Japan International Cooperation Agency (JICA)

NO.

Confidential

Final Report

The Study on the Port Security Enhancement Program of the Major Indonesian Public Ports in the Republic of Indonesia

(Summary)

August 2006

The Overseas Coastal Area Development Institute of Japan (OCDI)
NIPPON KOEI CO.,LTD.

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(As August 2005)

PREFACE

In response to a request from the Government of the Republic of Indonesia (hereinafter referred to as “GOI”), the Government of Japan decided to conduct a Study on the Port Security Enhancement Program of the Major Indonesian Public Ports in the Republic of Indonesia and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team to Indonesia three times between April 2005 and July 2006, which was headed by Mr. Hisao Ouchi of the Overseas Coastal Area Development Institute of Japan (OCDI) and was comprised of OCDI and Nippon Koei Co., Ltd.

The team held discussions with the officials concerned of GOI and conducted field surveys at the study ports. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the port security of the major Indonesian public ports and to the enhancement of friendly relations between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of GOI for the close cooperation extended to the team.

August 2006

Takashi Kaneko
Vice President
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

August 2006

Mr. Takashi Kaneko
Vice President
Japan International Cooperation Agency

Dear Mr. Kaneko:

It is my great pleasure to submit herewith the Final Report of "The Study on the Port Security Enhancement Program of the Major Indonesian Public Ports in the Republic of Indonesia".

The study team comprised of the Overseas Coastal Area Development Institute of Japan (OCDI) and Nippon Koei Co., Ltd conducted surveys in the Republic of Indonesia during the period between April 2005 and July 2006 according to the contract with the Japan International Cooperation Agency (JICA).

The study team compiled this report, which proposes the development plan for facilities, equipment and personnel training necessary for the establishment of the port security system and supporting tools for port security, through close consultations with officials of the Directorate General of Sea Transportation, the Ministry of Transportation of the Indonesian Government and authorities concerned.

On behalf of the study team, I would like to express my sincere appreciation to the Directorate General of Sea Transportation and other authorities concerned for their cooperation, assistance, and heartfelt hospitalities extended to the study team.

I am also very grateful to the Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Land, Infrastructure and Transport, and the Embassy of Japan in Indonesia for giving us valuable suggestions and assistance during the course of the study.

Yours faithfully,

Hisao OUCHI
Team Leader
The Study on the Port Security Enhancement Program of the Major Indonesian Public Ports in the Republic of Indonesia

Present Condition Photo

Access Control Gate (1)

Access Control Gate (2)

Access Control Inspection Tool

Access Control Inspection (1)

Access Control Inspection (2)

Security Level Indication Board

Restricted Area Boundary Fence with Top Guard

Movable Fence

LIST OF ABBREVIATIONS

ADPEL	Port Administration Office
AIS	Automatic Identification Systems
APEC	Asia-Pacific Economic Cooperation Conference
ASEAN	Association of Southeast Asian Nations
BAPPENAS	National Development Planning Agency
B/L	Bill of Lading
BJTI	Berlian Jasa Terminal Indonesia
BKPM	Investment Coordinating Board
BOT	Build-Operate-Transfer
BPS	Badan Pusat Statistik (Central Bureau of Statistics)
CCTV	Closed-circuit Television
CG	Contracting Government
CGI	Computer Graphic Interface
CKD	Complete Knock Down
CPI	Consumer Price Index
CPO	Crude, Palm and Oil
CSO	Company Security Officer
DA	Designated Authority
DGST	Directorate General of Sea Transportation
DKI	Daerah Khusus Ibukota (Special Capital District)
DNV	Det Norske Veritas
DoS	Declaration of Security
DT	Deep Tank
DWT	Dead Weight Tonnage
ETA	Estimated Time of Arrival
ETA	Education and Training Agency
ETD	Estimated Time of Departure
FLEET (SCGB)	Sea and coast guarding base (SCGB). SCGB is responsible for guarding activities, rescuing activities and reinforcing maritime laws and regulations in sea and coast waters.
G8	Group of Eight Countries
GAM	Gerakan Aceh Merdeka (Free Aceh Movement)
GDP	Gross Domestic Product
GOI	Government of the Republic of Indonesia
GOJ	Government of Japan
GRDP	Gross Regional Domestic Product
GRT, GT	Gross Tonnage
HBL	Horsburgh Lighthouse
HHWS	Highest High Water Spring
ICA	Immigration and Checkpoint Authority (Singapore)
ID	Identification Card
ILO	International Labour Organization. The UN specialized agency which seeks the promotion of social justice and internationally recognized human and labour rights.

IMB	International Maritime Bureau. A division of the International Chamber of Commerce. IMB's task is to prevent fraud in international trade and maritime transport, reduce the risk of piracy and assist law enforcement in protecting crews. It tracks cargoes and shipments and verifies their arrival at scheduled ports. IMB's regional office in Kuala Lumpur, Malaysia is also the home of the Piracy Reporting Centre which responds to acts of piracy and collects evidence for law enforcement agencies.
IPC	Indonesian Port Coorporations
ISPS Code	International Ship and Port Facility Security Code -- The code is part of SOLAS and comes into effect on 1st July 2004. It provides a framework for cooperation between vessels and port facilities in terms of maritime security. Specific requirements include the implementation of security plans, the appointment of security officers and the installation of automatic identification systems (AIS). Abbreviation: ISPS Code.
ISSC	International Ship Security Certificate
JICA	Japan International Cooperation Agency
JY	Japanese Yen
KAMPEL	Port Office
KL	Kuala Lumpur (Capital of Malaysia)
KM	Minstry of Communication Decree e.g. KM 62 Year 2001
KPLP	Sea and Coast Guard Unit
KPPP	Port Police (Kesatuan Palaksana Pengamanan Pelabuhan)
LLWS	Lowest Low Water Spring
LNG	Liquid Natural Gas
LOA	Length overall
LWS	Low Water Spring
MEH	Maritime Electronic Highway
METC	Pertamina Maritime Education & Training Centre
MLIT	Ministry of Land, Infrastructure and Transport
MLWS	Mean Low Water Spring
M/M	Men Month
MOC	Ministry of Communications
MPA	Maritime Port Authority (Singapore)
MSC Circular	Maritime Safety Committee Circular
MSE	Maritime Security Department
NavHaz	Navigation Hazards
O&M	Operation and Maintenance
PA System	Public Address System
PASO	Port Area Security Officer (Malaysia)
PASP	Port Area Security Plan (Malaysia)
PEB	Cargo Information for Export
PELINDO	Pelabuhan Indonesia (Indonesian Port Corporation)
PERSERO	Company or Share holder
PFSA	Port Facility Security Assessment
PFSO	Port Facility Security Officer
PFSP	Port Facility Security Plan
PIB	Cargo Information for Import
PLN	State Electric Company

PLO	Palestine Liberation Organization
POCC	Port Operations Control Center (Singapore)
POLAIR	Water Police
PSA	Port Security Assessment
PSC	Port Security Committee
PSO	Port Security Officer
PSP	Port Security Plan
PT.	Limited Company
PT. KAI	PT. Kereta Api Indonesia
ReCAAP	a Regional Cooperation Agreement on Combating Piracy and Armed Robbery
RMSI	Regional Maritime Security Initiative
RORO vessel	Roll-on Roll-off vessel
Rp	Rupiah (Indonesian Currency)
RSO	Recognized Security Organization
SAFTI	Secure and Facilitated International
SATPAM	Private establishments engaged in all activities of environmental security and order, in the form of the provision of Satuan Pengaman (SATPAM : Private Civil Defence Forces)
SoCPF	Statement of Compliance of a Port Facility
SOLAS	International Convention for Safety of Life at Sea
SSO	Ship Security Officer
STET	ST Education & Training Pte Ltd
STRAITREP	Mandatory Ship Reporting System in the Straits of Malacca and Singapore - STRAITREP
TEU	Twenty-foot Equivalent Unit
TOT Course	Training Of Trainer
TPS	Terminal Petikemas Surabaya
UM	Unit of Measure
UNLCOS	United Nation Convention on the Law of the Sea
UPS	Uninterruptable Power Supply
US$	United State Dollar
USA	United States of America
VAT	Value Added Tax
VTIS	Vessel Traffic Information System
VTS	Vessel Traffic Service
WPI	Wholesale Price Index
WW II	World War II

1. NECESSITY OF PORT SECURITY

1-1 Threat of terrorism

1. The heinous September 11 terrorist attacks in New York and Washington D.C.had a heavy impact on the world economy and society. As a result, people in the world recognized that security for transportation irrespective of passenger or cargo must be ensured. In particular, security for port facilities has not been generally as strict as at airport facilities, although ports are connection points for cargo transportation and passenger travel. In addition, port facilities and vessels are easily targeted and weapons and other materials can be imported and exported through international trade ports. Therefore strengthening security for international trade ports is an urgent issue.

1-2 Adoption of the revised SOLAS Convention

2. Under these circumstances, inter-governmental conference for the 5th Conference of contracting Governments to the International Convention for the Safety of Life at Sea (known as "SOLAS Convention") was held at the headquarters in London in 2002. Amendments to the 1974 SOLAS Convention aiming at enhancing maritime security on board ships and at ship/port interface areas were adopted. All contracting countries have been obliged to further strengthen security systems on ships and international ports after the amendment came into force in July 2004.

1-3 Threat of terrorism in Indonesia

3. In Indonesia, serious terrorism incidents have occurred in four successive years. It is thought that a south-east Asia Muslim-based terrorist group hides and operates in Indonesia. Indonesia is one of the countries where strict measures against terrorist attacks must be taken.

4. In addition, the Indonesian sea is notorious as a sea infested with many pirates. More than one-fourth of piracies in the world were reported there and the numbers have been drastically increasing. It is strongly desired that security measures be strengthened.

1-4 Enhancing security of international trade ports in Indonesia

5. Enhancing security of international trade ports in Indonesia is indispensable for the development of the economy and society. Indonesia has ratified the International Convention for the Safety of Life at Sea (SOLAS Convention) and is now making port facility security plans, constructing facilities, installing equipment for security, training security officers and so on. However, problems such as the shortage of facilities and equipment for security, the lumbering buildup of the organization due to lack of funds, and the insufficient education and training of security officers due to lack of know-how and training need to be overcome.

2. FRAMEWORK OF PORT SECURITY IN INDONESIA

2-1 Port Hierarchy in Indonesia

6. In Indonesia, the national port system became effective by Ministerial decree (KM53/2001). Under this system, there are two kinds of ports: general ports for public use and

special ports for private company use. The ISPS Code is applied to ports providing maritime transport. General port includes five kinds of ports providing maritime transport: International hub port, International port, National port, Regional port and Local port.

7. In this study, 26 ports were selected as study ports in the Steering Committee meeting. Port hierarchy of the 26 study ports is shown in Table 2-1-1.

Table 2-1-1 Port Hierarchy of Study Ports

Port Hierarchy	Number of ports in Indonesia	26 Study Ports
-International Hub Port (Primary trunk port)	2	Tanjung Priok, Tanjung Perak: 2 ports
-International Port (Secondary trunk port)	18	Belawan, Dumai, Teluk Bayur, Palembang, Panjang, Pontianak, Banten, Tanjung Emas, Cilacap, Benoa, Kupang, Banjarmasin, Balikpapan, Bitung, Makassar, Sorong: 16 ports
-National Port (Tertiary trunk port)	245	Pekanbaru, Tanjung Pinag, Batam, Kendari, Samarinda, Ambon, Biak, Jayapura: 8 ports
-Regional Port (Primary feeder port)	139	
-Local Port (Secondary feeder port)	321	

Source: DGST

2-2 Security Measures of Public Ports

8. The government nominated DGSC (now DGST), Ministry of Communications as the designated authority by Ministerial Decree (KM33:2003 and KM3:2004). DGST is responsible for supervising implementation of the Decree.

9. Port Security Officer (PSO) is nominated from the Port Administration Office or Port Office. In the Port Administration Office, PSO is the head of Guard and Rescue Division who represents KPLP.

10. PELINDO also plays an important role in port security measures and bears most of the costs for security measures in a port. The port facility security officers (PFSOs) of public ports are nominated from PELINDO.

11. The port administration office is obligated to form the Port Security Committee to oversee maritime security duties. Members of the Port Security Committee are as follows:

1) Coordinator; Head of Port Administration Office or Port Office
2) Coordinating Manager; Head of KPLP
3) Members
    - Representatives of government agencies such as Customs, Immigration and Quarantine which perform port related services
    - Representatives of government agencies such as Coast Radio Station and Navigation Aids Office which perform navigation safety tasks.
    - Representatives of security agencies such as KPPP and Navy which control bomb, drug and terrorists.
    - Representatives of private agencies such as PT. PELINDO, shipping companies and Associations which perform port activities.
    - Representatives of private agencies which support port activities such as industries in a port
    - Representatives of other agencies whose service is related to port security.

12. RSOs play fundamental roles in formulating port facility security assessments (PFSAs) and port facility security plans (PFSPs). In Indonesia, 26 RSOs in which two specialize only in ship security are registered as of August 2005.

13. The basic procedure for formulating PFSA and PFSP is shown in Figure 2-2-1.

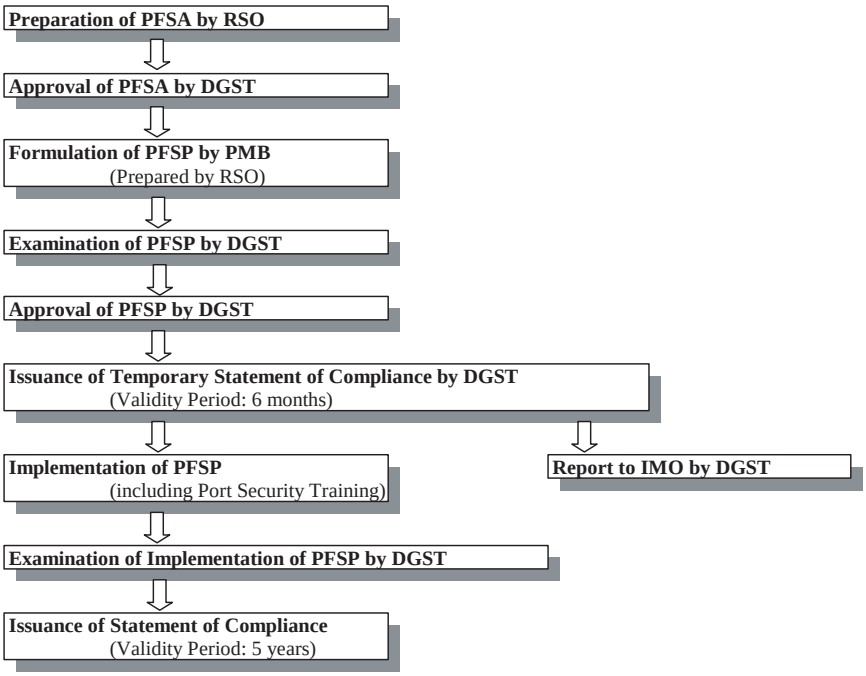


Figure 2-2-1 Procedure for Formulating PFSA and PFSP

14. The current status of ISPS Code implementation in Indonesia as of February 2006 is that two hundred and seven (207) port facilities have received permanent SoCPF, of which 27 are public port facilities, and 180 are special port facilities.

15. KPLP belonging to ADPEL and KAMPEL which have a total of 159 patrol boats patrols the water area in a port for ship safety and security. Many of the patrol boats were aged and another big issue is the shortage of fuel for patrol boats.

3. ISSUES RELATED TO PORT SECURITY IN INDONESIA

3-1 Security Condition

16. In many ports in Indonesia, problems including the gate & gate control and fencing are observed. Security measures and immediate responses are needed to cope with these issues. An overview of the study results concerning the present situation of port security measures is shown in Table 3-1-1. “X” indicates that some/problems are found.

17. As to the remaining ports, PFSPs have not been prepared and security measures are inadequate. Insufficient or no access control is conducted. Security facilities and equipment such as gates, fence and lighting are also poor. As to the ports of which international cargo volume is not large, flexible system including combination of mobile fence and security guards should be introduced.

Table 3-1-1 Port Security Measures of ISPS Code Compliant Ports

	Gate	Fence	Metal-detector, X-ray	CCTV	Lighting	Communication	PA	Access control	Clear zone	Patrol	Others
Belawan	x	x	x			x	x	x			
Dumai	x	x	x					x			
Tg.Pinang		x	x		x	x	x	x			
Batam		x(m)			x			x			x
Teluk Bayur				x					x		
Palembang	x	x						x			
Panjang		x									x
Tg.Priok	x	x(m)									x
Pontianak								x	x		
Banten		x		x							
Tg.Emas		x							x		x
Tg.Perak		x(m)									x

Note: (m) stands for "mobile fence" and PA "Public Adress system"
Source: JICA Study Team

3-2 Port Security Issues

18. Indonesia has its own natural conditions and different social, economic and financial situations and organizations from other countries. Although port security measures have to be established according to the ISPS Code, Indonesia should have its own security measures in conformity with its conditions and situation. Issues related to port security in Indonesia are summarized as follows

- In small ports international and domestic vessels use the same berth.
- There are many river ports where water depth is shallow.
- Budget for port security is small.
- Many patrol boats are aged and the number of boat is inadequate in some ports.
- There are no technical standards and manuals for port security.
- Piracy and property loss are found.
- Poverty.

(1) River Port and Patrol Boat

19. There are many river ports in Indonesia and most of them have a restriction on water depth. Therefore large bulk vessels cannot directly berth at wharves. They cast anchors at anchorages in a river or around the river mouth area. Cargo is transshipped from a large vessel to barges and carried to a wharf. Based on the above, ISPS Code is applied only to the anchorage area. However, it is deemed necessary that security measures be applied to not only the anchorage area but to the channel and main port area. It is advisable that water area security in a port is regarded as ship/ port interface and is included in the PFSP.

20. KPLP cannot fully patrol the water area due to budget constraints. DGST is requested to make efforts for increasing the budget relevant to water area security. In parallel with this effort, KPLP has to try to formulate a system in which all port management bodies share the cost of patrol boat's fuel for some time to come.

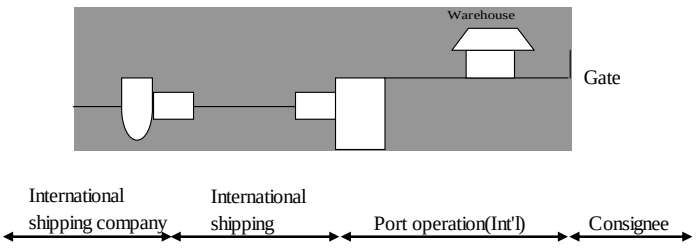


Figure 3-2-1 Ship/Port Interface at a River Port

21. In addition, it is proposed to have a security guard(s) board a barge or small vessel for transshipment of cargo. This can be applied to even a long channel.

(2) Mixed Use of Wharf by International and Domestic Ships

22. In some small ports which receive a few international ships, domestic vessels often use the same berth. This kind of mixed use of a wharf by international and domestic ships is found even in a large port. In this case, fixed fence to enclose a restricted area becomes an obstacle for domestic cargo handling; instead, it is proposed to install a mobile fence and to station security guards.

4. PORT SECURITY IMPROVEMENT STRATEGY

4-1 Necessity of Comprehensive Security Measures

23. When formulating port security measures, the following comprehensive security measures should be considered in addition to the measures prescribed by the ISPS Code.

- Increasing awareness about port security
- Making clear the responsibility
- Enlightening residents and stake holders
- Introduction of optimum transport security system
- Cooperation with other relevant organizations
- Appropriate education and training
- Sharing of latest security information
- Security of information on international cargo
- Formulation of Implementation Plan on Port Security Improvement Strategy

4-2 Identification of International Public Ports Where Security Measures are to be Implemented

24. Security measures for port facilities are classified into two categories considering importance of facilities, risk of destructive act occurrence (seriousness of incident impact and possibility of threat occurrence), budget restriction, etc. The Study Team proposes to introduce two groups as below.

1) Group A: Port facilities which need strict security measures
   - Container berths,
   - Passenger berths and
   - Hazardous material berths
2) Group B: Other port facilities
   - Bulk material berths and
   - Multi purpose berths

25. The Study Team proposes that the Group A port facilities and the Group B port facilities satisfying the following conditions in terms of numbers of calling vessels should be required to conduct a port facility security assessment and to formulate a port facility security plan.

- International cargo vessel: more than 12 vessels per year
- International passenger vessel: more than 1 vessel per year

4-3 Port Facility Security Improvement

26. The following port facility security improvement shall be the standard for Group A and B Facilities.

1) For Group A Facility
   - Fence: Fixed type
   - Monitoring: Round-the-clock monitoring by CCTV except the time when no ship and no cargo are at a berth.
   - Patrolling: Check regularly in the restricted area by security guards
   - Others: X-ray inspection apparatus (for liner passenger berths)

   If CCTV and X-ray inspection apparatus are not installed due to the budget restriction, security guards are deployed around the boundary of the restricted area and patrol intervals by security guards are shortened.

2) For Group B Facility
   - Fence: Fixed or mobile type
   - Monitoring: Conducted by security guards. Put security guards every 300m for fixed fence and every 40m for mobile fence.
   - Patrolling: Check in the restricted area by security guards.

5. IMPROVEMENT OF EDUCATION AND TRAINING ORGANIZATION

5-1 Present Situation

27. Pertamina Maritime Education & Training Centre (METC) provides education and training services to Pertamina seafarers. In addition, it has contracted outside consultants to conduct PFSO courses for State-owned port facilities (Pertamina staff) as well as to the non-State owned ports. METC has thus far trained more than 692 PFSOs since 2003 to March 2005 of which 95% are mainly applicants from non state-owned facilities.

28. Port administrators and PSOs should have a clear understanding of both the ISPS Code requirements and an awareness of the concepts advocated in the Code of Practice. KPPP staffs require greater understanding of the ISPS Code and also about the role of PFSO with regards to port facility. All PFSO's have attended the PFSO Courses conducted by DGST and the RSO. However, it is observed that most PFSOs require more training on the content of their PFSP and the application of DoS.

5-2 Basic Policy for Improving Education and Training

29. It is recommended that the following measures be taken to realize more effective training:

1) All ISPS legislated course syllabi should be submitted to DGST.
2) All trainers for ISPS courses should be submitted to DGST and registered.
3) ISPS trainers need to be updated on current developments in governmental legislation and international requirements.
4) Procedures and processes to audit the competency of trainers and relevancy of subject matters for statutory courses should be established.

6. PORT SECURITY DEVELOPMENT PLAN

6-1 General

30. The port security development plan is composed of the development plan for port security facilities and equipment and the development plan of port security human resources including education and training. The development plan for port security facilities and equipment is prepared for 12 ports which have already complied with the ISPS Code and 10 ports which have not complied. The Study Team conducted a site survey for these 22 ports.

6-2 Development Cost

31. The development direct cost and the total development cost for port security facilities and equipment and patrol boats is estimated and tabulated in Table 6-2-1 and 6-2-2.

32. The cost for human resource development such as training on port security in Indonesia is estimated assuming the maximum number of participants, duration of training and the trainers cost. An overview of the development cost for human resources in 2006 and 2007 is shown below. Almost the same amount will be needed every two years.

Table 6-2-1 Development Direct Cost

Unit:US$

	Port	Facilities and Equipment	Patrol Boat	Total
I	Belawan	2,780,000		2,780,000
	Dumai	1,211,000	722,000	1,933,000
	Pekanbaru		722,000	722,000
	Tg.Pinang	724,000		724,000
	sub total	4,715,000	1,444,000	6,159,000
BDA	Batam	244,000	1,444,000	1,688,000
II	Teluk Bayur	855,000	722,000	1,577,000
	Palembang	1,416,000		1,416,000
	Panjang	1,000		1,000
	Tg.Priok	4,100,000		4,100,000
	Pontianak	1,054,000	722,000	1,776,000
	Banten	61,000	722,000	783,000
	sub total	7,487,000	2,166,000	9,653,000
III	Cilacap	254,000		254,000
	Tg.Emas	1,000		1,000
	Tg.Perak	4,100,000		4,100,000
	Benoa	123,000		123,000
	Kupang	1,438,000	722,000	2,160,000
	Banjarmasin	501,000		501,000
	sub total	6,417,000	722,000	7,139,000
IV	Samarinda	44,000	722,000	766,000
	Balikpapan	7,000		7,000
	Bitung	269,000		269,000
	Kendari	5,000	1,444,000	1,449,000
	Makassar	1,660,000	722,000	2,382,000
	sub total	1,985,000	2,888,000	4,873,000
Total		20,848,000	8,664,000	29,512,000

Source:JICA Study team

Table 6-2-2 Total Development Cost

Unit: thousand US $

	Cost Items	Amount
1	Direct cost *1	29,512
2	Training cost of operators for facilities and equipment by experts from manufacturers or agents *2	240
3	Land acquisition cost (1.0% of 1)	295
4	Administration expenses (2% of 1)	590
5	Engineering service cost *3 (20% of 1)	5,902
Total		36,540

Table 6-2-3 Cost for Human Resource Development

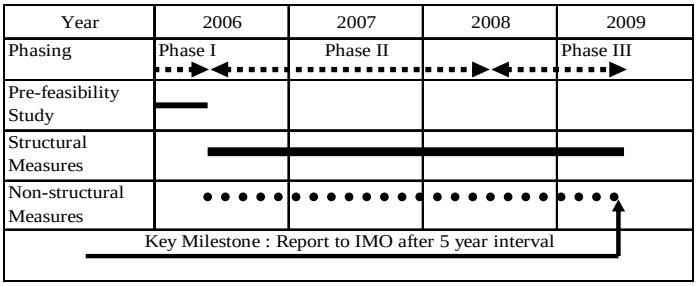
Unit: US$

Security Related Human Resource Development Program		Unit	Quantity	Unit cost	Amount
Cost for participants					
1	ISPS auditor training for port security	persons	138	700	96,600
2	Training, drills and exercises	port facility	25	8,000	200,000
3	Maritime security training of trainers	persons	28	600	16,800
4	Port facility security officer training	persons	30	600	18,000
5	Port facility security awareness course	persons	26	90	2,340
6	Facility security management in port area	persons	78	600	46,800
7	Code of practice for port security in the supply chain	persons	202	800	161,600
8	Bomb incident management for non security personnel	persons	81	90	7,290
9	Port state control	persons	128	600	76,800
Cost for trainer					132,000
Total					758,230

6-3 Implementation Schedule

33. The development for port security facilities and equipment will start as soon as possible and will be completed within two years, although this time frame could change depending on the financial situation of port management bodies. In case that the development is implemented by foreign aid, it usually takes a long time to start a project. To take Japanese Yen loan as an example, a total of 3 years is needed from the beginning to completion. In case of emergency grant aid, it may take almost two years for completion.

