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# BASIC DESIGN STUDY REPORT ON THE PROJECT FOR PROVISION OF PATROL SHIPS FOR ANTI-PIRACY, ANTI-MARITIME TERRORISM, AND NON-PROLIFERATION IN THE REPUBLIC OF INDONESIA

**May 2006**

**Japan International Cooperation Agency**
**Shipbuilding Research Centre of Japan**

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# PREFACE

In response to a request from the Government of the Republic of Indonesia, the Government of Japan decided to conduct a basic design study on the Project for Provision of Patrol Ships for Anti-Piracy, Anti-Maritime Terrorism, and Non-Proliferation in the Republic of Indonesia and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Indonesia a study team from 3rd October to 29th October, 2005.

The team held discussions with the officials concerned of the Government of Indonesia, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Indonesia from 23rd March to 29th March, 2006 in order to discuss a draft basic design, and as this results, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Indonesia for their close cooperation extended to the teams.

May 2006

Masafumi KUROKI
Vice President
Japan International Cooperation Agency

May, 2006

# Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Provision of Patrol Ships for Anti-Piracy, Anti-Maritime Terrorism, and Non-Proliferation in the Republic of Indonesia.

This Study was conducted by Shipbuilding Research Centre of Japan, under a contract to JICA, during the period from September, 2005 to May, 2006. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Indonesia and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Yushu WASHIO
Chief Consultant
Basic design study team on
The Project for Provision of Patrol Ships for Anti-Piracy, Anti-Maritime Terrorism, and Non-Proliferation
Shipbuilding Research Centre of Japan


Location Map of the Republic of Indonesia


Location Map of The Project Site


**Perspective of 27m Type Patrol Ship**

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## Abbreviations

| | |
|---|---|
| ARF | ASEAN Regional Forum |
| BAKORKAMLA | Badan Koodinasi Keamanan Laut (Maritime Safety Coordination Agency) |
| BAPPENAS | Badan Peruncanaan Pembangunan Nasional (National Planning & Development Agency) |
| DMP | Directorate Marine Police |
| DWT | Dead Weight Ton |
| GAM | Free Ache Movement |
| ICC | International Chamber of Commerce |
| ICITAP | International Criminal Investigative Training Assistance Program (Program under the FBI of USA) |
| IMB | International Maritime Bureau (a subordinate organization of ICC) |
| INP | Indonesia National Police |
| JI | Jemaah Islamiya |
| PROPENAS | Program Pembagunan Nasional (National Development Plan) |
| PSI | Proliferation Security Initiative |
| ReCAAP | Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia |
| RENSTRA | Renchana Strategis Pembangunan Kelautan dan Perikanan (Strategic Plan of Marine and Fishery Development |

# SUMMARY

The Republic of Indonesia, (henceforth called Indonesia) located right on the equator, is the world's largest islands country that consists of 17,500 islands in a vast extension of 5,000 km from east to west and 2,000 km from south to north. The development of marine transport field is therefore extremely important from the viewpoints of acceleration to unite the whole nation and to sustain transport infrastructure in the economic activities.

In reality, the marine transport fields is quoted in the Development Program of transport related facilities/infrastructure in PROPENAS (2001～2005). The following are, among others, recommended in RENSTRA (2001～2005) which has been designed based on the PROPENAS;

① Improvement of safety and quality of marine services

② Assistance to reinforcement of the related infrastructure, marine transport method and network

Meanwhile, piracy/armed robbery incidents have been internationally increasing (188 cases in 1995, 325 cases in 2004), which have become more atrocious, organized, and internationally syndicated, and the importance of marine safety measures has been increasing consequently. The territorial waters of Indonesia have especially become piracy-prone area, where about 30% of the world records on piracy incidents are reported. At the Malacca Strait, one of the arteries of the international marine transport, there are about 200 ships navigating through every day and meanwhile annually there are about 14,000 ships which have some connection with Japan. It is getting an urgent issue for Indonesia to strengthen marine safety measures, because the piracy incidents (37 cases in 2002) now account more than 10 percent in the world record. In addition, an issue on arms contraband has become the focus of attention in the Malacca Strait, and thus the arms contraband obstruction action at the edge of the waters is becoming an important subject in view of arms non-proliferation.

Indonesia has been executing joint patrolling together with Malaysia and Singapore. In accordance with ReCAAP, Information Coordinating Center in Singapore is scheduled to inaugurate in 2006. The system to share piracy information and the network enable multi countries to coordinate joint actions are started to formulate. Indonesian National Police has been trying to hold back the piracy/armed robbery incidents for themselves through strengthening watch and patrol operation in some designated areas in the territorial waters; nevertheless, it becomes an urgent task for them to have new patrol ships to be deployed in the vast territorial jurisdiction for they are short of high speed patrol ships and are insufficient for marine police operations.

Under the circumstances, the Government of Indonesia made an official request to the Government of Japan concerning the construction/procurement of three patrol ships under the grant aid scheme in order to

strengthen their capabilities of anti-piracy and armed robbery in the Malacca Strait and in response to the request, JICA performed the preparatory survey in May, 2005. The survey team had confirmed that the Department of Marine Police, Indonesian National Police is a principal agency for the piracy and armed robbery operation, and that improvement of capabilities for marine safety system by procurement of additional patrol ships is urgently required to suffice their shortage of patrol ships (particularly, high speed ships necessary for chasing piracy boats) in the existing fleet. It had also confirmed that the Department of Marine Police is totally unrelated (can not be related) to the defense matters (armed forces affairs), and Indonesian National Police in principle, does not enter under the command of army, thus canceling the probability that patrol ships to be procured might be diverted to military purposes. In the light of the survey results, the Government of Japan decided to carry out the basic design study for this project.

JICA, accordingly, dispatched the basic design study team from 2nd to 29th of October, 2005. The team had confirmed the substance of official request in a series of discussions with the authorities concerned at Indonesia side and had continuously performed the field survey on the operation, maintenance system, communications system, natural conditions of designated areas, ship maintenance/repair facilities in and around the project sites, etc. In compliance with the field survey results, the team had carried out the basic design work in Japan regarding the number of ships to be procured and the details of its specifications. JICA dispatched the mission to Indonesia from 23rd to 29th of March, 2006 and had mutually confirmed the contents of basic design, undertakings to be shared by Indonesia, and others.

The number of ships necessary in the project shall be at least three is confirmed based on the following assumptions that the project sites are Belawan, Tanjung Batu, and Jakarta Bases those confronting the piracy prone areas in the Malacca Strait (Areas in and close to the separated traffic zone off Medan, Areas connected the Singapore Strait and the Malacca Strait, Natuna Sea east side of the Singapore Strait) and that the patrolling shall be operated on a 24-hour bases in combination work with the existing patrol ships.

With regard to patrol ship's specifications, the designing and selection of apparatus/equipment are prepared in such concept as safety-first, economical, easy-maintenance in compliance with the consultations with Indonesian parties concerned in which the patrol ships shall have enough cruising miles so as to eliminate patrolling blank areas as quickly as possible in and around the piracy prone areas. The most appropriate hull structures is also carefully studied by referring to guide lines related to patrol ships construction in Indonesia, Japan's relevant rules and regulations as supplemental references, and design standard for patrol ships of Japan Coast guard, besides the actual patrolling conditions in the sea areas.

The following is the outlines of the final study.

| Items | Specifications/Contents |
|---|---|
| Number of Patrol Ships | 3 units |
| Type | 27m type patrol ship |
| Navigation area | Coastal service(JG 4-th class ship for coastal area, Safety Regulation for Ship of Japan) |
| Standard | Conform to Japan Coast guard Standard (inspected by Nippon Kaiji Kyokai(NK) during the construction |
| Principal particulars | |
| Principal dement ions | |
| Length(overall) | Approx. 27.00m |
| Length(water line, designed) | Approx. 25.50m |
| Breadth(mld) | 5.60m |
| Depth(mld) | 2.80m |
| Draft(mld,at designed full load) | Approx. 1.10m |
| Speed | Approx. 30 knots(with F.O. 5,000L) |
| Endurance | Approx. 600N.M.(at 12kt) |
| Complement | 12 persons (crew 10, suspect 2) |
| Machinery | |
| Main engine | |
| Propeller, shaft, rudder | Diesel engine 2,000ps x 2,000rpm x 2 units |
| Generator | 2 units each<br>Generator 25kva x 225 v x 2 units |

In case this project is materialized under the grant aid scheme of Japan, the provisional project cost shall total 1,920 million Japanese Yen (about 1,919 million Japanese Yen to be shared by the Government of Japan, about 610 thousand Japanese Yen by the Government of Indonesia)
The whole implementation period shall be of about 18 months which includes bidding process for selection of shipbuilder.

Upon finalizing the implementation, the operation/maintenance of patrol ships shall be commenced by the Department of Marine Police (patrol ship attached to Jakarta Base), under the Indonesian National Police, North Sumatra Marine Police (patrol ship attached to Belawan Base), and Riau Marine Police (patrol ship attached to Tg. Batu Base), both are under the Department of Marine Police. They are considered sufficiently qualified to execute operation/maintenance, as there are no serious problems found in terms of facilities and technology levels at shipyards managed by each Marine Police Base who are having more than ten engineers respectively.

The operation cost shall additionally required for respective Marine Police Bases, namely, 2,624 million Rp for Jakarta Base, 2,982 million RP each for Belawan and Tg. Batu Bases in order to maintain a 24-hour

patrolling operation. It has been confirmed during the field survey that the budget shall be allocated in the National Police Mid-term Operation Plan (2007～2011) aiming at securing the planned operation/ maintenance program which has resulted from the consultations held between the Department of Marine Police and respective provincial marine polices.

The following are the benefits directly or indirectly expected from the implementation of this project.

(1) Direct benefit

1) A 24-hour patrolling shall be realized in the piracy prone areas by the patrol ships to be procured in collaboration with the existing patrol ships at each Marine Police Base.
2) The patrolling range shall be extended to 250 N.M. in radius from each Marine Police Base thus making possible to cover the entire piracy prone areas.

(2) Indirect benefit

1) To contribute improvement of marine safety system against piracy in the Indonesian territorial waters focusing on the Malacca Strait
2) To contribute stabilization of ship navigation in the Malacca Strait

The improvement of safety of ship navigation in the Malacca Strait by implementation of this project shall, besides such social benefit in Indonesia as to dissolving social instability and helping to materialize the national development, greatly contribute to social and economic stabilization in Japan as well as those countries that benefit from utilization of the Malacca Strait. It is therefore considered quite appropriate to implement this project under the grant aid scheme.

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# CHAPTER 1 BACKGROUND OF THE PROJECT

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According to the annual report on piracy incidents (including attempted) issued by Piracy Information Center (Kuala Lumpur), International Maritime Bureau (IMB) under International Chamber of Commerce (ICC), piracy incidents have broken out frequently in South-east Asia monopolizing 48% of the world record in 2004. Indonesia is the country with the highest risk ratio where about one third of world piracy incidents broke out (107 cases on an annual average from 1999～2004). In case piracy incidents occurred in the territorial waters of Indonesia and those in the Malacca/Singapore Strait combined together, the total number is 138 incidents in 2004, more than 42% of piracy incidents in the world. It is reported that the same group has pirated repeatedly at the most dangerous sea area in the Strait.

Table 1-1 Piracy Breaking Out Numbers in the World

| Year | Whole world | Whole South-east Asia | The Malacca/ Singapore Strait | Indonesia |
|---|---|---|---|---|
| 1999 | 300 | 167 | 16 | 115 |
| 2000 | 469 | 262 | 80 | 119 |
| 2001 | 335 | 70 | 24 | 91 |
| 2002 | 370 | 170 | 21 | 103 |
| 2003 | 445 | 189 | 30 | 121 |
| 2004 | 329 | 158 | 45 | 94 |

Jamaah Islamiya (JI), key members still on the run, suspected of connection with a series of terror incidents generated in Indonesia since the bomb terror incident on Bali Island in October, 2002, has kept smart capability to execute some terror incidents, marine terror included. The threat to terror should be still seriously considered in Indonesia. It is suggested that JI has held a network with Al-Qaeda and been smuggling in the weapon from the neighboring countries.

Japan is the country who uses the Malacca/Singapore Strait most frequently. About 80 % of imported oil comes to Japan, loaded in VLCC, navigating through the Strait. The safety of the Strait is a matter of life or death for Japan's overall economy. The threat to terror is being heightening, as in addition to recent increasing piracy incidents reported, there is terror possibility at sea is pointed out that terrorists might hijack a LNG tanker for trying an assault on a port. Should a terror at sea rises at the Malacca Strait, it might cause serious damages to the world economy.

As the tendency of piracy these days, in particular after the year 2003, the organized piracy/armed robbery incidents has increased who has utilized high-speed boats and been armed with sophisticated weapons and they tend to kidnap the crew members for ransom. These incidents are considered to break out that they

have network connecting between land and sea, and are looking for a chance by using camouflaged fishing boats. The time of such crimes are centralized on from midnight toward dawn. The crimes are likely to increasingly occur to targeting slow-speed tugboats with their barges, similarly to the case of Idaten incident in March, 2005, becoming more atrocious, and complicated. The Directorate of Marine Police (DMP), Indonesia National Police (INP), responsible and authorized to administer marine crimes, piracy included, has executed patrolling operation, though their limited capabilities, and started joint patrolling at the provincial police level in cooperation with Malaysia Marine Police and Singapore Coast Guard in 90's. However, the Directorate of Marine Police, Indonesia National Police, Riau Marine Police and North Sumatra Marine Police under their command, governing the Malacca/Singapore Strait, the most important sea area and Natua Sea, east of the Singapore Strait, escape routes for pirates, are equipped with several numbers of small patrol ships. There are only two ships respectively which are suitable to patrolling at open sea capable of cruising at high speed with sufficient navigation distances. Due to shortage of necessary patrol ships, they are unable to organize a regular patrolling system over the jurisdiction area, which, further, put them unable to chase pirate's boats at the time of crimes breaking out.

In September, 2004, the Government of Indonesia made an official request to the Government of Japan concerning the grant aid cooperation with respect to construction/procurement of three high speed patrol ships, C-1 class (more than 22.5m) with first rate seaworthiness, in order to strengthen their marine security system and, in particular, to reinforce patrolling systems over the piracy prone areas, the Malacca/Singapore Strait and its surrounding sea areas. In response to the request, the Government of Japan dispatched the preparatory study team in May, 2005. The team confirmed the necessity of the project, and studied the organization of Indonesia National Police, executing agency, that they are independent organization from the Army thereby no possibility the patrol ships might be transferred to military purposes.

The specifications of patrol ships at the time of preparatory study are as follows. It describes only three patrol ships, C-1 class (length overall more than 22.5m, Max. speed about 35 knots) according to technical guidelines for ships attached to Indonesia National Police, without any further details.

Table 1-4 Specifications of Patrol Ships Requested

| | Specifications |
|---|---|
| Length overall | More than 22.5m |
| Cruising Distance | |
| Speed (Max) | About 35 knots |
| Particular equipment | ARPA |
| | Radar |
| | GPS |
| | Speed Log |
| | Echo Sounder |
| | Night scope |

During the preparatory study, provincial marine police, operation side made a request that they preferred to receive B-3 class patrol ships capable of coping with marine conditions at the Malacca Strait to C-1 class, however, the team only requested that Indonesia side should submit the data/information to prove its necessity.

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## 2-1 Basic Concept of the Project

### 2-1-1 Overall Goal and Project Purpose

Indonesia is an archipelago country, consisting of 17,500 islands in a vast geographical territory which extends 5,000 km from east to west, girded by several important International Sea Lanes. To build up maritime transport security is one of the crucial tasks for Indonesia since it is assisting the national development program. Nevertheless, these days, crimes at sea, in particular, piracy and armed robbery incidents to ships in Indonesian territorial waters and its peripheral waters have been increasingly rampant. The weapons used in terrorist's activities are said to be smuggled in the Malacca/Singapore Straits, piracy prone area. It is also pointed out that marine terror incident might break out in the Strait.

In the circumstance, Directorate of Marine Police (DMP), Indonesian National Police (INP), responsible agency for maritime security, is performing to suppress piracy and armed robbery incidents by means of strengthening patrols in the incidents-prone areas, however, they are not able to execute sufficiently their patrolling operations in the designated vast sea areas because of patrol ship shortage which is a must facility to tracking down piracy boats. The Government of Indonesia has a program to increase number of patrol ships to the level of those in the developed countries based on the mid/long term strategy.

This Project is therefore aiming at materializing procurement of patrol ships in order to fill up the shortage of patrol ships attached to Directorate of Marine Police, INP, and extending the technical assistance related to operation/maintenance, which, in the end, would build up marine security system in and around the Malacca Strait.

### 2-1-2 Basic Concept of the Project

In order to attain the overall goal, the following are programmed, namely deployment of 27m class patrol ships (each one ship, totaling 3 ships) to Tg. Batu Base, Riau Province Marine Police, Belawan Base, North Sumatra Province Marine Police, and Jakarta Base, Directorate of Marine Police, INP , those which are adjacent to sea areas connected to the Malacca Strait and technical assistances for ship operation planning and personnel training. Patrol ships in the Project will be cooperating with the existing patrol ships belonging to those Bases as well as with patrol ships dispatched from neighboring countries for participating in the joint patrolling in the Malacca Strait. In case of an emergency, they rush onto crime scene to rescue

the damaged ships, search, chase, and arrest the pirate's boats. In consequence, it is expected that the maritime security system shall be built up towards the Malacca Strait as its central figure, in Indonesian territorial waters.

## 2-2 Basic Design of the Requested Assistance

### 2-2-1 Design Policy

#### 2-2-1-1 Basic Design Policy

(1) Study on Project Sites

The Malacca Strait, about 490 miles (about 900 km), is roughly divided into the three important sea areas from the viewpoint of patrolling.

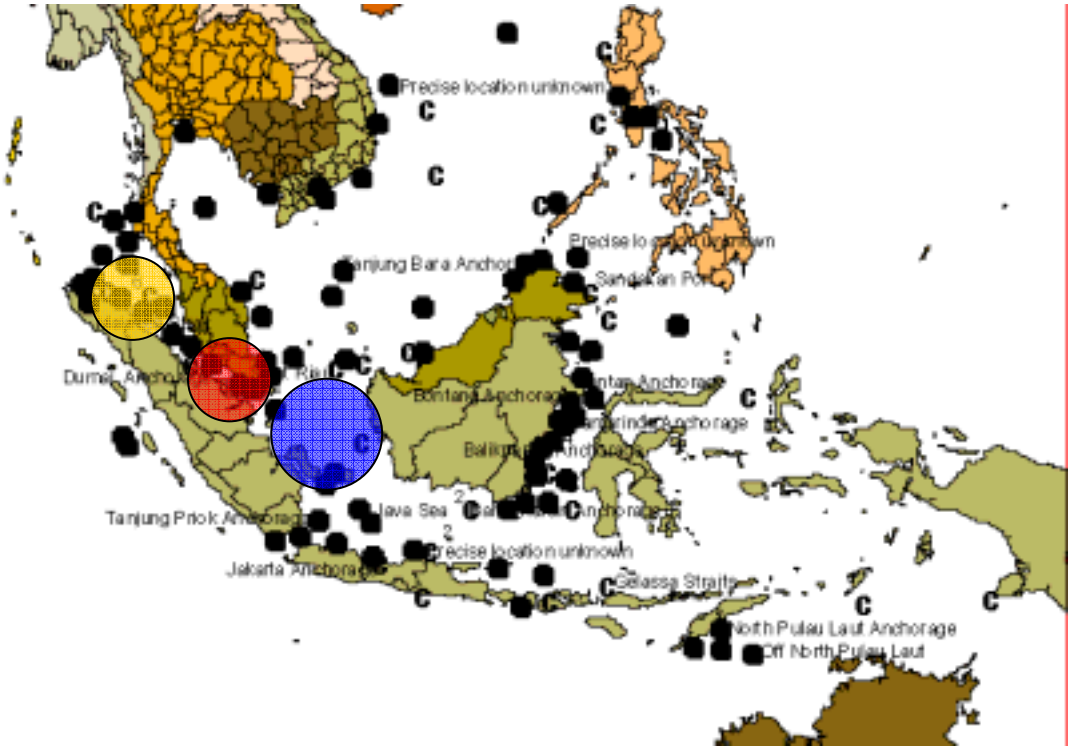



Fig. 2-1 Important Patrolling Sea Area and Piracy Incidents Spots in 2004
(Source: IMO Annual Piracy Report)

No.1 Sea Area is the separated traffic zone which is in the middle of the Strait with the length of about 250 miles (about 460 km) (Indicated in red-circle), where there are five perilous passes. They are namely One Fathom Bank, Tuan Cape, Fair Bank Channel, Raffles Shore and Off Bedku Light House.

