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THE PALEMBANG PORT AND SHIPPING STUDY

VOLUME IV

PORT OPERATIONS

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1.0 INTRODUCTION

In this volume we review the operational methods used in the port of Palembang. The volume is divided into sections concerning port operations, port services for banking and commerce, cargo handling, port labor, present equipment and facility utilization, and recommended improvements.

In general we found fixed facilities in an excellent state of repair. The port was undergoing renovation of older wharfs. At the completion of this renovation project, the existing fixed facilities should be in excellent condition. They should prove adequate to meet the demands placed on the port until the recommendations for short term improvements can be implemented.

The mechanical equipment, except for mobile cranes, was found to be in poor condition and in need of renewal. The situation regarding some of this equipment is extreme and immediate action is required to insure continued efficient port operations.

2.0 PORT OPERATIONS

2.0.1 General Port Information Applicable to All Indonesian Ports

2.0.1.1 Port Administration (Directorate General of Sea Communication)

All Indonesian ports are administered by port administrators with exception of some small ports. They coordinate and supervise all activities of the port, which includes the Harbor Master Service, the Harbor Board, the Customs, the Quarantine and Port Health Service, the Immigration, the Port Security and all other activities in the port.

The ports are divided into regions as follows and a coordinating body is appointed in each region:

Region I = Belawan and environs
Region II = Dumai and environs
Region III = Tanjung Priok and environs
Region IV = Surabaya and environs
Region V = Banjarmasin and environs
Region VI = Ujung Pandang and environs
Region VII = Menado/Bitung and environs
Region VIII = Ambon and environs
Region IX = Jayapura and environs

2.0.1.2 The Harbor Master Service (Directorate General of Sea Communication)

The Harbor Master supervises the safety inspections and the compliance of all shipping regulations, all ships movements within the harbor limits, the pilotage, the ship's certificates and documents, monitoring of crew members, issuing of port clearance, notes of protests, stamping and legalizing of logbooks.

Upon arrival, ships have to fill in the following forms:

a. Harbor Report obtainable from the boarding pilot, or from the Harbor Master
b. Pilot's Certificate

Upon arrival, vessels have to produce the following certificates and documents, which will remain in the Harbor Master's custody until cleared:

a. Nationality (Registry) Certificate
b. Seaworthiness Certificate
c. Measurement (Tonnage) Certificate
d. Deratization (Exemption) Certificate
e. International Load Line Certificate
f. Safety Certificate (Passenger's ships)
g. Safety Equipment Certificate (Cargo ships)
h. Safety Radio and Radiotelephony Certificate (Cargo ships)
i. Certificate of Approval (Ships radio station)
j. Health Book or Bill of Health
k. Last Port Clearance
l. Subscription of Light and Harbor dues
m. Crew lists and Passenger's lists
n. Ships articles
o. Other certificates and documents as required.

2.0.1.3 Pilotage

Pilots are in Government service. Pilot Signals are given in accordance with the International code of signals. Pilot boarding area as mentioned in the Sailing Directions or as indicated in the Chart Pilots which can be ordered direct by cable to the Harbormasters or via the Ships Agents.

2.0.1.4 Customs (Department of Revenues, Cost and Verification

It is recommended that Masters consult the Agents with the local prevailing Customs Regulations with regard to currency, cigarettes, spirits, etc., to prevent unnecessary difficulties and eventually, fines.

2.0.1.5 Quarantine Service - Pratique

Every vessel arriving from abroad must call at one of the first class ports to obtain Free Pratique without forward advice.

First Class ports are Belawan, Tanjung Priok, Surabaya and Unjung Pandang.

A Provisional Free Pratique can be obtained at the Second Class ports. Second Class ports are Cirebon, Cilacap, Semarang, Kupang, Palembang, Pangkal Pinang, Jambi, Padang, Tanjung Pinang, Sabang, Pontianak, Banjarmasin, Balikpapan, Samarinda, Tarakan, Ambon and Ternate.

Vessels arriving from abroad direct to one of the Second class ports (Quarantine Section) for a Provisional Free Pratique may obtain said Pratique which has to be cabled to the port concerned. The Provisional Free Pratique is only valid for the port specified. The next port of call must be a First Class Port as no further Provisional Free Pratique will be issued, unless the vessel sails directly abroad from the Second Class Port concerned.

In order to apply for a Provisional Free Pratique the following details are required:

1. Vessel's name
2. Port of call concerned (Second Class)
3. Vessel's eta

4. Last port or ports of call abroad during a minimum period of 14 days prior to arrival in the Indonesian port mentioned in Paragraph 3.

5. Next port of call, if an Indonesian, then it must be a First Class port.

6. Is a ship's surgeon on board

7. Number of passengers

8. Number of crew (including the Master)

9. State of health abroad

10. Kind of cargo on board

All other ports are Third Class Ports and can only be called at after obtaining a Free Pratique at one of the First Class Ports. Vessels arriving from abroad have to fly the Q Flag (yellow flag) until boarded and released by the Quarantine Officer. Masters have to fill in the Quarantine Form which must be signed by him and the ship's surgeon if any, and produce the following:

a. Health Book or Bill of Health

b. Deratization (Exemption) Certificates

c. Valid International Vaccination Certificates of Crew members and Passengers

d. Crew and Passengers list showing the validity dates of above certificates

During the time that the Q Flag is flying, no one is allowed to board or leave the vessel except with the permission of the boarding Quarantine Officer.

2.0.1.6 Immigration (Department of Justice)

Vessels arriving from abroad with passengers must hoist the N Flag. Masters have to supply the boarding immigration officer with passenger's list of:

a. Disembarking

b. Transshipping

c. Through passengers

No persons are allowed on board until the vessel has been examined and N Flag taken down. Passengers must be in possession of a visa: visitors, entry or a transit visa. Those not having a visa may at the discretion of the immigration officer, obtain a landing permit. Members of the crew including the Master must appear in the articles in order to get permits.

Ports at which the Immigration is represented: Belaway, Bagan Siapi-Api, Tg. Balai (Karimun), Tg. Pinang, Jambi, Palembang, Muntok, Plaju, Pangkal Pinang, Pontianak, Singkawang, Pemangkat, Tg. Priok, Semarang, Surabaya, Ujung Pandang, Kupang.

2.0.1.7 Chart and Nautical Publications

Issued at Jakarta by the Indonesian Naval Hydrographic Office (HIDRAL), some charts are available in other ports at the Harbor Master's Office.

2.0.1.8 Port Security

Maintained by members of the Indonesian Force. Crew members should be in possession of a Shore Pass issued by the Port Administrator, accompanied by an Identification Card when leaving or entering the guarded gates of the port areas. Shore passes can be obtained via the Agencies.

2.0.1.9 General Harbor Tariffs

Light Dues: Rp. 0.50 per cu.m gross per call, Rp. 2.50 per cu.m gross for six months with a maximum charge of Rp. 75,000.-. Rp. 1,000.- per non commercial

call. Rp. 1,000.- per special tourist vessel payable in US$ with the latest rate.

Anchorage: Accounted per 1000 cu.m gross per day, up to 1,500 cu.m gross US$400.-, 1,500-10,000 cu.m gross US$450.- non commercial calls US$ 10,000 per call.

Pilotage: It depends on the port/roadsted with an average of US$ 0.001 or US$ 0.002 per GRT and a minimum between US$ 10 and US$ 300 per ship.

Towage: Rates per hour

up to 60 h.p.	US$	3.45
to 150 h.p.		5.18
150 -250 h.p.		10.30
250 -500 h.p.		13.80
500 h.p. and over		20.70

Overtime: charges increased by 50%

Dockage: Computed per 10 m per hour

concrete wharf	US$	0.195
iron jetty		0.135
wooden jetty		0.90

Alongside ship by tariff Government oil jetty: length of ship computed and multiplied according to aforesaid tariff and increased by 50%.

Buoyage: US$ 4.90 per ship per day

Water: Supplied by quay pipes US$ 0.45 per ton with minimum of 5 tons, supplied ex lighters US$ 0.75 per ton with a minimum of 50 tons. Supplied in overtime rates increased by 10%, 25% or 50%.

2.1 Port Clearance and Administration and Procedures

1. Ship's Arrival And Departure.

   1.1 Two days before arrival of vessel, the ship's agent has to inform the Port Administration, by completing appropriate forms. Copies of completed forms must also be submitted to the Harbor Master, Port Health Service, Immigration, Customs and Security for preparation of services.

   1.2 The Pilot may berth the vessel on request of the ship's agent only after obtaining clearance from the Port Administrator, Harbor Master, Port Health Service and Immigration (foreign vessels only).

   1.3 Before departure, port clearance is issued by the Harbor Master, after clearance has been obtained from Customs, the Port Health Service, and Immigration.

2. Documents.

   A. Health Documents:
      1. Maritime Declaration of Health.
      2. Deratting Exemption Certificate.
      3. Vaccination Certificates.
      4. Crew list and passenger list.
      5. Health Book.

      a. Port Health Measures.
         I. The Port Health Service is responsible for the protection of the port against the introduction or dissemination of quarantinable diseases. This responsibilitty is based on :
            1. The National Quarantine Law.
            2. The National Epigemiological Law.
            3. International Health Regulations.

II. Quarantine :

A vessel is in quarantine and must hoist the quarantine flag (G, GL, GG), when it is a vessel :

1. that comes directly from abroad (Q flag).
2. that comes from an infected Indonesian Port (Q flag).
3. that takes passengers or cargo over from vessels mentioned in items (1) and (2) (Q flag).
4. whose captain has declared that a quarantinable disease exists or is suspected on board (QL/QQ).
5. which the Port Medical Officer has declared infected or suspected with a quarantinable disease (QL/QQ).

The concerned vessel is free from quarantine measures when Free Pratique has been obtained. The Free Pratique becomes invalid when a vessel is in quarantine as stated above or quarantinable disease occurs during the validity of Free Pratique. The Port of Palembang is a 1st class Quarantine Port At the request of the ship's owner/agent, the Department of Health will provide "Provisional pratique", for vessels calling directly from abroad to any Indonesian port which is not classified as a quarantine port, provided that health conditions on board comply with the required health conditions.

This "provisional pratique" however does not relieve the vessel from quarantine measures, and it is not to be construed as "Free Pratique". Accordingly vessels enjoying "provisional pratique" are still required to hoist the quarantine flag.

b. Vaccination/Immunization.

Vaccination and Immunization against smallpox and cholera can be carried out by the Port Health Service.

c. Extermination of Rats is carried out by the Port Health Service on the expenses of shipping agent.

d. Medical Care.

- First Aid at the scene of accident.
- Medical treatment or advice available on request to the Port Health Service.
- Hospitalization available in general and private hospital in Palembang.

B. Ship's Certificate :

The Ship's Certificate should be delivered to the Harbor Master through the Agent. The certificate will be returned to the Ship's Master prior to the ship's departure.

C. Ship's Manifest and Bill of Lading.

The copy of the Ship's manifest should be delivered to the Port Administrator through the agent.

3. Customs Regulations.

The Ports in Indonesia are divided into :

a. Sea Ports, i.e. ports at which foreign vessels may call without a "Flag Dispensation" from the Ministry of Communications (Directorate General of Sea Communications) and the Ministry of Finance (concerning the import and export of goods).

b. Coastal Ports, at which only vessels flying the Indonesian flag may call according to the regulation. For vessels under a foreign flag a permit must be obtained, which is called "Flag Dispensation".

The Port of Palembang is a Sea Port.
Vessels unloading and loading cargoes have to get a Customs permit.
The Cargo Manifest, the ship's store list and the list of the crew's dutiable belongings have to be delivered to Customs within 48 hours.

Tobacco Allowance.

Each crew member is allowed to carry 200 cigarettes or 50 cigars or 100 grams of tobacco ashore without paying import duty.

Alcohol allowance	:	There is no allowance for alcohol drinks.
Other commodities	:	Each crew member is allowed to bring personal good in use up to maximum value of US $ 25.-

4. Immigration.

Vessels carrying passengers arriving at Indonesian ports from abroad have to show the "N" flag. The Captain is required to furnish the boarding Immigration Officer with a passenger list showing the names of all passengers on board and classified as :

a. Disembarkation passengers.
b. Transshipment passengers, and
c. Through passengers (from abroad to ports outside of Indonesia).

Crew Identification Card.

Crew members having no passport are required to carry a Seamen Identification Card (S.I.C.). A re-entry permit into a country is required if there is no S.I.C.

Repatriation.

A valid document is needed. A re-entry permit from the country concerned is sufficient, if there is no passport available.

5. Port Services.

1. Radio.

The name and the call sign of the Radio Station is Palembang Radio/PKC.

V.H.F. System :

a. Harbor Master	-	Channel 14
b. Pilot	-	Channel 12
c. Tugboat Operations	-	Channel
d. Port Operations	-	Channel 12 - 16
e. Safety/Security	-	Channel 09 - 12 - 16

2. Pilotage.

The ship's owner/agent has to inform the Port Administration (the Pilotage Division) of the ship's arrival 24 hours in advance.

3. Anchorage.

Anchorage for vessels waiting for the pilot is at Musi River Outerbar.

4. Entry Restrictions.

Draft is approximately 4.5 meters LWS. - (6.0 late 1975)

5. Max Size of vessel.

Length	165 M	-	(185 with special permission)
Draft	6.5 M	-	(8.0 late 1975)

6. Tugboats.

Vessels more than 90 meters in length have to be tugged by a minimum of one tug-boat.

7. Berthing.

A minimum of one mooring boat must be used.
Berthing time is about 1½ hours.

8. Stevedores.

According to the requirements of the vessel concerned, laborers are requested from the U.K.A. (Port Labor Pool).
Working hours :
The usual working hours at the harbor are :

Monday - Thursday	:	08:00 - 12:00 hours
		13:00 - 16:00 hours
Friday	:	08:00 - 11:00 hours
		13:30 - 16:00 hours
Saturday	:	08:00 - 12:00 hours
		13:00 - 14:00 hours

Overtime is allowed on request.

9. Air density.

1,000 mb.

10. Fresh Water.

Piped water supply is at 15/20 tons/hour, and through water barges is at 50/60 tons/hour.

11. Coalwharf.

Two transporters with grippers are available.

12. Fuel.

Fuel is available, supplied by PERTAMINA through either pipes or barges.

13. Gangway/Deck Watchmen.

Gangway/deck watchmen are available if required.

14. Repairs.

Ship repairing facility is available.

15. Port Health Centre.

Port Health Centre is available in the port. Open 24 hours. Consist of emergency room, polyclinic, dental office, delivery room, family planning department and and dispensary drug.

16. Labor.

Harbor activities in Palembang are labor intensive and are available on a 24 hour basis. Laborers may be requested through the U.K.A. (The Labor Pool).

17. Fire Brigade.

Services of fire brigade are available.

6. Miscellaneous.

1. Indonesian Standard Time.

The Port of Palembang is located in the zone of Western Indonesian Time, which is based on the time at the maridian of 104° 46' 36" EL.

2. Airport.

Talang Betutu Airport is approximately 12 Km from Port of Palembang.

Source - Port Administration Information pamphlet Port of Palembang, and Wharves of Pertamina Unit II, Pusri, Kertapati with updated data supplied by Palembang Port Study - E.G. Frankel, Inc.

2.2 Aids to Navigation

2.2.1 General

The Palembang navigation district is under the command of a District Navigation Officer who is operationally responsible to the Palembang Port Administrator and technically responsible to the Aids to Navigation Section of the Directorate of Ports and Dredging, all of whom report eventually to the Director General of Sea Communications. The lines of command and technical or engineering direction are quite similar to those of other countries. The area for which the Palembang navigation district is responsible is shown in Figure IV-2.2.1-1.

2.2.2 Responsibilities

The Palembang navigation district is responsible for minor repairs and lamp servicing of most of the marine navigational aids in the Musi-Banyuasin Rivers. These aids are listed in Table IV-2.2.2-1. In this connection it should be noted that

a. Buoy tenders from Tanjung Priok regularly service the district buoys on a six months basis.

b. That the major repair, reconstruction and new construction of fixed beacons is usually performed on a contract basis.

c. The buoys installed at the upper end of the Musi River, about four in number, were requested, installed and are serviced by Pertamina.

Figure IV-2.2.1-1

Area for which Palembang Navigation District is Responsible

To Be Completed for Final Report

Table IV-2.2.2-1

Navigational Aids in Musi-Banyuasin Rivers

To Be Completed for Final Report

2.2.3 Facilities

The Palembang navigation district covers the Musi and Banyuasin Rivers. It is a part of Region III Tanjung Priok and Environs. The District Navigation Office is at Boom Baru, Palembang, where its facilities include

a. three light attendant vessels (LAV)
b. a small ship repair yard consisting of
   i. two small marine railways
   ii. workshop
c. lampshop
d. storage area
e. jetty

2.2.4 Condition of Equipment

Much of the aids to navigation equipment was wartime damaged and has suffered from inadequate maintenance and spare parts shortages for a number of years due primarily to a lack of available funding.

However, the overall condition of the aids has improved considerably in recent years, as a result of the Pelita Programs and while the Pelita Programs have not been completed, good progress is being made at rehabilitating the aids.

The condition of some of the aids of navigation tenders and light attendant boats is so poor that the repair of some of these boats is questionable. This subject will be further discussed in Volume VI. The practice of repairing a vessel almost regardless of its physical condition is a practice which should be controlled by a survey board which will also be discussed in Volume VI.

2.2.5 Aids to Navigation

In general, the aids to navigation in the Palembang navigational district are satisfactory in so far as the users of the aids are concerned; the pilots, shipmasters and other shipping interests; subject to the proviso that the existing lights be kept lighted as much of the time as possible. The users expect that with the proposed aids in Pelita II it will improve the aids to permit the safe navigation of relatively large ships on the river at all times.

2.2.6 Master Plan - Aids to Navigation

Pelita II roughly spells out the future aids to navigation improvement plan. However, the aids to navigation plans for the future have not been precisely determined for the Palembang navigation district. Due to local requirements, yearly plans are usually carried out on the recommendations of the local Navigational District Officer, which are at times at variance with the specific guidance established in Pelita programs.

The integrated system of aids to navigation for Indonesia Final Report September 1975 prepared for the Director General of Sea Communications by the Management Advisory Team for Aids to Navigation (FTA 127) has been reviewed and the added aids called for in this report appear to be justified. The report and possible additional aids will be discussed in Volume VI and/or VIII.

2.2.7 Propane Gas

The Palembang Port Administration District Navigation Officer is responsible for the purchasing of all

propane gas used by aids to navigation districts throughout Indonesia. This involves the purchasing, handling and distribution of about 2000 propane gas tanks per year.

The handling of gas bottles has its problems in Indonesia which are much the same as the problems involved in handling the gas tanks in other countries. Everyone seems to have troubles in keeping caps on the tanks.

The handling of gas bottles without caps is a dnagerous practice for the following reasons:

a. At Boom Baru gas bottles are handled without mechanical handling equipment and the bottles are usually offloaded from trucks by bouncing them over the side onto a padding of old rubber tires. It is unreasonable to expect that one of the tanks will strike the concrete wharf on the cap or without a cap on the tank valve.

b. The valves are susceptible of being damaged quite easily in transit and handling with the following results

   i. the minimum casualty usually results in the loss of the gas by leakage, the loss of fuel and the danger resulting from the release of the gas.

   ii. the maximum casualty, and this has occurred on numerous occasions, is to break off the valve on a charged tank in which case the tank will take off like a jet propelled rocket and have been known to go through the side of a shop.

c. The life expectancy of a valve without a cap is considerably shortened.

Propane gas tanks are usually difficult and expensive to buy or to make; therefore, greater care should be exercised in the handling of the tank caps. Such caps left in the field usually disappear via the thievery route. It is suggested that aid to navigation personnel not to leave the caps in the field, but return them to base and carry sufficient caps on their return trip to cover any bottle cap requirements.

2.3 Harbor Master

2.3.1 Pilotage

2.3.1.1 General

Pilotage appears to be adequate for its intended purpose for the Port of Palembang and the Musi River delta including the Banyuasin River.

The Palembang pilots operate as a section under the jurisdiction of the Palembang Harbor Master and have 22 river pilots and 8 harbor or docking pilots. Two of the river pilots are qualified on the Banyuasin River.

Generally speaking all ships are required to take a pilot to cross the Musi River bar and to operate on the Musi River.

As a rule all ships coming from foreign ports have to take a pilot, however the pilots may grant special dispendation to vessels on an individual case basis to navigate the Musi River without a pilot. This is usually only allowed for small vessels operating in the local or coasting trade or vessels which are known to have experience in the local waters. In either case the normal pilot fee is charged.

The pilots are not only responsible for piloting the ships on the Musi River and bar, they are also responsible for the docking of ships in the ports along the river including Palembang.

An unusual feature of the Palembang pilotage is that pilots remain on board all ships loading logs while anchored in either the Musi or Banyuasin Rivers. This service is required and is performed at an additional pilot charge.

2.3.1.2 Training and Qualification

The qualifications of the Palembang pilots appear to be satisfactory for the intended purpose of providing compulsory and competent pilots for the Musi River.

An applicant for the position of apprentice pilot must have completed senior high school and must have had at least two years experience on ships. He undergoes a six months pilot training course consisting of three months theoretical studies and three months of practical training prior to obtaining a pilots certificate, however, an apprentice pilot is required to obtain a master's certificate. After qualifying as a pilot, the new pilots start by piloting the smaller 400 ton ships and gradually increase the size of ships in steps as their experience increases until they become an unlimited pilot at the 10,000 ton qualification step which usually occurs at an age of about 25 years. The maximum age for becoming a pilot is 40 years. However many pilots when they reach the age of 40 are no longer assigned as active pilots and are transferred to administrative of teaching shore positions. The mandatory retirement or pension age for pilots is 55 years.

2.3.1.3 Operations - Musi River

The Port of Palembang is open to entry 24 hours a day, year round, except for a few hours a day usually about four hours before low water on the neap tides in January and February during the northerly monsoons wren the relatively large wave conditions on the bar preclude ship entry until the tide turns and starts to flood. This generally does not seriously delay ships entering because when the tide changes the ships will usually carry a flood tide all the way to Palembang.

The pilot boats although generally considered to be able and satisfactory boarding boats, except for speed, encounter difficulty in boarding operations on the last of the eff tide in January and February etc and sometimes must wait for the smoother water which occurs when the tide changes to flood.

Another factor which does cause delays in pilotage operations is the slow pilot boats which carry the sea pilots across the bar to the waiting ships. The pilot boats only make 7.5 knots. Against the current are extremely slow requiring up to two hours to make the run between pilot station a vessel's requiring a pilot.

The pilot station on the lower Musi River does not maintain a log of weather conditions in the region. Being a manned Government station it is a natural location at which to collect hydrographic and meteorological data. The station should have an anemometer; barometer; compass; pelorus; tide, current and wave height recording equipment and a good program for periodically collecting designated data.

2.3.1.3.1 Aids to Navigation

The pilots report that the aids to navigation are generally satisfactory in number for the full night time operation of the size ships permitted in the Musi River. They further report that the lighted aids are usually 60 percent lighted and that the navigational light outage is about 40 percent Despite the A to N lighted aid outage, the pilots state that ships are rarely delayed due to A to N outages.

2.3.1.3.2 Hydrographic

Up until the Musi River was recently dredged the following general rules applied to the depth of ships navigating the river ships with a draft of 4.5 meters or less could go at any time.

Ships drawing up to 5.5 meters and below could go on either high tide. Ship drawing 6.0 meters and above could go only on the higher high tide.

The maximum depth of water heretofore permitted in navigation on the Musi River has been 7.5 meters at HWS or 24.6 feet.

As a safety measure the pilots require .3 meters under the keel for ships on the river on a rising tide and .5 meters for safe operations with a falling tide.

During the monsoom season in January and February the depth of the Musi River is up about 1.0 meter at Palembang and this increase in water depth diminishes gradually and reaches zero increase at the Outer Bar.

There have been several reports indicating that the depth in the river used to be such that vessels drawing 27

feet of water could navigate to Palembang but that the river has since shoaled to about 24 feet.

When the Musi River channel is completed dredging to six meters at LWS and the range of tide is over 2.5 meters ships drawing eight meters can be accommodated to Palembang.

2.3.1.3.3 Banyuasin River

The pilot association has two pilots qualified to pilot ships on the Banyuasin River which is navigable to a depth of 6.5 meters (about 21.3 feet) at high water. This river is navigable a distance of about 25 miles from the Outer Bar. The only ships entering this river to go to reach the logs collected in the river for export.

2.3.1.3.4 Logging Operations

Ships loading logs both on the Musi and Banyuasin Rivers usually require about three to four days for the loading. Generally the ships load logs from anchored positions in the river and carry a pilot on board at all times during the log loading operation. Therefore, some pilots are out on duty for three or four days and the ships are billed for the additional pilot time required.

2.3.1.3.5 Speed on the Musi River

1. Present Situation

The present regulation requiring an 8 mile per hour speed limit on the Musi River should be changed for the following reasons.

a) The speed limit is unrealistic in that a ship which obeys the rule cannot transit the river from the Outer Bar to Palembang on one tide.

b) In order not to unduly delay ships the river pilots are not complying with the Musi River speed regulation.

c) There is no substantiable reason for limiting the speed on the entire river length to 8 miles per hour. Many stretches of the river are quite wide and quite deep and in these areas a speed of about 12 knots for most vessel navigating the river is not unreasonable.

d) There are parts of the river where a speed of 8 miles per hour is excessive. In these areas of heavy river front development either for villages or industrial development it may be necessary to reduce a ship's speed to 5 or 6 knots.

2. Proposed Solution.

Since it is obviously undesirable to have an unenforceable law or regulation on the books, it is recommended that the speed regulation on the Musi River be withdrawn and that the pilot and/or the ship's master be held responsible for maintaining a safe speed on the river. That speed should of course be one which does not cause damage to reasonably constructed or moored facilities along the river and should not be such that the ensuing waves will cause undo erosion along the river banks.

The pilots are in the best position to know where, when and what ships can operate safely up to 12 or 13 knots and also where, when and what ships must slow down and to what speeds, presumably 5 to 6 knots or less depending upon circumstances, in order that the ships will not damage either the river front installations of the river environment itself.

It is essential that navigational speeds on the river be such that under normal conditions most if not all ships should be capable of navigating the river in either direction at the rated or advertized depth of the river on one tide.

Tidal differences and other constants for the Musi River are published in the tide tables a sample of which is contained in Table IV-2.3.1-1.

2.3.1.3.6 Size of Ship on the Musi River

The maximum size ship normally permitted on the Musi River is 175 meters in length. The restriction in length is imposed for two reasons which are :

1. There are several turns in the river which make it difficult for a ship longer than 175 meters to navigate the river without assistance.
2. The maximum size vessel which can be safely turned around in the Musi River off Palembang is one not much longer than 175 meters.

The largest ship to call on the Port of Palembang was the SS Indian Mail, an American President Line ship which loaded 2440 bales of cotton (about 770 tons) and 60 tons of heavy equipment on the west coast of the United States for delivery to Palembang. The following is a report on her passage to and from the Musi River Outer Bar to Palembang in October 1975.

The S.S. Indian Mail is a large break bulk general cargo ship which has extensive heavy lift equipment installed on board. The ship is served by 20 ton booms at all of her many hatches and has a 70 ton boom servicing both her No.5 and No.6 hatches. The principle characteristics of the ship are as follows :

Table IV-2.3.1-1

Tidal Differences and Other Constants

Item number tide table	Place	Position		Differences				Ranges		Mean tide level
				Time		Height				
		Lat.	Long	High water	Low water	High water	Low water	Mean	Spring	
	Sumatra East Coast	0 ' S	0 ' E	n m	n m	feet	feet	feet	feet	feet
1779	Outerbar-Musi River entrance	2-14	104-56	Daily predictions				7.3	10.0	6.2
1781	Sungsang, Musi River	2-22	104-54	+0-42	+1-09	0.0	- 0.2	7.5	10.2	6.2
1783	Peradjin, Musi River	2-56	104-53	+ 3.44	+4-17	*0.83	* 0.83	6.1	8.3	5.3
1785	Palembang, Musi River	2-59	104-46	+4-12	+4-56	*0.75	* 0.66	5.7	7.8	4.6
1789	Muntok, Bangka Island	2-05	105-10	-0-13	+0-09	0.0	- 0.3	7.6	10.5	6.2

PALEMBANG RIVER ENTRANCE, SUMATRA 1975

Item No.	Date	High water	HT feet	Low water	HT feet
1.	21 October 1975	0813	8.2	1439	5.9
2.	21 October 1975	1801	6.2		
3.	22 October 1975			0049	3.3
4.	22 October 1975	0839	8.9	1618	5.9

Source - Tide Table - 1975 Central and Western Pacific Ocean and Indian Ocean - U.S. Department of Commerce - National Ocean Survey.

* Ratio - If ratio is accompanied by a correction multiply the heights of high and low water at the reference station by the ratio and then apply the correction.

Item No.	Characteristic	Dwt	Feet	Meters
1.	Length		605.0	184.5
2.	Beam		82.0	25.0
3.	Draft (winterload line)	21200	34.3	10.4
4.	Draft (summer load line)	22215	35.0	10.7
5.	Draft (entering Palembang)	7000	20.0	6.1
6.	Tons per foot immersion	1000	1.0	0.3
7.	Machinery steam 24,000 HP			
8.	Propulsion single screen			
9.	Bow thruster about 860 SHP			
10.	Speed - Max.cont. full power		22 knots	
11.	Speed - normal economical cruising		17 knots	
12.	Speed - manuevering standard or full speed		13 knots	
13.	Speed - manuevering half speed		9 knots	
14.	Speed - manuevering slow speed		5 knots	
15.	Speed - manuevering dead slow speed		2 knots	

About three weeks ago prior to arrival at Palembang the question of the S.S. Indian Mail going to Palembang, due to her size, etc. developed. Permission from Indonesian Authorities was questionable and the ships agents tried to transship the cargo to Palembang apparently without success. After much message sending, it was agreed that the ship could proceed up the river to Palembang provided the ship was escorted by a tug.

Accordingly the Indian Mail arrived off the Musi River outer Bar on the afternoon of 18 October 1975 and entered the Outer Bar channel at about 16:30 and required about five hours (normal for most large ships) to make the run to Palembang where she anchored awaiting a berth.

The ship came up the river a manuevering standard speed of 13.0 knots except for the Outer Bar itself and several other locations where the speed was reduced to lower speeds in way of congested and shallow areas. The ship is equipped with a bow thruster, which was not used in navigating the river, although it was held in readiness to operate. The bow thruster was used in Palembang to assist in the steering of the ship when manuevering at dead slow speed (2 knots) and in manuevering to dock the ship.

The Port Administration provided a tug boat escort which followed the ship up the river without actually furnishing any assistance except in docking which was primarily accomplished with the bow thruster. In fact the speed of the tug was so slow that she could not keep up with the S.S. Indian Mail and she fell off astern of the ship.

The ship discharged her cargo and was ready to depart about 22:00, 20 October 1975 and waited until 04:00, October 21, 1975 to depart such that she would have high water at Payung Island and the Outer Bar.

The trip downriver was uneventful, required six hours and was made at a normal manuevering standard speed of about 13 knots except in shallow and congested areas where the speed was reduced accordingly.

Conclusions.

Discussions with the interested parties developed the following conclusions and recommendations.

Conclusions

1. That within the available draft limitations, the passage of the S.S. Indian Mail, a 184 meter ship, from the Musi River

Outer Bar to Palembang and return was entirely satisfactory.

2. The pilots had no problems with handling the ship at any time.

3. The Master of the ship at no time had any apprehensions about the safety of his vessel except for depth of water. The charts available to him did not indicate there was sufficient depth of water for his ship on the Outer Bar.

4. At dead slow speed, two knots, the ship was not responsive to its rudder and the bow thruster was used to control the ships heading.

5. Had the ship not had a bow thruster two tug boat assistance would have been required while docking.

6. The vessel required most of the available channel width in which to turn around and head down the Musi River. Note - In order that the Indian Mail could turn in the Port, it was necessary for the pilots to move several ships which were anchored off her berth at Boom Baru in the Musi River channel.

7. In the tight turns on the river such as (1) just down river from Kramat Island and (2) just downriver from Pegadjahan, a large ship requires the whole channel in which to navigate the turns and it would be impossible to have two large ships passing in these areas. Advance information of estimated times of arrival at these locations should be known to other pilots and/or radio communication between pilots should be available for direct communication between pilots.

8. That most foreign ships, particularly liner service vessels, are usually close to the end of their outbound voyages and quite light in dead weight tonnage and draft

when they arrive in most Indonesian Ports, consequently they can usually load a reasonable amount of cargo even in relatively shallow draft ports such as Palembang.

9. That a ship such as the S.S. Indian Mail would be able to increase her Dwt at the rate of about 1000 tons per foot of depth of water.

Recommendations

1. That the port be opened to ships up to a maximum length of 185 meters provided they meet the draft restrictions of the Port.

2. That large low powered vessels without operable bow thrusters be escorted up the river from the first tight turn, just downriver from Kramat Island to Palembang.

3. That large vessels equipped with operable bow thrusters and large high powered vessels be permitted to navigate the Musi River to Palembang unescorted provided the bow thrusters when available are activated and ready to operate.

4. That a minimum of two tugs with a least 800 shaft horse power (SHP) be available for the docking and undocking of large ships at Palembang.

5. That one tug of at least 800 SHP be required to stand by a bow thruster equipped ship for both docking and undocking and that two large tugs be assigned to help turn around large ships not equipped with bow thrusters.

6. That a requirement be made to require that all pilots will have advance knowledge of the passage of very large ships or that a radio phone system be initiated among the pilots with portable transmitting and receiving units.

2.3.1.3.7 Ship Size Above Ampera Bridge

In response to questions on the size of ships permitted to operate or to navigate to the Kertapati terminal, the harbor master stated that ships of 165 meters could and would be permitted to operate above the Ampera Bridge subject to their draft limitation, their height limitation and to the availability of tugs in the port to turn them around. The turning circle above the bridge appears to be satisfactory for 165 meter ships.

With regard river conditions above the bridge, Chart No. 160-Sungai Musi, indicates that the depth of river is sufficient for normal operations to Kertapati and that the main depth of the river, 6 meters or more, appears to be over 600 feet (183 meters) wide in way of the coal pier at Kertapati. This should be ample turning circle for the 120 to 135 meter ships which Shell originally suggested operating to Kertapati.

2.3.2 Utilization of River Pilots

In order to analyze the river pilot operations to determine the normal or average pilot cycle time it is necessary to make some assumptions which are listed as follows.

1. It is assumed that a pilots cycle starts when he arrives on scene at the pilot office and concludes when he arrives back at the pilot office having completed one complete cycle from Palembang to the Outer Bar and return and that he has had a rest and recreation (R + R) and is ready for his next pilot assignment.

