilities for receiving sea cargo at Grand Turk.

New Equipment: The Adviser foresees that cargo some day may come to Grand Turk in containers to some extent, and that eventually it will be necessary to be able to off-load containers as large as 8'x8'x20'. For this purpose there would be required a forklift of 20-tons capacity and a low-bed trailer with tractor. One set of such equipment would not be fully utilized for handling all the container traffic for Grand Turk, and therefore an arrangement should be negotiated with the US Government for the joint use of special heavy-lift equipment that will be required infrequently.

New Facilities: In order to realize the reductions in cargo handling cost that are presented in this report it is essential that the Turks & Caicos Government establish a cargo aggregation depot adjacent to South Pier. It should include a transit shed of approximately 3,000 square feet and a paved open storage space of approximately 10,000 square feet, situated not more than 500 feet away from South Pier.

Enclosure (1)

PERSONS CONTACTED AT TURKS & CAICOS - 9 TO 20 APRIL 1973

Richard Rae
Chief Engineer
Government of Turks & Caicos Islands
GRAND TURK

David Hill, Engineer
Assistant to Chief Engineer
Government of Turks & Caicos Islands
GRAND TURK

S.G. Trees
Financial Secretary
Government of Turks & Caicos Islands
GRAND TURK

Malcolm Smith
Resident Engineer
Public Works Department at
Providenciales
Government of Turks & Caicos Islands
GRAND TURK

Mario Kirkaldy
Managing Director
Turks Island Importers
P.O. Box 72
GRAND TURK

T.M. Nichol
Agent for owners of the Barge
"MARIFAX" and the ship "ENRUS"
residing at Turks & Caicos Islands
GRAND TURK

Mr. Been
Deputy Managing Director
Turks Island Importers
P.O. Box 72
GRAND TURK

Art Butterfield
Councilman
Providenciales
Turks & Caicos Islands
GRAND TURK

Alexander Adams
Harbourmaster
Turks & Caicos Islands
GRAND TURK

H.E. Sadler
Businessman & Historian
P.O. Box 31
Turks & Caicos Islands
GRAND TURK

W. Jennings
Acting Treasurer & Acting
Collector of Customs
Government of Turks & Caicos
Islands
GRAND TURK

Veikko Vasko
UN Physical Planning Project
Turks & Caicos Islands
GRAND TURK

Mr. Robinson
Senior Customs Officer
Government of Turks & Caicos Islands
GRAND TURK

C.D. Hutchings
Manager of Caicos Company
South Caicos
Turks & Caicos Islands
GRAND TURK

Lloyd Stout
Former Operator of the Salt Industry
South Caicos
Turks & Caicos Islands
GRAND TURK

Captain Bruce Lightbourn
South Caicos
Turks & Caicos Islands
GRAND TURK

Mr. Mohamad
Mechanical Superintendent
Public Works Department
Turks & Caicos Government
GRAND TURK

Bill Solomon
Captain of the MV "ENRUS"
Operating between Dania, Florida and
Grand Turk Islands
GRAND TURK

C. Smythe
Manager
Turks Island Construction Company
and Agents for the Windward
Shipping Company
GRAND TURK

Robert Laing
General Trading Company
Turks & Caicos Islands
GRAND TURK

Mr. Fernando
Captain of the MV "CANAVERAL"
Operating between Canaveral,
Florida and Grand Turk

His Excellency
A.G. Mitchell
Governor of Turks & Caicos Islands
GRAND TURK

E. Petersen
Master
MV "MADS SKOU"

Captain W.L. Swann
Master of the Barge
"MARIFAX"

