

## MSDP

6. In December 1982, DGSC compiled the Maritime Sector Development Programme (MSDP) both as a follow-up work of the ISTS as well as a preparatory work for REPELITA IV (1984/85 - 1988/89). In the MSDP, 14 plans were proposed to embody the entire sea transport and port policies based on the above-mentioned concept of the Four Gateway System, as follows:

- (a) Shipping Sub-sector
  - (i) Integrated liner system
  - (ii) Fleet development
  - (iii) Maritime Safety improvement
  - (iv) PELNI operation and management improvement
  - (v) Container operations and management improvement
- (b) Infrastructure Sub-sector
  - (i) Super-crash program (for the four-gateway ports)
  - (ii) Port planning and engineering
  - (iii) Aids to navigation and telecommunication system improvement
  - (iv) Dredging improvement
  - (v) Ship repair and maintenance improvement
- (c) Organization, Administration, and Others Sub-sector
  - (i) Sea communication organization and management
  - (ii) Manpower development and training
  - (iii) Customs procedures improvement
  - (iv) Legal aspects

7. Repelita IV was formulated based on the MSDP. As a matter of fact, the beginning of REPELITA IV included the proposals from ISTS, and especially the concept of gateway ports. However, the gateway concept was abolished when the Inpres No. 4/85 and related regulations took effect in 1985. By virtue of the Inpres No. 4/85, 117 ports were open to international trade.

## Set-up of PERUMPEL and scrapping policy

8. The following two important policies were employed between 1983 and 1984 in accordance with the ISTS and the MSDP.

9. Firstly, the four publicly-owned port corporations and the publicly-owned dredging corporation were established to manage ports in terms of a self-financing system. The former were PERUMPEL I, II, III, and IV, and the latter was Perum Pengerukan. They are still presently in operation, changing further their status into PERSERO (state-owned limited liability company).

10. Secondly, a scrapping policy was introduced in 1984. This policy was enforced strictly, with some modifications of the ISTS. Initially, vessels aged above 25 were ordered scrapped. Later, in 1985, the vessel age for scrapping was changed to that of above 30.

11. As a result, a considerable number of vessels were scrapped while the vessel replacement by CARAKA JAYA Plan and others could not meet the demand. In the end, the scrapping policy was suspended in 1988 owing to the shortage of vessels.

B. Inpres 4/85 and PAKNOV 21/88

Inpres: 4/85 (Presidential Instruction no. 4 of 1985)

12. In 1985, the Indonesian Government issued the Inpres 4/85 to further encourage the export of non-oil products. This instruction aimed to enhance the smooth flow of cargo and to reduce transport costs. The following drastic measures were undertaken:

- (a) Reformation of customs tasks
  - (i) abolition of the AVI (Algemene Verklaring von Inlanding) in the interisland trade; and
  - (ii) transfer of customs tasks to SGS in the international trade for importable goods which have the value of US\$5,000 and over.
- (b) Establishment of stevedoring companies separate from shipping companies as cargo handling operators
- (c) Abolition of SKU license
- (d) Introduction of the tariff guideline for domestic shipping
- (e) Revision of cargo handling charge
- (f) Revision of port charge
- (g) Strict demarcation of responsibilities among Perumpel, ADPEL and DGSC
- (h) Liberalization of forwarding services to Indonesian companies.

PAKNOV 21/88

13. Although the ISTS already mentioned partial deregulation concerning sea transport, the Indonesian Government boldly ventured towards total deregulation by virtue of PAK NOV 21/88, which consists of PP-17 and PP-18, dated 21 Nov. 1988. To activate the shipping industry, these measures made possible the arrangement of vessels, routes, and marketing by shipping operators. The major revisions are as follows:

- (a) revision of operation licenses (the five types of licenses for ocean-going, inter-island, local, special, and "rakyat" services were reduced to only 2 types of licenses for domestic/international services and "rakyat" services)
- (b) deregulation of shipping operation
- (c) simplification of permit acquisition procedures
- (d) liberalization of routes
- (e) deregulation of foreign vessel operation
- (f) free joint venture

C. Government Spending on Maritime Sector under REPELITA I - V

14. Table 5-1 indicates the resource allocations for the transport sector from REPELITA I (1969/70-1973/74) up to REPELITA V (1989/90 - 1993/94).

15. The total development budget of REPELITA V amounts to Rp 107,500 billion, or 37% larger than that of REPELITA IV. Concerning sectoral allocations for the same period, the transport sector has a total increase of 108.3% but the increase for sea transport sub-sector amounted to only 10.5%. This is quite low compared with the other sub-sectors such as road (181.8%), land transport (46.3%), and civil aviation (92.6%).

Table 5-1 Resource Allocations for Transport under REPELITA I up to V (in %)

	REPELITA				
	I	II	III	IV	V
A. Road	75.0	77.7	66.5	46.3	62.7
B. Land Transport (Railways, Freight & Passenger Road Transport & Ferries)	6.3	6.7	8.5	17.6	12.3
C. Sea Transport (Ports & Shipping)	9.8	10.4	13.2	21.6	11.5
D. Civil Aviation (Airports & Air- crafts)	8.9	5.2	11.8	14.5	13.5
TOTAL	100.0	100.0	100.0	100.0	100.0
E. Sea Transport (% of total devmt. budget)	1.7	1.3	2.4	2.5	2.0
F. Transport (% of total devmt. budget)	17.0	16.0	14.0	11.6	17.6
Total Development Budget (in billion Rp)	2,012	3,125	25,845	78,628	107,500

Source: BAPPENAS

16. The low increase is attributed to the fact that the Indonesian Government expects the sea transport sub-sector to be self-sustaining as the Government assumes Badan Usaha Milik Negara (BUMN) or state-owned enterprises can invest part of their revenue in development projects. As a matter of fact, the Government expects BUMN to include about Rp 1,423 billion investment in their budget; more precisely, Rp 446 billion for port investment and Rp 977 billion for fleet development. Thus, combining the budgets of REPELITA V and BUMN would reflect an increase of 83% more than that of REPELITA IV.

Table 5-2 Recapitulation of Maritime Budget Allocation by Sub-sector, REPELITA V (1989/90 - 1993/94)

(in Million Rp)

Program	Funding Source			% of Total
	Internal	External	Total	
1. SHIPBUILDING AND FLEET DEVELOPMENT				19.9%
a. Perintis Subsidy	45,000	-	45,000	
b. Passenger Ship (8, 9, 10) <u>1/</u>	-	387,300	387,300	
c. Caraka Jaya	PM	PM	PM	
2. PORT DEVELOPMENT				57.4%
a. O/M/R 110 Small Ports	601,200	-	601,200	
b. Other Ports <u>2/</u>	-	643,900	643,900	
3. DREDGING	74,000	115,000	189,000	8.7%
4. MARITIME SAFETY				13.9%
a. Navigational Aids	72,635	169,402	242,037	
b. Harbour Master	6,622	-	6,622	
c. Coast Guard	11,576	41,165	52,741	
5. MARITIME SERVICES	2,000	-	2,000	0.1%
	813,033 + PM	1,356,767 + PM	2,169,800 + PM	100.0%

1/ Three passenger ships from West Germany (DM 205.2M loan).

2/ Dumai, U. Pandang, Tl. Bayur, Tg. Priok Phase III, Maluku Jetty, 9th Port Project, Surabaya Phase III, Belawan Phase I

Note: PM: Pending Matter

## Chapter 6 REVIEW OF THE PRESENT SITUATION IN SHIPPING

### A. Outline of Sea Transport

#### Overall cargo/passenger movement in Indonesia

1. The Study Team compiled various data sourced from DGSC to come up with a general scenario of the sea transportation in Indonesia. However, it should be stressed at this point that the data itself do not reliably reflect the actual situation due to inherent data management problems (i.e., poor reporting system, inadequate processing, and vague definitions).
2. A summary of the cargo and passenger traffic is presented in Appendix 6-1. There were more cargo/passenger traffic in 1991 than in 1990. However, the increase shown is way too high and so it may be safe to assume that the 1990 figures may be less than the actual figures. We can better visualize the overall traffic by the percentage points for each shipping category, as shown in Table 6-1.

Table 6-1 Cargo and Passenger Traffic (1990 and 1991)

Cargo Traffic	1990 (%)		1991 (%)	
Inter-island	9.5	52.5	11.2	58.7
Local	2.9	15.8	2.6	13.7
Pioneer Shipping	0.06	0.3	0.07	0.4
People Shipping	5.7	31.4	5.2	27.2
Sub-total	18.2	100.0	19.0	100.0
Special Shipping	15.7		13.2	
PERTAMINA	56.5		59.9	
Non-Shipping	9.6		7.9	
TOTAL	100.0		100.0	

Note: Cattle is excluded for this purpose.

Passengers Traffic	1990 (%)	1991 (%)
Inter-island	59.1	47.1
Local	14.0	11.0
Pioneer Shipping	5.2	3.8
People Shipping	21.7	38.1
TOTAL	100.0	100.0

Note: Yearly figures greatly varies due to differences in the reporting system of passengers embarking at Riau Province (e.g., 486,197 in 1990 and 1,354,026 in 1991).

PELNI Traffic	1990	1991
Total Passengers	2,219,006	2,476,348
(vessels)	(7 ships)	(9 ships)
Interisland share	96.4%	91.5%
National share	57.0%	43.1%

Source: DGSC

### Indonesian flag vessel fleet recapitulation

3. The magnitude and composition of the current domestic fleet in Indonesia is summarized in Appendix 6-2. Since the data of 1990 and 1991 were taken from different sources, a horizontal comparison may not produce reliable results (i.e., increase or decrease trend). However, a vertical scrutiny reveals the following:

- (a) In terms of number, the "rakyat" accounts for approximately 39% of total number of fleet in 1990 and 45% in 1991 but is the smallest in terms of vessel size. The average size is about 85 GRT.
- (b) Vessels of the inter-island cargo and passenger service are large in terms of vessel size (i.e., approximate average size/vessel is above 2,000 DWT). Similarly, those of PERTAMINA and other shipping companies are large in both size and number.

### B. Operational Characteristics of Domestic Shipping

#### Shipping operators

4. PELNI (Pt. Pelayaran Nasional Indonesia), established in 1952, was reorganized from PN (state enterprise) to PERSERO (state-owned limited liability company) in 1976. However, PELNI is still responsible for the execution of government policies in sea transport. The present PELNI fleet is given in Table 6-2. Recently, PELNI has laid stress on passenger service rather than cargo handling.

Table 6-2 PELNI Fleet

Type	No. of Vessels	DWT
Cargo Ships	39	42,841
Pioneer Ships	12	6,250
Passenger Ships	10	24,380
Total	61	73,471

Source: DGSC

5. Around 50 operators, of medium and small sizes, have been tapped to serve inter-island shipping business, in addition to PELNI.

6. PAK NOV 21/88 made possible to alleviate conditions set in the establishment of shipping companies and to resume the issuance of licenses, which had been suspended since 1976. As a result, number of operators have rapidly increased in recent years, as shown in Table 6-3, due to the following reasons:

- (a) Operators becoming independent from being a mere subcontractor of a big operator.

- (b) Operators establishing more than two companies to avoid paying higher tax or for other operational reasons.
- (c) Operators establishing companies to become agents for foreign vessels.

Table 6-3 Number of Operators Between 1988 - 1991  
(No. of Companies)

	1988	1989	1990	1991
Shipping	343	522	680	824
Non-Shipping	200	194	255	327
Rakyat	406	420	462	608
Total	949	1,136	1,397	1,759

Source: DGSC

7. Most of the shipping operators, with the exception of Rakyat operators, organized the Indonesian National Shipowners' Association (INSA). The number of members total 521 as of October 1992. On the other hand, Rakyat operators formed the Dewan Pimpinan Pusat Pelayaran Rakyat (DPP PELRA) as their own association. There are about 500 member companies or about 70,000 individual members. However, presently, they do not function as self-regulating bodies or even do not forge an agreement among members as regards tariff, supply of vessel tonnage, etc., for domestic shipping without government intervention.

#### Domestic fleet

8. The number of domestic fleet once decreased in 1984 due to the enforcement of the scrapping policy, resulting in the shortage of vessels. Table 6-4 and Table 6-5 indicate that tugs, barges, and foreign vessels are widely used.

Table 6-4 Trend in Domestic Fleet

Year	1984	1986	1988	1990	1991
No. of Vessels	7,832	8,380	9,020	7,568	7,024
DWT	3,169,645	2,896,976	2,848,109	2,800,905	3,189,268
GRT	838,598	1,183,559	1,198,195	1,148,620	1,051,951
HP	264,259	366,016	646,856	907,135	805,900

Source: DGSC

Table 6-5 Chartered Foreign Vessels in Inter-island Trade

	1984	1986	1988	1990
No. of Ships	56	11	14	53
Fleet Tonnage (dwt)	276,122	39,750	42,420	171,549

Source: DGSC

Vessel age

9. When scrapping policy was strictly enforced between 1984 and 1988, the average vessel age went down. At present, however, inter-island cargo vessels more than 16 years of age (and which should already be replaced), account for 72.4% as shown in Table 6-6.

10. PELNI and other major operators, totaling 11, have 134 vessels with an average age of 17.5. These old vessels are the cause of the rise in non-operation days and in maintenance/repair costs.

Table 6-6 Distribution of Inter-island Cargo Ships by Age and by Size  
(as of 1992)

Year Built (Age)	500 GRT-999 GRT	1000 GRT -	Total
1992 - 1988 (0 - 5)	6	6	12
1987 - 1983 (6 - 10)	3	10	13
1982 - 1978 (11-15)	24	39	63
1977 - 1973 (16-20)	39	82	121
1972 - (21-up)	37	73	110
Total	109	210	319

Source: BKI (Indonesian Classification Bureau)



### Efficiency

11. In general, the efficiency of Indonesia's domestic shipping is low because of the following reasons:

- (a) high number of old vessels;
- (b) long anchorage period and turn-around time due to the shortage of port facilities, poor stevedoring service and cargo waiting time; and
- (c) many non-commission days due to drydocking and repairs.

12. PELNI provides some data on the high frequency of their vessel delays (on the average) for 1990 as follows:

- (a) wharf waiting is 18.3 days;
- (b) cargo waiting is 12.0 days;
- (c) repair is 15.2 days;
- (d) weather is 3.2 days;
- (e) holidays at 2.9 days; and
- (f) others at 4.3 days.

13. The data in Table 6-7 provided by several inter-island operators prove that older vessels require more days in drydock.

Table 6-7 Drydocking by Vessel Age

Operator	Number of Vessels Owned	Average Age	Ave. Days in Drydock/vessel
A	15	19.3	56.8/vsl
B	10	17.6	13.8
C	13	16.8	16.8
D	10	24.1	56.2

14. In the matter of efficiency, it seems that there is no exception to vessel movements in Eastern Indonesia.

15. A check of the voyage data indicates that, generally, a vessel's stay in port is very long compared with the cargo tonnage being loaded/unloaded. Factors contributing to this are the difficulties of arranging for enough stevedores to unload the cargo and the waiting time for cargo stem. At certain small ports where vessels do not call often, stevedores are not always available and have to be gathered on makeshift basis from the local area, such as farmers and fishermen. The weather factor seems not so great as the port stay is fairly long.

16. It is also noted that at the Port of Surabaya, where most of the vessels bound for Eastern Indonesia originate, the vessels' stay in port is quite long. This is partly because of the tonnage involved in unloading raw materials and the loading of general cargo, and partly because of port congestion, cargo stem, ship repair, etc. Some examples are presented in Table 6-8.