2. The time estimates given in Table IV-2.3.2-1 are approximately the same as those developed in a later two month sur-

TABLE IV-2.3.2-1

ANALYSIS OF EVENTS CONSTITUTING A RIVER PILOT CYCLE

ON THE MUSI RIVER

Item No.	Description of event	Estimated time hours minimum	Estimated time hours maximum	Estimated time hours average	Estimated time hours standard allowable	Comments
1(a)	Wait in pilot office	0.25	0.25	0.25	0.25	
(b)	Pilot boat to ship	0.25	0.25	0.25	0.25	
(c)	Time on board before departure	0.5	0.5	0.5	0.5	
	Sub-total	1.0	1.0	1.0	1.0	
2	Running time Palembang to Outer Bar	6.0	18 to 30/30	6.0	6.0	Note (a)
3(a)	Time waiting on ship for pilot boat	0.25	0.25	0.25	0.2	
(b)	Time on pilot boat before starting for pilot station	0.25	1.25	0.75	0.4	
(c)	Running time to pilot station	2.5	2.5	2.5	1.4	
	Sub-total	3.0	4.0	3.5	2.0	Note (b)
4	Time at pilot station required R + R prior to qualifying for next pilot position	(6)	(6)	(6)	(8)	

TABLE IV-2.3.2-1

(Cont'd)

Item No.	Description of event	Estimated time hours minimum	Estimated time hours maximum	Estimated time hours average	Estimated time hours standard allowable	Comments
(a)	Average time before retiring to rest	0.5	4.0	1.0	1.0	
(b)	Average time sleeping	2.0	8.0	4.0	6.0	
(c)	Average time up and about before leaving pilot station	0.5	6.0	1.0	1.0	
	Sub-total	3.0	18.0	6.0	8.0	Note (c)
5(a)	Pilot boat running time to ship at Outer Bar	2.0	2.0	2.0	1.4	
(b)	Average waiting or delay time at Outer Bar prior to entering bar channel upbound	1.0	1.0	1.0	0.6	
	Sub-total	3.0	3.0	3.0	2.0	Note (b)
6	Average running time of ships Outer Bar to Palembang	5	6	6	6	
7	Time required to return to office write reports and depart for R + R	1	2	1	1	
8	Total time requirements working phase of pilot cycle Palembang to Outer Bar and return	21	50	26.5	26	

TABLE IV-2.3.2-1

(Cont'd)

Item No.	Description of event	Estimated time hours minimum	Estimated time hours maximum	Estimated time hours average	Estimated time hours standard allowable	Comments
9	Time requirements for R+R prior to next assignment	12	25	23.5	49	
10	Total time required for one complete pilot cycle	33	75	50	75	Note (d) and (e)
11	Average hours worked per week	82	74	69	40.2	Note (f)

vey of pilot times required in piloting ships from the Outer Bar to Palembang both inbound and outbound and for docking and undocking ships in the Palembang area. The latter survey results are shown in Figure IV-2.3.2-1.

In general the outbound trip usually starts several hours before high water in order that high water will exist at the shallowest part of the Musi River, usually the Payung Island area. Therefore, the trip outbound is usually run part way against the tidal current and the actual running time from Outer Bar to Palembang or vice versa is about five to six hours. The pilot time Figure IV-2.3.2-1 Part A indicates the outbound trip takes about an hour less time than the inbound trip. This is more a reflection of the fact that the pilots get off many of the ships at Tanjung Buyut, than a true measure of the time required to make the outbound run all the way to the Outer Bar pilot vessel. The fact that the pilots do not complete the outbound pilot run to the Outer Bar on all ships is attributable to several factors

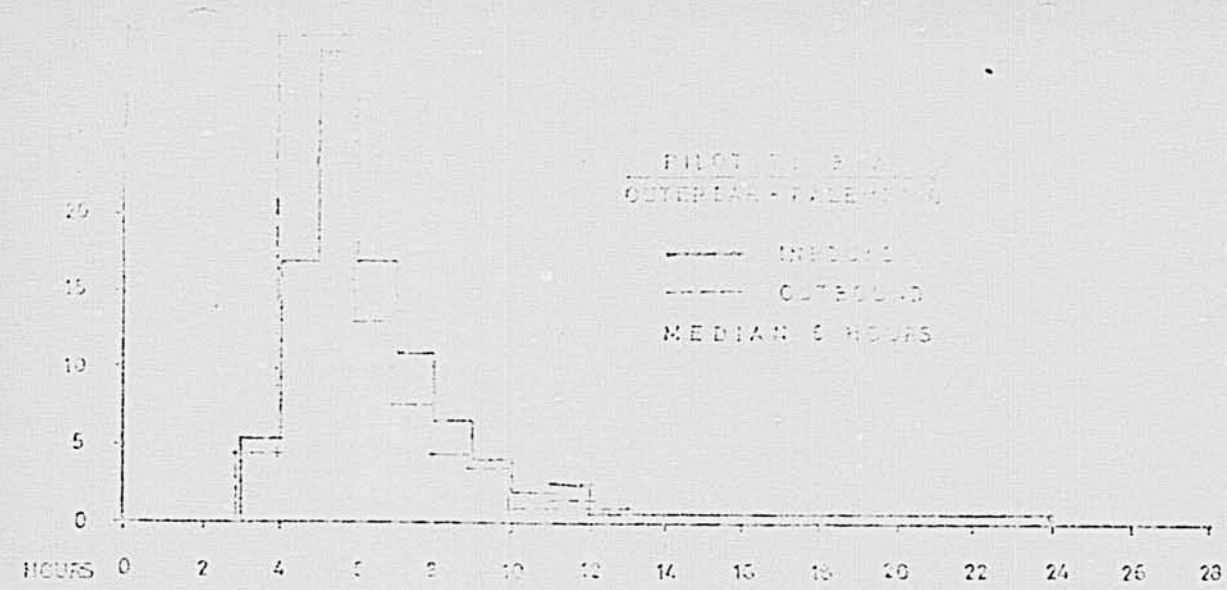
a) the overall shortage of pilots

b) the pilot needs for rest before undertaking the return trip

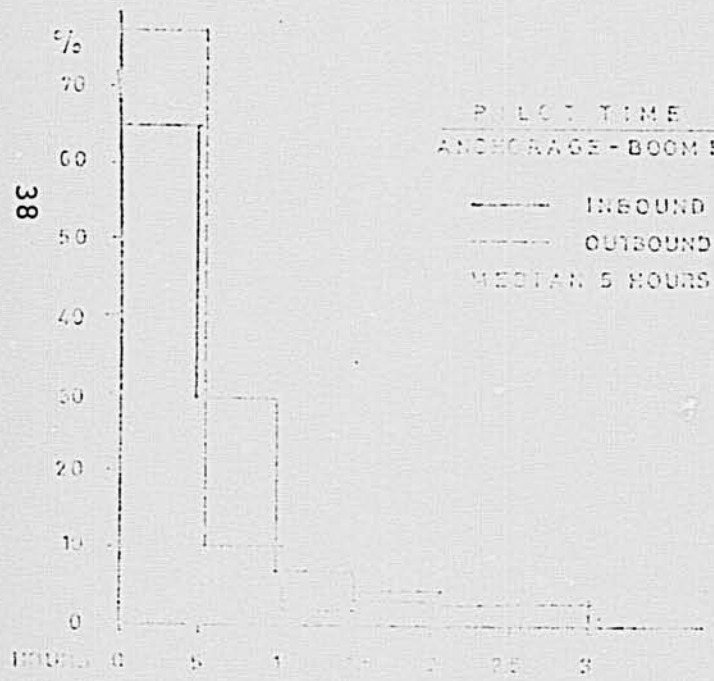
c) The slowness of the pilot boats which require from two to three hours to make the run from the Outer Bar pilot vessel to the Tanjung Buyut pilot station.

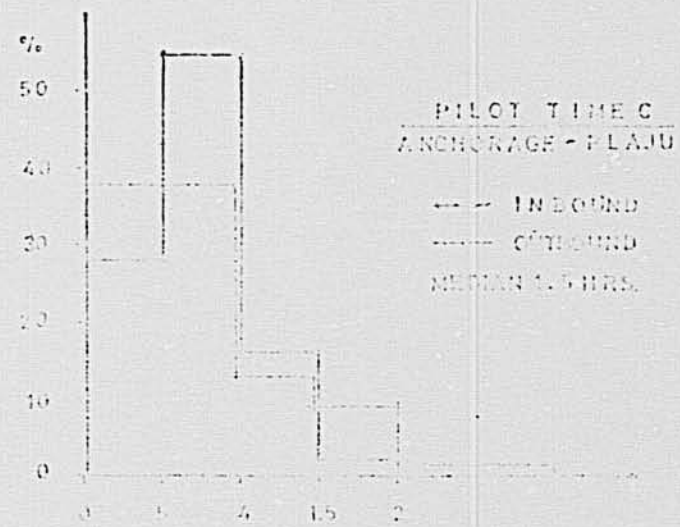
3. In order to identify the various steps in a pilot cycle, the identifiable time consuming events in the average pilot cycle are shown in Table IV-2.3.2-1.

1. That the following minimum rest and recreation (R + R) periods are required prior to proceeding to the next cycle step.



TWO MONTH SAMPLE
1975 (JULY - FEBRUARY)





a) Six hours at the pilot station
b) Twelve hours at Palembang

5. That there are now 22 river pilots and eight harbor pilots.

6. That the average age of qualifying as a pilot is about 25 years, the retirement age is 55 years and the useful pilot career of a pilot is about 30 years.

7. Notes amplifying entries on Table No. I

a) Assumes that deeply laden ship must wait for a second high tide for one of various reasons (inadequate speed, late start, etc.)

b) Assumed that new faster pilot boats will permit a reduction in running time to and from the pilot station of about two hours which will permit the pilots to have about six hours sleep before starting upriver rather than the approximate four hours at the present time.

c) Three hours R + R is below the minimum standard but pilots have returned to work with this R + R to prevent a ship from missing a tide which could delay the ship 24 hours.

d) Assumes the average day from a pilots point of view is 25 hours or the time interval between successive higher high tides.

e) To maintain this schedule every other ship assigned must be a shallow draft ship.

f) R + R at pilot station not included as work.

8. In the year from April 1, 1974 to March 31, 1975 there were a total of 133 ships in the Musi and Banyuasin rivers to load logs as cargo. The average time Outer Bar to Outer Bar of ships loading logs is four days during which time a pilot continuously attends the vessel. It is assumed that when a pilot completes his assignment to a log carrier he will be entitled to two days R + R.

9. The average number of ships requiring pilot service to and from Palembang in a year is now about 3000. This number is confirmed by the summary of pilotage statistics Table IV-2.3.2-2 which was derived from pilot annual statistic reports as indicated in Table IV-2.3.2-3.

2.3.2.1 Requirements for River Pilots.

The number of river pilots required by the Port of Palembang is computed as follows :

a) The number of ships per year	=	3000 ships
The cycle time for a pilot	=	3 days
Sub-total time river pilots to Palembang	=	9000 pilot days
b) In the logging operation		
The number of ships per year	=	133 ships
The cycle time for a pilot	=	6 days
Sub-total time river pilots log ships	=	798 pilot days
c) Total time river pilots (a) + (b)	=	9798 pilot days

d) Assume each pilot has 15 days vacation and 15 days sick leave per annum.

TABLE IV-2.3.2-2

SUMMARY OF PILOTAGE STATISTICS

Year	Monthly average number ships piloted upriver Ships/month	Monthly average number ships piloted downriver Ships/month	Average Dwt. ships upbound Dwt.	Average Dwt. ships downbound Dwt.	Percentage ship movements at night	Average number of ships piloted R/T per year	Number river or sea pilots available	Number harbor pilots available	Total number pilots available
1971	223	256	9613	8760	30 %	2874	23	6	29
1972	224	227	8410	8304	31 %	2706	25	6	31
1973	252	262	8273	8445	32 %	3084	25	8	31
1974	242	236	6792	6577	—	2868	22	8	30
1975	243	238	6890	7280	—	2886	22	8	30

TABLE IV-2.3.2-3

LIST OF PILOTED SHIPS

ARRIVING AND DEPARTING IN 1974 - PORT OF PALEMBANG

No.	Month 1974	Number of ship		Number of ship	
		Arriving	Bruto capacity	Departing	Bruto capacity
			M^3		M^3
1.	August	215	1,465,754.22	212	1,464,965.54
2.	September	249	1,815,738.87	224	1,732,367.67
3.	October	206	1,345,981.15	200	1,338,738.38
4.	November	284	1,665,736.36	252	1,456,450.76
5.	December	235	1,337,757.41	255	1,467,019.16

LIST OF PILOTED SHIPS

ARRIVING AND DEPARTING IN 1975

PORT OF PALEMBANG

No.	Month 1975	Number of ship		Number of ship	
		Arriving	Bruto capacity	Departing	Bruto capacity
			M^3		M^3
1.	January	243	2,346,150.87	241	2,325,611.21
2.	February	225	1,352,145.52	217	1,354,868.00
3.	March	240	1,765,903.49	236	1,702,849.25
4.	April	251	1,773,371.28	244	1,657,102.91
5.	May	239	1,650,002.28	244	1,800,866.00
6.	June	274	1,808,869.50	242	1,764,398.22
7.	July	240	1,808,869.50	242	1,886,359.25
8.	August	229	2,322,890.00	225	2,220,130.00
9	September	247	2,008,460.00	240	2,030,493.00

e) On a three day cycle time for river pilots they are assumed to be available for work a total of = 335 days per year

f) Number of river pilots required = 9798 ÷ 335 = 29 pilots

Since there are now 22 river pilots the port is short about 7 river pilots. If the pilots were working a normal 40 hours work week they could absorb, on a temporary basis, a 50 percent increase in the number of ships handled by increasing their weekly work load to 60 hours. In the interest of justice for the pilots and to provide sufficient pilots such that ships will not be delayed for a lack of pilots, the port should determine the number of pilots required on a normal 40 hours work week. The number of qualified Musi River pilots should be increased to 29 pilots.

2.3.2.2 Utilization of Harbor Pilots.

The utilization of harbor pilots was analyzed along similar lines as for the river pilots. The following assumptions were made with regard harbor pilot operations.

1) It is assumed that a harbor pilots time starts when he arrives on scene at the pilot office and concludes when he arrives back at the pilot office having completed one task of either docking or undocking a vessel and has returned to the pilot office and is ready for a new assignment.

2. In order to identify the various steps in a pilot cycle the identifiable time consuming events in the harbor pilots cycle time are shown in Table IV-2.3.2-4.

TABLE IV-2.3.2-4

ANALYSIS OF EVENTS CONSTITUTING A HARBOR PILOTS WORK CYCLE

Item No.	Description of work item	Estimated time hours minimum	Estimated time hours maximum	Estimated time hours average	Recommended time hours standard allowance	Comments
	DOCKING					
1.	Total time from office to pilot job	0.13	0.22	0.17	0.17	
2.	Time from arrival at ship until ship is secured at dock and pilot is ready to leave having completed paper work	0.99	1.06	0.96	0.96	
3.	Time required to proceed back to office	0.13	0.22	0.17	0.17	
4.	Sub-total docking	1.25	1.50	1.30	1.30	
	UNDOCKING					
5.	Time to proceed to ship to be undocked	0.13	0.22	0.17	0.17	
6.	Time on board ship	0.49	1.06	0.86	0.86	
7.	Time to proceed back to office	0.13	0.22	0.17	0.17	
8.	Sub-total undocking	0.75	1.50	1.20	1.20	
9.	Total pilot time docking and undocking	2.00	3.00	2.50	2.50	

3. The following size ships are required to take the services of a docking pilot a) length 12 meters or b) tonnage 70 M^3.

4. The normal working hours for a docking pilot are nine hours per day and the docking pilot usually works two hours overtime per day.

5. Reports indicate that there are about two ships per month and 24 ships per year which are delayed due to a shortage of docking pilots.

6. The pilots report being delayed in reaching their assigned ship due to pilot boat trouble about twice a month and about 24 times per year.

7. The assignment of harbor pilots is usually made on a rotation basis.

8. The pilots also report that about 92 ships per month or 1104 ships per year are permitted to dock without pilots because there are insufficient pilots to meet all pilot requirements.

9. Ships of 60 meters in length and up require tug assistance in both docking and undocking.

10. Assume that 50 percent of the ships entering the port are deeply laden whether ocean or interisland shipping and must dock and undock within 2½ hours of high water. Therefore, the deep draft ships can be worked on an average of about five hours per day and that time revolves around the clock along with the change in tides.

2.3.2.2.1 Summary Docking Pilot Requirements

The docking pilot analysis indicates that eight docking pilots on duty 55 hours a week are actually piloting about 33 hours per week and are performing about 80 percent of the ship movement pilotage required under existing law and/or regulation. In other words 60 percent of a docking pilots time is spent in waiting between assignments. In order to perform all (100 percent) of the required docking and undocking pilotage in Palembang assuming continuation of the present hours of work would require a total of 10 harbor pilots.

If we decrease the working week of the harbor pilot from 55 hours to 40 hours and plan to perform all of the required harbor pilotage, the number of pilots should be increased to about 14.

In order that the harbor pilots will be able to handle all of the required work on an average work week of 48 hours, it is recommended that the number of harbor pilots be increased to 12.

Since the number of ship dockings are bound to increase particularly at Pusri, Kertapati, Pertamina and Boom Baru it seems prudent that additional pilots be trained now for both present and future use. With a complement of 12 docking pilots, the pilot service would be able to absorb temporary fluctuations in ship traffic density without undo hardship on the part of the pilots and without delaying any ships.

The number of ship dockings and undockings performed by the harbor pilots is given in Table IV-2.3.2-5.

Table IV-2.3.2-5

Number of Ship Dockings and Undockings Performed by the Harbor Pilots

Item No.	Item description	Number for slow month	Number for busy month	Number for ave.month	Number per year
1.	Ship dockings	330	600	460	5500
2.	Ship undockings	330	600	460	5500
3.	Total piloted ship movements	660	1200	920	11000
4.	Total number of cycles piloted	330	600	460	5500
5.	Cycle of ship movements not piloted due shortage of pilots (usually small ships)	80	100	90	1080
6.	Total number of ship cycles which should be piloted	410	700	550	6580

2.3.2.2.2 Requirements for Harbor Pilots.

The number of harbor pilots required by the Port of Palembang is computed as follows.

a) The number of ship docking and undocking cycles per year 6580
The cycle time for a pilot in hours 2.5

Total time required of harbor pilots in hours 16450

b) If we assume that a pilot works 48 weeks per year and that there are 8 harbor pilots, each pilot should actually work about 2060 hours per year or about 43 hours per week.

c) Thus it can be seen that if the pilots could work steadily when on the job 8 harbor pilots should be sufficient. However, ship movement docking work is not steady work but comes in spurts with most shifts associated one way or another with high water in the river. Since ship movement pilot service must be provided 24 hours a day seven days a week, there will obviously be a large percentage of hours when a pilot will be on duty during which time he has no tasks to perform.

2.3.2.2.3 Watch Standing Requirements

Establishing the requirements for harbor pilots then becomes a question of the docking pilot watch standing requirements. At the present time the docking pilots are assigned as follows :

Station	No. pilots on duty for 24 hours	No. pilots off duty for 24 hours
Boom Baru	2	2
Plaju and Sungai Gerong	2	2

In order to keep the above watch standing routine in operation would usually require at least one spare pilot preferably two to cover for vacations, sick leave and other authorized administrative absences.

In order to have a docking pilot system capable of absorbing the present heavy workload with adequate reliefs as indicated above it seems apparent that the docking pilot complement should be increased to 10 pilots.

2.4 Communications

2.4.1 General

The Port of Palembang its primary radio station, call sign PKC on the following schedule :

Time operating (GMT). Frequency 500/448 Kc.; 0000/0100, 0400/0500, 0800/0900, 1200/1300. Frequency 8706 Kc.: A.I 0100/0200, 0500/0600, 0900/1000, 1300/1400. Frequency 8799.2 Kc.: A.III 0200/0230, 0600/0630, 1000/1030.

VHF Channel 16, 20, 22, 26 and 28. Time operating (local time) 0700/1330, 1500/1730, 1900/2100.

VHF - Direct Pilot Master Channel 12 and 14. Time operating (local time) 0800/1600.

The above channels are used as follows :

a) Harbormaster - channel 14
b) Pilots - channel 12
c) Tugboat operations - --

d) Port operations - channel 12 - 16

e) Safety and Security - channel 9 - 12 - 16

PKC Palembang apparently has little difficulty communicating with the outside world but does have difficulty in communicating with the pilot station at Tanjung Buyut.

The communication network operated by PPA is apparently inadequate for this task. PPA Palembang Radio (PPR) has difficulty reaching the pilot station except under favorable conditions. In addition, there are virtually no communications between the pilot station or PPR and any of the floating vessels except by virtue of one walkie talkie radio sometimes in use at the pilot station. There have been many adverse comments by industry on the inadequacy of communications from a ship to the pilot station etc.

The distance between PPR and the pilot station about 54 miles is too great for VHF or UHF frequency use without resorting to expensive high antenna systems and the range of most low powered equipment is limited.

PPA is aware of the communications difficulties and is evaluating its communications system prior to recommending changes.

It is recommended that the PPR and the pilot station be equipped with radio equipment of sufficient power such that they can communicate satisfactorily under most atmospheric conditions and that the major PPA fleet units be equipped with radio telephones of about 10 watts power output.

2.4.2 Pilot Station Generator Situation.

Radio communications at the pilot station is limited to a few hours a day because the station generators are operated only a few hours daily.

The station has ample generating capacity. However one of the three generators has been out of commission for about a year and the second one blew apart its crankcase about six months ago.

The three generators, two 10 KVA and one 27 KVA, were installed in a generator building with atmosphere exhaust without the benefit of mufflers. Practically all internal combustion engines now operate with mufflers to reduce the noise level. The operating generator made so much noise without a muffler that the pilots objected to any generator operating except for a few very restricted hours.

To eliminate the necessity of buying mufflers for the generators, someone devised a homemade muffler system. It consists essentially of a large concrete pit into which all exhausts were channeled. The only exit from the pit was a small pipe which was insufficient in size and caused a high back pressure on the exhaust systems from all engines. The pit and the exhaust system had heavy unburned cargon deposits on all surfaces. Eventually there was an explosion in the crankcase of the 27 KVA generator and it has been out of action for six months, waiting for a new base so that the engine can be rebuilt.

2.4.3 Pilot Boats.

The pilot boats are not equipped with fixed radio equipment although there is one portable walkie-talkie radio set which is sometimes passed from pilot boat to pilot boat.

Pilot boats make the trip of 60 miles from the pilot station to Palembang without radio communications.

2.4.4 Recommendations.

1) That the two generators now out of order be repaired as soon as possible or the pilot station will be without communications when the third generator breaks down or must undergo overhaul.

2) That each pilot boat be equipped with radio equipment such that they can communicate with the pilot station and Palembang.

3) That the three generators be equipped with mufflers, exhausting through the west wall of the generator building, to permit the generators to run quietly so that they can be operated without disturbing the sleeping pilots. Note - Most internal combustion engines are equipped with mufflers and those at the pilot station should be no exception.

Providing adequate radio equipment for PPR, pilot station and the major floating units will make it possible for PPR to contact the pilot station on the fleet units any time for routine operational calls which will substantially improve the service rendered to the maritime public and will eliminate the complaint about inadequate communications on the part of the shipping interests. If PPR is going to require pilotage and docking assistance, PPR should be able to communicate with the fleet doing the work.

In addition if the tugs are fire fighting unit equipped and they should be, they will need radio communication to be effective fire fighting units. Also, in view of the fact that most PPR units are good search and rescue (SAR) vessels, they should be radio equipped for SAR purposes if for no other purpose.

2.5 Port Security

Three agencies are involved in providing security for the Port of Palembang; these are the Angkatan Laut Republik Indonesia (ALRI), the Komando Pelaksana Pengamanan Pelabuhan (KPPP), and the Kesatuan Patroli Lau dan Pantai (KPLP), which are the equivalent of the navy police and port security forces.

The navy, ALRI, is responsible for the national defence of the waterways within Indonesia, as such they are responsible for patrolling the Bangka Straits and the Musi River. Although not officially required, they are operationally involved in anti-smuggling activities.

The police, KPPP, is a branch of the Palembang police. They are under the command of the Komdak, or commandant of the Palembang police. The latter liases directly with the Port Administrator and the KPPP operates according to the policies set out by the Port Administrator. The KPPP acts jointly with the KPLP under the direction of the Port Administrator. The KPLP was formed in 1975 to act as an internal security force for the PPA, in accordance with the authority set out in Presidential Decree 372/1962. The KPPP has the power of arrest and the authority to issue weapon permits but the KPLP does not.

The three areas of responsibility for the KPPP and the KPLP are: provide security within the port area, enforce the regulations of the Port Administrator, and conduct anti-smuggling activities. They are responsible for the security of the administration buildings and port property, for the personal security of personnel working within the port, for traffic control within the port area and for security and control at the entrances and exits to the port area.

The responsibility for the security of the vessels is left to the Harbormaster, and the joint force provides assistance only when requested by the Harbormaster. Security for cargo is provided by the shipping companies and again the joint force provides assistance only when requested. The KPPP and KPLP also provide a joint river patrol between Keramasan and Selat Salah Nama, however, this patrol is conducted infrequently. At the port gates the KPPP is responsible for checking the licenses of the vehicle operators and ensuring that any cargo carried is of the same type as listed in the Surat Jalan. At present the joint force mans seven posts; the truck entrance, the main exit, the exit from the godown area, the customs wharf, the office in back of godown H, the sailing boat wharf and the District Navigation office. The KPPP station three men at each post and each is fully manned 24 hours a day.

2.6 Port Health Services.

The Port of Palembang has two health services, the Port Health Center and the Port Health Service. The Port Health Center is a medical clinic operated for the benefit of the port employees, the stevedores, and the shipping agents. The clinic provides a full range of medical treatment. Any cases which cannot be treated at the PHC are referred to the Palembang General Hospital.

The Port Health Service is part of the Ministry of Health. It is their responsibility to enforce the public health regulations within the port area. Many of these regulations regarding vessels and crews are derived from the International Health Regulations prescribed by the World Health Organization. The PHS is responsible for

enforcing quarantine and for ensuring that vessels fly the quarantine flag as required. The PHS also receives bulletins from the WHO and the Ministry of Health concerning health problems in other ports. Each vessel regularly calling at Indonesian ports is required to carry a Buku Kesehatan or health book which specifies the previous ports called at and the health conditions in those ports. The PHS is also responsible for public health standards relating to the water supply, sewage disposal, and insect control as well as for inspecting public restaurant facilities.

The PHS officer is the first person required to inspect arriving and departing vessels. Aside for checking the documents described in section IV-3.1 he also provides innoculations for crew members as required. At present there are 7 doctors and 1 dentist working at these facilities.

2.7 Immigration

Immigration officials are required to check all foreign going vessels. Once the ships agent reports the arrival of a foreign going ship, an immigration officer is sent aboard with the general inspection team. He checks the crew lists and seaman's cards. He also stamps the passports of any passengers aboard. If prior arrangements have been made by the agent, shore passes valid for the length of the vessel's stay can be issued. The immigration officer is responsible for performing a security check to prevent any undesirable aliens from disembarking.

Before the vessel departs the ship agent submits a notice of departure to immigration. The immigration officer visits the ship again to determine if all passengers and crew are aboard.

The immigration office is located just outside the ports storage area. The working hours are from 8 AM to 2 PM weekdays, 8 AM to 12 PM Fridays and 8 AM to 12:30 PM Saturdays. There is only one immigration officer assigned to inspect arriving and departing vessels.

3.0 PORT SERVICES FOR BANKING AND COMMERCE

3.1 Ship's and Cargo's Documents

Procedures for entering a ship into the port of Palembang are similar to those used at any port. In contrast to Singapore or Penang, the bulk of the administration of port operations is in private hands so information flow to the port authority itself is less complete than in many ports.

Tables IV-3.1-1 to IV-3.1-4 summarize the procedures for entering a vessel in the port of Palembang.

Port services such as berthing space, warehousing, water and equipment are requested on a single form - Model 3. This form is shown in Figure IV-3.1-1. It is completed by the agent and given to the appropriate department within the port. The approval and instructions to operating personnel within the Port Administration is given on a Model 3A form. This is shown in Figure IV-3.1-2. Records of charges incurred by vessels are kept using a Model 29 Form (Figure IV-3.1-3) and the total invoice for each vessel is calculated using the form shown in Figure IV-3.1-4. The whole process is summarized in Figure IV-3.1-5.

3.2 Customs

Indonesian customs are concerned with domestic and international shipments of goods. Domestic customs centers around collection of statistics and checking validity of permits to trade certain commodities. On international shipments customs is charged with collecting the duty on incoming shipments, verification of the volume shipped and quality of export goods, and the collection of statistics. The working

TABLE IV 3.1-1

DOCUMENTS FOR ENTERING INBOUND VESSELS IN PALEMBANG

Inbound vessels - Furnished by Vessel and Agent.

Destination of Documents	Documents furnished
Port Health/Quarantine	Notification of Arrival* Deratization Certificate Health/Vaccination Books
Immigration	Notification of Arrival* Passports Crew Lists Passenger Lists Ships Articles
Harbor Master	Notification of Arrival* Registry Certificate All Ships Certificates Previous Port Clearance Radio License Subscription to Light dues
Customs	Notification of Arrival* Customs Declaration of Master Manifest Personal Effects List of Cargo not Manifested Bonded Stores List
Port Administrator	Notification of Arrival* Request for Pilot* Route Permit*

* Prepared by agent other documents prepared by ship.

TABLE IV 3.1-2

DOCUMENTS REQUIRED TO REMOVE CARGO
FROM PORT OF PALEMBANG

Inbound Cargo - Prepared by Agent.

Destination of Documents	Documents Furnished
Customs	Bill of lading
	Manifest
	A.V.I. or PPUD
	Model B (list of all PPUD or E-3)
	Packing list
	K.P.P.

TABLE IV 3.1-3

DOCUMENTS REQUIRED TO LOAD CARGO AT PALEMBANG

Outbound Cargo - Prepared by Agent.

Destination of Documents.	Documents Furnished
Customs	Model D (Request for inspection of cargo)
	Model C (Permit to load cargo)
	Model 5 B (List of all A.V.I. or E-3)
	AVI or E-3
	APE (Export Permit)

TABLE IV 3.1-4

DOCUMENTS REQUIRED TO SAIL FROM PORT OF PALEMBANG

Outbound Vessels - Prepared by Harbor Master.

Destination of Documents	Documents Furnished
Vessel's Master	Port Clearance

DEPARTEMEN PERHUBUNGAN
DIREKTORAT JENDERAL PERHUBUNGAN LAUT
DAERAH PELAYARAN III

BADAN PENGUSAHAAN PELABUHAN PALEMBANG
JALAN BLINYU No 1
Wessel Board :
Telp. No. 20218, 20351, 20411, 21479, 22531.
Telex No. 015 — 45

Model No. 3

BERTH
GOODOWN
MOORING
WATER
EQUIPMENT

REQUEST FILLED OUT BY SHIPS AGENT

PERMINTAAN

Yang bertanda tangan dibawah ini PT TRIKORA LLOYD CABANG PALEMBANG di

mohon menurut
a) Peraturan ~~xxxxxxx~~ BERLABUH .-
b) ~~xxxxxxxxxxxxxxxxxx~~
c) ~~xxxxxxxxxxxxxxxxxx~~
d) ~~xxxxxxxxxxxxxxxxxx~~

BENDERA : JEPANG
TIBA : TGL. 28 JULI 1975
DARI : KUCING
ISI KOTOR : 8.442, 487 M3
BONGKARAN : NIL
DWT 5.170

untuk KS. / KM. " OHKAWA MARU "

panjang 90,57 m. lebar 15,60 m. dalam yang besar 7,80 m.

dari sampai

a. Tempat ~~tambatan~~ di BERLABUH DI PERAIRAN BOOM BARU

dari 28 JULI 1975 JAM : 09.00 sampai 2 AGUSTUS 1975 .-

~~xxxxxxxxxxxxxxx~~ m³. air dari perahu air / pipa air di

Tempat tambatan mulai

c. ~~xxxxxxxxxxxxxxx~~ alat-alat seperti berikut

dari sampai

d. ~~xxxxxxxxxxxxxxx~~ m³ ruangan penimbunan

dari sampai

PALEMBANG 28 JULI 1975.-

19

Sipeminta.

Harap dicoret yang tidak perlu.

FIGURE IV 3.1-1 Request for Port Services

Penyanyang

Mc No. 3A.

No. 902.

K PUTUSAN

Badan Pengusahaan Pelabuhan di _____

Administrator Pelabuhan, membaca surat permintaan yang diterimanya pada tanggal 27/7 19 74 jam _____ pagi /sore

Memutuskan, menurut Peraturan-peraturan Umum yang bersangkutan :

Tempat tambatan

kepada kapal / perahu _____ diberikan tempat tambatan sepanjang

pangkalan-jembatan-tepi _____ dari tanda _____ sampai tanda _____

pada pelampung _____

mulai _____ 19 ____ jam _____ pagi / sore untuk waktu _____ sehari semalam ____ jam

Pemberian air

kepada kapal-perahu _____ diberikan

_____ m3 (_____ meter kubik) air dari pipa air pangkalan/perahu air

Pemberian akan dimulai pada _____ 19 ____ kira² jam _____ pagi/sore

62

Ruangan penimbunan

Diberikan untuk digunakan _____ m² ruangan pelabuhan Aspal ex penyanyang no: 853

dibangsal terbuka _____ m² ruang

dibangsal tertutup _____ m² ruang luas lindung

dilapangan penimbunan _____

Mulai dipakai 27/7-74 - 18/8 Habis dipakai 18/8.

Persewaan alat²

Alat² yang diminta diberikan untuk digunakan

dari _____ 19 ____ jam _____ pagi/sore sampai _____ 19 ____ jam _____ pagi/sore

Banyaknya barang, jenis, berat _____

Tempat penyediaan _____

Setuju : Sipeminta,

_____ 19 ____

a/n Administrator Pelabuhan,

Agus

Bambang

(ditanda tangani jika tidak diajukan permintaan tertulis)

FIGURE IV 3.1-2 Port Services Approval Form

Model No. 29.
Lembar ke : 1.

Kepada :
Yth. Administrator Pelabuhan
di
Palembang.

Misc. charges related to berthing filled out by ship's agent

PERMINTAAN
(RUPA²)

Yang bertanda tangan dibawah ini : .....

Alamat : .....

mohon .....

.....

.....

.....

.....

.....

.....

No. : .....

....., ... 19

A.n. Administrator Pelabuhan

Palembang, ... 19 .....

Sipeminta,

FIGURE IV 3.1-3 Record of Individual Charges

(.....)

(.....)

Dinormalisir, 200 bk. Isi 50 x 3 uk. : 21½ x 16 cm.