These areas are of rather shallow water and there are many piracies/armed robberies recorded specifically in the area situated in lat. 2 ° N. and long. 102 ° E. Tg. Batu Base, Riau Province Marine Police.

No.2 Sea Area is the northwest part of the Strait, about 172 miles (about 320 km) long (Indicated in yellow-circle), and there are also many pirates/armed robberies reported as seen similarly in No.1 Sea Area, and further more, the area has been used as pass of flight. Belawan Base, North Sumatra Province Marine Police, while dividing the area into three districts, has been executing the patrolling over this area.

No.3 Sea Area is Natuna Sea, east part of the Singapore Strait, again a very important area as has been used as stolen vessels' pass of flights. The area is under Riau Province Marine Police. Directorate of Marine Police, INP in Jakarta who are equipped with large-size patrol ships has also been patrolling this area, for the area is open sea and sea conditions are often rough. The following Fig. 2-2 shows the locations between the spots on piracy incidents in the Malacca Strait in 2005 and Project Sites. The information is according to the latest report of International Maritime Bureau (IMB), International Chamber of Commerce (including actual damages and those attempted).


Fig. 2-2 Locations between the Spots on Piracy Incidents in the Malacca Strait and Project Sites (Source: IMB Piracy Maps 2005)

Although the number of piracy in the Malacca strait in 2005 is decreased to 12 from that of 37 in 2004, hazardous level in the area remains still high. The number of piracy reported in the Singapore Strait and Natuna Sea increases to 10 in 2005 from 8 in 2004.
From the viewpoint of this piracy movements, marine security reinforcement to these three (3) areas is the most critical issue for Indonesia, and Tg. Batu Base, Riau Province Marine Police, Berawan Base, North Sumatra Province Marine Police, and Jakarta Base under Directorate of Marine Police, INP are considered appropriate for the Bases of new patrol ships in the Project.

(2) Study on Number of Patrol Ships

The most idealistic system is a regular patrolling (a 24-hour patrol), because piracy/armed robbery often break out during the night time. Presently, Riau Province Marine Police and North Sumatra Province Marine Police are unable to execute regular patrolling, for there are constrains stem from operation cost and personnel availability. Table 2-1 shows the operation patterns in Riau and North Sumatra.

Table 2-1 Operation Patterns

| Item | Riau Province Marine Police (Tg. Batu Base) | Marine Police North Sumatra Province Marine Police (Belawan Base) |
|---|---|---|
| Weekly Operation | 5 days | 5 days |
| Patrolling Hours/One Operation | 8 hrs | 8 hrs |
| Distance to Patrolling Area | 140 km | 90 km |
| Hours to round trip, Base to/from Patrolling Area | 6 hrs (25 knots at normal cruising speed) | 4 hrs (25 knots at normal cruising speed) |
| Annual Maintenance/ Repair Period | 40 days | 60 days |

As indicated in Table 2-1, the designated patrolling areas are in far distance from Tg. Batu Base, and so, watch/patrolling itself is performed only two hours in a routine 8-hour operation. It is four hours in case of Belawan Base. The patrolling operation includes not only the operation in the designated area but also cruising on round trips. It does not necessarily mean they do not watch while on round trip cruising. Patrolling hours therefore can be said equal to the hours consumed for sailing out from the port to sailing back to the port.

Based on the present operation patterns, the required number of patrol ships is calculated, materializing a 24-hour regular patrolling system. In this calculation “shifting of crew” is also adopted in order to make the required investment necessary to establish the regular patrolling system = “newly required patrol ships” minimized. The assumptions applied in calculation are as follows.

「Assumptions on Patrol Ship Operation in establishing a 24-hour Patrol System 」

- Operation hours shall be 16 consecutive hours, Patrol shall be done by 2 crews
  (The project requires two groups of crew per one patrol ship, C-1 class thus needs 10~12 persons for one crew, simultaneously another 10 persons as for stand-by, and it seems difficult to accommodate such two groups of crew on board at the same time from limited accommodation space.)
- Operation area depends on patrol plans made by respective Bases, and not necessarily sailing to the same sea area
- Consequently, round trip hours to priority patrol area shall be two thirds of figures calculated
- Annual maintenance/repair period for the both Base shall be 40 days on an assumption that patrol ship Maintenance/Operation Program shall be properly organized in this Project
- Crew and fuel cost shall be secured
- Assumptions are 1) One shift means an 8-hour operation, 2) another 8-hour operation after shifting crew when sailing back to the port, 3) thus making a 16-hour continuous patrolling.

Table 2-2 shows the calculations estimating the required number of patrol ships to establish a 24-hour regular patrolling system according to the above assumptions.

Table 2-2 Number of Ships Necessary for Regular (a 24-hour) Patrol at One Spot in the Designated Sea Area by Each Base

| Item | Riau Province Marine Police (Tg. Batu Base) | North Sumatra Province Marine Police (Belawan Base) |
|---|---|---|
| Annual Practicable Operation Days | 365-40(non operation day) =325 days<br>325 x 5/7(weekly operation ratio) = 232 days | 365-40(non operation day) = 325 days<br>325 x 5/7(weekly operation ratio) = 232 days |
| Patrolling Sea Area per Patrol | 8h x 2 shifts = 16 hrs | 8h x 2 shifts = 16 hrs |
| On- duty Hour | 16-6(round trip) x2/3 = 12 hrs | 16-4(round trip) x 2/3 = 13･3 hrs |
| Annual on-duty Days at Patrolling Sea Area | 232 x12/24(daily operation ratio) = 116 days | 232 x 13･3(daily operation ratio) = 128 days |
| Necessary Number of Ships | 365÷116 = 3.14 = abt.3 ships | 365÷128 = 2.85 = abt.3 ships |

As a result of the calculation, if both Riau Province Marine Police and North Sumatra Province Marine Police try to operate a regular patrol system, they need at least three (3) patrol ships for such patrol sea area ( C-2 class and over is ideal)

At present, the provincial marine police in particular can not establish a 24-hour regular patrolling system due to lack of patrol ships. The following display appropriate patrol ship‘s number and

conditions at Tg. Batu Base and Belawan Base.

1) Riau Province Marine Police

As indicated in Table 2-3 below, number of patrol ships under this office is 1 unit of C-1 Class, 7 units of C-3 Class, 6 units of Non-standard Class, totaling 14 units, of which 12 units are operational. Patrol ships capable of cursing at 20 knots and over are 5 units. Out of the 5 units, patrol ships able to navigate to the designated patrol areas are Kundur020 of C-1 Class and POL-019 ,relatively big in C-3 Class ships.

Table 2-3 Patrol Ships in Possession of Marine Police Riau Province

| No. | Ships | Class | Materials | Speed | Conditions | Remarks |
|---|---|---|---|---|---|---|
| 1 | POL 001 | C-3 | Wood | 10 kt | Good | |
| 2 | POL 002 | C-3 | FRP | 10 kt | | |
| 3 | POL 003 | C-3 | Wood | 10 kt | Good | |
| 4 | POL 004 | C-3 | Wood | 10 kt | Good | |
| 5 | POL 005 | C-3 | FRP | 20 kt | Good | |
| 6 | POL 006 | C-3 | Aluminum | - | Heavily damaged | Constructed at French shipyard, 2 units of main engines are stored on land. |
| 7 | POL 007 | C-3 | Aluminum | - | Heavily damaged | |
| 8 | POL 008 | C-3 | FRP | 10 kt | Good | |
| 9 | POL 0018 | C-3 | Wood | 10 kt | Good | |
| 10 | POL 0019 | C-3 | FRP | 25 kt | Good | 200hp out board main engines (4 units) |
| 11 | Kundur020 | C-1 | FRP | 30 kt | Good | 450hp main engine X 2 units |
| 12 | SS-II | NS* | Wood | 10 kt | Good | Materials transport boat |
| 13 | SS-II | NS | Wood | 10 kt | Good | Materials transport boat |
| 14 | 12.01 | NS | - | - | - | |

2) North Sumatra Province Marine Police

The office is equipped with 29 patrol ships as shown in Table 2-4 next. There are only POL-201 and POL-218 which can cruise at 20 knots and over.

Table 2-4 Patrol Ships in Possession of Marine Police North Sumatra Province

| No | Ships | Class | Materials | Speed | Size | Main Engine | Year Built | Operation Base |
|---|---|---|---|---|---|---|---|---|
| 1 | POL 001 | - | FRP | 10 kt | 4.8x2x0.5 | Yamaha | 92 | BLWN/SRPH |
| 2 | POL 002 | - | FRP | 10 kt | 4.5x2x0.5 | Johnson | 97 | BLWN/SRPH |
| 3 | POL 003 | - | FRP | 10 kt | 4.8x2x0.5 | Yamaha | 81 | PARAPAT |
| 4 | POL 004 | - | FRP | 10 kt | 3.8x1.8x0.5 | Suzuki | 00 | SIBOLGA |
| 5 | POL 005 | - | FRP | 10 kt | 4.5x2x0.5 | Johnson | 94 | PARAPAT |
| 6 | POL 101 | C-3 | FRP | 8 kt | 7.5x2x0.6 | Yamaha | 03 | BEDAGAI |
| 7 | POL 102 | C-3 | FRP | 8 kt | 7.5x2x0.6 | Yamaha | 03 | SERAPUH |
| 8 | POL 103 | C-3 | FRP | 8 kt | 6.5x2.2x0.95 | Yamaha | 03 | SIBOLGA |
| 9 | POL 104 | C-3 | FRP | 8 kt | 6.5x2.2x0.95 | Yamaha | 03 | BELAWAN |
| 10 | POL 105 | C-3 | FRP | 8 kt | 5.2x2.45x0.9 | Johnson | 96 | TBA |
| 11 | POL 106 | C-3 | FRP | 8 kt | 6.5x1.5x0.5 | Yamaha | 03 | SERAPUH |
| 12 | POL 201 | C-2 | FRP | 20 kt | 14x3.5x1 | Yamaha | 01 | BELAWAN |
| 13 | POL 202 | C-2 | FRP | 6 kt | 12x2.5x1 | Mitsubishi | 97 | BLWN/SRPH |
| 14 | POL 203 | C-2 | FRP | 8 kt | 12x2.5x1 | Volvo | 97 | BLWN/TBA |
| 15 | POL 204 | C-2 | Wood | 6 kt | 12.5x2.5x0.8 | Hino | 76 | BEDAGAI |
| 16 | POL 205 | C-2 | Wood | 8 kt | 12.3x2.5x0.7 | Nissan | 73 | BLWN/BDG |
| 17 | POL 206 | C-2 | Wood | 7 kt | 12.5x2.5x0.8 | Nissan | 79 | BLWN/BDG |
| 18 | POL 207 | C-2 | Wood | 10 kt | 12.5x2.5x1 | Mitsubishi | 89 | BLWN/BDG |
| 19 | POL 208 | C-2 | Wood | 8 kt | 12x1.8x1 | Mitsubishi | 65 | TBA |
| 20 | POL 209 | C-2 | Wood | 8 kt | 12x2.1x0.9 | Toyota | 65 | BLWN/SRPH |
| 21 | POL 210 | C-2 | Wood | 8 kt | 14x2.2x1 | Mitsubishi | 76 | SBR |
| 22 | POL 211 | C-2 | Wood | 8 kt | 14.5x3.5x0.9 | Layland | 92 | SBR |
| 23 | POL 212 | C-2 | Wood | 8 kt | 12.5x2.75x1.5 | Mitsubishi | 96 | BLWN/SBR |
| 24 | POL 213 | C-2 | Wood | 8 kt | 14.5x3.5x0.9 | Layland | 92 | SIBOLGA |
| 25 | POL 214 | C-2 | Wood | 10 kt | 14.8x3x2 | Mitsubishi | 92 | TBA |
| 26 | POL 215 | C-2 | Wood | 8 kt | 14.8x2.7x1.5 | Mitsubishi | 01 | BLWN/SRPH |
| 27 | POL 216 | C-1 | Wood | 9 kt | 23x5.5x2.2 | Nissan | 95 | BELAWAN |
| 28 | POL 217 | C-1 | Wood | 9 kt | 20x4x1.8 | Nissan | 94 | BELAWAN |
| 29 | POL 218 | C-1 | FRP | 24 kt | 22.5x5x0.9 | MTU | 05 | BELAWAN |

3) Jakarta Base, Directorate of Marine Police, INP

Patrol ships under Jakarta Base are listed in the Table 2-5. Patrol ships in a good condition are 28 units, of which 3 units are sent to Provincial Marine Police.

Table 2-5 Patrol Ships in Possession of Directorate of Marine Police, INP (Jakarta)

| Command | Ship Type | Total No. | Conditions | | | Remarks |
|---|---|---|---|---|---|---|
| | | | Good | Slightly Damaged | Heavily Damaged | |
| Central (Directorate of Marine Police, INP) | A-1 Class | - | - | - | - | No ships in this Class |
| | A-2 Class | 2 | 2 | - | - | Procured in 2001 budget, constructed in Spain |
| | A-3 Class | 9 | 5 | 4 | - | 8 units supplied under War Reparation from Japan |
| | Total | 11 | 7 | 4 | - | |
| | B-1 Class | - | - | - | - | |
| | B-2 Class | 4 | 4 | - | - | 5 units are under construction in Poland, to be delivered in Nov. 2006. |
| | B-3 Class | 12 | 5 | 7 | - | 9 units are under construction in Singapore to be delivered 4 units in Feb. 2006 & 5 units in 2007 |
| | Total | 16 | 9 | 7 | - | |
| | C-1 Class | 4 | 4 | - | - | |
| | C-2 Class | 3 | 2 | 1 | - | |
| | C-3 Class | 6 | 6 | - | - | |
| | Total | 13 | 12 | 1 | - | |
| Total | | 40 | 28 | 12 | | |

As explained, North Sumatra Province Marine Police and Riau Province Marine Police have two (2) patrol ships which can navigate to the target patrol areas with its speed at 20 knots and over, respectively. Therefore, three (3) Patrol Ships system can be established if an additional patrol ship can be deployed to each provincial marine police station under this Project.

Since Natuna Sea, east part of the Singapore Strait used as stolen vessels' pass of flights or escape route for pirates, is open sea and sea conditions are often rough, Directorate of Marine Police, INP in Jakarta has been patrolling the area by utilizing larger size patrol ships. In general, larger size ships have advantages in its seaworthiness and long endurance, suitable for the long term patrol operation at open sea. However they are sometimes not suitable to pursuit high speed boats running away, due to their disadvantages i.e. low speed, deep draft, large turning circle, etc. It is, consequently required to deploy jointly with larger size patrol ships and high speed patrol ships in these areas.

At present, Jakarta Base is equipped with 27 units of operational large size patrol ship (A, B Class), on the other hand, they have only 4 units of C-1 Class patrol ships which features high speed and

capabilities of small sharp turn suitable to the sea close to the open sea like Natuna Sea. Nowadays they are engaged in operation for the jurisdiction of Jakarta Base, thus making them impossible to dispatch any such ships to Natuna Sea under the jurisdiction of Riau Province Marine Police.
As a result, an additional deployment of C-1 Class patrol ship to Jakarta Base shall make it possible to strengthen watch/patrol plan through a joint deployment with large size patrol ships.

In line with the study results, it is justifiable, as Basic Policy, that new patrol ship shall be deployed at each marine police Base facing to three (3) critical sea areas namely the Malacca/Singapore Strait area and Natuna Sea area.
The studies to justify the deployment of 3 patrol ships are summarized in the Table 2-6.

Table 2-6 Summary of Study Result on Deployment of Three Patrol Ships

| Input & Activity / Base | Target Patrol Areas | Patrol Ships Available for patrol at Present | Newly planed Patrol Ships | New Action Plan with New Patrol Ships |
|---|---|---|---|---|
| Berawan Base North Sumatra Province | North West of Malacca Strait (172 sea miles) | C Class x 2 | C-1 Class x 1 | 3 x C Class Patrol Ships to operate for regular a 24- hour patrol |
| Tg.Batu Base Riau Province | Center of Malacca Strait (250 sea miles) | C Class x 2 | C-1 Class x 1 | 3 x C Class Patrol Ships to operate for regular a 24- hour patrol |
| Jakarta Base Directorate of Marine Police, INP | East of Singapore Strait, Natuna Sea | Plural number of over C Class ships available. (No deployment to the target area) | C-1 Class x 1 | Joint operation with C Class and large sized Patrol Ships |

(3) Class and Basic Performance Capability

Table 2-7 is the comparison table between data from Guidelines for patrol ship technical specifications by Directorate of Marine Police, INP and Specification of the requested patrol ship. In order to design most suitable patrol ship, it is necessary to analyze from various aspects such as operation, natural conditions, capabilities of executing agency, and the like. The basic designing policy lies on data concerning the ships 22.5m～27m long which are within the length of ship requested by the Government of Indonesia and patrol ships with 27m class which is a maximum length of C-1 Class patrol ship. It is moreover emphasized to examine specifications on similar types of patrol ships owned by Japan Coast Guard.

Initially, the request from the Government of Indonesia comprises of two points ; C-1 Class, the length overall 22.5m～27m, speed 30 knots and over (35 knots if possible). At the same time, the following particular equipment were requested

Table 2-7 Comparison Table for Specifications of Ships Requested

| Class | | B-3 | C-1 | Ship Initially Requested |
|---|---|---|---|---|
| Length overall | m | 28 ～35 | 16 ～27 | 22.5 ～27 |
| Cruising Distance | Nautical Miles | 1000 | 400 | |
| Speed (Max.) | Knots | 30～35 | 30～40 | Not less than 30 knots (Max 35 knots) |
| Main Engine (Diesel) | Unit | 2 | 2 | |
| Particular Equipment | | | | ARPA/Radar<br>GPS<br>Speed Log<br>Echo Sounder<br>Night Scope (Binocular) |

1) Study on Main Engine Output

Ship speed increases in proportion to a cube of necessary horsepower. The main engine is required 5,715 horsepower so as to attain 35 knots of max. speed which is proved through an examination carried out on an assumption on similar hull design, weight and 27m size of patrol ships belonging to JCG. Both Indonesian C-1 and C-3 Class are equipped with 2 units of main engine, the same size of patrol ships of JCG are also equipped with 2 units 1,500 p.s. engines, hence making max. speed 27 knots. Ships must be equipped with either 3 units 2,000 p.s. main engines or 2 units 2,900 p.s. main engines in case a ship is to fulfill service speed 30 knots, max. speed 35 knots. It needs another thorough examination regarding hull size/shape and propulsion system, which would control

increasing cost for construction and operation/maintenance.

Fig. 2-3 shows Speed/Horsepower Curve which acts as reference for the calculations. In this case study, when a main engine outputs 4,000 horsepower, the max. speed reaches 31.07 knots.

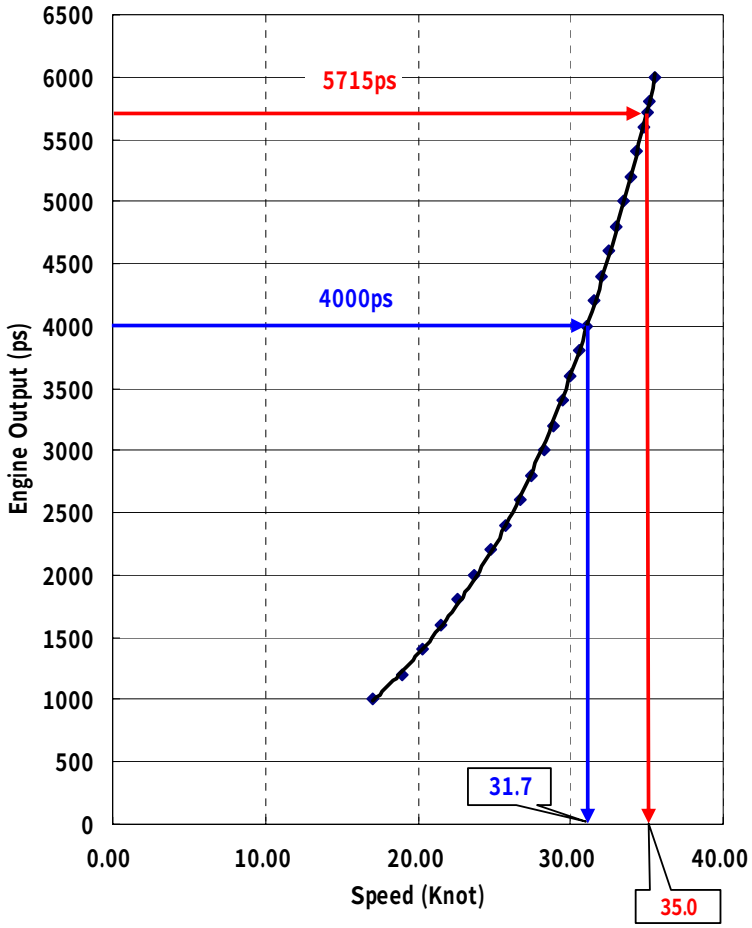



Fig. 2-3 Speed-Horsepower Curve

Since main engine of patrol ship is expected to be of light weight and high output, policy is to select the most appropriate specifications based on the assumption that max. service speed is 30 knots, in order to depress the unnecessary cost increase.