Table 6-8 Port Records of Sample Vessels

A. PT. Salam Pacific Indonesia "ARMADA PERMAI" 1,301 DWT									
	SUB	SMD	SUB	SMD	SUB	SMD	SUB	SMD	SUB
Loading	1060	897	844	591	785	1108	888	1186	750
Discharge	--	1060	897	844	591	785	1108	888	1186
TOTAL (R/Ton)		1957	1741	1435	1376	1893	1996	2074	1936
In Port (Days)	N/A	4.6	6.7	6.0	3.8	9.4	3.7	8.7	4.8

B. PT. Salam Pacific Indonesia "ARMADA INDAH" 6,542 DWT								
	TAR	SUB	SKL	SUB	BTG	MBG	SUB	
Loading	6243	5014	3723	3000	--	4060	5810	
Discharge	--	6243	--	3723	3000	--	4060	
TOTAL (R/Ton)	6243	11257	3723	6723	3000	4060	9870	
In Port (Days)	5.1	10.4	8.3	14.5	7.2	5.8	11.6	

Note: SUB=Surabaya, SMD=Samarinda, TAR=Tarakan, SKL=Singkel,  
BTG=Bitung, and MBG=Muala Bungalon

Source: DGSC

### Sectoral analysis

#### 1) Inter-island shipping

17. Inter-island shipping is the most important part of the entire domestic shipping in terms of serving the national backbone of sea transportation. Today, around 50 operators offer liner and tramping services in this field. Due to total deregulation and the increase in the number of operators, the excessive competition has put a strain on their management.

18. Meanwhile, the deregulation, particularly PAK NOV 21/88, have attracted foreign vessels into inter-island shipping. For instance, the share of foreign vessels in inter-island shipping has increased from 6.5% in 1986 to 18.4% in 1990, as shown in Table 6-9.

#### 2) Rakyat (People) shipping

19. One of the structural characteristics of domestic shipping is the existence of Rakyat shipping as a traditional form besides modernized shipping. Rakyat ships, consisting of wooden vessels measuring around 100 gross tons, accounted for about 39% of the total number of domestic vessels while their cargo handling volume accounted for only 5.7% in 1990. Because the hull of Rakyat ships is small, they are totally dependent on human labor during loading and unloading.

Table 6-9 Share of National Vessels and Foreign Vessels in Inter-island Shipping

Year	National Vessels		Foreign Vessels		Total	
	Ton	%	Ton	%	Ton	%
1986	7,640,748	93.5	530,896	6.5	8,171,644	100.0
1988	8,456,415	91.6	775,623	8.4	9,232,038	100.0
1990	5,731,389	81.6	1,294,350	18.4	7,025,739	100.0
			+ 125,521 TEU		+ 125,521 TEU	
1991	8,841,214	71.0	3,606,473	29.0	12,447,687	100.0

Source: DGSC

20. Considering their features, Rakyat shipping differs from other types of shipping in terms of licensing. And they are divided into three categories, as follows:

- (a) sailing ships of less than 850 cubic meters
- (b) sailing ships with motors of less than 850 cubic meters
- (c) motor boats of less than 100 cubic meters

21. Rakyat shipping is under the control of KANWIL (regional offices of the Ministry of Communications).

22. The Maritime Law No. 21/1992, which was newly promulgated and updated from the old one, recognizes the speciality and importance of Rakyat shipping as a form of sea transportation. The Government of Indonesia has taken steps to protect and develop Rakyat shipping such as motorization, standardization, and finally modernization. Table 6-10 shows the trend in motorization but total renovation, including management improvement, is still necessary.

Table 6-10 Composition of Rakyat Fleet (%)

	1984	1987	1990
Sailing Ships	35.7	24.3	8.8
Sailing Ships with motors	52.6	58.6	75.1
Motor Boats	11.7	17.1	16.1
Total	100.0	100.0	100.0

Source: DGSC

### 3) Perintis (Pioneer) shipping

23. Perintis shipping is being subsidized by the Indonesian Government. It has 28 routes with 13 base ports. In 1992, 26 vessels or a total of 15,800 DWT are

involved in this operation. Among them PELNI has 13 routes while eight local operators have 15 routes. The total number of voyages made is 488.

24. The Maritime Law No. 21/1992 states the position of Perintis clearly as a subsidized service for remote, undeveloped areas. Such being the case, traffic demand is limited and so Perintis shipping mainly carries passengers and daily commodities.

25. The history of Perintis shipping is summarized as follows:

- (a) 1974/75 - 1980/81 (7 years): Perintis shipping started in 1974. Direktorat Navigasi furnished its own vessels. The shortage of hull was offset through bidding among private operators.
- (b) 1981/82 - 1986/87 (6 years): SWAKELOLA (self-management) method was applied during this period. In this connection, the Indonesian Government built 14 vessels for the purpose of Perintis shipping and the actual operation of these vessels was entrusted to PELNI. The shortage of hull was offset by PELNI and private operators without bidding. This SWAKELOLA method caused some problems because PELNI was designated both as an administrator and as an operator.
- (c) 1987/88 - 1989/90 (3 years): The SWAKELOLA method was modified to KONTRAK MURNI (contract-based) method. Accordingly, the above mentioned government-owned 14 vessels were transferred to PELNI which was appointed as the solo operator of Perintis shipping. Under this method, PELNI got all operational income and operational deficits were compensated with government subsidy.
- (d) 1990/91 - present: Under the KONTRAK MURNI method, the Government makes route plans and decides on an operator for each route through bidding.

26. As stated above, the current operational method is based on public bidding which decides the responsible operator and the amount of subsidy. The subsidy can be paid to an operator after every voyage through the inspection of government officers concerned. If the voyage is made ahead or behind schedule, the expected subsidy would be reduced as penalty. As regards contract conditions, PELNI has no advantage compared with private operators.

27. Table 6-11 shows the performance of Perintis shipping between 1986/87 and 1990/91. The results of biddings under the current operation method are summarized in Table 6-12.

Table 6-11 Performance of Perintis Shipping

	SWAKELOLA		KONTRAK MURNI		
	1986/87	1987/88	1988/89	1989/90	1990/91
Budget Fund: (in Rp 000,000)	8,923	6,302	7,981	8,294	16,093
Routes	24	16	16	18	28
Base Ports	14	10	10	11	13
Call Ports	247	178	152	154	176
Perintis Ships					
No. of Vessels	21	14	16	16	26
DWT	9,066	7,150	8,741	8,741	15,800
Cargo:(in tons)	19,735	24,418	26,714	35,742	53,555
Passengers:(no. of persons)	115,672	141,100	181,128	214,070	175,558
Load Factor: %	-	4.7	3.9	6.6	-
Pass. Factor: %	-	51.4	55.8	65.0	-
Subsidy Ratio: %	90.6	75.1	84.0	83.3	-

Source: DGSC

Table 6-12 Results of Bidding under Current Operation Method

Fiscal Year	PELNI (routes)	Others		Total (routes)
		routes	operators	
1990/91	18	10	6	28
1991/92	14	14	12	28
1992/93	13	15	8	28

Source: DGSC

### C. Financial Analysis of Domestic Shipping

28. It is difficult to understand the financial situation of domestic shipping operators based on existing documents and data, except for PELNI. For this reason, the Study Team distributed questionnaires to more than 50 operators, in cooperation with INSA. However, no one filled out the questionnaires.

29. Through interviews conducted with several operators, the Study Team obtained the following information:

- (a) Severe competition among operators and the increase in cost has taken the balance of income and expenditure for the worse.
- (b) The cost of vessels built by the CARAKA JAYA Plan are prohibitive for operators. For example, one operator canceled his lease contract for a vessel of this type due to lack of money. Consequently, operators are more inclined to purchase second-hand vessels or to charter foreign vessels.

30. Table 6-13 indicates the cost components of PELNI and two anonymous private operators designated as Company A and Company B. Both Company A and Company B came up with profits. Although it is difficult to come to a definite conclusion due to limited data, bunkers, maintenance, repairs, and supplies compose a large share in proportion with the other cost items.

Table 6-13 Cost Analysis of Domestic Shipping

	PELNI				(%)
	Pass. Ship	Cargo Ship	Perintis Ship	Ave.	Company A + Company B Cargo Ship
Operating Cost					
Cargo/Passenger	14.5	11.8	0.6	12.7	10.2
Bunkers	25.3	20.6	17.1	23.7	23.7
Port Charges	2.8	3.7	0.4	2.8	3.6
Others	2.1	3.2	3.0	2.4	0.6
Running Cost					
Crew	4.4	13.3	13.5	6.8	7.0
Insurance	6.1	3.0	1.8	5.2	2.0
Maintenance/ Repair/Supplies	13.0	25.7	34.5	17.3	18.1
Depreciation	17.5	6.5	4.5	14.3	9.0
Others	0.2	0.5	0.7	0.3	1.1
Charter/Lease	-	-	15.8	1.4	13.3
Administration	14.1	11.7	8.1	13.1	11.4
Total	100.0	100.0	100.0	100.0	100.0

## Income and expense in PELNI

31. PELNI offers three kinds of shipping services such as passenger service, cargo service, and Perintis service. Table 6-14 shows the income and expenses of the three service types. The passenger services, as a main component of PELNI's operation, summed up some deficits due to the depreciation of vessels in 1988. In 1990, however, the service showed improvement due to the increase in passengers. On the other hand, cargo and Perintis services have operated in the red since 1989 constantly.

### Perintis service

32. The Indonesian Government subsidizes the Perintis service which is operated by PELNI and local small operators. As to PELNI, Table 6-15 indicates in detail the income and operating figures and subsidy. In brief, the amount of subsidy has been increasing yearly.

33. On the other hand, operating cost has been increasing with the slight increase in incomes. Eventually, PELNI had to sum up considerable deficits.

34. As to local operators, there is no available data for analysis.

Table 6-14 Income and Expenses of PELNI

						(in million Rp)	
Service Type	Year	Income	Expenses			Profit/Loss Before Depre-ciation	Profit/Loss After Depre-ciation
			Expenses	Depre-ciation	Total		
Passenger Service	1988	54,856	47,051	10,497	57,548	7,805	(-) 2,692
	1989	73,706	55,816	14,062	69,878	17,890	3,828
	1990	95,074	70,917	14,062	84,979	24,157	10,095
	1991	115,495	90,700	19,267	109,967	24,795	5,528
Cargo Service	1988	19,928	18,650	1,242	19,892	1,278	36
	1989	23,618	22,879	1,172	24,051	739	(-) 433
	1990	21,692	27,539	1,822	29,361	(-) 5,847	(-) 7,669
	1991	24,006	26,407	1,852	28,259	(-) 2,401	(-) 4,253
Perintis Service	1988	8,388	7,722	561	8,283	666	105
	1989	9,093	10,505	582	11,087	(-) 1,412	(-) 1,994
	1990	9,849	9,990	543	10,533	(-) 141	(-) 684
	1991	11,362	13,340	634	13,974	(-) 1,978	(-) 2,612
Total	1988	83,172	73,423	12,300	85,723	9,749	(-) 2,551
	1989	106,417	89,200	15,816	105,016	17,217	1,401
	1990	126,615	108,446	16,427	124,873	18,169	1,742
	1991	150,863	130,447	21,753	152,200	20,416	(-) 1,337

Source: PELNI

Note: 1991 : Unaudited  
1988-90: Audited

Table 6-15 PELNI Perintis Service

(in million Rp)					
Item	1987	1988	1989	1990	1991
Operating Income					
Cargo Freight	199	368	414	453	1,213
Passenger Fare	482	903	945	1,235	1,243
Other Income	3	3	22	23	49
Subsidy	4,438	7,114	7,712	8,138	8,857
Total	5,122	8,388	9,093	9,849	11,362
Operating Expenses					
Variable Exp.	1,332	2,215	2,289	2,780	3,441
Fixed Exp.	2,296	4,517	6,943	5,914	8,762
Depreciation	408	561	556	551	635
Total	4,036	7,293	9,788	9,245	12,838
Operating Profit/Loss	1,086	1,095	(-)695	604	(-)1,476
Overhead	582	987	1,016	1,169	1,136
Net Profit/Loss	504	108	(-)1,711	(-)565	(-)2,612

Source: PELNI

## D. Sea Transport Network in Eastern Indonesia

General situation

35. In general, the backbone of Indonesia's national economy is Java Island where agricultural and industrial products go in and out and where goods are produced and consumed extensively. Accordingly, the sea transportation in Eastern Indonesia is strongly connected with Java. Concerning daily commodities, the traffic flow from Java to Eastern Indonesia is consistent and considerable. On the other hand, that of the opposite direction and within Eastern Indonesia is limited and erratic except for raw materials such as oil, wood, and metal. As a result, major routes connected with major ports and feeder routes between major ports and small ports are formulated naturally.

## 1) Cargo vessels

36. Although the separation of inter-island shipping and local shipping has been lifted, still such segregation is applied for the purpose of data collection.

37. As for inter-island shipping, there are 136 vessels of an average 2000 DWT plying between Eastern Indonesia and Java.



38. In the case of local liner shipping, there are 112 vessels of around 200 GRT operating within Eastern Indonesia. But it is noted that there are a number of so-called local shipping vessels serving inter-island routes.

39. There are 21 vessels of an average 600 DWT serving 23 Perintis routes with government subsidy for remote, under-developed areas. As a means of transportation for small ports and limited demand, Rakyat shipping with more than 1,300 vessels are in operation.

40. Table 6-16 shows the overall situation of general cargo vessels by type of route.

Table 6-16 Present Situation of General Cargo Vessels

	Number of Ship Co.	Number of Ships Used	Total Ship Tonnage	Ave. Ship Tonnage
Inter-island Routes <u>1/</u>	32	136	267,573 DWT	1,967 DWT
Local Routes <u>1/</u>	41	112	20,345 GRT	182 GRT
Perintis (Pioneer Routes)	9	21	12,750 DWT	607 DWT
Rakyat (People) Shipping <u>2/</u>	316	1,374	68,811 GRT	50 GRT

Note: 1/ Inter-island/local routes have also the tramping service without regular schedules. Especially in the case of local routes, there are many tugboats and barges ('tongkang') used for such service. Such trampers are not included in the above figures.

2/ Only those based in Eastern Indonesia and Java East/Bali are included.

## 2) Passenger ships

41. Regular passenger ship service is provided by PELNI and Kalla Lines. Their fleet sizes for this service is given in Table 6-17.

Table 6-17 Regular Passenger Services of PELNI and Kalla Lines

	No. of Ships	Total DWT/GRT	Ave. DWT/GRT
PELNI	10*	24,380/98,366	2,438/9,837
Kalla Lines	5	6,331/17,383	1,266/3,477

Note: \* After one addition in 1992.

Source: DGSC

42. More than 90% of the passengers were carried by PELNI in 1991. In addition, cargo ships allow passengers to board on dispensation basis, which number exceeded that of the total passengers carried by passenger ships in 1991 (See Appendix 6-1).

#### Vessel movement features after deregulation

43. The Government of the Republic of Indonesia issued a new regulation called PAK NOV 21/88 in November 21, 1988 whereby various points affecting the Indonesian sea transportation network were revised, as follows:

- (a) Shipping operation is simply categorized into: 1) domestic shipping (including pioneer shipping), and overseas shipping, which can be operated under a single license; and 2) people shipping.
- (b) Domestic shipping companies can do the scheduling of their own ships for either regular shipping or tramping, and can now place their ships either in domestic or overseas shipping.
- (c) Domestic shipping companies must report the origin and destination of their ships and the cargo carried (both loaded and unloaded cargo) to the administration of the origin/destination port.
- (d) The schedule of the shipping routes by the domestic shipping companies must be announced to the public.
- (e) Domestic shipping companies can use foreign ships on charter basis for a period of time or for a special voyage or any other agreement, provided that it is reported to the minister or to the designated official.