BADAN PENGUSAHAAN
PELABUHAN PALEMBANG

DAFTAR PANGKALAN No.

Filled out by Berthing Office - List of charges for berthing

NAMA KAPAL	Kapal bermotor / Kapal stoom / Kapal layar					PANJANGNYA	
KEPUNYAAN						UKURAN KOTOR	
AGEN AGEN						AB : s/d :	
TEMPAT BERLABUH		Datangnya	Berangkatnya	Jumlah Jam	Jam / meter kali	Harga	Uang
						Jumlah	Rp.

PALEMBANG, _____ 19____
UNTUK DISETUJUI

Dinormalisir (100 bk. a 150 lbr. 28 x 21,5) 7-74.

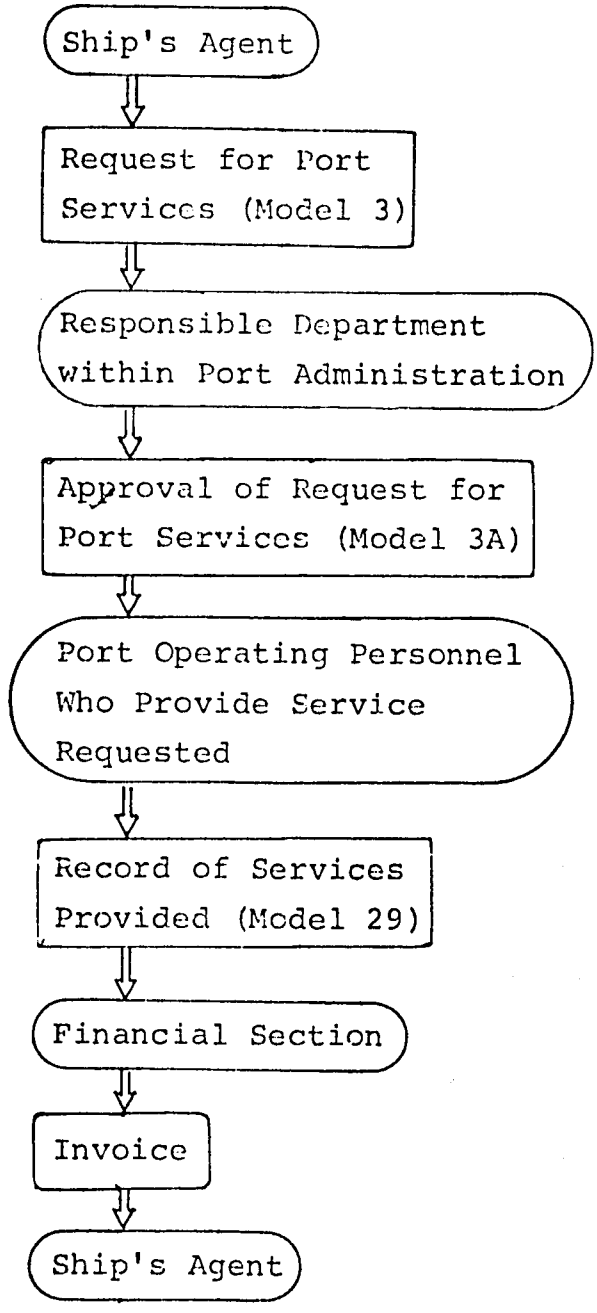
FIGURE IV 3.1-4

Invoice for Port Services

Figure IV-3.1-5

ADMINISTRATION OF SUPPLY OF PORT SERVICES

(Berthing, wharfage, water etc.)



There exist small variations between administrator of specific services. These are more fully discussed in Volume X.

offices of the customs are located on a barge moored in front of the port's offices. Between six and ten customs inspectors work at this wharf. Customs employs about 500 people of which 120 are involved with customs inspection. Both Pertamina and Pusri have customs offices and cargo going over their wharfs is handled through these customs offices.

3.2.1 International Shipments - Imports

Documents for incoming consignments are prepared by the steamship agent and by the bank financing the transaction. Customs is presented with:

1) Invoice for cargo, bill of lading and insurance policy
2) Packing list
3) PPUD (pemberitahuan Pemasukan Barang Untuk Dipakai) - Advice of receipt of cargo for use
4) KPP

The PPUD provides the details of shipment and price of the goods and is used to calculate the import duty. A sample PPUD form is shown in Figure IV 3.2.1-1. The top portion of the form is filled out by the steamship agent and the bottom by the customs cashiers department. The KPP is a report by the bank giving the details of financing arrangements. It gives the name of consignee, type of commodity, origin of the goods, freight and insurance, and the foreign agent for the cargo. A sample KPP form is shown in Figure IV 3.2.1-2. When all papers are in order, they are brought to the warehouse and checked against the goods. The goods are then released.

It is normally required that imported goods be unloaded at Boom Baru and stored in a warehouse before clearing customs. Special permission can be given to unload

DEPARTEMEN KEUANGAN REPUBLIK INDONESIA
DIREKTORAT JENDERAL BEA DAN CUKAI

(LAMPIRAN SKEP MEN KEU TGL 1 SEPT 1971 No KEP 874/MK.01/1971)

PEMBERITAHUAN PEMASUKAN BARANG UNTUK DIPAKAI

ASLI

MODEL F

DISI OLEH BEA		
Jenis kartu		(1)
No kartu		(2)
No Seri		(3)
Kode Pelabuhan	305	(4)
Gudang	D	(5)

No. PPUD: 002 (6)
Kode Devisa: B.kiriman 82 (7)
Tgl.: 29-9-75 (8)

A. RUANGAN UNTUK SIPEMBERI TAHU (EXPEDITUR/IMPORTIR)

1. Nama dan alamat Importir: PERTAMINA UNIT II, Pelabuhan Boom Baru Palembang .... No. TAPPI: (9)
2. Nama, Bendera kapal dan Nakhoda: Bintang Samudra IV - Indonesia ..... Kode kapal: (10)
3. Perusahaan Pelayaran: PT.Pel.Putra Samudra ... Voy. No. 11/HB/IV .....
4. Pelabuhan muat: Singapore ..... 122 - (11)
5. Negeri asal: U.S.A. ..... 411 - (12)
6. Tgl. KPP ..... No. KPP: (13)
7. No. Pos Tarip 8.05.01.60. BM .....30...% Opc .....-...% PPN .....10....% 85.01.60.- (14)
8. Berat Bruto (kg) ..... 500 kg (15)
9. Berat Netto ..... 500 kg - (16)
10. Mark, No., Jumlah dan Jenis koli: 1 (satu) koli (17)

Pertamina Unit II
Pelabuhan Bum Baru
Palembang
Indonesia
1 Case

11. Uraian jenis barang/jumlah Satuan Barang
Bagian dari pembangkit listrik.
(G.E.Exteiter,Model 51A387, 25 KV,S/N 2445028) S$.2.000,-

Barang tsb.diatas adalah yang diperbaiki di Singapore yang dikirim berdasarkan A.V.I. No.65 tgl.26-8-1975

Pemberitahuan ini dibuat dengan sebenarnya

Palembang, 29 September 1975.

Sipemberi tahu: U.D. VEEM "SATRIA JAYA"
EMKL
PALEMBANG

12. a). Harga FOB S$.2.000,- "3. 26,- .... Rp. 310.300.- (18)
b). Freight ..... Rp. 4.423,90 (19)
c). Assuransi ..... Rp. 794,- (20)
CIF Rp. 315.517,90

dibulatkan Rp. 315.518,- (Tigaratuslimapuluhlimaribu limaratus delapanbelas rupiah)

B. RUANGAN UNTUK BENDAHARA

S$1. x 0,41
US$1. = Rp.415,-

13. Perincian perhitungan bea-bea (bila perlu dilampirkan).

Fob.S$.2.000,- = US$. 820,-
Fr. "S. 26,- = " 10,66
CIF.S$.2.026,- = US$. 830,66

CIF ..... = Rp.315.518,-
Bea masuk..... " 103.655,40
Pung.tambahan.. " 103.655,40
Rp.522.828,80
+ 5% marge laba. " 27.241,14
Harga jual..... Rp.550.470,34

14. Catatan khusus (jaminan, tambahan bayar, denda, pengembalian, exempt dsb).
Pungutan bea tambahan
100% x Rp.103.655,40 = Rp.103.655,40
(Seratustigaribu enamratus limapuluh lima 40/100 rup)
telah dibayar dan dibukukan dalam Reg.27 Ka.Ro.
Palembang, 29 Sept.1975.
Bendaharawan

15. PU tgl. 29-9-75 ..... No. 1000 (21)
16. Pembebasan bea-masuk/Kode Fiscal (22)
17. Pembebasan PPN Impor ..... % (23)
18. Pungutan-pungutan:
a). Bea masuk ..... Rp. 103.655,40 (24)
b). Opsen ..... Rp.
c). PPn Impor ..... Rp. 50.047,10 (25)
d). M P O ..... Rp. 40.632,97 (26)
e). ..... Rp.
Jumlah Rp. 202.335,47

Jumlah tersebut sebesar Duaratusduaribu tiaratus tigapuluhlima 47/100 rupiah
Telah dibayar dan dibukukan dalam daftar 3 No. 710 tgl 29-9-75
..... Cukai ..... Rp. .....

Palembang, 29 Sept.1975.
Bendaharawan Bea dan Cukai
RAMELAN RASHID
Pengatur Tk.I

C. RUANG UNTUK PEMERIKSAAN BEA DAN CUKAI

20. Surat izin pengeluaran (surat jalan model 20)
Tgl. .....
No. .....

19. Partai barang-barang tersebut setelah diperiksa kedapatan .....
Pemeriksa Bea dan Cukai:
Nama : .....
Pangkat : .....

Sample PPUD Form
FIGURE IV 3.2.1-1

Figure IV-3.2.1-2

Sample KPP Form

To Be Included in Final Report

into lighters from the middle of the river. This is done commonly for heavy lifts. For bulk commodities like salt, sugar, flour, rice and cement customs prefers to do the inspection on the ship and unloading into lighters is generally allowed. When goods are stored in a warehouse prior to customs clearance, customs has the right to nominate the warehouse but this is generally left to the discretion of the ships agent. International shipments cannot be kept in the same warehouse with interisland shipments.

3.2.2 International Shipments - Exports

For international shipments customs is confined to checking for a valid export permit and verification that shipping documents are in accordance with the actual quantity and quality of the goods. Two customs documents are required for export shipments. They are:

1) E-3 (Pemberitahuan Ekspor Barang) - Export Advice
2) APE (Angka Pengenal Export) - Export Permit

The E-3 gives all the details of the export transaction including financing arrangements. The E-3 is filled out by the exporter or his bank. Figure IV 3.2.2-1 gives a sample E-3 form. The APE is obtained from the Department of Trade. Figure IV 3.2.2-2 gives a sample APE form.

Export documents are handled as below:

1) Exporters furnish seven copies of the E-3 to the export administration for checking.
2) It is then registered and numbered.
3) It is then recorded in the special export realization book
4) The original E-3 is then sent to the head of the Export

EKSPOR – Umum [1]
– [illegible] [2]
1) – .....
– .....

PEMBERITAHUAN EKSPOR BARANG
(E 3)

KOTAK KODE

APE ■ [illegible]

BTN [illegible]

Kwa ■ [illegible]

% [illegible]

Pib [illegible]
Prop [illegible]
Neg [illegible]

Bkp ■ [illegible]

Hrg ■ [illegible]
Val 411
FOB ■ [illegible]
Sin ■ [illegible]
Jkb ■ [illegible]
Jbb [illegible]
Jbk [illegible]

Ngr.Pbl [illegible]

.....
tgl. .....
Eksportir/konsinyatir
C.V. THAMRIN
PALEMBANG

RUANG UNTUK EKSPORTIR/KONSINYATIR

1. Nama dan alamat eksportir/konsinyatir: [illegible]
2. a. Merk, nomor, jenis dan jumlah koli: [illegible]
   b. Uraian jenis dan kwalitas barang: [illegible]
   c. Prosentase bagian eksportir: [illegible]
3. Pelabuhan muat: [illegible]
4. Propinsi asal barang: [illegible]
5. Pelabuhan tujuan: [illegible] Negeri tujuan: [illegible]
6. Pengiriman tgl: [illegible] Nama Kapal: [illegible]
   Agen Perkapalan: [illegible] Bendera kapal: [illegible]
   Nama Perusahaan Perkapalan: [illegible]
7. Harga patokan per satuan barang: [illegible]
8. Harga faktur f.o.b. per satuan barang: [illegible]
9. Jenis valuta asing faktur: [illegible]
10. Jumlah harga faktur f.o.b. dalam valuta asing 2): 27,443.07
11. Satuan barang: [illegible]
12. Jumlah satuan barang: [illegible]
13. Jumlah berat bersih (kg): [illegible]
14. Jumlah berat kotor (kg): [illegible]
15. Pembeli barang: [illegible]
    Alamat: [illegible] Negeri: [illegible]

1) Disikan:
   a. Khusus tanpa penyerahan devisa ..... [3]
   b. Red clause ..... [4]
   c. ke Bonded warehouse ..... [5]
   d. dari Bonded warehouse ..... [6]
   e. lainnya ..... [ ]

2) Jika kontrak Penjualan CIF atau C&F nyatakan dalam harga FOB yang sesuai.

RUANG UNTUK BANK

1. Nomor Registrasi Bank: [illegible]
   Tanggal: [illegible]
2. a. L/C No.: [illegible]
   b. Opening Bank: [illegible]
   c. Tgl. pengapalan terakhir: [illegible]
   Tgl. ekspirasi: [illegible] (Nama Bank Asing)
3. Kerjasama [illegible]

x) Jika tunai isikan "tunai"

No. [illegible]
Tgl. ■ [illegible]

Kba [illegible]

tgl. [illegible]

RUANG UNTUK BEA DAN CUKAI

1. Didaftarkan tgl. [illegible] No.: [illegible]
2. Ditimbun di gudang: [illegible]
   Keadaan lengkap/~~tidak lengkap~~ xx): [illegible]
3. Pada pemeriksaan kedapatan: [illegible]
4. Izin muat diberikan tanggal: [illegible]
   No. Izin muat: [illegible]
5. Kapal sesuai dengan yang diberitahukan/~~[illegible]~~: [illegible]
6. Tgl. selesai pemuatan: [illegible]
7. .....

xx) Coret yang tidak perlu.

Tgl. ■ [illegible]
No [illegible]

tgl. [illegible]
Bea dan Cukai

RUANG YANG HARUS DIISI OLEH BANK

1. Harga patokan per satuan barang pada tanggal izin muat: .....
2. Jumlah wesel atau dokumen pembayaran lain/sebagian yang bertalian dengan formulir ini: ...
3. Tanggal pengoperan wesel/perhitungan bank: .....
4. Kurs beli bank ke US$ 1,– (6 angka dibelakang koma): .....
5. Depository Correspondent: .....
6. Tarip Cess per satuan = Rp. .....
7. Jumlah Cess yang dipungut = Rp. .....
8. .....

"DRS RB75 MOKUSAR"

Wul [illegible]
Tgl [illegible]
Kurs [illegible]

.....
tgl. .....
Bank

Figure IV-3.2.2-1

Sample E-3 Form

Figure IV-3.2.2-2

Sample APE Form

To Be Included in Final Report

Section for approval and permission to load the barges

5) After loading the E-3 is signed by the person supervising the loading of the barges
6) A sample of the goods is taken for further checking
7) The E-3 together with samples are then given to the chief of the Export Section and on to customs.
8) After being checked by a customs official export permission will be given
9) The documents are then sent to the customs checking station. After being recorded permission to load the ship is given. A form stating that the loading has been done is sent to the customs
10) Finally the E-3 form is returned to the chief of the Export Section and subsequently to the exporters.

The inspection of most export cargoes is carried out at the floating inspection station. Export logs are inspected at the log ponds prior to the commencement of loading operations. Exporters frequently complain about the delays involved in the export customs procedures. Most comments centered around the actual inspection of the goods. Operators stated that the process consumed the entire morning for rubber shipments and that this caused significant delays. Customs on the other hand stated that inspection of most shipments could be done in twenty minutes. Probably both views are correct as the operator is counting the time required to bring the barges to the checking station plus the time waiting for the customs officer etc. On the whole it is clear that streamlining of this export procedure would decrease the cost of exporting cargo from Palembang by large amounts.

3.2.3 Domestic Shipments

The procedure for domestic customs supervision is much simpler than international. Only a single form is required. The ship agent files a PBM (Pemberitahuan Barang Muatan - loading advice) when the cargo is loaded. The cargo is checked on loading at the warehouse or customs wharf. At this time a check is made to ensure any special permits to carry particular cargoes are valid. When cargo arrives the PBM from the loading port is used. Figure IV 3.2.3-1 given an example of the PBM form. The PBM is also called the AVI form, which is the Dutch name for PBM.

M. J 1.

PEMBERITAHUAN BARANG MUATAN

F ...ma
Lembar : Ke - d
Ke - ti

Oleh : E. M. K. L. P. N. PELNI Cabang Palembang untuk ..... di PALEMBANG, pekerjaan Dagang akan dimuat dengan kapal motor/api ....., barang-barang seperti tersebut di bawah ini dan dikirim ke : .....

Berapa, apa merek dan nomor dari barang-barang atau lain-lain	No. Statistik	NAMA BARANG-BARANG	Banyaknya barang-barang dan lain-lain yang perlu untuk statistik	Berat kotor (dgn. angka)	Harga barang-barang (dgn. angka dan tulisan)	Bea keluar	Bea keluar tambahan

Pemuatan barang-barang tersebut dilakukan dengan „Pemberian tahu sementara" No. .....

Di PALEMBANG, tanggal ..... 19.....

Dipengirim,

P. N. PELNI Cabang Palembang

No. .....

Idzin ini diberikan untuk menjamin pemuatan dan pengangkutan dari barang-barang di atas dan berlaku dari .....
..... sesudahnya idzin diberikan.

Pengambilan idzin ini dalam tempo ....
harus dilakukan.

Di PALEMBANG, tanggal ..... 19.....

Juru periksa,

Jumlah :

Bea keluar ..... Rp. .....
Tambahan bea keluar ... „ .....
Bea statistik L.A.A.P.L.N. „ .....
Bea berat barang-barang „ .....
„ .....
„ .....
„ .....
„ .....

Jumlah Rp. .....

Dengan tulisan : .....
.....

Dibukukan kedalam Reg. No. 4 (21) No. .....

Di PALEMBANG, tanggal 19

Penerima Bea dan Cukai,

FIGURE IV 3.2.3-1
Sample PBM Form

Barang-barang tersebut disebelah selesai dibongkar para tongkang .....

Sipengirim,

Diperiksa barang-barang berikut :

dan terdapat :

IDZIN MEMUAT DIBERIKAN PADA JAM .....

DIBUKUKAN KEDALAM Reg. 17 No. .....

PALEMBANG, tanggal .....

Jurupemeriksa,

Barang-barang tersebut disebelah selesai dibongkar dan kedapatan

Dibukukan kedalam Reg. No. 7 No. .....

.... di ....

..... tgl. ..... 19.....

Jurupemeriksa,

Figure IV 3.2.3-1
(Continuation)

3.2.4 Customs Operations.

Customs officials work out of 5 offices in the port. The offices for imports, exports and security are located below the Traffic Division offices between godowns B and D. The inspectors for the lighters and for the ships working in the stream are stationed in temporary facilities aboard a lighter at the customs pier. The agents in charge of the godown operate out of an office in godown H. The hours of operation are from 7:30 AM to 4:00 PM on weekdays and 7:30 AM to 12:30 PM on Saturdays. Customs inspections can also be performed at night if special permission is obtained from customs. For this service the requestor must pay for the overtime of the agents. No inspection is performed on Sundays.

The lighters carrying exports to ships in the river are inspected for the quality and quantity of cargo. This inspection involves only about 10% of the lighters destined for each ship. It is performed at the wharf. A second inspection for quantity is performed by a customs agent on board the export vessel.

Imports and interisland inward cargo which are unloaded by special permission to lighters in the stream are inspected by customs agents on board the ship and then proceed directly to their destination.

The estimated average time required to inspect a single lighter at the customs pier is one hour. Six agents are assigned to this duty implying an average rate of inspection of 5 lighters per hour. Observations of customs operations indicate that the lighters which arrive in the morning do not all complete inspection until 1 PM or later.

3.3 Freight Forwarders

The freight forwarders in Indonesia are known as EMKL (Ekspedisi Muatan Kapal Laut). Their activities are federally regulated. EMKL services are provided not only by independent firms but also by ship's agents. Large companies such as PUSRI will often provide these services for themselves internally.

In order to operate as a freight forwarder permission must be obtained from PERLA. For a ship agent to operate as a freight forwarder he must have his ship's agent license and have a registered company. He must also have personnel certified and experienced in handling shipping documents. In addition he must have certain minimum amounts of cargo transporting equipment. For a private firm other than a ship agent to operate as a freight forwarder there are more stringent requirements. These include incorporation as a P.T. or P.N. (private or government owned shares) company, ten million rupiahs working capital, qualified personnel, and specified minimum quantities of office space, storage space, cargo transport and cargo handling equipment. In addition a guarantee must be given to customs, the amount of which is negotiable. As of May 1975 there were 18 private EMKL firms in Palembang. Also most of the ship agents were licensed freight forwarders. Table IV-3.3-1 lists the major EMKL firms and the tonnages they handled in 1974.

All cargo handled in the port must be processed by approved freight forwarders, except in the case where a specific exemption is granted by the Port Administrator. Two charges are billed by the freight forwarders. The first is specified by government tariff and is revenue for customs. The second is the actual charge of the freight forwarder. The published tariff lists two basic charges; a document pro-

Table IV-3.3-1

MAJOR EMKL FIRMS AND TONNAGE HANDLED.

Companies Ship Agents	1974* Tonnages					
			Exports		Interisland	
	Total	Imports	Tons	M3	In	Out
P.N. Jakarta Lloyd	462	462				
P.T. Samudera Indonesia	8,719	5,204	888		1,108	1,519
P.T. Gesuri Lloyd	4,352			4,352		
P.T. Pelni	34,670	3,351		10,637	20,682	
P.T. Putra Samudra	8,161	2,840			5,321	
P.T. Salam Sejahtera	15,595	339			15,116	140
P.T. Trikora Lloyd	4,846		302			4,544+
Private EMKL Firms						
P.T. Jasa Sukma Tama	94,573	833	12,394	57,051	24,295	
P.T. Palembang	106,722	6,538	34,543	62,826	2,815	
P.T. Tripola	62,828	97	48,237	14,494		
P.T. Veem Karya Jasa	34,809		362	34,447		
P.T. Safat Sampurna	42,081	42,081				
P.T. Satria Jaya	37,205	2,759	12,098		1,422	20,926
Other Companies with EMKL Offices						
P.T. Pusri	241,056	8,144	1,413		3,079	228,420
P.N. Pertamina	56,875	38,285	340		6,181	12,069
P.T. Asia Logs	43,397			43,397		
P.T. Kumala Mas	49,778			49,778		
P.T. Muharsu	9,140		9,140			
P.T. Kesuma Karya Jaya		(1198+) 2,928			4,818+	7,224

* April 1974 - March 1975

\+ M3

Source BPP Annual Statistics

cessing charge and a verification and security charge. The former is Rp. 6850 per foreign cargo declaration and Rp. 3415 per domestic cargo declaration. The verification and security charges are shown in Table IV-3.3-2.

For incoming cargo the freight forwarder is responsible for preparing the PPUD form for customs clearance, for obtaining the delivery order and for removing the cargo to the consignee. The ship's agent is responsible for overseeing the unloading from ship, checking the cargo against the documents, bringing sample to customs, repacking cargo. For outgoing cargo the freight forwarder is responsible for preparing the customs documents and obtaining the bill of lading while the ship's agent has the same responsibilities as for incoming cargo.

For imports the freight forwarder obtains from the consignee two copies of the original invoice, packing list, bill of lading, the notice of incoming cargo (KPP), cargo insurance documents and the customs declaration. These documents he submits to customs and to the ship's agent. The latter issues a delivery order once the cargo has cleared customs. The freight forwarder delivers the cargo to the consignee.

For exports a customs declaration, form E3 is prepared by the shipper and the bank which is handling the letter of credit. This form along with a letter of authorization from the shipper are submitted to customs. Customs then issues a clearance form (model 5) which the freight forwarder takes to the ship's agent. The ship's agent issues a shipping order and when the freight forwarder delivers the cargo he receives first the receipt from the ship's officer and then the bill of lading.

Table IV-3.3-2

EMKL Tariff for Verification and Security In and Out (Rp/ton)

Category	Type	1-15 tons	16-30 tons	31-60 tons	61-500 tons	500-1500 tons
Domestic	1	39	36	30		
	2	30	30	27	24	24
	3	36	36	30	27	27
	4	15	15	15	15	15
	5	11	11	11	11	10
Foreign	1	75	69	60		
	2	60	60	54	48	48
	3	69	69	60	54	54
	4	27	27	27	27	27
	5	22	22	22	22	20

Definition
1 Others
2 Sisal, coffee, tapioca, fibre, etc.
3 Tea, rubber
4 Copra, chips, fodder, bone
5 Bulk rice, fertilizer, cement in bags

The company fees are determined by the individual freight forwarder. An example of these charges, as presented in the Fact Finding Team Report, Pelabuhan Palembang are for

Godown to storage beyond port or
Boom Baru to 16 Ilir or
Between godowns in Port area Rp. 229.50 ton/M^3

For interisland cargo to be loaded the freight forwarder must submit both a shippers authorization and a cargo declaration (AVI form) to customs before receiving a shipping order from the ship's agent. For inward cargo the freight forwarder uses the AVI form and the bill of lading to collect the cargo.

3.4 Banking Practices

The principal function of commercial banks operating in Indonesia's foreign trade is to transfer money between other countries and Indonesia and to provide adequate safeguards to insure funds are used for their intended purpose. Four major banks handling this business are the Bank Export Import, Bank Dumi Daya, Bank Dagong Negara and Bank Negara Indonesia 1946. Because commercial banking is an international business the procedures used in Indonesia are nearly identical with those used throughout the world.

Central to the operation of commercial banking system are letters of credit and negotiable bills of lading. The actual transfer of funds is accomplished by discounting the bill of lading. When a bill of lading is discounted, it is in effect sold for a percentage of the value of the goods. The holder of the bill of lading controls the possession of the goods and for most purposes is the owner of the goods.

To finance an international shipment, the purchaser of the goods has his bank send a letter of credit to a bank in the exporting country. This letter authorizes the second bank to purchase (or discount) the bill of lading for the shipment. The funds used usually come from an account the foreign bank maintains in the exporting country's bank. When the shipment is loaded the exporter discounts his bill of lading at the second bank and receives his money. The bill of lading is then endorsed to the order of the bank issuing

the letter of credit and mailed to it. The consignees bank has in effect made a loan to the consignee and has the bill of lading as collateral. When the goods arrive, the consignee repays the outstanding balance of the loan and receives the bill of lading from his bank.

Using this system commercial banking accomplishes the following:

1) Transfer of funds between countries. Because the transfer takes place by crediting and debiting bank accounts held by banks in other banks no actual movement of money occurs.

2) Evaluation of credit. Because the bank in the importing country arranges the transaction for customers it is familiar with, the risk of defaults is much smaller than if the exporter himself evaluated the credit worthiness of his customers.

3) Enforcement of contracts. As no funds are moved until the shipping documents are presented showing the quantity and description of goods shipped. Because the exporting bank will ensure that this information is true, the possibility of fraud is minimized.

For an Indonesian bank to open a letter of credit with a foreign bank, forty percent of the letter's face value must be paid on account. Collateral to secure the remaining 60% is required. This collateral will include the bill of lading itself and additional collateral of up to 50% of the funds involved. When the goods arrive, the importer pays the outstanding loan balance and receives his bill of lading, and KPP form required for customs. The fee for this is 1/2% of the funds transferred. Additional charges vary between banks. Interest charges of up to two percent per

month are charged. If the importer does not wish to immediately repay the loan, loans on commercial terms can be arranged.

To discount a bill of lading for which a letter of credit has been arranged, the exporter brings the bill of lading, cargo insurance policy, invoice, packing list, mates loading receipt and E-3 customs document to the bank. The exporter endorses the bill of lading to the order of the bank and receives his money. The fee for this service is ½% of the funds transferred.

Containerized cargo is treated in the same manner as break bulk.

Local banks will perform the same services for inter-island cargo with the same procedures and fees.

Importers can obtain bank guarantees for customs duties. Usually a deposit and collateral are required. Charges for a bank guarantee range from ½ to 1% for each three months.

For ordinary commercial loans to importers and exporters the interest rates range between 1 and 2% monthly. The range is set by the central bank, but the exact rate is determined by the individual banks based on the type of cargo involved and the credit worthiness of the client.

3.4.1 Comments Concerning Banking Practices

The efficient functioning of import export banking depends strongly on the quality of the bill of lading. In order to be good collateral the bill of lading must precisely describe the goods and their value. Any uncertainty regarding grade, quality, number or condition of the goods rapidly undermines the usefullness of negotiable bills of lading

in financing trade. The current requirement by some banks for collateral of up to 150% in addition to the bill of lading indicates that improvements are in order.

The first requirement for decreasing banking costs is streamlining customs. Cargo which stays in customs for months is not good collateral.

The second is more rigorous application of inspection of goods for actual quality and quantity. Problems with quality control have created difficulties importing some Indonesian cargo into the United States. Recent reports indicate that large volumes of agricultural products-for example frozen shrimp have been impounded by the US Food and Drug Administration for improper grading. Experiences such as this visibly effect banking costs as no banker wishes to be the holder of a bill of lading for frozen shrimp that can't be imported.

The third step is the reduction of cargo damage during loading or unloading. Damage to cargo is frequent and increases the security required and increases the interest rate charged for import export financing.

4.0 CARGO HANDLING AT PALEMBANG

4.1 Cargo Flows in the Port of Palembang

4.1.1 Introduction

The Port of Palembang includes 5 major cargo handling facilities and several smaller ones. The five are Boom Baru, Pertamina, Pusri, P.N. Garam and Kertapati. A considerable quantity of cargo is also handled in the stream. The Pertamina facility handles crude, petroleum products and general cargo, primarily spares required for the operation of the refinery. Pusri handles bulk and bagged urea, construction equipment and supplies for the expansion of the facility. P.N. Garam handles shipments of salt. Kertapati handles primarily coal and small amounts of railroad cargo and domestic rice. Boom Baru handles general cargo imports, interisland cargo and local cargo. A map of the primary facilities is shown in Figure IV 4.1.1-1.

At present all exports are brought in lighters alongside ships anchored in the stream. Import cargo consisting of raw materials and staple foods such as rice and sugar are unloaded in the stream with special permission from the Customs and the Port Administrator. Other imports with the exception of salt and material for Pusri and Pertamina are unloaded at Boom Baru and transferred either to godown or open storage.

For interisland cargo and local cargo both loading and unloading can take place either at the wharf or in the stream.

4.1.2 Cargo Flow

At present all but a negligible amount of export cargo

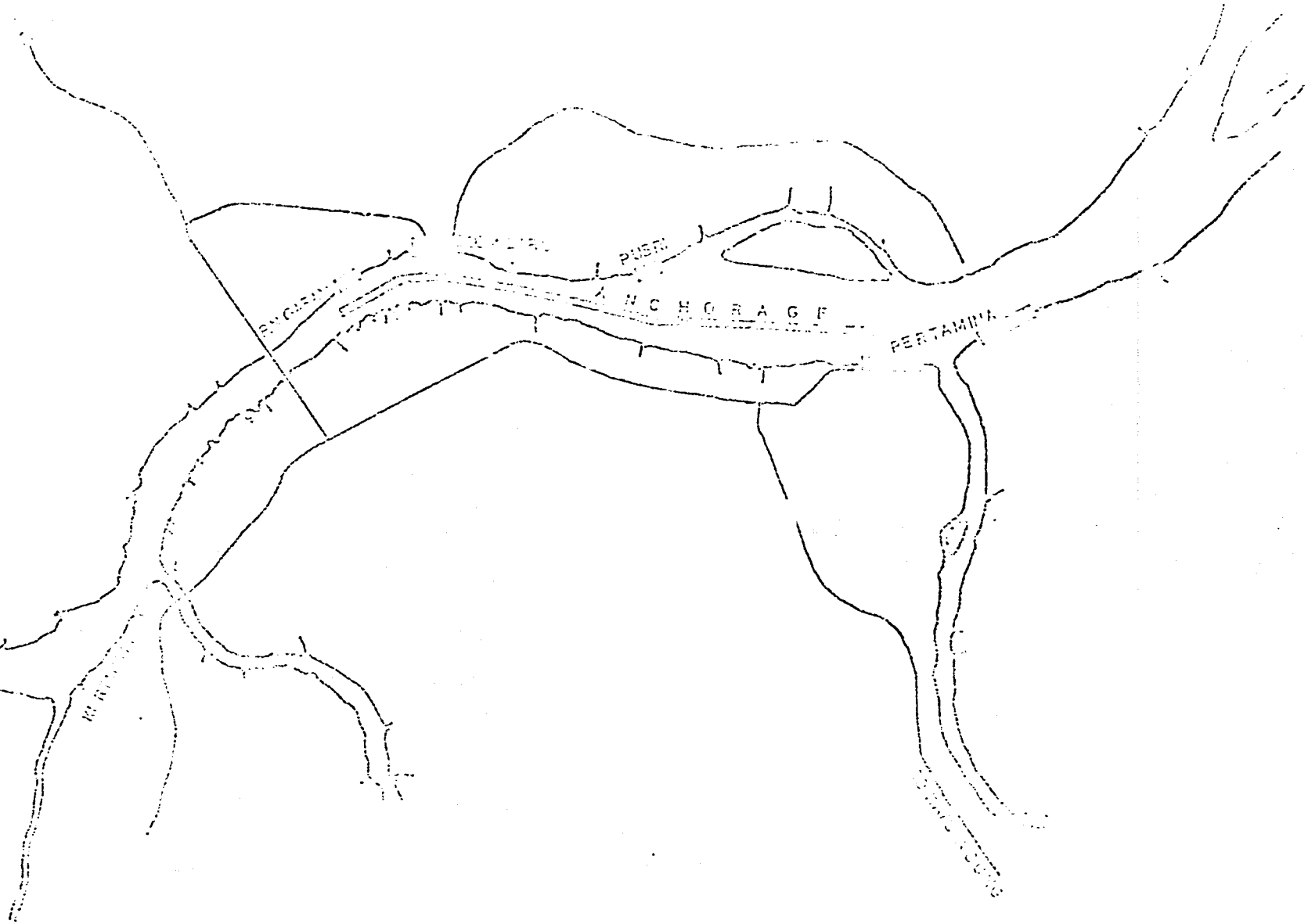


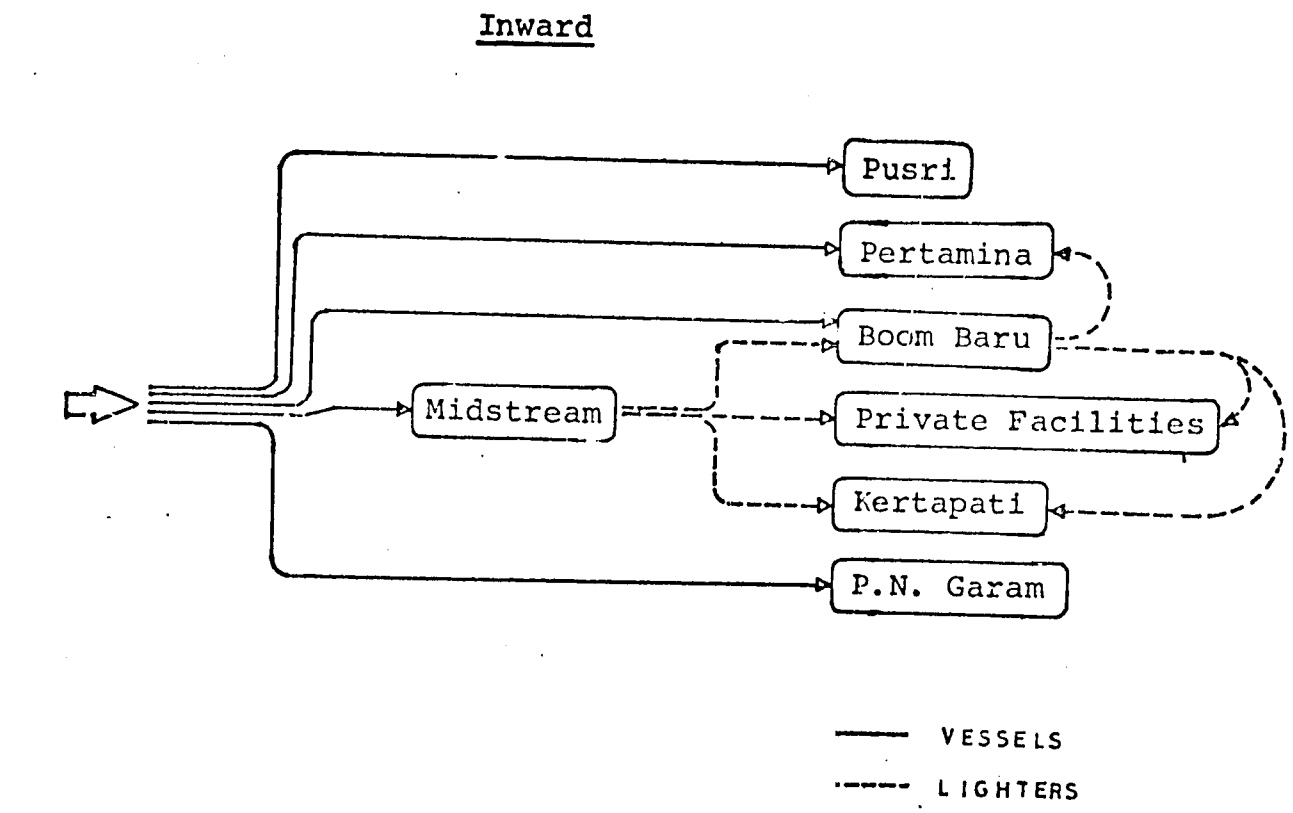
FIGURE IV-1.1.1-1

COLLECTION MANIFOLD FACILITIES

is loaded onto vessels from private lighters tied alongside. Imports are unloaded at the Boom Baru wharf because of customs requirements. However, imports of staple foods and raw materials may be unloaded in the stream if special permission is first obtained from customs. As a result, all imported flour and cement and about 30% of rice and sugar imports are unloaded midstream. Imported crude and oil products are mostly handled at Pertamina, while fertilizer imports are handled at Pusri. A portion of the imported general cargo is supplies for Pertamina and Pusri and only about 55% of the total is handled at Boom Baru.