Henry Moore
Customs Inspector
Government of Turks & Caicos
Islands
GRAND TURK

D. Jongejeugd
Captain KNSM
MV "SOLON"

SHIPS AND CARGO MOVEMENTS AT GRAND TURK - 1972

| Name of Ship | Size of Ship (NRT) | Date Arrived | Date Departed | Estimated Hours at Port ** | Amount of Cargo Handled | Consignees of Cargo | Remarks |
|--------------------|--------------------|--------------|---------------|----------------------------|-------------------------|---------------------|---------|
| LAKELAND | 493 | 1-1 | 3-1 | 60 | 216 D | B | F |
| STAR OF FLORIDA | 9 | 7-1 | 7-1* | 18 | 4.5 E | C | |
| CANAVERAL | 336 | 9-1 | 10-1 | 36 | 15 D | B | F |
| BAHAMA SHELL | 132 | 12-1 | 13-1 | 36 | 127 E | C | |
| MARIFAX | 150 | 12-1 | 12-1* | 18 | 75 E | C | |
| SUGAR FOOT | 8 | 14-1 | 14-1* | 18 | 4 E | C | |
| LAKELAND | 493 | 16-1 | 17-1 | 36 | 15 E | C | F |
| GULFSTREAM | 497 | 20-1 | 20-1* | 36 | 270 D | B | A |
| SANTA ANTONIO | 272 | 21-1 | 21-1 | 18 | 28 E | C | |
| STAR OF FLORIDA | 9 | 21-1 | 21-1* | 18 | 4.5 E | C | |
| LAKELAND | 493 | 29-1 | 30-1 | 36 | 76 D | B | F |
| LA ESSOMPTION | 36 | 31-1 | 31-1* | 18 | 18 E | C | |
| WANDERLUST | 155 | 1-2 | 5-2 | 96 | 301 E | C | |
| MARIFAX | 150 | 8-2 | 8-2* | 18 | 120 E | C | |
| ENRUS | 302 | 5-2 | 6-2 | 36 | 51 E | C | |
| LAKELAND | 493 | 10-2 | 11-2 | 36 | 76 D | B | F |
| SANTA ANTONIO | 272 | 11-2 | 11-2 | 18 | 30 E | C | |
| PIZARO | 4556 | 14-2 | 14-2 | 18 | 120 E | C | |
| CANAVERAL | 336 | 15-2 | 16-2 | 36 | 165 D | B | F |
| BAHAMA SHELL | 132 | 17-2 | 18-2 | 36 | 157 E | C | A |
| LAKELAND | 493 | 23-2 | 24-2 | 36 | 51 D | B | F |
| CANAVERAL | 336 | 28-2 | 29-2 | 36 | 19 D | B | F |
| SANTA ANTONIO | 272 | 3-3 | 3-3 | 18 | 102 E | C | |
| CHIRON | 1303 | 6-3 | 6-3 | 18 | 140 E | C | |
| EMERALD GOLD PIECE | 7 | 6-3 | 8-3 | 60 | 4 E | C | |
| LAKELAND | 493 | 6-3 | 7-3 | 36 | 132 D | B | F |
| WINDWARD TRADER | | 7-3 | 7-3 | 18 | 1 E | C | |
| ENRUS | 303 | 11-3 | 12-3 | 36 | 38 E | C | |