44. After the promulgation of the above regulation, there have been no restrictions for shipping companies on the deployment or route scheduling of their ships, thus, emphasis was placed on commercial considerations. The only requirements on the part of the shipping companies are to obtain a business license and to report to the government the required information mentioned above. However, the reporting requirement by the government has not been properly enforced and, therefore, not all the data have been reported to or collected by the government. In the meantime, the shipping companies operate their vessels not necessarily on the same route or same ports of call for every voyage. Inter-island and local shipping companies are required to file with the government their scheduled shipping routes, every three months (again not all the shipping companies comply with this requirement). Those who do comply usually list all possible ports of call (in some, more than forty for one vessel) even if in actuality, the vessel calls on only a few of them. An example of this case is shown in Table 6-18.

45. Therefore, in this section, the following sectors' current networks are identified based on the data from DGSC supplemented by field work done by the Study Team:

- (a) Inter-island cargo shipping
- (b) Container cargo movements
- (c) Local shipping
- (d) Perintis shipping
- (e) Other cargo movement, especially PERTAMINA
- (f) Ferry routes

Table 6-18 Example of Scheduled Shipping Routes of Inter-island and Local Shipping Companies

PT. Salam Pacific Indonesia "Kalteng" 2,158 DWT													
Filed Schedule:	Surabaya-Sorong/Manokwari/Nabire/Serui/Biak/ Jayapura/Ujung Pandang/Parepare/Palopo/Kendari/ Raha/Fakfak/Merauke-Samarinda/Tarakan/Balikpapan- Tolitoli/Pantoloan/Kendari/Raha/Benoa/Celkan Bawan/Lembar-Teluk Bayur/Belawan/Batam/Panjan/ Palembang/Dumai-Tanjung Priok/Cirebon/Semarang												
Actual Voyage of 1991:													
Voyage -->	01	02	03	04	05	06	07	08	09	10	11	12	13
Ports:													
Surabaya	1	1	1	1	1	1	1	1	1	1	1	1/4	1
Semarang	2												
Balikpapan	3	2											
Samarinda	4		2	2	2	2	2		2	2	2	2	2
Bontang	5												
Bitulicin													3
Ujung Pandang													3
Bitung	6												
Sorong		3											
Fakfak		4											
Merauke		5											
Raha		6											
Panjang									2				
Palembang												5	
Tanjung Priok									3				
Source: DGSC													

#### 1) Inter-island cargo shipping routes

46. Cargo ships bound for Eastern Indonesia usually originate from Java Is., Surabaya and/or Jakarta (Tanjung Priok), carrying various commodities. A typical example of a cargo vessel's voyage schedule and the cargo being carried is shown in Tables 6-19 and 6-20, respectively.

47. Figure 6-1 presents the main inter-island shipping routes covering Eastern Indonesia, involving 31 companies operating 136 vessels, based on the voyage data. The breadth of the line indicates the degree of traffic by number of trips per year.

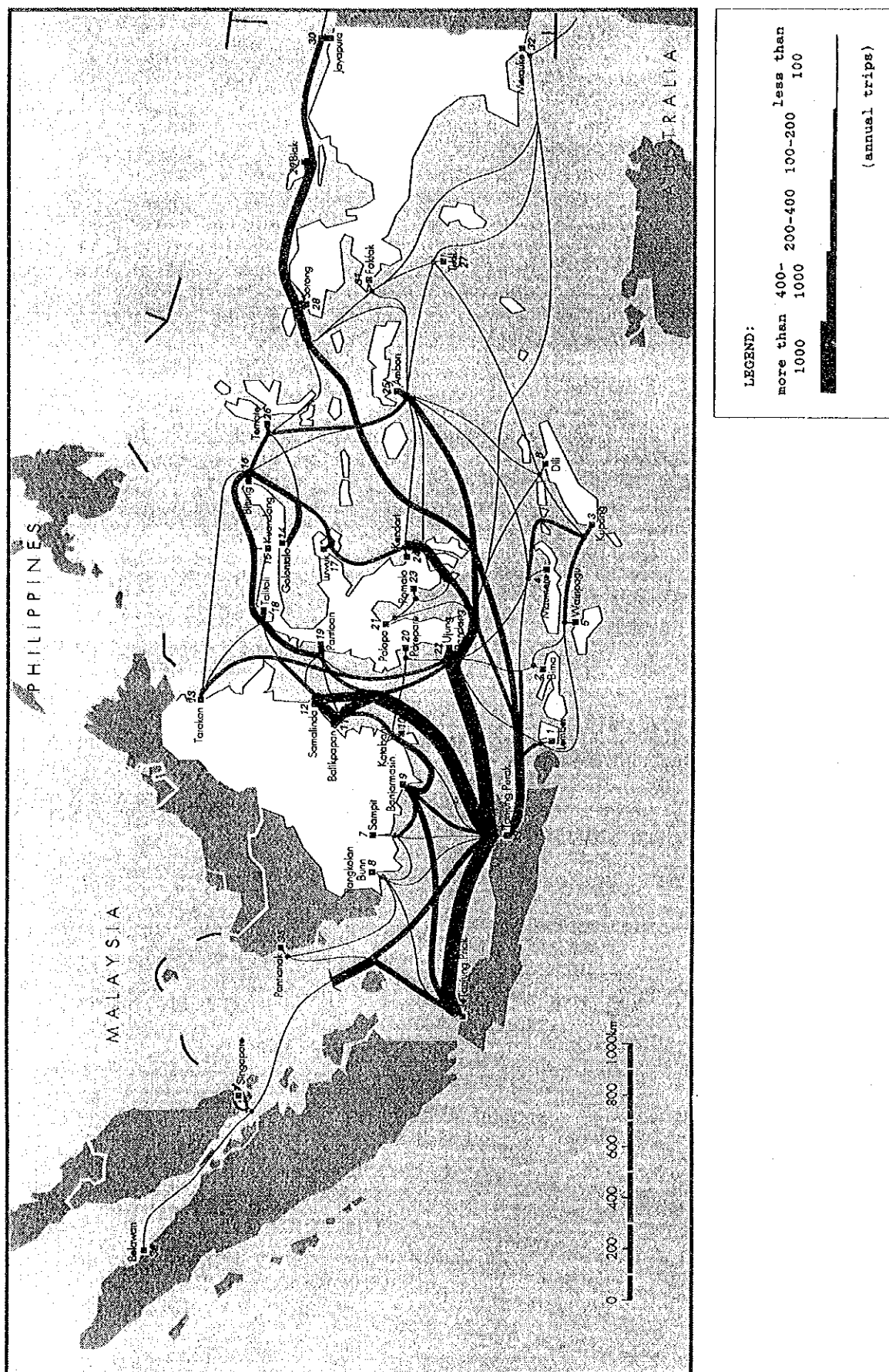
Table 6-19 Example of Vessel's Voyage Schedule

PT. Surya	"Sirontalo V" 750 DWT (Voyages in 1991)													
Voyage -->	01	02	03	04	05	06	07	08	09	10	11	12	13	14
Ports:														
Surabaya	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ujung Pandang	2	2	2		2	2	2	2	2		2	2	2	
Biringasi	3													
Luwuk	4				4/6		5/8	5/7			4/6			
Bunta	5	6	4			4			10	3				6
Kolonedale		4												
Gorontalo		5		2						2			10	5
Ampana				3					9					
Banggai								6			5			
Maumere		3												
Longkoga					5		7							
Bitung			3		3	3	3	4	8		3	3	3/9	
Pantoloan								3						
Tolitoli												4		
Mangole							4							
Belanta							6							
Tahuna									3				4	
Petta									4/7				5/7	
Beo									5				6	
Rainis									6					
Siau													8	
Biak														2
Jayapura														3
Sorong														4

Table 6-20 Cargo Loaded on Vessel "Sirontalo V" Voyages (1991)  
(Main cargo loaded in addition to general cargo)

Voy.	Ports (see Table 6-19) / main cargo			
01	3/cement	5/copra		
02	2/flour	3/migrant passengers		
03	3/animal skin	4/migrant passengers		
04	3/rattan, copra			
05	5/copra	6/copra		
07	2/paper	3/fertilizer	6/copra	7/copra
08	6/copra	7/copra		
09	2/grain & rice, flour	5/copra	9/copra	
10	3/rattan, copra			
11	5/copra	6/copra		
13	4/copra	7/copra	8/copra	9/copra
14	5/rattan, copra	6/rattan, copra		

Source: DGSC



## 2) Container cargo movements

48. Container movements in Indonesia do not clearly specify on record whether they are international or domestic or whether empty containers are excluded in unit counting or not. But it is safe to assume that most of the container movements in Indonesia are considered international cargo or the domestic leg of an international movement.

49. For example, Pt. Tempuran Emas has a small container vessel ("SELAT MAS" 2,900 DWT) and two semi-container vessels ("PANTAI MAS" 2,700 DWT, "BUKIT MAS" 5569 DWT serving between Jakarta (Tanjung Priok) and Ujung Pandang on a weekly basis. Their main cargo is nutmeg and maize for export to Europe. Containers have to be unloaded in Tanjung Priok and the cargo is then restuffed into ocean-going carrier's containers.

50. Other container movements in Eastern Indonesia is done by conventional vessels but the number is very much limited. Among them are Bitung, Banjarmasin, and Biak which handled a couple of thousand containers in 1991. Even if outbound movements from Surabaya or Jakarta to Eastern Indonesia can be containerized, the vessel operators would have difficulty returning with those containers filled with suitable cargo, which would mean that the turn-around days of containers would be longer, or returning with empty containers. Either way, it would mean additional cost to the vessel operators.

## 3) Local shipping

51. Because of the deregulation of shipping routes, most of the local shipping companies are filed as such with DGSC for statistical purpose, but are actually serving inter-island ports.

52. Also, it is noted that there are a number of vessels with no regular routes engaged in local tramping service and many tugboats and barges are used.

53. Therefore, the so-called local shipping is virtually considered as a part of inter-island shipping except that the vessels are much smaller in capacity.

## 4) Perintis (Pioneer) shipping

54. The pioneer shipping routes are designated by the government and the operators are appointed by tender on a yearly basis.

55. For the year 1992/93, a total of 28 routes are designated to be served by 26 vessels (there are some combined routes). Out of these, 23 routes are in Eastern Indonesia participated in by eight shipping companies including PELNI. The routes in 1992/93 are quite similar to those in 1990/91.

56. In addition to the findings described in sectoral analysis, the summary of the 1992/1993 routes is shown in Table 6-21 while Figure 6-2 presents the overall picture of pioneer shipping routes.

## 5) Other cargo movements

57. Among other cargo movements, crude and fuel oil movements constitute a major portion of domestic cargo flow. Also, such oil movements are closely related to the development of other industries, thus affecting other cargo flow. Therefore,

the general situation of crude oil/fuel oil movements in Indonesia was also investigated.

Table 6-21 Summary of 1992/1993 Perintis Shipping Routes

Route	Base Port	Ship DWT	Voyage/ Year	Service Area (X)
(R-1/4)	(Sumatra)			(Sumatra)
(R-5)	(Surabaya)			(Islands off Surabaya)
R-6	Bitung	750*	30	SWN (Islands north of Bitung)
R-7	-do-	750*	30	-do-
R-8	Kupang	500#	15	NTC
R-9	(combined with R-8)			NTE/TIM
R-10	-do-	500#	15	-do-
R-11	(combined with R-10)			NTC/NTW
R-12	-do-	750	13	TIM/MKS/MKC
R-13	Ambon	750	7	MKS/TIM/Surabaya
R-14	-do-	750*	16	MKS
R-15	-do-	750*	15	MKS/TIM
R-16A	Ternate	500*	19	MKN/Bitung
R-16B	(combined with R-16A)			-do-
R-17	-do-	500*	20	MKN/MKC
R-18	Jayapura	750*	22	IJN/Sorong
R-19	-do-	350*	17	IJN
R-20A	Sorong	350*#	14	North neighbourhood of Sorong
R-20B	(combined with R-20A)			South neighbourhood of Sorong
R-20C	-do-	500*	24	Sorong neighbourhood and MKN
R-21	-do-	750*	19	Sorong neighbourhood and MKS
R-22	-do-	750*	12	-do-
R-23	Merauke	300#	12	IJS
R-24	(combined with R-23)			IJS
R-25	-do-	200#	24	IJS
R-26	Ujung Pandang	950*	20	SWS/KME
R-27	-do-	950*	11	SWSE/SWCE/SWN
R-28A	-do-	350*	12	NTC/Kupang
R-28B	(combined with R-28A)			SWSE

Note: \* Also accommodates passengers

# Landing Craft Type vessel (LCU)

(X) Ports of call are specified in the contract

IJ =Irian Jaya (N/north coast W/west S/south coast

KME=Kalimantan east MK=Maluku (N/north C/central S/south)

NT =Nusa Tenggara (E/east C/central W/west TIM=Timor

SW =Sulawesi (N/north CE/central east SE/southeast S/south)

Source: DGSC

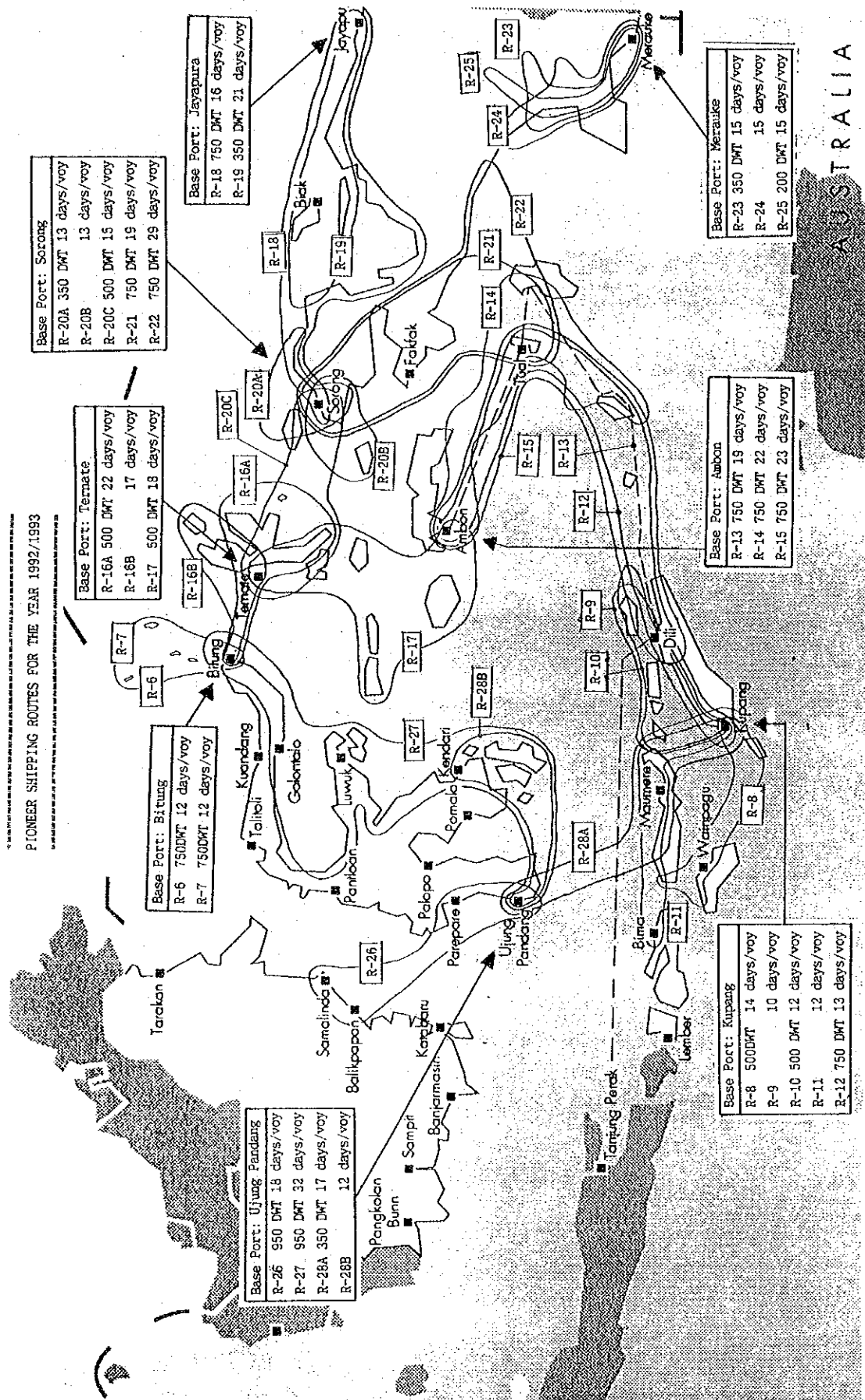


Figure 6-2 Pioneer Shipping Routes for the Year 1992/1993



58. Currently, among the four refineries, Balikpapan functions as the base port for supplying all the areas in Eastern Indonesia, with the main oil storage depots at Ujung Pandang, Bitung, Sorong, Biak, and Jayapura, from where further distribution is being made.