2) Study on Operation Pattern

The patrol ship operation plan held by the Directorate of Marine Police describes that one patrol consumes 8 hours and number of operations is 5 days per week. In light of setting up a 24-hour regular patrol system as previously mentioned, the plan - one patrol uses 16 hours (2 shifts) is

suggested in Fig. 2-4. On this operation pattern, the ship cruises at 75% of designated main engine output (about 28 knots) for a round trip navigation to and from the patrol areas. Taking changes of patrol areas into consideration, first operation is estimated to take total of 4-hour round trip, second total of 2-hour. At patrol areas, it is estimated on an assumption that an intermittent patrol takes 4 hours in first operation and 2 hours in second operation by using 30% of designated main engine output.

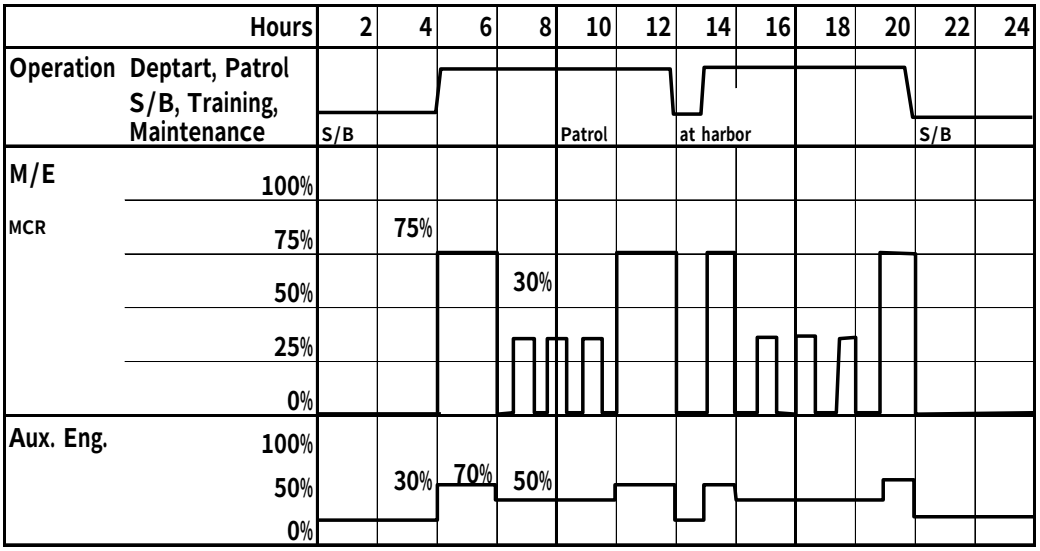



Fig. 2-4 Estimated Operation Pattern of Patrol Ship

As a result of this study, annual fuel consumption and operation hours for main engine with maximum output 4,000 ps are estimated as indicated in Table 2-8. In view of this operation plan, the basic design policy shall be studied with respect to cruising miles, fuel quantity on board, and others.

Table 2-8 Estimation of Fuel Oil Consumption & Operational Hours

| | Daily (16 hrs) | Annually |
|---|---|---|
| Fuel Oil Consumption | 2.5 tons | 551 tons |
| M/E Operational Hours | 9.1 hrs | 2,002 hrs |

3) Endurance

The nominated Bases for deployment under this Project are, as mentioned earlier, three Bases, i.e. Belawan Base, North Sumatra Province Marine Police, Tg. Batu Base, Raia Province Marine Police, and Jakarta Base, Directorate of Marine Police, INP.

Their patrol areas projected are as follows:

- Belawan Base: Northwestern Part of the Malacca Strait, about 172 miles ( about 320 km )
- Tg. Batu Base: Midway Part of the Malacca Strait, about 250 miles (about 460 km)
- Jakarta Base: Eastern Part of the Singapore Strait which includes Natuna Sea

With respect to Jakarta Base, C-1 Class patrol ship in the Project is scheduled to operate in combination with large size ships like A or B class ships, thus operation plan is somewhat different from other 2 Bases where a patrol ship is expected to cruise by itself. Cruising miles shall be studied on the operation conditions of Tg. Batu Base as its distance from the Base to patrolling area is far and patrolling area itself is long.

It is about 140 km from Tg. Batu Base to the central part of patrolling area, namely One Fathom Bank, and the distances between 5 important patrolling areas are as follows:

Table 2-9 Distances between each Patrolling Areas in the Central Part of the Malacca Strait

| | Patrolling Areas | Distances to each Areas |
|---|---|---|
| 1 | One Fathom Bank – Tuan Cape | 55 miles (about 102 km) |
| 2 | Tuan Cape – Fair Bank Channel | 85 miles (about 157 km) |
| 3 | Fair Bank Channel – Raffles Shore | 45 miles (about 83 km) |
| 4 | Raffles Shore - Off Bedku Light House | 20 miles ( about 37 km) |

An overall round trip distance accumulates 1,038 km = about 560 miles in case of cruising on these patrolling area at normal patrolling conditions. The maximum cruising distance shall be fixed by both main engine output and fuel quantity onboard, however, specifications shall be studied to find 500 miles cruising capabilities on low load conditions.

The possible patrolling range is shown on Fig 2-5 that is made within the radius of 250 miles and 500 miles of round trip distance. As indicated, most patrolling areas in the Indonesian territorial waters are covered provided it is within the radius of 250 miles from respective Bases. It makes possible to chase those questionable ships with patrol ships dispatched form two Bases, which are trying to escape or run away into the other designated sea areas.


Fig. 2-5 Radius 250 Miles Ranges from each Base

In case the maximum cruising distance is supposed to be about 560 miles, necessary fuel consumption at normal cruising is estimated as indicated in Table 2-10.

Table 2-10 Maximum Fuel Quantity Required

| Engine Output Rating | Output (Ps) | Speed (Knot) | Fuel required for 560 miles (ton) |
|---|---|---|---|
| 50% | 2000 | 23.63 | 8.06 |
| 45% | 1800 | 22.62 | 7.58 |
| 40% | 1600 | 21.50 | 7.09 |
| 35% | 1400 | 20.32 | 6.56 |
| 30% | 1200 | 19.03 | 6.00 |
| 25% | 1000 | 17.03 | 5.59 |

On the other hand, in case of operation pattern of a 16-hour patrol per day, fuel consumption per day becomes about 2.5 tons. The fuel of about 5 tons thus is necessary, in case of two times of patrol (2 days operation). The fuel of 5 tons makes the maximum cruising miles of 500 miles which is proven in reckoning backward in calculations in the above table on the condition that the cruising is at 25 % of Maximum Continuous Output (17 knots). Consequently, the minimum fuel on board

shall be of 5 tons, and try further to secure such quantity on board.

4) Hull Structure

The essential condition in high speed ship designing is “lighter weigh”, in particular, weigh of hull. The designing of light alloy such as aluminum, etc shall be carried out as partial hull materials. However, this is subject to further confirmation regarding the utilization situations of light alloy in Indonesia today, i.e.,

- Welding technical level for light alloy such as aluminum, etc in Indonesia.
  Aluminum, fragile in itself and so its hull is easily dented, generalizes to use TIG welding (Tungsten Inert Gas), specialized technique and materials. The technical level shall be confirmed whether it is good enough to repair work in Indonesia.
- Actual situations involved in Operation
  Hull strength shall be sufficient for those cases as compulsive alongside to pirate boats or banging into against patrol ships by their trial escape which have frequently been observed in patrolling activities in the Malacca Strait.

(4) Conflict with Three Principles of Weapon Export Ban, etc

The anxiety over 「Evasion from militarily utilization and promotion to international troubles」, one of the principle pillars of Official Development Assistance (ODA), was expressed at the discussions with agencies concerned in the Governments of Indonesia and it was reconfirmed that the organization of police is independent from Army, hence no possibility to make patrol ships transferred to military purposes after implementation of the Project. It was additionally confirmed that the patrol ships shall be used to maintain/strengthen genuine peace and stability through preventing piracy, terrorism, and proliferation of weaponry in the region of the Malacca/Singapore Strait.

In connection with 「Three Principles of Weapon Export Ban, etc」, articles under an embargo listed on the Table attached to Export Trade Control Ordinance based on Three Principles of Weapon Export Ban(1967.4.21）and 「Government Union Opinion concerning Weapon Export」(1976.2.27) were explained and the following were confirmed as design policy of patrol ships.

Table 2-11 Requests from Indonesia side in relation to Three Principles of Weapon Export Ban, etc

| Items | Specifications confirmed |
|---|---|
| Protection of Crew | Hull - High Tensile Steel, Super structures - Aluminum alloy |
| Gun Foundation | Arrangement is not required |
| Assisting Apparatus for Night Operations | Supply night scope binoculars |
| Propellers | Cavitations controlled design is required to cope with accidents/ repairs experienced in present ship operations at Indonesia side. |
| Communications equipment | The communications system of VHF (AM) transceiver to aircrafts is applicable to channels only for civil aircraft communications; channels for military aircrafts are disregarded. |

Regarding the specifications of crew member protection in the list above, Indonesia side has requested that hull is made of steel, although the sandwich structure by kepler fiber is used in FRP-made patrol ships attached to Belawan Base. The designing shall be performed taking the comments into consideration to adopt appropriate crew protection for aluminum-made structures on ship's deck part.

### 2-2-1-2 Policy for Natural Conditions

The climate over the Malacca strait is categorized as tropical monsoon, not distinguishing clearly between rainy season and dry season, where constant monsoon all the year around, hot temperature, and high humidity are observed as displaying an average temperature 26～27 °, and an average humidity 80～85%. The sea conditions over the Malacca/Singapore Strait are generally mild, and tidal current runs in general to North-west direction at an average speed of 0.5～2 knots. Wave heights are less than 0.6 m, and the maximum significant wave height through the year are less than 1.5m in both the Malacca Strait and Off Jakarta, hence the area can be regarded as very calm sea. On the other hand, the annual average significant wave height are 1.75 m in Natuna Sea located from Off Batam in the Malacca Strait～Area Off Western Part of Kalimantan Island (right on the equator), by which the waves are rather high in these areas.
Wind is also mild, except calm conditions, as 7～10 knots of wind is below 20% and no less than 17 knots below 1 % in the area off Belawan in the Malacca Strait and Batam area.

The patrol ship in the Project, 27m long, is classified as small ship. There are no specific stringent design conditions required in wave and wind aspects which greatly influenced to safety security of crew members in seaworthiness at open sea and patrolling operation as well in accordance with analysis on the data collected.

In the light of operation in the tropical climate areas, surrounding conditions to equipment/apparatus in terms of temperature are 45 ° (exposed parts, engine room are 50 ° ) ,and sea water temperature 32 ° .

### 2-2-1-3 Operation/Maintenance Capabilities of Executing Agency

The repair work involved in periodical or breakdown for hull and machinery on patrol ships in Jakarta Base, Tg. Batu Base, Riau Province, and Belawan Base, North Sumatra Province have been done at repair docks/work shops located inside Bases, slipways held by other Government agencies (Customs), and facilities owned by private shipyards. The facilities, technical/engineering capabilities of those shipyards are considered sufficient enough for required repair work of patrol ships. However, procurement of parts to damaged or broken machines is insufficient on budgetary or management system backgrounds at these Bases. The designing in this regard, therefore, shall be undertaken considering easy parts procurement and Japanese-made marine apparatus, the parts supply of which are substantially better in Indonesia. The equipment/apparatus to which they prioritize as for easy-maintenance group are navigation equipment such as radar, communication equipment, and main engines.

### 2-2-1-4 Policy on Method and Period of Construction

Patrol ships in the Project are specially purposed and some characteristic engineering know-how is required not only for designing but also for construction. To fulfill the objectives of chasing/patrolling pirates' ships, high-speed, stabilized maneuvering, and crew's safety are required. High construction technique, ample building experience, and strict process control at shipyard role importantly to attain suitable hull model, hull structure, main engine output, etc. The pre-qualification examination shall be prepared to find a shipbuilder in Japan who is qualified with experiences of repair or building patrol ships, sufficient engineering capabilities, facilities and equipment, and good number of engineers.

The recommendation is to build patrol ships simultaneously so as to materialize an early delivery to Indonesian party. The simultaneous building method can be conceived, as all of them will be built at one shipyard or to be built at several shipyards. The building method shall be further investigated through anticipating cost minimizing, better quality control, idealistic schedule control, and others.

Main engine and other principle equipment to be onboard shall be selected taking after-sales services, accessibility to spare parts, maintenance cost, etc into careful consideration.

## 2-2-2 Basic Plan

### 2-2-2-1 Principal Particulars

Basic plan is studied in compliance with the design policy examining the related factors indicated in Fig. 2-6 which are necessary to complete 「appropriate project scope and basic design」. Among others, appropriate designing shall be made considering clarification on such factors as closely related to basic performance of patrol ships and 「operation/maintenance capabilities of executing agency」. In other factors, appropriateness of each site required in the project scope was confirmed during the field survey, and furtherer, natural conditions are confirmed moderate all through the year and generally acceptable except for some particular areas. Study on Three Principles of Weapon Export, etc. shall be executed (examination with respect to specifications by the Ministry of Economy, Trade and Industry) in Japan in parallel with basic designing.

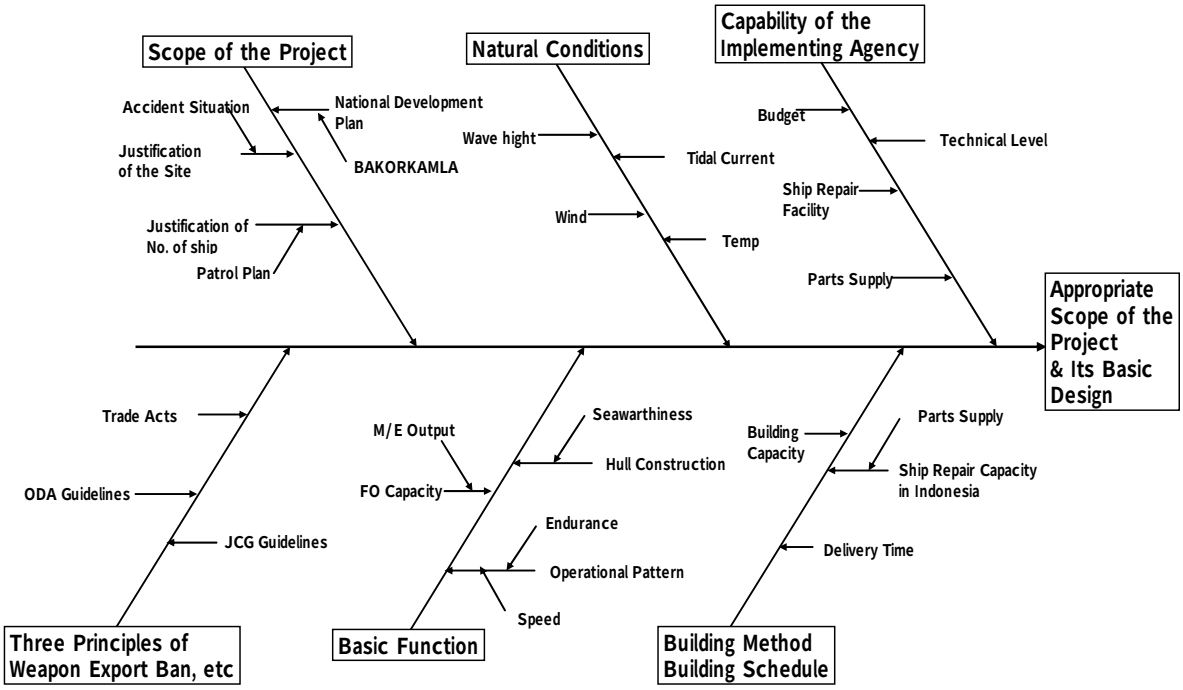



Fig. 2-6 Factors required in Basic Plan Preparation based on Design Policy

As a result of these studies, the specifications requested by Indonesian side and the one after consulted are shown in the table 2-12. Such study results taken up in fixing the principal particulars are displayed as follows.

Table 2-12 Summary of Amendments of Requested Specifications

| Principal Particulars | Specifications Requested | After Amendment |
|---|---|---|
| Class | C-1 | C-1 |
| Length Overall | 22.5m and over | 27.0m |
| Cruising Distance | | about 600 nautical miles (at 12 knots) |
| Speed (Max.) | about 35 knots | about 30 knots |
| Main Engine | | 1,800～ 2,000 ps x 2 |
| Crew | | 10 + 2 (Arrested) |
| Materials for Hull | | Hull: High Tensile Steel<br>Superstructure: Aluminum alloy |
| Major Equipment | ARPA | ARPA |
| | Radar | Radar with ARPA |
| | GPS | GPS compass |
| | Speed Log | - |
| | Echo Sounder | Echo Sounder |
| | Night Scope Equipment | Night Scope Binocular |

(1) Length, Breadth, and Draft of Hull

Patrol ships requested in the beginning was C-1 Class in Indonesian category. With regard to size of patrol ships, the following were requested during the field survey:

- Bigger size with ample stability to cope with chasing pirates' boats at rough open sea
- Longer cruising miles at the Malacca Strait
- Room space for detainees (2)

The above requests cause extra fuel and fresh waters to be onboard thus making ship size bigger. In view of tight budget conditions on operation costs - fuel and maintenance cost, the ship size beyond C-1 class was not recommended and consequently, the design shall be continued based on 27 m long, the max. length in C-1 Class (Length overall is 16～27m). Other major measurements for breadth, depth, draft, etc are fixed by referring to patrol ships owned by Japan Coast Guard which are blessed with high speed, seaworthiness, and depth. At the same moment, studies were carried out on the space availability that is good enough for major equipment, number of crew, fuel, fresh water, etc to be onboard. Therefore, the following are fixed, namely, breadth: 5.6m, Depth: 2.8m, Draft: About 1.1m.

(2) Hull Materials

High-Speed ship is generally equipped with light weigh hull to achieve high speed cruising. Aluminum alloy is recommended in the guidelines of technical specifications for C-1 class in Indonesia. Although light, it is less strong in terms of anti-shock performance, and it is rather expensive compared to steel. Since there are frequent possibilities for compulsive alongside to pirates' boats or counter -attacks from pirates' boats, it is determined that hull is of steel (High Tensile Steel to be adopted from the viewpoint of light weight), and upper deck/superstructure of aluminum alloy.

(3) Speed

The request of maximum speed was 35 knots The speed problem was discussed based on the following factors involved in (a) huge main engine output is abruptly required, depending on ship size/shape, (b) there should be space to accommodate a big size engine onboard, (c) huge output consumes unordinary fuel, and (d) the bigger ship size grow, the bigger output is required. Afterward, they expressed the conclusion that the maximum speed would be of 30 knots, in common with each Bases.

It is the more idealistic if ships are equipped with the more high speed, in view of the necessity generated in emergency sailing out, chasing pirates, etc. In case of this project, 30 knots at high speed conditions is considered actually sufficient judging from operation conditions required in expected operations, such as sailing orders, patrolling, and conventional chasing activities (examinations on number of patrol ships were undertaken on an assumption of 25 knots for cruising to the patrolling sea areas).
In the light of operation/maintenance, medium speed engine is expected to attain 30 knots, installation of this main engine type in the engine room has turned out impossible owning to its high speed requirements and space limitations in the engine room. High speed engine is therefore, adopted.
The patrol ships in the Project hardly cruise at high speed in the shallow/narrow channels because of their sizes and drafts. In order to chase/seize pirate's boats running away in those areas, small onboard high speed crafts indicated in (8) are suggested to study.

(4) Endurance

The Guide Lines of technical specifications for C-1 class in Indonesia states 400 nautical miles in respect to the cruising miles. As a result of survey, it is generally found that the longer cruising range is the better. As demonstrated in the Chapter 2-2-1, patrol ships in the Project, with 250 nautical miles

in radius, are able to cover the almost entire territorial sea waters in Indonesia. and the hearing to the INP proves that the standard is 600 nautical miles for C-1 class. In consequence, 600 nautical miles are adopted taking account of rough sea or unexpected accidents. (at 12 knots)

(5) Crew

The standard number of crew for C-1 class is from 10 to 12. It is consisting of one captain, one chief engineer, two navigators, one radio operator, three engineers, and one steersman. A detention room is suggested to install from a humanitarian point of view. Accommodation for 12 consisting of 10 crew members and 2 detainees is fixed for designing.