| Name of Ship | Size of Ship (NRT) | Date Arrived | Date Departed | Estimated Hours at Port ** | Amount of Cargo Handled | Consignees of Cargo | Remarks |
|--------------------|--------------------|--------------|---------------|----------------------------|-------------------------|---------------------|---------|
| CANAVERAL | 336 | 12-3 | 13-3 | 36 | 23 E | B | F |
| LAKELAND | 493 | 19-3 | 20-3* | 36 | 71 E | B | F |
| LINDA | 9 | 20-3 | 20-3* | 18 | 4.5 E | C | |
| FRANMAR | 15 | 24-3 | 25-3* | 36 | 12 E | C | |
| SANTA ANTONIO | 272 | 24-3 | 24-3 | 18 | 33 E | C | |
| CANAVERAL | 336 | 25-3 | 26-3 | 36 | 171 D | B | F |
| BAHAMA SHELL | 133 | 27-3 | 27-3 | 18 | 141 E | C | A |
| SEA TURTLE | 78 | 2-4 | 2-4* | 18 | 2 E | C | |
| CANAVERAL | 336 | 6-4 | 7-4 | 36 | 170 D | B | F |
| LAKELAND | 493 | 11-4 | 12-4 | 36 | 27 D | B | F |
| BAHAMA TRADER | | 12-4 | 12-4 | 18 | 4 E | C | |
| FRANMAR | 15 | 14-4 | 15-4* | 36 | 10 E | C | |
| SANTA ANTONIO | 272 | 14-4 | 14-4 | 18 | 20 E | C | |
| COMING HOME | 11 | 17-4 | 17-4* | 18 | 5.5 E | C | |
| POTOSI | 4556 | 18-4 | 19-4 | 36 | 275 E | C | |
| CANAVERAL | 336 | 18-4 | 19-4 | 36 | 87 D | B | F |
| LAKELAND | 493 | 23-4 | 24-4 | 36 | 41 D | B | F |
| BAHAMA SHELL | 132 | 28-4 | 28-4 | 18 | 122 E | C | A |
| SOUTH CAICOS PRIDE | 12 | 28-4 | 29-4 | 36 | 6 E | C | |
| SARAH QUEEN | 8 | 28-4 | 28-4* | 18 | 4 E | C | |
| ENRUS | 302 | 29-4 | 29-4 | 18 | 66 E | C | |
| CANAVERAL | 336 | 1-5 | 2-5 | 36 | 211 E | B | F |
| CHARTA | 622 | 4-5 | 7-5 | 72 | 451 E | C | |
| SANTA ANTONIO | 272 | 5-5 | 5-5 | 18 | 30 E | C | |
| LAKELAND | 493 | 7-5 | 8-5 | 36 | 16 E | C | |
| LADON | 1303 | 11-5 | 12-5 | 36 | 125 E | C | |
| CANAVERAL | 336 | 14-5 | 15-5 | 36 | 68 D | B | F |
| FAMILY FUTURE | 16 | 15-5 | 17-5 | 60 | 8 E | C | |
| SEA TURTLE | 78 | 18-5 | 22-5 | 96 | 3 E | C | |
| LAKELAND | 493 | 21-5 | 22-5 | 36 | 161 D | B | F |
| SANTA ANTONIO | 272 | 27-5 | 27-5 | 18 | 29 E | C | |

| Name of Ship | Size of Ship (NRT) | Date Arrived | Date Departed | Estimated Hours at Port ** | Amount of Cargo Handled | Consignees of Cargo | Remarks |
|---------------|--------------------|--------------|---------------|----------------------------|-------------------------|---------------------|----------------|
| CANAVERAL | 336 | 27-5 | 28-5 | 36 | 21 D | B | F |
| BAHAMA SHELL | 132 | 1-6 | 2-6 | 36 | 153 E | C | A |
| CANAVERAL | 336 | 3-6 | 3-6 | 18 | | B | No Dry Cargo A |
| LAKELAND | 493 | 3-6 | 3-6 | 18 | 33 D | B | F |
| CAICOS CLOUD | 16 | 5-6 | 6-6 | 36 | 8 E | C | |
| FRANMAR | 15 | 8-6 | 8-6 | 18 | 8 E | C | |
| FAMILY FUTURE | 16 | 9-6 | 13-6 | 96 | 8 E | C | |
| LAKELAND | 493 | 15-6 | 16-6 | 36 | 273 D | B | F |
| ENRUS | 302 | 16-6 | 17-6 | 36 | 81 E | C | |
| SANTA ANTONIO | 272 | 17-6 | 17-6 | 18 | 58 E | C | |
| PIZARO | 4556 | 19-6 | 19-6 | 18 | 73 E | C | |
| CANAVERAL | 336 | 20-6 | 20-6 | 18 | 20 D | B | F |
| LAKELAND | 493 | 28-6 | 29-6 | 36 | 139 D | B | F |
| CORAL SHELL | 87 | 30-6 | 30-6 | 18 | 117 E | C | A |
| CANAVERAL | 336 | 3-7 | 4-7 | 36 | 112 D | B | F |
| SANTA ANTONIO | 272 | 8-7 | 8-7 | 18 | 28 E | C | |
| LAKELAND | 493 | 10-7 | 11-7 | 36 | 16 D | B | F |
| SAN SALVADOR | 36 | 12-7 | 12-7 | 18 | 18 E | C | |
| SEA TURTLE | 78 | 13-7 | 15-7 | 60 | 24 E | C | |
| LADON | 1303 | 14-7 | 14-7 | 18 | 66 E | C | |
| CANAVERAL | 336 | 16-7 | 17-7 | 36 | 9 D | B | F |
| BAHAMA SHELL | 132 | 21-7 | 22-7 | 36 | 118 E | C | |
| MARIFAX | 150 | 22-7 | 22-7* | 18 | 5 E | C | |
| LAKELAND | 493 | 23-7 | 24-7 | 36 | 93 D | B | F |
| FAMILY FUTURE | 16 | 24-7 | 25-7 | 36 | 8 E | C | |
| COMING HOME | 11 | 26-7 | 26-7* | 18 | 5.5 E | C | |
| SANTA ANTONIO | 272 | 28-7 | 28-7 | 18 | 11 E | C | |
| CANAVERAL | 336 | 29-7 | 30-7 | 36 | 7 D | B | F |
| LAKELAND | 493 | 5-8 | 5-8 | 18 | 14 D | B | F |
| ENRUS | 302 | 5-8 | 6-8 | 36 | 94 E | C | |