59. It is planned in the future that the transit terminal (which is in larger scale than those depots) will be installed in Ambon and Bali. Figure 6-3 shows the present crude and fuel oil movements, with planned additional facilities.

#### 6) Ferry routes

60. The ferry situation in Indonesia is under the jurisdiction of the Directorate General of Land Transport and Inland Waterways (DGLT).

61. In 1991, there were a total of 35 ferry routes in operation throughout Indonesia, as shown in Table 6-22.

Table 6-22 Ferry Routes in Indonesia

	No. of Routes	No. of Passengers	Cargo (Tons)
East Indonesia	19	5,870,722 (18.2%)	336,732 ( 4.6%)
Other Areas	16	26,324,258 (81.8%)	6,943,854 (95.4%)
TOTAL	35	32,194,980	7,280,586

Source: DGLT

62. As of June 1992, there are 39 ferry routes throughout the country, with a total of 100 ferry boats in operation. Among these routes, 27 connect two islands and the others ply the river, bay, or lake routes. The longer inter-island route is between Kupang in Timor and Kalabahi in Nusa Tenggara East, which is 137 miles.

63. By the end of 1992 or soon after, ten more new routes will be in operation, including the route between Balikpapan in Kalimantan and Mamuju in Central Sulawesi (153 miles), and the route between Bitung and Ternate (135 miles).

64. Out of the total 49 ferry routes, 31 routes are located in Eastern Indonesia.

65. The future long-term ferry route development concept plan has been drawn up by DGLT in November 1992. Its primary objective is to link the islands of the Indonesian archipelago by way of ferry crossing lines, which in turn would serve as the continuation of the highway from Western Indonesia to Eastern Indonesia with three trunk lines (north, middle, and south lines), supplemented by some north-south lines. This program will be included in the second 25-year-long national development plan (REPELITA VI - X).

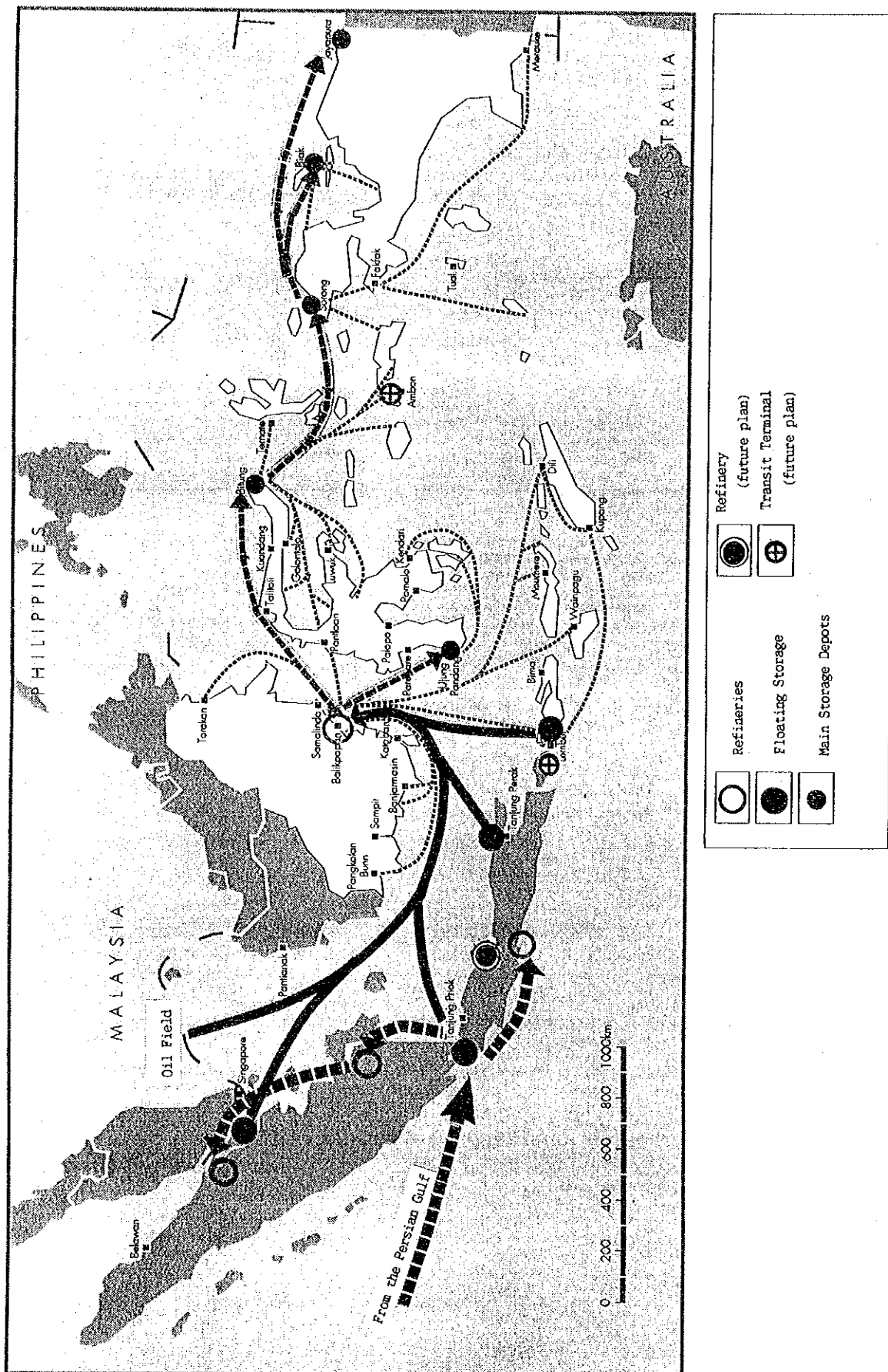


Figure 6-3 Present and Future Plan of Crude and Fuel Oil Movements

66. Under the concept plan, longer distant ferry service routes will be established, which will include such routes as between Kalimantan Central and Java Island (Kumai - Semarang, 265 miles), Kalimantan South (Banjarmasin) and Surabaya (268 miles), Kalimantan South (Batulicin) and Ujung Pandang (about 250 miles), and additional routes between Kalimantan East and Sulawesi west coast. These routes will be considered as one of the bases for the study of future sea transportation network in Eastern Indonesia.

67. Figure 6-4 diagrams the vision for the future ferry route development.

#### E. Navigational Control

##### Public sector's navigational control system

###### 1) Main function and organization of DGSC and KANWIL DEPHUB

68. At present, the Directorate General of Sea Communications (DGSC) of the Ministry of Communications consist of six directorates, all of which are concerned with the safety of vessel navigation.

69. Among those directorate, Dit. of Navigation (DITNAVIGASI), Dit. of Shipping and Safety (DITKAPPEL), and Dit. of Sea and Coast Guard (DITKPLP) are directly in charge of vessel navigation and safety.

70. There are 27 regional offices of the Ministry of Communications, KANWIL, which has two divisions at each office responsible for navigational control, i.e., the Sea Transportation Traffic and Port Division, and the Maritime Service Division.

71. The Sea Transportation Traffic and Port Division has the following functions:

- (a) to prepare the materials for control and guidance of all shipping activities and shipping routes within its region, including loading/unloading activities and other shipping supporting activities,
- (b) to prepare the materials for development, control, and guidance of port management, pilot services, construction and maintenance of port facilities and equipment, and dredging.

72. The Maritime Service Division has the following functions:

- (a) to prepare guidelines and to control the implementation of laws/regulations concerning,
  - (i) seaworthiness of ships and equipment,
  - (ii) the maintenance, repair, and construction of ships,
  - (iii) order in harbour and shipping activities;
- (b) to prepare the guidelines for salvage activities and underwater work,
- (c) to prepare the development and control of the implementation with regard to port and harbour safety, marine patrol and evaluation of safety and order in the respective region.

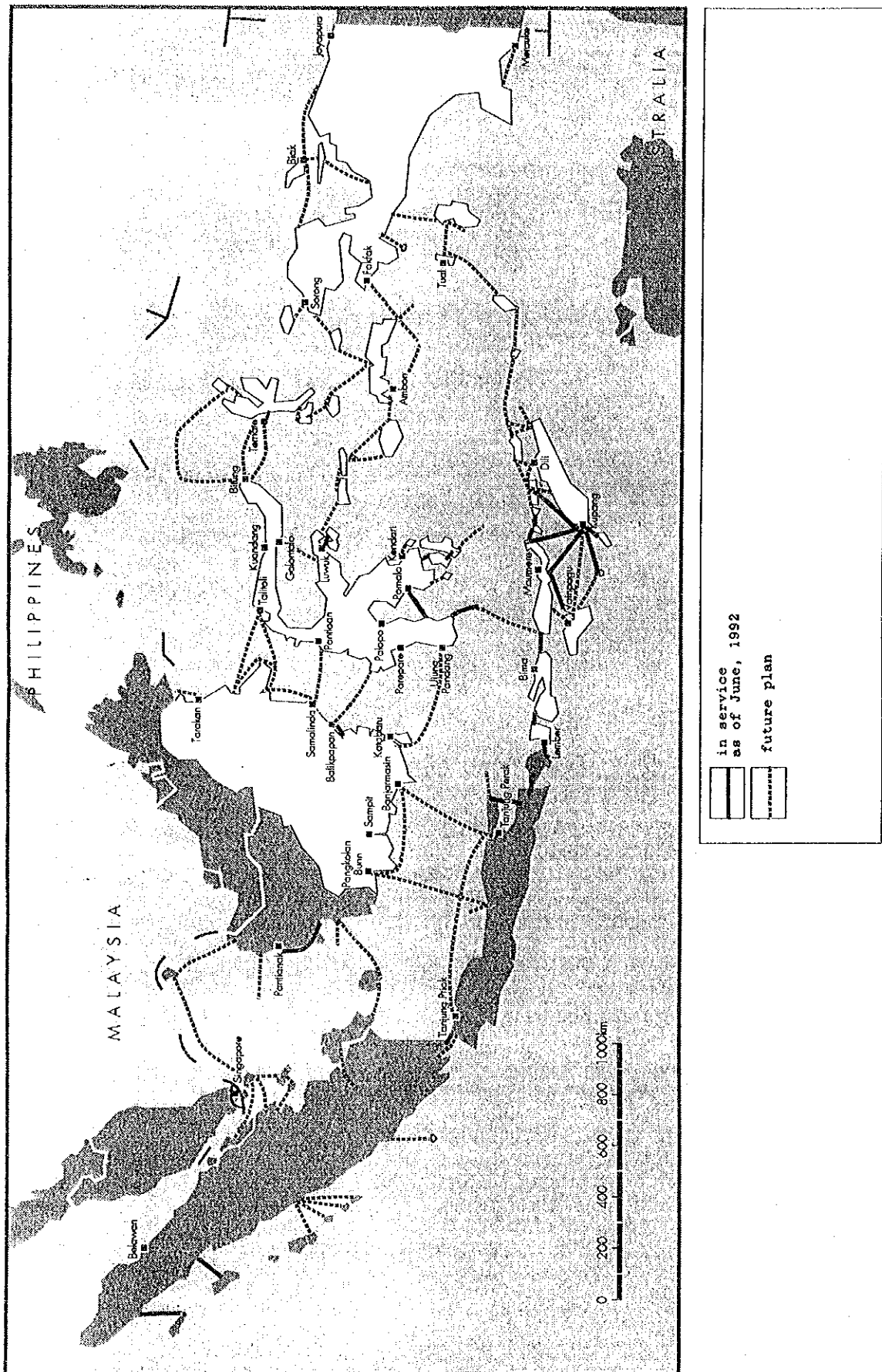


Figure 6-4 Future Ferry Routes

## 2) Emergency communication system

73. In order to immediately respond to emergency situations, the Government of Indonesia has developed the following communications system:

- (a) Maritime Search and Rescue (SAR) Communications System: An overall communication network linking 12 areas and vessels at sea by means of telephone, digital radio concentrator system (DRCS) and VHF radio system.
- (b) National Contingency Plan: The purpose of this plan is to mobilize local, regional, and national agencies in a prompt, efficient, and integrated manner, responding to an emergency marine environment pollution by oil spillage, through a nationwide information system linking all the government authorities and parties concerned. This scheme is shown in Appendix 6-3.  
As present the number of experts on oil spill at DGSC is about 15 and the equipment to stop oil spill such as oil booms, oil skimmers, and oil dispersants is only being leased from the oil company PERTAMINA.
- (c) Global Maritime Distress and Safety System (GMDSS): In order to meet the recommendations and guidelines of international organizations concerned such as IMO, the Government of Indonesia has been developing the GMDSS system to further improve the present SAR system.

## 3) Computerization

74. Since 1987, DGSC has been developing the Management Information System (PERLAMIS), utilizing 12 units of super micro-computer as a statistical tool for maritime data. The outline and flowchart of the system is shown in Appendix 6-4.

75. At present, the system itself is well-managed, but the following problems are pointed out:

- (a) Since reports being submitted to DGSC by shipping and non-shipping companies are not complete, it is hardly possible to prepare sufficient database.
- (b) Because of the hardware's limited capacity, it often takes a long time to process data and to further utilize the software to analyze the accumulated data in accordance with the various requirements.
- (c) The limited capabilities of the executive staff for system analysis and program applications.

## Owners/operators' navigational control system

### 1) Public owners/operators

76. PT. PELNI (PT. Pelayaran Nasional Indonesia) is the only state owned shipping company engaged in inter-island passenger ship service as well as cargo ship service, operating their own fleet on nationwide service routes, including the eastern part of Indonesia. As of 1992, the company owned and operated 10 passenger ships, 51 cargo ships including 12 vessels for pioneer ship service.