Interisland cargo unloaded in Palembang is usually handled at the wharf with the exception of sugar, rice and flour which are unloaded to lighters in the stream. Most of the local cargo is handled in small ships which are not allowed to work midstream, and therefore, unload at Boom Baru. The amount of general cargo handled interisland is relatively small but a large portion of it is shipped to Pertamina for inputs to the refinery process.

The major interisland cargoes loaded in Palembang are fertilizer and oil products. The former is handled at Pusri, the latter at Pertamina. Almost all of the local cargo is handled at Boom Baru. The interisland shipments timber and plywood are handled through private facilities or by lighter. Interisland general cargo is loaded 30% at Boom Baru, 30% in the stream and the remainder at Pusri. Figure IV 4.1.2-1 provides a diagrammatic representation of cargo movements within the port while Table IV 4.1.2-1 lists the estimated percentage of cargo handled by facility and by cargo type. It should be noted that about 30% of the interisland and local cargo handled at Boom Baru is handled through lighters alongside ships at the wharf. The tonnages for the major commodities handled



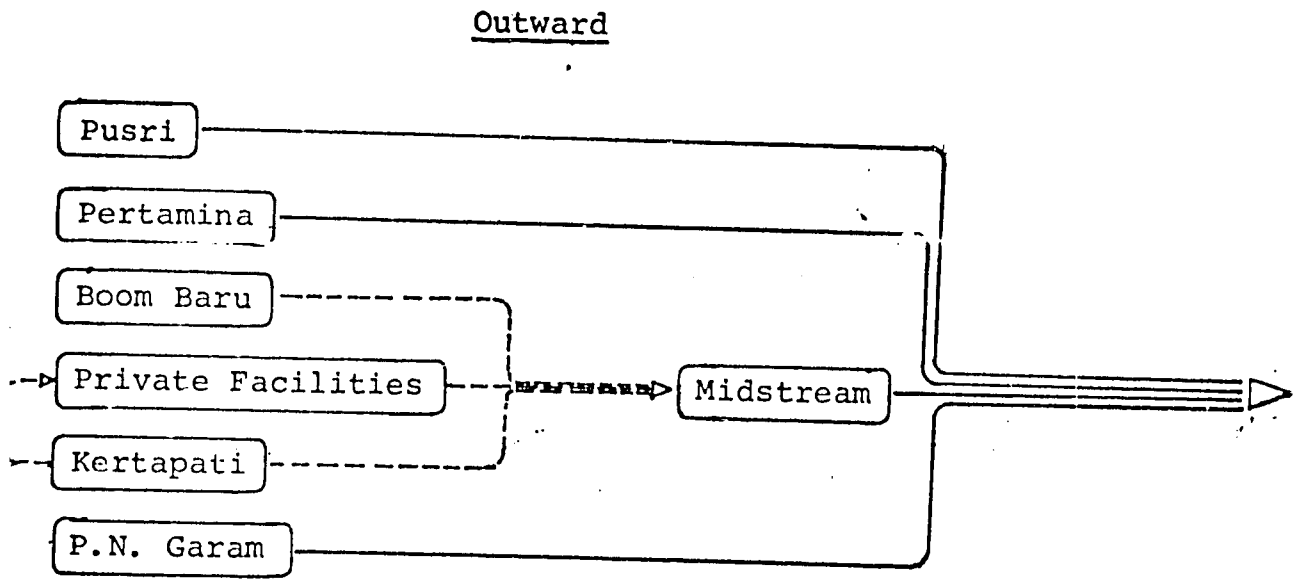


FIGURE: IV-4.1.2-1

POSSIBLE CARGO MOVEMENT WITH THE PORT

Table IV-4.1.2-1

Distribution of Present Cargo Flows Over Palembang Port Facilities

Imports	Boom Baru	Mid-Stream	Pertamina	Pusri	P.N. Garam
Rice	70 %	30 %	—	—	—
Sugar	70 %	30 %	—	—	—
Cotton	100 %	—	—	—	—
Flour	—	100 %	—	—	—
Cement	—	100 %	—	—	—
Fertilizer	—	—	—	100 %	—
Oil Products	10 %	—	90 %	—	—
Crude	—	—	100 %	—	—
Other	55 %	—	45 %	5 %	—
Exports	—	100 %	—	—	—
Interisland Inward					
Sugar	—	100 %	—	—	—
Rice	—	100 %	—	—	—
Timber	—	—	—	—	—
Salt	50 %	—	—	—	50 %
Cement	100 %	—	—	—	—
Flour	—	100 %	—	—	—
Oil Products	100 %	—	—	—	—
Others	25 %	—	75 %	—	—
Local Inward					
Coconut Oil	100 %	—	—	—	—
Others	100 %	—	—	—	—
Interisland Outward					
Fertilizer	—	—	—	100 %	—
Oil Products	—	—	100 %	—	—
Plywood	—	—	—	—	—
Timber	—	—	—	—	—
Other	30 %	30 %	—	40 %	—
Local Outward	100 %	—	—	—	—

at the Boom Baru wharf as well as in midstream are shown in Table IV 4.1.2-2 for the years 1972-1974. Interisland cement and imported rice accounted for about 50% of the cargo unloaded at Boom Baru, while rubber and coffee represent 50% of the cargo loaded from lighters midstream. Approximately equal tonnages of inward cargo, both interisland and local, were loaded at the wharf and to lighters alongside. For outward cargo in 1974 about four times as much was loaded from lighters as was loaded at Boom Baru. Figure IV 4.1.2-2 represents the possible cargo movements at Boom Baru and at the anchorage.

4.1.3 Tonnages Handled

If petroleum is excluded approximately 1,070,000 tons of cargo were handled in the Port of Palembang from April 1975 to March 1974. This represents a 16% increase over the quantity handled in 1973 and a 35% increase over 1971. This total includes 203 thousand tons of imports, 224 thousand tons of exports, 242 thousand tons of interisular and local inward cargo and 403 thousand tons of outward cargo. The tonnages handled at Boom Baru amounted to 90 thousand tons of imports and 95 thousand tons of local and interinsular cargo. This is a 20% drop from 1973 but a 17% increase over 1971. The tonnages handled by lighters included 99 thousand tons of imports, 222 thousand tons of exports and 135 thousand tons of interinsular and local cargo. A list of the cargo flows by facility is given in Table IV 4.1.3-1 for the period 1971-1975. The total flow of cargoes, other than petroleum, which were loaded and unloaded are given in Figure IV 4.1.3-1.

TABLE IV 4.1.2-2

TONNAGES OF MAJOR CARGOES HANDLED AT BOOM BARU AND IN THE STREAM

(000's tons)

	1974	1973	1972	Estimated percentage Boom Baru	Estimated percentage Midstream
Imports					
Rice	51.2	90.5	43.8	70 %	30 %
Sugar	10.4	21.6	-	70 %	30 %
Cotton	3.4	2.8	1.8	100 %	
Flour	0.5	1.9	-		100 %
Cement	15.5	26.4	17.4		100 %
Exports					
Rubber	149.0	163.0	129.4		100 %
Coffee	39.5	21.8	26.9		100 %
Scrap iron	2.8	7.4	3.5		
Interisland					
Sugar	32.6	32.5	39.6		100 %
Rice	32.0	13.8	8.2		100 %
Salt	18.6	19.1	17.9	50 %	
Cement	46.4	39.3	32.2	100 %	
Flour	11.4	17.5	2.6		100 %
Asphalt	10.1	5.4	4.2	100 %	
Local					
Coconut oil	14.9	13.5	13.0	100 %	
Timber *	8.7	7.1	1.6	100 %	
Rice	7.7	0.8	2.1	100 %	

* 000's M^3.

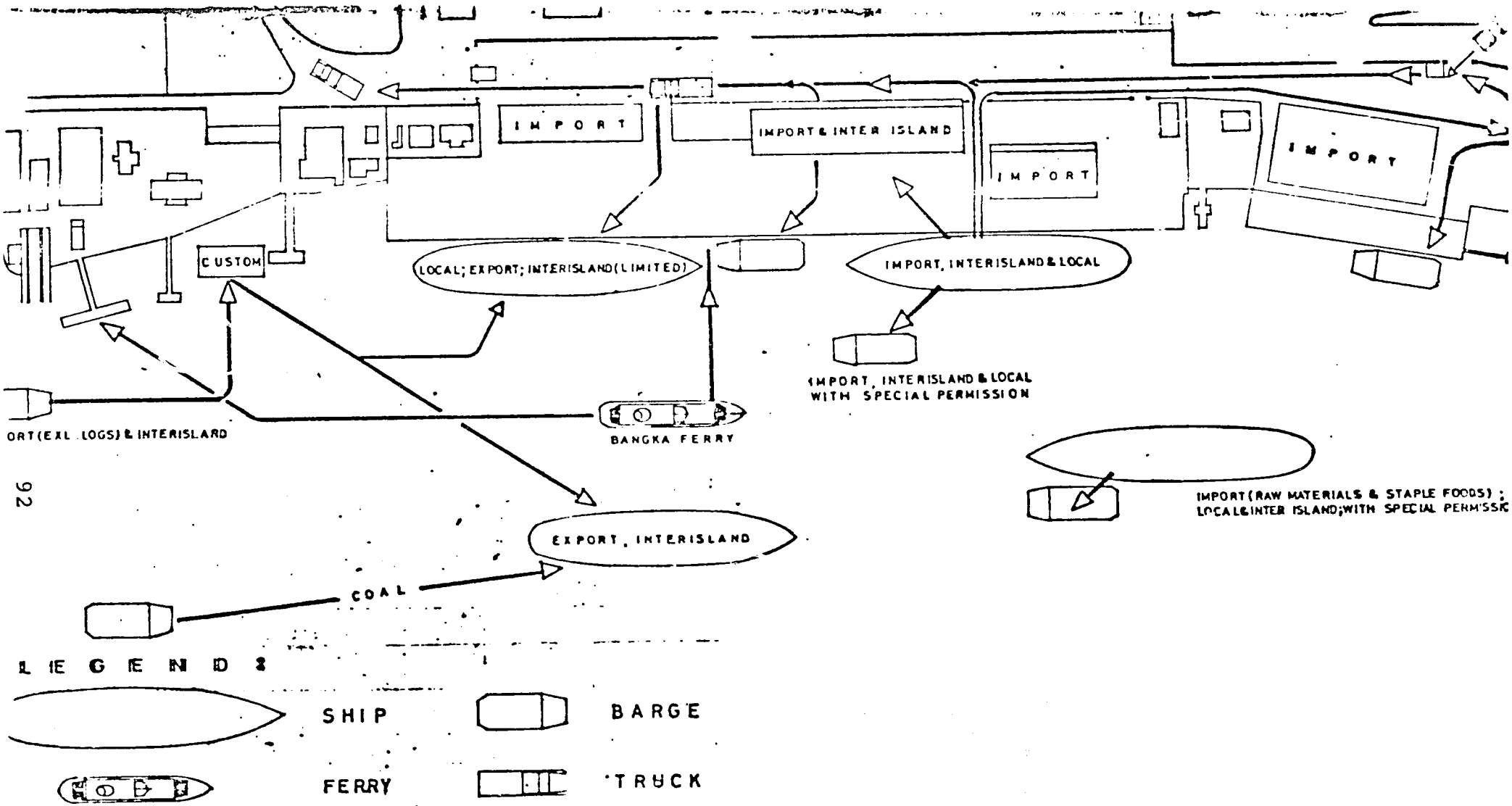


Figure IV-4.1.2-2

Cargo Movements Through the Port

Source: E.G.F. Survey

TABLE IV 4.1.3-1

TONNAGE[1]) HANDLED WITHIN THE PORT OF PALEMBANG BY FACILITY

(Excluding Petroleum Handled by Tankers) (10^3)

Description	1975[9])	1974[2])	1973	1972	1971
Imports Unloaded to :					
Boom Baru	69.3	90.3	133.3	74.7	74.0
Pusri	*	8.1	34.6	7.9	—
Pertamina	*	38.3	36.8	23.2	— [3])
Lighter	22.5	49.0	29.0	24.5	30.1
Unaccounted [4])	*	17.0	12.1	18.7	70.9
TOTAL		202.7	245.8	149.0	175.0
Exports Loaded from :					
Boom Baru	0.2	—	—	—	—
Pusri	*	1.4	0.8	0.8	0.4
Pertamina[6])	*	0.3	30.8	21.2	23.7
Lighter	245.3	222.2	198.3	164.6	154.4
Unaccounted	*	0.1			
TOTAL		224.0	229.9	186.6	178.5
Interinsular and Local Unloaded to					
Boom Baru	115.1	86.6	76.2	60.7	59.9
Pusri	*	3.1	1.0	0.7	0.9
Pertamina	*	6.2	6.8	5.1	3.3
P.N. Garam/Others	*	7.2	11.6	18.2	14.6
Sailing Port	*	11.2	13.3	7.7	8.5
Lighter	132.3	104.2	90.1	66.8	37.6
Unaccounted[4])	*	23.4	32.2	39.5	40.3
TOTAL		241.9	231.2	197.7	171.1
Interinsular and Local loaded to:					
Boom Baru	14.4	8.2	12.5[5])	12.6	23.9
Pusri	*	228.4	101.3	99.6	106.8
Pertamina [6]) [7])	*	110.8	56.1[8])	72.4	70.3
P.N. Taba/Batubara	*	11.5	2.1	19.9	40.8
Prajen	*	7.1	—	—	—
Sailing Port	*	0.8	11.8	7.1	8.6
P.N. Garam/Others	*	—	—	—	4.4
Lighter	37.4	31.3	30.0	20.2	14.5
Unaccounted	*	5.0	5.0	0.3	0.4
TOTAL		403.1	218.8	225.0	269.7

* NOT AVAILABLE.

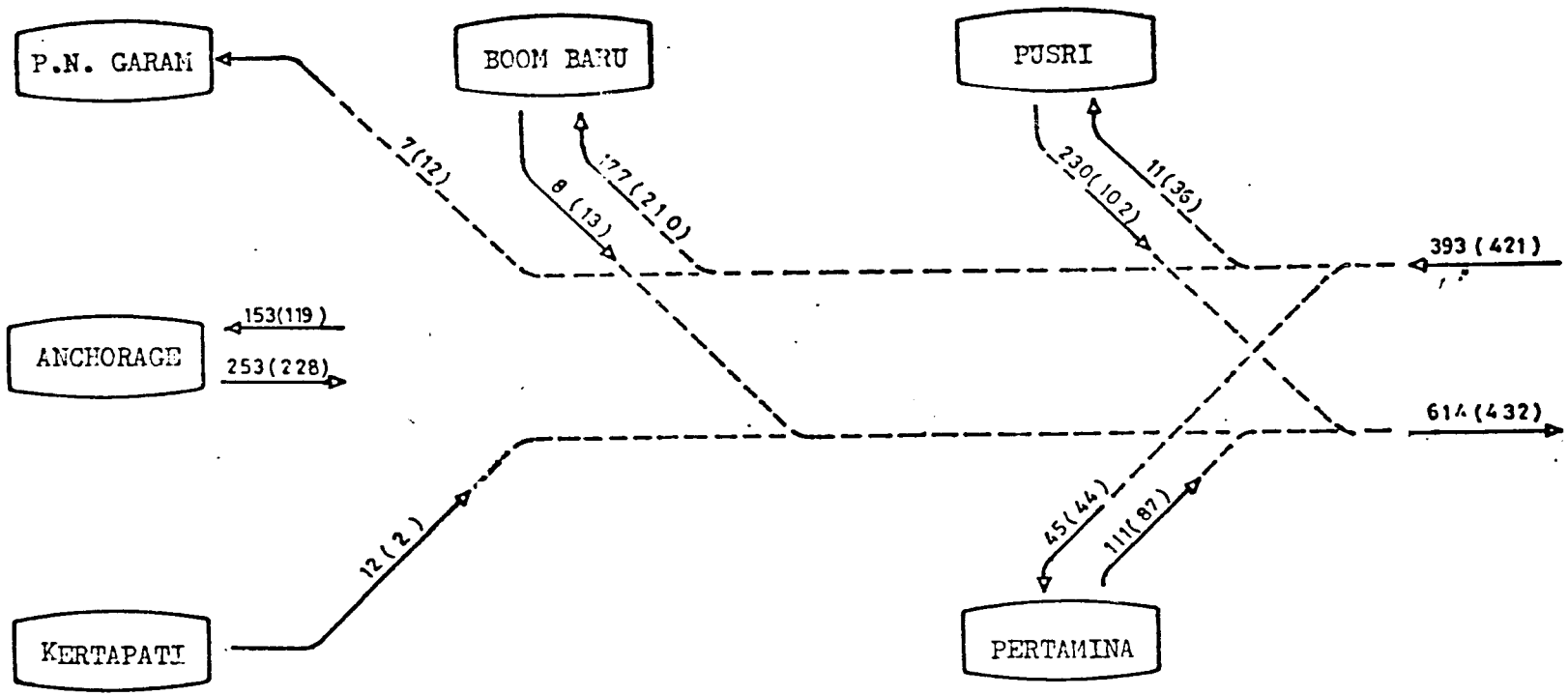


Figure IV-4.1.3-1

Cargo Flows in the Port of Palembang (Excluding Petroleum)

For 1974 (1973)

4.1.4 Inland Movement

The primary inland movement of cargo is direct by lighter between a ship and the factory or market. This accounted for 38% of the cargo handled in the port in 1974 excluding logs and petroleum. An additional 37% was delivered to the site, e.g. Pertamina dn Pusri. Only 1% was carried on the railroad.

For the cargo which was handled across the wharf at Boom Baru in 1974 about 38% was transferred directly between ship and truck. The rest went either to open storage or to the godown. Eighty percent of the stored cargo was subsequently transferred to truck for the journey inland (see Table IV 4.1.4-1) while 20% was loaded into lighters.

Most of the movement inland is to godowns and markets within the immediate vicinity of Palembang. Because a large amount of industry is located along the Musi River, lighters represent the quickest and least expensive form of transport.

4.1.5 Trade Patterns

The primary exports from the Port of Palembang are coffee, rubber, logs and wax. Approximately 160,000 tons of exports went to Singapore in 1974. In addition to the primary exports, this trade included shipments of rattan, ammonia and bran. The USA and Europe received approximately 60,000 tons of rubber, coffee, tea and rattan in 1974. The primary cargo shipped to Japan is logs; approximately 325,000 cubic meters were exported in 1974. Taiwan and Korea also received large shipments of logs, 111,000 and 38,000 cubic meters respectively.

The figures for export tonnages during the first ten months of 1975 are shown in Table IV 4.1.5-1. Of the 44,000

TABLE IV 4.1.4-1

TONNAGE HANDLED OVER THE WHARF BY MODE (1000's)

Description	1975[3]	1974[1]	1973	1972	1971
Imports unloaded to :					
Truck	11.9	25.8	54.5	7.9	4.5
Open storage	17.6	12.1	9.1	11.8	14.5
Warehouse	39.8	52.4	71.7	55.0[2]	55.0[2]
TOTAL	69.3	90.3	133.3	74.7	74.0
Interisland and local unloaded to:					
Truck	72.7	37.2	38.3	22.5	22.0
Open storage	12.2	19.4	9.6	6.2	1.5
Warehouse	30.2	30.0	28.3	32.0[2]	36.4[2]
TOTAL	115.1	86.6	76.2	60.7	59.9
Interisland and local loaded from:					
Truck	14.1	7.2	1.1	0.1	4.4
Open storage	0.3	1.0	1.1	1.5	0.4
Warehouse	-	-	10.3	11.0	19.1
TOTAL	14.4	8.2	12.5	12.6	23.9

1) April 1974 - March 1975

2) Estimates

3) April 1975 - Sept. 1975 multiplied by 2

Source : BPP Traffic Dept. Statistics.

TABLE IV-4.1.5-1

TONNAGES BY
EXPORT DESTINATION

January - October 1975

	COMMODITY									
Country	Coffee	Rubber	Tea	Frozen Shrimp	Logs*	Bran	Resin	Rotan	Ammonia	Total+
Singapore	3,979	113,205	33		3,888	6,356	385	385	991	125,334
Europe	17,226	1,714	162	42				76		19,220
U.S.A.	18,763	11,959	295					135		31,152
Japan	1,015			228	143,820					1,243
Hong Kong	3,074			257						3,331
Taiwan					97,023					0
Korea					8,329					0
TOTAL	44,057	126,878	490	527	253,060	6,356	385	596	991	

* m^3

+ Excluding logs

tons of coffee exported 30% went to Europe, 43% to the USA, 9% to Singapore and 7% to Hongkong. Rubber exports went primarily to Singapore, 90% of a total shipment of 127,000 tons, and the USA. Logs exported amounted to 253,000 cubic meters; 57% went to Japan, 39% to Taiwan, 3% to Korea and the remainer to Singapore. Other exports included 6356 tons of bran and 990 tons of ammonia sent to Singapore.

The primary imports handled in the Port of Palembang are machinery, rice, salt, cement, asphalt and general cargo. The major source of imports is Singapore, which in 1974 shipped nearly 80,000 tons of general cargo, cement, asphalt, fertilizer, paper and lubricating oil. Japan is the next largest source supplying general cargo, cement and machinery, amounting to more than 40,000 tons in 1974. Thailand and Korea are the primary source of rice. Thailand also provides cement and some salt. The USA shipped sugar, cotton, machinery and general cargo. Imports from India totaled nearly 16,000 tons in 1974, most of this was sugar, salt and cotton.

Approximately 300,000 tons of interisland cargo was shipped out of the Port of Palembang between April 1974 and March 1975. The largest tonnage was fertilizer, 224,000 tons. The tonnages by destination was given in Table IV 4.1.5-2. About 35,000 tons of fuel oil and 4000 tons of lube oil were shipped largely to Jakarta and Belinyu on Bangka Island. Jakarta also received a majority of the 9,000 tons of asphalt and part of the 7,000 tons of plywood loaded in Palembang. The other recipient of plywood was Padang. The Port of Surabaya received wax, logs and coffee. The total amount of wax loaded in Palembang was 3880 tons. The other port receiving wax was Semarang. About 11,600 tons of coal were shipped from Palembang to Belinyu and to Tembilahan.

TABLE IV-4.1.5-2

DISTRIBUTION OF FERTILIZER FROM PUSRI IN 1974

(000 tons)

Place	Quantity
Jakarta	49.3
Cirebon	30.3
Semarang	32.9
Surabaya	59.0
Kalianget	3.0
Bali/Benoa	6.2
Cilacap	23.7
Meneng	8.7
Pontianak	2.4

The primary interisland commodities unloaded at Palembang are sugar, rice, salt, cement, flour, coconut oil and asphalt. The 30 thousand tons of sugar and 26 thousand tons of rice received from April 1974 to March 1975 came from Surabaya and Jakarta. The 11,800 tons of flour were received from Jakarta, Surabaya and Padang. Padang also provided 51,000 tons of cement. Madura, near Surabaya, and Bangkalan shipped a majority of the 14 thousand tons of salt unloaded in Palembang. About 8,000 tons of asphalt were received primarily from Buton.

The primary cargoes shipped as local cargo were oil products and coal sent to Bangka. The primary local cargo received was coconut oil, which mostly came from Riau. The rest of the local trade was primarily with Jakarta via the Port of Sunda Kelapa.

4.1.6 Form of Commodities

Rubber exported from Palembang is shipped as crumb rubber or blanket rubber. The crumb rubber is in 100 kg. bales which are crated, 10 bales to a crate. The blanket rubber is in 100 kg. bales. The consignment size is relatively small so that many consignments are loaded per ship. Coffee is exported in 80 kg. bags also in relatively small consignments, 10-100 tons.

Cement is received in 40-50 kg. bags in single consignments. Rice is shipped in bags, the size varies with the source 100 lbs from U.S.A., 60 kg from Japan and 100 kg from Thailand. The rice is handled in single large consignments. Sugar is also bagged, 100 kg. per bag and is received in small consignments by the private market and large consignments (1-2000 tons) by Dolog. Both flour and tea are bagged, 40 kg, and shipped in small consignment. Exported tea is

shipped in 1 m^3 containers.

Drum cargo includes coconut oil, lube oil, and fuel oil. A standard drum is 55 gallons. Asphalt both import and interisland is received in 100 kg drums, in addition some bulk shipments are received from Buton. A list of cargoes and their form of shipment is given in Table IV-4.1.6-1.

4.2 Cargo Handling and Documentation

4.2.1 General Cargo Imports

The primary inward flows of cargo to Palembang are rice, sugar, cement, fertilizer, salt, crude oil, oil products, machinery and general cargo. Present customs regulations require all imports to be handled at the wharf and placed into the godown with the exception of raw materials and staple foods which may be handled in the steam. Domestic cargo must also be unloaded at the wharf except where special permission is obtained to unload in the stream.

Cargo unloaded at the wharf is transferred by ship's gear or mobile cranes from the hold to the wharf, directly to trucks or overside to lighters. In the latter two cases two gangs are employed one working in the hold and one working in the truck or lighter. The size of the gang is a function of the type of cargo and the size of the ship. Stevedoring gangs are from 8-13 men while lighter and truck gangs average about 7-8 men. For cargo which is moved across the wharf either hand trucks or in some cases forklifts are used to move the cargo into the godown. In the godown another gang is involved in stacking the cargo either manually or using folklift trucks.

There are two cases where mobile cranes are used for unloading. The first is for heavy lifts which can not be

TABLE IV-4.1.6-1

FORM AND CONSIGNMENT SIZE OF COMMODITIES

Commodity	Form	Size	Consignment
Rubber, crumb	Crated	1 ton	Small
Rubber, blanket	Loose sheets	60x65x60 cm 100 kg	Small
Coffee	Bagged	80 kg	Small
Tea	Bagged, container	40 kg	Small
Cement	Bagged	40-50 kg	Large
Rice	Bagged	40-100 kg	Large & small
Flour	Bagged	40 kg	Small
Sugar	Bagged	100 kg	Large & small
Fertilizer	Bulk, bagged	25 kg	Large
Asphalt	Drum, bulk	100 kg	Large
Coal	bagged, bulk	62 kg	Large
Fuel oil	Drums	55 gal	Large
Coconut oil	Drums	55 gal	Small
Salt	Bags	50 kg	Large
Logs	Loose		Large
Sawn timber	Bundled	50 pieces 1 ton	
Lube oil	Drums	55 gal	Small
Cotton	Bales	250 kg	Large

handled by either the ship's gear cranes. This cargo is off-loaded at Pusri's wharf which has larger mobile cranes, up to 100 ton capacity. The second case is for smaller ships that have inadequate or damaged cargo lifting gear. For these vessels unloading is done using one of the hired mobile port cranes.

Cargo unloaded in the stream is transferred by ship's gear directly to lighters. The lighters then proceed directly to their destination.

Most of the staple foods, cement and fertilizer is in bags. Much of the general cargo is in crates and cartons. Almost no cargo is palletized. Cargo is handled using fiber or wire rope slings and wooden rectangular pallets. The latter is used only for transfer from hold to wharf and is then unloaded and lifted back into the hold.

4.2.2 Control and Documentation Procedures

The cargo is tallied by two representatives of the ship agent working in the ship and on the wharf. A sample tally sheet is shown in Figure IV-4.2.2-1. The cargo is tallied again by a representative of the ship's agent working in the godown. For cargo unloaded direct to lighter or truck the consignee will also perform a tally against his delivery order. For unloading to a lighter the customs agent checks the cargo and a notice, Surat Perahu, is prepared and signed by the tally clerk, consignee and customs agent for submission to the central customs office. The lighters are not required to go to the main customs wharf.

[illegible] : I (Dua) -

Barang dari kapal : Sungsine

Dimuat dalam Perahu No. : KM VI -

Untuk dikirim kepada :

P.N. PELAYARAN NASIONAL INDONESIA
CABANG PALEMBANG

SURAT PERAHU

NAKHODA

CAP Merek	Nomor	Banyaknya Angka	Banyaknya Huruf	Jenis bungkusan dan barang	Keterangan
KIPALA KERBAU -		1272	(Seribu Dua Ratus Tujuh Puluh Dua)	ZAK SEMEN PADANG	Pemilik CV [illegible] Jenis [illegible] 90 %
JUMLAH		1272	[illegible]		

[illegible] 19....

P.N. "PELAYARAN NASIONAL INDONESIA"
CABANG PALEMBANG

Juragan kapal

Mualim I

FIGURE IV 4.2.2-1

Sample Tally Sheet

PELNI - LINES
PALEMBANG

TALLY - SHEET

Terima dari perahu jembatan

Dibongkar ke - perahu jembatan

Kapal "M.V. HERO" barang-barang yang tersebut di bawah ini

Palka No. I (SATU) Perahu No. ..... Gudang No. .....

Pelabuhan BOOM BARU. Tanggal 31 Agts 19 75. Tirta Yasa - Plg

Merek	Tally (Bongkar Jam 13.00 s/d 20.00)										Jumlah (sebutkan jenis pembungkus)	CATATAN²
PETIZON	1	1	1	1	2	1	1	1	1	1	11 C#	
	1	1	1	1	1	1	1	1	1	1	10 --	
	1	1	1	1	1	1	1	1	1	1	10 --	
	1	1	1	1	1	1	1	1	1	1	10 --	
	1	1	1	1	1	1	1	1	1	1	10 --	
	1	2	1	1	1	2	2	1	1	1	13 --	
	2	2	2	2	2	2	2	2	2	2	20 --	
	2	2	2	2	2	2	2	2	2	2	20 --	
	4	3	3	-		-	-	-	-	-	10 --	
							Jumlah				114 C#	
Bal Karung	2	5	6	6	7	6	6	2	-	-	40	Bal
"OUS.	10	7	9	-	-	-	-	-	-	-	26	Bal
							Gen. TOTAL				180 C#	

Tally Pelabuhan

Chief Off.

Mandor

Harus ditanda-tangani oleh kedua belah pihak
(Tanda - tangan sepihak tidak berlaku),
dengan menyebutkan nama dengan huruf cetak.

20 buku á 100 × 3 lbr. - 21,2 × 33 cm.

FIGURE IV 4.2.2-1
(Continuation)

4.3 Outward Cargo

The primary outward cargoes are exports of rubber, coffee, and timber, and domestic shipments of fertilizer, petroleum products, coal and timber. The coffee and rubber and timber are in bags, bale and bundles respectively and are loaded directly from lighter to a ship in the stream. Cargo is handled exclusively by ships gear. The gang size is the same as for unloading in the stream. Prior to going to the vessel the lighters are required to dock at the customs wharf for inspection.

The major domestic shipments are handled at private facilities, Pusri and Pertamina, and in the Musi and Banyuasin Rivers.

4.3.1 Documentation and Control.

The cargo is tallied by two representatives of the ships agent stationed in the lighter and on board the ship. The port and UKA obtain information on the quantity loaded from the manifest, no formal tally is made by them. The customs inspection is carried out at the main customs wharf. Customs inspection of log exports is done at the log pond prior to loading of the ship.