| Name of Ship | Size of Ship (NRT) | Date Arrived | Date Departed | Estimated Hours at Port ** | Amount of Cargo Handled | Consignees of Cargo | Remarks |
|---------------------|--------------------|--------------|---------------|----------------------------|-------------------------|---------------------|---------|
| CANAVERAL | 336 | 10-8 | 11-8 | 36 | 158 D | B | F |
| LAKELAND | 493 | 17-8 | 17-8 | 18 | 81 D | B | F |
| SANTA ANTONIO | 272 | 18-8 | 18-8 | 18 | 54 E | C | |
| NOTRE DAME ASSONDON | 36 | 21-8 | 15-8 | 96 | 18 E | C | |
| ROSINA | 6 | 21-8 | 21-8* | 18 | 3 E | C | |
| CANAVERAL | 336 | 22-8 | 22-8 | 18 | 67 D | B | F |
| LAKELAND | 493 | 30-8 | 30-8 | 18 | 232 D | B | F |
| BAHAMA SHELL | 132 | 30-8 | 31-8 | 36 | 180 E | C | A |
| CARIBBEAN TIUNA | 354 | 2-9 | 6-9 | 96 | 588 E | C | |
| CANAVERAL | 336 | 4-9 | 5-9 | 36 | 57 D | B | F |
| MERCI PHILU | 40 | 5-9 | 7-9 | 60 | 20 E | C | |
| SANTA ANTONIO | 272 | 9-9 | 9-9 | 18 | 57 E | C | |
| LAKELAND | 493 | 11-9 | 12-9 | 36 | 186 D | B | F |
| SEAVIEW | 8 | 11-9 | 11-9* | 18 | 4 E | C | |
| CANAVERAL | 336 | 17-9 | 18-9 | 36 | 87 D | B | F |
| LAKELAND | 493 | 23-9 | 23-9 | 18 | 205 D | B | F |
| ENRUS | 302 | 23-9 | 23-9 | 18 | 88 E | C | |
| CARIB SHELL | 194 | 25-9 | 25-9 | 18 | 155 E | C | A |
| CANAVERAL | 336 | 30-9 | 2-10 | 72 | 160 D | B | F |
| SANTA ANTONIO | 272 | 30-9 | 30-9 | 18 | 30 E | C | |
| COTOPAXI | 4551 | 1-10 | 1-10 | 18 | 113 E | C | |
| GULF STREAM | 497 | 3-10 | 4-10* | 36 | 270 D | B | A |
| LAKELAND | 493 | 7-10 | 7-10 | 18 | 92 D | B | F |
| CANAVERAL | 336 | 12-10 | 13-10 | 36 | 207 D | B | F |
| GORDA PEAK | 98 | 14-10 | 14-10* | 18 | 5 E | C | |
| MEDON | 2101 | 16-10 | 17-10 | 36 | 201 E | C | |
| LAKELAND | 493 | 19-10 | 20-10 | 36 | 23 E | C | |
| CANAVERAL | 336 | 24-10 | 25-10* | 36 | 26 D | B | F |
| CARIB SHELL | 194 | 30-10 | 30-10 | 18 | 207 E | C | |
| LAKELAND | 493 | 31-10 | 1-11 | 36 | 196 D | B | F |