Table 6-3-1 Schedule of Development Plan



6-4 Urgent Port Security Development Plan

34. The Study Team selected port security facilities and equipment which are thought to be installed as soon as possible in the development plan and proposed them as the urgent port security development plan. The direct cost is shown in Table 6-4-1. The total development cost including administration expenses and engineering service cost is 11,972 thousand US$.

Table 6-4-1 Direct Cost of Urgent Development Plan

Unit: US$

Name of Port		New Gate and Fence	CCTV Camera System	X-ray System	Walk-through type Metal Detector	Lighting System	Communi-cation System	Hand Hole Wiring	Total
1	Belawan	7,500	1,390,000	87,000		200,000	87,000	914,000	2,685,500
2	Dumai	113,000	506,600	87,000	10,000	150,300	87,000	243,800	1,197,700
3	Tg. Pinang		515,000	87,000				122,000	724,000
4	Teluk Bayur		679,400					169,000	848,400
5	Palembang	32,100	641,000			230,300	87,000	406,500	1,396,900
6	Pontianak	56,300	640,900			90,100	87,000	111,800	986,100
7	Benoa	8,600		87,000	9,800				105,400
8	Bitung					60,100	87,000	121,900	269,000
9	Makassar	4,900	755,100				87,000	609,800	1,456,800
Total		222,400	5,128,000	348,000	19,800	730,800	522,000	2,698,800	9,669,800

Source: JICA Study Team

7. RECOMMENDATIONS

7-1 General

35. The ISPS Code requires port facility personnel to be proficient in all assigned security duties, at all security levels, and to be able to identify any security related deficiencies. It is important to conduct training, drills and exercises in an honest way.

36. Threats to port security are becoming increasingly complex. In order to cope with these threats, it is necessary to obtain information from all over the world, prepare appropriate counter-measures, and put them in practice. In addition, it is indispensable to randomly review the existing security measures and improve them as necessary. This entails introduction of the "Plan-Do-See" system.

37. Port security measures are incomplete without cooperation and concerted implementation with many other countries. Therefore it is advisable to participate in international meetings and symposiums on port security in a positive way and to contribute to the realization of a secure world through such discussions.

7-2 Establishment of Port Security System

38. The study team has completed draft PFSAs and PFSPs for the foreign trade ports which have not complied with the ISPS Code. It is recommended that all foreign trade ports follow the prescribed procedure using the draft PFSAs and PFSPs and comply with the ISPS Code as soon as possible.

39. Although the framework and system on port security in Indonesia has become regular in shape, actual situation of security measures is not always satisfactory. The study team pointed out the problematical points in detail in the study. In addition, the team members had discussions with officials who were in charge of port security and the team held seminars and workshops. It is recommended that the Indonesian officials take proper security measures using what they have learnt during the study as reference.

40. The study team proposed the development plan for port security facilities and equipment and suggested that expensive facilities and equipment be developed by foreign loan and/or grant. It is recommended that the Indonesian government make efforts to ensure that these proposals are carried out. Other facilities and equipment such as fence and gate should be installed at an early date using Indonesia's own funds.

41. The study team proposed the draft technical standards for port security facilities and equipment. It is recommended that this technical standard be amended as necessary and be distributed to officials in charge of port security at an early date. The technical standards can be a textbook on port security facilities and equipment and it is advisable that it become required reading for persons related to port security.

7-3 Build-up of System

42. In the present port security system in Indonesia, only some officials belonging to the Directorate of Sea and Coast Guard, DGST have wide knowledge on port security and have to assume all responsibilities in responding to port security incidents in Indonesia. In the future it is expected that PSC will fully function and PSO will be able to undertake his/her role. However, strengthening of the organization assigned to port security in the Directorate of Sea

and Coast Guard is an urgent issue because the intermediate audit is forthcoming and the officials will have many works to handle in updating the PFSPs in the days to come.

43. In addition, the officials have to handle confidential information in many cases and a vast number of related documents have been accumulated. Therefore it is recommended to refurbish and improve the office where documents are reviewed and filed.

44. Although the ISPS Code prescribes provisions to be observed, it can be interpreted in several ways and thus a variety of methods can be adopted. This study has showed the basic approach to port security in Indonesia. However, Sea and Coast Guard of DGST still needs technical supports to put the contents of the study into effect and technical advice for the intermediate audit to come. It is recommended that port security specialists be dispatched from foreign countries to give technical guidance.

7-4 Concretization of Responsibility

45. It is found that sharing of roles between KPLP and KPPP and between PSO and PFSO is not clear in some ports. It should be clarified in PSC that the responsible person at each security level makes a judgment on security measures and that all information related to security incidents be conveyed to upper responsible persons.

7-5 Growth of Awareness

46. Port security incidents may have a serious impact on transportation and economic development in Indonesia. Therefore it is important that officials directly in charge of port security not only have full knowledge of port security incidents and measures but also make efforts to get various influential persons to understand the importance of port security.

47. Strict implementation of port security measures may give some inconvenience to related persons. It is recommended that security officials explain the necessity of port security measures and make efforts to acquire their understanding.

48. A port is a facility where many organizations are involved and some organizations have information on thieves and crime. Therefore it is important to maintain close relations with these organizations and exchange information frequently. It is advisable to make the most use of PSC.

49. Moreover it is important to grasp and analyze the port security incidents which occur in Indonesia to prepare effective security measures. It is recommended to make a unified report form and to establish a system to report security incidents to DGST as soon as possible. Sea and Coast Guard of DGST should summarize the information and make it public periodically.

7-6 Introduction of New Security Measures

50. It is recommended that DGST encourage shipping companies and operators to positively introduce new security equipment and system which are thought to be more effective for port security.

51. DGST is now developing AIS in major ports. AIS is originally devised for safe vessel navigation, but it can be applied to port security by using it with radar. It is recommended that AIS be placed in many foreign trade ports for vessel safety and port security.

52. Several cases were reported in which only valuable goods were stolen from a container. It is recommended that port operators adopt strict information control and DGST encourage moral improvement of persons involved in information handling.

7-7 Education and Training

53. It is indispensable that Port Administrator, PSO, PFSO, KPPP and SATPAM acquire knowledge on the ISPS Code and related port security measures respectively and can practically apply them to daily works in order to introduce correct port security measures.

54. PELINDO, being a state-owned enterprise, is recommended to have their own training center or PELINDO academy for effective training. ADPEL and personnel with security related duties in PELINDO ports should also hold their training in the center. BP3IP, the existing government training school responsible for training seafarers should incorporate an awareness program in maritime security and the ISPS Code.

55. It is indispensable for each port to conduct drills and exercises which are prescribed in the ISPS Code in order to rapidly and appropriately cope with actual security incidents. One problem on drills and exercises is that no evaluation on the implementation was conducted. It is recommended that a system which identifies points to be improved and reflects them in the existing security measures be established.

7-8 Development of Port Security Facilities and Equipment

56. The study team proposed the development plan of port security facilities and equipment for proper implementation of port security measures. It is advisable that DGST make efforts to realize the plan.

Contents

Table, Figure and Photo Contents

CHAPTER-1. INTRODUCTION

1. In response to the request of the Government of the Republic of Indonesia (hereinafter referred to as "GOI"), the Government of Japan (hereinafter referred as "GOJ") has decided to conduct "The Study on the Port Security Enhancement Program of Major Indonesian Public Ports in Republic of Indonesia" (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan. The Study Team started the Study in April 2005.

1-1 BACKGROUND OF THE STUDY

1-1-1 Threat of Terrorism

2. The heinous September 11 terrorist attacks in New York and Washington had a heavy impact on the world economy and society. As a result, people in the world recognized that security for transportation irrespective of passenger or cargo must be ensured. In particular, security for port facilities has not been generally as strict as at airport facilities, although ports are connection points for cargo transportation and passenger travel. In addition, port facilities and vessels are easily targeted and weapons and other materials can be imported and exported through international trade ports. Therefore strengthening security for international trade ports is an urgent issue.

1-1-2 Adoption of the Revised SOLAS Convention

3. Under these circumstances, inter-governmental conference for the 5th Conference of contracting Governments to the International Convention for the Safety of Life at Sea (known as "SOLAS Convention") was held at the headquarters in London in 2002. Amendments to the 1974 SOLAS Convention aiming at enhancing maritime security on board ships and at ship/port interface areas were adopted.

4. In this amendment of the Convention, security measures for ships as well as development of a port facility security plan and designation of a port facility security officer are included as obligatory. It was decided that PFSP should include the designation of restricted areas of a port facility and access control to/ from a port facility.

5. All contracting countries have been obliged to further strengthen security systems on ships and international ports after the amendment came into force in July 2004.

1-1-3 Threat of Terrorism in Indonesia

6. In Indonesia, serious terrorism incidents have occurred in four successive years: the Bali Island Night Club bombing in 2002, Mariott Hotel bombing in Jakarta in 2003, explosions around the Australian Embassy in Jakarta in August 2004 and the Bali Island bombings in 2005. In addition, Indonesian government must deal with the independence movement in Aceh, Maluku and Irian Jaya and the conflicts between Christians and Islamites. It is thought that a south-east Asia Muslim-based terrorist group hides and operates in Indonesia. Indonesia is one of the countries where strict measures against terrorist attacks must be taken.

7. In addition, the Indonesian sea is notorious as a sea infested with many pirates. More than one-fourth of piracies in the world were reported there and the numbers have been drastically increasing. It is strongly desired that security measures be strengthened.

1-1-4 Enhancing Security of International Trade Ports in Indonesia

8. Enhancing security of international trade ports in Indonesia is indispensable for the development of the economy and society. If security measures for international trade ports in Indonesia are uncertain, the number of vessels calling ports in Indonesia which belong to major shipping companies will decrease. It will not only cause a paralysis of port and maritime shipping activities but also place fetters on the promotion of industries in Indonesia. Moreover the security issue in Indonesia is closely connected to world security. Indonesia is also a very important country for Japan from the viewpoint of trade relations and investment to Indonesia. Port security measures should be taken to ensure that the investment climate in Indonesia remains sound.

9. Indonesia has ratified the International Convention for the Safety of Life at Sea (SOLAS Convention) and is now making port facility security plans, constructing facilities, installing equipment for security, training security officers and so on. However, problems such as the shortage of facilities and equipment for security, the lumbering buildup of the organization due to lack of funds, and the insufficient education and training of security officers due to lack of know-how and training need to be overcome.

10. Member countries declared at G8, APEC and ASEAN meetings that they would strengthen measures against terrorism all over the world. These member countries have been charged with a mission to secure security in their own countries as well as to cooperate with related countries on security measures. In particular, at the Japan-ASEAN Transport Ministers' meeting it was concluded that maritime transport security was one of the four major issues. Japan decided to cooperate positively with ASEAN countries and to support anti-terrorism measures taken by each ASEAN country.

11. Under these conditions, Japan extended grant aids for the project entitled "Major Airport and Port Security Facilities Improvement Project in Indonesia" in 2003, where Japan prepared the basic plan and design to provide security equipment for major ports and airports. The project has completed.

1-2 OBJECTIVES OF THE STUDY

12. For ensuring effective security measures of major Indonesian public ports for international trade corresponding to the revised SOLAS Convention which was ratified in December 2002 and became effective on 1 July 2004, the Study Team proposed objectives of the Study at the beginning of the study.

13. The above objectives were prepared considering the scope of work agreed upon by DGSC and JICA in October 2002 when the Indonesian side seldom or never had taken port security measures. However, when the Study was started in April 2005, 12 major public ports have already complied with the ISPS Code. Therefore the objectives of the Study were amended at the first steering committee meeting as follows:

1) To conduct port facility security assessment (PFSA) and to prepare port facility security plans (PFSP) for the selected ports which have not complied with ISPS Code and to make a study on implementation of the ISPS Code for the ports for which Statements of Compliance have been issued;
2) To prepare the manuals of PFSA and PFSP based on the above study (the PFSA manual was added.);
3) To formulate the plan for facilities, equipment and personnel training necessary for the establishment of the security system and to recommend a funding plan for selected ports (the selected model ports were changed to the selected port.);
4) To prepare and recommend a human resource development program including education and training based on a comprehensive analysis of governing laws and regulations; and
5) To recommend measures to strengthen the port security system in Indonesia through implementation of the above items and/or as complements.

14. When carrying out the Study, the Study Team has not employed a unilateral approach but has consulted closely with the Indonesian side. The Study Team made efforts to work with Indonesian officials of various organizations who were concerned with port security.

1-3 STUDY PORT AND STUDY FLOW

15. As the result of discussions with the Indonesian side, 26 study ports were selected out of all major public ports for international trade which handle international trade cargo and international passengers. The 26 study ports are composed of the 25 strategic ports in Indonesia with the exception of Lhokseumawe which was heavily damaged by a large earthquake and Kendari and Cilacap which were recommended to be included as study ports in the Steering Committee meeting.

16. The 26 study ports, the selected ports for PFSA and PFSP, the prioritized ports for urgent development plans and the ports for which security development plans are formulated are shown in Table 1-3-1. Mark △ in Bitung means that Bitung Port complied with the ISPS Code during the study although it had not when the study started. Mark △ in Makassar means that Container Terminal and Multipurpose Terminal comply with the ISPS Code, while Passenger Terminal does not.

17. Workshops were held twice at each PELINDO. In the workshops the Study Team presented the security measures in Japan, outlines of draft PFSA and PFSP prepared by the study team and observation on implementation of ISPS Code in Indonesian public ports and had a training session on ISPS Code. In addition seminars were held to explain the contents of the study in Jakarta and Bali.

18. The study flow is shown in Figure 1-3-1.

Table 1-3-1 Study Ports

	Port Management Body	Port	Province	Comply with ISPS Code	PFSA	PFSP	Urgent Security Measures	Development Plan
1	PELINDO I	Belawan	North Sumatra	○			○	○
2		Dumai	Riau	○			○	○
3		Pekanbaru	Riau		○	○		○
4		Tanjung Pinag	Riau	○				○
5	BDA	Batam	Riau	○				○
6	PELINDO II	Teruk Bayur	West Sumatra	○				○
7		Palembang	South Sumatra	○			○	○
8		Panjang	Lampung	○				○
9		Tanjung Priok	DKI Jakarta	○				○
10		Pontianak	West Kalimantan	○				○
11		Banten/Bojonegara	Banten	○				○
12	PELINDO III	Cilacap	West Java		○	○		○
13		Tanjung Emas	Central Java	○				○
14		Tajung Perak	East Java	○				○
15		Benoa	Bali		○	○		○
16		Kupang	East Nusa Tenggara		○	○		○
17		Banjarmasin	South Kalimantan		○	○	○	○
18	PELINDO IV	Samarinda	East Kalimantan		○	○	○	○
19		Balikpapan	East Kalimantan		○	○		○
20		Bitung	North Sulawesi	△	○	○	○	○
21		Kendari	South Sulawesi		○	○		○
22		Makassar	South Sulawesi	△	○	○	○	○
23		Ambon	Maluku		○			
24		Sorong	Papua		○			
25		Biak	Papua		○			
26		Jayapura	Papua		○			

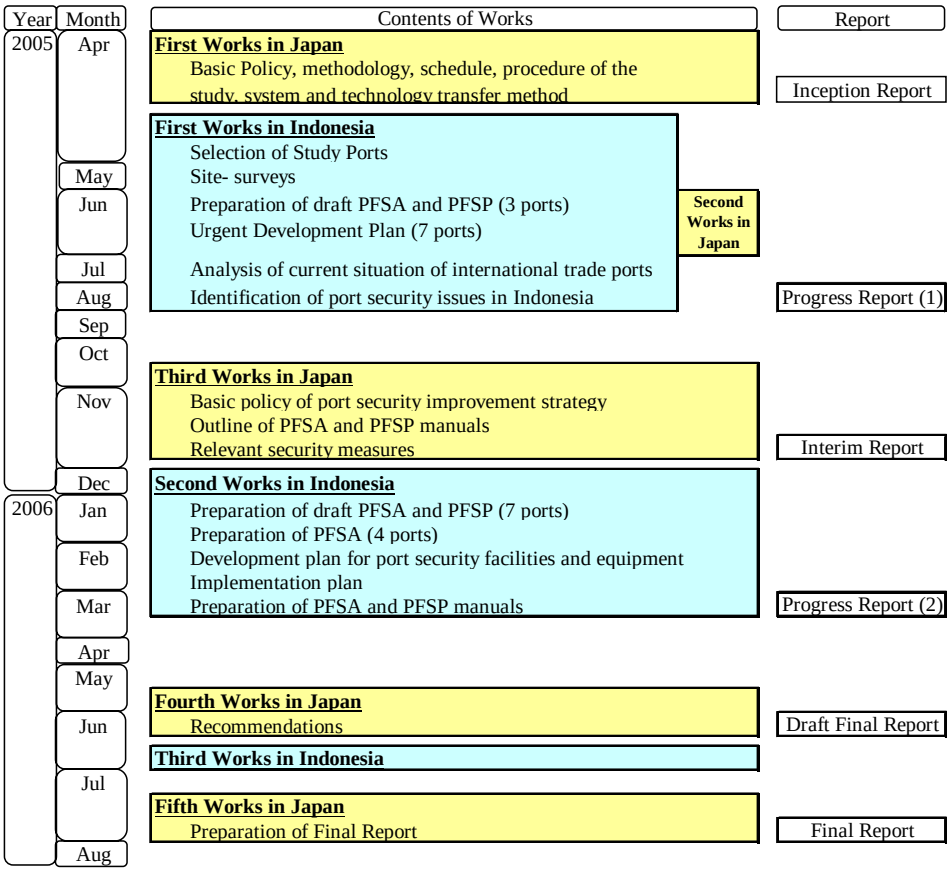


Figure 1-3-1 Study Flow

CHAPTER-2. SOCIOECONOMIC SITUATION IN INDONESIA

2-1 POPULATION

1. Population growth in Indonesia is shown in the following Table. Population is projected to reach 232 million in 2010 and 274 million in 2025.

Table 2-1-1 Population Growth of Indonesia

Year	1985	1990	1995	2000	2003
Total Population	162,660,000	179,380,000	194,750,000	206,200,000	215,040,000
Population density (/km^2)	85	93	101	109	113
Growth rate (%)	1.97	1.97	1.70	1.49	1.50

Source: BPS Statistics

2. Indonesia's population is concentrated in Java Island. According to the 2000 Population Census and population data in 2003, Java Island was home to around 59% of population, although it represents only of 7% of the total area of Indonesia. Population density in Java Island is around 997 persons per square kilometer in 2003.

2-2 GDP AND ECONOMIC GROWTH

3. The Indonesian economy suffered a steep 13.1% drop in 1998 during the Asian economic crisis. Economic growth recovered only in 2000 at a rate of 4.9%. Based on GDP at 1993 constant prices, growth of the Indonesian economy was 4.1% and total DGP reached 444.5 billion rupiahs in 2003. The shift of Indonesian economy from agriculture to manufacturing is reflected in the GDP. In the year 2003, the contribution of the manufacturing industry sector to GDP was 26.1%.

4. Among the 30 provinces in Indonesia, the GRDP of DKI Jakarta at the year was 16.5% of total provinces. The second and third ranked provinces were East Java Province and West Java Province, accounting for 14.5% and 13.9 % of total GDP respectively.

5. Based on per capita GRDP at current prices, when oil and gas are included, East Kalimantan, DKI Jakarta and Riau rank top three in per capita GRDP, with 34.29 million rupiahs, 30.39 million rupiahs and 12.57 million rupiahs. However, without oil and gas, per capita GRDP of the East Kalimantan and Riau were less than half.

2-3 EMPLOYMENT

6. Of the 100.3 million labor force in whole Indonesia in 2003, 60 million workers reside in Java Island and 20 million are in Sumatra. Number of employed in Indonesia is about 90.8 million in 2003, with 46.3% of the workforce being engaged in the Agriculture, Forestry and Fisheries sector. The second largest sector is Trade (wholesale and retail), Restaurant and Hotel sector, followed by the Manufacturing Industry.

7. Average unemployment ratio of Indonesia (9.5%) is very high, compared with neighboring countries. The particular Sulawesi's unemployment rate exceeds 12%. It is

estimated that annual national economic growth of over 7% is required to absorb the unemployed.

8. The average wages and salaries of hired agricultural employees had increased and in 2000 reached to 5,100 thousand rupiahs. The average wages of hired production, operator and manual employees increased to 8,498.3 thousand rupiahs in 2000.

2-4 CONSUMPTION

9. Consumer Price Index (CPI) from 1998 to 2003 is shown in Table 2-4-1.

Table 2-4-1 Consumer Price Index 1998-2003

Year	1998	1999	2000	2001	2002	2003
General Index	*168.32*	*202.63*	*210.27*	*234.46*	*262.31*	*279.59*
Food	209.23	261.72	249.03	269.99	299.69	301.74
Prepared Food and Beverages	173.94	215.94	229.49	261.50	292.86	317.52
Housing	142.02	164.20	175.24	196.21	224.79	249.32
Clothing	191.70	229.98	245.27	267.79	280.28	292.44
Health	179.50	217.76	229.87	255.52	272.40	287.87
Education and Recreation	147.03	165.36	183.96	211.45	235.64	260.59
Transportation and Communication	145.14	169.43	182.78	208.14	245.23	262.54

Source: BPS-Statistics

2-5 INDUSTRY

10. Indonesia is well known as an agricultural country and agricultural area in Indonesia comprised 74.7% of total area in 2002. There are two types of farming in Indonesia: one is family scale self-sustaining farming style and the other is industrialized large scale plantation style. Plantation style produces mass tropical products such as palm-oil and rubber on a large scale farm and mainly exports to foreign countries. Shrimp farming is also expanding.

11. Manufacturing sector is a leading sector in the Indonesian economy. There are two categories in export manufacturing industry in Indonesia. One is natural resource processing industry including plywood production and the other is labor intensive industry such as textile which is dependent on low wage labor. The motor industry is also important.

12. Indonesia is rich in mineral resources and mining sector is expected to serve as an important source of national income, naturally led by exports of oil and gas. Indonesia is the world's largest export of LNG, of which 90% are bound for Japan.

13. Most electricity in Indonesia is supplied by the State Electricity Company (PLN).

14. The construction sector has strategic role in terms of man power absorption. The number of fixed workers employed by construction firms in 1999 was 152 thousand workers and rose to 257 thousand workers in 2003, an increase of 14.0% a year.

2-6 TRANSPORT

15. Recent conditions of road and railway are shown in the following tables.

Table-2-6-1 Length of Road by Type of Surface

Unit: km

Year	1998	1999	2000	2001	2002	
Asphalted	168,072	203,374	203,214	212,935	211,998	57.6%
Non-Asphalted	155,390	136,210	136,590	132,173	131,061	35.6%
Others	31,901	16,367	16,147	16,674	25,283	6.9%
Total	355,363	355,951	355,951	361,782	368,342	100.0%

Source: BPS-Statistics

Table 2-6-2 Railway Freight Transportation in Java and Sumatra

Unit: km-ton

Region	1998	1999	2000	2001	2002	Annual Increase
Java	1,230	1,237	1,226	1,085	990	-3.90%
Sumatra	3,733	3,798	3,783	3,774	3,460	-1.46%
Total	4,963	5,035	5,009	4,859	4,450	-2.07%

Source: BPS-Statistics

2-7 MEDIUM TERM DEVELOPMENT STRATEGY 2004-2009

16. Medium Term Development Strategy (2004-2009) outlines the key policy priorities and direction of the new government under three (3) agendas.

- To create safe and peaceful Indonesia
- To create justice and democratic Indonesia
- To create prosperous Indonesia

17. Three targets are presented to create safe and peaceful Indonesia.

- Resolving separatism and horizontal conflicts
- Combating conventional and transnational crime
- Fighting terrorism and improve national security

18. The medium term plan has set ambitious but attainable goals. The first objective is to reduce the open unemployment rate from 9.5% to 5.1% by 2009. The second goal is to cut the poverty rate in half to 8.1%. The economic strategic framework to support these goals is built as follows.

Table 2-7-1 Macro-Economic Framework

Year	2004	2005	2006	2007	2008	2009
Unemployment ratio (%)	9.7	9.5	8.9	7.9	6.6	5.1
GDP growth rate	5.0	5.5	6.1	6.7	7.2	7.6
GDP per capita (2000 constant price, 1,000 rupiahs)	7,626	7,946	8,333	8,791	9,317	9,914
Government Debt Stock/GDP (%)	53.9	48.0	43.9	39.5	35.4	31.8
Foreign Debt	25.6	21.6	19.3	16.7	14.4	12.6
Domestic Debt	28.6	26.3	24.6	22.8	21.0	19.2

Source: BPS-Statistics

CHAPTER-3. TRADE AND MARITIME TRANSPORT

3-1 INTERNATIONAL TRADE STRUCTURE

3-1-1 Trend of International Trade Value

1. Indonesian exports steadily increased 1989 to 1997, namely, from US$22.2 billions in 1989 to US$53.4 billions in 1997. For subsequent two years, however, exports declined due to the economic and financial crisis. Then, in 2000 Indonesian exports recovered, registering a peak value of US$ 62.1 billions.