4.4 Dry Bulk.

The two commodities handled in dry bulk form are fertilizer and coal. Both are also handled in bagged form. Pusri has its own bulk loading facility presently capable of loading 300 tons per hour and soon to be improved to handle 500 tons per hour. The cargo is moved by conveyor belt directly from the warehouse to the loader. All cargo handling is under the direct control of Pusri and customs agents are stationed at the wharf.

Coal is loaded onto barges from a bulk loader located at the TABA facility at Kertapati. The loading operations is performed by TABA employees. The loader is capable of handling 350 tons per hour. The coal is moved by conveyor belt either directly to the ship loader or to an intermediate storage pile.

4.4.1 Documentation and Control.

Both bulk cargoes are under direct control of the producer. The port receives the manifests for the cargo loaded.

4.5 Liquid Bulk.

Pertamina's facility hands both crude oil and oil products in bulk. Both are pumped directly to and from shore tankage at Plaju and Sungai Gerong. There are a total of twelve berths. Six or eight inch hoses can be used for all products except bunkers and LP gas at Sungai Gerong. Here four and six and two and three inch lines are used respectively. Products handled and pumping rates are shown in Table IV -4.5-1.

4.5.1 Control and Documentation

Cargo handling procedures for bulk oil products similar to those for other cargoes except of course Pertamina acts as agent for the oil cargoes and makes monthly reports to the Port Authority concerning numbers of vessels and tonnages handled.

4.6 Logs and Timber

Logs are loaded from the river at four major locations - the Banyuasin River, Pulau Kemaro, Pulau Borang,

TABLE IV-4.5-1

BULK OIL PUMPING RATES

Product	Maximum loading or discharge rate (tons/hour)
Avgas	400
Premium gas	500
PCG	500
Specials	300
H.A.W.S.	400
Kerosene	600
Avtur	400
Autogas	700
Diesel fuel	700
Residual fuel	700
Crude oil	700
Bunkers	150
High speed diesel	

Mesuji River. The floating logs are loaded using ships gear into special log carriers. A log carrying ship being a high cubic ship fitted with deck racksto simplify the carriage of deck cargo. Substantial quantities of plywood are exported to Singapore in barges.

4.6.1 Documentation and Control.

Procedures for timber shipping are identical with other products. Customs makes inspections of export log shipments at the log pond before the cargo is loaded.

4.7 Present Stevedoring Methods.

General cargo handling at Boom Baru is in urgent need of improvement. The most critical problem is currently damage to cargo. An informal E.G. Frankel survey of merchants in Palembang indicated that 4% breakage of cargo is expected and that overall loss rates including theft run to eight percent. In a port such as San Francisco or Rotterdam cargo damage and loss would run on third of this.

Cargo is usually handled using ships gear. Nets are used for light general cargo in boxes, loading boards are used for bulk cement. Heavier cargoes such as steel, gas bottles, or machinery in crates are unloaded using slings. Once landed on the wharf, the cargo is separated into small units of 30 to 100 kilos and moved to open or covered storage with handcarts. There the cargo is again stacked manually When cargo is directly loaded or unloaded on trucks the processes is completely manual with much rehandling with resultant increase in cargo damage.

The failure to use forklifts or to provide suffi-

cient men to work the pier frequently increases cargo damage rates. When this situation occurs, the gang working on the dock is unable to remove cargo from its landing place and occasionally a second sling load of cargo is dumped on the pile. This of course increases the incidence of cargo damage.

On occasions the utilization of labor is poor. This usually happens when a cargo which is unpleasant to handle arrives, for example cement or carbon black powder. An insufficient number of men usually are made to work in the holds where the dust is most severe, and too many men man the hand trucks. Insufficient attention is given to rotating work assignments and providing rest periods.

5.0 PORT LABOR

5.1 Management of Port Labor

All stevedoring labor in Indonesia is under the control of the U.K.A. (Usaha Karya). This is a semi-private organization which is responsible for providing cargo handling labor at the ports. The UKA is responsible for registering the labor, organizing the gangs, assigning gangs as requested by the ship's agents, training the labor, and providing wages and social benefits. The pay of the laborers is determined either by contract or published tariff. The rate is determined by a board, Dewan Pengawas, consisting of representatives from the Government, the local Labor Office, UKA, shippers, and the Port.

The UKA operates under the direct guidance of the Port Administrator who has the right to hire and fire stevedores but does not provide their wages or social benefits. The UKA is also under the authority of the Directorate General of Sea Communications. The central offices for UKA are located in Jakarta.

The stevedoring labor is requested from UKA by the ship's agent. The ship's agent is in charge of the labor while they are handling cargo. He decides what and how much mechanical cargo handling equipment should be used. These he provides or rents from the PPA. The PPA through its Operations Division can request that additional gangs be used by a ship's agent if the cargo handling is not proceeding at an adequate rate. Other than this the PPA takes no active part in the administration of the cargo handling labor. Any information the PPA requires concerning stevedoring activity they obtain from the UKA.

5.2 Organization and Utilization of Port Labor.

The stevedores are organized into 15 man gangs. For unloading a ship three gangs are used for each hatch. These three gangs are referred to as a unit. One gang works in the hold, the second gang transfers the cargo from the wharf to the godown and the third gang stacks the cargo in the warehouse. The maximum gang size which is used is 15 men, however, for smaller ships or for cargo which is easy to handle the number of men per gang is reduced. The minimum size gang is supposed to be 8 men although smaller gangs are used. Even with the smaller size gangs, three gangs are required to move the cargo from the ship to the godown. An additional gang is required to move the cargo from the godown to the truck.

For ships which load or unload directly from/to lighters only two gangs are required, one in the ship's hold and one on the lighter. The minimum gang size for working a lighter is supposed to be ten men. For a ship which loads/unloads directly from/to a truck only two gangs are required. In addition to the laborers in the gangs there is an assistant foreman working with each gang and a foreman in charge of the whole ship. The movement of cargo is recorded by a checker in the ship's hold and one in the godown, or on the truck if it is direct delivery. These checkers are employees of the ship's agent, not UKA or PPA.

At present the stevedores do not work on a shift basis, although plans are being considered for changing over to a shift system. Normally a day gang will work 8-10 hours and will be replaced by a night gang, which will work until the next morning. The gangs work on a piece rate basis and there is no provision for overtime or holiday pay. The ste-

vedores work full days on Friday, Saturday, Sunday and holidays. The normal hours for meals are :

12:00 - 13:00	lunch
18:00 - 19:00	dinner
22:00 - 23:00	coffee

if work is to continue through the night then the night breaks are :

20:00 - 20:30	coffee
24:00 - 00:30	supper
06:00 - 06:30	coffee

5.3 Registration, Termination and Assignment of Labor.

In order to register as a stevedore, a laborer must apply to UKA for employment. The laborer is then screened by the military. If he is found to be acceptable and is in good health then he is registered with the UKA. The present are requirement is that the applicant be at least 18 years old, but this regulation is not enforced. At present there is no provision for retirement and some of the stevedores working in Palembang are in their 50's. It is estimated that from 30-40% of the stevedores are over 40.

The gangs are assigned each morning by UKA for work on the following day. The gangs queue up before 8 AM to receive their assignments. If there is not enough work, the UKA is responsible for giving priority on the following day to those gangs not receiving assignments. When the day gang begins work, it states the time at which it will stop so that the night gang can be informed as to what time it must start working.

The request for gangs is made by the ship's agent 24 hours in advance, however, requests for gangs can be accepted at any time during UKA office hours (7 AM - 3 PM).

The total number of cargo handling labor registered with UKA as of November 1975 was 1251 men. Of these 21 were registered as foreman and 63 as assistant foreman (mandor kecil). The labor is divided with about 30% working foreign going ships 42% working interisland ships and 28% working local shipping. According to UKA record 118,500 man days were worked in the first nine months of 1975. This would imply an average work week of 2.5 days per stevedore. A survey discussed in a following section indicates an average work week of 5 days. This latter figure is felt to be more correct, and therefore, implies that only 50% of the labor is actively employed.

5.3.1 Remuneration of Port Labor

The present remuneration of port labor is based on a letter of agreement, Surat Keputusan No.183/DPUKA/74 dated August 5, 1974. This agreement specifies the following wage which is paid on a per ton basis (cubic meter for timber). The wages are in rupiahs :

Activity	Stevedoring (1 gang)	Cargo-doring (2 gangs)	Delivery (1 gang)	Total
From ship at wharf through godown to truck	120	210	100	430
From ship direct to truck	120	155	-	275
From ship direct to lighter	120	155	-	275
From ship at anchor to lighter to wharf and to the godown for delivery to truck	120	355	100	575

An additional Rp.90.- per ton or cubic meter is paid directly to UKA. This Rp.90.- is then distributed to the worker, Rp.10.- for housing, Rp.51.10 for other social benefits, Rp.10.- for a port pass, Rp.4.50 for UKA administration, Rp.13.50 for UKA headquarters and Rp.0.90 for the PPA. The social benefits include uniforms and shoes, however, no gloves or safety shoes are provided. The UKA provides general health benefits through the port health facilities but, in the event of an accident, the ship's agent is responsible for the medical costs. Included in the planned social benefits which UKA will provide to the workers is the provision of new housing. UKA plans to begin construction in 1976 of at least 100 units of housing.

For handling dangerous cargo a 100% surcharge is included in the wages of the labor. For cargo which is not dangerous but which presents a hazard for the labor in handling, a 12½% surcharge is added.

5.3.2 Proposed Revision Under the New Port Tariff

The remuneration of the Port labor is covered in the new Port tariff. The tariff specifies a single shift system, 08-00 - 16:00 Monday - Friday, 08:00 - 14:00 Saturday, with a daily wage paid to a working stevedore. It also stipulates a number of social benefits which the worker is to receive. In addition the workers receive overtime for working outside of the normal shift hours and/or on Sundays and holidays.

The remuneration under the new tariff includes Rp.360/day take home pay, Rp.375/day allowance for food, clothing, transport and other benefits. A foreman will receive a total income of Rp.975/day. The take home pay is based on a ten ton per gang-hour rate for general cargo (15 tons for bagged

cargo). If the stevedores exceeded this rate they would be paid accordingly. Overtime payment is Rp.3,278/gang-hour except Sundays and holidays after 16:00 when the rate increases to Rp.4,918/gang-hour.

The gangs would be fifteen men gangs. Additional personnel would include a foreman, checker and assistant checker. Presumably the same system of using smaller gangs for easily handled cargo would be discontinued. However, the use of one gang from 16:00 to 08:00, 16 hours, would be continued, with the resulting reduction in productivity.

5.4 UKA Information Flow.

The ship's agent requesting stevedoring labor makes a formal request for labor by completing the Permohonan Tenaga Kerja. On this form he lists his labor requirements for stevedoring, cargodoring, and delivery and also states the type of commodity and tonnage to be handled. The UKA operaing division then prepares a work order, Surat Perintah Kerja, and a work permit, Izin Kerja, for the laborers assigned to the job. When the laborers report for work the foreman prepares a labor receipt, Serah Terima Bupelta, which states the number of men who actually report and where they are assigned. The receipt is signed by the ship's agent.

When the work is completed an UKA supervisor prepares a statement of work completed, Daftar Keterangan Kerja. The tonnage handled is determined from the initial request and in some cases compared against the manifest. From the work statement a bill is prepared by the UKA operations department and this bill is then sent to the ship's agent.

5.5 Labor Productivity

The present productivity of labor is recorded either by the PPA or by UKA. In order to estimate productivity three sources were consulted. The first were UKA's labor records, the second was the ship's agent and the third was direct observations of the wharf activities. The individual UKA bills proved to be inconsistent so that only the aggregate figures could be used. These provide the number of men employed and the number of tons handled but do not indicate either the number of man hours or the number of gangs. The latter presents a problem since gang size varies with type of ship, type of cargo and location of cargo handling. An estimate of productivity was made assuming a 9 hour man day and an average of 16 stevedores working on barge or ship for loading in the stream and 12 on the ship for unloading at the wharf. The resulting productivity is calculated as 23 tons/gang-hatch-hour loading from lighter in the stream and 10 tons/gang-hatch-hour loading at the wharf.

The ship's agents gave the following average rates for working in the stream per gang-hatch-hour

rubber	15 tons
cement	25 tons
sugar	20 tons
rice	25 tons
coffee	15 tons

Observations made at the wharf of cargo handling activities provided net working rates. These rates were then discounted by 30% to yield gross handling rates per gang-hatch-hour. The results are cement 13 tons, small boxes 8.5 tons, rice 16 tons, full bottles 13.5 tons, filled drums 25 tons, steel coils 13.5 tons. The three

sources of data provide a range rather than an average value. For the purposes of this report the figures in Table IV-5.5-1 are used per gang-hatch-hour.

Two conclusions can be drawn from these estimates. First that labor is working at a faster rate than the PPA's published figures of 14 and 8 tons per gang-hour for bagged and general cargo. However, these rates are achieved with predominately single hatch ships working at level with the wharf with a large amount of direct delivery to/from truck. If larger ships are to be handled then there will be delays associated with the congestion of working multiple hatches. In addition more of the cargo will be handled via the godown because of limitations on the number of trucks and agent can supply for direct delivery and because of congestion on the wharf associated with large numbers of trucks servicing a single ship. Second, that the chief cause of low annual handling rates per meter of wharf is the limited number of hours worked per day by the stevedores.

5.6 Stevedore Survey

A survey was conducted of the stevedores working on the wharf. Although the sample size is small the results are informative. The stevedores had been working on the wharfs for only a few years despite an average age of 40. Those who could walked to work, but those who could not had to take a taxi which cost about Rp.100/day. The average work week was five days long and the average pay was about Rp.3500/week. If the average productivity is assumed to be 1 ton/man-hour and an average work day is 7 productive hours then the average pay per ton is only Rp.100/ton. This is less than the amount specified by UKA and as both the hour and productivity are estimated conservatively, this discre-

TABLE IV-5.5-1

ESTIMATED STEVEDORE PRODUCTIVITY

(per gang-hatch-hour)

Loading/Unloading	In the stream	Over the wharf
Bagged	20	15
General cargo	15	10

If a handling rate of 11 tons per gang-hatch-hour is assumed for the wharf, i.e. a ratio fo 2:1 general cargo to bagged cargo, with an occupancy of 70% and one hatch per 50 meters, then an average working time per day can be computed. The formula for this calculation is

$$A \cdot \frac{L}{L_o} \cdot r \cdot 365 \cdot X = L \cdot R$$

where

A = occupancy = .7

L = length of wharf = 310 meters

L_o = length of wharf per hatch = 50 meters

r = handling rate = 11 tons/gang-hatch-hour

X = hours per day worked

R = tons handled per meter-year

The present tonnage handled per meter year is 600 tons and the implied average working day is X = 10.6 hours. In order to achieve a productivity of 1000 tons per meter year X must equal 18 hours per day.

pancy may be larger. Although the stevedores knew that they were paid on a per ton basis or at least on the number of jobs performed, they were not aware of the rate they should receive. The stevedores in general believe that the ship's agent is responsible for counting the tonnage handled. The wages are received either from UKA or from the ship's agent through the mandor (gang foreman). All stevedores identified themselves with a specific shipping company and said that they were assigned work by the ship's agent or his mandor. Discussions with ship's agents indicate that all foreign-going and some interisland shipping company agents select their own stevedoring labor force. These companies pay fee to UKA and work permits are issued to the men which have been designated by the company's mandor. The company is then responsible for paying both a per tonnage fee to UKA and the wages to the stevedores. Other ship agents will also use their own mandor but will request labor from UKA and will pay all wages and fees to UKA. The basis for all payments appears to be the ship agent's statement as to tonnage handled with the option that UKA may check this figure against the manifest.

At present the stevedores have received an issue of uniforms and shoes. As this was the first issue they are not sure of when they will receive another set. Their hooks they must provide themselves. Gloves are not issued and they are unwilling to pay for them. Hard hats are issued by the UKA on a daily basis, but at least one stevedore mentioned that there is a daily rental for these hats. Health treatment is provided by UKA through the port health center and if necessary through the General Hospital. For serious injuries the ship agent bears the cost of treatment. This system appears to be better than

the older system where all treatment was provided on an ad hoc basis by the ship agents.

5.7 Working Conditions.

Presently working conditions are not consistent with maximum efficiency of stevedoring operations. Incidence of cargo damage is high. Productivity is lowered for lack of equipment. As a result stevedores concentrate more on avoiding personal injury than on the job at hand. It is common practice for stevedores to handle scrap iron, steel products and barbed wire without gloves or shoes. Scrap iron is usually handled by hand - without gloves (if the pieces are small) or with wire rope slings (if the pieces are large). Because of the irregular shape of the scrap, pieces frequently break loose falling on the dock, in the water, on deck or in the hold.

Careless handling of cargo by stevedores is common and creates significant difficulties by itself. Careless handling of compressed gas cylinders and heavy load presents a very real hazard to dock workers. Many bags of cement are broken through inadequate equipment and rough handling. In addition to the lost cargo and additional work to clean the ships hold, the dust laden atmosphere in the hold may increase the incidence of silicosis.

There is also a lack of adequate supervision of the cargo handling labor. Insufficient numbers of laborers are assigned to the more unpleasant tasks, and many laborers can be observed sitting around. The foreman and assistant foreman sometimes do not appear to take an active role in the supervision of the cargo handling labor. There also appears to be a general disregard for the safety of the cargo, since

neither the port nor UKA accept responsibility for cargo damage.

5.8 Training

Up until November of 1975 there was no training provided to the UKA labor. In November a vocational school was opened. It offers a two month course in loading and unloading. No instruction is given in the use of cargo handling equipment since with the exception of ship's winches they are operated by PPA personnel. The instructions will be given by experienced workers and individuals from the government labor office, and the Indonesian National Shipping Association (INSA).

5.9 Conclusions and Recommendations

If the port is to improve its efficiency, it must increase labor's productivity. This requires the cooperation of the stevedores themselves. Cooperation in this respect can only be achieved through adequate incentives, proper equipment and adequate supervision.

Stevedores should be paid a daily wage as specified in the Buku Pedoman Perhitungan Tarif. Additional funds should be paid for increased productivity and for overtime. For maximum effect of improved wages to be felt, the way in which payrolls are calculated must be clear in the minds of stevedores. Wage payments should be audited. Work assignments should be rotated equitably. Specific procedures for discipline of workers should be set down and adhered to.

Work should be limited to eight hour shifts. This avoids the extreme loss of productivity resulting from longer work periods. The ships agent should be required to use adequate cargo handling equipment. UKA must provide additional safety equipment - especially gloves and safety shoes. As

the mandors are involved in the efficient organization of labor, they should be trained in work supervision and leadership.

Those procedures cannot be introduced all at once. Many of them require a period of evolution. But their collective purpose is to provide a well understood and equitable relationship between labor productivity and worker's incentive.

6.0 PRESENT EQUIPMENT AND FACILITY UTILIZATION

6.1 Cargo Handling Equipment Utilization

One of the characteristics of the present operation of the Boom Baru terminal is that insufficient use is made of the mechanized cargo handling equipment. While the primary reason for this is that the equipment is not usually available, it is also true that an abundance of inexpensive stevedoring labor reduces the economic importance of continuous availability of forklifts to the operation.

Table IV-6.1-1 gives the number of times and hours of use for each piece of equipment now in operation. Table IV-6.1-2 gives the utilization of this equipment. The utilization is based on single shift operation only. If it is desired to base this on two shift operation, the utilizations will, of course, be half the value given in the table.

It is clear from the table that the bulk of the work in the port is done with only two pieces of equipment - the seven ton crane and a 2 ton forklift truck.

The mobile cranes available are basicly construction cranes and are not nearly as productive as the cargo gear fitted on most vessels calling at Palembang. As a result they are used only whenever a ship or barge without cargo handling gear uses the wharf, when a ships cargo gear is broken or when a heavy lift is required.

The seven ton crane is the oldest piece of equipment now used by the port. It is in extremely poor condition and is moved by pushing it with forklift trucks. It will not be usable within two years. This crane is used most frequently as it is completely mechanical and has a very rapid cycle time.

Table IV-6.1-1

HOURS OF USE OF CARGO HANDLING EQUIPMENT AT BOOM BARU

Machine	July 75 (Hours/ times)	August 75 (Hours/ times)	September 75 (Hours/ times)	October 75 (Hours/ times)	November 75 (Hours/ times)	December 75 (Hours/ times)	Total for 6 months (Hours/ times)
15 ton crane	43/15	32/8	41/15	16/5	18/7	51/14	201/64
10 ton crane	97/27	93/21	32/10	64/20	72/22	73/20	431/120
8 ton crane			11/2			2/1	13/3
7 ton crane	115/26	106/25	120/26	82/16	86/21	103/30	612/144
2 ton forklift	41/14	109/22	161/33	135/32	83/12	122/26	651/139
2 ton forklift	42/12		39/10	25/7	82/16	20/7	169/52
2 ton forklift	12/3			20/4			32/7
3 ton forklift		16/2		13/5			29/7
5 ton forklift	--	--	--	--	--	--	--

Source : BPP Statistics

Table IV-6.1-2

UTILIZATION OF CARGO HANDLING EQUIPMENT AT BOOM BARU

Machine	Working hours in last 2 quarters 1975	Utilization
15 ton crane	201	.13
10 ton crane	431	.29
8 ton crane	13	.01
7 ton crane	612	.42
2 ton forklift	651	.45
2 ton forklift	169	.11
2 ton forklift	32	.02
3 ton forklift	29	.02
5 ton forklift	0	0

Source: BPP Statistics.

It is clear that the replacement of this crane with an identical, but new, unit is an extremely good investment.

Except for the replacement of this crane and the possible acquisition of a crane to handle containers, further investments in crane capacity are not justified in the immediate future.

The situation concerning forklift trucks is somewhat different. Again a single unit does most of the work. The reason for this is not lack of demand, but lack of reliability. Table IV-6.1-3 gives the incidence of equipment breakdown of port owned equipment in 1975. The information presented by this table is somewhat misleading as the length of breakdown periods can be quite long.

In January 1976 three of the port's five forklifts were out of service for repairs. One two ton forklift had a broken fuel pump and had been in the shop for 2 months, a second forklift truck was having its engine rebuilt and was out of service for four months. The five ton forklift had a broken fuel pump and had been out of service for seven months. This of course leaves the port with only two. In practice it is extremely difficult for ships agents to arrange the use of these forklifts. To insure that they have forklifts when required, ships agents maintain their own. Often when extra trucks are required they prefer to rent them from each other rather than from the port.

The forklifts which are used are too small. Their size is generally 2 tons. The machines are frequently called on to handle cargoes which are heavier than 2 tons. Coils of flat roofing steel weighing about 3 tons must be handled with a two ton truck. While the small truck does the job, it is overstrained, this necessary abuse obviously shortens its life.

Table IV-6.1-3

INCIDENCE OF EQUIPMENT BREAKDOWN 1975

Machine	Number of recorded breakdowns	Period of sample	Number of recorded breakdowns per month
15 ton crane	3	1 month	3
10 ton crane	12	12 months	1
8 ton crane	12	4 months	3
7 ton crane	17	12 months	1.4
2 ton forklift	10	12 months	.83
3 ton forklift	8	12 months	.75
5 ton forklift	12	3 months	4

Source: BPP Statistics Dept.

The acquisition of additional forklift trucks is vital to improve productivity in the port. This is dealt with in more detail in the volume on short term improvements.

6.1.1 Tariffs for Use of Port Owned Cargo Handling Equipment

Cargo handling equipment is rented by the ship's agent on an hourly rate. Charges for this are shown in Tables IV-6.1.1-1 and IV-6.1.1-2.

This way of billing for cargo handling equipment tends to minimize its use. As stevedoring labor is paid by the ton of cargo handled rather than by the hour, the use of forklifts increases the charges per ton of cargo unloaded as the usage charge plus stevedoring wage must be paid. This means that agents usually will not use forklift trucks unless cargo is too heavy to be handled manually or if the ships owner is concerned about the time ship is spending in port. In most cases the agent will try to reduce the ships stay in port by working cargo at night rather than by hiring forklifts as this is cheaper.

When new forklifts arrive it is vitally important that the payment of stevedores be changed to an hourly basis. Otherwise the disincentive to work efficiently will continue and the new equipment will not be used to the maximum extent possible.

6.2 Floating Equipment Utilization

6.2.1 Lighter Utilization and Rental Charges

Currently two types of lighters are available for use at Palembang. Their characteristics are shown in Table 6.2.1-1.

Table IV-6.1.1-1

FORKLIFT TRUCK RENTAL CHARGES

Size	Hourly Rental Indonesian Ships Rupiah	Hourly Rental Foreign Ships US Dollars
Up to 2 tons	1,700	4.10
2 to 3 tons	2,280	5.50
3 to 5 tons	2,650	6.40
5 to 10 tons	4,630	11.20

Table IV-6.1.1-2

MOBILE CRANE RENTAL CHARGES

Size	Hourly Rental Indonesian Ships Rupiah	Hourly Rental Foreign Ships US Dollars
Up to 3 tons	1,416	3.41
3 to 7 tons	3,170	7.64
7 to 15 tons	4,715	11.36
Over 15 tons	7,080	17.06

TABLE 6.2.1-1

CHARACTERISTICS OF BARGES IN USE AT PALEMBANG

Type of Construction	Steel	Wood
Deadweight	200 tons	15 tons
Length	31.5 mtrs	15 mtrs
Beam	6.0 mtrs	2.8-3.0 mtrs
Draft (loaded	1.9 mtrs	1.4 mtrs
Rental cost per day	Rp. 90,000 = $220	Rp. 15,000 = $36.40
Construction cost	Rp. 35 million = $85,000	Rp. 0.8-1.0 million $1,940 - $2,430

Presently 35 steel and about seventy wooden lighters are registered at Palembang. It is estimated about 160 actually are available. The lighterage fleet is heavily used. On a single day up to ten wooden lighters are used unloading vessels at Boom Baru, about thirty lighters are either being loaded with rubber, in transit to rubber factories, or being used for other purposes.

All lighterage is privately held. The wooden lighters are largely owned by rubber factories and exporters.

The principal use of lighters is loading rubber for international exports. Typically crates are constructed aboard these lighters and filled with rubber while the barge is at the rubber factory. The barge is then towed down stream, checked through customs, and taken to the ship to be loaded.

It is clear that the demand for lighters will expand rapidly in coming years. If future development takes place at Palembang the bulk of the increased demand can be met with wooden barges. These are cheap and easy to build with local materials. Their expansive deck areas makes them easy to load and unload. Because of their cost and ease of construction, barge operators in the private sector should be able to meet additional demand for this type of craft without detailed advance planning.

However, should additional port development take place down stream expansion of the steel lighter fleet will be required. However well suited the wooden lighters are to life on the Musi they sometimes sink and cannot be left unattended for long periods of time. Secondly the fifty tons size of the wooden barge is much too small for the economic transportation of large volumes over the seventy kilometer distance between Banyuasin and Palembang.

Tables IV 6.2.1-2 and IV 6.2.1-3 give the approximate cost of setting up a large scale barge operation to service any port facility located at the mouth of Musi. The cost per ton of barged cargo of course varies between alternatives but is in the vicinity of $1.10 per ton. The costs and alternatives for large scale barging down the Musi are further explored in the volume of the report concerned with long term Port Development - Volume VII Section 4.4.1.

6.2.2 Tugboats

The Palembang Port Administration has in its floating facilities one small tug about 10 meters in length with diesel propulsion of about 60 horse power installed. The permanent job of this tug is to handle the 100 ton water barge which supplies water to the pilot station and to ships. Thus in effect insofar as ship handling tug boats are concerned the PPA has none although it has a statuatory requirement to provide towing services within the port. The tariff for renting tugboats is contained in Table IV-6.2.2-1.

6.2.2.1 Large Towboats.

The liner shipping services are now using ships in the 10,000 to 12,000 and sometimes up to about 20,000 Dwt in their Southeast Asia operations and it is in the interest of the Port of Palembang and the development of South Sumatra that these ships be capable of safely operating up the Musi River to the heart of the areas industrial center, Palembang.

It is required by law that all ships over 60 meters in length must have tug assistance in docking and undocking in Palembang is itself required to furnish the necessary tugboat service to meet the port needs. The port, however, does not own a docking tugboat and leases a tugboat to partially compensate for its lack of towing facilities.

TABLE IV-6.2.1-2

INVESTMENT COSTS TUG BARGE SYSTEM

500 HP TUGS SINGLE TOW

($000)

Barge Out	# tugs	Unit cost tugs	Total cost tugs	#Barges	Unit cost barges	Total cost barges	Total invest-ment	Appr mate capac of sy per y
Nominal Capacity system 500,000 tons								
500	5	424	2120	9	120	1080	3200	500,
1000	3	424	1272	7	210	1470	2742	600,
1500	2	424	848	6	285	1710	2558	600,
2000	2	424	848	6	360	2160	3008	800,
2500	1	424	424	5	400	2000	2424	500,
Nominal capacity system 1,000,000								
500	10	424	4240	14	120	1680	5920	1,00
1000	5	424	2120	9	210	1890	4010	1,00
1500	4	424	1696	8	285	2280	3976	1,20
2000	3	424	1272	7	360	2520	3792	1,20
2500	2	424	848	6	400	2400	3248	1,00
Nominal Capacity system 1,500,000								
500	15	424	6360	19	120	2280	8640	1,50
1000	8	424	3392	12	210	2520	5912	1,60
1500	5	424	2120	9	285	2565	4685	1,60
2000	4	424	1696	8	360	2880	4576	1,60
2500	3	424	1272	7	400	2800	4072	1,50

TABLE IV-6.2.1-3

INVESTMENT COSTS TUG BARGE SYSTEM

1000HP TUGS DOUBLE TOWS

Barge Out	# tugs	Unit cost tugs	Total cost tugs	#Barges	Unit cost Barges	Total cost Barges	Total investment	Approximate capacity system
Nominal Capacity = 500,000 tons								
500	3	667	2001	10	120	1200	3201	600,000
1000	2	667	1334	8	210	1680	3014	800,000
1500	1	667	667	6	285	1710	2377	600,000
2000	1	667	667	6	360	2160	2827	800,000
2500	1	667	667	6	400	2400	2067	1,000,000
Nominal capacity = 1,000,000 tons								
500	5	667	3335	14	120	1680	5015	1,000,000
1000	3	667	2001	10	210	2100	4101	1,200,000
1500	2	667	1334	8	285	2280	3614	1,200,000
2000	2	667	667	8	360	2160	2827	1,600,000
2500	1	667	667	6	400	2400	3067	1,000,000
Nominal capacity = 1,500,000 tons								
500	8	667	5336	20	120	2400	7736	1,600,000
1000	4	667	2668	12	210	2520	5188	1,600,000
1500	3	667	2001	10	285	2850	4851	1,800,000
2000	2	667	1334	8	360	2880	4214	1,600,000
2500	2	667	1334	8	400	3200	4534	2,000,000

TABLE IV-6.2.2-1

TUGBOAT RENTAL CHARGES

Size	Hourly Rental Indonesian Ships Rupiah	Hourly Rental Foreign Ships US Dollars
Up to 60 HP	10,680	25.75
60 to 150 HP	16,080	38.75
150 to 250 HP	31,970	77.00
250 to 500 HP	47,840	103.25
Over 500 HP	69,325	155.00

In order that the port will be able to handle the maximum size vessels permitted in the port, vessels in the 135 to 185 meter length category, and will be able to service the increasing towing need, the port needs two large tugs which are under the control and administration of the Port Administrator.

The docking pilots report that they dock and undock about 330 ships per month in a slow month, 600 ships in a busy month and about 460 ships in an average month.

About half of the above dockings occur at the Pertamina facilities at Plaju and Sungai Gerong about 10 kilometers below the center of Palembang.

All vessels over 60 meters in length require tow boat assistance in docking and undocking. The average number of such vessels docking per month at facilities other than Pertamina is about 92 ships per month.

The number of tug assisted ship docking cycles per month exclusive of Pertamina activities is scheduled to increase by about 40 as the result of projected increases at Pusri and Kertapati alone within the next three years.

The average docking cycle time for tugboats has been computed as 2.62 hours and the tugboat docking workload in 1978 will be about 2.62 x 132 = 345 hours per month or 4150 hours per year.

The ship docking workload fluctuates somewhat with the tides with the demand being higher at some stages of the tide than at others.

Due to the total number of operating hours required per year, the unpredictable schedule demands and the usual down time particularly for Indonesian vessels, two tugboats will be required to fulfill the required needs.

The tugs equipped for ship handling, docking and undocking etc, are usually fairly short, very manueverable and well powered vessels. The minimum size tugs recommended would have a length of 80 to 90 feet and have at least 800 shaft horse power installed.

If the tugs are to be used regularly for docking large tankers at the Pertamina jetty type facilities, a minimum horse power of 1200 would be more appropriate and recommended.

The benefits to be derived from the acquisition of two 800 HP tugs are : the port will be able to advertize the fact that it has two large tugs available which will assist in attracting traffic to the port. The port presently advertizes that it has a 350 HP tug which is an indication of a limited port facility; the port will be able to handle the maximum sized vessel which may come to its facilities and will be able to accommodate the expected increase in the volume of ship traffic in the port; the anticipated volume of work available for the tugs should make the tugs self-supporting provided reasonable charges for tug services are required; the port will have under its control the necessary equipment to discharge its obligation under the law without having to pay high prices for inadequately powered equipment.

6.2.2.2 Small Tugs or Mooring Boats.

The port has a collection of mooring boats two of which are of old wooden construction and are not in condition to be renovated and it has two small new mooring boats. All of the mooring boats are very slow, underpowered and overworked due in large part to the down time of the older vessels.

At the present time PPA does not have in its floating craft a good small tugboat. Since the operations of PPA will expand and will include the use of a few lighters as well as a water barge and other craft, PPA will have a need for small tug towing services. As it is possible to combine the capabilities of a good small tug and a good mooring boat into one vessel it is recommended that the two old and inadequate wooden construction mooring boats be scrapped and replaced by two modern combination small tug and mooring boats.

The boats will serve primarily as mooring boats but will be available and handy for general port towing purposes. It is proposed that vessels to be acquired under this project will be about 15 meters in length and about 2.2 meters in depth with about 240 horsepower installed.

Table IV-6.2.2-1 is the result of an analysis of the time requirements for a docking and undocking cycle for a mooring boat.

Given the cycle time per mooring boat the number of mooring boats required by the Port of Palembang is computed as follows :

a) The number of ships per year requiring docking and undocking	6,580 *
Total cycle time for docking and undocking	2.5
Subtotal hours of mooring boat time required per year	16,458

* Obtained from Table IV-2.3.2-5 and equals the number of vessels which should take a docking pilot.