| Name of Ship | Size of Ship (NRT) | Date Arrived | Date Departed | Estimated Hours at Port ** | Amount of Cargo Handled | Consignees of Cargo | Remarks |
|---------------|--------------------|--------------|---------------|----------------------------|-------------------------|---------------------|---------|
| ENRUS | 302 | 2-11 | 4-11 | 60 | 141 E | | |
| LAKELAND | 493 | 12-11 | 13-11* | 36 | 96 D | B | F |
| WANDERLUST | 155 | 12-11 | 12-11 | 18 | 250 E | C | |
| ERICA | | 12-11 | 12-11* | 18 | 10 E | C | |
| CAICOS CLOUD | 14 | 13-11 | 14-11 | 36 | 7 E | C | |
| COMING HOME | 11 | 14-11 | 14-11 | 18 | 6 E | C | |
| ENRUS | 302 | 15-11 | 15-11 | 18 | 49 E | C | |
| CANAVERAL | 336 | 18-11 | 19-11 | 36 | 12 D | B | F |
| LA PALOME | 94 | 19-11 | 20-11* | 36 | 287 E | C | |
| SANTA ANTONIO | 272 | 20-11 | 20-11 | 18 | 65 E | C | |
| LAKELAND | 493 | 24-11 | 24-11 | 18 | 148 D | B | F |
| WANDERLUST | 151 | 28-11 | 28-11* | 18 | 258 E | C | |
| CANAVERAL | 336 | 1-12 | 1-12 | 18 | 56 D | B | F |
| IMMACULEE | 30 | 5-12 | 6-12* | 36 | 15 E | C | |
| LA PALOME | 94 | 5-12 | 6-12* | 36 | 248 E | C | |
| LAKELAND | 493 | 7-12 | 7-12 | 18 | 25 D | B | F |
| BAHAMA SHELL | 132 | 11-12 | 11-12 | 18 | 205 E | C | A |
| CANAVERAL | 336 | 12-12 | 13-12 | 36 | 197 E | B | F |
| SANTA ANTONIO | 272 | 15-12 | 16-12* | 36 | 62 E | C | |
| LAKELAND | 493 | 19-12 | 20-12 | 36 | 42 D | B | F |
| AMADEO | 6184 | 20-12 | 22-12* | 60 | 572 E | C | |
| CANAVERAL | 336 | 14-12 | 26-12 | 60 | 53 D | B | F |
| ENRUS | 302 | 4-12 | 5-12 | 36 | 91 E | C | |
| ENRUS | 302 | 22-12 | 22-12 | 18 | 55 E | C | |

NOTES:

- * Assumed departure date.
- ** Estimated time at port: 18 hours when ship departs on date of arrival; 36 hours when ship departs day after arrival; 60 hours when ship departs second day after arrival; 72 hours per 3-day interval; 96 hours for 4-day interval.
- A Liquid Petroleum only.
- B Cargo consigned to US Government Bases.
- C Cargo consigned to either Turks & Caicos Government or to Private Parties.
- D Cargo measured in long tons.
- E Cargo measured in short tons.
- F Liquid fuel carried by two ships, the CANAVERAL and the LAKELAND, is excluded from the indicated amount of cargo. Based on an estimate that the weight of liquid fuel comprises 81 per cent of the weight of dry cargo carried on these two ships, the estimated total of liquid fuel brought to Grand Turk by the CANAVERAL and the LAKELAND during 1972 is 4014 long tons or 4495 short tons.