2. Until the 1986, Indonesian exports were dominated by oil and gas, however, due to new deregulation policies in 1987, a surge in non-oil export commodities was seen. The contribution of non-oil & gas export commodities grew from 60.8% in 1989 to 77.6% in 2003.

3. During the period from 1989 to 2003, the value of Indonesian imports grew at an average rate of 6.7% annually, from US$16.5 billion in 1989 to US$ 32.6 billion in 2003. Non-oil & gas imports grew on average by 5.3% and its share declined from 92.7% to 76.6%.

4. Table 3-1-1-1 shows Indonesian international trade from 1999 to 2003.

Table 3-1-1-1 Growth of Indonesian International Trade 1999-2003

Unit: million US$

Year	1999	2000	2001	2002	2003
Export					
Oil & Gas	9,792.2	14,366.6	12,636.3	12,112.7	13,642.6
Crude Petrolium	4,517.3	6,090.1	5,714.7	5,227.6	5,621.0
Petrolium Products	918.1	1,651.6	1,189.4	1,307.4	1,547.6
Gas	4,356.8	6,624.9	5,732.2	5,577.7	6,474.0
Non Oil & Gas	38,873.3	47,757.4	43,684.6	45,046.1	47,380.4
Agricultural Products	2,901.5	2,709.1	2,438.5	2,568.3	2,558.4
Industrial Products	33,332.4	42,003.0	37,671.1	38,729.6	40,548.2
Mining and Others	2,639.4	3,045.3	3,575.0	2,748.2	4,273.8
Total	48,665.5	62,124.0	56,320.9	57,158.8	61,023.0
Import					
Consumer Goods	2,486.3	2,718.7	2,251.2	2,650.5	2,833.8
Raw Materials	18,475.0	26,018.7	23,879.4	24,227.5	25,764.3
Capital Goods	3,060.0	4,777.4	4,831.5	4,410.9	3,792.2
Total	24,021.3	33,514.8	30,962.1	31,288.9	32,390.3

Source: BPS-Statistics

3-1-2 Trade Partners

5. The major trading partners of Indonesia in 2003 were Japan, the United States, Singapore, Republic of Korea, China, Taiwan and Germany. Indonesia's trade with Japan recorded US$ 17.8 billion or 22.3% of the total trade of Indonesia. The next largest trade partner was the Unite States at US$ 10.1 billion, followed by Singapore, the Republic Korea and China.

3-1-3 Export and Import Volume

6. Though total Indonesia's import volume had recovered from the economic crisis in 1998 of 51.0 million tons, since then, it stagnated between 62.0 million tons and 72.0 million tons last five years. Import volume of Kalimantan region and Java has been increasing, but other's has been stagnating.

7. According to the data of export volume by port, the biggest export volume was loaded through Kalimantan ports with 122.5 million tons in 2003. Kalimantan is very rich for oil & gas resources. The second was Sumatra with 60.2 million and tons and Java is third. In last ten years, total Indonesia's export volume also has been stagnating in the range between 210 million tons and 270 million tons including economic crisis time. Export volume of Kalimantan has been increasing, but other's has been stagnating.

3-2 MARITIME TRANSPORT NETWORK

3-2-1 Movement of International Cargo Shipping Network Centering on Indonesia

8. Although larger and faster vessels are the latest trend in the world, vessels registered in Indonesia which are still operative are aged and small. As to container vessels, most have a capacity of less than 1,500TEUs. New container vessels have been constructed these days but more than half vessels were built more than 20 years ago. More than 70% of bulk carriers are less than 10,000 GRT and 60% are over 25 years of age. General cargo vessels and tankers have the same characteristics as container vessels and dry bulk cargo carriers.

9. On the other hand, it is difficult for large vessels to enter service in Indonesia because there are many river ports of which water depth is shallow and few large wharves even in big ports.

10. As trade with Asian countries increases, direct container routes from Indonesian ports to other Asian ports also increases. Accordingly, demand for small container vessels is becoming larger due to the before-mentioned constraints.

3-2-2 Existing Cargo Shipping Network on Intra-Asia Routes

11. Trade volume between Indonesia and other Asian countries accounts for 78.5% of the total in 2003. Many cargo shipping routes are spread out in Asia. As to the container liner, 34 routes did business as of November 2004. Routes departing from/arriving at Jakarta (Tg.priok) number 28, followed by Surabaya (Tg.Perak) (15 routes). Singapore is the main destination (25 routes), followed by Hong Kong (10 routes).

3-2-3 Existing Cargo Shipping Network on Long Distance Routes

12. No direct container route is inaugurated to North America. Containers from/to North America are transshipped at Singapore, Hong Kong or other major ports. Two direct container routes to Europe and two to Australia are established as of November 2004.

3-2-4 Current Situation of International Passenger Transport

13. There are two kinds of international passengers in Indonesia. One is those who travel on routes between Indonesian ports which face the Malacca Strait and Singapore or Malaysia. About 2 million passengers embark and disembark in each year. Another is international

tourists who travel by cruise vessels. Benoa is the typical port for cruise vessels. One to four thousand tourists embark and disembark per year.

14. International passengers of major ports are shown in Table 3-2-4-1.

Table 3-2-4-1 International Passengers in Indonesia

Name of port		1999	2000	2001	2002	2003	2004
Belawan	Disembarkation		97,595	135,832	119,187	78,684	
	Embarkation		113,708	108,690	97,323	74,599	
Dumai	Disembarkation		151,370	143,392	209,604	125,054	147,003
	Embarkation		141,178	177,368	188,928	180,337	148,373
Batam (Batam Center)	Disembarkation						1,311,772
	Embarkation						1,273,851
Batam (Sekupang Terminal)	Disembarkation			562,761	538,645	494,331	495,874
	Embarkation			573,992	565,427	507,119	224,747
Benoa	Disembarkation	4,340	3,569	1,320	2,943		
	Embarkation	4,332	3,569	1,320	2,943		

3-3 CURRENT AND FUTURE PROSPECTS OF CARGO VOLUMES, NUMBER OF PASSENGERS AND SHIP CALLS IN MAJOR FOREIGN TRADE PORTS IN INDONESIA

3-3-1 Cargo Volumes by Items and Packing Types

(1) Belawan port

15. Belawan port is the most dominant port in Sumatra. Export volume has been increasing steadily, registering average growth of 12.1% annually since 2000. Palm oil is the major export commodity, with its share of the total export volume increasing from 56.9% in 2000 to 75.8% in 2004.

16. On the other hand, import volume has stagnated since 2002. However, import volume of fertilizer has been increasing in relation to the increase in Palm oil production. Share of fertilizer in total imports rose from 27.6% in 2000 to 53.1% in 2004.

(2) Tg. Priok port

17. Both international trade cargo volume and domestic cargo volume decreased when the economic crisis occurred in 1998. Since then, both have been increasing steadily, although exports cargo volume has been stagnated since 1999.

(3) Tg. Perak port

18. At Tg. Perak port, total cargo volume fell by 15 % in 2003 after increasing steadily from 1999 to 2002. The ratio of international trade cargo volume to domestic cargo volume is roughly 40: 60.

(4) Makassar port

19. At Makassar port, total cargo volume has been increasing at an annual growth rate of 11.5%. International trade volume decreased 13.6% in 2002 compared with previous year and but has been increasing since. Domestic trade cargo has been increasing steadily with an annual average growth rate of 5.4%. The ratio of international trade cargo to domestic cargo is roughly 25: 75.

3-3-2 Number of Passengers

20. Passenger traffic volume at 4 major ports is shown in Table 3-3-2-1.

Table 3-3-2-1 Passenger Traffic Throughput (2000 to 2004)

Unit: person

Year	2000	2001	2002	2003	2004
Belawan	910,229	842,104	716,662	1,046,818	na
Tg. Priok	1,545,528	1,676,812	2,036,171	2,277,486	2,518,802
Tg. Perak	1,792,508	1,740,180	1,328,360	1,143,746	987,384
Makassar	1,257,293	1,183,204	1,190,509	865,527	1,181,594

Source: DGST

3-3-3 Forecast of Future Cargo Volume in International Trade

21. Future cargo in international trade is forecasted using correlation between total international trade cargo volume and National GDP (at 1993 constant prices) for major 4 ports.

Table 3-3-3-1 International Trade Cargo Volume Projection

Unit: thousand ton

Year	2010	2015	2020
Belawan	8,600	10,600	12,600
Tg. Priok	79,300	114,000	158,100
Tg. Perak	23,000	29,600	38,100
Makassar	3,100	3,900	4,800

CHAPTER-4. INTERNATIONAL PORTS IN INDONESIA

4-1 PORT HIERARCHY

1. The concept of port hierarchy under the national port system in Indonesia is shown in Table 4-1-1. There are two kinds of ports: general port for public use and special port for private company use. General Port composed of ports providing for maritime transport, lake & river ports and ferry ports.

Table 4-1-1 Port Hierarchy in Indonesia

	General Port	Special Port
Ports providing for maritime transport	･International Hub Port (Primary trunk port) ･International Port (Secondary trunk port) ･National Port (Tertiary trunk port) ･Regional Port (Primary feeder port) ･Local Port (Secondary feeder port)	･National/International Special Port ･Regional Special Port ･Local Special Port
Lake & River Ports	(Non classification)	
Ferry Ports	･Port for inter Province and County ･Port for inter Regency/City ･Port for inside Regency/City	

Source: DGST

2. There are 725 general ports in total in Indonesia, of which two are international hub ports and 18 are international ports. The number of ports in each province by type is shown in Table 4-1-2.

3. Port hierarchy of the 26 study ports is shown in Table 4-1-3.

4-2 PORT MANAGEMENT SYSTEM AND PORT ACTIVITIES

4. In 1964, the Government of Indonesia established the Port Authority as government agency of the Directorate General of Sea Communications (DGSC) responsible for implementing safety control of ships and cargo in ports and providing port service and port operation at certain large ports. In 1969, the Government of Indonesia restructured the organization and established Port Administration Offices to manage commercial public ports and Port Offices to manage non commercial ports.

5. In 1983, the Government of Indonesia reorganized 9 state owned port enterprises into 4 Public Port Corporations in order to more efficiently handle passenger and cargo flows.

6. In 1991, four Public Port Corporations were changed into PT PELINDO I to IV which have limited company status. Shipping Law No.21 which came into effect in 1992 grants PT PELINDOs authority to manage and operate commercial public ports.

Table 4-1-2 Provincial Breakdown of Indonesian Ports

Island	Province	International hub Port	International Port	National Port	Regional Port	Local port	Total
Sumatra	Aceh	0	0	10	4	3	17
	North Sumatra	0	1	13	10	30	54
	Riau	0	1	44	4	20	69
	West Sumatra	0	1	3	5	3	12
	Jambi	0	0	4	4	6	14
	Bengkulu	0	0	1	2	1	4
Babel	Babel	0	0	6	8	0	14
Sumatra	South Smatra	0	1	1	2	0	4
	Lampung	0	1	2	11	5	19
Jawa	West Jawa	0	1	1	7	1	10
	Banten	0	1	2	2	2	7
	Jakarta Capital	1	0	5	1	0	7
	Middle Jawa	0	2	1	6	3	12
	East Jawa	1	0	11	7	7	26
Bali	Bali	0	1	3	3	4	11
	NTB	0	0	6	5	5	16
	NTT	0	1	9	12	21	43
Kalimantan	West Kalimantan	0	1	8	1	1	11
	Middle Kalimantan	0	0	6	5	1	12
	South Kalimantan	0	2	5	2	0	9
	East Kalimantan	0	1	14	3	1	19
Sulawesi	North Sulawesi	0	1	9	1	18	29
	Gorontalo	0	0	3	1	9	13
	Middle Sulawesi	0	0	12	6	9	27
	South Sulawesi	0	1	15	6	21	43
	East Sulawesi	0	0	6	3	25	34
Maluku	North Maluku	0	0	3	10	9	22
	Maluku	0	0	15	7	26	48
Papua	Papua	0	1	27	1	90	119
Total		2	18	245	139	321	725

Source: DGST

Table 4-1-3 Port Hierarchy of Study Ports

Port Hierarchy	The number of ports in Indonesia	26 Study Ports
・International Hub Port (Primary trunk port)	2	Tanjung Priok, Tanjung Perak: (2 ports)
・International Port (Secondary trunk port)	18	Belawan, Dumai, Teluk Bayur, Palembang, Panjang, Pontianak, Banten, Tanjung Emas, Cilacap, Benoa, Kupang, Banjarmasin, Balikpapan, Bitung, Makassar, Sorong: (16 ports)
・National Port (Tertiary trunk port)	245	Pekanbaru, Tanjung Pinag, Batam, Kendari, Samarinda, Ambon, Biak, Jayapura: (8 ports)
・Regional Port (Primary feeder port)	139	
・Local Port (Secondary feeder port)	321	

Source: DGST

7. In 1992, public ports which were not under the responsibility of PT PELINDO were still managed by the Government through the Port Office which fell under the jurisdiction of a regional office of DGSC. However, 1n 1993, the regional offices of DGSC were abolished and restructured into Kanpel (the regional office of the Ministry of Communications).

8. In 1996, PT PELINDOs as the state owned limited company fell under the jurisdiction of the Ministry of State Owned Enterprises because the Ministry has authority to control all state owned companies and the Ministry is the only share holder of PT PELINDOs on behalf of the Republic of Indonesia.

9. In 2001, the Government expanded the roles of regional and local governments in port affairs by issuing Government Regulation No.69 of 2001. In 2005, DGSC was changed to the Directorate General of Sea Transportation (DGST) while MOC was changed to MOT.

4-3 SYSTEMS AND STRUCTURE OF RELATED ORGANIZATIONS

10. The port related government organization includes Port Police, Water Police (KPPP), Customs, Immigration and Quarantine. Port Police and Water Police belong to Police Republic Indonesia. Customs and Immigration are under the jurisdiction of the Ministry of Finance and the Ministry of Justice and Human Right respectively.

CHAPTER-5. SECURITY MEASURES IN THE WORLD

5-1 MARITIME AND PORT SECURITY IN JAPAN

5-1-1 Establishment of Airport and Seaport Border Crisis Management Team

1. In order to effectively conduct border control and crisis management, the government must always respond in a consistent fashion so that the relevant organizations can fulfill their respective duties while ensuring solid "horizontal cooperation" between the different organizations. To achieve this, an "Airport and Seaport Border Crisis Management Team" was established in the Cabinet Secretariat by a Prime Ministerial Decision in January, 2004.

2. When it is recognized, due to the situation, that border control must be tightened at international airports and seaports, the Border Crisis Management Team shall monitor coordination and provide any necessary advice regarding matters like information notification, security alerts and inspections at the site, and shall fulfill any other necessary duties relating to crisis management at international airports and seaports.

5-1-2 Port Management Crisis Officers

3. Various organizations are involved in border control and crisis management, and it is important to strengthen horizontal cooperation between organizations at the same level. To achieve this, Crisis Management Officers are posted at five key ports (Port of Tokyo, Port of Yokohama, Port of Nagoya, Port of Osaka and Port of Kobe), and Coast Guard Officers are appointed with jurisdiction over each port.

4. Port Crisis Management Officers provide the necessary coordination for crisis management at their port, for example, monitoring and providing any necessary advice on cooperation regarding improvement of matters like information notification, security alerts and inspections.

5-1-3 Port Security Committee

5. In order to truly strengthen the border control and crisis management system at ports, it was decided to establish Port Security Committees at the 123 international ports. Each Port Security Committee is comprised of representatives from port manager, police, coast guard, customs, regional immigration bureau, regional development bureau, district transport bureau and other national or regional organizations with jurisdiction over the pertinent port, relevant bureaus of regional public bodies where the port is located, private sector operators related to the pertinent port, or other relevant groups or organizations which the Committee deems to be necessary. The Committee coordinates and cooperates in consolidating and managing facilities and equipment for inspection and surveillance and in matters such as monitoring and patrolling, and deliberates and coordinates on any other necessary matters relating to security and entry/exit control measures to be taken cooperatively, such as conducting joint drills.

5-1-4 Enforcement of Domestic Laws

6. The "Law to Ensure Security of International Navigating Ships and International Port Facilities (Short title: Law for the Security of Ships and Port Facilities)" was enacted on April

7, 2004 to comply with the amended SOLAS Treaty, and it came into full force on July 1, 2004.

7. International port facilities where security measures are mandatory are as indicated in Table 5-1-4-1. Managers of these facilities (or other similar personnel) must draft "Port Facility Security Plan" and "Water Area Security Plan" as the operating provisions (implementation manual) for self-security, and these must be approved by the national government. Even at international port facilities and international water area facilities where implementation is not mandatory, the facility manager can voluntarily draft provisions equivalent to Port Facility Security Plan or Water Area Security Plan, and obtain the approval of the Minister of Land, Infrastructure and Transport.

Table 5-1-4-1 International Port Facilities where Security Measures Are Mandatory

International port facilities	Criteria for mandatory compliance	Number of facilities, Number of security provisions
International pier facilities (Quays and other facilities provided for use by international navigation ships Note 1))	Quays and other facilities at key ports, used by at least 1 passenger ship per year, and at least 12 cargo ships (or similar ships) per year (Key international pier facilities)	Number of facilities: Approx. 1,500 Number of provisions: Approx. 800 Note 2)
International waterfront facilities (Berths and other facilities provided for use by international navigation ships Note 1))	International waterfront facilities of ports with key international pier facilities	Number of provisions: Approx. 110 (Port units)

Note 1) Passenger ships engaged in international navigation, and cargo ships of gross tonnage at least 500 tons etc.
Note 2) Multiple international pier facilities can be established as a single pier security provision.

5-1-5 Security Measures at Ports

8. At international port facilities, the measures taken shall include: establishing a restricted area and access control, surveillance inside and outside the facility, and control of freight loaded onto ships. Among these measures, the most important are access control at entry/exit gate and surveillance of the restricted area along the fence.

9. The basic policy concerning response to terrorists is to deter by detection and alert and to minimize the damage by informing ships and persons in the port restricted area. Based on the Port Facility Security Assessment (PFSA) carried out by the central government (Designated Authority: Ministry of Land, Infrastructure and Transport (MLIT)), the Port Facility Security Plan (PFSP) is formulated by port management bodies and approved by MLIT.

10. In PFSPs, security measures at each security level including establishment of the restricted area and the restricted water area and installation of port security facilities and equipment are described. In Japan the restricted area is generally as limited in size as possible in order to secure port security more effectively. The restricted water area is the area from the wharf face line to 30 meters from the outer edge of the berthing vessel.

11. As to installation of the port security facilities and equipment, there are two categories: category A is for international berths for container, dangerous goods and passenger and category B is for berths other than the before mentioned. Port security facilities and equipment of the category A berth have the following specifications.

Table 5-1-5-1 Specifications of Security Facilities and Equipment (Category A)

Fence	Height:	over 2400mm
	Outrigger	30deg and over 450mm in length
	Net fence	3.2mm in diameter and 53mm mesh
Monitoring	In priceiple, monitor the restricted area and boundry by CCTV cameras Alert a suspicious person and if he/she does not go away, call the police	
Lighting system	Secure illuminance so that watching or monitoring by CCTV may be enabled	

5-2 MARITIME AND PORT SECURITY IN SINGAPORE

12. The Maritime Port Authority's Marine Security Department (MSE) is responsible for maintaining and enhancing shipping and port security in Singapore. It works closely with government security agencies to assess/review risks and implement appropriate security measures. MPA is the Designated Authority to ensure and enforce implementation of the ISPS Code which came into effect on 1 July, 2004.

5-2-1 Port Security Measures

13. Sensitive areas such as waters around chemical and offshore oil terminals declared as prohibited areas. Vessels/craft are not allowed entering, anchoring, mooring or transiting these prohibited areas without MPA's approval. Security at sea entry checkpoints is tightened against undesired persons, dangerous weapons. Ships' crew/passengers from vessels at anchorages and offshore terminals are allowed only to land at designated landing points where Custom, Immigration and Quarantine facilities are deployed. All personnel are subjected to "face-to-face" checks by the Immigration and Checkpoint Agents.

14. Security checks are conducted for all passengers and luggage by use of X-ray machines, and walk-through/metal detectors that are implemented at cruise and ferry terminals. MPA implements initiatives on maritime security measures beyond the ISPS Code. For example: Small ships/harbour craft exempted from ISPS Code are also viewed as security risks to the bigger ships and the port facilities.

15. MPA Singapore is responsible for safe navigation of ships within Singapore's port waters and the Singapore Strait. It closely monitors vessel movements in these waters through two Port Operations Control Centers (POCCs). Both centers employ state-of-the-art Vessel Traffic Information System (VTIS). MPA Singapore has set up AIS transponder base stations to enable its control centers to automatically receive ships' identities and positions transmitted from transponders carried onboard. These base stations cover the Singapore Strait and port waters.

5-3 MARITIME AND PORT SECURITY IN THAILAND

5-3-1 Implementation of the ISPS Code in Thailand

16. National authority responsible for port facility security is Marine Department, Ministry of Transportation. Marine Department has recognized no RSO. New legislation on ISPS implementation came into force on January 2005. National security committee is established.

17. There are 94 ISPS compliant port facilities in 13 ports. Regarding commercial ports, port operators formulated PFSP at the following Bangkok and Laem Chabang ports.

5-3-2 Port Security Measures in Bangkok Port

18. Bangkok Port is a river port which is located on the left side of the Chao Phraya River Klongtoey District, Bangkok. There are 44 ISPS compliant port facilities in Bangkok Port. Dolphin and Buoy in the river port are also compliant with the ISPS Code.

19. Customs boundary is fenced off by fence of 2.4m in height with top guard. Regarding port to ship interface, restricted area is partitioned by a wall of warehouses, and security gates are installed among warehouses. There are two main gates of the customs boundary where security guards conduct access control. No CCTV camera is installed in Bangkok commercial port. Security documents are strictly controlled as confidential documents.

20. When international passenger vessel calls they install a provisional restricted area, with movable fence and wall of passenger terminal building.

5-3-3 Port Security Measures in Laem Chabang Port

21. There are 11 ISPS compliant port facilities in Laem Chabang Port.

22. Customs boundary is fenced off by fence of 2.4m in height with top guard. Regarding port to ship interface, restricted area is partitioned by fence with top guard and access control is strictly conducted by terminal operator.

23. CCTV cameras are installed in ISPS compliant berths. Security documents are strictly controlled as confidential documents.

5-3-4 Issues on Port Facility Security in Thailand

24. Security personnel of the Ministry of Transportation (national authority responsible for port facility security) and Port Authority of Thailand have knowledge on the SOLAS Convention and the ISPS Code. They have little experience in ISPS implementation and knowledge about security levels. Good cooperation with relevant organizations is also necessary.

5-4 MARITIME AND PORT SECURITY IN MALAYSIA

5-4-1 Implementation of the ISPS Code in Malaysia

25. Malaysian Marine Department administrates marine activities and is the Designated Authority (DA) for port security. Each port facility has PFSO and PASO (Port Area Security Officer) who oversee all port security. ISPS committee composed of national security agencies sets the port security level.

26. A total of 23 ports have received the certificate of ISPS code compliance with PASP (Port Area Security Plan). There are 82 facilities in compliance with the ISPS code. Marine security consultants carry out security assessment and develop the security plan. There are 8 approved consultants. RSO audits documents and ships for the purpose of ISSC (International Ship Security Certificate) issuance on behalf of the Marine Department Peninsula Malaysia (DA). There are 7 approved RSO.

5-4-2 Port Facility Security Measures

27. Local fishermen encroach into the traditional fishing area which is inside the port facility area. Effectiveness of water patrolling within Designated Port Security Area (DPSA: anchorages) is in question as the DPSA is too wide and distant from land and has experienced security breach. Some of the port facilities are incapable of providing water crafts for patrolling due to financial and human resource constraint and entirely rely on government -assist crafts.

28. The following measures are planned in the years to come.

- To ensure all port facilities conform to IMO Self-Assessment and submit to DA
- To conduct training for duly authorized officers such as PASO and PSCO

5-4-3 Training Program

29. Marine Department Peninsular Malaysia is responsible for training. It conducts the IMO model courses for Port Facility Security Officer (PFSO), Company Security Officer (CSO), and Ship Security Officer (SSO) and so on. Only PFSO/SSO courses conducted by the approved training institutions are certified by the DG of Marine Department

5-5 CURRENT SITUATION IN THE WORLD

30. At the G8 Summit Meeting held from June 6 to 8 (2004) at Sea Island in the US, transportation security measures were discussed as one aspect of counter-terrorism, and it was agreed that the G8 countries would work together to enhance port security as part of the "Secure and Facilitated International Travel Initiative (SAFTI)".

31. More specifically, it was decided to promote two projects: (1) Drafting a port security checklist, and (2) Supporting developing countries. In response to this, many of the leaders made statements praising progress in port security cooperation.

CHAPTER-6. PORT SECURITY MEASURES IN INDONESIA

6-1 CURRENT ISSUES RELATED TO MARITIME AND PORT SECURITY

6-1-1 Piracy

1. Indonesia continued to record the highest number of attacks with 79 reported incidents in 2005. Although there is a drop from 94 attacks in 2004, Indonesia still accounts for nearly 30% of the worldwide incidents of piracy and armed robbery against ships.