77. The company's organizational chart is shown in Appendix 6-5. Fleet operation, under the responsibility of the Business Director, has four main divisions, i.e., Passenger Ship Division, Cargo Ship Division, and Pioneer Ship Division, and Agency Division

78. Two communication systems are employed as follows:

- (a) Terrestrial System: Ship Stations-Coast Stations-Land Line and vice-versa
- (b) Satellite System: Ship Earth Stations-INMARSAT-Coast Earth Stations-Land Line and vice versa

79. To ensure the safety of navigation, the company has published a) the operation guide book per the Direktur Decision which stipulates the duty and work order of the master and crew, the resources and personnel required, and b) the instruction book for maintenance of ship and equipment including docking in compliance with the regulations concerned.

80. The Perum ASDP is the only state-owned ferry company under the control of DGLT. In 1990, the company owned 51 ferry ships, operated 35 ferry service routes including 17 routes in Eastern Indonesia as well as 10 ferry terminals. But most of the ferry ports are managed and operated by the Ministry of Communications.

81. Although the distance of ferry service is not so long (the average distance of 35 service routes is about 33 miles and the longest route is 137 miles of Kupang-Kalabahi route, as of 1992), the focus of attention is on the carriage of vehicles and operation of berthing/unberthing in order to ensure the safety of passengers.

82. Appendix 6-6 shows the organizational chart of Perum ASDP. The company is headed by a Managing Director, with a Supervisory Board. Three directors oversee the important aspects of Operating, Engineering, and Administration and Finance. Perum ASDP has 19 shipping branch offices and 7 terminal branch offices.

## 2) Private owners/operators

83. Private owners/operators may be classified according to the type of service being offered: passenger ship owners/operators and cargo ship owners and operators.

84. PT Kalla Lines is engaged in passenger shipping. The company owns and operates 10 vessels including 6 passenger ships for the main service routes Johor(Malaysia)/Surabaya/Ujung Pandang/Balikpapan and Surabaya/Banjarmasin in 1992.

85. A manual has also been prepared by the company outlining the duties of the captain and crew and instructions on the maintenance of their fleet. The operation of the fleet is controlled by the offices at the mother ports such as Jakarta, Surabaya, Ujung Pandang, and Balikpapan.

86. As regards cargo ship owners/operators, among the most active ones serving inter-islands in Eastern Indonesia are as shown in Table 6-23.

Table 6-23 Active Inter-island Cargo Shipowners/Operators in Eastern Indonesia

Name of Company	Fleet Size ( ) = DWT	No. of Employees ( ) = Seamen
PT. Pelayaran Meratus	11 (30,400)	506 (306)
PT. Salam Pacific	12 (17,972)	605 (448)
PT. Panurjwan	10 (25,985)	N/A

Source: DGSC

87. These shipping companies usually carry general cargoes such as electrical goods and garments for outbound trade, and the bulky cargoes like plywood, wheat and grain, and live cattle for inbound trade.

88. The organizational charts of PT. Pelayaran Meratus and PT. Salam Pacific, shown in Appendix 6-7, are presented as typical of cargo ship owners. Fleet operation is generally under the control of the company's Director of Business or Operation who is also in charge of business and cargo operation.

89. The technical section is in charge of the maintenance and repair of the ships, making sure that the ships are ready for operation and are seaworthy. Some companies have prepared the necessary guidelines/directives of navigation laws/regulations for the ships to ensure the safety of their fleet.

### 3) Shipping Associations

90. There are two major shipping associations in Indonesia: The Indonesian National Ship Owners' Association (INSA) and The Indonesian People Shipping Owners' Association (DPP PELRA).

91. INSA was established in 1967 and was recognized by the Indonesian Government as the sole organization of shipping companies. As of 1992, there are 521 member companies, including private companies, as well as the state-owned companies.

92. The purposes of the activities of INSA are as follows:

- (a) To participate actively in the development of national merchant activities by means of policing their own ranks and seeking the assistance of government and other concerned organizations in order to realize the national political doctrine and to achieve social justice and prosperity for Indonesia; and
- (b) To preserve the economic unity of Indonesia in order to minimize the economic dependency on foreign countries in the sea-borne trade.

93. As such INSA must be a partner to government, as it fulfills its responsibility of providing safety and order in the shipping business.

94. DPP PELRA, an organization similar to INSA, comprises 500 members of Rakyat owners, crew, and ship builders, representing the traditional shipping activities.

95. As to the rules and regulations being adhered to by all shipping owners/operators in Indonesia, Appendix 6-8 presents a concise discussion on this matter.

## Chapter 7 REVIEW OF THE PRESENT SITUATION IN SHIPBUILDING AND SHIP INSPECTION

### A. Preface

1. The purpose of the work at the first stage in Indonesia between November 1992 and February 1993 is to research and recognize the present situation of shipbuilding industries and the ship inspection activities executed in this Country, which should support the sea transportation of this Country.
2. Although principal theme of this study is specified that for Eastern Indonesia as clarified in the Inception Report, the study of shipbuilding industry has been made in allover the Country at first, then, deepened into Eastern Indonesia, because most of shipbuilding activities are seen in Jawa island as mentioned in this chapter.
3. Our study has been made by the corporation with Departemen Perhubungan (Ministry of Communications, MOC), Departemen Perindustrian (Ministry of Industry, MOI), Biro Klasifikasi Indonesia (BKI), IPERINDO in Jakarta and local harbour masters, various shipyards, etc..
4. Through this study work, a difficulty was found in statistical data which were supplied by various sources, because they use different items or categories in the data. It must be noted that some of the data in this report are adjusted or corrected from our field survey or our own judgment which is believed towards proper direction.

### B. Environmental Condition of Shipbuilding Industry

#### Fleet structure from shipbuilding point of view

5. Shipbuilding industries in this Country is now sharply growing in respect of both volume and technique for steel ships while traditional shipbuilders are continue to build wooden ships by conventional technique.
6. Indonesian merchant fleet for domestic sea transportation services can be roughly divided into steel ships and wooden ships (Kapal layar motor, KLM). Role of wooden ships fleet in sea transportation may not be negligible at present as shown in other chapter. However, this type of ship is not included in this study because the statistics are not sufficient and the modernization of sea transportation will be proceeded by steel ships from safety and efficiency points of view.
7. As a preparation of the study for shipbuilding industries, present scale of BKI class tonnage for all purposes by BKI's data is shown on Table 7-1. The itemizing of ship's kinds are followed to original BKI data. In principal, Indonesian flag ships must be registered in BKI except ships below 20m or 100 hp or 100 GT. "KLM" are not registered in BKI because they are built by very traditional method. In addition, the ships of Indonesian flag but registered to only other class than BKI are reported by research of BKI as shown on Table 7-2. Thus, it can be understood that Table 7-1 & 7-2 show almost all of Indonesian steel ships of all kinds only except pure governmental service ships or naval ships.



Table 7-1 Indonesian Fleet Tonnage by Principal Type of Ships

SHIP TYPE	END of 1989			END of 1991		
	NO	BRT	Ave. BRT	NO	BRT	Ave. BRT
CARGO SHIP	469	642,219	1369	533	795,069	1492
CONTAINER SHIP	10	91,886	9189	11	101,739	9249
BULK CARRIER	9	93,102	10345	9	86,147	9572
Dry Cargo Ships	488	827,207(100)	1695	553	982,955(119)	1777
Landing Ship	91	19,955(100)	219	109	26,389(132)	242
Ferry	81	38,269(100)	472	101	55,927(146)	554
Passenger Ship	11	81,902(100)	7446	14	103,080(126)	7362
Tanker	206	880,643(100)	4317	216	892,612(101)	4132
Fishing Boat	252	49,114(100)	195	291	55,113(112)	189
Tug Boat	721	72,301(100)	100	788	79,174(110)	101
Others	285	125,755(100)	441	306	132,092(105)	432
SHIP TOTAL	2135	2,095,146(100)		2378	2,327,342(111)	
BARGE TOTAL	1163	667,947(100)	574	1328	787,754(118)	593

Source: BKI, 1992

Table 7-2 Indonesian Fleet Tonnage (Not Registered to BKI)

SHIP TYPE	NUMBER	BRT	AverageBRT
Dry Cargo Ship #1	45	208,000	4,840
Tanker	8	22,200	2,780
Fishing boat	15	2,400	160
Tug Boat	5	400	80
Others	17	8,000	-
SHIP TOTAL	90	241,000	-
BARGE	20	13,900	700

Source : BKI, 1992

Note. : #1 Sum of 42 Cargo ships, 2 Container Ships, 2 Bulk Carriers.  
BRT of 2 out of 42 are not mentioned.

8. Total Indonesian steel ships tonnage of all kinds except barges are about 2.6 Million BRT, while dry cargo ships are about 1.2 Million BRT and tankers are about 0.9 M BRT.

9. The Table 7-1 also expresses change of the tonnage in recent two years. While increasement of total tonnage of steel ships (except barges) in this period is 111%, dry cargo ships, landing ships (shallow draft small cargo carrier with bow ramp for loading/unloading), ferries, and passenger ships are increased by higher rate than average. Those kinds of ships may be major demands for Indonesian shipyards.

10. Average size of the vessel is not big except passenger ships. Such sizes are within the range of ships which can be built by present building facilities in this Country. Indeed, majority of passenger ships in Table 7-1 are built in Germany, but smaller sized passenger ships are planned to build in this Country near future.

#### Age distribution of the fleet

11. Age distribution of Indonesian steel dry cargo ships of 500 BRT and above are analyzed from BKI data as shown on Figure 7-1. Specimen are firstly picked up from BKI's register book 1992 with supplement No.3 1992 and our own addition due to current situation of CARAKA JAYA PROJECT. But other ships completed in later half of 1992 (may be small ship) are not able to be accounted at this stage. Thus, total number of specimen are 365 ships which can be understood that almost all existing ships of such category are included. Specimen are divided into 3 groups in Figure 7-1 as follows :

Small size group : 500 BRT - 999 BRT  
Medium size group : 1,000 BRT - 4,999 BRT  
Large size group : 5,000 BRT & above

12. In general, 1,777 BRT of average size per ship of dry cargo ships as seen in the Table 7-1 is nearly confirmed by the Figure 7-1 because medium size group is largest among of the 3 groups.

13. From the Figure 7-1, it is clearly understood that peak tonnage by age is located in the range of 16 - 20 years old because of scrapping policy done in 1984 - 86. However, ships more than 21 years old are still about one third of medium size group. Such ships are considered to be replaced soon.

14. The Figure 7-1 also shown the ships which were built in this Country by shaded zone. Share of Indonesian built ship are 23% in small size, 8% in medium size and nothing in large size. In small size group, Indonesian built ships aged 11-20 include N-series (950 DWT) which were built as a standard cargo ship by PT. PANN in '70s.

In medium size group, young Indonesian built ships are CARAKA JAYA TYPE (3,000 - 3,650 DWT) which is also a standard cargo ship. CARAKA JAYA PROJECT is now going on as schedule to complete more 14 ships in 1993 and 1994 which is very effective to renewal of Indonesian fleet.

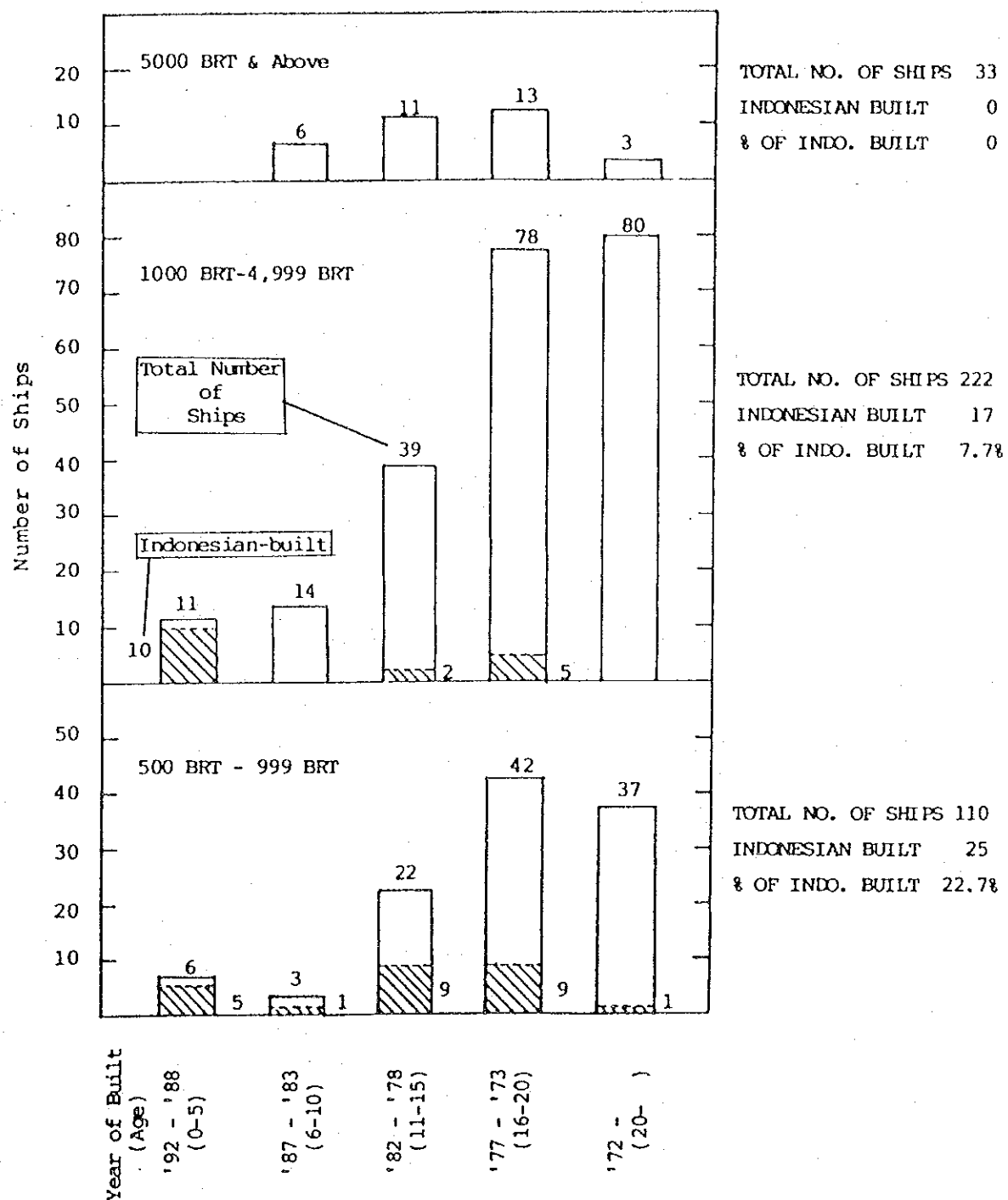


Figure 7-1

Distribution of Ages by Size of Dry Cargo Ships  
(500 BRT and Above)

### C. Structure and Present Activity of Shipbuilding Industry

#### Number of shipyards and their distribution

15. By the data from MOI, 123 shipyards are spread in all over the Country from Aceh to Irian Jaya. By analyzing from the data, they can be divided that 87 shipyards have newbuilding facilities and 107 shipyards have repairing facilities. (Many shipyards have both facilities) They are doing either new building or repairing with flexible operation by common facilities but majority of them are small and local.

16. Distribution of the shipyards having the facilities capable to handle ships 500 BRT and above by area located is shown on Table 7-3. Total number of such shipyard for newbuilding are 25 and for repairing are 38. It is very clearly noted that, as far as the newbuilding facilities of ships over 1,001 BRT, 8 shipyards out of 9 are located in Jawa island.