(6) Safety and Protection of Crew

Gun fights with automatic machine guns can be forecasted in the event of chasing pirates. The front and side walls of wheel house shall be protected with bulletproof materials strong enough against machine-gun shootings where all the crew runs into for self-protection.

(7) Navigation/Communication Apparatus

Communications shall be carried out by HF/VHF by utilizing GMDSS equipment in principle, which have satisfied specifications required in an internal communications of Marine Polices, outbound communications, special communications, etc. Speed Log to monitor speed of ships is cancelled due to adoption of GPS. VHF/AM transmitters-receivers for communications to aircrafts is confined to channels for civilian aircrafts (120MHz) only, for communications to military aircrafts are also executed with civilian channels.

(8) Outfittings and Others

There were three requests extended by Indonesian side, i.e. onboard high speed crafts、night scope、and diving apparatus. On board high speed crafts、which are usually not equipped on C-1 Class in Indonesia, are studied and considered acceptable in case rubber type boats, taking account of their purposes and sizes. They shall work effectively to chase pirate’s boats who try to run away in the shallow waters, and shall execute rescue operations to persons adrift at the sea more effectively than those works extending from on-deck, 1.7 m of free board of patrol ships.

As for night scope, the necessity is duly recognized, however, due to attention to Principle for Weapon

Export、night scope binoculars shall be provided.

Diving apparatus were considered necessary either in search of the smuggled goods which are abandoned in the sea or for rescuing sufferers. It was decided to provide compressors, regulators, and cylinders to fill up air which are used in common among the crew members.

There was a request for an additional supply to important parts other than standard inventory.
V shape hull, with propellers, propeller shafts, etc projected out from the bottom plate, is in high risks for unavoidable accidents like hitting against sunken logs while navigation and eventually got damaged at propellers, propeller shafts, and others. These cases are confirmed positioning at high classification during the survey. The damages often enter in to the total loss, therefore, one set of inventory for propeller and propeller shaft is decided to supply, as they would need a long delivery time and it would take time to repair, even though repair is possible.

(9) Applicable rules

The rules of classification society[1] in general do not govern the patrol ships, Directorate of Marine Police, INP. The Safety Regulation on Ship in Japan so called “JG rules” governs Japan’s patrol ships that must satisfy safety rules on structure and equipment. In compliance with mutual agreement that the applicable rules to Japan Coast Guard shall be application to the patrol ships in the Project, designing shall be prepared under application of JG rules.

### 2-2-2-2 Basic Specifications

The basic specifications on the patrol ships in the Project are determined as follows in accordance with the above study results.

(1) General and Hull Part

The main hull shall be made of high tensile steel, and the deck and the superstructure shall be of aluminum alloy.
Two (2) sets of propulsion unit shall be installed in engine room, located at ship’s stern. The Ship shall be of 2-engine 2-shaft type, i.e. each main engine with the reduction gear shall drive propeller

[1] The classification society, third party organization, is to lie down and manage the rules and regulations on hull design, seaworthiness, safety, and the like to secure the safety of ships and marine structures at sea. In the event of construction of ships and marine structures, it is necessary to receive approvals from designated classification society.

shaft and 3-blade fixed-pitch propellers. Two (2) sets of rudder shall be provided.

| | | | |
|---|---|---|---|
| 1) Navigation Area | : Coastal Service (JG[2] 4th –class ship for coastal area[3]) | | |
| 2) Standard | : Conform to Japan Coast Guard Standard<br>Inspected by Nippon Kaiji Kyokai (NK) during the construction | | |
| 3) Speed | : approx. 30 knots (with F. O. 5,000L) | | |
| 4) Endurance | : approx. 600 N.M.( at 12 kt ) | | |
| 5) Principal Dimension | : Length(over all) | | approx. 27.00 m |
| | Length(water line) (designed) | | approx. 25.50 m |
| | Breadth (mld) | | 5.60 m |
| | Depth(mld) | | 2.80 m |
| | Draft(mld)(at designed full load) | | approx. 1.10 m |
| 6) Complement | : Crew | | 10 persons |
| | Suspect | | 2 persons |
| | Total | | 12 persons |
| 7) Tank Capacity | : Fuel Oil | | 6,000 L |
| | Fresh Water | | 1,000 L |
| 8) Life Saving Equipment | : Inflatable Life Raft (15P) | | 1 set |
| | Life buoy | | 1 set |
| | Life jacket | | 12 sets |
| 9) Anchor, Chain etc. | : Anchor | Danforth type 60 kg(Chain 15mm dia. x 2 m) | 2 sets |
| | Anchor Rope | (Vinyl rope 36mm dia. x 100 m) | 2 sets |
| | Towing Rope | (Vinyl rope 38mm dia. x 135 m) | 1set |
| | Mooring Rope | (Vinyl rope 20mm dia.x 165 m) | 1 set |

[2] JG: abbreviation of Ship Safety Regulations. Rules for ship's structure and equipment necessary to secure safety of life and goods at sea aiming at that Japan registered ships are able to maintain capabilities required in safe navigation.

[3] Navigation area defined in 7, Article 1, implementation rules of JG. Sea areas within 20 nautical miles from the coastal lines of Karafuto Island to those of the Korea Peninsula. No 4 type ship( non passenger ships, non international ships )

10) Rubber Boat, Deck Machinery Air Cond. and Ventilation

| | | | |
|---|---|---|---|
| : Hybrid Type Rubber Boat (Max person. 6) | | | 1 set |
| | (35 knots at 2 persons) | | |
| Boat Davit | (Electric max load 400 kg) | | 1 set |
| Steering Gear | (Elect. Hydro 1.5 t-m ) | | 1 set |
| Capstan | (Elect. appx. 1 t x 13m/min) | | 2 sets |
| Air Conditioner | | | 1 set |
| Ventilation Fan | | | 5 sets |

11) Commissary and Sanitary Equipment

| | |
|---|---|
| : Refrigerator (approx. 400L) | 1 set |
| Micro Wave Range (approx. 1.2 kW) | 1 set |
| Rice Cooker (LPG ) | 1 set |
| Gas Range | 1 set |
| LPG Cylinder(20 kg) | 1 set |
| Gas Detector (for LPG) | 1 set |
| Fresh Water Pump | 1 set |
| Sanitary Pump | 1 set |

| | | |
|---|---|---|
| 12) Others | : Electric Window Wiper | 5 sets |
| | Window Washer | 5 sets |
| | Fire Monitor (Portable type approx.1,000L/min ) | 1 set |
| | Gasoline Pump(Portable type 33 ps) | 1 set |
| | Portable Bilge Pump | 1 set |
| | Ship Bell | 1 set |
| | Boat Hook | 2 sets |
| | Air Compressor | 1 set |
| | Scuba Diving Equipment (Air tank and Air regulator) | 2 sets |

(2) Machinery Part

| | | |
|---|---|---|
| 1) Main Engine | : V-type 4-cycle high speed diesel engine with super-charger and reversible reduction gear | 2 sets |
| | Maximum output x revolutions 2,000ps x 2,000 rpm/set at the shaft end of main engine | |

2) Shaft and Propulsion Unit

| | | |
|---|---|---|
| | : Propeller Shaft made of stainless steel | 2 sets |
| | Propeller 3-blade, fixed pitch, Aluminum-Bronze | 2 sets |
| 3) Diesel Generator | : Generator 25kVA AC 225V 50Hz | 2 sets |
| | Engine 4-cycle diesel engine | 2 sets |
| | 24 kW x 1,800 rpm | |

4) Auxiliary Machinery and Tank

| | | |
|---|---|---|
| | : Ventilation Fan for Engine Room | 1 set |
| | F.O. Hand Pump | 1 set |
| | Drain Discharge Hand Pump | 1 set |
| | L.O. Transfer Pump (Elect. portable type) | 1 set |
| | Bilge Pump (Elect.) | 1 set |
| | Bilge Hand Pump | 1 set |
| | Cooling Water Pump for Air Cond. Unit | 1 set |
| | Condensing Unit for Air Cond. | 1 set |
| | F.O. Gathering Tank | 1 set |
| | F.O. Drain Tank | 1 set |

(3) Electrical Part

| | | | |
|---|---|---|---|
| 1) Electric power source | : AC Generator | Brushless AC225V 25kV | 2 sets |
| | Storage Battery | DC24V 130Ah | 2 sets |
| | Main Switch Board | | 1 set |
| | Charging Rectifier | | 1 set |
| | Shore Connection Box | | 1 set |
| | Wheel House Switch Board | | 1 set |
| | Distribution Box | | 1 set |
| 2) Lighting System | : Fluorescent Ceiling Light | | 1 set |
| | Incandescent Lamp | | 1 set |
| | Desk Lamp | | 1 set |
| | Portable Lamp | | 2 sets |
| | Flood Lights | | 2 sets |
| | Chart Table Light | | 1 set |
| | Battery Light | | 1 set |

| | | |
|---|---|---|
| | Fluorescent Mirror Light | 1 set |
| 3) Other | : Ship's Telephone | 4 sets |
| | Bell for Communication Engine Room | 1 set |
| | Public Addressor System | 1 set |
| | Bilge Alarm | 1 set |
| | General Use Receptacle | 1 set |

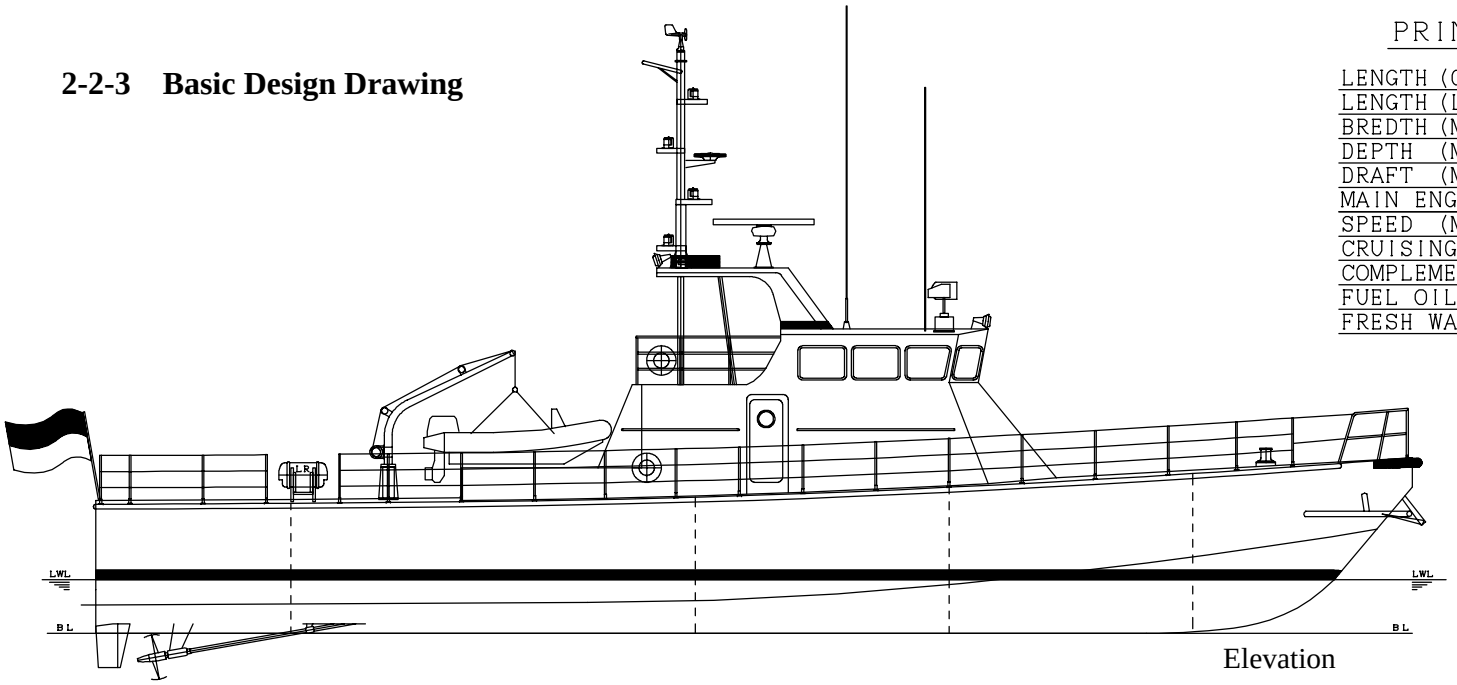
(4) Instrument / Communication Part

| | | |
|---|---|---|
| 1) Instrument Part | : Marine Monitoring System | 1 set |
| | Magnetic Compass | 1 set |
| | GPS Compass | 1 set |
| | DGPS Navigation System | 1 set |
| | Echo Sounder | 1 set |
| | Vane Anemometer | 1 set |
| | Barometer | 1 set |
| | Ship Lights | 1 set |
| | Searchlight | 1 set |
| | Binocular | 2 sets |
| | Night-Vision Binocular | 1 set |
| | Video Camera for Capturing Evidence | 1 set |
| | Electric Horn System | 1 set |
| | Flashing Signal System | 1 set |
| | Clock (Marine use) | 1 set |
| | Inclinometer | 1 set |
| 2) Communication Part | : Automatic Identification System | 1 set |
| | MF/HF Radio Equipment | 2 sets |
| | VHF Radio Equipment | 2 sets |
| | VHF Aeronautic Radio Equipment | 1 set |
| | International NAVTEX Receiver | 1 set |
| | Satellite EPIRB | 1 set |
| | SART | 1 set |
| | Portable Two-Way Radio Telephone | 2 sets |
| | Radio Telephone System on Board | 4 sets |

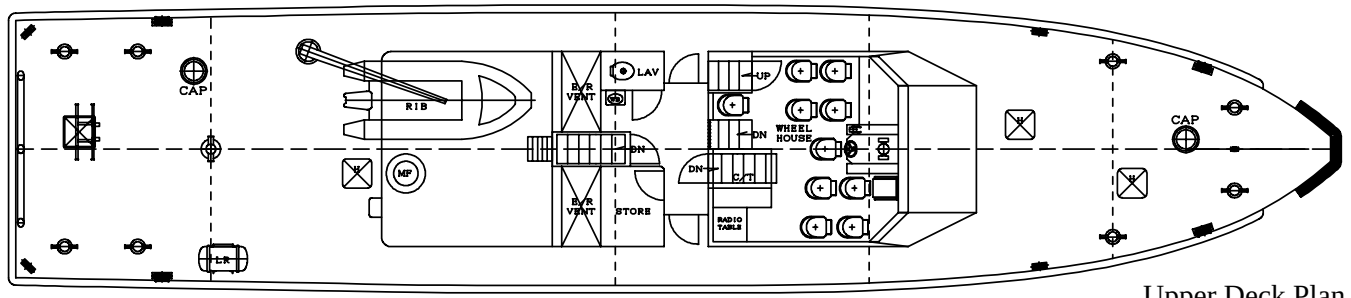
## 2-2-3 Basic Design Drawing

PRINCIPAL DIMENSIONS

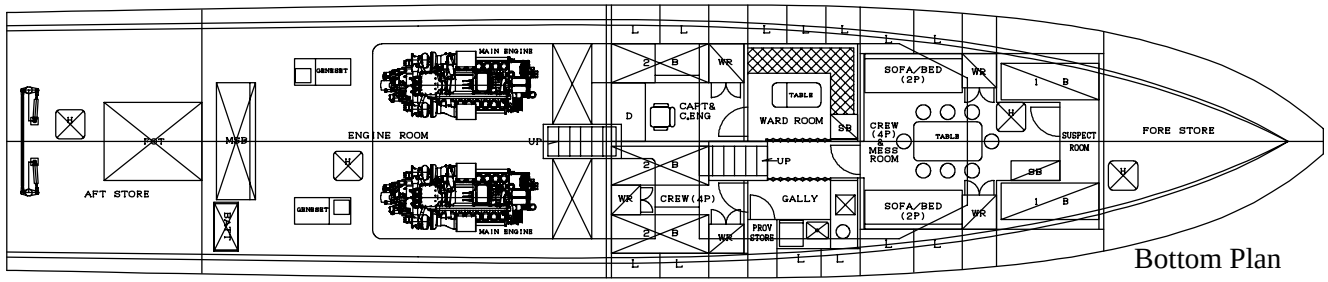
| | |
|---|---|
| LENGTH (OVER ALL) | APPROX 27.00M |
| LENGTH (Lpp) | APPROX 25.00M |
| BREDTH (MLD) | 5.60M |
| DEPTH (MLD) | 2.80M |
| DRAFT (MLD) | APPROX 1.10M |
| MAIN ENGINE | APPROX 2000PS x 2 SETs |
| SPEED (MAX) | APPROX 30 Kt |
| CRUISING RANGE | APPROX 600SM at 12Kt |
| COMPLEMENT | 10P(Crew)+2P(others) |
| FUEL OIL | APPROX 6000L |
| FRESH WATER | APPROX 1000L |




Elevation




Upper Deck Plan




Bottom Plan

Fig. 2-7 General Arrangement

## 2-2-4 Implementation Program

### 2-2-4-1 Implementation Policy

(1) Policy on construction

When Exchange of Note (E/N) for this Project is signed, the consultants selected and the executing agency in Indonesia through a close consultation to each other shall carry out detail designing and tender preparation to find a shipbuilder by referring to the basic design policy. Special engineering technology is required not only for designing but also construction itself as patrol ships in Project, with its special purpose/mission, are different from other conventional ships. High-speed, stable maneuvering, and safety of crew are especially necessary while chasing or patrolling pirate boats at sea, and the shipyard where ships are to be built needs high production technology, ample building experiences, and strict process control with respect to ship model, ship structure, main engine output, etc.

Consequently, it is planned that a Japanese shipbuilder is going to take in charge of construction of patrol ships in the Project who has rich experiences, superb engineering level, excellent facilities, and a good number of engineers. in terms of patrol ship's building/repairing work. These days, Japanese ship builders have been busy with growing construction volume. The consultant shall conduct firstly to check shipbuilding orders on hand, engineering level, construction record, and construction scheme at pre-qualification examination, to select secondly qualified shipbuilders and thirdly to assist tender process focusing on those qualified shipbuilders.

The shipbuilder selected through tender proceeds shall sign a building contract and perform the construction under the supervision or inspection undertaken by Classification Society and/or consultants.

(2) Policy on Technology Transfer Cooperation

During the site survey, Indonesian side requested the familiarization training with regard to equipment and maneuvering of patrol ships. The request has included training to be undertaken at the shipyard for 5 members to 3 patrol ships (one each of captain, chief engineer, and navigator, two of crew member). In response to this request, both the technical guidance and operation training towards candidate members are to be arranged at a timely occasion during the construction process at the shipyard and/or makers, in particular, at the site of main engine manufacturers. In case the main

engine manufacture is a foreign enterprise, factory trial tests are to be arranged at the site of agent in Japan so that repair/maintenance training shall be provided at the same place. As this familiarization training in the course of construction are within the scope of ship building contract, neither soft component nor technical cooperation scheme are separately necessary. The necessity of training in Indonesia, dispatch of engineers from shipyard or trainers from Japan Coast Guard for ship maneuvering training shall be reviewed after their requests is reconfirmed.
Technical cooperation for police activities on pirates patrolling was not requested during this survey.

(3) Policy on Delivery in Indonesia

After building work, official sea trial, delivery/acceptance of inventory/spare parts, and etc., are completed, shipbuilder is obliged to contract a cargo ship (heavy cargo carrier) to transport all the patrol ships in the Project to Jakarta Port, Indonesia at his cost and responsibility. When all the patrol ships are confirmed no defaults by means of test run in Jakarta Port, they are delivered to the executing agency in Indonesia. If any default is found, urgent measures shall be arranged by shipbuilder.
The shipbuilder shall be responsible for the cost related to test run including fuel. The executing agency in Indonesia shall be responsible for cost and arrangements to navigate patrol ships to respective Marine Police Bases.

### 2-2-4-2 Attentions to the Construction

Attentions shall be paid to the following items during the construction.

(1) Construction Management

Hull shape of patrol ships in the Project is designed so as to attain high speed and is designed to weigh extremely light in order to secure the stability even at rough sea conditions. Shipbuilder is expected to have high production/management level required in lightweight hull construction and aluminum alloy manufacturing, as the ship size is small and number of crew is rather big, thus leaving quite small space availability for designing. The quality control shall be made ready from preventive aspect to minimize maintenance operations at Indonesia side after delivery by making best utilization of strict application of quality control and inspection standard at the shipyard.