TABLE IV-6.2.2-1

OPERATIONAL DATA - MOORING BOAT

	Description of work item	Est.time hours minimum	Est.time hours maximum	Est.time hours average	Recommended time hours standard allowance	Commen
	SHIP DOCKING					
1.	Time from base to incoming ship	0.13	0.22	0.17	0.17	
2.	Time standing by or assisting docking ship	0.99	1.06	0.96	0.96	
3.	Time from ship docking back to base	0.13	0.13	0.17	0.17	
4.	Sub-total time docking	1.25	1.50	1.30	1.30	
	SHIP UNDOCKING					
5.	Time from base to docked ship	0.13	0.22	0.17	0.17	
6.	Time standing by or assisting undocking ship	0.19	1.06	0.86	0.86	
7.	Time from ship undocking back to base	0.13	0.22	0.17	0.17	
8.	Sub-total undocking	0.75	1.50	1.20	1.20	
9.	Total vessel time docking and undocking	2.00	3.00	2.50	2.50	

b) Assuming that one mooring boat can operate a maximum of about 4000 hours per year on multiple shift operation there is a need for four operational mooring boats

The benefits to be derived consist mainly of the greater efficiency which would be obtained by replacing two old wooden mooring boats which are not worthy of further extensive maintenance and repairs. The new combination mooring and tug boats would be faster more versatile and would replace boats which are considered to be unsuitable for their purpose.

The port would further benefit by having a substantial small tug towing capability in its fleet which will prove to be a necessity with the expanding port activities.

6.3 Fixed Equipment Utilization

6.3.1 Warehouse Operations

6.3.1.1 Warehousing Methods

The PPA operates a series of first line warehouses located in 4 buildings along the face of the main and extension wharves. The buildings are subdivided to provide 10 separate storage areas. These storage areas are shown in Figure IV 6.3.1-1 and described in Table IV 6.3.1-1.

The godowns are controlled by the PPA in that they assign the cargo to specific godowns, charge rent for the use of the godown and share responsibility for the security of the godown. However, it is the ships agent who tallies the cargo arriving at and departing from the warehouse. He also determines the location of the cargo in the warehouse and maintains an inventory of where the cargo is located.

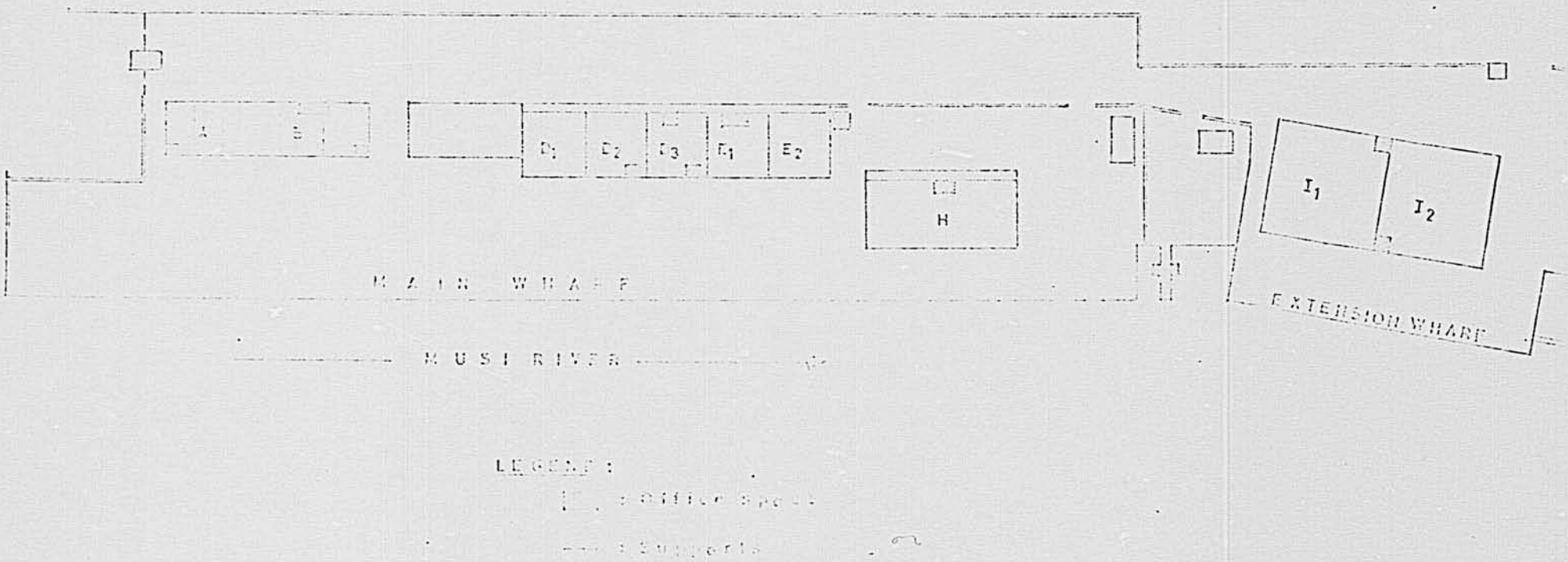


Figure IV-6.3.1-1
Warehouses at Boom Baru

TABLE IV 6.3.1-1

ALLOCATION OF WAREHOUSING

Godown	Area (m^3)	Approximate dimension (m x m)	Shipping Companies Presently Using	Cargo
A	624	25 x 25	Gesuri Lloyd	Foreign
B	1171	47 x 25	Pelni	Domestic
D_1	1511	105 x 14.5		Domestic
D_2			Putra Samudra	Foreign
D_3			Putra Samudra Jakarta Lloyd	Foreign
E_1	1331	105 x 12.5	Birawa Salam Bahagia Sriguna	Domestic
E_2			Samudra Indonesia Jakarta Lloyd Palka Utama	Foreign
H	1375	53 x 26		Foreign
I_1	3000	75 x 40	Pelni	Domestic
I_2			Samudera Indonesia Palka Utama Gesuri Lloyd Jakarta Lloyd Salam Bahagia	Foreign

Finally he is responsible for the security of the cargo and provides his own men to perform this task. The KPLP provides only two guards on warehouse patrol.

The operation of the warehouses is supervised by the Dinas Gudang, or warehouse office. Nine men from the PPA are assigned to work as storekeepers. In general six of them work from 7 AM to 4 PM and 2 from 4 PM to 7 AM. However, these numbers fluctuate with demand. All the warehouses are locked when not in use and the keys are kept by Customs and by ADPEL.

Cargoes are generally stored by vessel but they are not subdivided by consignment. The warehouses have markings along the wall to indicate stacking height and to delineate vaks (100 m^2 = 10 x 10 m) which were formerly used to calculate storage charges. The maximum stacking height is 3-3.5 meters and the maximum loading is 2.5 tons/m^2. However, very little of the cargo is palletized and with the exception of cargo in large crates the average stacking height is about 2 meters. The cargo is stacked either by hand or with forklifts provided either by PPA or the ship agent. These forklifts have an upward reach of about 3 meters.

The form of the cargo stored in the warehouse vary. Much of it is packed in wooden crates. Almost none of the cargo is palletized and as a result cannot be stacked more than 1.5-2 meters. Cargo remains in the godown an average of one to two weeks. Consumer goods such as rice, sugar, cotton, cement and small retail items remain the shortest period of time. Machines, spare parts and government cargoes remain in the warehouse the longest.

The present subdivision of warehouses is based on two requirements. The first is a Customs ordinance requir-

ing the separation of domestic and foreign cargoes. The second is the requirement of each ship agent to provide security for his cargo. The subdivision is an attempt to limit the area that each agent must guard. The walls which subdivide the warehouses were installed in 1957 for godowns A, B, D and E and in 1975 for godown I.

The port also administers a godown at the prahu wharf. This godown has 96 m^2 of storage space. At present this godown is not used. All cargo is handled directly to and from lighters.

6.3.1.2 Use of Open Storage

The port has three areas used for open storage. The first is along the main wharf in front of godowns A, B, D and E. The second is behind godown H and the third along side of godown I. The total amount of storage is about 10,000 m^2. The primary cargoes placed in open storage are cargo in drums and tanks, machinery, iron and steel products, vehicles and dangerous commodities. The average stay for cargo in open storage is about two weeks.

Storage under the eaves is not provided. Neither is storage for dry or liquid bulk cargoes. The only available secondary storage, godown G, was torn down in late 1975.

6.3.1.3 Marking, Checking and Inspecting

The ship agent's responsibility for cargo although listed in the tariff as tackle to tackle effectively extends to the point where delivery is taken. For cargoes handled through the godown, the ship's agent is responsible from the time it is delivered to or up until the time it is picked up from the warehouse. No specific markings are required by PPA for cargo landing at the port. The cargo is tallied by

the ship agent both arriving at and departing from the godown. Inward cargo is tallied against the ship's manifest coming into the godown and against the delivery order going out. Outward cargo is tallied against the ships manifest coming into the godown and againts the ships manifest going out. In the case of short landed cargo, a report is filled out by the ship agent and signed by the ship's master. The payment of damages involves the ship agent and consignee but not PPA. Inspections of the cargo are carried out by Customs but only for cargoes which arouse suspicion or in cases where a request is made by the ship's agent.

The only checking performed by PPA is to determine if cargo arriving at the godown is of the same type as specified in the manifest (inward) or the shipping order (outward). The storekeeper submits a daily report on the movement of cargo. This report describes the type of cargo, the weight as listed in the manifest or the m^3 as measured, the amount of floor space occupied and a diagram of the cargoes position.

Weighing of cargo is performed on the scales located in godowns A, D_2, E_1, H and I_2.

6.3.1.4 Storage - Information Flow

In order to use port storage facilities, a ships agent must submit a formal request for warehouse space on the Model 3 request form. The head of the Pergudangan Department then checks whether space is available by referring to the daily reports on warehouse status. If space is available the ship's agent is then notified where he should store his cargo (Model 3A) and a preliminary invoice is prepared specifying the use of the storage and the quantity stored (form PBB2/PBM2). When the cargo is unloaded to the godown the ship's agent submits a record of the actual quantity on form PBB1/PBM1.

Cargo arriving at the wharf is tallied by a representative of the ship agent as it is unloaded from the ship. The tally is performed on a standard form, Surat Muat, and copies are given to the ship agent, consignee, Customs and ship's captain. The storekeeper records the arrival of cargo by comparing it with the manifest. The storekeeper checks to ensure that the cargo is of the same type as listed in the manifest and for cargoes charged by cubic meter he measures the volume. The cargo is also tallied against the manifest by another representative of the ship agent.

The movement of cargo in and out of the warehouse is recorded by the storekeeper on the form Penimbunan Barang-Barang. This is submitted to the Godown Section along with the daily report. When cargo is removed the invoice is completed by the Nota Section and sent to the Financial Division for collection.

When cargo is removed from the warehouse, either the consignee or the freight forwarder presents a delivery order to the storekeeper. The cargo is then weighed and the weight recorded on a Surat Timbang which is signed by the collector and by the head of the godown section. After cargo has been inspected and has cleared Customs then a receipt of goods, Berita Acara, is prepared and signed by the storekeeper, the ships agent and the collector. Also a form permitting exit from the port, Surat Jalan, is prepared by the ships agent, and signed by him, Customs and the storekeeper. This form must be presented to the security forces at the exit gate from the storage area and at the exit to the port. The truck is subject to inspection at the first gate.

6.3.1.5 Charges

The basic daily tariff for storage is Rp.30 per ton or Rp.20 per m^3 for closed storage and Rp.15 per ton or Rp.10 per m^3 for open storage. Cargo which is charged per m^3 includes logs, lumber, drums, barrels, machinery, automobiles and fibres. Only one day's charge is made for cargo stored from one to four days. From the fifth day to the end of the second week the basic rate is charged. Beyond the fifteenth day a 100% surcharge is added to the basic rate. Dangerous cargo is charged a 20% surcharge as is hazardous cargo.

6.3.1.6 Private Warehouses

Pusri operates two godown, one with a capacity of 25,000 tons of palletized bagged urea and the other with a capacity of 15,000 tons of bulk urea. Included in the Pusri III expansion program is additional dry bulk storage for 38,000 tons.

Pertamina has large tank farms located at both Plaju and Sungai Gerong for the storage of both crude and products.

P.N. Garam has a warehouse for storing salt. The storage area is about 500 m^3.

Kertapati has a small godown but it is presently not in use.

Dolog presently leases a warehouse from the army for the storage of rice. The available space is about 2800 m^2 and is capable of holding 3000 tons of rice. This godown is located on port property.

6.3.1.7 Utilization of Warehouses

The present utilization of PPA warehouses is low. The capacity of these warehouses is reduced by the lack of palletization and by the numerous internal walls which subdivide them. As a result it is typical for some godowns to be completely full while others are nearly empty. Those that are full are only stacked to an average height of 2-2.5 meters. The demand over the last three years has declined and the godown occupancy is well below 50%.

6.3.1.8 Warehouse Capacity

The capacity of a warehouse is a function of the size of the facility, the volumetric characteristics of the cargo, the length of time in storage and the method of cargo handling. The size of the godowns have been described in Volume V Section Seven. The only godowns having beams which hinder the storage of cargo are A and B. The total available space in godown A, B, D, E, H and I is 9000 m^2. The maximum stacking height is three meters for A and B and 3.5 meters for the others. However, all the space in a godown cannot be utilized. Provision must be made for the flow of cargo in, out and through the godown. If forklifts are to be used, then the aisles between cargo must be a minimum of 3.5 m wide. At least two aisles must be provided one connecting the entrances and one running lengthwise. In addition office space and damaged cargo areas must be provided. On average the movement and administrative space takes up from 30-40% of the total area of a godown. If the lower figure is used, then the total available space is 6300 m^2. The supports in A and B provide an additional reduction of about 10%, 200 m^2, for these godowns. Thus, the present available space is estimated to be 6100 m^2.

The storage requirements for cargo are determined by two factors; stacking height and volume-to-weight ratio. The stacking height varies with the packaging of cargo. Large crates can be stacked, assuming that there is adequate cargo handling equipment, to 3.5 or 4 meters, whereas cardboard cartons may be limited to two meters or less. For many cargoes the stacking height can be increased considerably through the use of palletization. Pallets not only reduce the loading at any individual point but also permit the use of forklifts for handling bags and cartons. Without pallets small boxes must be stacked manually thus reducing the height and requiring a stepped stack. The maximum stacking height of several types of packaging are estimated in Table 6.3.1-2. The heights are listed both for aplletized and non-palletized cargo. The pallets are assumed to be 15 cm in height.

The volume-to-weight ration specified the number of cubic meters required to store one ton of cargo. For heavy cargoes such as cement the ratio is less than 1. For drum cargo the ratio varies with the specific density of the cargo but averages about 1.5, because cylinders lose at least 27% additional space between the drums. Cargo in crates though often heavy may occupy 50% or less of the total volume required for the crate. Textiles have about the largest volume to-weight ratio. The ratioes for various types of commodities and packaging are estimated in Table 6.3.1-2.

The length of time cargo spends in storage determines the number of times cargo can be turned around. If the static capacity of a warehouse is computed then the maximum annual throughput is computed as the product of the static capacity and the maximum number of turnarounds per year. The average storage time for PPA godowns was estimated from a two month

TABLE IV-6.3.1-2

GENERAL STORAGE PARAMETERS

	Maximum Storage Height (meters)		
	Unpalletized	Palletized	Height discounting pallets
Large crates	3.5	3.8	3.5
Small cartons	1.5	2.75	2.4
Bags	1.5	3.5	2.6
Drums, full	1.5	2.8	2.4
General cargo	1.5	2.75	2.4
Bagged cement	2.5	3.5	2.6
Rubber	1.5	2.8	2.3

Average Stacking Heights for Palletized Cargo

Large crates	3.0
Small cartons	2.5
Bags	2.5
Drums	2.0
General cargo	2.5
Bagged cement	2.5

Volume to Weight Ratio* (m^3/tons)

Drums	1.5
Rice bagged	1.0
Plywood	1.4
Textiles	3.0
Flour	1.5
Cement, bagged	.8
General cargo	1.75
Crates	1.5
Rubber	1.2

sample of storage bills. The average storage time in the godown was 6.5 days and in open storage 12.5 days. This imply a maximum turnaround of 57 and 29 respectively. The distribution of storage times is shown in Table 6.3.1-3. Three quarters of the cargo remain in the godown one week or less.

The maximum annual throughput can be achieved only if there is a uniform rate of arrivals and departures. In fact there is a fluctuation in demand. In order to provide sufficient storage capacity an average occupancy of 70% must be used, thereby allowing for a 30% fluctuation in demand without overloading the facility. This 70% occupancy also represents a desirable level from an operational standpoint. As occupancy increases above 70% so does the difficulty in placing, locating and removing cargo. The congestion which occurs at occupancies above 85% can seriously hinder cargo handling operations.

The method of cargo handling also places limitations on the use of space. The requirement for sufficiently wide aidles to allow for forklifts to pass has already been referred to. In addition the allowable space between stacks and between the wall and the stacks is determined by the requirements for location and inspection as well as by the skill of the forklift operators. If the cargo is positioned in designated bays for purposes of cargo location and identification then additional space is lost between the bays. Finally there are losses because of the non-uniformity of cargo size, the unevenness in the stacks, the space between pallets, and variability in stacking height. These factors are incorporated into an overall stowage factor. This stowage factor is estimated to be 25%.

The calculation of the operating capacity involves

TABLE IV- 6.3.1-3

DISTRIBUTION OF TIME IN STORAGE

Days Open	Open Storage	Godowns
0	.4	2.6
1 - 3	36.3	32.2
4 - 7	20.5	41.6
8 - 10	4.6	11.4
11 - 14	7.2	5.0
15 - 21	3.6	4.4
22 - 28	19.2	1.0
29 - 35	3.2	1.3
36 - 49	4.0	.3
50 -100	.6	.1
>100	.4	.1
Total tons*	3050	7810
Average stay	12.4	6.4

* 1 M^3 = 1 ton

Source : Godown Receipts for June & July 1975

all of the previous factors. The formulas are

$$C_m = \frac{A\ (f_u)\ h\ (1-f_s)}{r} = \frac{365}{t_{ave}}$$

$$C_o = f_c\ C_m$$

C_m = maximum annual capacity (tons)

A = floor area (m^2)

f_u = usable space factor = .7

h = stacking height (m)

f_s = stowage factor = .25

t_{ave} = average time in storage (days) = 7

f_c = congestion factor = .7

C_o = operational capacity

A sample calculation for bagged cement is shown below for a 1 m^2 area

$$.7 \left[\frac{(1)(.7)\ (2.6)\ (.75)\ (365)}{(.8)\ 7} \right] = 62.3\ \frac{\text{tons}}{\text{year}}$$

The resulting operational capacities per meter^2 of warehouse are shown in Table 6.3.1-4. If the cargo mix is assumed to be 25% each of bagged cement, bagged rice, large cartons and small cartons/general cargo, then the operational capacity of the existing godowns is 407,000 tons/year assuming that $A - f_u = 6100\ m^2$ and the cargo is palletized. If the cargo is not palletized the capacity is reduced by 20%.

The future projections indicate a larger proportion of bagged and general cargo. If the cargo mix should become 50% bagged cargo, 40% general cargo, and 10% large crates then the capacity would be only 352,000 tons/year for palletized cargo.

TABLE IV 6.3.1-4

ANNUAL STORAGE CAPACITY PER UNIT AREA

Commodity	Operational Capacity*	
	Palletized	Unpalletized
Large crates	48.5	44.5
Small cartons	26.5	16.5
Bags rice	50.0	28.5
Drums	30.5	19.0
Bagged cement	62.0	60.0
Rubber	37.5	24.0
General cargo	26.5	16.5

* Rounded to the nearest .5

It should be noted that all capacity calculations are based on the assumption that the walls subdividing godowns A and B, D, E, and H are removed. If these walls are not removed the operational capacity estimates should be reduced by 10-15%.

6.3.1.9 Demand for Storage

The port does not keep records on the amount and types of tonnages which pass through the godowns. However, these tonnages can be estimated from data on the tonnages handled over the wharf and the tonnages handled direct to truck. These tonnage estimates are 98,000 tons for 1972, 110,300 tons for 1973, 82,400 tons for 1974 and 70,000 tons for 1975. The decline in demand is a result of the general decline in cargo handled over Boom Baru and the reduction in use of godowns for domestic cargo to be loaded. These numbers indicate that the godowns are being used at about one third available capacity given that the godowns are still subdivided and the cargo is not palletized.

The port does keep data on the amount of floor area occupied by cargo. From April 1974 to March 1975 the average amount of space occupied was 5300 m^3 or 57% of the total available space and 87% of the usable space. It is felt that these statistics are not reliable because they are based on rough estimates of area. However, they do point to the fact that the floor area occupied is more than 33%. This is reasonable since the low occupancy, lack of pallets, and lack of cargo handling equipment causes relatively low stacking heights.

The future demand for storage is difficult to predict. It is a function both of the type of cargo and the degree to which direct delivery is both permitted and preferred. If the present ratio of 40-50% of the cargo going across Boom Baru passes through the warehouse and if the tonnages across Boom

Baru are equal to those proposed in Volume VI Table VI-2.1-2 then the demand for warehousing should be about 126,000 tons in 1980 and 156,000 tons in 1985. Both these numbers are well below the operational capacity of the existing godowns.

The demand for warehousing might increase if the average length of stay of cargo increases. The present average of 6.5 days is quite reasonable. If the length of storage were to double then capacity would fall to 175-200,000 tons per year. If, in addition, less cargo is handled by direct delivery then the demand would begin to approach capacity around 1985. These two factors are both a function of the pricing of the godowns. If PPA warehouse space is inexpensive relative to the marginal cost of alternative storage facilities, then more cargo will be left longer in the godown. However, if the price of PPA warehouse space is increased then the tonnage and average time will be reduced.

6.3.2 Berth Utilization

6.3.2.1 Source of Statistics

Information on vessels calling at the Port of Palembang and the utilization of the wharf facilities is based on four primary sources. First, data as recorded in the Port of Palembang annual statistical reports (as corrected by the consultants); second, examination of the original records concerning ship operations; third, interviews with port users; fourth, a month long survey made by the consultants of the activities on the Boom Baru wharf. Where possible, the data has been subdivided among the three major facilities, Boom Baru, Pusri and Pertamina. Where the sources were not in agreement the data most directly connected with the actual events has been selected.

6.3.2.2 Vessel Characteristics

Numbers of vessels (over 500 m^3) entering the Port of Palembang for the past 5 years are shown in Table 6.3.2-1. There has been a relatively constant number of ship calls during this period. Arrivals averaged about 345 vessels per month. Of these about 225 were general cargo ships and 120 tankers. Of the cargo ships approximately 6% were larger than 10,000 m^3 and an additional 27% between 1500 and 10,000 m^3. The tankers were larger vessels with about one-third larger than 10,000 m^3 and only 16% less than 1500 m^3. The average size of foreign and Indonesian flag cargo vessels calling at Palembang has declined steadily over the last 6 years. Table 6.3.2-2 shows a decline from an average of 3710 GRT in 1969 to 2380 GRT in 1974. The number of ship calls has remained relatively constant.

A two month sample of vessels required pilotage at Palembang indicates an arriving draft ranging up to 6 meters; the distribution of actual draft (not design draft) is shown in Figure 6.3.2-1. For tankers calling at the port approximately 10% are less than 50 meters in length, half are between 50 meters and 100 meters, a third between 100 and 150 meters and only about 7% are longer than 150 meters. For foreign general cargo vessels about 40% are less than 50 meters while 31% are greater than 100 meters; for national general cargo vessels over half are less than 30 meters and only 15% are more than 50 meters. If both types of general cargo vessels are grouped about 60% are less than 50 meters and 17% over 100 meters.

Of the cargo ships over 500 m^3 approximately 40% are of Indonesian registry. The percentage appears to have increased slightly over the last six years. The two major foreign countries in which the cargo ships are registered

TABLE 6.3.2.-1

VESSELS ENTERING PALEMBANG (> 500 M^3 GRT)

Year	Cargo	Tanker	Total	Per month
1969	2821	1855	4676	390
1970	2762	1413	4175	348
1971	2691	1118	3809	317
1972	2492	1068	3560	297
1973	2692	1768	4460	372
1974*	2631	1609	4240	353
1975*	1071	1443	3514	293

* April 1974 - March 1975

Source : NEDECO No.12 & BPP Annual Report

TABLE 6.3.2-2

AVERAGE SHIP SIZE FOR VESSELS* OVER 500 M^3 (GRT)

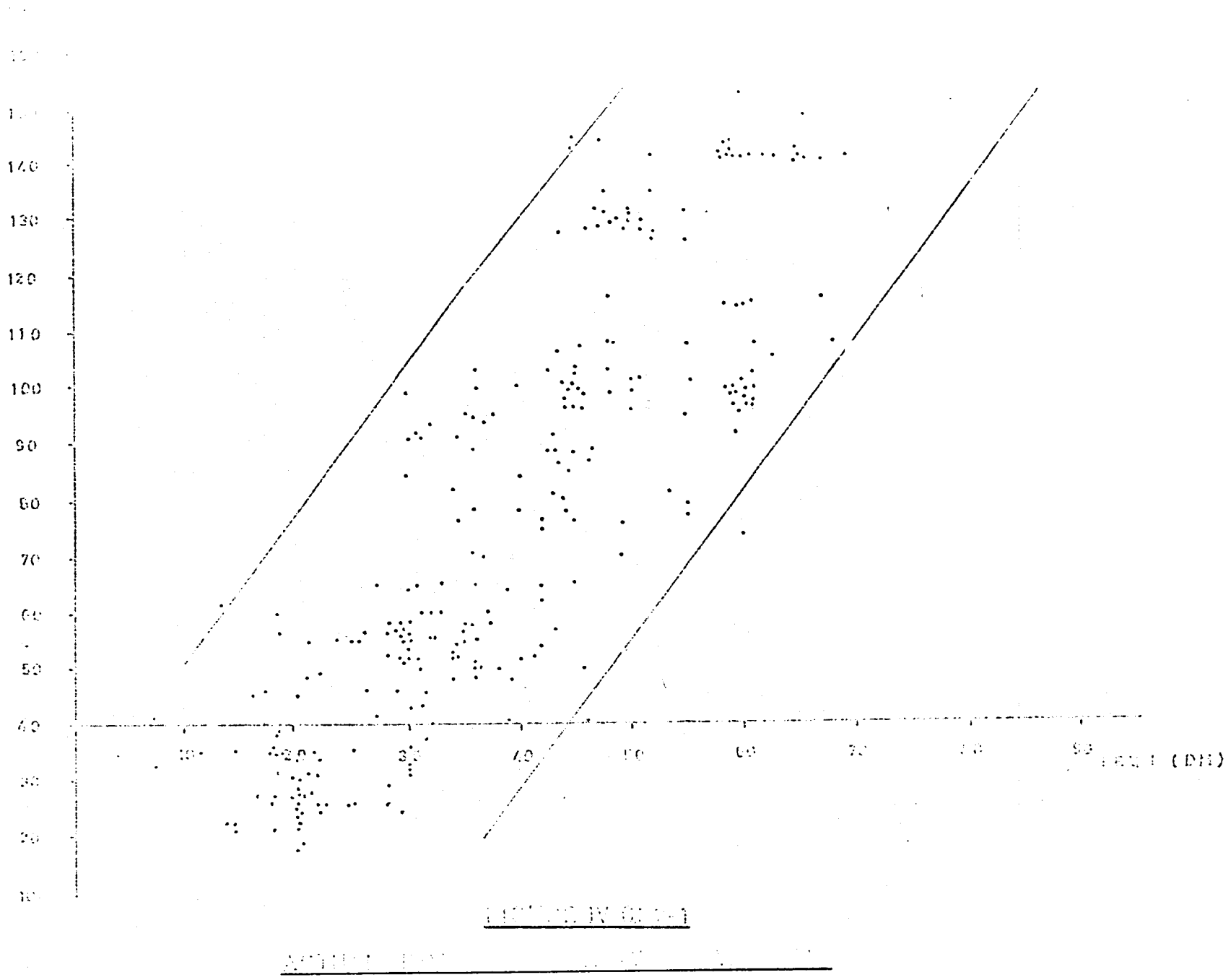
ENTERING PORT OF PALEMBANG

Year	Indonesian Vessels		Foreign Vessels		Total	
	Number	GRT	Number	GRT	Number	GRT
1969	950	--	1871	--	2821	3710
1970	1090	--	1672	--	2762	3240
1971	1195	1190	1496	4420	2691	2990
1972	1135	870	1357	4300	2492	2740
1973	1059	930	1633	3830	2692	2680
1974**	1141	1005	1490	3410	2631	2380
Average	1095	1000	1587	3990	2682	2960

* Excludes oil tankers

** April 1974 - March 1975

Source : B.P.P. Annual Reports


140
130
120
110
100
90
80
70
60
50
40
30
20
10
20
30
40
50
(DH)

are Panama and Liberia. Together they account for about 35% of the vessels. Indonesian ships accounted for 38% of the tanker calls in 1974; tankers registered in Liberia and Panama accounted for an additional 48%. A summary of the flag of registry of arriving vessels over 500 m^3 is shown in Tables 6.3.2-3 and 6.3.2-4.

In addition to the above vessels, approximately 150 vessels of less than 500 m^3 gross registered tonnage also called at Palembang. The number of calls and vessel size has increased over the last five years. These now average about 210 m^3. A summary of these trends is shown in Table 6.3.2-5. Of the 150 vessels a month, approximately one quarter are sailing vessels (prahu layar). They average in size about 140 m^3. The number of calls by these sailing vessels has been decreasing over the last 10 years and now amount to about half the number in the mid 1960's. A summary of the activity of these sailing vessels is given in Table 6.3.2-6.

Vessels berthing at Boom Baru usually are unloading import or interisland cargoes (other than raw materials and staple foods) or are smaller ships with local cargoes. The average length of ships at Boom Baru is only 34 meters. Only 15% of the ships visiting the facility are over 50 meters in length. The average GRT of the ships calling at Boom Baru is 1300 m^3 and 75% of these are less than 500 m^3. The distribution of length and GRT of ships calling at Boom Baru is shown in Table 6.3.2-7.

6.3.3 Cargo Handled Per Vessel

The amount of cargo handled per ship call varies with the type of cargo being handled. The average tonnage of export cargo per ship is about 530 tons. Most export

TABLE 6.3.2-3

FLAGS OF CARGO VESSELS* OVER 500 M^3 (GRT)

NUMBER OF CALLS PER YEAR

Major Flags	1969	1970	1971	1972	1973	1974+	Average
Panama	757	534	512	404	533	568	550
Liberia	324	355	386	322	387	477	375
Japan	227	285	182	75	90	55	152
Singapore	45	59	148	138	149	129	111
Norway	249	114	116	287	324	114	200
Greece	57	106	45	37	47	17	52
England	64	82	9	10	11	9	31
Sub Total	1723	1535	1398	1273	1541	1369	--
Indonesia	950	1090	1195	1135	1059	1141	1095
Others	148	137	98	84	92	122	--
TOTAL	2821	2762	2691	2492	2692	2632	2682

* Includes tanker

\+ April 1974 - March 1975

TABLE 6.3.2-4

FLAGS OF VESSELS OVER 500 M^3 (GRT)

ENTERING PALEMBANG IN 1974/75

Major Flags	Tankers		Cargo Ships		T o t a l	
	No.	%	No.	%	No.	%
Panama	322	20	246	24	568	22
Liberia	458	28	19	2	477	18
Japan	1	--	54	5	55	2
Singapore	56	3	73	7	129	5
Norway	104	6	10	1	114	4
Greece	16	1	1	--	17	1
England	--	--	9	1	9	--
Phillipines	5	--	8	1	13	--
Malaysia	37	2	5	--	42	2
Sub Total	999	60	425	41	1427	54
Indonesia	610	38	531	52	1141	43
Others	--	--	66	6	63	3
T O T A L	1609	98	1022	99	2631	100

Source : B.P.P. Annual Report

TABLE 6.3.2-5

SHIP ARRIVALS AT PALEMBANG FOR

VESSELS LESS THAN 500 M^3 GRT

Year	Number of Vessels per month	Average Gross Tonnage (M3)
1969	166	162
1970	135	181
1971	105	182
1972	133	210
1973	157	214
1974	151	Not available

TABLE 6.3.2-6

ACTIVITY OF PELAYARAN RAKYAT (SAILING VESSELS)

Year	Total Number of Vessels Using Port	Total Cargo 000's Tons	Total Tonnage* Handled per Vessel
1966	899	35	39
1967	645	20	31
1968	854	22	25
1969	798	22	27
1970	538	19	35
1971	481	17	36
1972	397	15	38
1973	440	25	57
1974/1975	432	27	63

Average size approximately 140 m^3
Assume .8 ton = 1 m^3 of logs

TABLE 6.3.2-7

SIZE OF SHIPS CALLING AT BOOM BARU

Length (m)	Percentage	GRT (m^3)	Percentage
20 or less	30	Less than 500	75.8
21 - 40	50	500 - 999	5.1
41 - 60	10	1000 - 1999	7.0
61 - 80	4.5	2000 - 2999	3.3
81 - 100	1.0	3000 - 5999	3.1
101 - 120	2.0	6000 - 9999	2.5
Greater than 120	2.5	10000 - 14999	1.2
		Greater than 15,000	2.0

Source : B.P.P. Traffic Dept. Records
4 month sample

shipments range from 250 to 750 tons per ship. However, major cargoes such as coffee, wax and rubber sometimes are loaded in shipments over 1000 tons. The average tonnage of imports unloaded per ship call is about 600 tons. Tonnages of these shipments are widely dispersed between 200 and 2000 tons per ship call. For both imports and exports larger tonnages where handled per ship for foreign ships as shown in Table 6.3.3-1. The average tonnages of interisland cargo handled per ship call are large; in 1974 they averaged 1250 tons loaded per ship and 1020 tons unloaded. A majority of the interisland tonnage which is loaded is fertilizer from Pusri. This fertilizer is shipped in cargoes averaging about 2500 tons. If this cargo is excluded then the average shipment size is about 550 tons. About 30% of inbound interisland cargo is cement. It is shipped in quantities averaging 2500 tons per ship. If cement is excluded from the calculations, then the average tonnage of interisland cargo unloaded was about 750 tons. For local cargoes carried in vessels other than sailing ships the average shipment loaded was about 84 tons, and the average tonnage unloaded was 78 tons. The majority of the shipments were between 20 and 200 tons. The only larger tonnages were kerosene and other petroleum products. These were often loaded in shipments between 200 and 400 tons per ship. The cargo handled by sailing ships was in relatively small quantities averaging 45 tons loaded per ship and 38 tons unloaded.

The quantities handled per ship have been increasing over the last three years for imports, exports and interisland cargoes. While local cargoes and sailing vessel cargoes have fluctuated without any clear trend. A summary of the tonnages handled per ship is given in Table 6.3.3-2 for the four categories of cargo.