17. As for the repairing facilities, distribution by area is rather inclined into westside of the Country while there is a few in Eastern Indonesia. The principal shipyards for repairing are shown in Table 7-4.

Table 7-3 Shipyards Distribution by Area and Scale

Figures show number of shipyards

AREA	NEWBUILDING FACILITY (BRT)				REPAIRING FACILITY(BRT)			
	501- 1000	1001- 3000	3001- 10000	10001- above	501- 1000	1001- 3000	3001- 10000	10001- above
SUMATRA	6	—	1	—	5	5	2	1
JAVA								
DKI JAKARTA	3	1	2	1	2	1	—	1
WEST JAVA	1	—	—	—	—	—	1	—
CENTRAL JAVA	2	1	1	—	3	—	1	—
EAST JAVA	1	—	1	1	2	—	3	—
KALIMANTAN	2	—	—	—	7	—	—	—
EAST INDONESIA	1	—	—	—	3	1	—	—
TOTAL	16	2	5	2	22	7	7	2

Source: MOI, 1992

Table 7-4 Facility of Principal Shipyards for Repairing

SHIPYARD (*:Persero)	PLACE	PRINCIPAL REPAIRING FACILITY
<LARGE-SIZED>		
PT. Pertamina	† Dumai	F/D 20,000BRT and 15,000BRT
PT. DKB UNIT-I	† Jakarta	F/D 12,000BRT, 6,000BRT, 3,500BRT etc.
<MEDIUM-SIZED>		
PT. Bahtera Tirta	† Batan	F/D 8,000BRT (Now in PT DKB JKT)
PT. Intan Sengkunyit	Palembang	S/W 4,000BRT, 2,000BRT, etc.
PT. DKB UNIT-Cirebon	† Cirebon	G/D 5,360BRT
PT. Jasa Marina Indah	Semarang	G/D 5,360BRT
PT. PAL	† Surabaya	F/D 5,000BRT*2 etc.
PT. DOK Surabaya	† Surabaya	F/D 6,000BRT, 4,000BRT, 2,500BRT etc.
PT. Dumas	Surabaya	G/D 5,360BRT

Source: MOI, 1992

Note: F/D=Floating Dock, S/W=Slipway, G/D=Graving Dock.

#### Governmental organization

18. Indonesian shipbuilding industries are positioned as one (1) of National strategic industries out of ten (10) of them. It is clearly understood because the shipbuilding industries are so important to support the sea transportation in such vast archipelago.

19. The industries are principally supervised by Direktorat Jenderal Industri Mesin Logam Dasar dan Elektronika (Directorate General for Machine, Basic Metal and Electronic Industries) of MOI while shipping and its supporting activity such as port administration, harbour master's office, ship registration, aids to safety navigation, seamen's education etc. are supervised by Direktorat Jenderal Perhubungan Laut (Directorate General of Sea Communication) of MOC.

#### Overall output

20. Output of Indonesian shipbuilders in 1990, 91 and 92 are shown on Table 7-5 according the data from MOI.

Total monetary output in 1992 is about 300 Billion rupiah (about 150 Million U.S. Dollars) by newbuilding and repairing except off-shore structure.

21. Although the output is clearly increasing by years, the output seems to be not sufficient yet to support the Indonesian fleet. If 2.1 million BRT of steel cargo ships and tankers as mentioned before is divided by 25 (assumed year of life) annual replacement will be roughly 84,000 BRT. Of course, additional tonnage is needed according to the economic development and various services.

Necessary tonnage can be supplied by either import or own-build, however, ships for domestic services are better to be built in the Country from various aspects. Development of the shipbuilding industries seems to be necessary and should be supported by the other sectors concerned.

Table 7-5 Summary of Activity Records of Indonesian Shipbuilding Industry

TOTAL VALUE shows in Million Rupiah.

	1990		1991		1992	
	VOLUME	TOTAL VALUE	VOLUME	TOTAL VALUE	VOLUME	TOTAL VALUE
NEWBUILDING (NB)						
BRT	32,620	53,015	40,915	133,215	51,037	142,094
HP	21,580	33,785	19,950	16,750	8,649	25,265
SUM (NB)		86,800		149,965		167,359
REPAIRING (RP)						
Docking Repair. BRT	1,305,318	85,100	1,483,950	103,995	1,483,028	114,978
Do. HP	307,730	12,490	425,625	13,380	317,297	9,861
Floating Repair. BRT	3,875,813	12,560	2,995,955	11,280	2,175,486	10,580
Do. HP	324,885	2,350	454,945	3,025	322,911	1,897
SUM (RP)						
BRT	5,181,131	97,660	4,479,005	115,275	3,658,514	125,558
HP	632,615	14,840	880,570	16,405	640,208	11,758
TOTAL (NB+RP)		199,300		281,645		304,675
OFFSHORE STRUCTURE	TON 15,780	187,900	TON 15,175	209,445	TON 18,750	400,000
GRAND TOTAL		387,200		491,090		704,675

Source: MOI, 1991 & 1992

### Caraka jaya project

22. In the part of this work, CARAKA JAYA PROJECT must be mentioned. It is a scheduled serial newbuilding of a standard cargo ship for domestic interisland services. The project was planned in 1984/5 by REPELITA IV, then, following to the Phase-1 which was finished by completion of 5 ships, Phase-2 is started for 24 ships expecting all delivery in the beginning of 1994. Present situation of the Project is shown on Table 7-6.

23. 4 ships in Phase-2 are already completed in 1992 and about 10 ships may be completed in 1993. It can be expected that output in 1993 will be remarkably increased. This Project has to be evaluated to make a great incentive for development of the shipbuilding industries.

### Output by shipyards

24. All newbuilding of any kinds of steel ships 500 BRT and above built since 1980 are shown on Figure 7-2 by shipyard basis. This was made based on BKI data with addition by the survey work. Total number of ships are 61 which contain 24 cargo ships including 10 CARAKA JAYA type, 15 tankers, 7 ferries, 6 self propelled barges, 4 landing ships, 3 supply boats and 2 dredgers. In the Figure 2, P.T. DKB means summation of 4 shipyards after their mergering while all others are 1 shipyard in 1 company.

25. Average size of the products in big 4 companies are more than 1,000 BRT while all others are less than 1,000 BRT, but all shipyards have built many small (less than 500 BRT) size ships other than this records.

26. Newbuilding of ferry boats for domestic services planned by Direktorat Jenderal Perhubungan Darat (Directorate General of Land Communication) of MOC is one of main stems of the shipbuilding demand. Actual order made in 1990 and 1991 are 21 ferries and 7,650 GT (average BRT is 364) with 9 shipyards. Major builders are as follows :

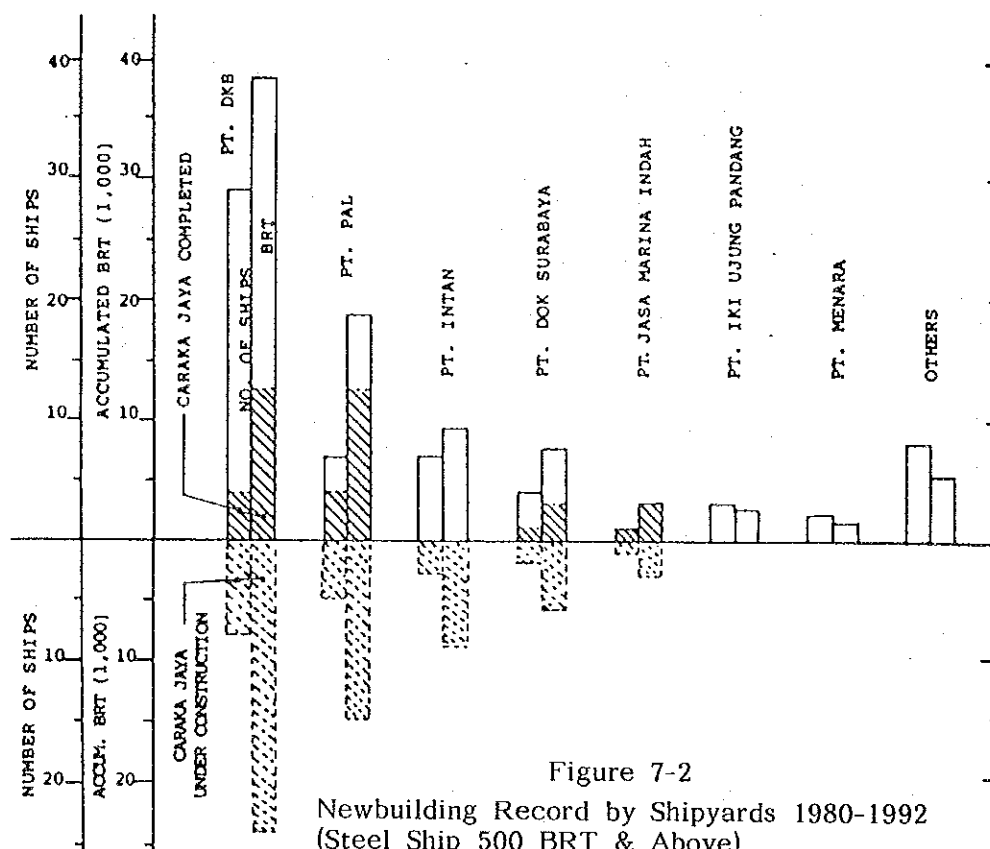
P.T. Dumas (Surabaya)	4 ships / 1,900 GT
P.T. DKB Palembang	4 ships / 1,300 GT
P.T. Noahts (Lampung)	3 ships / 1,150 GT

Table 7-6 Situation of "CARAKA JAYA PROJECT" as of the End of 1992.

BUILDING SHIPYARDS	PHASE-1 (1988-1990) 3,000DWT G/C	PHASE-2(1991-1994), 3,650DWT G/C or S/C		
		Order	Launched	Completed
PT. DKB. UNIT 1 (JKT) UNIT 2 (JKT) UNIT 3 (JKT) UNIT Semarang	3 (1) (1) (1)	9 (G/C)*1  (8) (1)	5	1
PT. PAL. (Surabaya)	2	10 (S/C)*1 (-3)*2	3	2
PT. Dok. Surabaya (Surabaya)		2 (+1) (S/C)	1	1
PT. Jasa Marina Indah (Semarang)		1 (+1) (G/C)		1
PT. Intan Sengkunyit (Palembang)		2 (+1) (G/C)	2	
TOTAL	5	24	11	5

Note:\*1 G/C : General Cargo Ship, S/C : Semi Container Ship.

\*2 3 ships are shifted to each 1 for PT.Dok Surabaya, PT.Jasa Marina Indah and PT.Intan Sengkunyit.





In addition, 6 ferries are added by 1992 budget, but many old ferries are still working.

27. Newbuilding order by P.T. Pertamina (PERSERO) is also one of major demand for the Indonesian shipyards. According to the P.T. Pertamina's data on the end of 1990, Indonesian shipyards built 35 ships including 5 of 3,500 DWT oil tankers, 2 of 4,200 HP tug boat etc. in 1980s. In 1993, ships under construction in Indonesian shipyards for P.T. Pertamina's own or charter are 15 service boats and 7 oil tankers including 2 of 6,500 DWT class. P.T. Pertamina owns 70 oil tankers (average 15,200 DWT) and 360 service ships including 96 tug boats (Average 1,528 HP). Replacement of the fleet must be necessary in good order because many aged ships are still working while safe and reliable distribution of oil in the Country is essentially important.

#### Present situation of principal shipyards

28. As shown on Table 7-3, number of principal shipyards which have capability of newbuildings for 1001 BRT and above are nine. Eight of nine are located in Jawa Island. Field survey has been done mainly such shipyards and shipyards in Eastern Indonesia. Their present situation are summarized in Table 7-7 from new building point of view. Other detail information obtained at field survey are useful for further steps.

29. Division of shipyards according to the size in Table 7-7 are made through the survey work but it is almost corresponding to the division in the Table 3.

30. In Table 7-7, it is clear that majority of principal shipyards are owned by the Government (PERSERO, one type of BUMN, Badan Usaha Milik Negara), however, it was felt that no significant differences are found in their enthusiasm to develop their activity between PERSERO and private own.

#### P.T. DKB and P.T. PAL

31. Character of P.T. DKB (PERSERO) and P.T. PAL (PERSERO) must be mentioned because those 2 companies are on leading position in the industries as seen on the Figure 7-2.

32. P.T. Dok Perkapalan Kodja Bahari (DKB) was established in 1991 by mergering of 3 companies located in Jakarta, and absorbed in 1992 P.T. Dok & Galangan Kapal Nusantara who had 3 shipyards in Jakarta, Cirebon and Semarang. Now, P.T. DKB has main shipyards as follows and total employees of the company are about 2,400.

Unit 1 in	Tanjung Priok, Jakarta	(Ex. P.T. Kodja)
Unit 2 in	Do.	(Ex. P.T. Dok Priok)
Unit 3 in	Do.	(Ex. P.T. Pelita Bahari)
Unit 4 in	Do.	( Do. )
Unit Semarang	(Ex. P.T. Nusantara)	
Unit Cirebon	( Do. )	

It is a remarkable thing that 18,900 GT ro/ro trailer ship for Swedish owners is now under construction at P.T. DKB UNIT 4.

Table 7-7 Present Condition of Indonesian Principal Shipyards for Newbuilding

Shipyard (Location) * = Persero	Newbuilding Facility		Major Products	
	Existing	Under Construction or Planning	Ever Built	Under Construct. or On Orderbook or Planning
<LARGE-SIZED YARD> PT. DKB. UNIT 4 (Jakarta)	B/B 20,000BRT (227m×36m)	Up to 50,000DT as Building Capacity. B/D 100,000DT (309m×62m)		18,900GT RO/RO (Exp.) 16,000DT Tanker(Do.)
PT. PAL. (Surabaya)	B/D 13,400BRT (238m×28m)	B/D 30,000BRT (300m×32m) (Almost completed)	CARAKA JAYA Phase 1&2 6,500DT Tanker Jet Foil Boat	CARAKA JAYA Phase 2 500 PAX. Passenger Ship Naval Ships
<MEDIUM-SIZED YARD> PT. DKB. UNIT 2 (Jakarta)	B/B 3,350BRT × 2 (150m×42m together) B/BS 3,350BRT (150m×17m)	—	N-Series Cargo Ship CARAKA JAYA Phase 1&2 1,500DT Self-propelled Barge	CARAKA JAYA Phase 2 3,500DT Tanker (Exp.)
PT. DKB. UNIT 3 (Jakarta)	B/D 6,000BRT (120m×22m)	—	CARAKA JAYA Phase 1&2 6,500DT Tanker	CARAKA JAYA Phase 2 6,500DT Tanker (Exp.)
PT. JASA MARINA INDAH (Semarang)	B/B 3500BRT (102m×21.5m)	New factory in reclaiming area. (200m Dock)	CARAKA JAYA Phase 2 Tug boats	CARAKA JAYA Phase 2
PT. DOK PERKAPALAN SERABAYA (Surabaya)	B/B 3,500BRT (110m×25.4m)	—	N-Series Cargo Ship 5,000GT Ferry CARAKA JAYA Phase 2 1,500DT Self-propelled oil barge.	CARAKA JAYA Phase 2
PT. INTAN SENGKUNYIT (Palembang) <Adiguna Group>	B/B 3,500BRT (180m×22m)	B/B 8,000BRT (180m×35m)	7500DT Cargo Ship 3,500DT Tanker CARAKA JAYA Phase 2	CARAKA JAYA Phase 2
<SMALL-SIZED YARD> PT. DKB. UNIT 1 (Jakarta)	B/BS 2,000BRT (100m×20m)	—	N-Series Cargo Ship CARAKA JAYA Phase 1 1,500DT Self-propelled oil barge.	1,500DT Tanker(Exp.)
PT. DUKAS (Surabaya)	B/B 670BRT B/D 5,360BRT(125m×20m) can be used for newbuild or repair	15ton railed crane under fabrication.	1,500DT Self-propelled oil barge. Tug boats & Ferries	600GT Ferry 3,200HP Tug Boat
PT. DKB. UNIT SEMARANG (Ex. Nusantara)	B/BS 3,000BRT (Not well maintained)	Under reinforcing for CARAKA JAYA Phase 2	N-Series Cargo ship 950GT Tanker 1,500DT Self-propelled oil barge.	CARAKA JAYA Phase 2 (Assembling only)
PT. INGGOM (Jakarta) <Adiguna Group>	N/B or R/P 4-Trucks(each 75m) with 1-Shifter (1,000TLC)	B/BS 4,500BRT (200m×20m)	N-Series Cargo Ship 4,200HP Tug Boat with Z-Prop.	1,500 Tanker×2

Source: MOI's Data, 1992 with addition by field survey.