(2) Delivery Management

There is a probability to get foreign-made equipment (main engines) onboard. The timing of main

engine installation would be a critical pass in outfitting process management in this type of high speed ship, the major part of which is occupied with main engines. It is definitely necessary for the shipyard to confirm a precise procurement schedule of main engines at the time of the planning of an overall construction plan and to execute construction control related to major equipment installation and hull construction.

(3) Management of Transport Carrier

In the event of ocean transport to Indonesia, it is rather expensive to charter exclusively a specialized carrier, and is better to secure transport method by booking with a conventional cargo ship. It is also necessary to proceed in booking with such transport carrier in advance in conformity with the delivery in Indonesia and the completion date estimated in construction plan for patrol ships in the Project.

### 2-2-4-3 Undertakings in Implementation

In the event of implementation of this Project under the Grant Aid Scheme from the Government of Japan, the undertakings shall be shared by the Japanese Government and the Indonesian Government as follows:

(1) Undertakings shared by the Government of Japan

- To execute detail designing, assistance to bid, supervision of construction, and supervision of delivery (at shipyard quay)
- To execute tests required in shipbuilding and procurements of equipment/parts, etc in Japan
- To assist education/training for operation and maintenance of equipment onboard to crew member
- To execute transportation to Jakarta Port and delivery in Indonesia after confirmation on running conditions of the ships

(2) Undertakings shared by the Government of Indonesia

- To obtain necessary documents for transportation to Indonesia
- To pay banking charges to a foreign exchange bank in accordance with Banking Arrangement (B/A).
- To secure an unloading port and quay or wharf after unloading.
- To have patrol ships registered in the Ministry of Finance and execute tax exemption of

patrol ships, customs clearance (Peraturan Pemerintah-42), and any other legal procedures concerned.

- To arrange crew members for acceptance of patrol ships in Jakarta Port.
- To arrange fuel for navigation to respective Bases.
- To secure budget allocation for operation, fuel, maintenance, and inventory
- To improve (if necessary) communication facilities on land to make smooth communication between patrol ships in the Project and Marine Police Bases.
- To train new crew members.
- To secure transport fee and installation cost which are outside of Grant Aid Scheme

### 2-2-4-4 Supervision Plan

In compliance with basic design policy, Japanese consultant shall perform the detail design for patrol ships in the Project, and as Agent working on behalf of Executing Agency in Indonesia, shall execute a consistent services which covers assistance to bidding, assistance to negotiation of ship building contract, checking on shipbuilding drawings, screening/approving manufacturers list submitted by shipbuilder, supervising/inspecting with related to ship construction at shipyard. The consultant shall further undertake witness on inspection for defect liability when the guarantee period comes to an end after one year from the date of delivery/acceptance.

The consultant shall undertake, following to the construction plan, supervise hull construction, outfitting work, installation of main engines, and electric/communication apparatus onboard ,and shall sometimes extend advice or recommendations in connection with trail operation of major equipment at manufactures' factories At the time of completion, the consultant shall witness and confirm delivery of technical documents, spare parts/inventory which be delivered from the shipbuilder to the ship side.

### 2-2-4-5 Quality Control Plan

(1) Process Control

Periodical process control is crucial on progress of ship construction and delivery of major equipment in accordance with implementation program separately arranged, in order to avoid irregularities to be generated from delayed delivery of major equipment or steel materials.
Only if a delay, such as delivery, is forecasted in the schedule (all three ships), the consultant, before the problems be actualized, shall take a close contact with the shipbuilder and execute supervision work

so as to arrange counter-measures as soon as possible.

(2) Quality Control

Quality standard to materials, equipment, and construction methods shall be maintained through studying the rules on Safety of Ships (JG), related standards of Japan Coast Guard, and quality control system held by the shipyard in order to guarantee performance capabilities. The consultant shall examine quality management system (QMS/ISO) being used by the shipyard and shall continue to supervise its execution.
As for the one of the supervision work, the consultant shall inspect and supervise not only designing or inspection departments but also manufacturing or testing department as well if considered necessary.

### 2-2-4-6 Patrol Ships Procurement Plan

The patrol ships in the Project are to be built in Japan, and if domestic procurement of materials/equipment in Japan is possible, it might mitigate construction period and transport cost. Ship building related industry circle, who is stuffed with high engineering standard and comprehension on construction philosophy of Japanese shipbuilders would contribute offer services in many ways in dealing with comments on drawings, negotiations with makers, witness at factory inspections, etc. Procurement plans on major equipment are as follows:

(1) Main Engine

The expectation to receive a Japan-made main engine was expressed during the field survey, saying that it is possible to repair in Indonesia and that spare parts are easily supplied. Japanese engine makers do not have enough manufacturing and delivery to Indonesia records on high rotation/high power type main engines required in patrol ships in the Project. Judging from those aspects, there are a lot of products, German-made or U.S.A.-made and procurement from overseas shall be studied, if they are satisfied with capabilities requested, reliability, operation/maintenance costs, after-sales services and the other.

(2) Shipyard

The study was made on whether to build, 1) plural number ships at one shipyard by simultaneous construction or continuous construction, 2) simultaneous construction at plural number shipyards.
Advantages and disadvantages on plural number ships at one shipyard by simultaneous construction or

continuous construction are as follows:

「Advantages」

- Lower procurement cost on materials/equipment due to simultaneous orders to the same company
- Designing cost and drawing fee (construction drawings) are enough for the portion to one ship
- The same quality is easily manageable in three ships, and problems shall be resolved at once.
- Construction and delivery schedule easily controlled
- Transport period and cost be minimized (time factor and cost to send a cargo ship to loading ports, and loading hours be minimized)
- Easy contact/consultation between executing agency and consultant
- Checking on drawings by consultant/executing agency be done at one shipyard
- Supervision by consultant/executing agency and inspection by classification society be done at one shipyard
- The shipyard acting as a window organization to guarantee period work be one shipyard

「Disadvantages」

- Difficulties is foreseen about building spaces and arrangements of building schedule
- Construction schedule will be longer than that of plural number of shipyard
- Number of shipyards with capabilities is restricted.

In case of construction at plural number of shipyards, its advantage will be the shorter construction schedule than the case at one shipyard. On the contrary, the disadvantage shall be no guarantee to lower the total price of three ships due to price differentials among the three ships. On top of that, there will be another disadvantages i.e. quality assurance, delivery time, after services, etc.

The three-ship construction at one shipyard is ideal based on the above analysis. However, in order to keep impartial bidding process, clarification shall be examined on the building capability of the candidate shipyard that deemed possible to build 3 consecutive or simultaneous construction.

(3) After-Sales Services on Equipment

The parts replacement, consumables supply, and inspection/repair work in Indonesia are expected to be done quickly and smoothly shall be considered with respect to major equipment onboard. Large size inventories shall be utilized in common by means of storage on land. The maintenance on these

groups of equipment shall be planned towards easy management through selection of such makers who have representative offices or factories/agents in Indonesia upon confirming that competition are still secured among those makers. As for electrical parts or main engines, selection of makers shall be subject to conditions that they at least have spare parts stores in Singapore or any other neighboring country, if they do not have such functions in Indonesia.

### 2-2-4-7 Implementation Process

Implementation Process are as follows; detail design shall be finalized within about 5 months from signing of E/N, thereafter shipbuilding contract shall be concluded within about 3 months, building period is about 11 months, and it would take one months till the commencement of transport ships to Jakarta Port to perform sea trails and transport ships to respective Marine Police Bases.
Overall period shall be about 198months after E/N.
Fig. 2-8 is "'Implementation Schedule" of the Project.

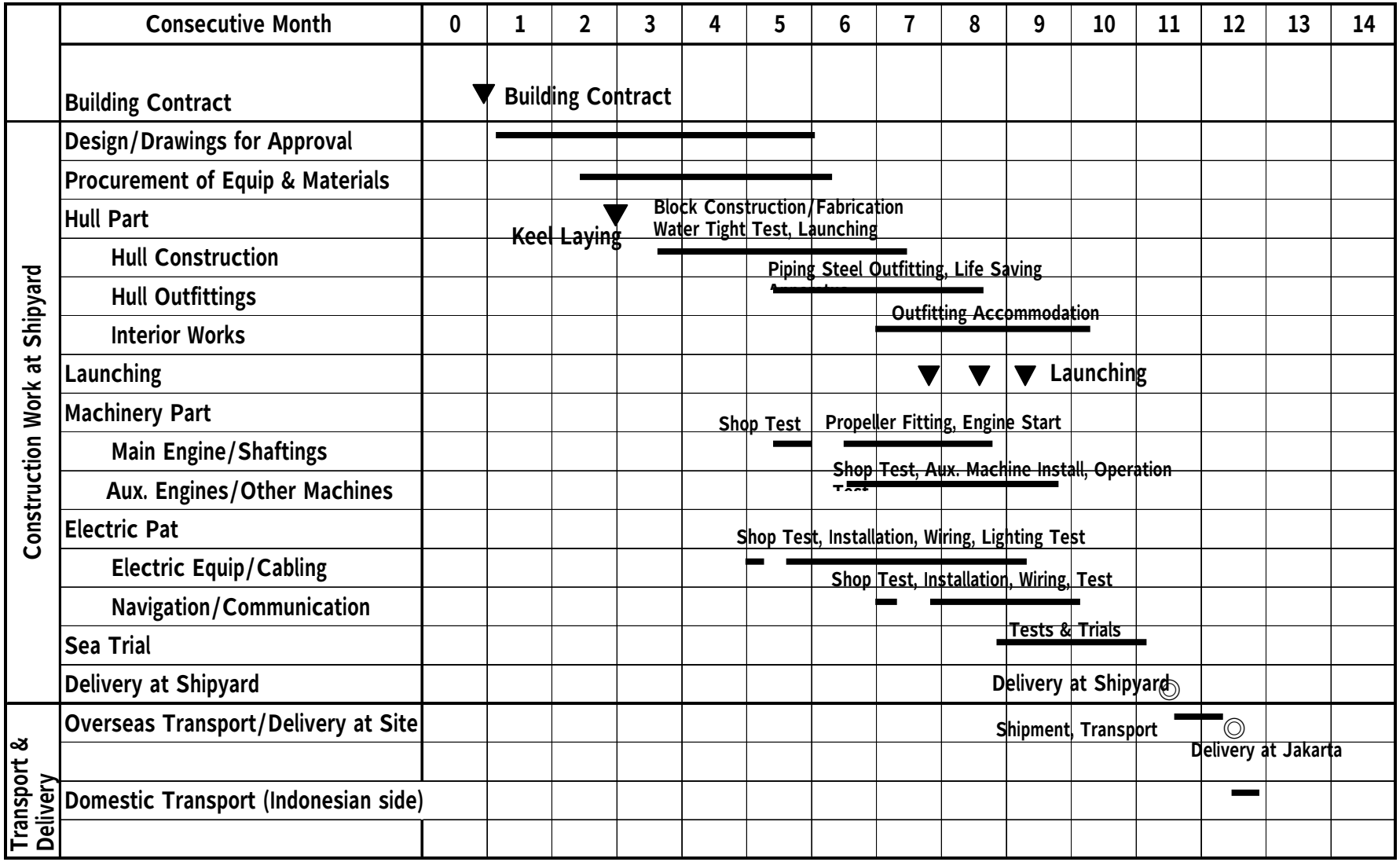



Fig. 2-8 Implementation Schedule

## 2-3 Obligations of Recipient Country

The following are the undertakings and its procedures confirmed in writing with the Government of Indonesia

- To provide necessary documents for transportation of patrol ships in the Project
- To pay banking charges to a foreign exchange bank in accordance with Banking Arrangement (B/A).
- To secure an unloading port and quay or wharf after unloading.
- To have patrol ships registered at the Ministry of Finance and execute tax exemption of patrol ships, customs clearance (Peraturan Pemerintah-42), and any other legal procedures concerned.
- To deploy respective crews to patrol ships at acceptance of Jakarta Port.
- To arrange fuel for navigation of each patrol ship to Bases.
- To secure budget allocation for operation, fuel, maintenance, and inventory
- To improve (if necessary) communication facilities on land to make smooth communication between patrol ships in Project and Marine Police Bases.
- To train new crew members.
- To secure transport fee and installation cost beyond Grant Aid Scheme

## 2-4 Project Execution/Management Plan

### 2-4-1 Organization/Personnel

#### 2-4-1-1 Operation/Management System

Operation, maintenance, and management of the patrol ships in the Project shall be carried out at the respective Marine Police Bases. In case of completion of construction of three patrol ships in the Project, deployment shall be as follows:

1) Jakarta Base (Tg. Priok, Jakarta Port), Directorate of Marine Police, INP
2) Tg. Batu Base (Water areas near the Singapore Strait) Marine Police, Riau Province.
3) Belawan Base (Medan area), Marine Police, North Sumatra Province.

Jakarta Base is under the command of the Directorate of Marine Police, INP, Tg. Batu Base, Marine Police of Riau Province, Belawan Base, Marine Police of North Sumatra Province.

(1) Regular Operation Management

Patrol ships classified in A class or B class are under the management of Directorate of Marine Police, INP and they usually station at Jakarta Base. Patrols ships classified in C or those not classified in any class belong to Provincial Marine Polices or Directorate of Marine Police, INP and they station at Jakarta Base or respective Provincial Marine Police Bases.

The patrolling activities are basically managed with the patrol ships owned by Provincial Marine Police to the respective designated sea waters. As the number of patrol ships owned by Provincial Marine Police or Police Stations is limited, Directorate Marine Police, INP, in compliance with request from Provincial Marine Police, dispatch part of their ships (A Class and B Class) to such Provincial Marine Police.

The operation/maintenance cost at Jakarta Base are sustained by Directorate of Marine Police, INP, and those of other two Bases are supported by the Provincial Police budget. The Operations are therefore undertaken under the different plans, not the plan nation-widely integrated. It was confirmed that the Provincial Police shall secure the budget necessary for operation and maintenance of patrol ships through consultation with INP.

(2) Periodical Survey and Repairs

Programs for inspection/operation management vary from respective Bases.

Daily maintenance work are normally taken care of by the crew, and those for main engines are done by dock workers during the dry docking period because the engine room space is too small to allow their overhauling work.

The shipyard expected to be used for dry docking by Jakarta Base is equipped with dock and repair department. Tg. Batu Base uses private shipyards on Batam Island and the one located in the suburbs of Batam. Belawan Base uses shipyards close to the Base.

The patrol ships in the Project shall not ask classification certificates. There will, thus, be neither inspections nor periodical surveys obligated by classification Society. Such inspections, in stead shall be managed with operation/maintenance programs prepared by respective Bases.

(3) Urgent Repairs/Consumables Supplies

The replacement of parts, if there are no spares in the available inventory, repair work is surrendered to the public tender and a winning company get repair work contract to supply the parts. Marine

machinery/equipment are rich on the market in and around Indonesia, and there are many agents as well. The procurements are always open to deal in terms of parts or consumables.

(4) Maintenance of Main Engine

The study proves that the present fleet undergo maintenance work in dock 2～4 times annually. Main engines shall be inspected and repaired at the time of dry docking. The work process is to lift up the main engine out of the engine room, transport it into workshop of engine maker/agent, and have it inspected by their professional workers. Under normal load (85～90% MCR), 4000～5000 hours operation is the overhaul standard.

The above figures become equal to two years' operation according to the current operation records at each Base, and overhaul or maintenance work are anticipated to be undertaken every two years by maker's professional engineers at maker's workshop or at shipyards designated for maintenance work.

### 2-4-1-2 Personnel for Management of Operation/Maintenance

As stated in Chapter 2 with regards to education/training ship officers, Directorate of Marine Police, INP, besides education/training at Police Academy and SPPS, have been managing a 6-month seamen training towards about 600 high school graduates every year. They also have trained about 170 on marine police staff in 2 months course to train them for ship crew members and/or petty officers.

Education and training system seems sufficient and, as such, able to cope with net increase of 30 crewmembers if produced from provision of three patrol ships in the Project.

The daily maintenance capability at each Base was confirmed adequate during the survey, as Jakarta Base is equipped with 46, Belawan Base 10, and Tg. Batu 12 in terms of members engaged in the maintenance/management division in 2005. Such a large scale repair work as involved in engine over-hauling shall be, if necessary handled at shipyards near by the Base and their facilities and technology standard were also confirmed sufficient level to deal with such repair work

## 2-5 Provisional Project Cost Estimate

The Provisional project cost shall total 1,920 million Japanese Yen (about 1,919 million Japanese Yen to be shared by the Government of Japan, about 610 thousand Japanese Yen by the Government of Indonesia) in case of implementation. The figures are not always the same as the limit amount to be indicated in the E/N. The project cost based on the undertakings shared by the Japanese Government and the Indonesian Government previously mentioned shall be as follows in compliance with the estimate conditions, (3) below.

### 2-5-1 Project Cost Undertaken by the Japanese Government

(1) Project cost undertaken by the Japanese Government

Provisional Total Project Cost About 1, 919 million Japanese Yen

Three (3) 27m type Patrol Ship

| Items | | | Provisional cost (Million Yen) | | |
|---|---|---|---|---|---|
| Facility | Construction of Three (3) Patrol Ships | Direct Cost (Materials, Equipment/Apparatus, Building cost, Direct building cost) Indirect Cost( Indirect labor cost, Yard management cost), Design engineering cost | 1,802.2 | 1,861.0 | 1,861.0 |
| | Transport cost | Japan to Indonesia, Marine transport | 58.9 | | |
| Detail designing/Supervision Cost | | | | | 57.7 |

This cost estimates is provisional and would be further examined by the Government of Japan for the approval of the Grant.

(2) Project cost undertaken by the Indonesian Government

| Items | | | Provisional Cost (Million Rp) |
|---|---|---|---|
| Facility | Inland Transport Cost | Fuel Cost Jakarta to Tg. Batu and Belawan | 46 |
| Others, Cost shared by the Indonesian Government | | | 0 |

(3) Cost estimate conditions

1) Point of estimate time : As of October, 2005

2) Foreign currency exchange rate : 1US$ = J¥112.85 ( average rate from April～September, 2005)
3) Implementation period: 12 months from shipbuilding contract. The duration necessary for detail designing, procurement of materials/equipment/apparatus is as per the Implementation Program.
4) Others: The project shall be implemented in accordance with Grant Aid Scheme of the Government of Japan.

### 2-5-2 Operation/Maintenance Management Cost

All the costs are as follows witch are necessary for operation and maintenance management including fuel and so forth.

(1) Fuel oil necessary for annual operation of new patrol ship ( In case of normal operation plan)

Annual fuel consumption for new patrol ship is calculated based on the normal operation plan held by each Marine Police Base at present. The average ship speed is set as per 30% of MCO (about 19 knots) and suspension of operation due to docking is estimated on an average for 4 weeks per a month. FO consumption of generators is set at 5% of main engines. The operation hours are calculated based on the data and annual fuel is estimated.

Table 2-13 Annual Fuel Volume based on Normal Operation Plan

| Planned Site | Operation Hours | Main Engine Load (30%) | Fuel | Annual Fuel Consumption |
|---|---|---|---|---|
| Belawan Base | 6 hours/day X 5 days x 4 weeks x 12 months – 40 days | 1,200ps | 202kg/h | 242 ton |
| Tg. Batu Base | 8 hours/day x 7 days x 4 weeks x 12 months – 30 days | 1,200ps | 202kg/h | 339 ton |
| Jakarta Base | 8 hours/day x 5 days x 4 weeks x 12 months – 30 days | 1,200ps | 202kg/h | 339 ton |

The above fuel shall be additionally required, when new patrol ships are deployed and operated on the present patrolling system at respective Bases.

(2) Additional fuel for a 24-hour patrolling system

A 24-hour patrolling system needs total three ships consisting of one new ship and two existing ships

which operates with a 2-shift crew, and one ship operates 16 hours per day. New patrol ship needs 551 tons of fuel annually on this operation plan. In addition, fuel for the existing two patrol ships shall need another 51 tons per ship based on the same operation plan. Consequently, fuel for a 24-hour patrolling system shall be of 653 tons. (New ship + existing two ships , 551 t + (51t x 2)).
Considering lubricants and fresh water, on top of fuel as operation costs, additional operation cost calculated by the market prices during the survey shall be estimated 2,296 million RP(30.6 million J¥, exchange rate 1J¥ = 75.0 RP)

Table 2-14 Necessary Operation Cost

| | Unit Price (Rp) | Consumption /Year | Cost (thousand Rp) |
|---|---|---|---|
| Fuel oil | 3,500/L | 653 ton | 2,285,500 |
| Lubricants | 16,000/L | 0.6 ton | 9,600 |
| Fresh Water | 15,000/Ton | 80 ton | 1,200 |
| Total | | | 2,296,300 |

There are other major expenses such as maintenance expenses, docking charges, etc. The cost for main engines periodical maintenance shall depend on types or makers' maintenance guidance. If such maintenance cost is supposed to be 1 % of a new ship price, another 6 million yen = 450 million Rp would be further necessary. About 235.2 million Rp is necessary as for crew cost, net additional 10 crew members per ship.