SUMMARY - OCEAN TRAFFIC - GRAND TURK ISLAND - 1972

| CARGO CATEGORY | Number of Ship Calls (ea) | Ships Time At Port (hours) | Total Amount of Cargo Handled (tons) | Average Amount of Cargo Carried (tons/ship) | Average Ship Turn- around Time (hours) | Port Per- form- ance Index* |
|------------------------------------|------------------------------------|----------------------------------|--|---|---|---|
| Inbound Dry & Liquid Cargo (US) | 53 | 1,752 | Dry 5,549 Liq. 4,495 | 189.5 | 33.1 | 5.73 |
| Inbound Liquid Cargo (US) | 2 | 72 | 605 | 302.5 | 36.0 | 8.40 |
| Outbound Cargo (US) | n.a. | n.a. | n.a. | - | - | - |
| Sub-total (US) | 55 | 1,824 | 10,649 | 193.6 | 33.2 | 5.83 |
| Inbound Dry Cargo (T&C) | 64 | 2,244 | 5,655 | 88.4 | 35.1 | 2.52 |
| Inbound Liquid Cargo (T&C) | 11 | 288 | 1,682 | 152.9 | 26.2 | 5.84 |
| Outbound Cargo (T&C) | 14 | 252 | 313 | 22.4 | 18.0 | 1.24 |
| Sub-total (T&C)** | 89 | 2,784 | 7,650 | 86.0 | 31.3 | 2.74 |
| TOTAL GRAND TURK** | 144 | 4,608 | 18,299 | 127.1 | 32.0 | 3.97 |

BY SHIP SIZES

| | | | | | | |
|---------------------------|------------|--------------|---------------|--------------|-------------|-------------|
| SMALLER THAN 100 NRT | 25 | 858 | 724 | 29.0 | 34.3 | 0.84 |
| BETWEEN 100 & 1000 NRT | 110 | 3,492 | 15,890 | 144.5 | 31.7 | 4.55 |
| LARGER THAN 1000 NRT | 9 | 258 | 1,685 | 187.2 | 28.7 | 6.53 |
| TOTAL ALL SIZES** | 144 | 4,608 | 18,299 | 127.1 | 32.0 | 3.97 |

* Tons per hour of ships time at port.

** Excludes inter-island movements by "Seahorse"

US = U.S.A. Government for Air Force Base and Naval Facility.

T&C = Turks & Caicos Government plus Private Sector.

NUMBER OF CALLS PER SHIP - GRAND TURK - 1972

| Ships Smaller Than 100 NRT | | Ships Sizes 100 to 1000 NRT | | Ships Larger Than 1000 NRT | |
|-------------------------------|-----------|--------------------------------|-----------|-------------------------------|-----------|
| Name of Ship | No. Calls | Name of Ship | No. Calls | Name of Ship | No. Calls |
| CAICOS CLOUD (16) | 2 | BAHAMA SHELL (132) | 8 | AMADEO (6184) | 1 |
| COMING HOME (11) | 4 | CANAVERAL (336) | 26 | CHIRON (1303) | 1 |
| EMERALD GOLD PIECE (7) | 1 | CARIB SHELL (194) | 3 | COTAPAXI (4551) | 1 |
| ERICA (?) | 1 | CARIBBEAN TIUNA (354) | 1 | LADON (1303) | 2 |
| FAMILY FUTURE (16) | 3 | CHARTA (622) | 1 | MEDON (2101) | 1 |
| FRANMAR (15) | 3 | ENRUS (303) | 10 | PIZARO (4556) | 2 |
| GORDA PEAK (98) | 1 | GULFSTREAM (497) | 2 | POTOSI (4556) | <u>1</u> |
| IMMACULEE (30) | 1 | LAKELAND (493) | 28 | TOTAL CALLS | 9 |
| LA ESSOMPTION (36) | 1 | MARIFAX (150) | 3 | | |
| LA PALOME (94) | 2 | SANTA ANTONIO (272) | 15 | | |
| LINDA (9) | 1 | WANDERLUST (155) | <u>3</u> | | |
| MERCI PHILU (40) | 1 | TOTAL CALLS | 100 | | |
| NOTRE DAME A. (36) | 1 | | | | |
| ROSINA (6) | 1 | | | | |
| SAN SALVADOR (36) | 1 | | | | |
| SARAH QUEEN (8) | 1 | | | | |
| SEA TURTLE (78) | 3 | | | | |
| SEA VIEW (8) | 1 | | | | |
| SOUTH CAICOS PRIDE (12) | 1 | | | | |
| STAR OF FLORIDA (9) | 2 | | | | |
| SUGAR FOOT (8) | 1 | | | | |
| WINDWARD TRADER (?) | 1 | | | | |
| BAHAMA TRADER (?) | <u>1</u> | | | | |
| TOTAL CALLS | 35 | | | | |

Notes: The figures within brackets indicate the size of ship in nett register tons.