2. In the Malacca Straits, after the tsunami there were no incidents reported for approximately 2 months. Thereafter attacks resumed. Ships are advised to avoid anchoring along the Indonesia coast of the straits unless required for urgent operational reasons. Waters off North Sumatra, Aceh coast, and off Belawan are particularly risky. Pirates heavily armed with guns are known to have fired at vessels to stop them. Recent attacks showed that pirates were attacking vessels further out in the open sea and closer to/in Malaysian waters. Further south in the straits, pirates armed with machetes/knives and small arms normally attack vessels that do not maintain any anti piracy watch. In the Singapore Straits, pirates have attacked ships underway.

3. Those preying on ships are becoming better armed and organized. They sometimes have satellite phones and can eavesdrop on the communications of vessels they are targeting. Automatic assault rifles are commonly carried and fired. Rocket-propelled grenades and hand grenades were reportedly brandished in several attacks in 2005. The hijacking of vessels - mainly slow-moving tugs, barges and small tankers with low freeboards that are relatively easy to board while underway - and the kidnapping of their officers and crew for ransom, are on the rise.

4. The impact of piracy, besides the killing of innocent lives, aggravates the economic and financial damages to countries as well as the international shipping industry. The launch of the Trilateral Coordinated Patrol, which involves the navies of Malaysia, Indonesia and Singapore patrolling in a coordinated fashion in their respective territorial waters in mid-2004 did not have any significant reduction in the total number of incidents of piracy for that year.

6-1-2 Armed Robbery

5. The KPPP police is responsible for law and order in and around the port area. In the year 2003 there were a total of 18 other related criminal offenses in the port. None of these has been classified as armed robbery.

6-1-3 Cases of Theft in Ports

6. In 2003 there were 10 cases of theft in the port. In 2004, 5 cases were reported. These offenses are characterized by unauthorized entry into the ports in an attempt to commit theft.

6-2 ORGANIZATION AND ITS FUNCTION

6-2-1 DGST

7. The government nominated DGSC (now DGST), Ministry of Communications as the designated authority by Ministerial Decree (KM33:2003 and KM3:2004). The DGST is responsible for supervising implementation of the Decree.

8. The Guard and Rescue Bureau, which is one of five bureaus making up DGST, is directly in charge of port security measures. ISPS Code Team composed of six members from the Guard and Rescue Bureau manages ISPS Code affairs at present.

6-2-2 Port Administration Office and Port Office (ADPEL/KANPEL)

9. Port Security Officer (PSO) is nominated from the Port Administration Office or Port Office. In the Port Administration Office, PSO is the head of Guard and Rescue Division who represents KPLP.

10. The security functions are provided by the following division:

- Port Administration Office /Guard and Rescue Division /Security and Order Section
- Port Office /Harbormaster Division /Port Security and Patrol Section

6-2-3 KPLP

11. The KPLP is one of the units in the Port Administration Office or Port Office. In Main and 1st Class Port Administration Offices, the Guard and Rescue Division represents KPLP, while in 2nd and 3rd Class Offices KPLP is represented by the Guard and Rescue Section.

12. The Guard and Rescue Division assumes the responsibilities for implementing port state control and navigation control, giving clearance permission, investigating ship accidents, conducting search and rescue on waters, preventing pollution, inspecting ship structure, salvage activities and underwater work, taking security measures and also enforcing orders and laws on navigation and crimes in port and harbor waters.

13. As to port security measures, Guard and Rescue Division administrates the port area including the water area.

6-2-4 PELINDO

14. PELINDO also plays an important role in port security measures and bears most of the costs for security measures in a port. The port facility security officers (PFSOs) of public ports are nominated from PELINDO.

6-2-5 Port Security Committee

15. The port administration is obligated to form the Port Security Committee to oversee maritime security duties. Port Security Committee has the following functions:

- To make working plans for communication and port security intelligence.
- To identify threats and unsafe area against port security.

- To arrange procedures and port security system to decrease the threats.
- To coordinate and direct the Port Security Committee meeting
- To coordinate and direct on technical affairs, procedures and port security operation.
- To arrange communication procedures in normal and emergency situations
- To arrange reporting procedures and to evaluate security threats to determine the security level of a port.
- To make an inventory of all ports security threat and to identify possible threats.
- To coordinate and give technical direction to Port Management bodies (PT. PELINDOs).
- To set out the layout of land boundaries, waters boundaries, port equipment and infrastructure.
- To specify area, port security facilities and equipment which are necessary to counter security threats.
- To designate the restricted area and port security facilities and equipment in it.
- To specify physical port security facilities and equipment such as fence, light, detector and alarm, surveillance and communication devices.
- To formulate port security policy and systems and port security procedures implemented by security guards.

16. Members of the Port Security Committee are as follows:

1) Coordinator; Head of Port Administration Office or Port Office
2) Coordinating Manager; Head of KPLP
3) Members
   - Representatives of government agencies such as Customs, Immigration and Quarantine which perform port related services
   - Representatives of government agencies such as Coast Radio Station and Navigation Aids Office which perform navigation safety tasks.
   - Representatives of security agencies such as KPPP and Navy which control bomb, drug and terrorists.
   - Representatives of private agencies such as PT. PELINDO, shipping companies and Associations which perform port activities.
   - Representatives of private agencies which support port activities such as industries in a port
   - Representatives of other agencies whose service is related to the port security.

6-2-6 RSO (Recognized Security Organization)

17. RSOs play fundamental roles in formulating port facility security assessments (PFSAs) and port facility security plans (PFSPs). In Indonesia, 26 RSOs in which two specialize only in ship security are registered as of August 2005.

18. In order to become an RSO, applicants have to submit application form and necessary documents to DGST. After examining applications, DGST informs applicants of approval or denial. A denied applicant can apply again after fulfilling requirements.

6-3 PROCEDURE FOR FORMULATING PFSA AND PFSP

19. The basic procedure for formulating PFSA and PFSP is shown in Figure 6-3-1.

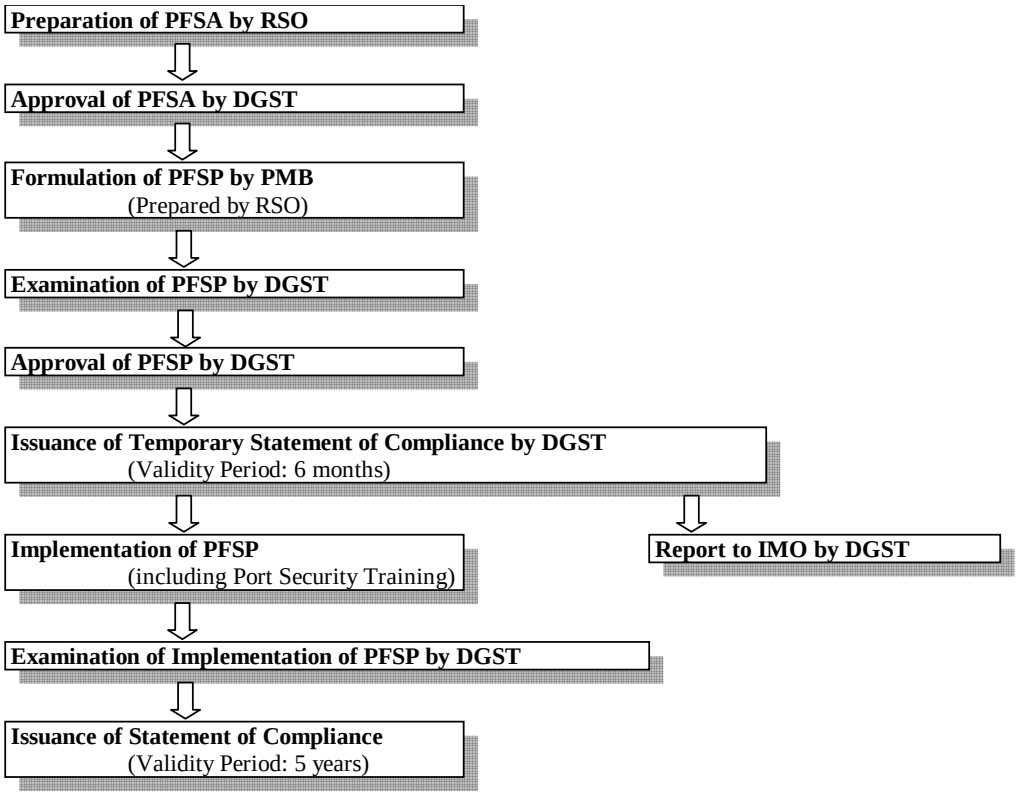


Figure 6-3-1 Procedure Chart

6-3-1 Present Situation

20. The current status of ISPS Code implementation in Indonesia as of February 2006 is as follows:

- Two hundreds and seven (207) port facilities receive permanent SoCPF, of which 27 are public port facilities, 180 are special port facilities.
- The 27 public port facilities which have complied with the requirements of the ISPS Code are located in 22 ports shown in Table 6-3-1-1.

21. Four hundreds and thirty two (432) ships obtain permanent ISSC as of February 2006.

Table 6-3-1-1 Public Ports which Have Complied with the Requirements of the ISPS Code

	No.	Public Port	Name of Facility
PELINDO I	1	Belawan	Belawan Container Terminal Unit Terminal Peti Kemas
			Belawan Mult Purpose Terminal
	2	Sabang	Pelabuhan Bebas Sabang
	3	Tanjung Balai Karimun	Pelabuhan Tanjung Balai Karimun
			STS Pelabuhan Tanjung Balai Karinum
	4	Dumai	PT (Persero) Pelabuhan Indonesia I Cabang Dumai
	5	Tanjung Pinang	Pelabuhan Sri Bintan Pura Tanjung Pinang
	6	Pekanbaru	PT (Persero) Pelabuhan Indonesia I Cabang Pekanbaru
BDA	7	Batam	Otorita Pengembangan Daerah Industri Pulau Batam Pelabuhan Batu Ampar Pulau Batam
		Batam	Pelabuhan Umum Penumpang Internasional Batam Center
PELINDO II	8	Bengkulu	PT (Persero) Pelabuhan Indonesia II Cabang Bengkulu
	9	Jambi	PT (Persero) Pelabuhan Indonesia II Cabang Jambi
	10	Teluk Bayur	PT (Persero) Pelabuhan Indonesia II Cabang Teluk Bayur
	11	Panjang	PT (Persero) Pelabuhan Indonesia II Cabang Panjang
	12	Palembang	PT (Persero) Pelabuhan Indonesia II Cabang Palembang
	13	Banten	PT (Persero) Pelabuhan Indonesia II Cabang Banten
	14	Tanjung Pandan	PT (Persero) Pelabuhan Indonesia II Cabang Tanjung Pandan
	15	Cirebon	PT (Persero) Pelabuhan Indonesia II Cabang Cirebon
	16	Semarang	Dermaga Samudera & Terminal Penumpang Internasional
	17	Pontianak	PT (Persero) Pelabuhan Indonesia II Cabang Pontianak
	18	Tanjung Priok	PT Dok & Perkapalan Kodja Bahari
		Tanjung Priok	PT (Persero) Pelabuhan Indonesia II Cabang Tanjung Priok
	19	Pangkal Balam	PT (Persero) Pelabuhan Indonesia II Cabang Pangkal Balam
PELINDO III	20	Tanjung Perak	Jamrud Pelindo III Tanjung Perak
		Tanjung Perak	Gapura Nusantara Pelindo III Tanjung Perak
		Tanjung Perak	PT Terminal Petikemas Surabaya
	21	Cilacap	PT (Persero) Pelabuhan Indonesia III Cabang Tanjung Intan Cilacap
PELINDO IV	22	Makassar	PT (Persero) Pelabuhan Indonesia IV Cabang Makassar

Source: DGST

6-4 PATROL IN WATER AREA

22. KPLP belonging to ADPEL and KAMPEL patrols water area in a port for ship safety and security. ADPEL and KAMPEL have a total of 159 patrol boats to patrol waters.

23. As to construction year of a patrol boat, many were built around 1980 and around 25 years have passed. Average life expectancy of a ship is said to range from 15 to 35 years and many patrol boats in Indonesia are standing on their last legs. Therefore many of them have low engine and hull performance. Proper repair or reconstruction is required to conduct effective sea patrol.

24. Another big issue is the shortage of fuel for patrol boats. Some ports have enough fuel to patrol every day, but it is said that other ports have limited fuel and can operate only once a month.

25. According to the JICA study on maritime safety plan concerning search and rescue prepared in 1989, 164 patrol boats should be stationed at 45 major ports in Indonesia. The target year is 2005. However not all the required patrol boats have been stationed yet. For these ports, patrol boats should be stationed not only for conventional general patrol works but also for security patrol works based on the ISPS Code (PFSP).

6-5 AUTOMATIC IDENTIFICATION SYSTEM (AIS)

26. AIS is an equipment to enhance the safety and efficiency of navigation and the protection of the marine environment by preventing collision and is fitted on a ship. Moreover AIS can be utilized for maritime security because it can monitor movement of target vessels. Combination of AIS and radar enables wide area search for a suspicious terrorist vessel.

27. After the terrorist attacks in the US in 11 September 2001, IMO decided the early introduction of AIS at the inter-governmental convention for the 5th conference of contracting governments in December 2002, as the result of cumulative anti-terrorism studies in maritime field.

28. Indonesia decided to introduce AIS. DGST has developed Vessel Traffic Management System (VTMS) which consists of AIS, radar, VHF and CCTV. At present, VTMSs are built at five ports: Jakarta, Belawan, Sumaran, Surabaya and Makassar on a trial bases although CCTV is installed only at Jakarta and Surabaya. These VTMSs do not transmit information now, but it is planned that they will transmit navigation safety information. According to the VTMS development plan, the station which has AIS, radar, VHF and CCTV will be constructed at 18 major ports and the sub-station which has AIS and VHF at 27 ports.

29. Three AIS base stations are connected with DGST Headquarters by internet and will be connected dually by VSAT (satellite communication). DGST officials in the headquarters can brows these information. It is recommended from the viewpoint of reinforcement of security measures that AIS stations be further constructed in other ports in Indonesia.

CHAPTER-7. EDUCATIONAL AND TRAINING ORGANIZATIONS IN INDONESIA

7-1 INSTITUTION/AGENCY THAT CONDUCTS ISPS CODE TRAINING

7-1-1 Education and Training Agency

1. The Education & Training Agency (ETA) comes under the Ministry of Transportation. ETA is responsible for 6 other training centres of which Maritime Education and Training Centre and STIP Jakarta (Maritime Higher Education and Training Institute) conduct IMO Model ISPS courses for the Maritime Industry. The STIP Jakarta only provides Company Security Officer (CSO) and Ship Security Officer (SSO) Courses. The Maritime Education and Training Centre has 7 training institutions in Indonesia that provide education courses; refresher and upgrading training to experienced seafarers. One of such training institutions is BP3IP located in Jakarta. BP3IP is the only institution that provides Port Facility Security Officer (PFSO) Courses as a separate training program. However, a PFSO course has yet to be conducted.

7-1-2 PELINDO

2. Among four PELINDOs (Indonesian Port Corporations (IPCs)) in Indonesia, PELINDO II has an education and training centre known as Balai Pendidikan dan Latihan (BPL). BPL is a technical unit (UPT) in PELINDO II responsible for human resource education and was founded in the year 1976 for dockworkers by the name of Indonesia Port Workers Training Centre. Most of PELINDO training is conducted either in hotels or at the service provider premises because PELINDO does not have an in-house trainer per se.

7-1-3 Recognized Security Organization (RSO)

3. The Designated Authority (DA) has appointed a total of 26 Recognized Security Organizations. However, less the 50% of the appointed RSOs are actively providing consultancy services in conducting port facility security assessments and development of the port facility security plans. Most RSOs do not focus solely on providing training for PFSO or any security related courses as these courses are requested on an ad-hoc basis. RSOs coordinate such ad-hoc courses and arrange for trainers from the Directorate of Sea and Coast Guard, DGST and/or from external consultants.

7-1-4 Port Security Committee (PSC)

4. The Port Security Committees (PSCs) do not have training institutions. Most of the committee members require greater knowledge of the ISPS Code and rely upon the PSO for advice in regards to port security.

7-1-5 Pertamina Maritime Education & Training Centre (METC)

5. METC provides education and training services to Pertamina seafarers. In addition, it has contracted outside consultants to conduct PFSO courses for State-owned port facilities (Pertamina staff) as well as to the non-State owned ports. METC has thus far trained more than

692 PFSOs since 2003 to March 2005 of which 95% are mainly applicants from non state-owned facilities.

7-1-6 ST Education & Training Pte Ltd (STET)

6. Located in Singapore, STET has been conducting PFSO/ CSO/ SSO courses, ship and port consultancies for both commercial (local and international markets) and international organizations; the latter of which are under international and national ambits such as the IMO, ILO and MPA as well as DGST.

7-2 GENERAL FINDINGS AND ANALYSIS

7. Many inter-agencies are involved in port security. As such, there is tendency for the roles and responsibilities of these multi-agencies to overlap. Agencies such as Kesatuan Palaksana Pengamanan Pelabuhan (KPPP), Kesatuan Pengamanan Laut dan Pantai (KPLP), and POLAIR (water police) will need to understand their roles with regards to the ISPS Code.

7-2-1 Port Administrator (ADPEL) and the Port Security Committee (PSC)

8. To further complement the effectiveness of the port administrator in leading the PSC, it is proposed that all Port Administrators should:

- Have a clear understanding of both the ISPS Code requirements and have an awareness of the concepts advocated in the Code of Practice (COP).
- Establish the communications requirements with clear lines in the chain of command. These are key areas that need to be instituted.

7-2-2 Port Security Officer (PSO)

9. Through most of the interviews with the PSO, it was observed that they have vague knowledge of the ISPS Code. In some ports, the PSO is charged with the responsibility to exchange DoS with the ship – in such situations, PSO will need to be as conversant as the trained PFSO in areas of the ISPS Code.

7-2-3 Kesatuan Palaksana Pengamanan Pelabuhan (KPPP)

10. KPPP's main responsibility is to investigate any criminal act and arrest criminals in the port working area including the port facility. However, in some port facilities, KPPP police posts are located in the berth area. In general, KPPP staffs require greater understanding of the ISPS Code and also about the role of PFSO with regards to port facility.

7-2-4 Port Facility Security Officer (PFSO)

11. All PFSO's have attended the PFSO Courses conducted by DGST and the RSO. However, it is observed that most PFSOs require more training on the content of their PFSP and the application of DoS. There is therefore a need for the Ports and Port Facilities to conduct Drills and Exercises to familiarize their PFSOs with their duties and the related procedures.

7-2-5 Satuan Petugas Keamanan (SATPAM)

12. SATPAM is commonly applied to the in-house security personnel employed by PELINDO. The role of SATPAM staff is primarily to perform guard and patrol duties in the port facilities. It was gathered through interview that most SATPAM staff received short briefing by the PFSO or PSO.

7-2-6 Personnel Working in the Port Area

13. These are personnel defined in the ISPS Code B/18.3 as all port facility personnel, including the operations, administration and management. One key area that receptionist and administration personnel should be trained is in the area of handling bomb threat calls.

CHAPTER-8. SECURITY MEASURES OF PORTS FOR WHICH STATEMENT OF COMPLIANCE HAVE BEEN ISSUED

8-1 PORT OF BELAWAN

8-1-1 Outline of Belawan Port

1. Belawan Port is one of the four major ports in Indonesia and as the major port in PELINDO I plays an important role in Sumatra Island. It is a hub port for cargo and passengers as well. Its container handling volume and export of agro industries is substantial. It is located at latitude 03°47'00" north and longitude 98°41'00" east, 26km from Medan, the capital of North Sumatra Province, and has a hinterland not only in North Sumatra area but also in other areas around Riau and Ache. It also faces the Malacca Straits and has close relations with Singapore and Malaysia. Enhancement of security measures is urgently required.

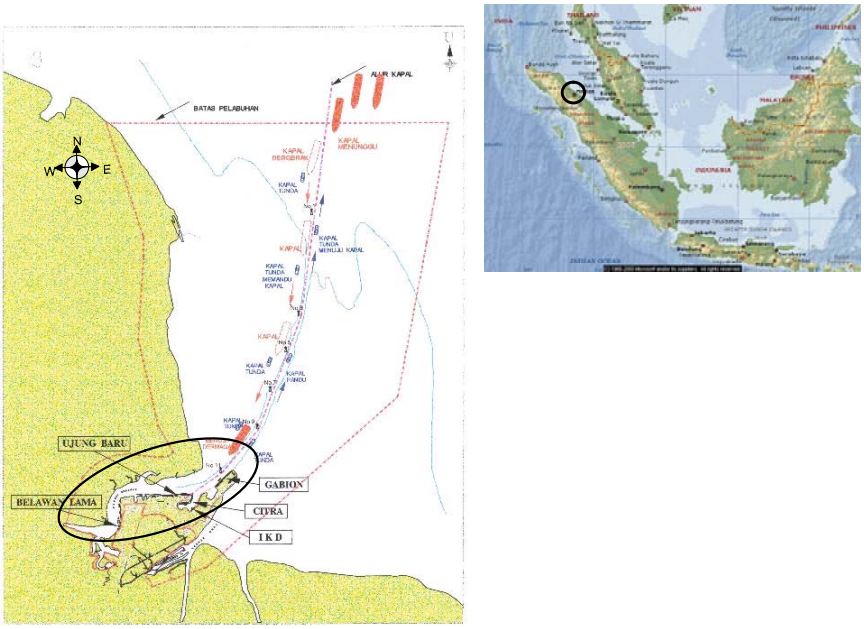


Figure 8-1-1-1 Location of Belawan Port

8-1-2 Layout Plan of the Port

2. Layout plans of the berths at Belawan Port are shown in Figure 8-1-2-1. Two major terminals are located in Belawan Port. One is a conventional terminal (Ujung Baru terminal) for bulk cargo. Total length is 1,195m (Liquid bulk; 650m, Dry bulk; 380m, General cargo; 165m) and water depth is -9m. The other is a container terminal, which is located on the east side of the conventional terminal. The terminal is divided into a local terminal and overseas terminal by fence. Total length is 500m and water depth is -10m. A trunk road leads to each terminal with a toll gate. A railroad is laid down for transporting palm oil. East end of the conventional terminal connects to the international passenger terminal where liner service is available to/ from Port of Kelang, Penang and Singapore. Total length is 350m.

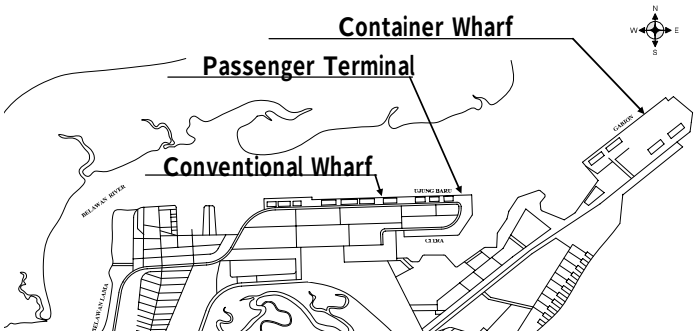


Figure 8-1-2-1 Layout Plan of Belawan Port

8-1-3 Present Situation of Port Facility Security Measures

3. A main road runs in front of the conventional terminal which is partitioned off by a fence along the road. There is no CCTV camera. There are ten gates in the conventional terminal. At two gates access control is conducted. Another main road runs to the container terminal and there is a main gate at the end of the main road. Neither boom nor CCTV camera has been installed in the terminal. KPLP and KPPP officials strictly control the area 24 hours a day.

8-1-4 Issues on Implementation of Port Facility Security Measures

4. Issues on implementation of port facility security measures are shown below:

1) Conventional terminal
   - No boom for stopping vehicles is installed at any gate.
   - Some security guards who conduct access control and patrol the port area have no communication device.
   - Three kinds of ID with photo are issued by PELINDO I Belawan Branch but confirmation of ID has not been conducted at the gates or in the restricted area by KPLP or KPPP.
   - Public address system is not functional.

2) Container terminal
   - There is a little clearance between the net fence and concrete wall and the height of the net fence is not enough, making it is easy for a person to enter the port over the concrete wall and net fence.
   - Domestic container terminal abuts on the international container terminals which are separated by a mobile fence. However, access control is insufficient due to fence damage.

3) International passenger terminal
   - There is no area for passengers to stay.
   - There is an X-ray scanner for passenger luggage which is owned by Customs. No check by metal detector and X-ray scanner for baggage and explosives is conducted by PELINDO I Belawan Branch.

8-1-5 Recommendation on Port Security

5. Recommendations for PELINDO I Belawan Port are as follows.

1) Security equipment should be provided or installed:
   - Repair of gates at the Conventional terminal is necessary. The gate should be equipped with a boom for stopping cars.
   - X-ray inspection device and handheld metal detector for Passenger terminal.
   - Gate type metal detector and mirror for Passenger terminal.
   - Communication device should be given to all personnel who patrol in the terminal.
   - CCTV camera, lighting and P.A. system are necessary for International passenger terminal and International container terminal.
   - New fence should be installed at the south end of the Passenger terminal instead of mobile fence.

2) Access control
   - Access control at the conventional terminal, for example Photo ID check at the gate, should be conducted more strictly.
   - Patrol in the conventional terminal should be conducted strictly.
   - Fishermen should be prohibited from entering the Passenger terminal.

8-2 PORT OF DUMAI

8-2-1 Outline of Dumai Port

6. Dumai Port is one of the biggest ports under the jurisdiction of PELINDO I. It is located in Central Sumatra at latitude 01°41'14" south and longitude 101°27'42" east. Dumai Port is a good natural port facing the Rupat Island which is a natural breakwater. It is also at a strategic location close to the Malacca Strait. Since Dumai Port was built in 1957, it has been developed rapidly from a small fishermen's village into a big port.