Table 2-15 Necessary Additional Labor Cost

| | Monthly Salary(RP) | Numbers | Annual Salary (thousand RP) |
|---|---|---|---|
| Captain/Chief Engineer | 3,000,000 | 2 | 72,000 |
| Others | 1,700,000 | 8 | 163,200 |
| Total | | 10 | 235,200 |

Remarks: salaries are estimated according to Government officers salary tariff, 2005

(3) Operation Budget for a 24-hour Patrolling System

Based on the above, additional operation budget necessary for a 3-ship 24-hour patrolling system commissioned with new patrol ships in Belawan Base, North Sumatra Province and Tg. Batu Base, Riau Province, and the one in Jakarta Base, Directorate of Marine Police, INP are calculated shown in Table 2-16.

Table 2-16 Budget necessary of a 24-hour Patrolling System commissioned by New Patrol Ships (2008)

| Items | | | Directorate of Marine Police, INP (Jakarta Base) | North Sumatra Province Marine Police (Belawan Base) | Riau Province Marine Police (Tg. Batu Base) |
|---|---|---|---|---|---|
| Additional Operation Budget | Operation Cost (Fuel fee)* | | 1,928,500 | 2,285,500 | 2,285,500 |
| | Ship Cost | | | | |
| | Crew Cost | | 235,200 | 235,200 | 235,200 |
| | Lubricant, Fresh Water | | 10,800 | 10,800 | 10,800 |
| | Repair Cost | | 450,000 | 450,000 | 450,000 |
| | Total | | 2,624,500 | 2,981,500 | 2,981,500 |
| Budget | Operation Cost (except fuel) | | 2,558,707 | | |
| | | Salary/labor cost | 24,444,003 | | |
| | | Inventory/repair cost/others | 10,491,234 | | |
| | Total | | 37,493,944 | | |

*Necessary fuel in Jakarta calculated is 551 tons, 653 tons for other 2 bases.

Security of the above operation/maintenance management cost, through consultation between Directorate of Marine Police, INP and respective Provincial Marine Polices, is confirmed during the survey, which will be allocated in the Mid-Term Activity Program (2007-2011) projected by Directorate of Marine Police, INP in order to ensure the budget which is able to sustain stable operation and maintenance of the patrol ships in the Project.

# CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

# CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

## 3-1 Project Effect

The territorial waters of Indonesia and the Malacca/Singapore Strait are prominent piracy-prone areas, and the worsening of marine security is influencing negatively to both the national economic development and the social stability Indonesia. There are pirates' incidents, more than 10% in the world-wide incidents, recorded in the Malacca Strait, the artery of international shipping where there are about 200 ships navigating through every day and about 14,000 ships, having some deal with Japan also passing through annually. Recently, terrors such as bomb accidents on Bali Island are getting rampant in Indonesia, which has generated the anxiety over the weapon smugglings by sea.

Directorate of Marine Police, INP, responsible agency for marine security, has been making efforts to suppress piracy and armed robbery incidents by means of strengthening patrols in the incidents-prone areas, however, they are not able to execute sufficiently their patrolling operations in the designated vast sea areas because of patrol ship shortage. The data demonstrates that the arrest rate is only 4.4% in pirate incidents and 20.0% in smuggling cases (one arrest per 5 cases).

Pirates' incidents often break out during the night; a 24-hour patrolling over the dangerous sea areas seems effective accordingly. It is impossible for Jakarta Base, Directorate of Marine Police, INP, Tg. Batu Base, Riau Province Marine Police, and Belawan Base, North Sumatra Province Marine Police to execute a 24-hour patrolling over those important sea areas under the present fleet and present operation patterns.

A 24-hour patrolling over the important sea areas shall be realized by procurement of patrol ships, three C-1 class, in the Project, and it is expected to generate higher arrest rate and to suppress the possible incidents as well.

There would be such benefits can be expected as to mitigation of social instability and promotion to growing national development, and more over it would contribute to stabilization of Japan and those other countries who have been making use of the Malacca Strait.

The following are the benefits expected from the implementation of this Project.

(1) Direct Benefit

1) A 24-hour patrolling shall be realized in the piracy prone areas by the patrol ships to be procured in collaboration with the existing patrol ships at each Marine Police Base.
2) The patrolling range shall be extended to 250 N.M. in radius from each Marine Police Base thus

making possible to cover the entire piracy prone areas.

(2) Indirect benefit

1) To contribute improvement of marine safety system against piracy in the Indonesian territorial waters focusing on the Malacca Strait ( Improve arrest rate in incidents)
2) To contribute stabilization of ship navigation in the Malacca Strait

## 3-2 Recommendations

Indonesia National Police, executing agency of this Project, under the supervision of BAKORKAMLA, shall execute activities for marine safety by using patrol ships and so forth. It is however likely that their marine patrolling operation are not underway effectively and efficiently. The background related to this are made clear that operation/maintenance budget for patrol ships are quite insufficient, in particular, at provincial polices. The site survey proves that there are no problems as far as capabilities on operation/maintenance of patrol ships concerned at those provincial marine polices, and that patrolling has been executed normally within the budget allocated.

In the event of implementation of this Project, one patrol ship each shall be deployed to Belawan Base, North Sumatra Province, and Tg. Batu Base, Riau Province, which make them possible to patrol the problem area 24 hours. It is expected to formulate an appropriate patrol plan and secure the budget with top priority through consultations with Directorate of Marine Police, INP.

In Indonesia, the tendency “repair is started only when broken” has been noticed in relation to maintenance of patrol ships ,and it is important to maintain constantly patrol ships at operational conditions by promoting idea for preventative repairs and setting up daily inspection/maintenance program in order to carry out continuous patrolling along the established plans.
It is also recognized that the communication equipment are partially out of order. They are recommended should be repaired so that emergency radio communications from ship or instructions from headquarters can be transmitted properly.

## 3-3 Project Appropriateness

In view of the various factors such as substance and effectiveness of the Project itself, operation/maintenance management system on patrol ships, necessity of patrol ships for marine security in

and around the Malacca Strait, and so on, this Project is considered appropriate to implement under the grant aid scheme from the Government of Japan.

1) The implementation of the Project shall benefit socio-economic stabilization in Indonesia and those countries, Japan included who have been utilizing the Malacca Strait and the adjacent sea areas.
2) Although there are 10 agencies, marine security organizations that are engaged in operation against piracy or armed robberies at sea, Indonesia National Police is designated in a concentrated manner with judicial procedures involving in arrest and other legal procedures. Indonesia National Police is considered appropriate organization to implement the Project.
3) Through deployment of one patrol ship each to Tg. Batu Base, Belawan Base, and Jakarta Base, a 24-hour patrolling system shall be established over the important sea areas including piracy prone areas.
4) C-1 class is considered appropriate ship type, since the cruising range of not much exceeding 600 nautical miles is necessary in order to cover the vast sea areas, the Malacca/Singapore Strait and the open sea including Natua Sea
5) With respect to maintenance and management of patrol ships, inspection/maintenance/repair works are satisfactorily possible from technical point of view at the dock facilities in Jakarta Base and those at shipyards located near Tg. Batu Base and Belawan Base. There are no serious problems with respect to repair work on major equipment and parts procurement, for there are manufacturer's after-sales service networks established in Indonesia.
6) With respect to operation/maintenance management cost, it is confirmed during the survey that the budget shall be allocated in Mid-Term Program (2007–2011) in order to secure operation/maintenance management as programmed.
7) Directorate of Marine Police, INP who's role is clearly assigned to patrolling at sea, therefore, it is confirmed that the patrol ships shall never be used any other mission than building up of marine security system, the objective of this Project.
8) There are no negative influences at any time, cruising at sea or anchoring in port, to environment or socio-environment aspects.

## 3-4 Conclusions

Under this project, new patrol ships shall be built and delivered to Directorate of Marine Police, INP in order to strengthen marine security system in Indonesia. In the event of implementation, it might be somewhat difficult to clarify the direct benefit on improvement of maritime safety in terms of quantity. The deployment of new patrol ships makes establishment of a 24-hour patrolling over the important areas, the Malacca/Singapore Strait, the Natuna Sea. The patrolling range furthermore covers almost all the

important areas by extending the distance to 250 nautical miles in radius from the project sites, respective Marine Police Bases.

There are varieties of mechanisms regarding breaking out of piracy, etc, however, as far as incidents sporadically happened in the territorial waters in Indonesia are concerned, they are not pirates sorely looking for money/goods. There seems a high risk of occurrence of marine terrors which might be staged by an international terrorist organization. In the circumstance, patrolling operation plays crucial roles in crime restraint mechanism. The deployment of new patrol ships, making regular patrolling over more wide areas possible, shall contribute to reduce number of pirates' incidents and break out ratio of atrocious crimes. The operations after occurrence of incidents shall also be improved as to chase pirates who attempt flights, search into captured vessels, etc.

In the light of the fact that the Malacca/Singapore Strait, the Project site, is one of the most important international straits on which Japan's 80% of import oil is being transported with oil tankers, the improvement of marine security in the Strait will greatly contribute to not only to Indonesia, but also to socio-economic stability in all those countries who have been utilizing the Strait. The Project is therefore considered appropriate to implement under grant aid scheme of the Government of Japan.

With regard to operation/maintenance management involved in the Project, Directorate of Marine Police, organization of which is expected capable of executing marine security activities effectively and efficiently as well under the BAKORKAMLA, there is no problem foreseen on system and technology standard of personnel about the operation/maintenance management required in new patrol ships. The Project is, no doubt, considered capable of fulfilling the project purposes, should the focal points narrated in the above 3-2, Problems and Recommendations be ensured or improved.

# Appendix 1：Member List of the Study Team

## 1. MEMBER LIST OF THE STUDY TEAM

(1) Basic Design Study

| | | |
|---|---|---|
| Leader | YAMAUCHI Kunihiro | Group Director, Project Management Group I, Grant Aid Management Department, International Cooperation Agency |
| Grant Aid Cooperation Planner | MITSUHASHI Hisashi | Official, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs |
| Project Coordinator | SAKABE Hidetaka | Officer, Project Management Group I, Grant Aid Management Department, International Cooperation Agency |
| Supervisor for Patrol Ship's Design | KOHAMA Teruhiko | Equipment & Technology Department, Japan Coast Guard |
| Advisor for Radio Transmission Design | MORIYAMA Hidetaka | Japan Coast Guard |
| Chief Consultant/ Shipbuilding/Operation & Management Planner | WASHIO Yushu | Shipbuilding Research Centre of Japan |
| Hull Designer | TOMOI Takehito | Ditto |
| Outfitting Designer | HIRANO Shozo | Ditto |
| Logistic Plan/Cost Estimator | YAMADA Michimasa | Ditto |
| Interpreter | OCHIAI Toshihide | Ditto |

(2) B.D. Draft Final

| | | |
|---|---|---|
| Leader | TOTSUKA Shinji | Deputy Resident Representative, International Cooperation Agency, Indonesia Office |
| Project Coordinator | SAKABE Hidetaka | Officer, Project Management Group I, Grant Aid Management Department, International Cooperation Agency |
| Chief Consultant/ Shipbuilding/Operation & Management Planner | WASHIO Yushu | Shipbuilding Research Centre of Japan |
| Hull Designer | TOMOI Takehito | Ditto |
| Outfitting Designer | HIRANO Shozo | Ditto |
| Interpreter | OCHIAI Toshihide | Ditto |

# Appendix 2：Study Schedule

## 2. STUDY SCHEDULE

(1) Basic Design Study

| | Date | Day of the Week | Survey Activities |
|---|---|---|---|
| 1 | 10/2 | Sun | Lv. Narita Ar. Jakarta (Messrs. Yamauchi, Mitsuhashi, Sakabe, Washio, Tomoi, Ochiai)<br>Discussions with JICA, Indonesia Office |
| 2 | 10/3 | Mon | Courtesy call on Coordination Ministry for Politics, Law and Security(CMPLS) and Director of Marine Transport, Directorate General of Sea Communication (DGSC)<br>Courtesy call on Embassy of Japan (EOJ) |
| 3 | 10/4 | Tue | Courtesy Call on / Discussion with Indonesian National Police(INP)<br>Hearing from / Discussion with the Expert belonging to the INP<br>Courtesy Call on / Discussion with Directorate of Marine Police(DMP), Indonesian National Police(INP) |
| 4 | 10/5 | Wed | Discussion with DMP |
| 5 | 10/6 | Thu | Discussion with DMP<br>Survey on Patrol Ships in Jakarta |
| 6 | 10/7 | Fri | Signing of the M/D Report to EOJ、JICA Indonesia Office<br>Lv. Jakarta (Messrs. Yamauchi, Mitsuhashi, Sakabe) |
| 7 | 10/8 | Sat | Ar. Narita (Messrs. Yamauchi, Mitsuhashi, Sakabe)<br>Preparation for Site Survey |
| 8 | 10/9 | Sun | Recompilation of Materials and Data<br>Lv. Narita Ar. Jakarta (Messrs. Moriyama, Hirano, Yamada) |
| 9 | 10/10 | Mon | Preparation for Site Survey |
| 10 | 10/11 | Tue | Lv. JKT Ar. Batam (Messrs. Washio, Tomoi, Moriyama, Hirano, Yamada, Ochiai)<br>Site Survey on Expresindo Shipyard & Palma Progress Shipyard |
| 11 | 10/12 | Wed | Lv. Batam Ar. TG. Batu Discussions with Marine Police, Riau Province(TG. Batu)<br>Lv. TG. Batu Ar. Batam |
| 12 | 10/13 | Thu | Visit. Sumber Teknik Shipyard in Sagulung<br>Lv. Batam Ar. Jakarta |
| 13 | 10/14 | Fri | Discussion with DMP (Follow-up of Questionnaires)<br>Hearing from Marine Equipment Supplier |
| 14 | 10/15 | Sat | Recompilation of Answer to Questionnaire |

| | | | |
|---|---|---|---|
| 15 | 10/16 | Sun | Recompilation of Answer to Questionnaire<br>Lv. Narita Ar. Jakarta (Mr. Kohama) |
| 16 | 10/17 | Mon | Data & Information collection<br>Visit IPERINDO for hearing after services on Marine Equip. |
| 17 | 10/18 | Tue | Discussion with DMP (Technical & Follow-up of Questionnaires)<br>Hearing form PT PIONEER (M/Engine After Service) |
| 18 | 10/19 | Wed | Discussion with DMP (Technical & Follow-up of Questionnaires)<br>Visit Ministry of Geography |
| 19 | 10/20 | Thu | Discussion with DMP (Survey on Training , Maintenance facilities)<br>Visit Ministry of Geography |
| 20 | 10/21 | Fri | Lv. Jakarta Ar. Medan Discussion & Site survey with Marine Police, North Sumatra Province (Belawan) |
| 21 | 10/22 | Sat | AM Visit Warna Nusa Sentana Shipyard |
| 22 | 10/23 | Sun | Internal Meeting<br>Lv. Medan Ar. Jakarta |
| 23 | 10/24 | Mon | Discussion with DMP (Technical Matter)<br>Preparation of Memorandum of Technical Discussions<br>Visit Ministry of Geography |
| 24 | 10/25 | Tue | Signing of the Memorandum of Technical Discussions<br>Hearing form Engine Supplier |
| 25 | 10/26 | Wed | Report to EOJ and JICA Indonesia Office<br>Lv. Jakarta (Messrs. Washio, Tomoi, Kohama , Moriyama) |
| 26 | 10/27 | Thu | Ar. Narita (Messrs. Washio, Tomoi, Kohama , Moriyama)<br>Review of the Memorandum of Technical Discussions at DMP<br>Hearing from sales agents of Aux. Machines |
| 27 | 10/28 | Fri | Hearing from sales agent of Aux. Machines<br>Lv. Jakarta (Messrs. Hirano, Yamada, Ochiai) |
| 28 | 10/29 | Sat | Ar. Narita (Messrs. Hirano, Yamada, Ochiai) |

(2) B.D. Draft Final

| | Date | Day of the Week | Activities |
|---|---|---|---|
| 1 | 3/23 | Thu | Lv. Narita Ar. Jakarta (Messrs. Sakabe, Washio, Tomoi, Hirano, Ochiai) Discussions with JICA, Indonesia Office |
| 2 | 3/24 | Fri | Courtesy Call on / Discussion with Directorate of Marine Police(DMP), Indonesian National Police(INP) and Planning Div. INP.<br>Courtesy call on Embassy of Japan (EOJ)<br>Discussions with JICA, Indonesia Office |
| 3 | 3/25 | Sat | Internal Meeting |
| 4 | 3/26 | Sun | Internal Meeting |
| 5 | 3/27 | Mon | Explanation and Discussion on B.D. Draft Final with DMP<br>Discussion on M/D |
| 6 | 3/28 | Tue | Signing on M/D Report to EOJ<br>Report to Coordination Ministry for Politics, Law and Security(CMPLS) and National Planning & Development Agency (BAPPENAS)<br>Lv. Jakarta ( Messrs. Sakabe, Washio, Tomoi, Hirano, Ochiai) |
| 7 | 3/29 | Wed | Ar. Narita (Ditto) |

# Appendix 3：

# List of Parties Concerned in the Recipient Country

## 3. LIST OF PARTIES CONCERNED IN THE RECIPIENT COUNTRY

- INDONESIA

  Directorate of Marine Police, Indonesian National Police (DMP of INP)

  (TG. Priok, Jakarta)

| | |
|---|---|
| T. Sutisuna | Director General |
| Suristyono | Kombes Police |
| Imam Basuki | Kombes Police |
| Isnarno | Kombes Police |
| Suhart | AKBP |
| Supriyono | AKBP |
| Suwandi | AKBP |

  TG. Batu, Marine Police, Riau Province

| | |
|---|---|
| Sjamsul Badhar | AKBP |
| Isral BA | KOMPOL(Kombes Police) |
| Supandy | IPDA |
| L.Agus Riyanto | KOMPOL |
| Sapto Hartoyo | |
| Sugit | |

  Belawan, Marine Police, North Sumatra Province

| | |
|---|---|
| Buli Hartono Untung | KBP |
| Dwi Priyambodo | AKBP |
| Omad | KP |
| Rf. Furingoringo | KP |
| J. Tondang | KP |
| Swito Widodo | IPDA |
| Watirin | BRIPTU |
| Sjahputra | BHARAKA |

- JAPAN SIDE

  Embassy of Japan

| | |
|---|---|
| Takashi Ikemitsu | First Secretary (Transport & Tourism) |

  JICA Indonesia Office

| | |
|---|---|
| Keiichi Kato | Resident Representative |

| | |
|---|---|
| Shinji Totsuka | Deputy Resident Representative |
| Hiroshi Takeuchi | Assistant Resident Representative |

# Appendix 4：Minutes of Discussions

4.(1) Minutes of Discussions on the Basic Design Study
4.(2) Memorandum of Technical Discussions
4.(3) Minutes of Discussions (Explanation on the Draft Report)

**Minutes of Discussions**
**on the Basic Design Study**
**on the Project for Provision of Patrol Ships**
**for Anti-Piracy, Anti-Maritime Terrorism and Non-Proliferation**
**in the Republic of Indonesia**

Referring to the results of Preliminary Study conducted in May 2005, the Government of Japan decided to conduct a Basic Design Study on the Project for Provision of Patrol Ships for Anti-Piracy, Anti-Maritime Terrorism and Non-Proliferation (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Indonesia the Basic Design Study Team (hereinafter referred to as "the Team"), headed by Mr. Kunihiro Yamauchi, Group Director, Project Management Group I, the Grant Aid Management Department, JICA, and is scheduled to stay in the country from October 2 to October 28, 2005.

The Team held discussions with the concerned officials of the Government of Indonesia. In the course of the discussions, both sides have confirmed the main items of described in the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Jakarta, October 7, 2005

Kunihiro Yamauchi
Leader
Basic Design Study Team
Japan International Cooperation Agency

Drs. I Nengah Sutisna, MBA
Director of Marine Police
Indonesian National Police
Republic of Indonesia

Drs. I. Lebang
Chief of Secretary Development and Guidance Agency
Indonesian National Police
Republic of Indonesia

## ATTACHMENT

1. Objective of the Project

The objective of the Project is to enhance the capacity of the Directorate of Marine Police, Indonesian National Police for maritime security against piracy and maritime terrorism, and for prevention of weapons proliferation, mainly in the Malacca Straits.

2. Project Site

The sites of the Project are Marine Bases of the Directorate of Marine Police, Indonesian National Police in Jakarta, Riau District Police in Tg. Batu and North Sumatra District Police in Belawan, as shown in the Annex-1 of Minutes of Discussions signed by both sides on May 20, 2005 (hereinafter referred to as "the previous M/D").