The data with respect to the movement of SEA HORSE, a small ship engaged in inter-island traffic was not available. However, it was reported the amount of cargo carried was not significant.

DISTRIBUTION OF SHIP ARRIVALS - GRAND TURK - 1972

| Number "n" of Ships Arriving One Day | Number of Days "n" Ships Arrive | | Extent Agreement | |
|---|---------------------------------|--|--|---------|
| | Actual Distribution | Predictable Poisson Distribution | Between Actual and Poisson Distribution Days | Percent |
| 0 | 242 | 247 | 242 | 98.0% |
| 1 | 107 | 97 | 97 | 90.7% |
| 2 | 14 | 19 | 14 | 73.7% |
| 3 | 3 | 3 | 3 | 100% |
| 4 | <u>0</u> | <u>0</u> | <u>0</u> | |
| | 366 | 366 | 356 | 97.3% |

DISTRIBUTION OF SHIPS TIME AT GRAND TURK - 1972

| Number "n" of Ships Present Same Time | Number of hours "n" Ships were Present at Grand Turk |
|---|---|
| 0 | 5106 (58%) |
| 1 | 2887 (33%) |
| 2 | 666 (7.6%) |
| 3 | 111 (1.3%) |
| 4 | 14 (0.1%) |

Distribution of Ship Arrivals at Grand Turk - 1972

| DATE | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 1 | 1 | | | 1 | 1 | | | | 1 | | 1 |
| 2 | | | | 1 | | | | | 1 | | 1 | |
| 3 | | | 1 | | | 2 | 1 | | | 1 | | |
| 4 | | | | 1 | 1 | | | | 1 | | | 1 |
| 5 | | 1 | | | 1 | 1 | | 2 | 1 | | | 2 |
| 6 | | | 3 | | | | | | | | | |
| 7 | 1 | | 1 | | 1 | | | | | 1 | | 1 |
| 8 | | 1 | | | | 1 | 1 | | | | | |
| 9 | 1 | | | | | 1 | | | 1 | | | |
| 10 | | 1 | | | | | 1 | 1 | | | | |
| 11 | | 1 | 1 | 1 | 1 | | | | 2 | | 1 | 1 |
| 12 | 2 | | 1 | 1 | | | 1 | | | 1 | 3 | 1 |
| 13 | | | | | | 1 | 1 | | | | 1 | |
| 14 | 1 | 1 | | 2 | 1 | | 1 | | | 1 | | |
| 15 | | 1 | | | 1 | 1 | | | | | 1 | 1 |
| 16 | 1 | | | | | 1 | 1 | | | 1 | | |
| 17 | | 1 | | 1 | | 1 | | 1 | 1 | | | |
| 18 | | | | 2 | 1 | | | 1 | | | 1 | |
| 19 | | | 1 | | | 1 | | | | 1 | 1 | 1 |
| 20 | 1 | | 1 | | | 1 | | | | | 1 | 1 |
| 21 | 2 | | | | 1 | | 1 | 2 | | | | |
| 22 | | | | | | | 1 | 1 | | | | 1 |
| 23 | | 1 | | 1 | | | 1 | | 2 | | | |
| 24 | | | 2 | | | | 1 | | | 1 | 1 | 1 |
| 25 | | | 1 | | | | | | 1 | | | |
| 26 | | | | | | | 1 | | | | | |
| 27 | | | 1 | | 2 | | | | | | | |
| 28 | | 1 | | 3 | | 1 | 1 | | | | 1 | |
| 29 | 1 | | | 1 | | | 1 | | | | | |
| 30 | | X | | | | 1 | | 2 | 2 | 1 | | |
| 31 | 1 | X | | X | | X | | | X | 1 | X | |
| Month Total | 12 | 10 | 13 | 14 | 11 | 14 | 14 | 10 | 12 | 10 | 12 | 12 |