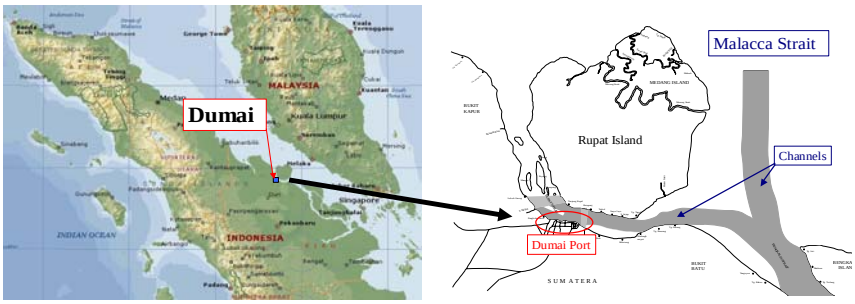


Figure 8-2-1-1 Location of Dumai Port

7. The public facilities which handle international cargo are a multi-purpose wharf and general cargo wharf. Crude palm oil accounts for most of the international cargo.

8. Projects to increase port capacity including the extension project of the multi-purpose wharf are being carried out because both wharves are approaching their capacity limits.

9. In addition, Dumai port has a passenger terminal for international and domestic passengers. International passenger ships enter service between Dumai port and Malacca, Port Dikson and Port Klang in Malaysia.

8-2-2 Layout Plan of the Port

10. Overview of the Dumai port and layouts of the multi-purpose wharf, general cargo wharf and passenger wharf are shown in Figure 8-2-2-1.

11. These three wharves are fenced off. Both the multi-purpose wharf and general cargo wharf, which are reinforced concrete piers, handle international and domestic cargo. The passenger wharf has two pontoons. The manufacturing plants of crude palm oil are located in the port area between the multi-purpose wharf and general cargo wharf. A main road runs in the east-west direction in close vicinity to the port area.

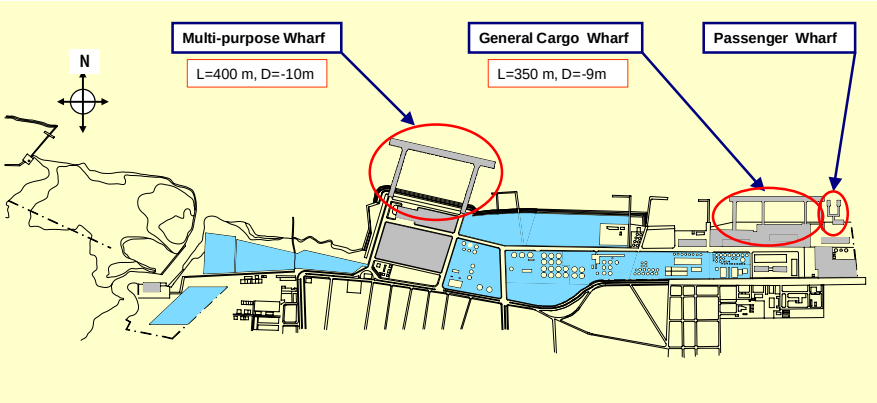


Figure 8-2-2-1 Overview of Dumai Port

8-2-3 Present Situation of Port Facility Security Measure

12. The multi-purpose wharf, general cargo wharf and passenger wharf are fenced off. At the multi-purpose wharf and general cargo wharf, double gate system which is composed of entrance gate of the port (outer gate) and one of the restricted area (inner gate) is adopted as access control. Security check is conducted only at the outer gate. Though ID card is issued, security guards do not check it at the gate. Public can enter the restricted area without any inhibition. Though international and domestic cargoes are handled at both wharves, international and domestic area is not divided off.

13. At the passenger wharf, fence surrounding the restricted area is under construction. At the gate of the passenger wharf, a boom is installed and security check of vehicles is conducted. Security guards check the baggage of passenger by metal detector at the old passenger terminal. Passengers go to the new passenger terminal through the old one. New passenger terminal has been built recently, but no X-ray inspection device for baggage, walk-through type metal detectors, CCTV cameras for monitoring inside of the terminal etc. are installed there.

8-2-4 Issues on Implementation of Port Facility Security Measures

14. Issues on implementation of port facility security measures at Dumai Port are as follows:

- At the multi-purpose wharf and general cargo wharf, some part of the fence is not installed or top guard of the fence inclines in the wrong direction (slopes to the inside).
- The inner gates of both wharves have no gate door and check is not conducted. Public can enter the restricted area without any inhibition.

- No X-ray scanner for baggage, walk-through type metal detector, CCTV cameras for monitoring inside of the terminal, etc. are installed at the new passenger terminal.

8-2-5 Recommendations on Port Security

15. Recommendations on port security are shown below:

- It is proposed that a fence surrounding the restricted area and gate be installed at the multi-purpose wharf and general cargo wharf and top guard be installed appropriately.
- It is also proposed that an X-ray inspection device for baggage, walk-through type metal detector, CCTV cameras for monitoring inside of the terminal be installed in the new passenger terminal.
- Access control should be conducted strictly at the multi-purpose wharf and general cargo wharf.

8-3 PORT OF TANJUNG PINANG

8-3-1 Outline of Tanjung Pinang Port

16. Port of Tanjung Pinang is located on Bintan Island, and comprised of Sri Bintan Pura Port, Sri Payung Batu VI Port and Sei Kolak Kijang Port. It provides pilot service to Tanjung Uban Port, Port of Batam and Port of Sambu.

17. Among them, Sri Bintan Pura Port is a special port for domestic and international passenger ships, especially fast ferry, and the international passenger terminal area is separated from the domestic area.

8-3-2 Layout Plan of the Port

18. The location and the existing layout of Sri Bintan Pura Port are shown in Figure 8-3-2-1.

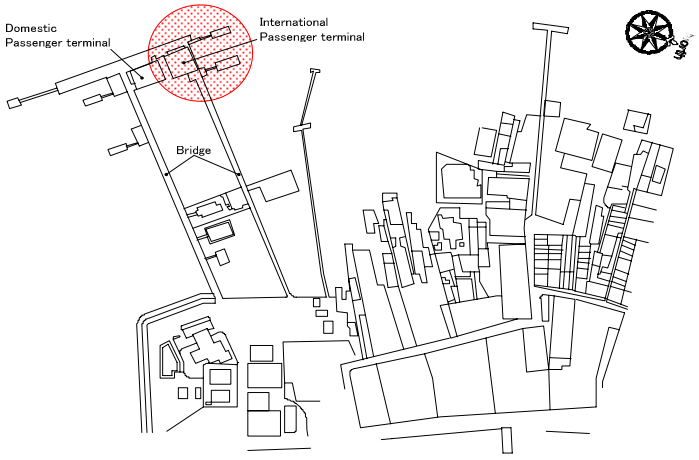


Figure 8-3-2-1 Location of Sri Bintan Pura Port

8-3-3 Present Situation of Port Facility Security Measures

19. Present situation of port facility security measures at Tanjung Pinang Port is as follows:

1) The access management situation at the gate is as follows:

a) Personnel

- Access control is conducted at one gate for the international passenger terminal.
- Photo ID card is issued to port related administrative personnel. However, PELINDO and KPLP officials seldom check these IDs.
- Photo ID card is issued to shipping personnel and shipping agency personnel as well; their personal identification is checked at random.
- Tug pilots, lines men and visitors are asked to show photo ID cards and their belongings are checked by hand-held metal detector.
- Seamen are identified by passport, and passengers are identified by passport and boarding pass. The procedure is done by Immigration.
- As for persons other than the above mentioned, their belongings are checked by hand-held metal detector.

b) Vehicle

- Passenger terminal is on the pier above the sea. There is an access road for passengers only between the land and passenger terminal.

c) Cargo

- Passenger's baggage is checked by X-ray inspection system, only during debarkation by customs.

2) The situation of patrol is as follows:

- KPLP has a plan to patrol an apron area.
- PELINDO patrols the passenger terminal building.
- KPLP seldom patrol by patrol boat.

8-3-4 Issues on Implementation of Port Facility Security Measures

20. Issues on implementation of port facility security measures at Tanjung Pinang Port are as follows:

- Identification checks are rarely carried out though photo ID card is issued to personnel concerned by PELINDO.
- There is no X-ray inspection system for checking passenger's baggage on the embarkation side.

8-3-5 Recommendations on Port Security

21. Recommendations on port security at Tanjung Pinang port are shown below:

- The gate and fence to divide international passengers from domestic ones should be improved because the height is not sufficient and the size of mesh is too wide. A lock for the gate is also required.
- In a part of the terminal, lighting is not sufficient for monitoring during the night. Some lighting apparatus is out of order. The lighting system should be repaired and improved.
- ID card checks should be strictly carried out.

- In the embarkation procedure, passenger's baggage should be checked by an X-ray inspection system, and their belongings should be checked by walk-through metal detector and hand-held metal detector.

8-4 PORT OF BATAM

8-4-1 Outline of Batam Port

22. Batam Island faces the main ship route that connects between the Middle East and Far East, while Singapore is on the opposite side of the ship route. It takes less than one hour by ferry boat from Singapore to Batam Island. Therefore, the main industry at Batam Island is tourism and there are several international and domestic passenger terminals.

23. The international public ports which already have PFSA and PFSP are Batu Ampar Port, Batam Center International Passenger Terminal and Sepupang International Passenger Terminal.

Figure 8-4-1-1 Location of Batam Port

8-4-2 Batu Ampar Port

(1) Outline of Batu Ampar Port

24. Batu Ampar is a main seaport of Batam Island with an existing container handling capacity of 70,000 TEUs and general cargo handling capacity of 3 million tons per year. International cargo is handled at a 250m-long consecutive wharf with a depth of 10-12m.

25. The existing layout of Batu Ampar Port is shown in Figure 8-4-2-1.

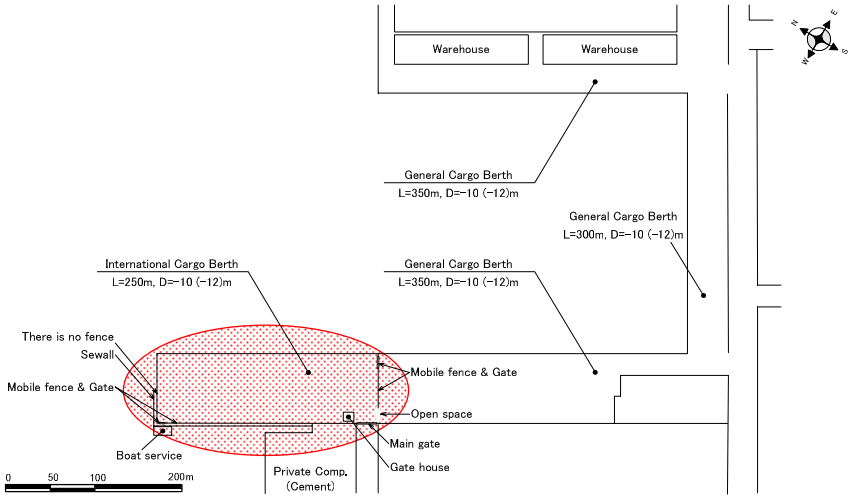


Figure 8-4-2-1 Layout Plan

(2) Port Facility Security Measures

26. Present situation of port facility security measures at Batu Ampar Port is as follows:

- Consecutive wharf is divided into international and domestic wharf by using mobile fence and gate.

27. Issues on implementation of port facility security measures at Batu Ampar Port are as follows:

- Mobile fences and a gate are installed on the boundary with the domestic terminal neighboring to the south. However there is no mobile fence in front of the guard box. Vehicles and persons usually pass this no-fence part and security guards conduct access control.
- Clear zone is not kept around the fence which is installed between the wharf and the private cement corporation area neighboring to the west.
- Lighting system is poorly maintained.

28. Recommendations on port security are shown below:

- Mobile fence and a gate should be installed in front of the guard box. Over-hanging physical barrier should be installed at the edge of revetment.
- ID card should be strictly checked.
- Gates should be locked when no security guard is present.
- Clear zone should be kept around the fence.
- In a part of the terminal, lighting is insufficient for monitoring during the night. The lighting system should be repaired and improved in such places.

8-4-3 Batam Center Terminal

(1) Outline of Batam Center Terminal

29. Batam Center is a designated terminal for international passenger ships, and it has two pontoons with a depth of 6m. The function of the international passenger terminal shifted from Batu Ampar to Batam Center in 2003.

30. The existing layout of Batam Center Terminal is shown in Figure 8-4-3-1.

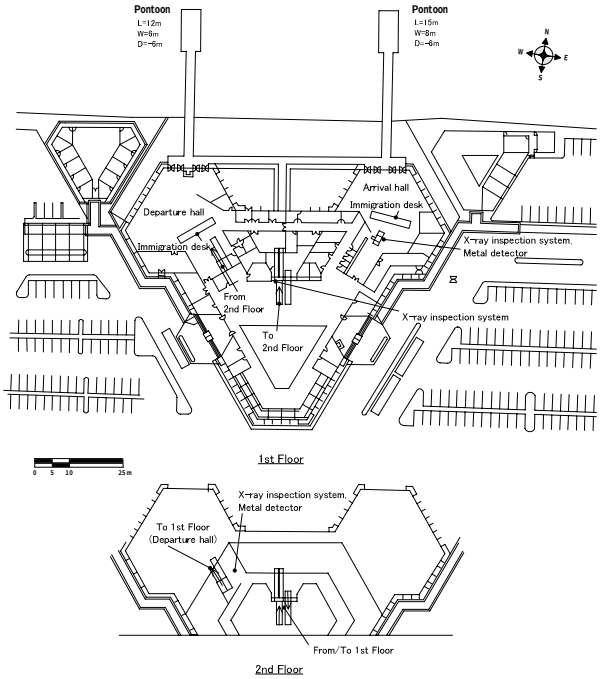


Figure 8-4-3-1 Layout Plan (Passenger Terminal)

(2) Port Facility Security Measures

31. Present situation of port facility security measures at Batam Center Terminal is as follows:

- Security check is conducted for in-coming/out-going passengers and their belongings by X-ray inspection device, walk-through metal detector and hand-held metal detector. Check-in baggage is checked by X-ray inspection device.
- The terminal including the terminal building is monitored and patrolled by security guards.

32. Issues on implementation of port facility security measures at Batam Center Terminal are as follows:

- There is a fence on the boundary between the terminal building and a shop neighboring to the east and a gate between the fence and the shop. The height of the fence and gate is insufficient.
- The entrance for embarkation is separated from that for debarkation, but passengers intersect each other at the passage. In addition, checked baggage is piled at the passage.

33. Recommendations on the port security are shown below:

- The height of the fence and gate on the border with the shop should be increased and a top guard should be added. The gate at the shop should also be improved in a similar manner.
- When it is foreseen that passengers will intersect at the passage, operators should have embarking passengers wait in a departure hall until all debarking passengers have cleared the passage. In such a case standing security guards

should be increased in number.
- Checked baggage should not be left at the passage. Security guard should carefully monitor checked baggage.
- Lighting system should be improved.

8-4-4 Sekupang Terminal

(1) Outline of Sekupang Terminal

34. Sekupang is composed of an international passenger terminal, domestic passenger terminal and domestic cargo terminal. The international passenger terminal has two pontoons with a depth of 6-13m. The renewal of the terminal building has just begun and will be completed in 2006.

35. The existing layout of Sekupang Terminal is shown in Figure 8-4-4-1.

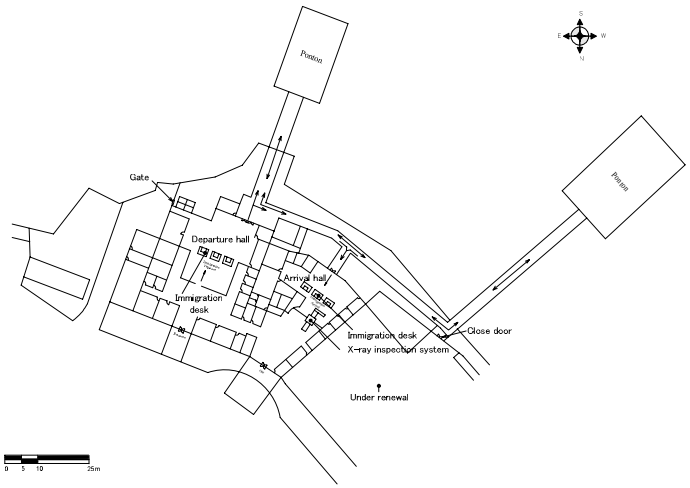


Figure 8-4-4-1 Plan of Sekupang Terminal

(2) Port Facility Security Measures

36. Present situation of port facility security measures at Sekupang Terminal is as follows:

- Security check is conducted only for in-coming passengers and their belongings by X-ray inspection device.
- In the terminal building and piers, security guards monitor by standing at appropriate positions and patrolling.

37. Issues on implementation of port facility security measures at Sekupang Terminal are as follows:

- It is dark during the night at the landside area of access bridges for pontoons.
- The door placed at the east side of the international passenger terminal which is usually used by seamen is not locked.

38. Recommendations on Port Security are as follows:

- The over-hanging fence should be installed near the door at the east side of the international passenger terminal to deter intruders.
- In case that it is expected that passengers intersect at the passage, operators

should have embarking passengers wait in a departure hall until all debarking passengers pass the passage. In such a case standing security guards should be increased in number.
- The gate should be locked when security guards are not present.
- In a part of the terminal, the lighting is not sufficient for monitoring during the night. The lighting system should be repaired and improved.

8-5 PORT OF TELUK BAYUR

8-5-1 Outline of Teluk Bayur Port

39. Teluk Bayur Port is located at Bayur Bay (Padang City) on the West Coast of Sumatra. As the primary port on the West Coast of Sumatra, Teluk Bayur Port serves the major commodities from its hinterland area such as coal, cement, crude oil, fertilizer, rubber, crude palm oil, etc.

40. The public facilities which handle international cargo are container wharf and general cargo wharf. Both facilities handle international and domestic cargo.

8-5-2 Layout Plan of the Port

41. Overview of Teluk Bayur Port is shown in Figure 8-5-2-1. The port area is fenced off.

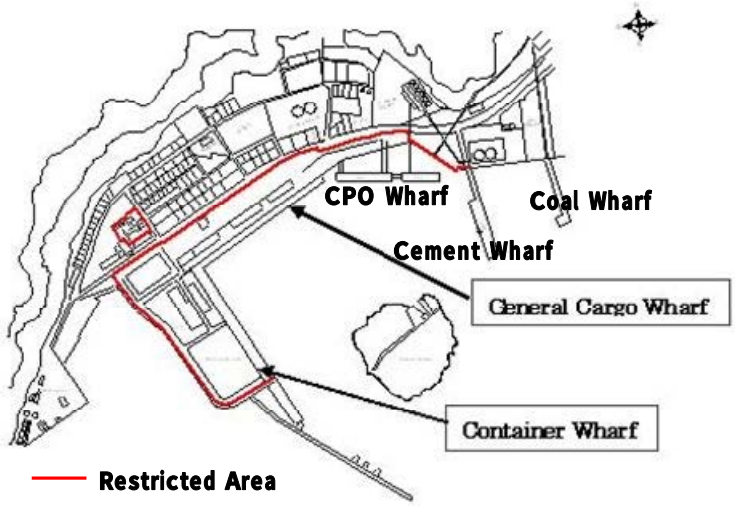


Figure 8-5-2-1 Overview of Teluk Bayur Port

8-5-3 Present Situation of Port Facility Security Measures

42. Present situation of port facility security measures is described below:

- There are six gates in the restricted area of the port. Among them, four gates are closed and opened if needed for operation. Access control is conducted at the other two gates by four security guards from KPLP, PELINDO II and KPPP respectively around the clock. Security bar is installed at these two gates.
- Security guards check ID cards for government official, operator, and users such as forwarder and ID stickers for truck and ship stores car.
- The water area including the wharf side and anchorage is patrolled once a day.

8-5-4 Issues on Implementation of Port Facility Security Measures

43. Issues on implementation of port facility security measures are shown below:

- The top guard at some parts of the fence along the restricted area is broken and there is a hole in the fence at the container wharf. In addition, there are tall trees and bushes beside some parts of the fence.
- There is no CCTV camera monitoring system in the container wharf area.

8-5-5 Recommendations on Port Security

44. Recommendations on port security are as follows:

- The CCTV camera monitoring system should be installed in the container wharf area.
- The broken top guard at some parts and the hole in the fence at the container wharf should be repaired.
- The tall trees and bushes beside the fence should be cut in order to allow security personnel to have a better view in the day and at night.
- The water area should be patrolled more frequently.

8-6 PORT OF PALEMBANG

8-6-1 Outline of Palembang Port

45. Palembang Port is a large port located on the Musi River, the largest river in south Sumatra. The port plays an important role in the social economic activities of south Sumatra. Within Palembang Port, Boom Baru and Sei Lais are public ports owned by PELINDO II. Lais Port is 8 km downstream from Boom Baru Port and handles domestic cargo. Boom Baru Port has conventional, container and (domestic) passenger terminals lined in a row. The container terminal of Boom Baru is equipped with a quay side crane to handle international containers. Palembang port has a long channel and patrolling the water area is one of the major concerns.

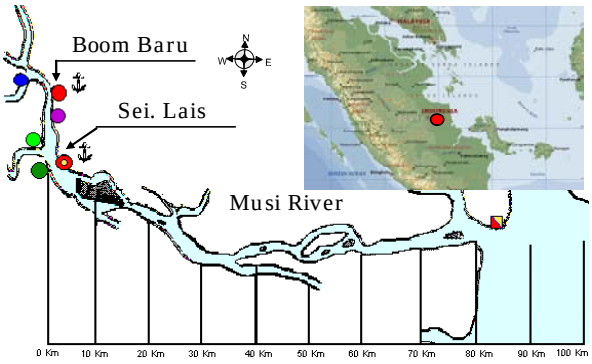


Figure 8-6-1-1 Location Map of Palembang Port

8-6-2 Layout Plan and the Restricted Area

46. The layout plan of Palembang Port (Boom Baru) is shown in Figure 8-6-2-1.

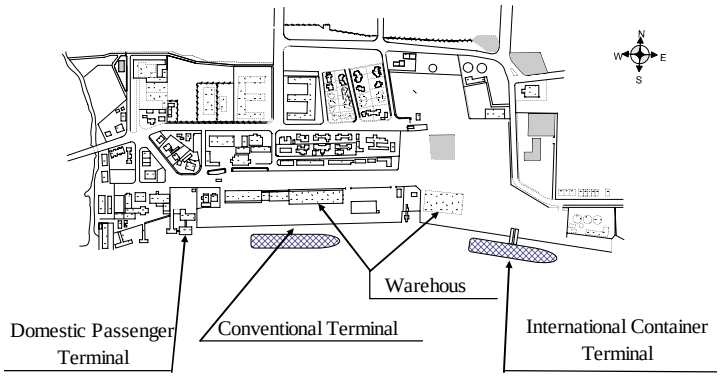


Figure 8-6-2-1 Layout Plan of Palembang Port

8-6-3 Present Situation of Port Facility Security Measures

47. Present situation of port facility security measures based on the site survey is shown below:

- There are flags which indicate the security level at the port office and warehouse.
- The fence is in good condition except the portion which partitions off the west end of terminal.
- Security guard and KPLP conduct tight access control at the Container terminal gate 24 hours a day.
- Palembang Port issues stickers for entering vehicles.
- Security guards patrol the gate and terminal periodically.

8-6-4 Issues on Implementation of Port Facility Security Measures

48. Issues on implementation of port facility security measures are shown below:

- A part of fence is low and aged.
- Clearance gap between the gate/fence and ground surface is about 20cm in the container terminal and conventional terminal.
- Although the gates of two terminals have a boom for stopping vehicles, the booms are always up (are not used).
- ID has not been checked at gates.
- Many unauthorized vehicles park in the restricted area.

8-6-5 Recommendation on Port Security

49. Recommendation on port security for Palembang Port is as follows.

1) Security equipment
   - Repair of the gate at the container terminal is necessary. The gate should be installed with a boom for car stopping.
   - Handy metal detectors and mirrors for the conventional terminal and the container terminal are necessary.
   - A communication device should be given to all security guards who patrol in the terminal.
   - CCTV camera, lighting and Public Address system are necessary for Palembang Port.

2) Access control
- Access control at the conventional terminal and container terminal, for example photo ID check at the gate, should be conducted more strictly.
- Patrol in the conventional terminal should be conducted strictly.
- Fishermen should not be permitted in the conventional terminal

8-7 PORT OF PANJANG

8-7-1 Outline of Panjang Port

50. Located in the province of Lumpung, Port of Panjang is one of the main ports in South Sumatra. This port has a container terminal and facilities for liquid bulk, dry bulk and break bulk cargo.

8-7-2 Layout Plan of the Port

51. The existing layout of Panjang Port is shown in Figure 8-7-2-1.

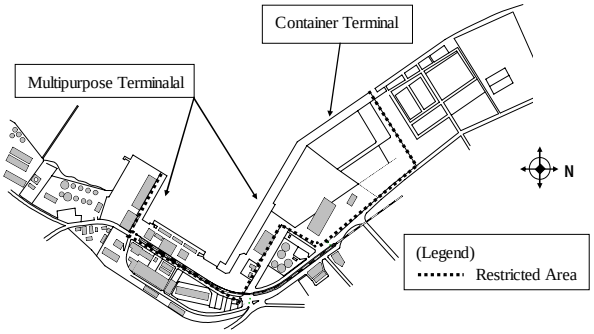


Figure 8-7-2-1 Existing Layout at Panjang Port

8-7-3 Present Situation of Port Facility Security Measures

52. Present situation of port facility security measures at Panjang port are as follows:

- The restricted area is enclosed by a fence or wall with a height of over 2m. ID cards, visitor cards and sticker of vehicles are checked and visitors are questioned when they pay the entrance fee at the gates.