Note: B/B=Building Berth, B/BS=Building Berth but Side Launching, B/D=Building Dock, TLC=Tons of Lifting Capacity.

33. P.T. PAL is held by BPIS who is a Governmental organization for strategic industries. Task of P.T. PAL is to pull up the shipbuilding technology in this Country. P.T. PAL's products are spread to turbine, diesel, high speed craft etc. from conventional ships. Design and drawings of CARAKA JAYA TYPE are supplied by P.T. PAL for other shipyards concerned and 3 CARAKA JAYA ships in the order book are shifted to other shipyards for brushing up their technical level. P.T. PAL also has a training center of yard's workers. Total employees of the company are about 5,000.

#### D. Shipyards in Eastern Indonesia

34. According to the MOI's data, total number of shipyards recorded in the Eastern Indonesia except Kalimantan are 22 but shipyards having capacity for ships 500 BRT and above are 4 as shown in the Table 7-3, while only one shipyard is doing newbuilding and repairing parallelly.

Field survey has been done for selected shipyards in heart of Eastern Indonesia such as Sulawesi, Maluku and Irian Jaya, because Bali, West Nusa Tenggara and East Nusa Tenggara have no shipyard and Kalimantan is little far from main water of Eastern Indonesia. Geographical relation with Jawa island of such shipyard is shown in Figure 7-3.

35. Present situation of the shipyards surveyed is summarized on Table 7-8. Their main activities are ship repairing and seen rather busy. Only Ujung Pandang shipyard of P.T. IKI has experienced newbuilding of ships 500 BRT and above and is going to build bigger ships if new facility is realized.

36. 4 shipyards out of 7 in the Table belong to the company of other industries and they are usually occupied for taking care of their own fleet. On the other hand, main demands for other 3 shipyards come from the ships working locally such as fishing boats, ferries, tug boats, governmental service ships etc., while merchant cargo ships, in most cases, go to Jawa for docking because of scale of facilities and cheaper cost.

37. Due to remote of the location from central industrial area like Jawa, the materials required for repairing work may be more expensive than those in Jawa. As a example, cost for replacing steel plate is higher in Ambon than in Jakarta and supply of oxygen is not easy to obtain by competitive price in Ambon.

38. Fundamental facilities in Eastern Indonesian shipyards are slipways and mobile cranes while there is no graving dock. Slipway and mobile crane are flexible for either newbuilding or repairing depending on the situation and may be low cost. Existing maximum capacity of slipways in the area is about 500 tons which is not big enough to lift up a cargo ship of 1,000 DWT Class.

# DISTANCE BY SEA ROUTES FROM SURABAYA

TO UJUNG PANDANG	: 458 SM (847 KM)
TO AMBON	: 986 (1824)
TO BITUNG	: 1193 (2207)
TO SORONG	: 1306 (2416)
TO JAYAPURA	: 1940 (3589)
TO JAKARTA	: 392 (725)

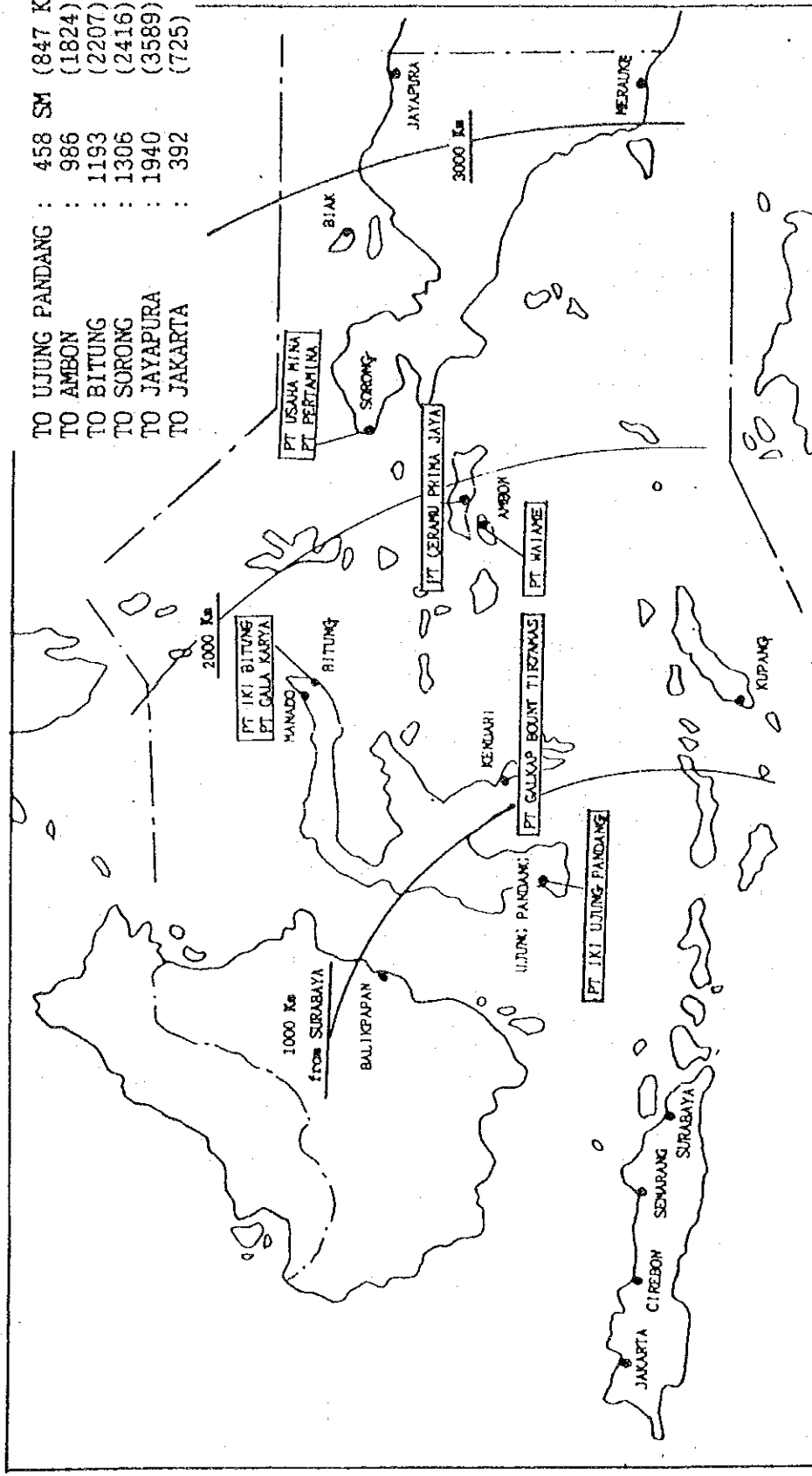


Figure 7-3  
Geographical Relationship of East Indonesian Shipyards

Table 7-8 Shipyards in Sulawesi Maluku and Irian Jaya

SHIPYARD (*: Persero)	FACILITY (NB: Newbuilding, RP: Repairing)		NEWBUILDING RECORD	PRESENT ACTIVITY
	PRESNT	FUTURE PLAN		
PT. Industrial Kapal Indonesia (IKI) * UJUNG PANDANG	RP&NB: 4-Side Trucks (335BRT each) with 1-Shifter(500TLC)	NB: B/BS 4,000DWT RP: G/D 120m*18m (abt. 6,000GT)	500GT Ferry Boat 1,500DWT Self-propel led oil barge.	1-Barge under construction 38-Laminated Wooden Boats (Planning) Repairing for mainly Ferry Tug boat etc.
Do. BITUNG *	NB: B/B 135BRT*2 (200TLC) RP: S/W 270BRT*3 (300TLC) S/W 200BRT*1 (200TLC)	RP/NB: 1,000TLC*1	250GT Ferry Boat	Mainly repairing No orderbook on NB
PT. WAIAVE (Ambon) *	RP: S/W 335BRT*1 (500TLC) S/W 200BRT*1 (200TLC)	RP/NB: 1,000TLC*1	-	Repairing for Fishing Boat Ferry etc.
PT. USAHA MINA (Sorong) * <Fishing Co. >	RP: S/W 335BRT*1 S/W 200BRT*1	-	-	Repair. for own or related Co.'s Fishing Boats.
PT. PERTAMINA (Sorong) * <Oil Co. >	RP: S/W 670BRT*1 (250TLC)	RP: S/W 1,500TLC*1	-	Repair. for own ship(70%) and Fishing ship(30%)
PT. GALA KARYA (Bitung) <Shipping Co. >	NB: B/B 670BRT*1 RP: S/W 1,000BRT*1 (800TLC)	(COULD NOT COFIRMED IN THIS SURVEY)		
PT. CERAMU PRIMA JAYA (Ceramu Island) <Dejanty Group>	NB: B/B 400BRT*2 RP: S/W 2,000BRT*1 S/W 1,700BRT*1	-	-	Repair. for only own group ships, carrying wooden prod ucts.

Source: MOI's Data, 1992 with addition by field survey.

39. If such class becomes more common for local services near future, repairing facilities in the area seems to be insufficient for the merchant ships, because docking in Jawa area must disturb the ship's availability if the ships have no regular service to Jawa.

#### E. Shipbuilding Technology

##### Size and kinds of products

40. As one of the measuring scale, records of distinctive ships ever built are as follows picked up from the data of IPERINDO etc.

Cargo ship : 950 DWT (Loa = 59.9 m) .....	1977
3,000 DWT (Loa = 98 m) .....	1988
3,650 DWT (Semi-Container Type Loa = 98m) .....	1991
Oil tanker : 3,500 DWT (Loa = 89.8m) .....	1985
6,500 DWT (Loa = 99 m) .....	1992
500 DWT Landing type Cargo Ship (Loa = 48.9 m) .....	1982
5,000 GT Passenger/Car Ro/Ro Ferry (Loa = 105 m) .....	1989
4,200 PS Tug Boat with Z propellers (Loa = 37 m) .....	1985
1,000 DWT Split Barge Dredger (Loa = 54.5 m) .....	1982
900 DWT Sailing/Motor Cargo Ship (Research Purpose Loa=63m). .....	1990
5,000 TLC Floating Dock .....	1990

41. Followings are now under construction/on-order or very realistic project in near future.

18,900 GT RO/RO Trailer Ship for foreign owners :  
 166 m (Loa) x 27.7 m (Breadth), 2 x 6,000 hp Diesel Engine  
 16,000 DWT Tanker for foreign owners  
 133.8 m (Lpp) x 23m, 1 x 4,800 hp Diesel Engine  
 CARAKA JAYA PROJECT Phase 3 (may be started in this year) :  
 About 24 ships of 4,000 DWT Semi-Container Ship for major coastal area.  
 Passenger Ship for domestic service by P.T. Pelni :  
 500 Passengers Type as similar to German-built ship.

42. In addition to the CARAKA JAYA Phase 3, following movements on shipbuilding field are found in the course of field study although their future process or reality are not confirmed.

PALWA BUWANA PLAN : 10,000-30,000 DWT Class Container Ship  
 Standard type of laminated wooden boats :  
 for fishery or other general services  
 Standard and Modernization of Wooden Ship :  
 A valuable report in technical aspect has been made by a committee composing with DGSC, BKI, ship owners and a university.

#### Level of technology

43. It is clear that size and kinds of products are steadily growing, however, almost all ships were built for domestic clients with some assistance from outside of the shipyard. This means less familiar with international shipbuilding practices such as quality levels, accurate delivery, guarantee etc.

44. Basic shipbuilding technique such as quality of welding, accuracy of hull steel block, surface preparation for painting etc. are necessary to improve further. Also, management (or control) for executing the work well on schedule are to be improved. To establish well-prepared building schedule from design to ship's delivery and to execute it on right time is most important to reach competitive levels in all aspects.

45. In respect that shipbuilding industry is a kind of assembling industry, supporting industries are also important for building up of self-standing shipbuilding industry. Although survey for that industry is not done in this period, several shipyards require to receive "Package Deal" at present in order to upgrade the ship's quality and overall productivity, because design stuff is not sufficient to purchase many equipment.

46. There are three National university having naval architecture course and around 100 graduates are expected every year namely.

Institute Technology of Surabaya (ITS) at Surabaya  
Hasanudin University at Ujung Pandang  
Pattimura University at Ambon.

Other two universities (one is private) have also similar course.

One International sized ship model basin (236 m x 14 m) is under construction in the place of ITS by supporting of P.T. PAL in addition to existing small one. Such fundamental activities shows a potentiality of development of the industry.

#### F. Summary of the Study on Shipbuilding Industry

47. It can be believed that the study in this time as summarized above are concluded with satisfaction and will be fully utilized on the next step.

48. One of things to be carefully considered is how to create the position and the role of shipbuilding industries in Eastern Indonesia because the ships for that area can be built in Jawa area and more efforts to improve even for the principal shipyards are necessary. This should be studied in further stage.

#### G. General Situation of Ship Inspection Activities in Indonesia

##### Ship inspections relating to ship safety

49. Ship inspection is the invisible backbone for the safety of ships. It plays a very important role in keeping the persons aboard ships safe and comfortable, in

normal conditions and in emergencies. In order to insure human beings with a uniform high level safety of life at sea, international agreements have been adopted by many countries in the form of conventions and other agreements.