TABLE 6.3.3-1

TONNAGE HANDLED PER VESSEL FOR FOREIGN GOING CARGO

(Excluding Bulk Petroleum and Logs)

Year	IMPORTS			EXPORTS		
	Indonesian Vessels	Foreign Vessels	All Vessels	Indonesian Vessels	Foreign Vessels	All Vessels
1970	317	701	515	478	490	483
1971	274	513	415	458	568	501
1972	186	591	413	451	552	485
1973	285	858	585	494	652	547
1974*	342	839	602	466	675	533

* April 1974 - March 1975

Source : B.P.P. Annual Reports

TABLE 6.3.3-2

CARGO HANDLED PER SHIP BY CARGO TYPE

(Excluding Bulk Petroleum and Logs)

Cargo type	Year	Number of ships unloading	Average Tonnage Unloaded	Number of ships loading[1]	Average tons loaded
FOREIGN GOING					
	1974[2]	337	601	554	532
	1973	420	585	599	548
	1972	361	413	455	484
INTERISLAND					
	1974[2]	172	1020[3]	240	1250
	1973	139	1030	97	1071
	1972	165	758	139	726
L O C A L					
	1974[2]	844	78	1210	84
	1973	879	65	1181	92
	1972	929	71	1256	100
SAILING VESSELS					
	1974[2]	299	38	357	45
	1973	374	35	232	51
	1972	267	28	188	33

1) Exclude ships loading logs

2) April 1974 - March 1975

3) Assume m^3 = 1 ton

Source : B.P.P. Annual Report

Tankers calling at the Pertamina facilities unloaded an average of 6600 tons of crude per ship in 1974. While the amount of refined products loaded per ship was only 3,100 tons. The amount unloaded has remained relatively constant over the last five years, however the amount loaded has been declining steadily. A summary of these trends is given in Table 6.3.3-3. For log carrying ships, the cargo size has risen over the last five years and now averages 3707 m^3 per ship. Table 6.3.3-4 gives the average volume of logs handled over the past five years.

6.3.4 Length of Stay.

The average time vessels spent in port was determined from port statistics to be about 3 days for vessels which go to Pertamina facilities and six days for others. These numbers are calculated from port receipts and are based on a minimum unit of one day. That is if a ship remains in port for part of a day it is recorded as being there for the full day. The average length of stay has been fairly constant over the last three years as can be seen in Table 6.3.4-1. Data was also gathered from port records of the times for ship arrivals and ship departures. Based on a two month sample, the distribution of time in port is shown in Table IV-6.3.4-2.

The cumulative distribution is shown in Figure IV-6.3.4-1. The average stay for foreign vessels was 5 days while the median stay was 4 days. The average stay for national vessels was 4 days and the median stay was three days. These numbers are lower than those in Table IV-6.3.4-1, but the difference is presumed to result from the rounding off into etmal of the earlier numbers. For the total sample of foreign and national ships, the average stay in port was 4.3 days and the

TABLE 6.3.3-3

VESSELS CARRYING OIL TO/FROM PLAJU AND SUNGAI GERONG

Year	Total No. of vessels	National Vessels		Foreign Vessels		Ave.000 tons/Ship	
		Unloading	Loading	Unloading	Loading	Unloading	Loading
1970	1413	25	110	632	646	6.2	5.4
1971	1118	12	118	471	517	6.3	5.3
1972	1068	16	247	289	516	5.4	4.4
1973	1857	8	598	423	828	7.2	3.7
1974*	1866	10	610	419	827	6.6	3.1

* April 1974 - March 1975

Source : B.P.P. Annual Report

TABLE 6.3.3-4

SHIPS EXPORTING LOGS

Year	No. of ships	Average volume per ship (m^3)	% cargo carried in foreign ships	Total volume (m^3)
1970	67	2,358	98	157,992
1971	64	2,255	92	144,346
1972	70	2,199	94	153,956
1973	180	3,069	95	552,340
1974*	133	3,707	99	493,020

* April 1974 - March 1975

Source : B.P.P. Annual Report

TABLE 6.3.4-1

AVERAGE VESSEL TIME IN PORT

All ships at Plaju and Sungai Gerong, tankers and general cargo (etmal*)

Year	Foreign	National
1972	3.0+	3.0+
1973	3.0	2.8
1974/75	3.3	3.1

All other vessels (etmal*)

Year	Foreign	National
1972	6.2	5.2
1973	7.0	4.3
1974	6.7	5.0

+ Separate breakdown not available

* Etmal fractions of a day rounded as a whole day

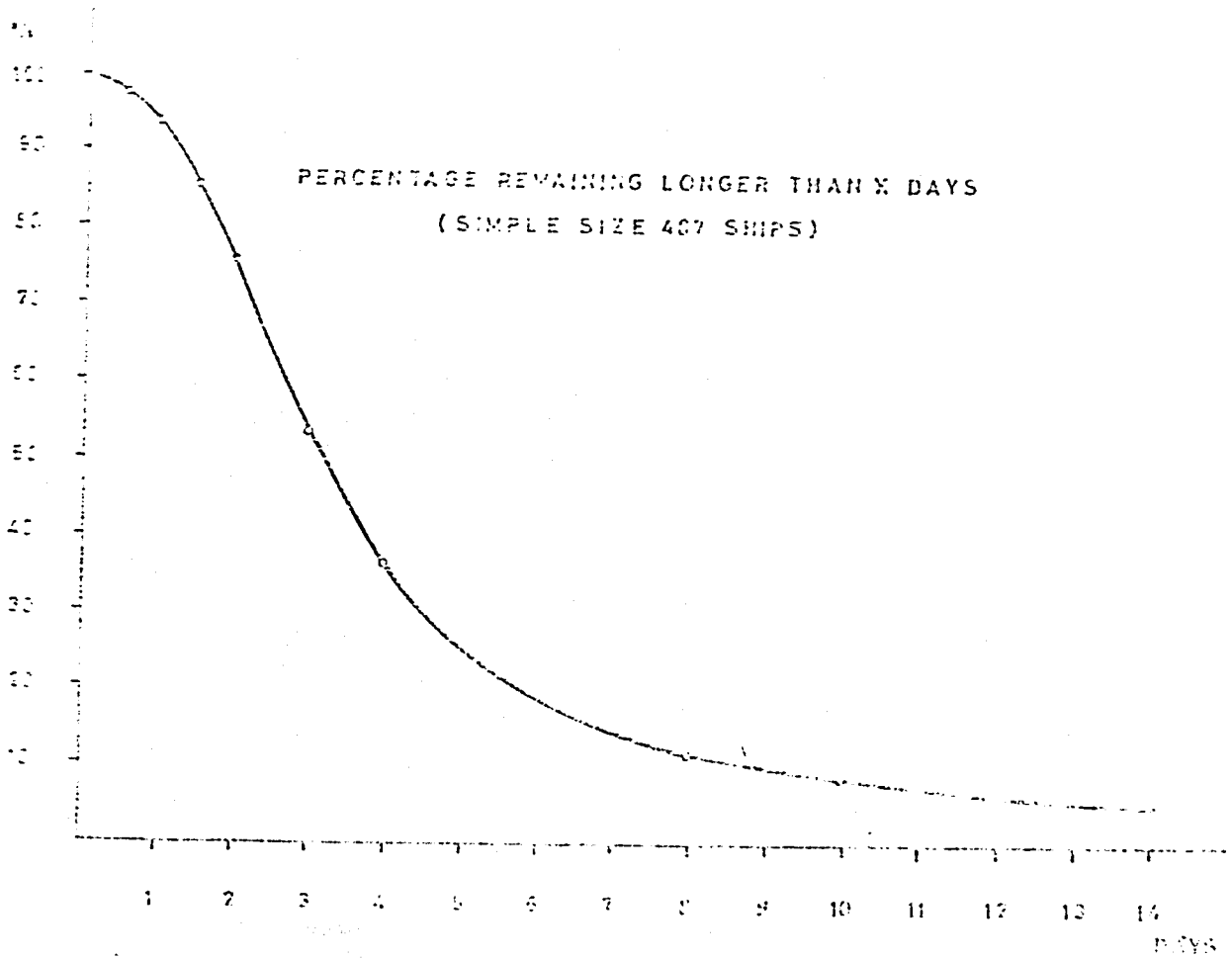
Source : B.P.P. Annual Report

Table IV-6.3.4-2

DISTRIBUTION OF TIME IN PORT FOR CARGO VESSELS*

Days	% Foreign Vessels	% National Vessels	% All Vessels
1	7.1	5.0	5.6
1 - 2	15.2	19.3	18.2
2 - 3	12.5	26.2	23.0
3 - 4	11.6	18.2	16.6
4 - 6	26.8	18.2	20.1
6 - 8	12.5	2.9	5.1
8 - 10	5.3	2.1	2.9
10 - 14	5.3	4.8	4.9
14	3.6	3.5	3.5

* Excludes ships calling at Pertamina facilities.



[illegible] 17-6.3.4-1

[illegible] DISTRIBUTION OF TIME PORT FOR VESSELS (EXCLUDING [illegible])

median stay was 3.2 days.

Vessels calling at Boom Baru spent an average time at the wharf of 38 hours. However, many of these vessels made two or more stops at the wharf so that the average length per berthing was over 27 hours. The distribution of time at the wharf is shown in Table IV-6.3.4-3.

The cumulative distribution for time at the wharf is shown in Figure 6.3.4-2. One-half of the berthings lasted less than 15 hours and only 1/6 lasted more than two days.

Berth occupancy was calculated using the product of the length of a ship and the number of hours it spent at the wharf. The sum of these products was then compared with the total meter-hours of wharf available. Since the rehabilitation of the wharf was underway during this period, the available wharf was limited to 312 meters. Therefore, the occupancy formula was

$$\frac{\sum_{i=1}^{N_j} l_i \; t_i}{(312)(n_j)(24)}$$

where j = the month being sampled

N_j = total number of berthings at Boom Baru in the jth month

l_i = length of ith vessel berthed in meters

t_i = time at wharf of ith vessel berthed

n_j = number of days in j^{th} month

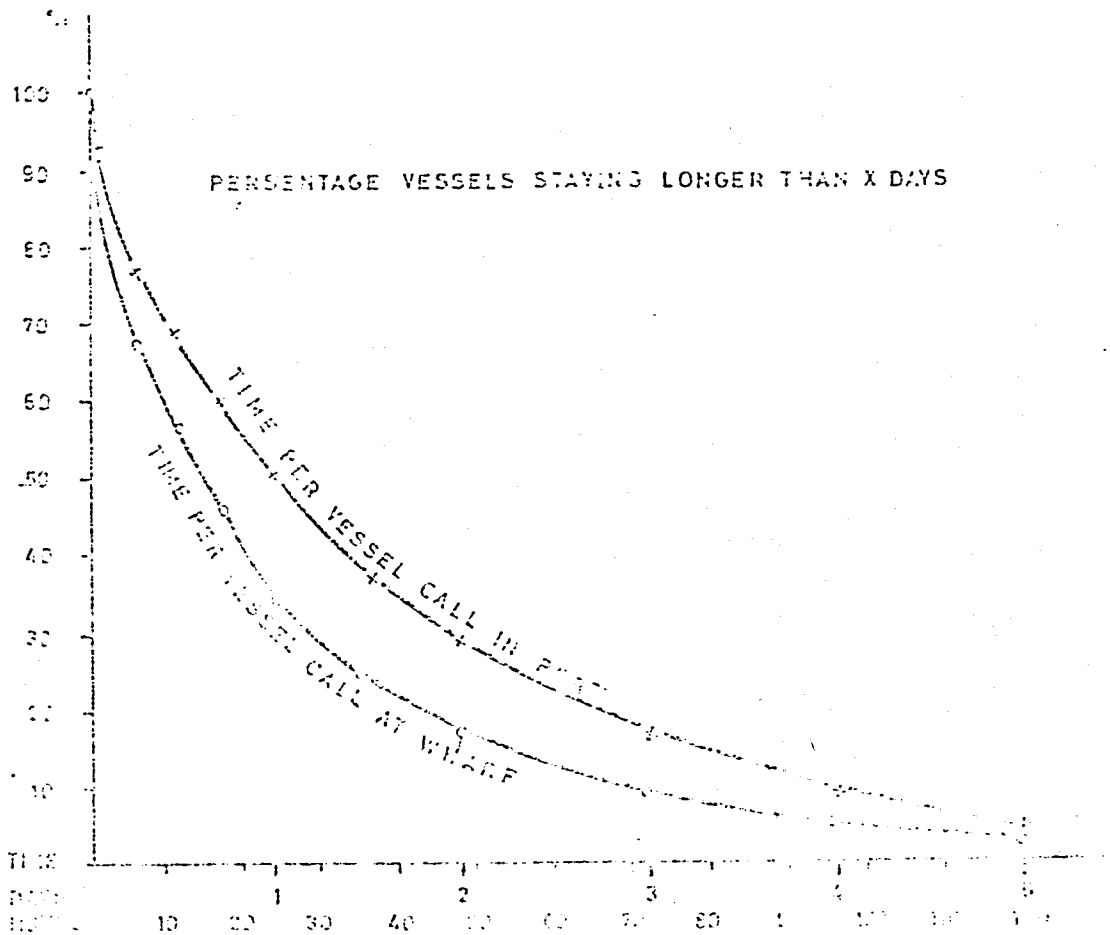
For the four months sampled the occupancy ranged between 67% and 87% with an overall average occupancy of 74%. The

TABLE 6.3.4-3

DISTRIBUTION OF TIME AT BOOM BARU

Hours	% Per Berthing	% Per Vessel Port Call
6	33	22
7 - 12	10	8
13 - 18	11	9
19 - 24	12	10
25 - 36	9	14
37 - 48	7	7
49 - 72	8	13
73 - 96	4	8
97 - 120	2	5
120	2	4

Source B.P.P. Traffic Dept. Statistics
Four month sample 620 berthings
441 vessel calls


PERCENTAGE VESSELS STAYING LONGER THAN X DAYS
TIME PER VESSEL CALL IN PORT
TIME PER VESSEL CALL AT WHARF
100
90
80
70
60
50
40
30
20
10
1
2
3
4
5
10
20
30
40
50
60
70
80

arrivals and departures at Boom Baru took place mainly during normal working hours. The distribution of arrivals and departures shown in Table IV-6.3.4-4 indicates that 64% of the arrivals and 79% of the departures took place between the hours of 6 AM and 6 PM. There is a slight imbalance of arrivals and departures which indicates that the occupancy during the day is somewhat higher than at night. Observations of daytime occupancy for the month of November 1975 indicated that the daytime occupancy was about 7% higher than the average occupancy, thereby implying a difference between night and daytime occupancy of 15%. The average daytime occupancy for the four months sampled would therefore be about 80%.

For the Pertamina facilities, a five month sample of berth activity information was obtained. This data is summarized in Table IV-6.3.4-5.

Information was aldo obtained from port records of the length of time spent in port and at the wharf by vessels calling at Pertamina facilities. The average time in port was about 2 3/4 days while the average time at the wharf was about 30 hours. More than half the ships were at the wharf for less than one day and only 1/6 were there for more than 2 days. The average pumping rate while at the wharf was 200 tons per hour for crude and 100 tons per hour for finished products.

The berth occupancy at Pusri has been increasing as the output of the fertilizer plant has been increasing. The occupancy as a function of the volume shipped can be estimated using the following information. The bulk urea is carried in one of four charterd ships; three have a carrying capacity of 3300 DWT while the fourth has a capacity of 4000 DWT. The average load carried per ship call is about 3200 tons. The average time for loading the smaller vessels is 26 hours inclu-

TABLE 6.3.4-4

DISTRIBUTION OF VESSEL ARRIVAL AND DEPARTURE TIMES AT BOOM BARU

	Hours	% of Arrivals	% of Departures
AM	0 - 2	2.8	.4
	2 - 4	2.6	.4
	4 - 6	4.4	2.8
	6 - 8	11.4	12.3
	8 - 10	12.2	14.6
	10 - 12	16.8	10.4
PM	12 - 14	13.9	12.4
	14 - 16	9.6	13.4
	16 - 18	8.2	15.6
	18 - 20	10.0	10.0
	20 - 22	4.0	6.1
	22 - 24	4.8	2.2

ource : B.P.P. Traffic Dept. Statistics
3 month sample

TABLE 6.3.4-5

PERTAMINA FACILITY UTILIZATION DATA

Item	Monthly Average	Range
Number of tankers	136	121 - 144
Dwt/tanker	5480	600 - 21,000
Number of ocean-going tankers	88	87 - 91
Number of bulk lighters*	47	35 - 57
Number of general cargo ships	39	30 - 44
Number of vessels bunkering	5	3 - 9
Number of local oil barges	477	444 - 502
Berth occupancy	51%	46% - 58%

* Tankers less than 1000 tons

Source : Pertamina Marketing Dept.

ding delays for weather and equipment failure; for the larger vessel it is 37 hours. Assuming an average time at berth of 29 hours, then a volume of 500,000 tons per year would imply a berth occupancy of 51%. These averages are expected to change with the introduction of the new shallow draft 7000 Dwt. bulk carriers and a new quadrant beam loader. These improvements should allow Pusri to handle more than the 960,000 tons associated with 100% occupancy of the present facility. The present demand on the facility averages in addition to 8 bulk carriers a month, 16 vessels loading bagged fertilizer and 12 vessels handling imports and exports. The latter are primary equipment associated with the on-going construction. Both the bagged cargo and the imports and exports are handled at the berth adjoining the bulk loading berth and do not effect its utilization.

6.3.5 Wharfage Use Survey

In the course of the feasibility study it was found that information regarding the use of Boom Baru was not sufficiently detailed. The principal failing was that it was aggregated by month or year and gave no indication of the fluctuations in the use of the wharf. The second difficulty was that the arrival of large ships was importly recorded in the statistics because

1) their affect was averaged over a long period of time
2) while their gross tonnage was large, the cargo they actually unloaded in general was not
3) large vessels were berthed more often at the separate wharf while small vessels were almost never handled there.

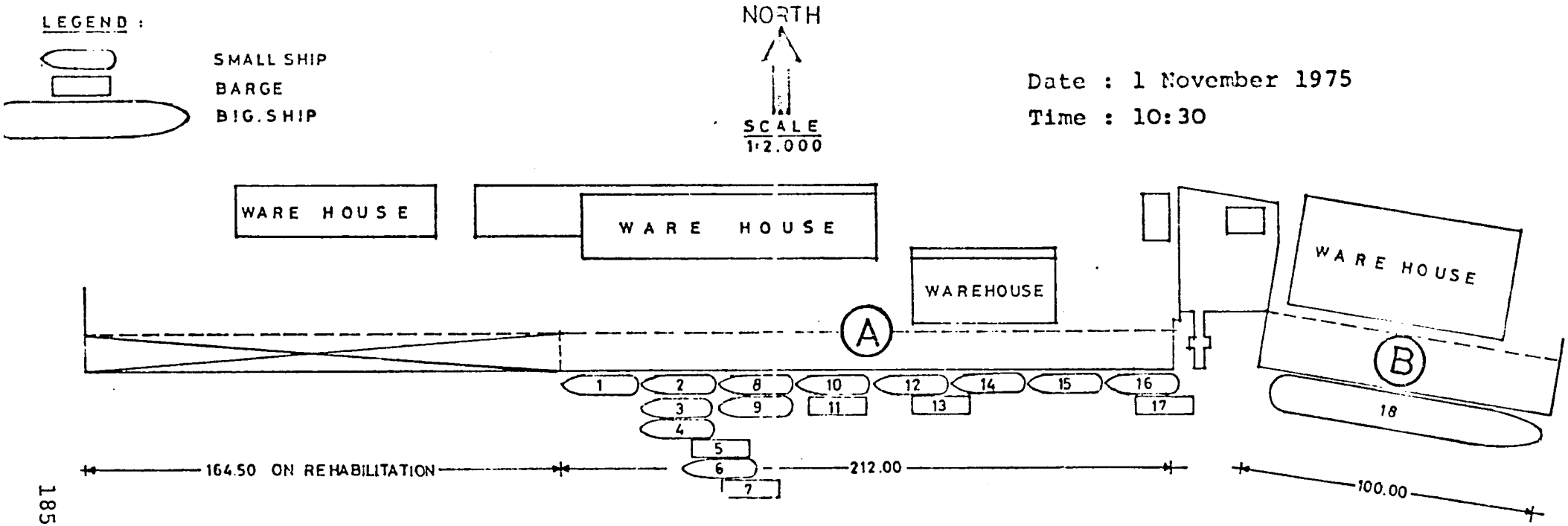
The effect of this is to raise the utilization of the main section of wharf over what would infer from the statistics themselves.

In order to clarify the true utilization of the wharf, a detailed traffic survey was made. Each morning and afternoon for one month detailed records were made of what ships were at the dock, what port supplied crane capacity was being used. Figure IV-6.3.5-1 gives the use of the wharfs on a fairly busy day. The main area of the wharf is called section A and the separated area section B. There are a few insights that are clear from this figure. The first is that much of the time spent at Boom Baru is spent waiting. The primary reason for this is the delays which always accompany port operations - waiting for customs and immigration officials, waiting for bunkers etc. A secondary reason is merely that Boom Baru is a better place to wait then at anchor.

Another important consideration is that much of the cargo handled at Boom Baru is in fact transshipment cargo moving from local shipping or the reverse. This transshipment is a major use of port mobil cranes as the cargo handling gear on these local ships is frequently either not working well or missing. The bulk of the cargo transshipped in this fashion is coconut oil in drums and the return cargo of empty drums, rice in bags and to a small extent bagged flour.

This situation suggests that the utilization of existing Boom Baru facilities could be improved if a special small ship pier were constructed. This pier would be used as a platform for mobile cranes involved in this transshipment and as a waiting spot for small vessels.

A last very important point is that the shipping using wharf A on 1 November was entirely local shipping with not a single vessel larger than 150 tons Dwt. While the separate wharf B is being used for a large (4000 tons Dwt) vessel. This is the normal situation when no vessels are



1. Santi III ex beer ship loading scrap
2. Karya Mula - loading empty bottles
3. Pulau Harapan - no activity
4. Horas - unloading smelly bags to lighter
5. Wooden barge receiving small bags
6. Pioneer - no work
7. Wooden barge waiting
8. Bintang Mustika - unloading food, soap etc. Much less damage as pallets used
9. Bintang Perak - waiting
10. Sinar Palembang - unloading empty bottles
11. Wooden barge waiting
12. Sinar Sarina - unloading drums using 10 ton crane
13. Wooden barge waiting
14. Wooden barge receiving drums from 12 above
15. Wooden barge receiving newspapers
16. Kumala Jaya - loading scrap
17. Barge - new steel waiting
18. Salarjar - unloading cement

FIGURE IV-6.3.5-1

USES OF BOOM BARU WHARFAGE

Source: E.G.Frankel Traffic Survey.

tied up at B it usually is vacant. Wharf B has a mooring dolphin ashore and a long finger pier extention with a bollard. This allows vessels over 40 meters longer than the pier apron itself to use the berth. Local and interisland shipping prefer not to call here as the facility is separated from the rest of the port complex by a power plant fuel berth. Access to warehouses used in the domestic trade is poor from this berth and its distance from port offices etc. is great.

The results of the survey are shown in Figures IV 6.3.5-2 to IV 6.3.5-6. When calculating the lengths of vessels for this information five meters was not added (to make the statistic berth length and not ship length) as is customary in port statistics.

The interpretation of this data is difficult as the main section of Boom Baru frequently operates quite well at levels exceeding what one would estimate to be its maximum capacity. From inspection of the facility, one would estimate that the situation shown in Figure IV 6.3.5-1 (1 November 1975) represents the maximum utilization of the wharf possible. A desirable situation would be to remove some of the double and triple tiered tonnage to other locations. When the berth is used in this fashion there is a continued shuffling about of ships from waiting to the pier face and back. This disrupts somewhat loading and discharging operations. However, except for the inconvenience surrounding the mooring and unmooring of vessels, this multiple ship mooring does not appear to have a dilitereous effect and loading and unloading rates via Boom Baru itself.

This survey indicates that the 212 meters of wharf has berth space for about 7 small local ships (less than 200 T Wt) handling cargo via Boom Baru and an equal number of small vessels handling cargo through lighters. The

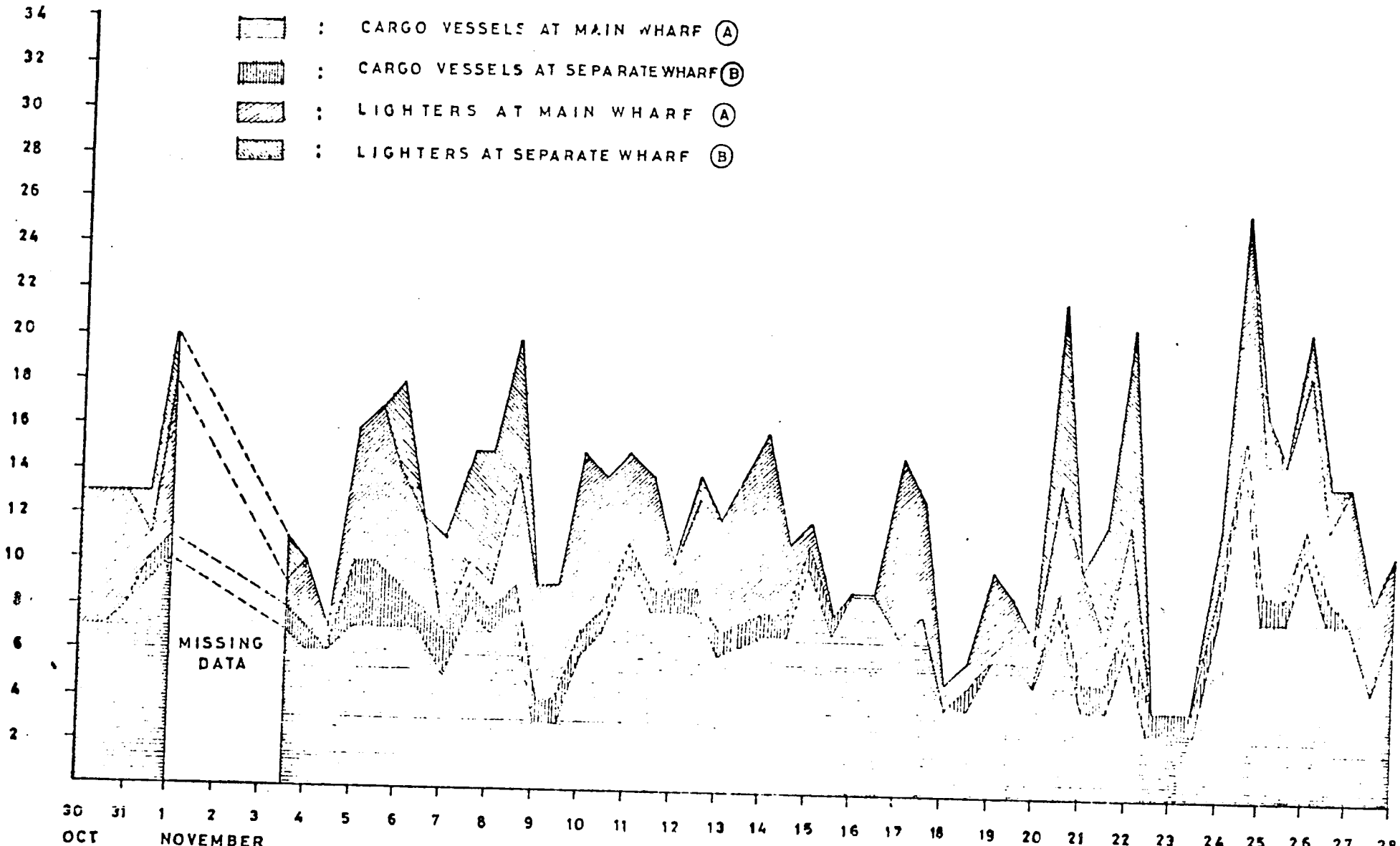


FIGURE : IV-6.3.5-2

NUMBER OF VESSELS TIED UP BOOM BARU (WHARF A AND B)