8-7-4 Issues on Implementation of Port Facility Security Measures

53. Issues on implementation of port security measures on Panjang port are as follows:

- Damage to the fence at the wharf was observed.
- Fishing boats were observed near the international vessel mooring wharf.

8-7-5 Recommendations on Port Security

54. Recommendations on port security are shown below:

- Improvement or renewal of the fence which is low standard.
- Ensure the surveillance on the water area and wharf side, for example, by

increased patrol boats and security guards.

- Installation of CCTV system to ensure surveillance in the restricted area at all times.

8-8 PORT OF TANJUNG PRIOK

8-8-1 Outline of Tanjung Priok Port

55. Tanjung Priok port is the largest port in Indonesia which accommodates many ocean going vessels and supports the nation's economy. Tanjung Priok Port was originally constructed from 1877 to 1883. The port was expanded in 1912 to accommodate the increasing cargo volumes and ship calls.

8-8-2 Layout Plan of the Port

56. A layout plan of Tanjung Priok Port, considering facilities under PELINDO II, JICT and KOJA, is shown in Figure 8-8-2-1. Eight PFSPs including ones for four private terminals were formulated for Tg. Priok Port.

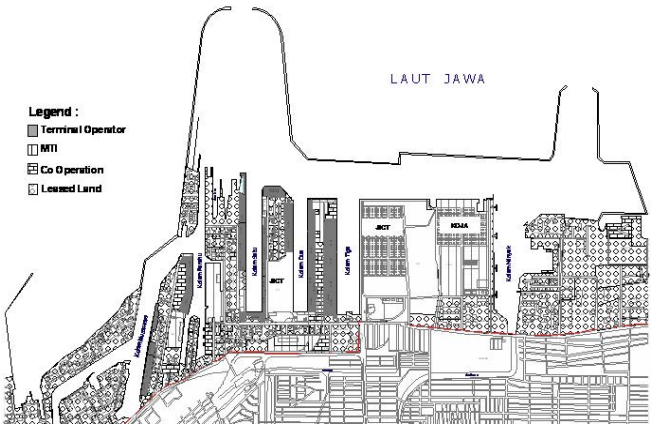


Figure 8-8-2-1 Layout Map of Tanjung Priok Port

8-8-3 Present Situation of Port Facility Security Measures

57. Koja and JICT container terminal, which are operated by a private company, are under strict security control not only at the gate but also in the terminal. They have installed a perimeter fence and CCTV cameras that monitor the area 24 hours a day. MTI container terminal is a state owned company and has installed a perimeter fence but no CCTV camera. KPLP or KPPP does not patrol such private terminals.

58. The international berths other than Koja, JICT and MTI are managed by PELINDO II Tanjung Priok port. They are partitioned off by fence which is partially broken. Private operators have contracted to use the berths. Gates with car stopping boom are placed at the entrance of each terminal which have several berths and KPLP and KPPP control there.

59. CCTV cameras have been installed in the international terminals operated by PELINDO II Tanjung Priok Branch. PELINDO II Tanjung Priok Branch issues stickers for vehicles entering the port.

60. Patrol on water area in the port is carried out by patrol boats belonging to ADPEL. The boats are used for not only security purpose but also safety and transportation.

8-8-4 Issues on Implementation of Port Facility Security Measures

61. Issues on implementation of port facility security measures are shown below:

- The number of public wharves amounts to 32 berths and their average length is 166m. Eighteen (18) different operators implement cargo handling on each of the contracted wharves, but wharves at which international ships berth are not fixed. Therefore all wharves are designated as the restricted area.
- When an international vessel berths, mobile fences are placed on both edges of the wharf and security guards employed by an operator are deployed around the border. However, the length of the mobile fence is insufficient and it serves more as a marker than a barrier.
- Moreover, no strict access control is conducted at the gate placed at the entrance of the restricted area when an international vessel berths.

8-8-5 Recommendation on Port Security

62. Recommendations on port security are follows:

- When an international vessel berths at a wharf, the wharf and cargo handling area should be separated by mobile fences and security guards should be deployed as necessary.
- Some fences should be repaired and top guard should be attached on some gate and fence.

8-9 PORT OF PONTIANAK

8-9-1 Outline of Pontianak Port

63. Pontianak is the capital of West Kalimantan. Pontianak port is the economic gate in the Province of West Kalimantan and the biggest port in Kalimantan Island. The port develops on the bank of the Kapuas Kecil River. The length of a channel from the estuary of Kapuas Kecil River to the port is 31 km.

8-9-2 Layout Plan of the Port

64. The existing layout of Pontianak Port are shown in Figure 8-9-2-1.

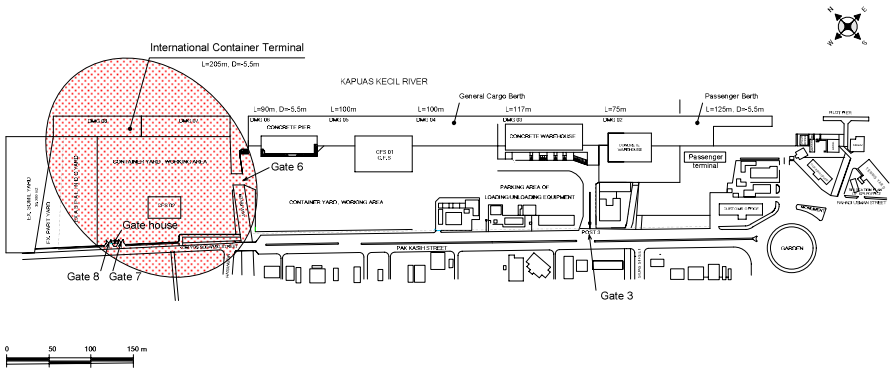


Figure 8-9-2-1 Layout Plan

8-9-3 Present Situation of Port Facility Security Measures

65. Present situation of port facility security measures at Pontianak Port is as follows:

1) Access Control at Gate
   - Instead of Gate 6, security check at Gate 3 at the multi-purpose terminal on the east side is conducted for all persons and cargo in-coming/out-going.
   - PELINDO or related organizations issue an ID card with personal photo for their working staff. Visitor cards are issued for each visitor.
   - ID sticker is issued for not only vehicle but also motorcycle.
   - Document check for cargo is executed at the gate. Empty containers are inspected at the gate.

2) Patrol
   - Patrol is conducted in the terminal including berth.
   - Surveillance of the water area around the terminal is conducted by KPLP.

8-9-4 Issues on Implementation of Port Facility Security Measures

66. Issues on implementation of port facility security measures at Pontianak Port are as follows:

- Visitor cards are issued for each visitor, but visitors are seldom identified.
- ID sticker is issued for not only vehicle but also motorcycle, but some motorcycles do not have an ID sticker.
- The clear zone is not secured due to the plants near the fence at the international container yard and on the eastern side of Gate 7.

8-9-5 Recommendations on Port Security

67. Recommendations on port security are as follows:

- The security check like checking of ID card should be done strictly.
- It is recommended that the security check be done at Gate 6.
- The clear zone should be secured at the western international container yard and on the eastern side of Gate 7.

8-10 PORT OF BANTEN

8-10-1 Outline of Banten Port

68. Banten Port is located in Ciwandan City at the west tip of Java Island. Banten Port has been a center of tourism, shipping and trade nationally and internationally for more than three centuries with spices as its main commodity.

8-10-2 Layout Plan of the Port

69. Layout plan of Banten port is shown in Figure 8-10-2-1. The main public facility which handles international cargo is a multi-purpose wharf. Main exported commodity is steel, while main imported commodities are sugar and food.

8-10-3 Present Situation of Port Facility Security Measure

70. Present situation of port facility security measures at Banten Port is as follows:

- There is one gate in the restricted area of the Port. Access control is conducted at the gate by 5-6 security guards from KPLP, PELINDO II and KPPP around the clock. Security guards check ID cards for government officials, operators, and users such as forwarder and ID documents for truck. However, ID check is not strictly conducted.

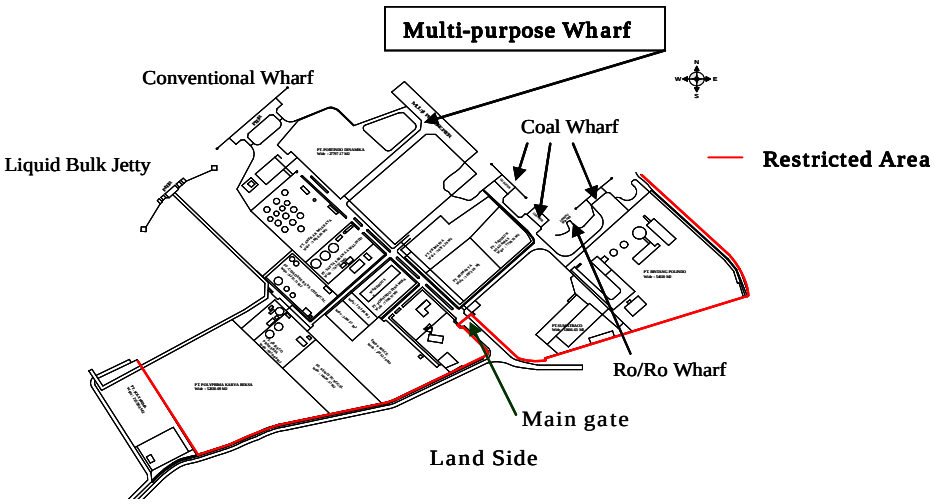


Figure 8-10-2-1 Overview of Banten Port

8-10-4 Issues on Implementation of Port Facility Security Measures

71. Issues on implementation of port facility security measures are shown below:

- ID check at the main gate is not strictly conducted.
- The fence structure along the restricted area is in good condition. However, there is no top guard in some portions of the fence near the main gate.
- The number of mobile fence units in the multi-purpose wharf is not sufficient.
- Patrol of the water area including the wharf side and anchorage is conducted only once a day.

8-10-5 Recommendations on Port Security

72. Recommendations on port security are as follows:

- The top guard of the fence near the main gate should be installed. More mobile fence units should be provided in the multi-purpose wharf area.
- When the container handling volume is not larger, PELINDO II should strengthen the patrol by security guards in the multi-purpose wharf area. If the container handling volume rapidly increases, PELINDO II should consider installing a CCTV camera monitoring system in the multi-purpose wharf area.
- Patrol of the water area should be conducted at least twice a day.

8-11 PORT OF TANJUNG EMAS

8-11-1 Outline of Tanjung Emas Port

73. Semarang is the capital of Central Java and with a population of nearly 1.5 million, the country's fifth largest city. Tanjung Emas Port lies on the north coast of Semarang.

8-11-2 Layout Plan of the Port

74. Overview and layout plan of Tg. Emas port is shown in Figure 8-11-2-1 and 8-11-2-2. Although the port of Tg. Emas has a container terminal and multipurpose terminal for international cargo, public wharf is the only multipurpose wharf. There is a passenger wharf at the south side of the multipurpose wharf. This wharf is exclusively for domestic passenger ships

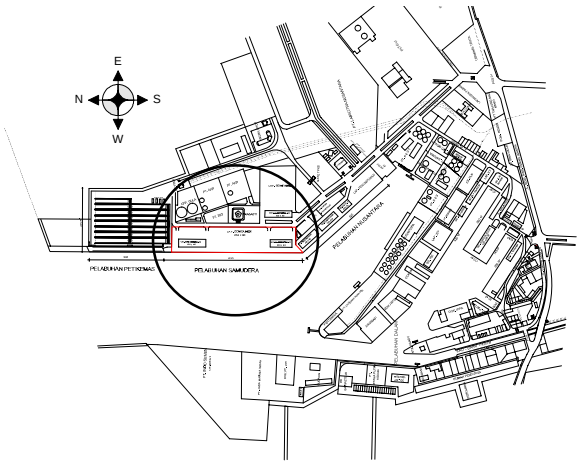


Figure 8-11-2-1 Overview of Tanjung Emas Port

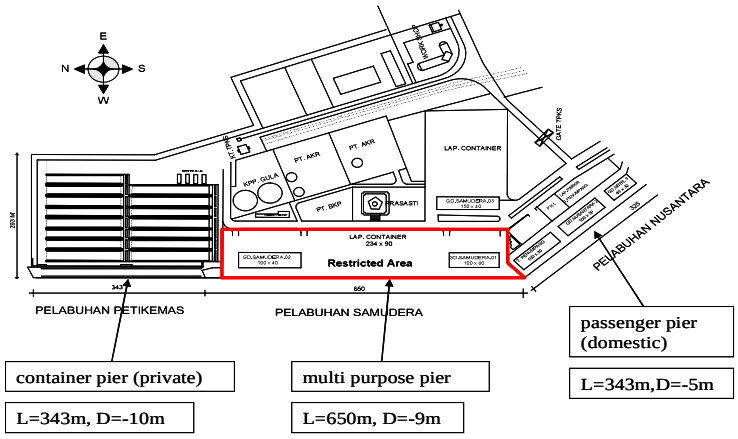


Figure 8-11-2-2 Layout of Tanjung Emas Port

8-11-3 Present Situation of Port Facility Security Measures

75. The wharf is very neat and clean. Fence is properly installed except in between Samudera and Nusantra wharf. There is no top guard on the fence. Access control using ID card and vehicle pass is properly conducted at the entrance gate

8-11-4 Issues on Implementation of Port Facility Security Measures

76. Issues on implementation of port security measures at Tg. Emas Port are as follows:

- There is a big gap between the fence of Samudera wharf and Nusantara wharf, so the fence does not work as a deterrence to intruders.
- No clear zone at the backside of Samudera wharf is maintained. Containers are put very close to the fence.

8-11-5 Recommendations on Port Security

77. Recommendations on port security at Tg. Emas Port are shown below:

- Overhang of the fence should be installed in between Samudera wharf and Nusantra wharf.
- Containers shall be put at least three meters away from the fence to keep a clear zone.
- Whenever the gate is open, security guard(s) should conduct access control.

8-12 PORT OF TANJUNG PERAK

8-12-1 Outline of Tanjung Perak Port

78. The Port of Tanjung Perak is one of the main gateway ports of Indonesia. It is the principal port in East Java, and the main cargo collection and distribution center for both the province of East Java, and the whole eastern archipelago of Indonesia. The port is therefore the maritime transportation hub for the eastern region of Indonesia, servicing both International and Inter-island shipping in the region.

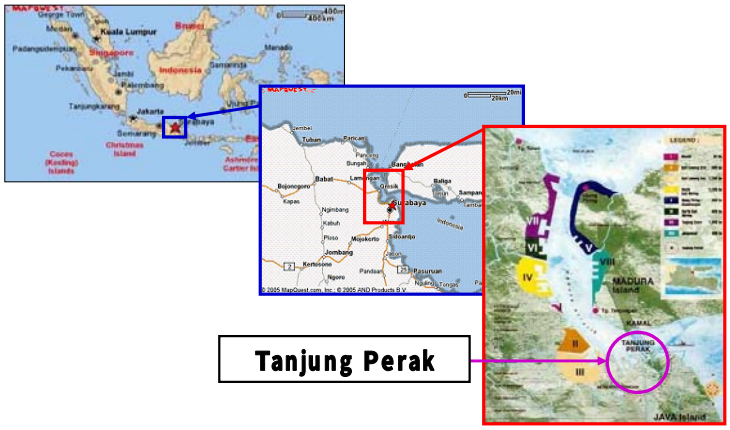


Figure 8-12-1-1 Location of Tanjung Perak Port

8-12-2 Layout Plan of the Port

79. The existing layout of the Port of Tanjung Perak is shown in Figure 8-12-2-1.

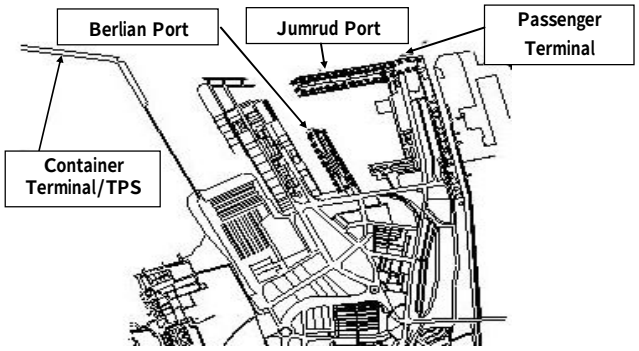


Figure 8-12-2-1 Existing Layout at the Port of Tanjung Perak

8-12-3 Present Situation of Port Facility Security Measures

80. Present Situation of Port Facility Security Measures at Tg. Perak port are as follows:

- PELINDO has a control system in the port area using 32 units of CCTV 24 hours a day. Installation of a total of 20 units of CCTV at four gates by JICA Grant Aid started from May 16 2005.
- Each restricted area is enclosed by fence or wall with a height of over 2m. However, part of the restricted area at Terminal Berlian has not been enclosed yet. Berlian terminal is under construction for reform of container yard.
- The access control is conducted at each gate of terminals. The basic procedure of access control is an oral inspection at the gate, identification such as ID card, Visitor card and Vehicle sticker, and a check by detective mirror.
- Mobile fences are applied at the wharf that handles both international and domestic cargoes at the same time.
- The access control at each gate and patrol inside the port facility are well conducted by port security officers in accordance with PFSP. In addition, the police also carry out patrol. It can be said that the security condition is good.

8-12-4 Issues on Implementation of Port Facility Security Measures

81. Issues on implementation of port security measures at Tg. Perak port are as follows:

- Part of the restricted area at one terminal has not been enclosed.
- It is necessary to improve surveillance on the water area for not only safety but also security, because the access channel is very long and a lot of vessels are waiting offshore.

8-12-5 Recommendations on Port Security

82. Recommendations on port security at Tg. Perak port are shown below:

- The international and domestic areas at the terminal should be separated. Mobile gate and fence should be installed. Security guard surveillance is also required.
- Considering that the access channel is very long and a lot of vessels are waiting offshore, it may be necessary to consider the enforcement of the existing vessel observation system and the installation of high-spec vessel traffic observation system.

CHAPTER-9. SECURITY MEASURES OF PORTS FOR WHICH PFSP HAS NOT BEEN PREPARED

9-1 PORT OF PEKANBARU

9-1-1 Outline of Pekanbaru Port

1. Pekanbaru is the administrative capital of Riau Province and a major gateway into Indonesia from Singapore. Port of Pekanbaru is located at the south bank of Siak River which flows in the northern part of Pekanbaru. Locations of Pekanbaru Port are shown in Figure 9-1-1-1.

2. The Siak River waters are narrow and bend and therefore the width of the channel is only 60 m. The depth in front of the wharf varies between 1 - 5 m LWS. Container ships cannot enter Pekanbaru Port due to the water depth restriction. Therefore containers are loaded/ unloaded at the anchorage area at Sungai Pakning. They are transshipped on a barge towed by tug boats from/to each wharf along the Siak River.

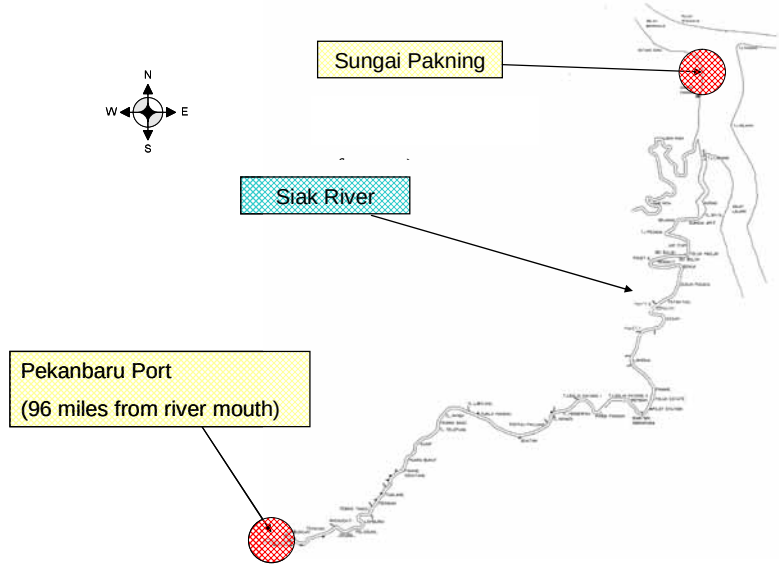


Figure 9-1-1-1 Location of Port of Pekanbaru

9-1-2 Layout Plan of the Port

3. The layout plan of Pekanbaru port is shown in Figure 9-1-2-1. Public wharves are located at Sungai Pakning on the most upper stream of the Siak River and are approximately 100 miles from the mouth of the river. Only bulk cargo is loaded/ unloaded in these wharves. Port facilities are old and the area in the vicinity of the port continues to be developed commercially. Therefore the municipal government plans to relocate the wharves in the near future.

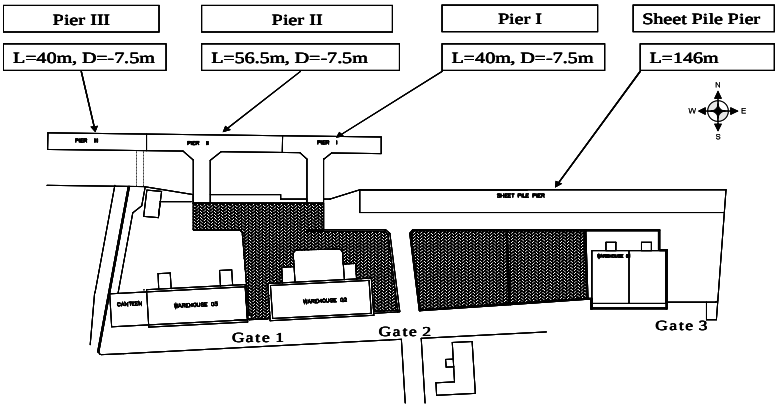


Figure 9-1-2-1 Layout Plan

9-1-3 Present Situation of Port Facility Security Measures

4. International cargo is rarely handled and no security measures are taken at the wharves. Facilities are very old. Fence installed along the port boundary has many tears and cuts. Lighting is not sufficient to illuminate during night time and some of the existing lighting is out of order. There is no security guard on duty.

9-1-4 Issues on Implementation of Port Facility Security Measures

5. It is necessary to improve security facilities, but it is planned that the wharves will be relocated in near future. Fence is poor and there is no security guard on duty, so many outsiders are free to enter the wharf. Until the wharves are relocated, certain security measures should be taken for international ships.

9-1-5 Recommendations on Port Security

6. Recommendations on port security are as follows:

- Install new fence with top guard near gate 3.
- Improve gate 1. Height of the gate is not sufficient and barbed wire of the gate is cut off and is not functioning anymore.
- Install additional security lights near gate 2. Some areas around the fence are very dark and it is difficult for security guards to monitor the area.
- Establish an ID card entrance system. “No ID, no entry” is the basic tenet of access control.
- Establish a Port Security Committee (PSC) immediately.

9-2 PORT OF TANJUNG INTAN (CILACAP)

9-2-1 Outline of Tanjung Intan Port

7. Cilacap is the biggest city on Central Java’s southern coast. Facing the south coast, Port of Tanjung Intan (Cilacap) has the only deep water berthing facilities on Java’s south coast and is a gateway for the economic activities of southern Central Java Province, Daerah Istimewa

Jogjakarta, and southern West Java Province. Locations of Cilacap and Tanjung Intan Port are shown in Figure 9-2-1-1.

8. Port of Tanjung Intan has very calm and safe conditions, as it is sheltered by Nusakambangan Island from the waves of the Indian Ocean.

9-2-2 Layout Plan of the Port

9. Layout plan is shown in Figure 9-2-2-1. There are two public wharf areas in the port of Tanjung Intan. One area is multipurpose wharves I to IV and the other is wharf VI for flour import.

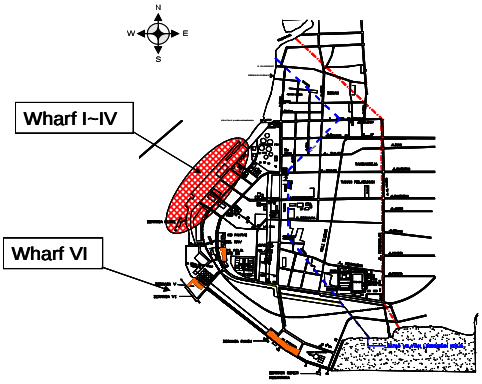


Figure 9-2-1-1 Port of Cilacap

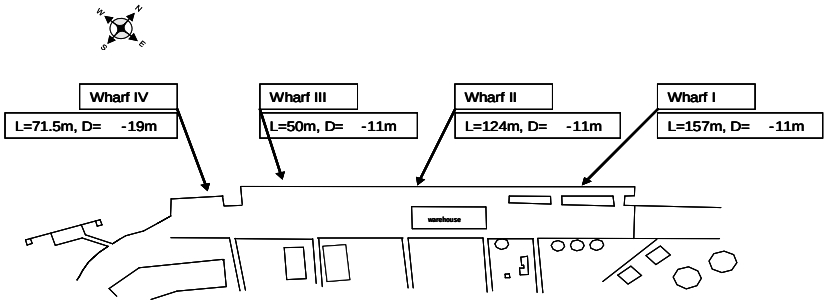


Figure 9-2-2-1 Layout Plan

9-2-3 Present Situation of Port Facility Security Measures

10. Present situation of port facility security measures at the Port of Cilacap is as follows:

- Port of Cilacap has four public wharves and several private berths. It also includes crop fields and residents inside the area. Therefore if the restricted area is made wide, it will be necessary to conduct access control for those who are not related to the wharves. The target wharf handles bulk cargo only, 70-80 % of which is international cargo.
- Actually no access control is conducted at any gate.
- Fence around the wharves has not been installed for some part of the boundary (near warehouse) and some portions of the existing fence are torn apart.