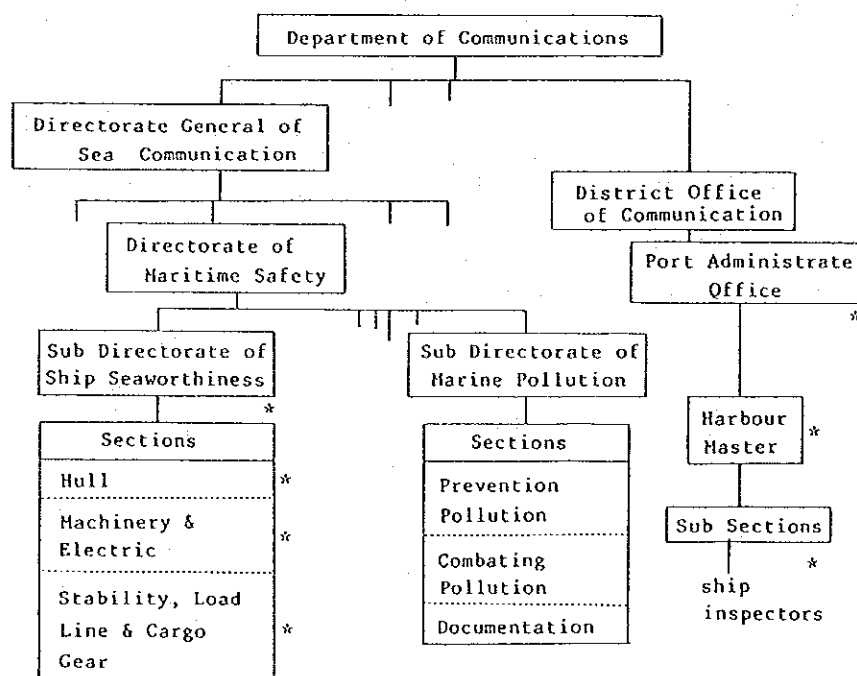
50. The Republic of Indonesia ratified the 1974 SOLAS convention as well as other conventions regarding ship safety. The existing ship safety fundamental law of Indonesia. "Ordonansi Kapal-kapal 1935" was established in 1935 and has been enacted. Meanwhile SOLAS convention was adopted, enacted and replaced and then amended for its satisfactory implementation, the contents of which have been well taken into the legislation of the Republic.

51. The related decrees under Ordonansi Kapal-kapal 1935 are as shown in the following :

Peraturan Kapal-kapal - 1935	(Ships Regulations)
Pengumuman-pengumuman Pengawasan Pelayaran	(Shipping Control Announcement)
Petunjuk Pengawasan Kapal-kapal	(Ship Inspection Guidance)

Other numerous documents have been issued by the Communication Ministry offices to define procedures of ship inspections or interpret the regulations in detail, although they are not referred to in this report.

52. The government organization concerned with ship safety and ship inspections is marked as \* in the diagram.



53. In the Republic, the related legislation is implemented by the operational units in provinces. Ship inspectors carry out ship inspections directly.

54. In order to study these circumstances, a study team of the project has visited the Directorate of Sea Communication in Jakarta and Port Administrations in local areas according to the following tour schedule.



#### schedule

period	45 days (1992.11.04 --- 1992.12.18)		
local offices in	(in the sequence of visiting)		
	Banjarmasin	Balikpapan	Samarinda
	Surabaya	Ujung Pandang	Bitung
	Ambon	Sorong	Denpasar

55. The results gave rise to an opinion that the Republic is enacting the ship safety legislation in a systematically and practically satisfactory way of operation in all respects. But on the other hand the study team held an opinion that the Republic will develop into a new age with her mercantile fleet expanding remarkably for domestic and foreign trade at the advent of the twenty-first century and that it may become impracticable to maintain the existing style of legislation and administration as it is.

56. The 1983 amendment of SOLAS 1974 requires each country to possess a type approval system. The Republic will soon have various industries of the lifesaving appliances which require the type approval system. This system will have to be established sooner or later in future. GMDSS is being phased in reaching its full application in 1999. Other amendments of international conventions and agreements are under consideration for more perfect safety of life at sea. The rules are never fixed permanently, but subject to incessant review and amendment. Ship inspections are laid down in them, and then a higher level of ship inspections will be called for in future. Upgrading of the level of ship inspection will have to be made in future by reinforcing the inspection methods and the implementation power. This would be a secure way in Indonesia's ship safety in coping with the new rules and the oncoming surf of foreseen increase in her mercantile fleet with the background of various industries at their start for advancement in this archipelagic country, especially in the eastern parts of the Republic of Indonesia.

57. The study team has considered the above circumstances and is, for the moment, of the opinion that the existing ship inspection system of Indonesia matches perfectly enough the existing infrastructure of the republic, and that the current system of ship inspections can be described from the various viewpoints as in H.

#### Ship inspection relating to marine pollution prevention

58. Marine pollution prevention is one of the major issues being addressed internationally to each nation. An international convention which is the Protocol of 1978 relating to MARPOL 1973 has been signed and ratified by the Republic. The protocol has 5 annexes of MARPOL, 4 of which are in effect, and oil pollution prevention is the first annex to have come into force practically.

59. The Republic has prepared several decrees with relevance to the marine pollution prevention such as Keputusan Menteri Perhubungan 1990 (Decree of the Ministry of Communications) regarding "Pencegahan Pencemaran oleh Minyak dari Kapal-kapal (prevention of pollution by oil from ships)".

60. The survey team, has had, apart from ship safety, the opportunity of studying an aspect of marine environmental protection for pollution by oil in Indonesia.

61. It was told that in the local ports the team visited, shore reception facilities have neither been established nor operated. But during the survey on the other hand, ships of at least 400 tons gross tonnage in these ports were found that they were equipped with oily-water separators with or without a sludge tank. Some ships had a sludge tank of sufficient capacity enabling unloading the accumulated sludge to shore when they get into a dockyard. Those ships without a sludge tank may have a hard time in handling the sludge. In future, the shore reception facilities or mobile reception facilities are anticipated for presenting convenience to dispense with the accumulated sludge on board ships in various ports, and it is noted that the ships required to be fitted with oily-water separators by the provisions of MARPOL should perfectly satisfy those provisions.

#### H. Study Results on Ship Inspections

62. The study made by the team is generally described in G. Detailed consideration will be given in this part H by breaking down the circumstances into various phases such as command line of the Ministry of Communications connecting the central office with local offices with respect to ship inspections, job arrangement, related laws, decrees and ministerial documents, inspection equipment and peripheral equipment, frequency of inspection, training of ship inspectors, system and reporting of ship inspections, rule-making mechanism and international contribution thereof.

63. Generally speaking, Indonesia's existing conditions regarding ship inspections do not necessarily suffice the current circumstances in every respect, but the inspections are carried out in a steady state. The study here will include aspects regarding not only the existing features, but also, to some extent, the future phases which are expected.

#### Participation in rule-making

##### 1) Domestic rule-making

64. Domestically, when provisions of rules are considered, it is desirable to have them discussed by related quarters of the country through consideration in a meeting or through document consideration, in order to have them match the existing circumstances, and to expect smooth implementation of the provisions. The related quarters referred to may include scholars, shipowners, shipbuilders, classification societies and neutral organizations. They may wish to join the work and contribute to the development of the state through rule-making. The current administration does not include consideration in this regard.

##### 2) International contribution

65. Participation in various international conferences and meetings related to ship inspections and safety of life at sea has been made very faithfully by the Indonesian delegations. It is preferable to have discussions with related quarters in order to formulate the policy of the Republic of Indonesia before the participation, and it is also preferable to have the movement or tendency of international rules known to every person concerned. The related parties referred to above may include scholars, shipowners, shipbuilders, classification societies and neutral organizations as mentioned in paragraph 64. The current administration does not include consideration in this regard.

## New act and related matters

### 1) New act

66. The fundamental act concerning ship safety, etc., "Bill of the Republic of Indonesia on Navigation", has been signed by the President of the Republic of Indonesia. This act will come into force in 1994. Under this act various decrees and orders will be considered for new promulgation or dissemination. They are awaited anxiously.

### 2) Command line

67. The government should have a strong tie between the central office and the local offices in order to realize its perfect administration. The command line is considered to be an important feature in the matter of ship inspections. It should be strong and perfect. On the other hand the circumstances are changing. Eastern Indonesia is expected to have more activities in the maritime transportation, and the industries and livelihood more varied in the quality and scale in the next decade, hence more complexity in ship inspections will be required. The stricter and stronger command line especially in the matter of technical aspects of ship inspections between the central office and local offices will be required in future. Even now the line should be reviewed for betterment in stringency.

### 3) Independence of ship inspection job

68. In local offices, a Port Administrator has under him an organ entitled Harbour Master. The Harbour Master has as his job "harbour job" (surveillance of ships entering and leaving a port)" and "ship inspection". Ship inspectors are assigned to the organ entitled Harbour Master and perform their duties. The Harbour Master himself carries out ship inspections as long as he is qualified as ship inspector, and usually he is. If ship inspections are separated from the harbour job, the circumstances of ship inspections are expected to improve satisfactorily. Ships inspection is a system to be applied and executed for ensuring the safety of ships. This separation is an important reform which is awaited.

### 4) Type approval

69. Type approval is a means of approving a kind of equipment manufactured on a production line in a more efficient way than by a piece-by-piece production in order to secure the uniform character and function of products which are essential to the safety of life and ships. This system has been required especially for lifesaving appliances in accordance with the provisions of SOLAS 1974 (1983 amendment).

70. It is told that the industry in lifesaving appliances is springing up in Indonesia. If Indonesia should have the type approval system, the provisions of international agreements might be satisfied and simultaneously the demand of the domestic industrial circles will also be satisfied. The industrial circles will be sure to enjoy the system.

71. In addition to the type approval system referred to above, other systems of inspections which make a product capable of being produced and inspected by the government even before the ship is defined can be considered. These systems can be utilized when a product is required to be inspected in a system other than a type approval system.

#### 5) Classification societies

72. B.K.I., a classification society of Indonesia is performing its own business in a satisfactory manner. The activities are very secure and active. According to the Indonesian government policy all the Indonesian flag ships which have L of 20 metres or greater, GT of 100 tons or greater, or power of 100 horsepower or greater are required to be classed in B.K.I. (Ministry of Communication instruction No. IM.8/AL.407/PHB-81 dated March 23, 1981). B.K.I. is also authorized to issue load line certificates.

73. B.K.I. and other classification societies may involve potentiality in the future probable contribution to the internationally and domestically mandatory governmental inspections, if the government examines and sanctions their rules on an official basis.

#### 6) Reporting

74. Reporting on the results on ship inspections by the provincial offices to the central office in Jakarta is in good operation. It is important for the central office to collect data on ship inspections performed in local offices in order to get statistics which will be useful for producing materials necessary for fixing its future policy. The current reporting does not include detailed facts such as the number of visits made by ship inspectors for on-the-spot inspections in terms of the kind of inspection (e.g. periodical, intermediate, special).

#### Training and assignment of ship inspectors

##### 1) Job arrangement of ship inspections

75. The job arrangement of the central office regarding ship inspections at the central office is apparently perfect for the current style of management. In future the pressure of inspection jobs will increase in the head office and local offices because of the change in quality and quantity of the Indonesian merchant fleet with more passenger ships, chemical carriers, multi-hull vessels, high speed ships, etc. At present the central office does the job of inspections which will need help by the local offices. If helped, then the central office may direct its efforts to more administrative areas. A part of the jobs now held by the central office that can be shifted to local offices will be the design inspections of newly built ships, etc.

##### 2) Number of ship inspectors

76. The number of ship inspectors is considered to be appropriate and they are very well planned and distributed for the existing inspection procedures, taking into account their specialty and experience. But inspection procedures are under constant review, and in the near future it may become necessary to reconsider the number of ship inspectors in order to cope with the changing circumstances of ship inspections in the Republic.

### 3) Training of ship inspectors

77. Training of ship inspectors has been well planned and performed systematically. This brings about very good results.

### 4) Trimming of documents

78. Documents regarding ship safety have been issued in a great profusion to secure ship safety and to keep the ship inspection system intact. They are prepared and sent to local offices. They are important documents which may include problems on such matters as system, implementation, preparation, application, and certification concerning ship inspections. They may also be relevant to the technical references regarding steel ship structure, wooden ship structure, propulsion machinery, ship equipment, lifesaving appliances, fire-fighting equipment, subdivisions, fishing vessels, passenger ships, dangerous goods carriage, etc. They are so tremendous in number that the study could not include the examination of these documents. For the future inspection system they may be utilized effectively by trimming and re-editing.

## Peripheral affairs

### 1) Equipment of ship inspections

79. Various pieces of ship inspection equipment provide very useful means for ship inspectors to carry out their job properly and safely. They are available in local offices as well as the central office. But they are not necessarily sufficient in view of non-destructive testing devices (magnetic particle examination, penetrant examination, etc.), mechanical, electrical, electronics and chemical measuring devices (e.g. bar gauges, meggers, thickness gauges, oxygen concentration meters), safety protective equipment (e.g. safety shoes) and the peripheral devices such as telefax devices and copying machines.

### 2) Transportation means

80. Transportation may be either provided by the ship inspection applicants (e.g. shipowners, shipbuilders) or offered by the local offices for ship inspection purposes. Some transportation means in local offices are very important for carrying ship inspectors from the local offices to the ship inspection sites, or to port state control sites, by car or by boat depending on the local office circumstances. According to the study of the team, the transportation means will become not entirely reliable in some local offices in the very near future for the ship inspection purpose because of ageing of the vehicles.

## Others

### 1) Inspection fees

81. No fee is charged to an applicant or else for the government ship inspections of Indonesia. There might be some room for considering collecting fees from the viewpoint to secure financial resources for establishing future inspection basis.

## I. Summary of the Study on Ship Inspections

82. Various study results on ship inspections were introduced in paragraphs G and H. In this paragraph the ship inspection systems of both ship safety and marine pollution prevention are summarized as in the following.

### Rule-making

83. When rules are considered domestically or internationally, private sectors, scholars and neutral organizations may wish to take part in the rule-making in future. Now they do not take part in the job.

### Strengthening of command line

84. The command line of ship inspections connecting the central office of the Ministry of Communications and ship inspectors should be stringent. It has to increase in strength, especially in technical aspects.

### Independence of ship inspection system

85. Ship inspection jobs are being carried out as a partial work of a harbour master. Separation of ship inspection jobs from other jobs is important to bring forth efficient results.

### Type approval system

86. On account of the existing circumstances of the Republic's industry, there has been established no type approval system for lifesaving appliances, etc.

### Classification societies

87. Classification societies have potentiality to contribute to the governmental inspections.

### Reporting on ship inspections

88. The results of ship inspections are channeled from local offices to the central office. More detailed contents of reports will be necessary for inspection planning.

### Job of the central office

89. The job of the central office regarding ship inspections should be administrative, and in future the jobs may become more planning-directed and be more regulatory.

#### Number of ship inspectors

90. The number of ship inspectors is considered appropriate and they are properly distributed, for the current inspection procedures. Reference is made to Appendix 4-2, Part II for the current number and distribution of ship inspectors.

#### Training of ship inspectors

91. The training of ship inspectors is well planned and perfectly performed. Reference is made to Appendix 7-1 Part I, Appendix for the training program.

#### Documents of ship inspections, ship safety and pollution prevention

92. The documentation work of various requirements for ship inspections, safety and pollution prevention is quite active in the central office. More work will be required in future for proper harmonization and unification of various documents, which expectation of the new act coming into effect in 1994.

#### Inspection devices

93. Distribution of ship inspection devices should be put to future consideration in view of inspection implementation, inspector's safety and peripheral support of the job.

#### Inspection fees

94. Inspection fees are not collected for ship inspections in the current system of the Government of Indonesia. Collecting inspection fees is a means to improve inspection circumstances.

#### Oily-water separators

95. Installation of oily-water separators on board ships should be encouraged.

#### Shore reception facilities

96. Shore reception facilities for oily waste are not built at ports.

97. East Indonesian district offices of the Ministry of Communications are far-flung bases for ship inspection. They should be quite tight in relationship with the main office of the Ministry on the point of inspection implementation in a nationwide unified manner as well as rapid reaction to the new waves of present day naval architectural technology including submersible type of ships, GMDSS-related instruments, non-destructive tests and high-speed craft. However, they are now quite separately positioned by their distant location, lacking in present day office equipment which needs modernization such as telefax equipment and copying machine, devoid of recently developed or expensive inspection devices, and inconvenient in having access and exposure to new technology. These matters are the features of the east Indonesian ship inspection.