3. Responsible and Implementing Organization

3-1. The responsible and implementing organization is the Directorate of Marine Police (DMP), Indonesian National Police (INP).

3-2. The organization chart of INP and DMP and their roles are as described in the Attachment of the previous M/D.

4. Items Requested by the Government of Indonesia

The following items were requested by the Indonesian side. JICA will assess the appropriateness of the request and will report its findings to the Government of Japan.

- Requested items: three (3) C-1 class patrol ships.

5. Japan's Grant Aid Scheme

5-1. The Indonesian side understood the Japan's Grant Aid scheme explained by the Team, as described in Annex-1.

5-2. The Indonesian side will take the necessary measures, as described in Annex-2, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the study

6-1. The consultants will proceed to further study in Indonesia until October 28, 2005.

6-2. JICA will prepare the draft report in English and Indonesian and dispatch a mission to Indonesia in order to explain its contents around the beginning of March 2006.

6-3. In case that the contents of the report is accepted in principle by the Government of Indonesia, JICA will complete the final report in English and send it to the Government of Indonesia by June 2006.

7. Other Relevant Issues

7-1. The Team explained that the specification of the ships to be supplied will be examined taking into account Japan's policy on the control of arms exports.

7-2. Both sides confirmed that the ships and equipment to be provided on the Project would never be utilized for military purpose under any circumstances.

7-3. The Indonesian side shall register the Project with the Ministry of Finance in Indonesia, in a timely manner necessary for smooth implementation of tax exemption procedures and customs clearance for the ships to be procured under the Project at the port of disembarkation in Indonesia, based on the Indonesian law "Peraturan Pemerintah-42".

7-4. The Indonesian side shall allocate the appropriate budget and conduct the undertakings in a timely manner necessary for proper operation and maintenance of the ships to be provided: procurement of fuel and spare parts, and overhaul of main engine.

7-5. The Indonesian side will improve the land-based transmission facilities for smoother communication between patrol ships and INP basements by its own expense, if necessary.

(ANNEX-1)

# JAPAN'S GRANT AID SCHEME

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

## 1. Grant Aid Procedures

Japan's Grant Aid Scheme is executed through the following procedures.

| | |
|---|---|
| i) Application | (Request made by a recipient country) |
| ii) Study | (Basic Design Study conducted by JICA) |
| iii) Appraisal & Approval | (Appraisal by the Government of Japan and Approval by Cabinet) |
| iv) Determination of v) Implementation | (The Notes exchanged between the Governments of Japan and the recipient country) |
| vi) Implementation | (Implementation of the Project) |

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country.

Finally, for the smooth implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

i) Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
ii) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view;
iii) Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
iv) Preparation of a basic design of the Project.
v) Estimation of cost of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses registered consulting firms. JICA selects firms based on proposals submitted by interested firms. The firms selected carry out a Basic Design Study and write a report, based upon terms of reference set by JICA.

The consulting firms used for the Study are recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as natural disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

5) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the Project,
(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
(3) To secure buildings prior to the procurement in case the installation of the equipment,
(4) To ensure all the expense and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the verified contracts,
(6) To accord Japanese nationals, whose services may be required in connection with supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

8) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

9) Authorization to pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

Annex-2

## Major Undertaking to be taken by Each Government

| NO | Items | To be covered by Grant Aid | To be covered by Recipient side |
|---|---|---|---|
| 1 | Design and Construction of ships | ● | |
| 2 | Allocate the appropriate budget and conduct the undertakings in a timely manner necessary for proper operation and maintenance of the ships to be provided (procurement of fuel and spare parts, and overhaul of main engine) | | ● |
| 3 | To bear the following commissions to a bank in Japan for the banking services based upon the B/A | | |
| | 1) Advising Commission of A/P | | ● |
| | 2) Payment commission | | ● |
| 4 | To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country | | |
| | 1) Marine and land transportation of the products from Japan to the recipient Country | ● | |
| | 2) Tax exemption and customs clearance of the products at the port of disembarkation, including the project registration to the Ministry of Finance, and budget allocation for tax refund according to the implementation schedule of the Project | | ● |
| | 3) Inland transportation from the port of disembarkation to the project site | ( ● ) | ( ● ) |
| 5 | To accord Japanese nationals, whose services may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work | | ● |
| 6 | To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract | | ● |
| 7 | To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid | | ● |
| 8 | To bear all the expense, other than those to be borne by the Grant Aid, necessary for the Transportation and installation of the products | | ● |

(B/A: Banking Arrangement, A/P: Authorization to pay)

4.(2)

# MEMORANDUM OF TECHNICAL DISCUSSIONS
# ON
# THE BASIC DESIGN STUDY
# ON
# THE PROJECT FOR PROVISION OF PATROL SHIPS
# FOR
# ANTI-PIRACY, ANTI-MARITIME TERRORISM
# AND NON-PROLIFERATION
# IN
# THE REPUBLIC OF INDONESIA

From 4th October to 25th October, 2005, the Basic Design Study Team ( hereinafter referred to as " the Team") held a series of technical discussions with the officials of Directorate of Marine Police at Jakarta, Marine Police of Riau Province at Tanjung Batu and Marine Police of North Sumatra Province at Belawan and had field surveys at each bases thereof with project-related facilities.

As a result of the discussions and the field surveys, the both sides confirmed the items described in the attached sheets and annexes.

Jakarta, 25th October, 2005

Dr. Yushu Washio
Chief of Consultant
Shipbuilding Research Centre of Japan
JICA Basic Design Study Team

Drs. I Nengah Sutisna,MBA
Director of Marine Police
Indonesian National Police
Republic of Indonesia

Witness: Teruhiko Kohama
Supervisor
Japan Coast Guard
JICA Basic Design Study Team

1. Outline specifications of Patrol Ship

Referring to the results of Preliminary Study conducted in May 2005, the Team presented the "GENERAL ARRANGEMENT of 24.5 m Patrol Ship" (Annex-1) and confirmed DMP's requested items as described in the Memorandum of the iscussion dated October 6, 2005.(Annex-2)

Reflecting the items mentioned in the above Memorandum of the discussion and the requests expressed from DMP side in the course of the discussions held from October 11 to October 18, 2005, the Team made "PRINCIPAL PARTICULARS of 27 m Patrol Ship" (Annex-3) and the "GENERAL ARRANGEMENT of 27 m Patrol Ship"(Annex-4) and presented them to DMP for the discussion purpose and DMP requested the Team their propositions as shown below and the Team took note the their requests.

1) FOT and FWT to be not less than the figure indicated in the PRINCIPAL PARTICULARS,
2) The anchor arrangement to be of one (1) anchor at center forward,
3) The galley equipment to be of propane gas type,
4) The spare parts for two(2) years to be provided, and
5) One (1) speed boat to be provided.

On the basis of the "PRINCIPAL PARTICULARS of 27 m Patrol Ship" (Annex-3), the "GENERAL ARRANGEMENT of 27 m Patrol Ship"( Annex-4) and the investigation made on the additional requests as above-mentioned item 1) to 5), the Team will further proceed the Basic Design Study of the patrol ship through the analysis to be made in Japan, and the basic design will be finalized with due consideration of the objectives and necessity of the Project within the frame work of the Japan's ODA with discussions between higher authorities of the Government of Japan.

Should the modification of the principal particulars be necessary, the order of the priority among the major items of the specifications is confirmed as follows:

1. The length of ship : 27m
2. Complement : 10 + 2( Suspects)
3. Speed of ship : Maximum about 30 knots
4. Capacity of FOT and FWT
5. Main engine maker
6. Speed boat( DMP stressed this item to be supplied even at the low priority)
7. Crew protection wall and window
8. Operation cost

2. Operation and maintenance of patrol ships

The Team obtained the data concerning the operation and maintenance of the present fleet of patrol ships from each Marine Police Base as follows:

(1) Operation and maintenance of the patrol ships (Annex-5)

1) Annual operation cost and ship cost of DMP total record of the year 2001 to 2004 and the budget from 2005 to 2009.
2) Annual fuel oil consumption in 2004
3) Typical operation procedure
4) Dock-in times and period

(2)Major trouble in patrol ships

1) Propeller
2) Engine
3) Auxiliary machinery
4) Rudder

(3) Main engine

DMP requested the main engine to be of simple control and easy to be repaired in case of trouble

Taking these data into consideration, the Team will make basic design of the patrol ships.

3. Familiarization Training to the patrol ships

DMP requested the acceptance of total five (5) persons for three (3) patrol ships for familiarization training in the shipyard and the qualification of each person is as follows:

Captain – 1
Chief Engineer – 1
Communication – 1
Supervisor – 2

The Team will investigate the numbers of persons and the period of training etc., in the course of the Basic Design Study.

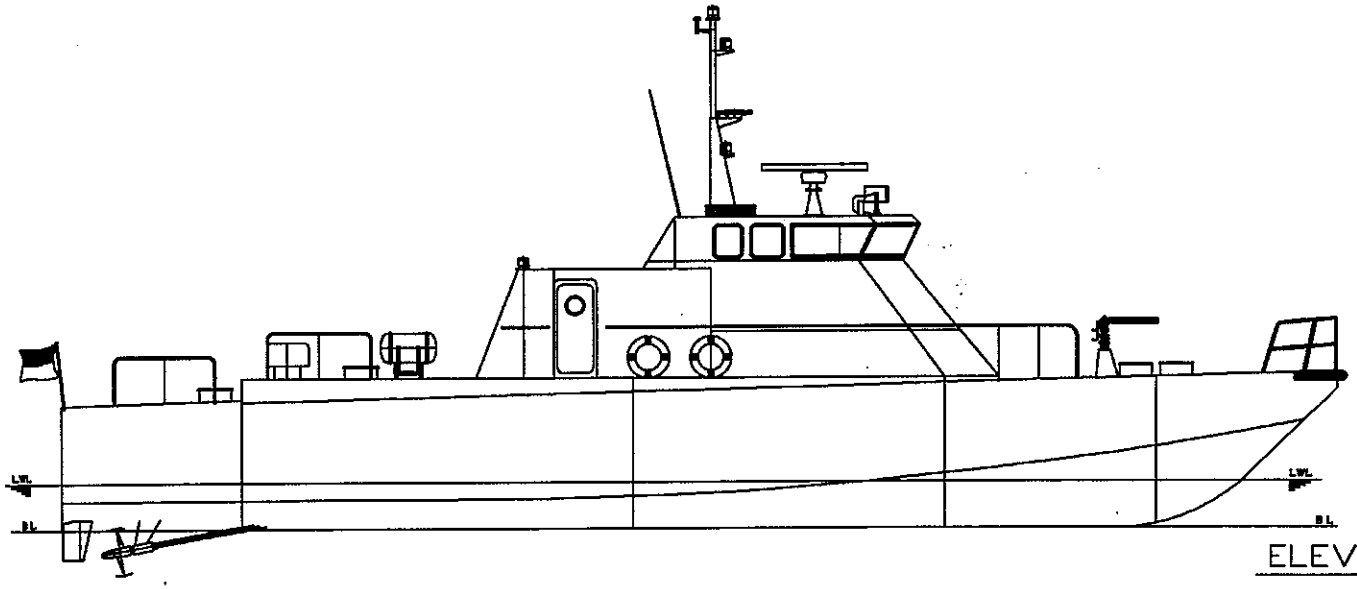
4. Others

The Team suggested in the field survey at Belawan Marine Police Base of North Sumatra Province that the both HF and VHF communication equipment should be repaired by DMP own expense and DMP accepted the suggestion.

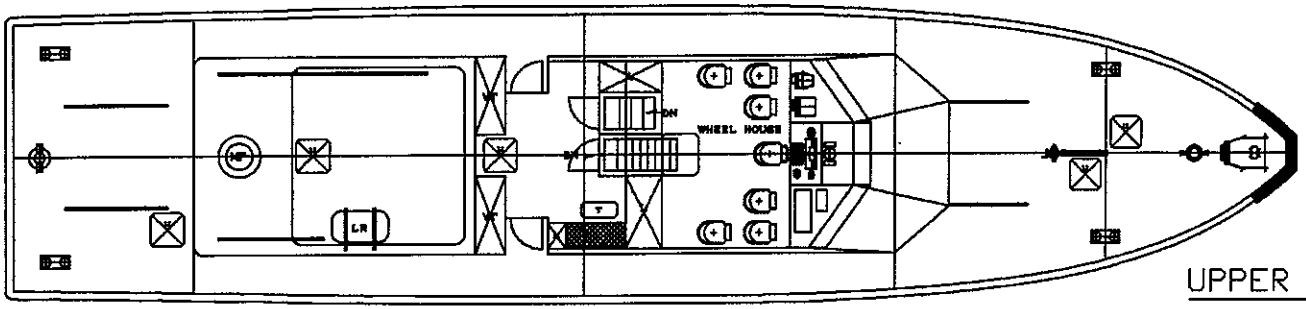
Annex-1 GENERAL ARRANGEMENT of 24.5m Patrol Ship
Annex-2 Memorandum of the discussion of October 6, 2005
Annex-3 "PRINCIPAL PARTICULARS of 27 m Patrol Ship"
Annex-4 "GENERAL ARRANGEMENT of 27 m Patrol Ship"
Annex-5 Operation and Maintenance of the patrol ships

## PRINCIPAL DIMENSION

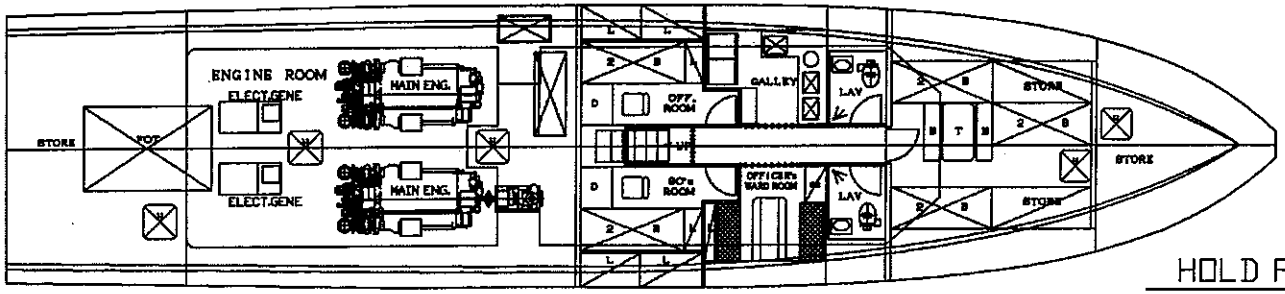
| | |
|---|---|
| LENGTH (OVER ALL) | Abt. 24.5 m |
| LENGTH (LWL) | Abt. 23.0 m |
| BREADTH (MLD) | 5.4 m |
| DEPTH (MLD) | 2.6 m |
| DRAFT (MLD) | 0.9 m |
| MATERIAL | |
| HULL | Hi-TENSILE STEEL |
| UPPER DK & SUPERSTRUCTURE: | ALMINIUM ALLOY |
| MAIN ENGINE | Abt. PS x 2 sets |
| ELECTRIC GENERATOR | 15KVA x 2 Sets |
| SPEED (Max) | Abt. Kt |
| CRUSING RANGE | Abt. 500 SM at 12 Kt |
| COMPLEMENTS | TOTAL 10 PERSONS |
| FUEL OIL | Abt. 4500 L |
| FRESH WATER | Abt. 800 L |
| ACCOMMODATION | AIR CONDITIONED CABIN |
| EQUIPMENT FOR PATROL | |
| RADAR | 1 set |
| SEARCH LIGHT | 1 set |
| FIRE FIGHTING MONITOR | 1 set |
| LOUD SPEAKING SYSTEM | 1 set |
| RADIO EUIPMENT | 1 set |




ELEVATION




UPPER DECK PLAN




HOLD PLAN

GENARAL ARRANGEMENT PLAN

24.5 m PATROL SHIP
for
ANTI-PIRACY
ANTI-MARITIME TERRORISM
AND NON-PROLIFERRATION

SHIPBUILDING
RESEARCH CENTRE
OF JAPAN

| | |
|---|---|
| Date | 2005.09.30 |
| Scale | 1:~~100~~ |
| | A-2 |

Annex-1

Annex-2

Memorandum of the discussion
on the Basic Design Study on the Project for Provision of Patrol Ships
for Anti-Piracy, Anti-Maritime Terrorism and Non-Proliferation
in the Republic of Indonesia

JICA Study Team and Directorate of Marine Police (DMP) confirmed the requested items from DMP for the Basic Design of ships procured under the Project as follows;

1. Characteristics of ship's performance according to the submitted plan are understood and considered by DMP when the specifications are finally decided.
2. Principal particulars of to be decided within the specifications of "C1 class" patrol ship of the submitted plan
3. The length of the ship is preferable to be lengthened to the maximum of "C1 class", as 27m of overall length.
4. The ship's maximum speed is agreed as about 30 knots.
5. The materials of the hull are agreed as follows.
   1) Hi-tensile steel for main hull
   2) Aluminum alloy for the upper deck and the superstructure
6. The numbers of the complement is 10 persons with 2 tiers beds.
7. The foundation of gun is not needed at the delivery.
8. The capacity of FOT and FWT is preferable to increase as possible by taking the space into consideration.
9. The room for the suspects is provided for 2 persons with 1 tier bed.
10. The decrease of the speed by the requirements of the items in relation to the weight increase is agreed.

October 6th, 2005

Dr. Yushu WASHIO
Chief Consultant
Shipping Research Center of Japan
JICA Basic Design Study Team

Drs. I Nengah Sutisna, MBA
Director of Marine Police
Indonesian National Police
Republic of Indonesia

Witness: Kunihiro YAMAUCHI
Leader
JICA Basic Design Study Team

27 m Patrol Ship PRINCIPAL PARTICULARS (for discussion ) Annex-3

| ITEM | | SPECIFICATION | No | REMARK |
|---|---|---|---|---|
| 0 RULE & REGULATION | | | | |
| 1 Technical Standard | | In accordance with Japan Coast Guard Standard, Inspected by Nippon Kaiji Kyokai (NK) | | |
| 1 GENERAL | | | | |
| 1 | Length (OVER ALL) | abt 27.0 m | ✓ | |
| 2 | Length (LWL) | abt. 25.5 m | | |
| 3 | Breadth (MOLD) | 5.6 m | | |
| 4 | Depth(MOLD) | 2.8 m | | |
| 5 | Draft(MOLD) | 1.15 m | | |
| 6 | Material Hull body<br>Upp. Dk & Superstructure | Hi-Tensile Steel<br>Aluminium Alloy | | |
| 7 | Main Engine | 1,800 to 2,000PS x abt.2000rpm | 2 ✓ | |
| 8 | Speed(Max/Full load) | abt.30Kt | ✓ | |
| 9 | Cruising Range | abt.600 SM at 12Kt | | |
| | | | | |
| 10 | Complements | 10 + 2*Persons | ✓ | *2 suspects |
| 11 | Fuel oil | abt.5,000 L | ✓ | |
| 12 | Fresh water | abt.1,000 L | ✓ | |
| | | | | |
| 2 HULL EQUIPMENT | | | | |
| 1 | Steering Gear | Elect-hydraulic | 1 | |
| 2 | Capstan | | 1 | |
| | | | | |
| 3 | Ventilation | | | |
| | Air conditioning | Water cooled condensing unit | 1 ✓ | |
| | | Fan coil unit | each 1 | for accommdation space |
| | | | | |
| | Mechanical Vent. | Exhaust | 1 | |
| | | | | |
| 4 | Towing Beam | by cross bitt | 1 | |
| 5 | Fender Steel | half round pipe | 1 row | for side shell,end wall |
| | Rubber | | 1 | for Bow |
| 6 | Life saving equipment | Inflatable liferaft | 1 | |
| | | Life jacket | 12 | |
| | | | | |
| 3 ACCOMMODATION | | | | |
| 1 | Wheel House | Chair x 10sets | 1 | Crew protection wall & window (Front & side) |
| 2 | Cabin | Cap&C/E 2Beds x 1 | 1 | Capt/C.Eng |
| | | Crew 2Beds x 2 | 1 | |
| | | Crew 2Beds x 2+ 1Table | 1 | common use for mess |
| 3 | Suspect Room | 1Bed x 2 | 1 | |
| 4 | Galley | | 1 | |
| | | Refrigerator (400 lit) | 1 | |
| | | Micro wave oven | 1 | |
| | | Rice cooker | 1 | |
| | | Sink | 1 | |
| 5 | Lavatory | | 1 | |