- Some areas along the fence are very dark.

9-2-4 Issues on Implementation of Port Facility Security Measures

11. It is necessary to establish a restricted area as small as possible to minimize access control. New gates are required and it is necessary to repair the fence or erect a new one. At present, outsiders can easily enter into wharf. Actually, many people can be observed fishing at the wharf and nobody instructs them to leave.

9-2-5 Recommendations on Port Security

12. Recommendations on port security are as follows:

- Install new fence and gates with outrigger and barbed wire where there are no fence and gates. At the back of wharf 3, fence and gates are very old and have tears. It is necessary to repair the fence otherwise intruder can easily enter the restricted area.
- Install additional security lights along the fence of wharf 1 to wharf 3. Some areas around the fence are very dark, and it is very difficult for security guards to monitor the area.
- Establish an ID card entrance system. “No ID, no entry” is the basic tenet of access control.

9-3 PORT OF BENOA

9-3-1 Outline of Benoa Port

13. Bali Island is an exotic island with a rich culture heritage and unparalleled scenery that has attracted visitors from all over the world. As the main gate from the sea (Indian Ocean), the Port of Benoa has to serve both international passenger and domestic passenger vessels.

14. Benoa is a natural harbor, sheltered by Serangan Island and the Cape of Benoa (Tanjung Benoa) from the high waves of the Indian Ocean.

9-3-2 Layout Plan of the Port

15. The existing layout of Benoa Port is shown in Figure 9-3-2-1. There are some private companies and houses in the port area.

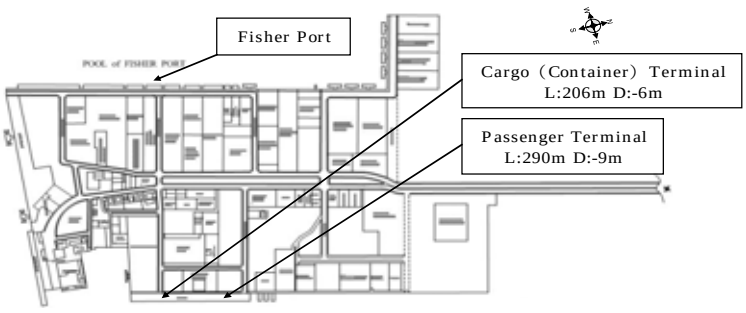


Figure 9-3-2-1 Existing Layout at Benoa Port

9-3-3 Present Situation of Port Facility Security Measures

16. Present situation of port facility security measures at Benoa Port is as follows:

- Port of Benoa covers a wide area which includes two public berths, several private berths and fishing boat berths. Residents are also found inside the area. Public berths are the Passenger wharf and Container wharf. Domestic container vessels also call here. PELINDO and related organizations conduct access control at the main-gate of the port.
- Actually no access control is conducted at any gate of public berths.
- PELINDO has special measures and procedure when international passenger vessels call. But these measures and procedures have not been put in writing.
- There is no PSC, since Benoa port does not comply with the ISPS code. However, they provide a Declaration of Security (DoS) to the international passenger vessels on request.

9-3-4 Issues on Implementation of Port Facility Security Measures

17. It is necessary to establish a restricted area as small as possible to minimize access control. To conduct effective access control, it will be necessary to repair the fence or erect a new one.

9-3-5 Recommendation on Port Security

18. Recommendations on port security are as follows:

- The restricted area should be designated, and be enclosed by physical barriers such as fence and gates in order to conduct access control at the gates. Because international ships berth at the wharf occasionally and the berth is usually used for domestic vessels, mobile fence should be placed on the boundary with neighboring wharves. Before an international passenger ship berths, the mobile fence should be set up and the patrol should be conducted to make sure no suspicious persons or no unusual signs are present in and around the restricted area. Gates which are not usually used should be locked.
- Access control for persons, vehicle and cargo should be conducted strictly to prevent suspicious persons and objects from entering.
- Port Security Committee (PSC) is immediately established.
- Patrol should be executed continuously to ensure the safety of facilities, passengers and cargo.
- Surveillance of the water area and its port facility should be conducted, for example, by patrol boat.
- In a part of the terminal, the lighting is not sufficient for surveillance during the night. The lighting system should be repaired and improved in such places.
- A person’s belongings should be inspected by using hand-held metal detector at the gate.
- In an emergency, a warning against suspicious persons and an evacuation report for ships, passengers, etc. should be given immediately using a PA system.

- Communication equipment should be installed or improved in the passenger terminal to allow for communication between security guard and security guard's office, administration office and any other related office. It is recommended that security guards carry a transceiver as a back-up to the hand phones.

9-4 PORT OF TENAU (KUPANG)

9-4-1 Outline of Tenau (Kupang) Port

19. Tenau Port is located at the west tip of Timor Island and is the largest port in west Timur. The port is composed of several private ports and public wharves. Public wharves of Tenau Port handle little international cargo at present, but are expected to play a strategic role in the future.

9-4-2 Layout Plan of the Port

20. Tenau Port has four wharves in a row: Traditional Public Wharf for sail boats which carry timber from other islands and other places of Timor Island, Local Wharf for passenger, Inter-islands Wharf for general cargo and Multi-purpose Wharf. Multi purpose wharf is expected to handle international cargo, especially containers.

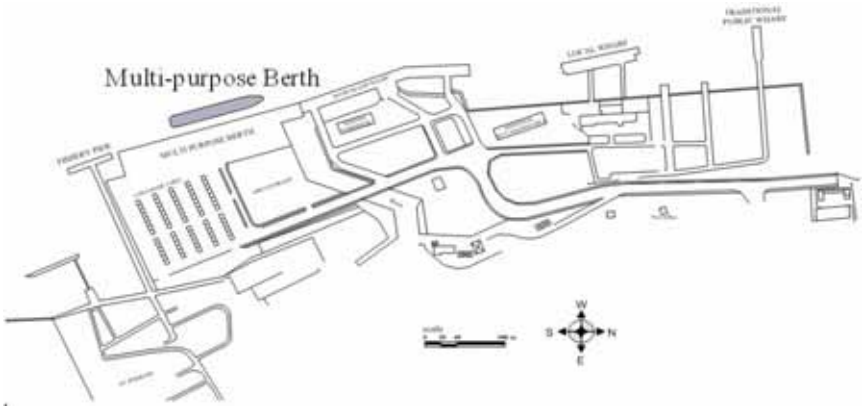


Figure 9-4-2-1 Layout Map of Tenau Port

9-4-3 Present Situation of Port Facility Security Measures

21. Present situation of port facility security measures at Tenau Port are as follows:

- Officials of PELINDO, DGST, ADPEL, KPLP, KPPP, Customs and Immigration who wear uniforms are allowed to pass through the gate.
- Stevedores, workers of shipping company, agent, etc. are requested to show his/her ID.
- Only external appearances of incoming vehicles are inspected by PELINDO and KPLP.
- Security guards of PELINDO and KPLP stand at the gate all day.
- KPLP monitors the front water area and patrols by speedboat.
- Fresh water storage tank is not protected by fence.
- There is no evacuation route or muster point from the terminal and port management office.

- ISPS security plan has not been formulated until now.
- No phone line is available in the Multi-purpose Wharf but mobile phones have a clear connection.
- Pilot office communicates with vessels by VHF radio transmission.

9-4-4 Issues on Implementation of Port Facility Security Measures

22. Issues on Implementation of port facility security measures at Tenau Port are as follows:

- The main gate is not equipped with a pole to stop cars nor is there a lock and gates are always open.
- No access control is conducted for persons other than port officials and workers such as vendors.
- Persons and their belongings have not been checked by metal detector.
- KPLP usually does not patrol the anchorage area due to lack of funds. Therefore, patrol in the channel and anchorage area is not fully conducted.

9-4-5 Recommendation of Port Security

23. Based on the assessment which was implemented by the study team, recommendations on port security are described as follows.

- To install necessary port security facilities and equipment.
- To implement intensive access control concerning personnel, vehicle and cargo.
- To ensure communication between security personnel and a PFSO
- To establish emergency communication system and emergency response plan including initial action order
- Domestic passenger terminal should be fenced off so that passengers cannot enter other wharves.

9-5 PORT OF BANJARMASIN

9-5-1 Outline of Banjarmasin Port

24. Banjarmasin is the capital of South Kalimantan Province, and Banjarmasin Port is located along the Barito River, 40 km upstream of the mouth of the river. Banjarmasin Port is composed of the Trisakti area and Martapura area.

25. As for the Trisakti area, the existing wharves are 510 m long, which consist of Container Wharf, General Cargo Wharf and Passenger Wharf with depth of -9 m LWS. In the Martapura area, only domestic cargo is handled. Locations Banjarmasin Port are shown in Figure 9-5-1-1.

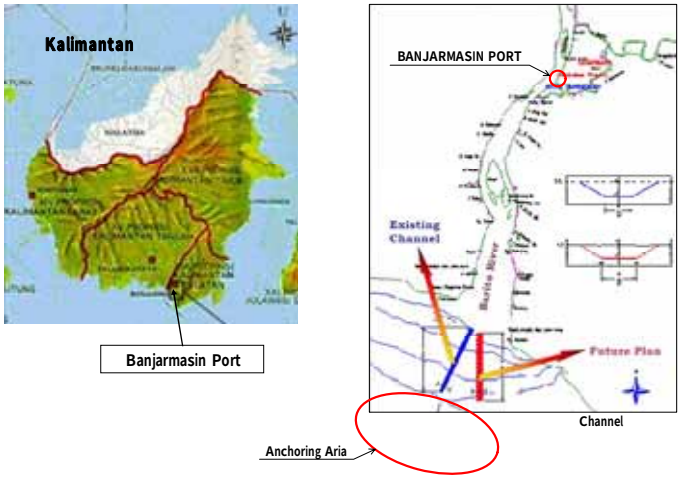


Figure 9-5-1-1 Location of Banjarmasin Port

9-5-2 Layout Plan of the Port

26. The existing layout of Banjarmasin Port is shown in Figure 9-5-2-1.

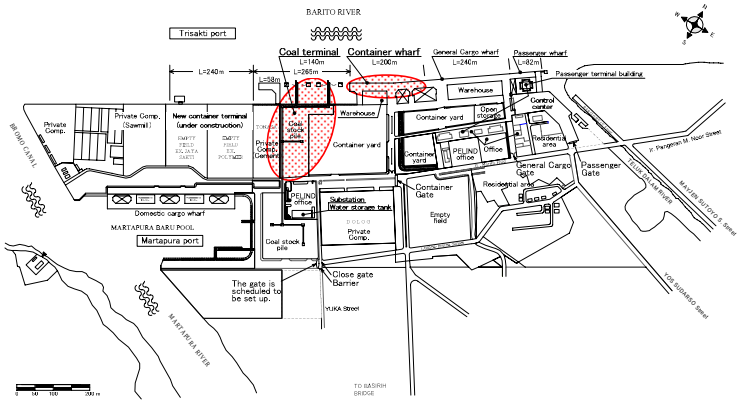


Figure 9-5-2-1 Layout Plan of Banjarmasin Port

9-5-3 Present Situation of Port Facility Security Measure

27. Present situation of port facility security measures at Banjarmasin Port is as follows:

- Passenger Wharf does not receive international ships. In case of no domestic passenger ship berth at Passenger Wharf, it is also utilized as a general cargo terminal.
- A gate for Container Wharf is located outside of the area enclosed by fence and it doubles as the gate for Coal Terminal, the domestic terminals and the private terminal.

9-5-4 Issues on Implementation of Port Facility Security Measures

28. Issues on implementation of port facility security measures at Container Wharf, General Cargo Wharf, Passenger Wharf and Coal Terminal in Banjarmasin Port are as follows:

- Though a restricted area has not yet been designated in the port, the above-mentioned 4 terminals are divided into the following three areas and these areas

are enclosed by fence or wall respectively. However, the height of fence is not adequate and there are some breakages on the fence.
+ Container terminal and General cargo terminal, + Passenger terminal
+ Coal terminal

- In case of domestic passenger ship berth at Passenger Wharf, the continuous general cargo and passenger terminal area are divided off by mobile fence and a gate.
- Though the access control is conducted at the three gates, they do not check ID cards.

9-5-5 Recommendations on Port Security

29. Recommendations on port security are as follows:

- The restricted area should be designated, and be enclosed by physical barriers such as fence and gates in order to conduct access control at the gates.
- Access control for persons, vehicles and cargo should be conducted strictly. The photo ID card should be issued.
- External check of cargo should be done while the cargo is in the storage area and during loading.
- Random patrols (intervals and routes) should be executed.
- Surveillance of the water area and its port facility should be conducted (for example, by patrol boat).
- Belongings of persons who enter the restricted area should be checked by using hand-held metal detector at the gate.
- Telephone (and fax machine if possible) should be installed in the passenger terminal. It is recommended that security guards carry a communication device.

9-6 PORT OF SAMARINDA

9-6-1 Outline of Samarinda Port

30. Samarinda port is located in East Kalimantan Province and is a river port in the Makaham River. Due to the variation in the seasonal wind, southern anchorage is used from January to June and northern one is used from July to December.

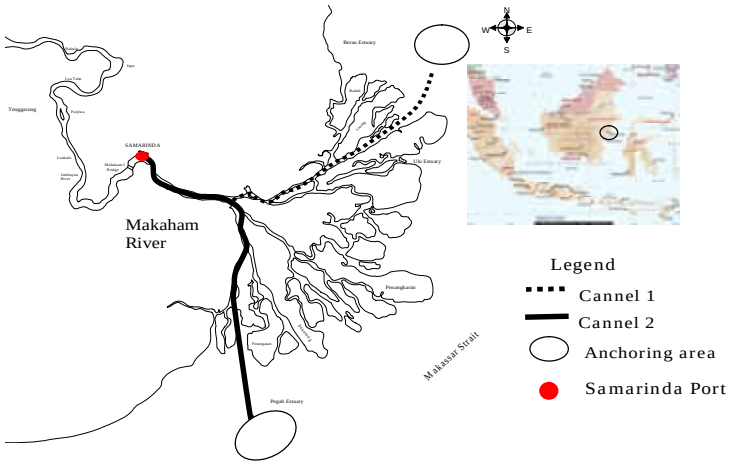


Figure 9-6-1-1 Location Map of Samarinda Port

9-6-2 Layout Plan of the Port

31. Layout plan is shown in Figure 9-6-2-1. The port faces the trunk road and opposite site of the trunk road is the downtown area. Total length of the wharf is 935m and water depth is -5.5m.

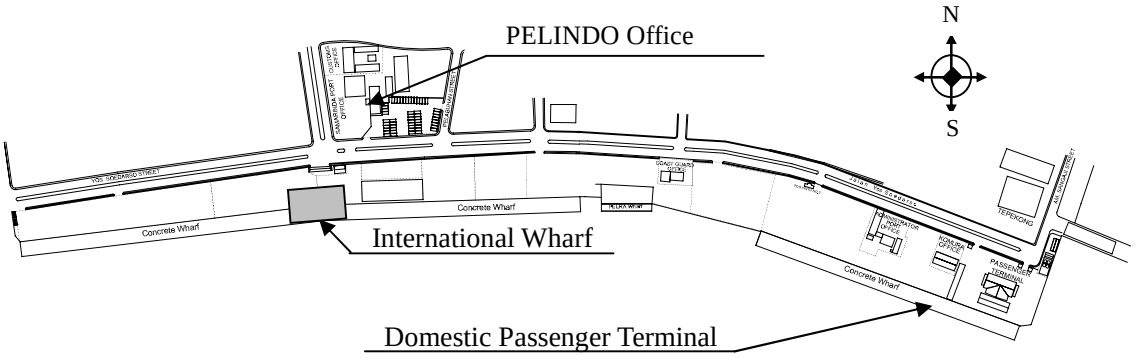


Figure 9-6-2-1 Layout Plan of Samarinda Port

9-6-3 Present Situation of Port Facility Security Measures

32. Present situation of port facility security measures in Samarinda Port is as follows:

- Officials of PELINDO, DGST, ADPEL, KPLP, KPPP, Customs and Immigration who wear uniforms are allowed to pass through the gate.
- Stevedores, workers of shipping company and agent, etc. are requested to show his/her ID.
- Only external appearances of incoming vehicles are inspected by PELINDO and KPLP.
- Only cargo slips and external appearance of cargo are checked at gates.
- Container cargo stored in the terminal is checked and confirmed by a seal.
- Clear zone is not secured because cargo is stored an inch away from the fence.
- Officials of PELINDO, KPLP and KPPP who patrol in the port area bring a transceiver and privately owned mobile phone with them.
- Fence around the port boundary and lighting in the port is not in good condition.
- Fresh water storage tank is protected by fence. Distributor is protected by a barrier made of iron bars.

9-6-4 Issue on Implementation of Port Facility Security

33. Issue on implementation of port facility security measures at the port are as follow.

- The main gate near the international berth is not equipped with a pole to stop cars nor is there a lock.
- No other access control is conducted for other persons such as vendors.
- Patrol in the channel is not appropriately conducted.

9-6-5 Recommendations on Port Security

34. Recommendations on port security are as follows:

- Restricted area and important facilities should be protected. Mobile fence should be installed during berthing of an international ship and unloading of cargo from a ship.
- Necessary Security Equipment such as mobile fence should be installed.
- Communication between security personnel and a PFSO should be ensured.
- Emergency communication system should be established according to the plan.
- Domestic passenger terminal should be fenced off for safety and security reason so that passengers cannot enter cargo terminals.

9-7 PORT OF BALIKPAPAN (SEMAYANG PORT)

9-7-1 Outline of Balikpapan Port

35. The port of Balikpapan is located in the south-east of Balikpapan City. It serves as the gate of East Kalimantan and supports the regional economic activities and development.

9-7-2 Layout Plan of the Port

36. The existing layout of Balikpapan Port is shown in Figure 9-7-2-1. The total length of a wharf is 489 meters.

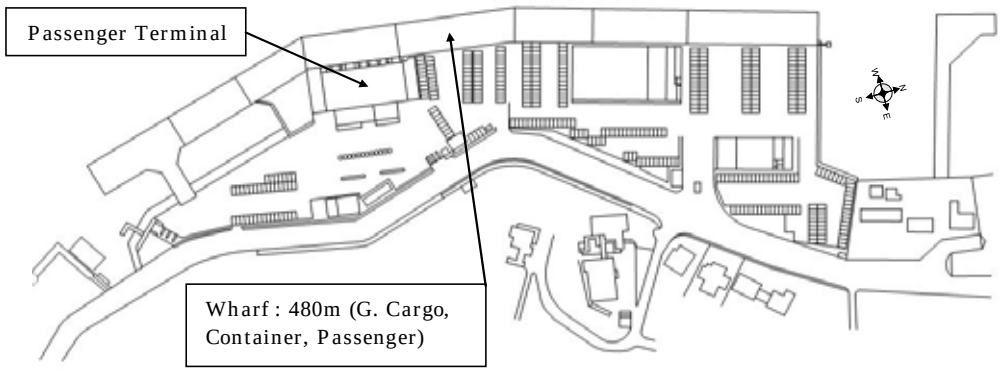


Figure 9-7-2-1 Existing Layout at Balikpapan Port

9-7-3 Present Situation of Port Facility Security Measures

37. Present situation of port facility security measures at Balikpapan Port is as follows:

- The relevant pier facilities are used primarily for domestic navigating ships and rarely used by international ships and no security measures are taken at this wharf.
- PELINDO and related organizations conduct access control at the main-gate of the port and in passenger wharf for safety.
- Neighboring area of the wharf is a commercial area.

9-7-4 Issues on Implementation of Port Facility Security Measures

38. It is very difficult to separate domestic/international area and wharf/commercial area by fixed fence.

9-7-5 Recommendation on Port Security

39. Recommendations on port security are as follows:

- The restricted area should be designated and be enclosed by physical barriers.
- Intensive access control for persons, vehicles and cargo should be conducted to prevent suspicious person and objects from entering port facilities.
- Continuous patrols should be executed to ensure the safety of facilities and cargo.
- The lighting system should be repaired and improved in such places.
- Emergency plan including communication network and instruction in case of emergency should be prepared.
- Communication between security personnel and relevant organization should be ensured.

9-8 PORT OF BITUNG

9-8-1 Outline of Bitung Port

40. Port of Bitung is located in north Sulawesi. The port is protected by the Lembeh Island which shields the port from storm and swells disturbance. The length of the channel is approximately 15km and the width is about 600m. Minimum depth in the channel is 16m. Location of the port is shown in Figure 9-8-1-1.

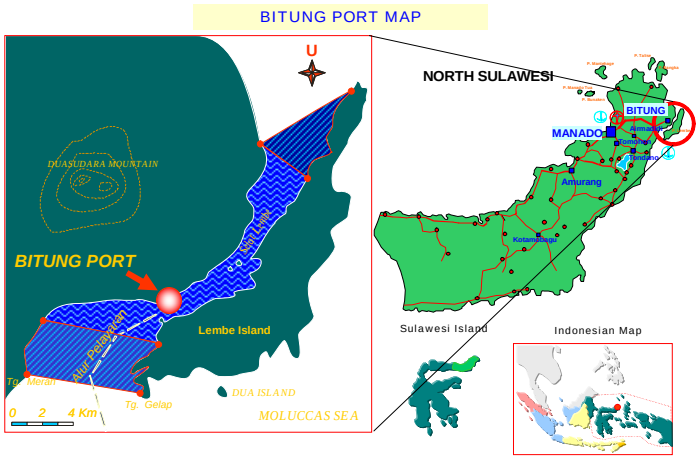


Figure 9-8-1-1 Location Plan

9-8-2 Layout Plan of the Port

41. Location plan and layout plan of Bitung port is shown in Figure 9-8-2-1. The new port was constructed by Japanese loan and opened in January 2005. The new port handles domestic containers at present, but it is expected that international containers will be handled exclusively in the new port in the future. The old port has three continuous berths, dealing with international cargo (container and bulk), domestic cargo and domestic passengers.

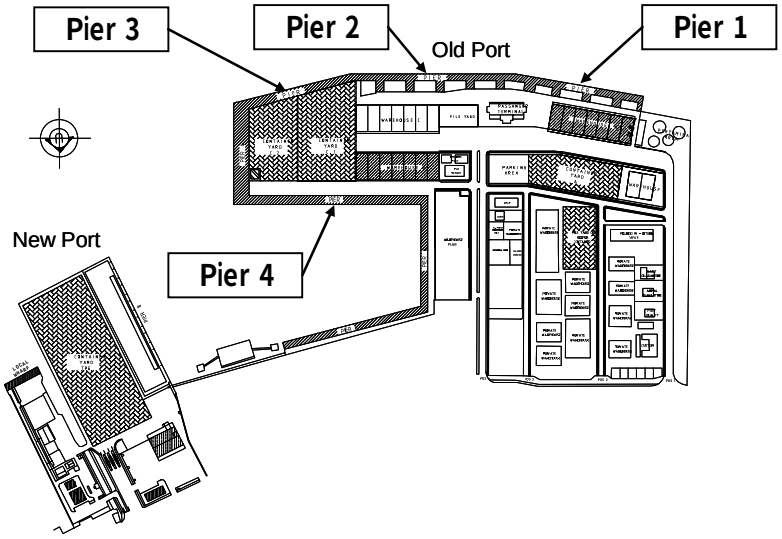


Figure 9-8-2-1 Layout of Old Port and New Port

9-8-3 Present Situation of Port Facility Security Measures

42. Present situation of port facility security measures at Bitung Port is as follows:

- International and domestic cargo ships berth at the wharves and load/unload in parallel. Moreover domestic passenger ships are using the same wharf. Fence is installed in front of Pier 1 and the passenger terminal, but no fence is installed for Pier 3 and 4. Therefore outsiders can easily enter the wharf from Pier 3 and 4 sides without warning by security.
- Containers are placed on the wharf and used as a temporary fence. It is not easy to remove and thus very useful.

9-8-4 Issues on Implementation of Port Facility Security Measures

43. It is difficult to separate domestic area from international area by fixed fence because both international and domestic ships use the same wharves. Security guards patrol only outside of the wharves.

9-8-5 Recommendations on Port Security

44. Recommendations on port security are as follows:

- Temporary fence should be provided to fence off the restricted area and security guards be deployed to patrol the restricted area and conduct access control.
- Security lights should be installed at the boundary of piers and in front of pier 1.
- The Port Security Committee (PSC) has to be established.

9-9 PORT OF KENDARI

9-9-1 Outline of Kendari Port

45. Kendari is the capital of South-east Sulawesi Province and Port of Kendari faces Kendari bay. Port of Kendari consists of International wharf, General cargo wharf, Passenger wharf and Traditional wharf. The length of wharves other than Traditional Wharf is 270 m with a depth of -6 to -12 LWS, in which containers, general cargo and passenger are handled. Occupancy rate of the storage area was 99.9% in 2004.