SOURCE : E. G. FRANKEL TRAFFIC SURREY

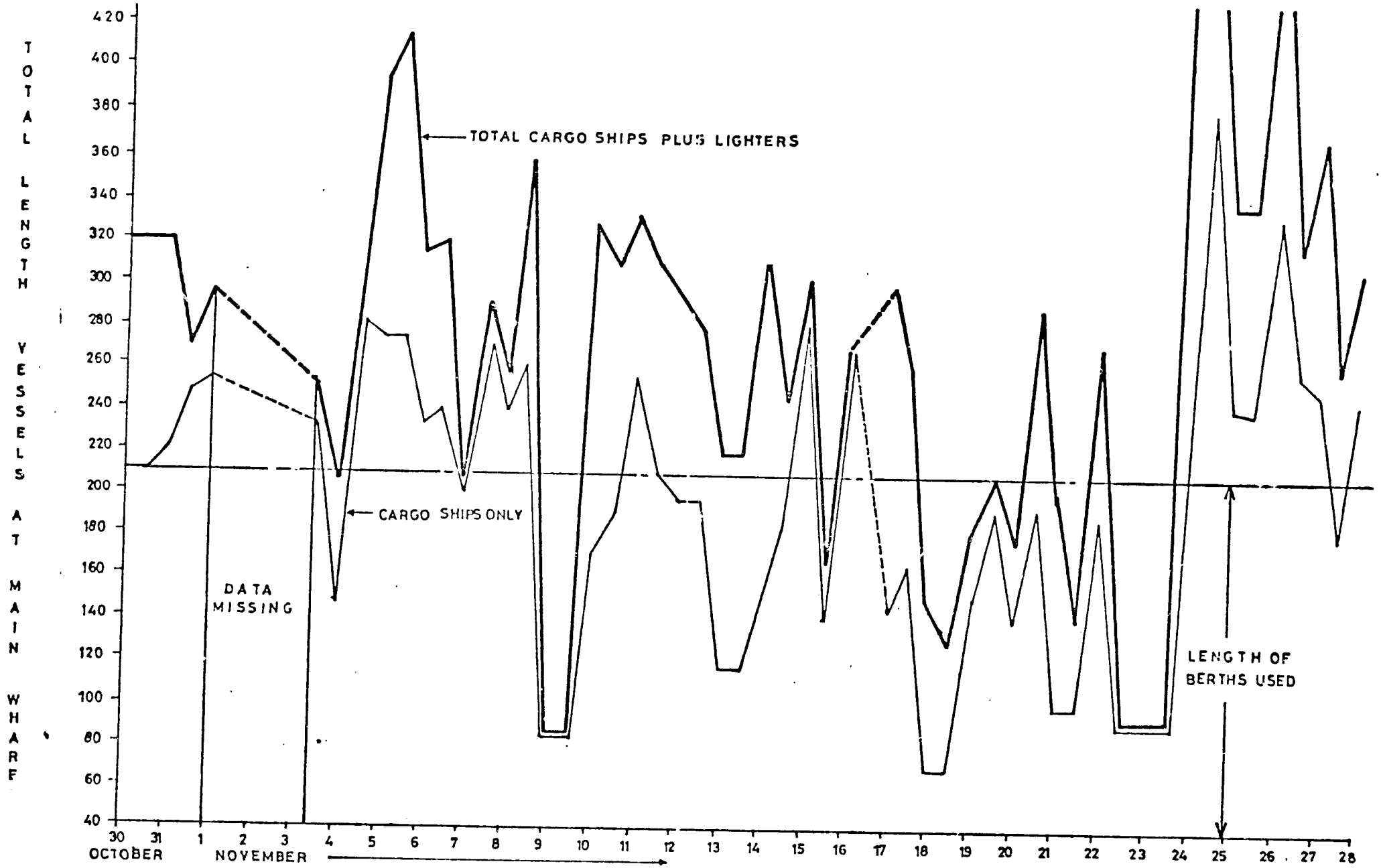


FIGURE IV-6.3.5-3

BOOM BARU OCCUPANCY - MAIN WHARF Ⓐ
TOTAL LENGTHS OF VESSELS
SOURCE : F. G. E. SURVEY

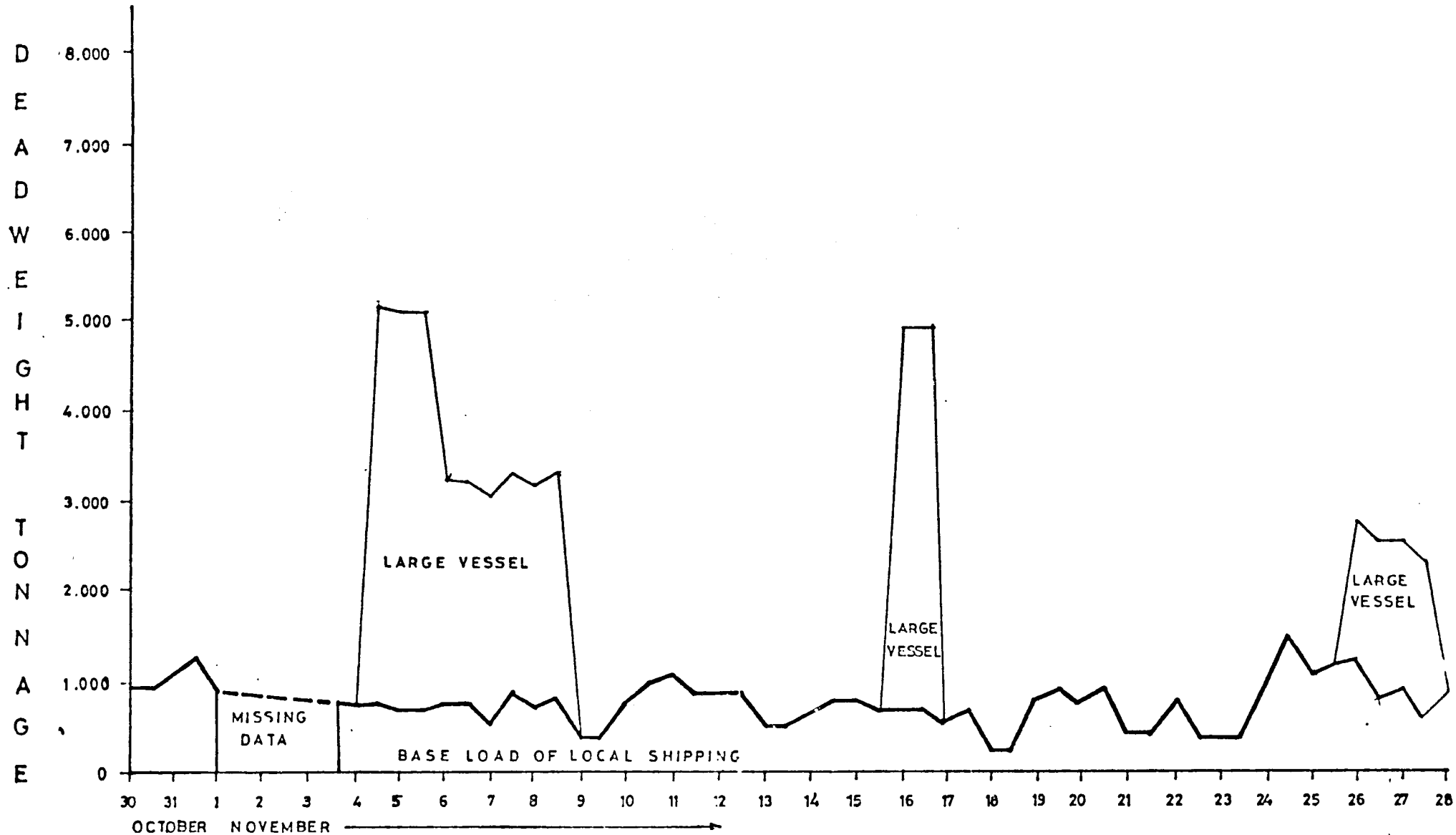


FIGURE: IV-6.3.5-4

TOTAL DEAD WEIGHT TONNAGE OF VESSELS TIED UP TO BOOM BARU Ⓐ

SOURCE : E.G.F SURVEY

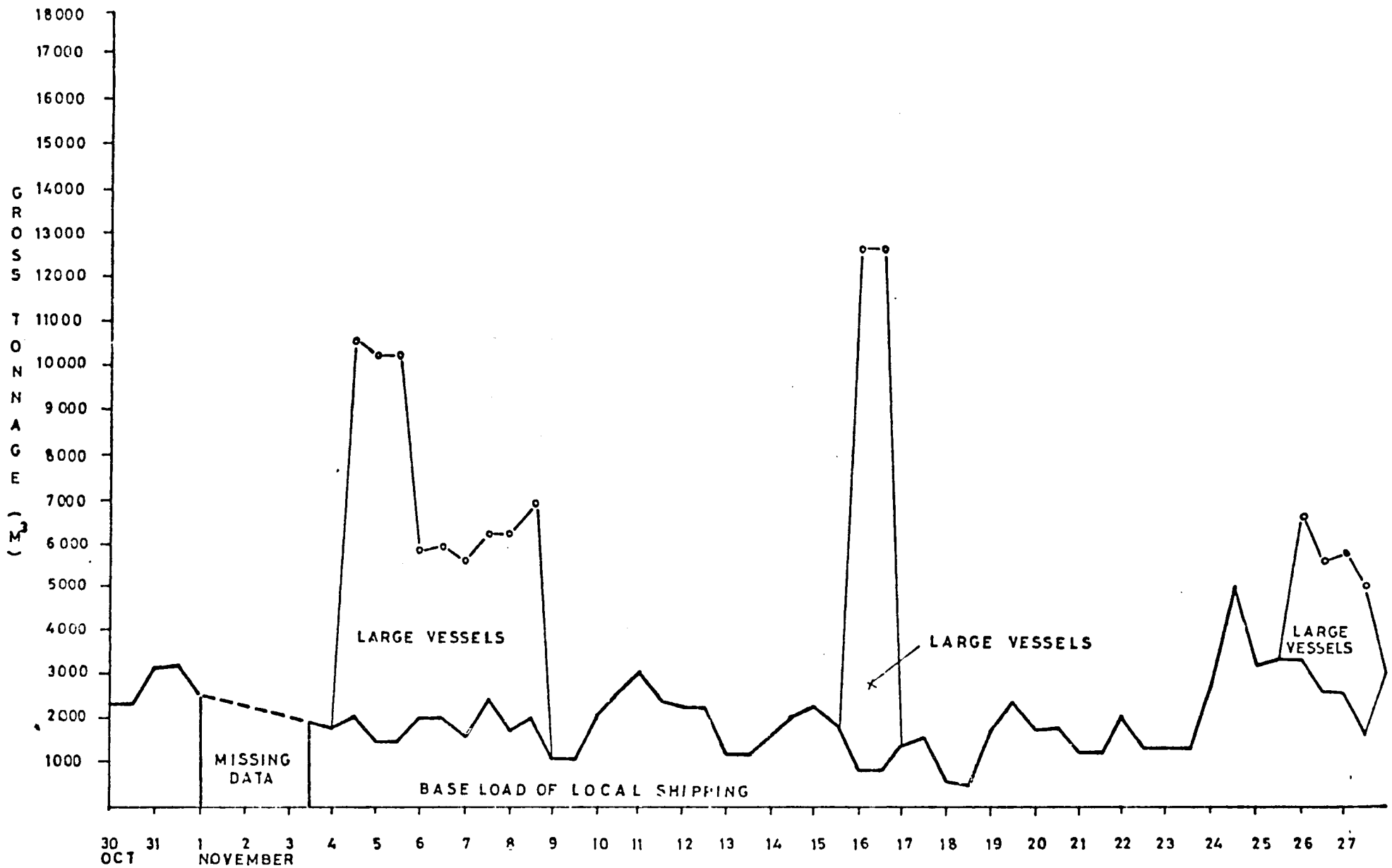


FIGURE: IV-6.3.5-5

TOTAL GROSS TONNAGE OF SHIPS TIED UP TO BOOM BARU MAIN WHARF Ⓐ

SOURCE: E.G. FRANKEL TRAFFIC SURVEY

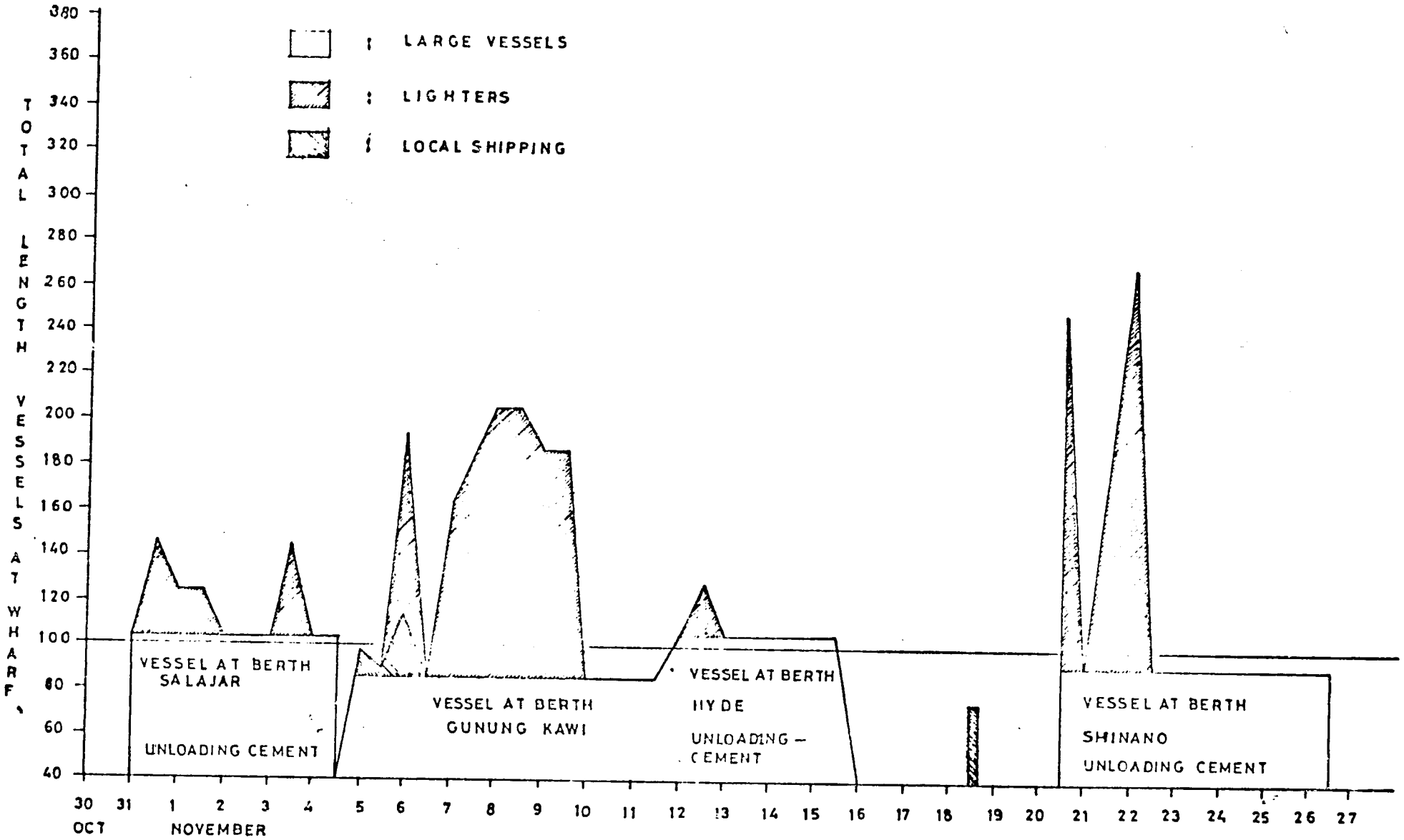


FIGURE: IV-6.3.5-6

TOTAL LENGTH OF VESSELS TIED UP TO BOOM BARU SEPARATE WHARF(B)

SOURCE : E.G. FRANKEL TRAFFIC SURVEY

wharf in question was designed to be two large berths of 100 meters each. When one of these berths is used, the capacity of Boom Baru for local shipping is reduced to three vessels working via Boom Baru and three via lighters. When both berths are occupied the capacity of the pier for small vessels is of course zero.

To estimate berth capacity, an average local vessel brings a cargo of 78 tons and departs with about 84 tons making a total of 162 tons handled per vessel. Assuming average cargo handling rates of 15 tons per hour this vessel could be turned around in about a day. The utmost capacity of 212 meters of wharf for local cargo is thus

$$\frac{162 \times 7 \times 313}{1} = 354{,}942 \text{ tons per year}$$

In order to attain a reasonable waiting time for arriving shipping the design utilization of the facility should be no more than .7 making the capacity of wharf space about 248,459 tons per 212 meters annually or 1171 tons per meter annually. Should the port only be able to achieve cargo handling rates of 10 tons per hour these figures are 204,213 tons per year or 933.3 tons per meter per year.

In 1975 185,000 tons flowed over Boom Baru and in 1974 221,000 - indicating that Boom Baru is operating very close to its design capacity. With the completion of the renovation of the wharf the situation will be eased for several years.

During the month of November large vessels were tied up to the separate wharf for a total of 22 days. The time period of the survey was 29 days giving a resultant utilization of 76%. During the month of December far fewer vessels call at the wharf and were the survey to have been over a two month period the utilization of the wharf would have been 50%.

All of the vessels calling at the pier during November carried cement and were operated by a single company.

An additional result of the survey is shown in Figures IV 6.3.5-7 to IV 6.3.5-10. These give the distributions of vessels handling cargo midstream and at Boom Baru (A & B sections) by length and deadweight.

6.3.6 Delays

The major causes of delay for vessels using the Port of Palembang can be broken down into delays enroute and delays in port. The delays enroute include waiting for tide, waiting for pilots and waiting for daylight. The delays in port include waiting for harbor pilot, waiting for berth, waiting for cargo. Vessels which are greater than 200 M^3 require a pilot to travel on the Musi. Delays due to pilots occur primarily at the Outer Bar where ships queue up for pilots. Data from Pertamina indicates that about 70 vessels per month were delayed an average of 15 hours while waiting for pilots. A two month sample of Pusri's bulk carriers indicates that a majority of the ships were delayed waiting for a pilot but the average wait coming in was only 5 hours. The difference in these two statistics most probably results from the difference in definition of delay due to pilots. Unfortunately neither the port nor the pilot service keep records on pilot delay.

The delay for tide was caused by the 4.5 LWS depth available in the Outer Bar . The problem should be considerably reduced by the recent dredging program which has increased the river depth to 6 meters. Data from 1975 for Pertamina vessels indicated about 60 ships per month delayed an average 18 hours while waiting for tide, in general for high high tide.

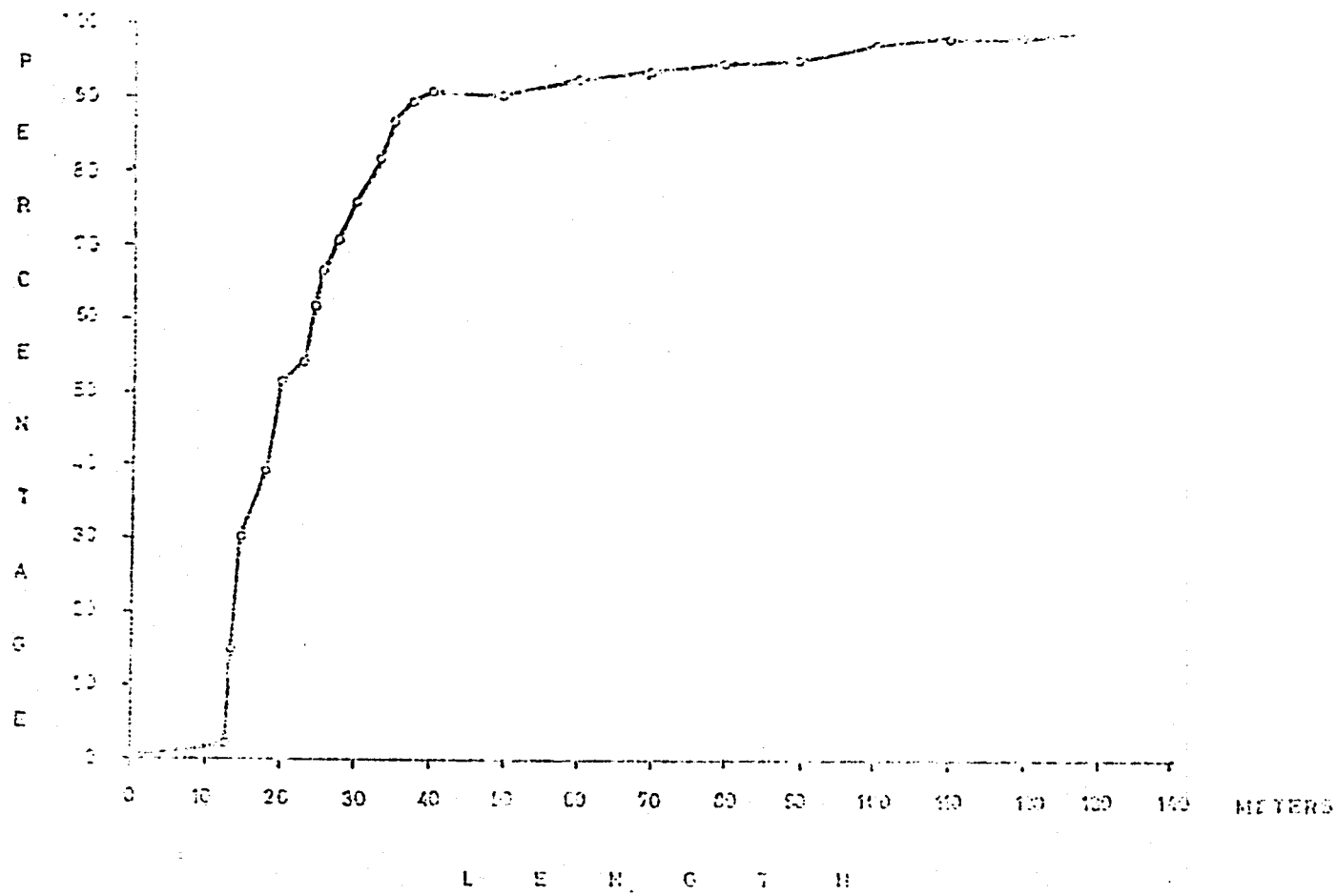


FIGURE : IV-3.5-7

CUMULATIVE DISTRIBUTION OF LENGTH OF VESSELS CALLING AT PORT BARU NOV.1975

SOURCE: [illegible]

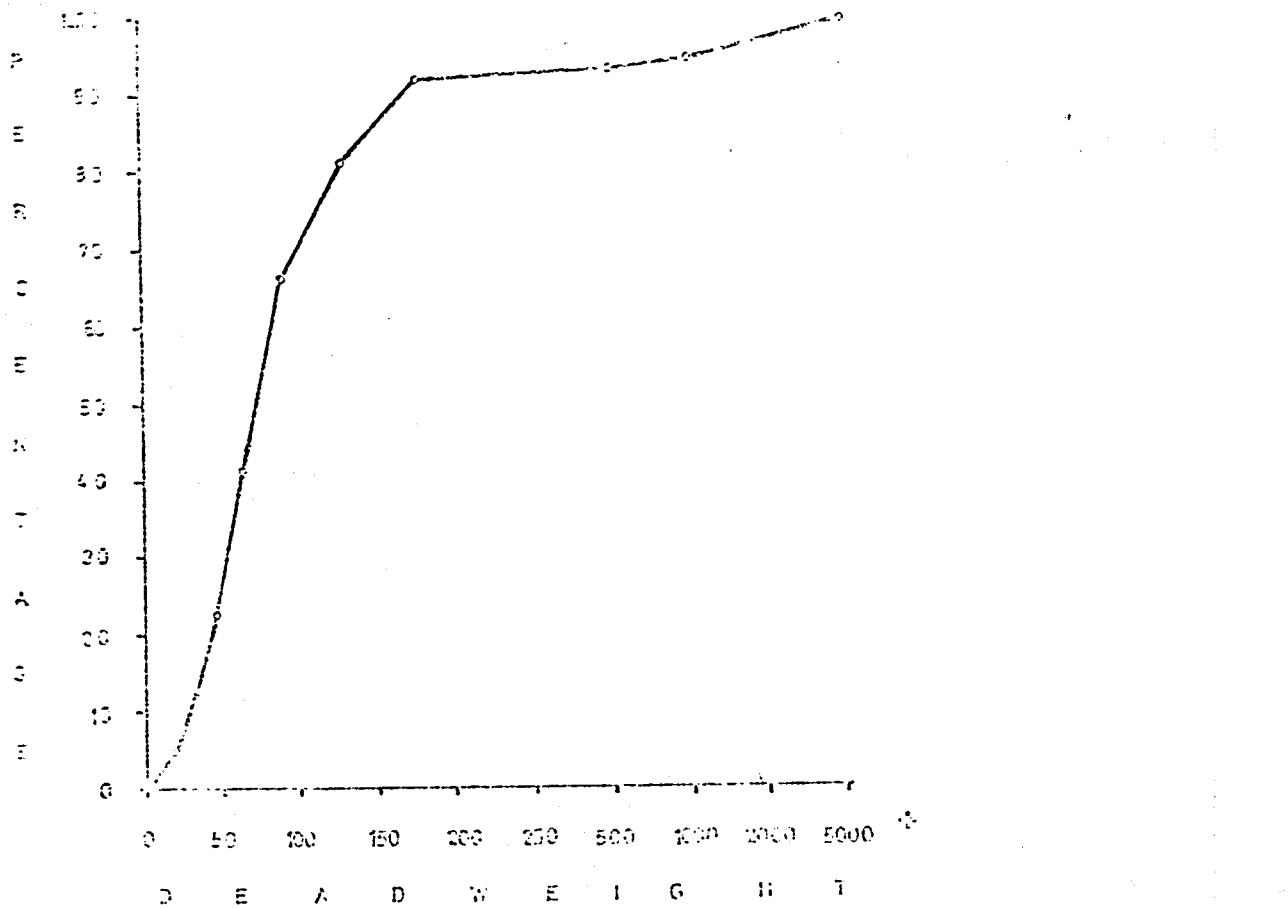


FIGURE M-135-C

CUMULATIVE DISTRIBUTION OF DEADWEIGHTS OF VESSELS USING LOAM BASIN - NOV.1973

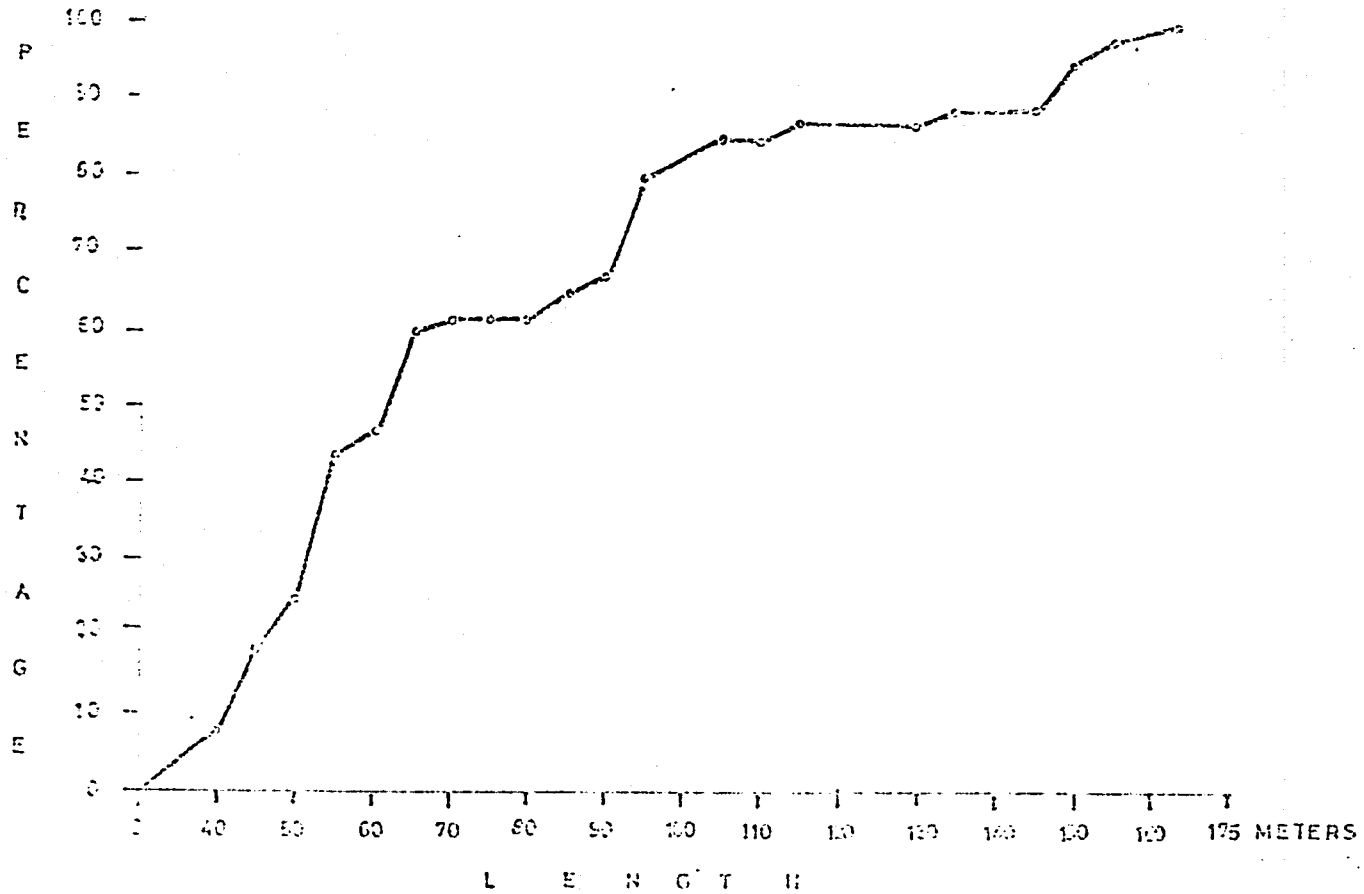


FIGURE : IV-[illegible]

CUMULATIVE DISTRIBUTION OF LENGTHS OF VESSELS

SOURCE : OPERATIONAL [illegible]

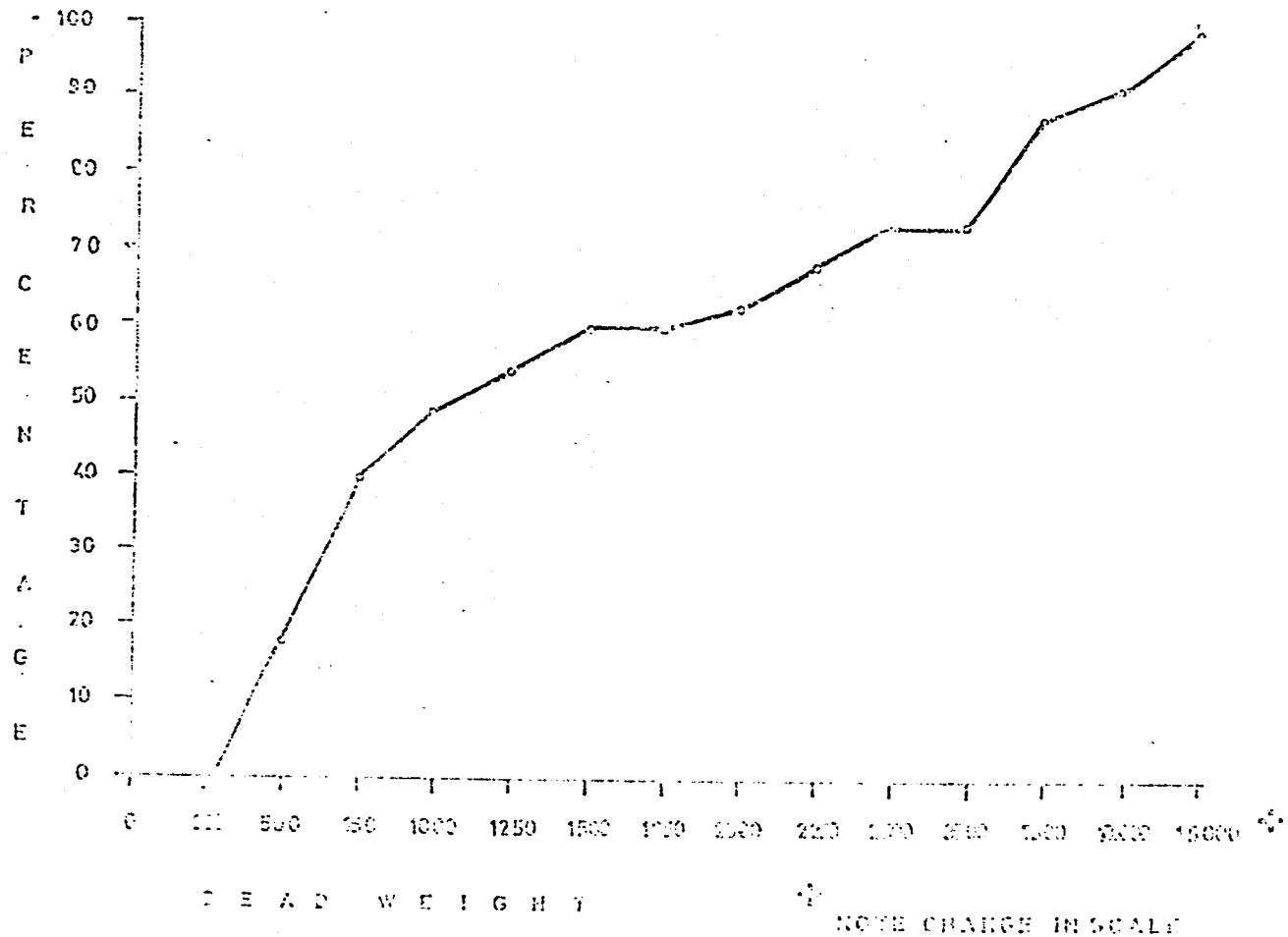


FIGURE [illegible]

CUMULATIVE DISTRIBUTION OF SINGLE HANDLING CARGO LIFTS [illegible]

The data for Pusri indicate a smaller average delay about 12 hours for its 4200 ton ship and only 4 1/2 hours for lts 3300 ton ships. The longest delay occurs on the trip out when a vessel must go against the flood tide. The two locations where shallow depths cause bottlenecks are the Outer Bar and Payung. The Pertamina data for 1971 and 1972 indicated that about 40% of the delays for tide occurred at the Outer Bar, and the rest occurred about half the time at Payung and half the time at the Pertamina anchorage. The data on delay for tides presents a problem. The delay at the Outer Bar waiting for sufficient water to proceed up the Musi is well defined, but the constraint on departure from the harbor may not always be recorded as a delay for tide, even though the ships activities are scheduled to make a certain tide.

No data is available on the delays associates with waiting for a berth or waiting for cargo at Boom Baru. These delays fluctuate with the overall demand for the wharf and there are problems in defining delays particularly for ships which work in the stream. Both Pusri and Pertamina keep wharf delay information. For a 34 shipcall sample of Pusri bulk carriers, about 25 were reported as having berth delays which averaged 13 hours. For Pertamina the delay was broken down between waiting for cargo and waiting for berth. A summary of these delays along with other Pertamina delay data is given in Table IV-6.3.6-1 and IV-6.3.6-2.

Table IV-6.3.6-1

Pertamina Delays - January and July 1975

Cause	No. and % of Ships delayed		Average delay(hr)	% of Total delay	Number of Ship delay (hrs) ≤ 2	2-4	4-6	6-8	8-10	10-15	> 15
Daylight	31	22.6	11	4.5	-	4	5	2	5	10	5
	22	19.8	9.2	3.9	-	3	3	1	6	7	2
Repair	19	13.8	50.7	12.7	1	1	-	-	-	1	16
	13	11.7	41.4	10.4	-	-	2	-	1	-	10
Pilotage	74	54.0	15.2	14.8	8	5	4	7	5	16	29
	70	63.1	14.7	20	9	6	6	10	10	7	22
Await Berth	75	54.0	16.2	16.1	2	7	9	8	5	10	34
	34	30.6	8.9	5.8	1	7	5	6	4	6	5
Await Cargo	20	14.5	23.6	6.3	-	2	1	-	-	1	16
	11	10.0	12.0	2.6	-	3	-	1	1	3	3
Await Tide	57	41.6	23.0	17.4	-	3	4	1	5	6	38
	64	57.7	15.6	19.3	2	8	8	8	4	9	25
Grounded	2	1.5	102	2.7	-	1					1
	2	1.8	4.4	.2	1	1					-
Total	278			74.5	11	23	23	18	20	44	139
	216			62.2	13	28	24	26	26	32	67

Number of ships delayed	January	137
	July	111
Number of Ships calling	January	249
	July	n.a.

Source : Pertamina Delay Reports.

Table IV-6.3.6-2

Pertamina Delays

Year	Reason / Description	Tide				Pilot	Tide & Pilot
		Outer Bar	Sungai Lais	Payung	All		
1974*	Ships	na	na	na			793
	Average hours				20.2	14.7	34.9
1973	Ships	na	na	na			869
	Average hours				12.5	19.6	28.1
1972	Ships	70	60	61	190	na	na
	Average hours	6	4.3	9	6.5		
1971	Ships	113	75	87	260	na	na
	Average hours	14	9	15	13.7		

* April 1974 - March 1975

\+ NA = information not available

Source : BPP Annual Report

7.0 RECOMMENDATIONS FOR IMPROVEMENTS IN OPERATIONAL METHODS

Improvements in the operation of the Port of Palembang will result from investment in administrative talent to improve the production of the port facility and investments of money to improve available equipment in the port.

It goes without saying that the current operation of the Port of Palembang is more than adequate to meet the current demands placed on it by the economy of Palembang. As the flow through the port increases it will be necessary to invest in management, skills to more closely manage the facility. This means that total responsibility for all functions within the port will go to a single body - the Port Administration. The administration must grow into this role first by collecting more accurate and timely information concerning all facets of the ports operation. This information can then be used to effectively manage the port facility.

The Palembang Port Study itself was hampered to a minor degree by contradictory and confusing statistics. As most information comes from documents used to prepare invoices, the rapid collection of all charges due in exact agreement with the conditions of the tariff is absolutely vital.

Once steps are taken to improve the quality of the information available it will be possible to concentrate on planning the use of the port facility. Table IV-7.0-1 gives an extremely sketchy outline of areas where administrative effort should be invested in planning the use of port facilities.

On a more concrete side a few rules which would improve the utilization of port facilities are listed below :

1) cargo handling berths should only be used while vessels are working cargo. Dredges for example should take water from barges unless there is no need for the wharf space.

TABLE 7.0-1

Central planning - Traffic Department.

a) Confer with ships agents to determine
   1. cargo to be handled
   2. means of handling
   3. flow of cargo
   4. time of ship arrival

   and berthing meeting for assignment of berths subject to review by assembled ships agents.

b) Planning berth allocation
   1. to minimize distance of cargo movement
   2. to ensure free movement of equipment on the wharf
   3. to provide maximum berth occupancy

c) Planning labor and equipment allocation to ensure efficient cargo handling, issuing orders as required for
   1. more gangs
   2. more equipment
   3. more shifts

d) Planning warehouse allocation for
   1. provision for adequate receiving and delivery spaces
   2. easy location of consignments
   3. restacking for consolidation of spaces
   4. notifying users of unclaimed or long term cargo

e) Training requirements for above
   Training in network planning, scheduling design or forms, specification of data requirements, designation of berths, daily report availability storage, labor, equipment, berths etc.

Local shipping should not use the wharf as a place to wait. This creates congestion and makes all statistics concerning the use of the wharf misleading.

2) well defined work rules concerning how high and how carefully to stow cargo, when to use loading boards, when to use slings and nets, and where to store fast and slow moving cargo should be established.

3) forklift drivers and stevedores damaging cargo through lack of attention to their duties should first be warned and then disciplined

4) foreman able to make the productivity of their workers exceed pre-established norms should be rewarded.

5) hatches should be worked as quickly as possible after bering opened.

6) delays should be closely monitored. When there is a delay, for example a flat tire, it should be made to effect the ship or hatch of a particular ship where the lost time is most easily and cheaply recovered.

7) a work plan allocating men and cargo handling equipment to particular jobs should be made and updated daily.

8) when extra workers or shifts are required to work a vessel they should be used as soon as possible in a vessels stay in port.

9) real effort should be made to provide the proper amount of manpower to do a job. Too many workers can impede the progress of work just as much as too few.

10) Customs procedures must be improved.

11) Plywood and thin steel sheets should be unloaded by lifting from all four corners. These products are not strong enough to be lifted from a single point

12) care should be taken when handling compressed gas bottles

13) the pilot station should log weather and sea conditions. This would aid in evaluating such projects as larger pilot boats or helicopter transfer of pilots.

14) the size of the inspection team meeting incoming foreign vessels should be decreased in size. All arrangements for prompt service should be made only by the ships' agent. Captain of foreign flag ships prefer that all such arrangements be made this way as the agent can do it much more efficiently.

15) some type of program for continuing regular maintenance of equipment should be instituted. The very minimum requirement is for increased stocks of spares.

Improvements to the physical equipment in the port are dealt with in detail in the volume on short and long term improvements. A few items germain to the immediate operation of the port are :

1) an improved fire fighting system should be installed. The system should have a diesel driven permanently mounted fire pump enclosed in a separate building. In the immediate future more larger portable fire extinguishers should be provided.

2) the existing partitions in the warehouses should be removed.

3) better protective clothing should be issued to the stevedores.

4) communications with the pilot station and the condition of electrical generating capacity there should be improved as per short term improvement 3.1.3.

5) more forklifts should be acquired again for details see the volume on short term improvements.