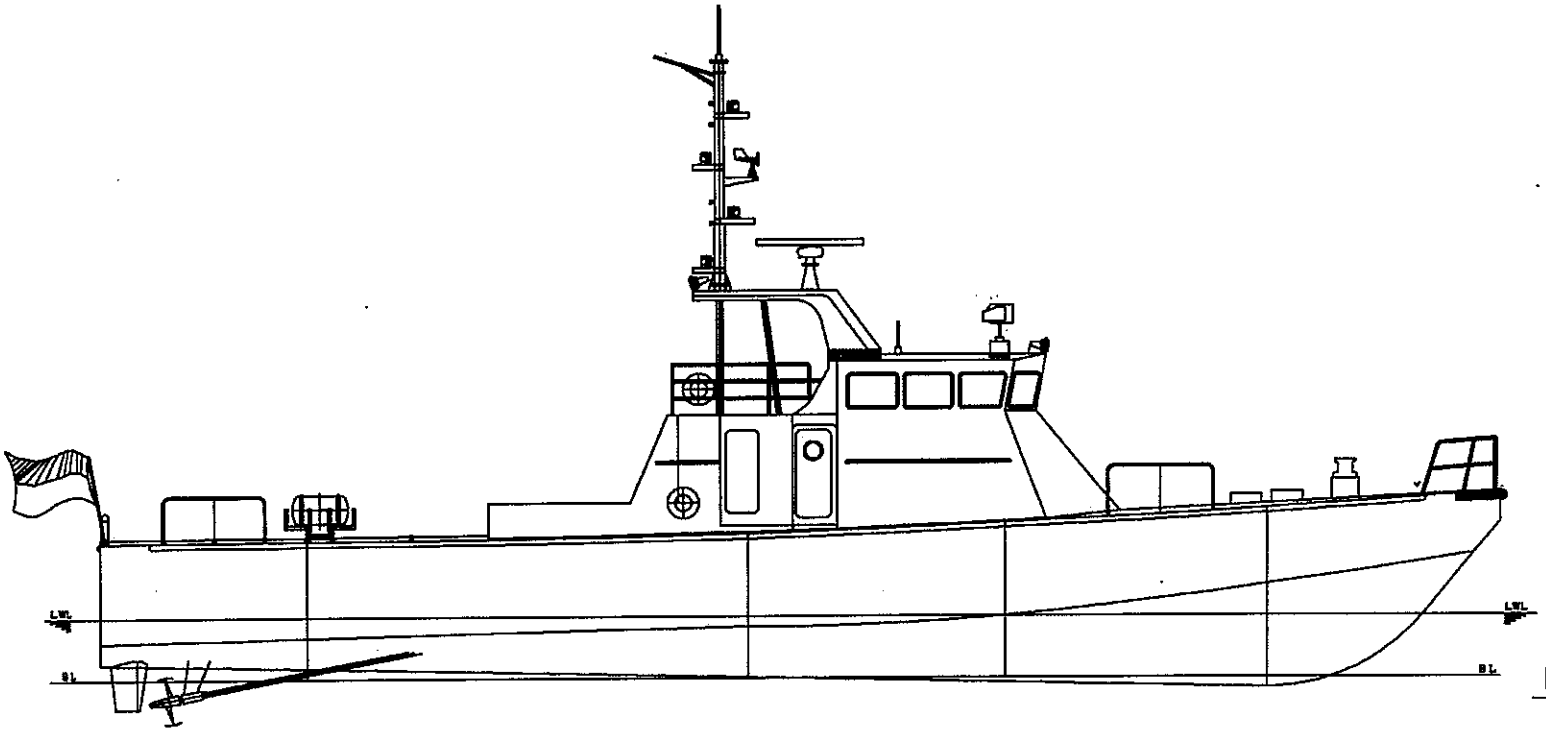
25 L

60

| | ITEM | SPECIFICATION | No | REMARK |
|---|---|---|---|---|
| 4 | MACHINERY PART | | | |
| 1 | Main engine | High speed diesel<br>1,800 to 2,000 PS | 2 | |
| 2 | Propeller | FPP | 2 | |
| 3 | Auxiliary Machinery | Mechanical vent. | 1 | |
| | | Bilge pump | 1 | |
| | | F.O. Transfer pump | 1 | |
| | | Bilge hand pump | 1 | |
| | | | | |
| 5 | ELECTRIC PART | | | |
| 1 | Power | | | |
| | Generator & Engine | Diesel engine driven AC220V | 2 | |
| | Main Switchboard | | 1 | |
| | Battery | DC24V | 1 | |
| | | | 1 | |
| 2 | Lighting | | | |
| | Accommodation Space | Fluorescent light | | |
| | Machinery Space | Fluorescent light | | |
| | Deck | 400W mercury floodlight | | |
| | Search Light | 1,000W | 1 | |
| | | | | |
| 3 | Navigation and Communication Equipment | | | |
| | Marine RADAR | Color LCD display with ARPA | 1 | |
| | DGPS Navigator | 5 inch digital display | 1 | |
| | GPS Compass | 2 antenna type | 1 | |
| | Navigation Echo Sounder | Remote display | 1 | |
| | AIS(Auto.Identification Sys.) | 5.7 inch LCD display | 1 | |
| | MF/HF Radio Equipment | 250W | 2 | |
| | VHF FM Marine Radio Telephon | 25W/FM, DSC | 2 | |
| | VHF AM Air Radio Telephon | 10W/AM | 1 | |
| | Public Addressor | 100W | 1 | |
| | Night Eyes Binocular | | 1 | |
| | Loud Speaker | | 1 | |
| | | | | |
| 6 | OTHER EQUIPMENT | | | |
| 1 | Evidence Recorder | VTR | 1 | |
| 2 | Scuba Diving Apparatus | Compressor | 1 | |
| | | Diving aparatus | 2 | |
| | | | | |

## PRINCIPAL DIMENSION

| | |
|---|---|
| LENGTH (OVER ALL) | Abt. 27.0 m |
| LENGTH (LWL) | Abt. 25.5 m |
| BREADTH (MLD) | 5.6 m |
| DEPTH (MLD) | 2.8 m |
| DRAFT (MLD) | 1.15m |
| MATERIAL | |
| HULL | Hi-TENSILE STEEL |
| UPPER DK & SUPERSTRUCTURE: | ALMINIUM ALLOY |
| MAIN ENGINE | Abt. 1800~2000 PS x 2 sets |
| ELECTRIC GENERATOR | 2 Sets |
| SPEED (Max) | Abt. 30 Kt |
| CRUISING RANGE | Abt. 600 SM at 12 Kt |
| COMPLEMENTS | TOTAL 10+2 PERSONS |
| FUEL OIL | Abt. 5000 L |
| FRESH WATER | Abt. 1000 L |
| ACCOMMODATION | AIR CONDITIONED CABIN |
| EQUIPMENT FOR PATROL | |
| RADAR | 1 set |
| SEARCH LIGHT | 1 set |
| LOUD SPEAKING SYSTEM | 1 set |
| RADIO EUIPMENT | 1 set |

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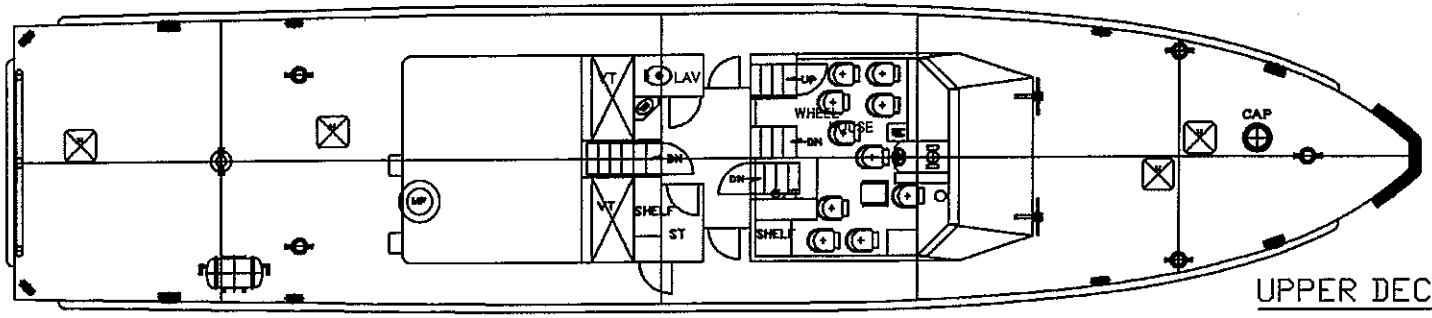


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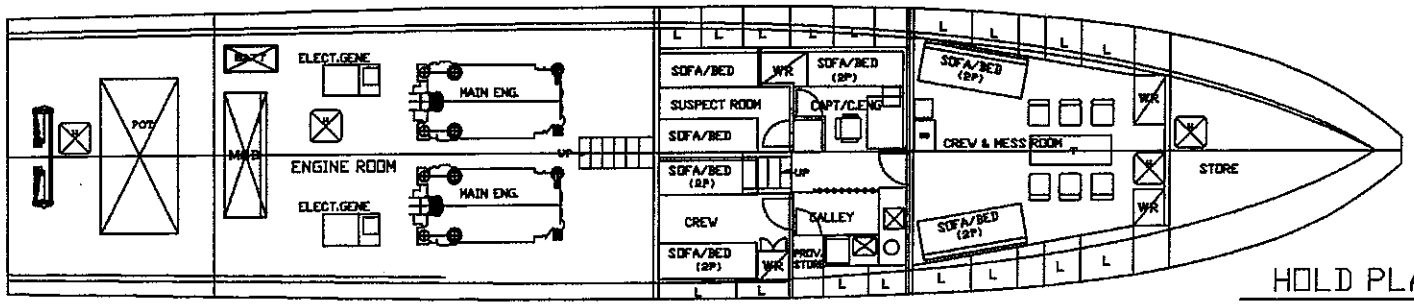


HOLD PLAN

# GENERAL ARRANGEMENT PLAN

27 m PATROL SHIP
for
ANTI-PIRACY
ANTI-MARITIME TERRORISM
AND NON-PROLIFERRATION

Date 2005.10.19

Scale ~~1:100~~

A-1

Annex-4

OPERATION AND MAINTENANCE OF PATROL SHIPS

Annex-5

1)Annual operation and ship cost for DMP total

unit 1,000 Rp

| Item | | RECORD | | | | BUDGET | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| Operation cost without F.O | | 1.225.270 | 1.244.528 | 1.387.446 | 2.108.146 | 1.922.395 | 2.114.634 | 2.326.097 | 2.558.707 | 2.814.578 |
| Ship cost | Salaries and wages | 11.673.486 | 12.952.140 | 14.371.947 | 15.965.141 | 18.365.141 | – | – | – | – |
| | Ships article, Parts for Repair, Docking fee etc | 5.664.550 | 6.231.004 | 6.854.804 | 7.882.220 | 7.882.220 | 8.670.442 | 9.537.486 | 10.491.234 | 11.540.358 |
| Total | | 18.563.306 | 20.427.672 | 22.614.197 | 25.955.507 | 28.169.756 | | | | |

| Item | | Tanjung Priok Base | Tanjung Batu Base | Belawan Base |
|---|---|---|---|---|
| 2)Annual fuel oil consumption in 2004 | | 4,167 KL ( for C-1x 6 ) | 108 tons ( incl. land facilities) | 92 tons |
| 3)Typical operation procedure | Operation hour /day | 8 Hr | 8 Hr | 6 Hr |
| | Patrol speed | 10 to 20 Knots | 15 to 20 Knots | 7 to 10 Knots |
| 4)Dock-in times and period | Dock-in time | every 6 months | every 4 months | every 3 months |
| | Period | each 6 to 14 days | each 1 week | each 10 to 30 days |

A.(3)

**Minutes of Discussions**
**on the Basic Design Study**
**on the Project for Construction of Patrol Ships**
**for Anti-Piracy, Anti-Maritime Terrorism and Non-Proliferation**
**in the Republic of Indonesia**
**(Explanation of Draft Report)**

In October 2005, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Construction of Patrol Ships for Anti-Piracy, Anti-Maritime Terrorism and Non-Proliferation (hereinafter referred to as "the Project") to the Republic of Indonesia (hereinafter referred to as "Indonesia"), and through discussions, field survey and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult with the concerned officials of the Government of Indonesia on the contents of the draft report, JICA sent to Indonesia the Basic Design Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Shinji Totsuka, Deputy Resident Representative, JICA Indonesia Office, from March 23 to 29, 2006.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Jakarta, March 28, 2006

Shinji Totsuka
Leader
Basic Design Explanation Team
Japan International Cooperation Agency

Drs. I Nengah Sutisna, MBA
Director of Marine Police
Indonesian National Police
Republic of Indonesia

Drs. I. Lebang
Chief of Secretary Development and Guidance Agency
Indonesian National Police
Republic of Indonesia

## ATTACHMENT

1. Components of the Draft Report

The Indonesian side agreed and accepted in principle the contents of the draft report and draft detailed specification of the ships to be procured explained by the Team.

2. Japan's Grant Aid Scheme

The Indonesian side reconfirmed the Japan's Grant Aid scheme and the necessary measures to be taken by the Indonesian side as explained by the Basic Design Study Team and described in the Annex-1 and Annex-2 of the Minutes of Discussions signed by both sides on October 7, 2005.

3. Schedule of the Study

JICA will complete the Final Report in accordance with the confirmed items and send it to the Indonesian side by the end of May 2006.

4. Other Relevant Issues

4-1. The Team handed one copy of the draft detailed specifications of the ships to Drs. I Nengah Sutisna, MBA, Director of Marine Police, Indonesian National Police. Both sides agreed that this draft specifications were confidential and should never be duplicated or released to any outside parties.

4-2. Both sides reconfirmed that the ships and equipment to be provided under the Project would never be utilized for military purpose under any circumstances.

4-3. When the alteration is added to the ships, and/or when ships move from the base port specified as beforehand, the Indonesian side shall inform the Japanese side of these acts in advance.

4-4. The Indonesian side shall secure the personnel and allocate the necessary budget for executing the patrol activities based on the new patrol plan by the patrol ships (including the ships procured under the Project ) with 24-hours operation.

4-5. The Indonesian side shall register the Project with the Ministry of Finance in Indonesia and allocate budget in a timely manner, necessary for smooth implementation of tax exemption procedures and customs clearance for the ships to be procured under the Project at the port of disembarkation in Jakarta, based on the Indonesian law "Peraturan Pemerintah-42".

4-6. The Indonesian side confirmed that the following undertakings should be taken by the Indonesian side at the Indonesian expenses.

(1) Prepare and execute all the necessary procedures for quick acceptance of the patrol ships into the Port in Jakarta, custom clearance of the ships and their equipment, and registration of the ships, when the ships arrive at the port in Jakarta from Japan,
(2) Secure the quay for safe mooring of the patrol ships,
(3) Secure the personnel and fuel necessary for the shifting of ships from Jakarta to the designated bases of Tanjung-Batu and Belawan, and
(4) Execute the "On the Job Training" for the new crew to obtain the operation and maintenance skill of the patrol ships.

4-7. The Indonesian side requested the Team to carry out the counterpart training in Japan on Operation and Maintenance for the patrol ships under a technical cooperation scheme by JICA, and the Indonesian side understands that an another official request on this scheme will be needed to submit from the Indonesian side to the Japanese side through the JICA Indonesia Office.

# Appendix 5：

# Cost Estimation Borne by the Recipient Country

Project cost undertaken by the Indonesian Government

(1) Cost estimate conditions

1) Point of estimate time : As of October, 2005
2) Unit Price of Diesel Fuel Oil (Light Fuel): 1 Litter = Indonesia Rp. 3,500

| Main Engine Rating (MCO) : 4,000 ps | | |
|---|---|---|
| Fuel Consumption Rate : 170g/ps/hr | | |
| Output Ratio | Output (ps) | Ship Speed (Knot) |
| 50% | 2000 | 23.62631 |
| 45% | 1800 | 22.62046 |
| 40% | 1600 | 21.49773 |
| 35% | 1400 | 20.32097 |
| 30% | 1200 | 19.03277 |
| 25% | 1000 | 17.02967 |
| 25% | 1000 | 17.02967 |

| Destination | Distance form Jakarta (Sea Mile) | Required Fuel (ton) | Required Fuel Cost (Rp.) | Other Consumables (1% of Fuel Cost) |
|---|---|---|---|---|
| Tg.Batu | 500 | 4.991287 | 17,469,506 | 174,695 |
| Belawan | 800 | 7.98606 | 27,951,210 | 279,512 |
| Sub Total | | 12.97735 | 45,420,716 | 454,207 |
| Total Required Cost | | | 45,874,923 | |

Therefore, project cost borne by the Indonesian Government is as follows.

| Items | | | Provisional Cost (Million Rp) |
|---|---|---|---|
| Facility | Inland Transport Cost | Fuel Cost Jakarta→ TG.Batu and Belawan | 46 |
| Others, Cost shared by the Indonesian Government | | | 0 |

# Appendix 6：References

## 6. REFERENCES

| No. | TITLE | FORM (Book, Video, Map, Photo, etc.) | ORIGINAL or COPY |
|---|---|---|---|
| 1 | Economic & Social Indices of Indonesia | Book | Copy |
| 2 | Agent List of Marine Equipment in Indonesia | 〃 | 〃 |
| 3 | Data Piracy IMB 2001～July 2005 | 〃 | 〃 |
| 4 | Jawaban Pertanyaan Untuk Bentuk Dasar Pelatihan Proyk (Renchana bantuan Luar Negri) | 〃 | 〃 |
| 5 | Jawaban Pertanyaan Untuk Bentuk Dasar Pelatihan Proyk | 〃 | 〃 |
| 6 | Basic Design Concept on Electric Navigation and Communication Equipment for Patrol Ships | 〃 | 〃 |
| 7 | Organization of DMP | 〃 | 〃 |
| 8 | Proyek Kredit Ekspor Polri | 〃 | 〃 |
| 9 | Konsep Putunjuk Teknis Pelaksanaan Diklat TPK-V Dek Bagi Peserta Didik Dari Sub. Dit. Pol Air | 〃 | 〃 |
| 10 | State Police Republic of Indonesia Riau Area Directorate of Territorial Water Police | 〃 | 〃 |
| 11 | As built Drawing of PT. EXPRESINDO Shipyard | Brochure | Original |
| 12 | Brochure of PT. PALMA Shipyard | 〃 | 〃 |
| 13 | State Police Republic of Indonesia North Area Sumatera Directorate of Territorial Water Police | Book | Copy |
| 14 | Brochure of PT. WARNA NUSA SENTANA Shipyard | Brochure | Original |
| 15 | Brochure of SUMBER TEKNIK Shipyard | | 〃 |
| 16 | Provinsi Riau | Map | Original |
| 17 | Provinsi Sumatera | 〃 | 〃 |
| 18 | Indonesia Batam Island | 〃 | 〃 |
| 19 | Atlas Indonesia & Dunia | 〃 | 〃 |
| 20 | No.10. Sumatera Pantai Timur, Sungai Deli Hingga Sungai Asahan LembarII | Chart | 〃 |
| 21 | No.11.Sumatera Pantai Timur, Sungai Asahan Hingga Selat Rupat LembarIII | 〃 | 〃 |
| 22 | No.12.Sumatera Pantai Timur, Selat Rupat Hingga Tanjung Parit（PulauBegkallis）LembarIV | 〃 | 〃 |
| 23 | No.13. Sumatera Pantai Timur, Tanjung Parit Pulau Bengkalis Hingga Selat Durian LembarV | 〃 | 〃 |

| | | | |
|---|---|---|---|
| 24 | No.40. Sumatera Pantai Timur, Pulau-Pulau Riau dan Pulau-Pulau Lingga LembarI | 〃 | 〃 |
| 25 | No.41. Sumatera Pantai Timur, Pulau-Pulau Riau dan Pulau-Pulau Lingga LembarII | 〃 | 〃 |
| 26 | No.78. Selat Sunda Hingga Tanjung Priok LembarI | 〃 | 〃 |
| 27 | No.85. Jakarta Pelabuhan Tanjung Priok LembarI | 〃 | 〃 |
| 28 | Peta Arus Puarian Indonesia Kawasan Barat | Book | 〃 |
| 29 | Daftan Arus Pasang Surat, Tidal Stream Tables 2005 | 〃 | 〃 |
| 30 | Daftan Pasang Surat, Tide Tables 2005 | 〃 | 〃 |
| 31 | Almanak Nautika 2005 | 〃 | 〃 |
| 32 | Peta Cuaca, Perairam Indonesia 2003 | 〃 | 〃 |
| 33 | Wind and Waves Data (Nov. 2004 － Oct. 2005, Belawan, Pulau Karimun and Pulau Seribu) by Sub. Division of Marine Meteorological Data and Information System) | 〃 | 〃 |