9-9-2 Layout Plan of the Port

46. The existing layout of Kendari Port is shown in Figure 9-9-2-1.

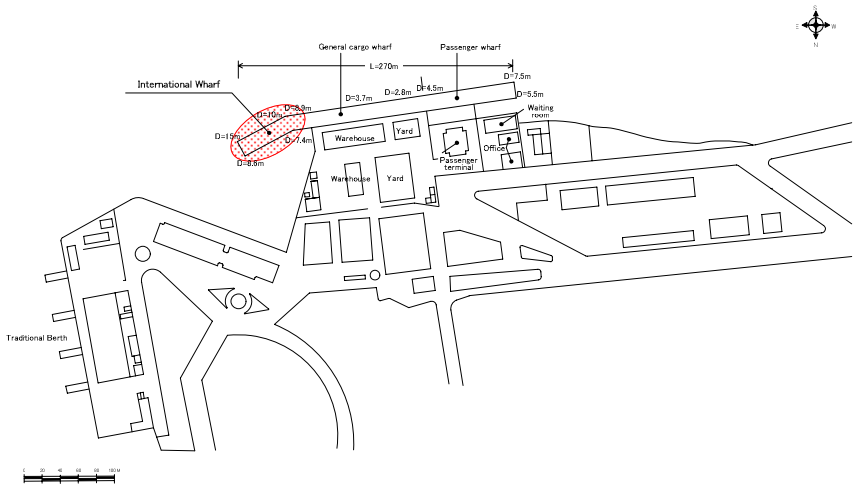


Figure 9-9-2-1 Layout Plan

9-9-3 Present Situation of Port Facility Security Measure

47. Present situation of port facility security measures at Kendari Port is as follows:

- There are two main gates: one is for passenger and vehicle and another is for general cargoes.
- Moreover, there are gates for the passenger terminal, which is usually closed.
- The Passenger wharf and the General cargo wharf are continuous and movable fence is placed on the boundary between the two wharves.

9-9-4 Issues on Implementation of Port Facility Security Measures

48. Issues on implementation of port facility security measures at Kendari Port are as follows:

- No access control is conducted at the wharves.
- Patrolling by security guards is not conducted in the wharves.
- The number of lights is not sufficient to provide complete brightness on the wharf.

9-9-5 Recommendations on Port Security

49. Recommendations on port security are as flows:

- The restricted area should be designated in the port area and illegal access should be prevented. Before an international ship berths at the wharf, mobile fence should be installed and the patrol should be conducted.
- The appearance check for cargo should be done while the cargo is in the storage area and being loaded.
- The random patrol (intervals and routes) should be executed.
- The water area including a channel and an anchorage should be monitored and patrolled.
- Telephone (and fax machine if possible) should be installed for the communication between security guard and security guard's office, administration office or a PFSO.
- An emergency plan including communication network and instructions in case of emergencies should be prepared and put in the PFSP.

9-10 PORT OF MAKASSAR

9-10-1 Outline of Makassar Port

50. Makassar is located at Sulawesi's southeast corner. It faces the Makassar Strait which is an international shipping lane. Makassar Port has a container terminal, international cargo terminal, passenger terminal, domestic cargo terminal and a private company wharf.

9-10-2 Layout Plan of the Port

51. The existing layout of Makassar Port is shown in Figure 9-10-2-1. From the west side, Hatta Container Terminal and Soekarno Multi-purpose Terminal are located side by side. The passenger terminal is located in the Soekarno Multi-purpose Terminal.

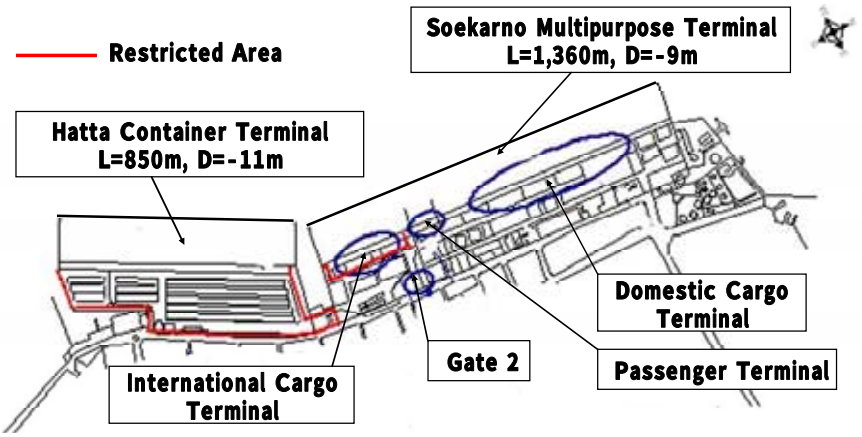


Figure 9-10-2-1 Layout of Makassar Port

9-10-3 Present Situation of Port Facility Security Measures

52. Present situation of port facility security measures at Makassar Port is as follows:

- The entire container terminal area is designated as a restricted area, and an access gate and fence have already been installed. Access control and patrol in the terminal area are properly implemented. However, illegal access to the restricted area does not seem to be difficult because the fence gauge is coarse and no top guard is attached.
- At the international cargo terminal, wharf, apron and warehouse are designated as a restricted area and access gate and fence have been installed. A mobile fence is used on the border abutting with the passenger terminal when a domestic passenger ship berths at the passenger terminal.
- Since the passenger terminal now handles only domestic passengers, it is not designated as a restricted area.

9-10-4 Issues on Implementation of Port Facility Security Measures

53. Issues on implementation of port facility security measures at Makassar Port are as follows:

- Although security guards patrol the container yard, it is difficult for them to grasp conditions behind piled containers.
- As to the international cargo terminal, since there is no top guard on the fence of the access gate which faces the open space in front of the passenger terminal building, it would not be difficult for visitors and venders to climb over the fence.
- Though the terminal area is surrounded by a fixed fence and mobile fence, people can enter the terminal area freely because the side gate besides the terminal building remains open.

9-10-5 Recommendations on Port Security

54. Recommendations on port security are as follows:

- As to the container terminal, it is proposed that the top guard of the fence and CCTV cameras be installed.
- As to the international cargo terminal, the top guard should be installed on the fence of the access gate to prevent intruders from climbing over the fence easily.
- As to the passenger terminal, when an international passenger ship calls, access control at the gate 2 and the entrance of passenger terminal building should be enhanced by increasing the number of security guards.
- Communication between security personnel and a PFSO should be ensured.

9-11 PORT OF AMBON

9-11-1 Outline of Ambon Port

55. Well known for its spice for centuries, Port of Ambon has been developed. Loading and unloading activity is mainly conducted using vessel's crane. Prior to the conflict in 1999, Port of Ambon had a cool storage to export directly cloves and mace. However, after the conflict no

international ship calls the Port of Ambon at present. Location of Ambon Port are shown in Figure 9-11-1-1.

Figure 9-11-1-1 Location of Ambon Port

9-11-2 Layout Plan of the Port

56. The layout plan of Ambon port is shown in Figure 9-11-2-1.

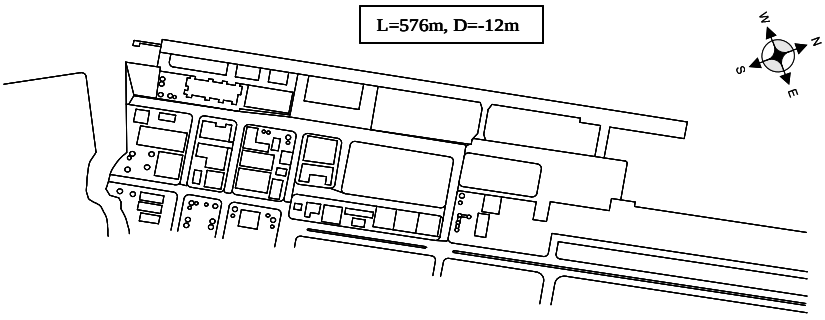


Figure 9-11-2-1 Layout Plan

9-11-3 Present Situation of Port Security Measures

57. Present situation of port security measures at the Port of Ambon is as follows:

- Many squatters from other islands who are reluctant to return to their home islands have resided in the port after the conflict in 1999.
- Although KPPP and Military Police offices are nearby the main gate, persons are not subjected to security check.
- Access points are made on east and west sides and no security check is conducted at both access points. Therefore many unauthorized people are found in the port.

9-11-4 Issues on Implementation of Port Facility Security Measures

58. Squatters live in and around the port, it is thought to be difficult to remove squatters from the port area.

9-11-5 Recommendations on Port Security

59. In case international ships call at the port in the future, it is necessary to comply with the ISPS Code. To comply with the ISPS Code, the following measures must be taken:

- Fence needs to be installed on the border of the wharf.
- Security guard(s) are necessary to conduct access control. People not related to port activities must not enter the restricted area.
- Security lights must be installed to deter intruders.

9-12 PORT OF SORONG

9-12-1 Outline of Sorong Port

60. Port of Sorong lies in West Papua Province. It is the crossing point connecting north/ south and east/west maritime transportation in Papua and Maluku Province. The main wharf with 280m in length can accommodate vessels up to 20,000 GRT.

9-12-2 Layout Plan of the Port

61. The layout plan of Sorong Port are shown in Figure 9-12-2-1.

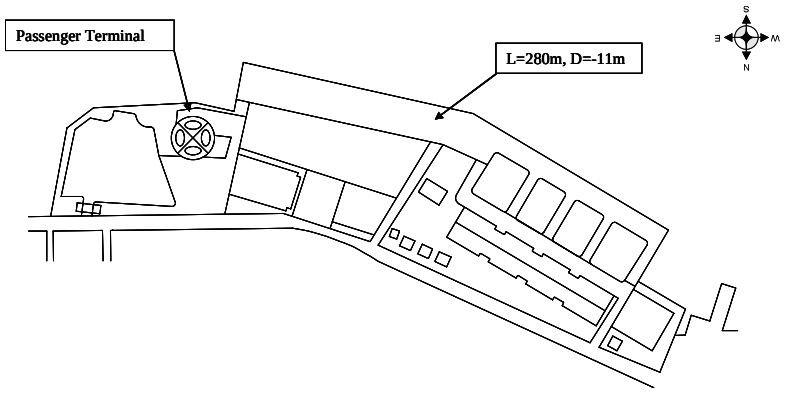


Figure 9-12-2-1 Layout Plan

9-12-3 Present Situation of Port Facility Security Measures

62. Physically Sorong Port is adequately protected by its perimeter fence. Access control is well conducted in the passenger terminal which has separate gates for personnel and vehicle entrance/exit. However, this good practice is not seen at the general cargo terminal where an entrance gate is open and no security measures are taken.

9-12-4 Issues on Implementation of Port Facility Security Measures

63. It is easy to enter the general cargo wharf because security check is not conducted.

9-12-5 Recommendation on Port Security

64. Recommendations on port security are as follows:

- Security guards should be stationed to conduct access control at the gate of the general cargo terminal.
- ID cards should be issued to those involved in port activities by PELINDO.
- Security guards should patrol in the restricted area. The patrol route and time should be random.

9-13 PORT OF BIAK

9-13-1 Outline of Biak Port

65. The Port of Biak is located in Biak Island in the Province of Papua. Biak Port is a third-class port of PT. PELINDO IV.

9-13-2 Layout Plan of the Port

66. The existing layout plan of Biak Port is shown in Figure 9-13-2-1. There are two wharves, Wharf I and Wharf II in Biak Port. The Wharf I is for international use while the Wharf II is for domestic use.

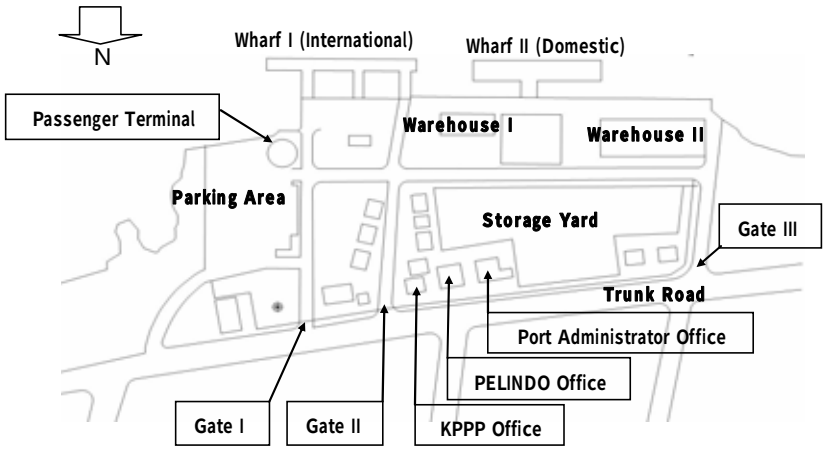


Figure 9-13-2-1 Layout of Biak Port

9-13-3 Present Situation of Port Facility Security Measures

67. Present situation of port facility security measures at Biak Port is as follows;

- The port area is surrounded by steel fence with no top guard However, there is no security equipment such as a security bar and a mirror at the main entrance.
- Access control is conducted by PELINDO, KPLP and KPPP at only Gate II for 24 hours a day. As ID card is not issued, security guards check an access list, uniform and a company label at doors of a truck.
- Security guards from PELINDO, KPLP and KPPP patrol in the terminal and along the wharf occasionally. KPLP monitors the water area occasionary.
- Security guards communicate with each other using VHF, mobile phone and handy talky.

9-13-4 Issues on Implementation of Port Facility Security Measures

68. Issues on implementation of port facility security measures at Biak Port are as follows:

- Fence surrounding the port area has no top guard. A three-meter zone along the fence is not kept clear.
- Brightness of lighting is not enough for patrol at night.

9-13-5 Recommendations on Port Security

69. Recommendations on port security are as follows:

- The top guard should be fixed on the fence.
- The ID cards (with photo) should be issued for all personnel. In addition, temporary pass should be issued for visitors.
- Access control should be conducted strictly at Gate II.
- Security guards for access control should be deployed at the gate III & I.
- Lighting system should illuminate the port area appropriately for monitoring and patrolling.

9-14 PORT OF JAYAPURA

9-14-1 Outline of Jayapura Port

70. Jayapura is the capital city of Papua Province. Port of Jayapura is a second-class port in the PT. PELINDO IV. The Port of Jayapura supports various hinterland industries such as mining, agriculture, forestry. The hinterland of Jayapura produces sea products, chocolate, rubber copra, rice, beans, and spare parts.

9-14-2 Layout Plan of the Port

71. The existing layout plan of Jayapura Port is shown in Figure 9-14-2-1. From the west side, Cargo Wharf (Wharf I), Container Wharf (Wharf II) and APO Wharf are located consecutively.

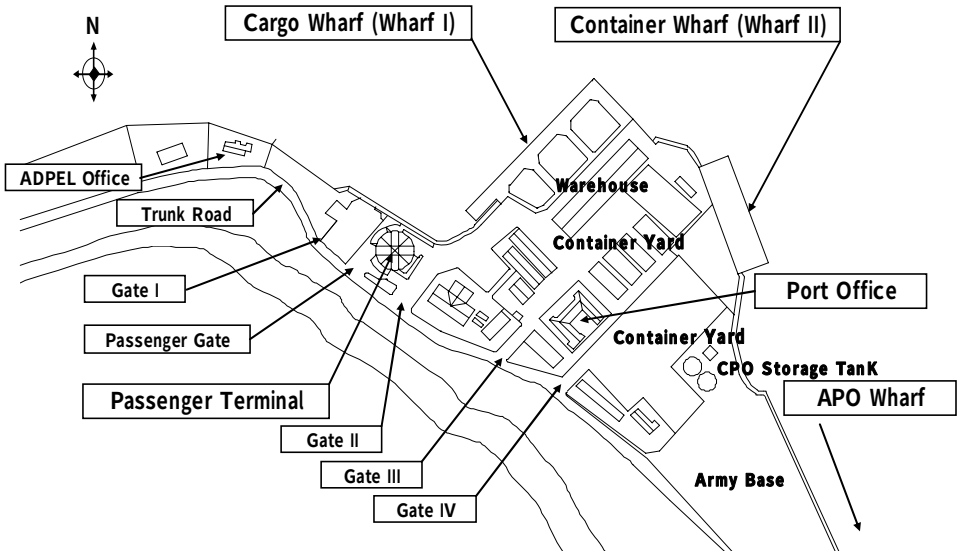


Figure 9-14-2-1 Layout of Jayapura Port

9-14-3 Present Situation of Port Facility Security Measures

72. Present situation of port facility security measures at Jayapura Port is as follows;

- The port area is surrounded by steel & concrete fence with the top guard. However, the top guard has no barbed wire at some parts of the fence. A three-meter zone along the fence is not kept clear.
- Though security guards from PELINDO, KPLP and port operator are deployed at Gate III & IV for 24 hours a day, access control is not conducted sufficiently. As the entrance pass is issued for vehicles, security guards check the entrance pass or a company label at doors of a truck.
- Security guards from KPLP patrol in the terminal and along the berth occasionally.

9-14-4 Issues on Implementation of Port Facility Security Measures

73. Issues on implementation of port facility security measures at Jayapura Port are as follows:

- Access control is not conducted at Gate I and II.
- The passenger terminal and cargo handling area are not separated, resulting in a dangerous and unsecured situation.

9-14-5 Recommendation on Port Security

74. Recommendations on port security are as follows:

- The passenger terminal should be separated with barriers (e.g. mobile fence).
- Access control should be conducted strictly at Gate III & IV and security guards for access control should be deployed at the other three gates.
- Security guards should randomly patrol in the port area.
- The water area and wharf side should be monitored and patrolled more frequently.

CHAPTER-10. REVIEW OF GRANT AID PROJECTS ON PORT SECURITY IN INDONESIA

10-1 OUTLINE OF GRANT AID PROJECTS

1. Bali Island terrorist attack which occurred on October 12th, 2002 and subsequent bombing incidents that took place at various locations within the country dealt a heavy blow to Indonesia's overall tourist sector, and they also have taken a major negative toll on Indonesia's macro economy by, among other things, inviting the loss of external trust of Indonesia and reducing the once growing willingness of foreigners to invest in the country.

2. Against this background, a Security Facilities Improvement Plan Basic Design Study of the country's major airports and ports was formally requested by the Indonesian government in January, 2003. Thereafter, following bilateral coordination, it was eventually decided that a Grant Aid Cooperation Project Basic Design Study would be conducted on the contents of the request for the installation of X-ray inspection systems and other security equipment with the objective of strengthening security measures at eight of Indonesia's major airports and three of its major ports. The content of that request regarding the ports is set out below.

[Target Areas] : The three ports of Tanjung Priok (Jakarta), Tanjung Perak (Surabaya), and Batam
[Target Equipment] : X-ray baggage inspection system, metal detector (walk-through and handheld), explosive-detection equipment, CCTV surveillance system, wireless radio, radio relay station, infrared binoculars, fire extinguisher equipment, diving equipment.

3. Thereafter, a Basic Design Outline Explanation Study Group was dispatched to the sites from February 29th to March 7th, 2004, and an explanation of the plan contents was given to the relevant parties within the Indonesian government. Based on these results, the final target equipment was narrowed down to X-ray baggage inspection systems, metal detectors (walk-through and handheld) and CCTV surveillance systems.

4. Subsequently, in 2004, JICA called for bids for the implementation of improvements to these ports based on this plan, and on January 17th, 2005, signed the contract. Construction operations were completed on September 15th, 2005.

10-2 IMPLEMENTATION OF GRANT AID COOPERATION PROJECT

10-2-1 Progress of Work

5. Pre-construction work was conducted in parallel with equipment procurement because it was estimated that time required for equipment production and installation work amounted to approximately four and six months respectively. At the end of June, 2005, work on the bases of CCTV surveillance system camera poles as well as the laying of associated electrical wiring tubes was conducted in Tanjung Priok Port (Jakarta) and Tanjung Perak Port (Surabaya). Additionally, by the middle of August the installation of equipment and the remaining electrical wiring work were completed. Then, following adjustments and operation maintenance training which were to be finished by the end of August and final testing was conducted until September 15th.

6. The certificate of completion of the installation work was issued by the Consultant and approved by the DGSC on October 18, 2005.

10-2-2 Observed Issues

7. Issues which were observed on the grant-aid project on port security are as follows:

- A part of the wiring routes and camera base installation locations were in use or were located on private lands. It took much time, energy and money to make adjustments.
- There were some cases where objections on installation sites for security equipment and cable routes were raised after starting installation works and it took much time to obtain a consensus.
- Installation works have to be carried out in an operating port. Many restrictions are imposed on the work. For example, it was prohibited to excavate at gate area; instead a drilling method was adopted. There were some cases where construction machines could not be used to avoid trouble with cargo handling and thus works had to be carried out manually.
- There are various kinds of buried objects in construction sites of the port area and no map of buried objects is prepared. There are some cases where a constructor had to decide details of the wiring route after digging specified sites.

10-2-3 Items to be Considered

8. It is proposed that the following items be paid attention when conducting similar types of programs.

- When carrying out construction works in a port which is in operation, cost for site purchase, compensation and other required expenses need to be appropriately earmarked.
- It is important to come to a mutual agreement concerning installation sites, routes and methods with relevant agencies and persons prior to the tender document preparation.
- It is important to set the appropriate construction cost, schedule and working time in consideration of restrictions of construction sites and inform bidders of such information so as not to interfere with cargo handling operation.
- In case the layout plan of the existing facilities can not be obtained or the presence of existing buried objects can not be known without excavation, it may be necessary to conduct a pre-survey and add to the specification a clause of preparation for an unforeseen situation.
- It is important to have prior consultation with relevant authorities prior to confirming the layout plan so as not to interfere with cargo operation and not to change the installation plan.
- It is important to prepare particular specifications for security equipment to implement necessary security measures.
- Lockable steel cabinet is necessary for safekeeping the spare parts.
- It is necessary to estimate and secure the appropriate budget for maintenance. Procurement of spare parts for at least two years of operation is necessary given the time required for the budgetary process.

- It is necessary to estimate and secure the budget for the procurement of important spare parts especially parts with short life spans such as radioactive made X-ray tubes which are durable for 1.0 to 1.5 years.
- Preparation of the CCTV monitoring room and regular reporting system will have to be created under the supervision of the consultant to efficiently operate the security system.
- It is necessary to limit to the extent possible the number of persons operating confidential equipment such as the CCTV camera monitor.
- It is important to obtain a consensus and understanding on engineering works from not only the executing agency (DGST) but also the contracted terminal operator who conducts cargo handling works at the site for the work to be conducted smoothly.
- Dust prevention specification will be important especially for CCTV cameras installed outdoors.
- Indonesian language manuals will also be necessary for practical use of equipment by Indonesian staff.

CHAPTER-11. ISSUES RELATED TO PORT SECURITY IN INDONESIA

11-1 SECURITY CONDITIONS OF THE 26 STUDY PORTS IN INDONESIA

11-1-1 Security Measures of Ports for which Statements of Compliance Have Been Issued

1. In the 26 study ports, statements of compliance have been issued for 12 ports: Belawan, Dumai, Tg.Pinang, Batam, Teluk Bayur, Palembang, Panjang, Tg.Priok, Pontianak, Banten, Tg.Emas and Tg.Perak.

2. In these ports, security measures have been taken based on PFSPs. Each port has been making efforts to introduce required structures for the port security system, conduct a PFSA, formulate PFSPs and implement security measures.

3. In many ports, problems including the gate & gate control and fencing are observed. Security measures and immediate responses are needed to cope with these issues.

4. An overview of the study results concerning the present situation of port security measures is shown in Table 11-1-1-1. “X” indicates that same issues/problems are found.

Table 11-1-1-1 Overview of the Present Port Situation

	Gate	Fence	Metal-detector, X-ray	CCTV	Lighting	Communication	PA	Access control	Clear zone	Patrol	Others
Belawan	x	x	x			x	x	x			
Dumai	x	x	x					x			
Tg.Pinang		x	x		x	x	x	x			
Batam		x(m)			x			x			x
Teluk Bayur				x					x		
Palembang	x	x						x			
Panjang		x									x
Tg.Priok	x	x(m)									x
Pontianak								x	x		
Banten		x		x							
Tg.Emas		x							x		x
Tg.Perak		x(m)									x

Note: (m) stands for "mobile fence" and PA "Public Adress system"
Source: JICA Study Team

11-1-2 Security Measures of Ports for Which PFSP Has Not Been Prepared

5. As to the remaining 14 ports, PFSPs have not been prepared. Many of the ports are located in the eastern part of Indonesia, which is far from the international trunk trade route and of which international trade is not large except raw materials such as coal and plywood.

6. In all the ports security measures are inadequate because PFSPs have not been formulated. Insufficient or no access control is conducted. Security facilities and equipment such as gates, fence and lighting are also poor. As to the ports of which international cargo volume is not large, flexible system including combination of mobile fence and security guards should be introduced.

7. An overview of the study results concerning the present port situation is shown in Table 11-1-2-1. "X" indicates that same issues/problems are found.

Table 11-1-2-1 Overview of the Present Port Situation

	Gate	Fence	Metal-detector, X-ray	CCTV	Lighting	Communication	PA	Access control	Separation of cargo	Patrol	Others
Pekanbaru	x	x			x						
Cilacap	x	x						x			x
Benoa	x (e)	x		x				x			
Kupang		x		x	x			x			
Banjarmasin		x		x				x			
Samarinda	x	x			x			x		x	
Balikpapan	x (e)	x						x	x		
Bitung	x	x						x	x		
Kendari	x (e)				x	x	x	x		x	
Makassar	x	x	x	x				x			
Ambon		x			x			x			x
Sorong								x			x
Biak	x (e)	x						x		x	
Jayapura	x (e)							x	x		x

Note: (e) stands for "No security equipment at gate" and PA "Public Address"
Source: JICA Study Team

11-2 ISSUES RELATED TO PORT SECURITY IN INDONESIA

11-2-1 General

8. Issues related to port security in Indonesia measures are summarized as follows.

- In small ports international and domestic vessels use the same berth.
- There are many river ports where water depth is shallow.
- Budget for port security is small.
- Many patrol boats are aged and the number of boat is inadequate in some ports.
- There are no technical standards and manuals for port security.
- Piracy and property loss are found.
- Poverty.

11-2-2 Security Measures on Water Area

9. For security measures on the water area in a port, DGST has to make efforts to increase the budget for repair and renewal of aged patrol boats, new patrol boats for a port which has no or only one patrol boat, and fuel for operation according to the ISPS Code.

10. On that basis, in case that there are enough KPLP patrol boats to patrol the water area in the port, KPLP patrols on the condition that all port management bodies agree to delegate water patrol to KPLP and share cost of patrol boat's fuel.

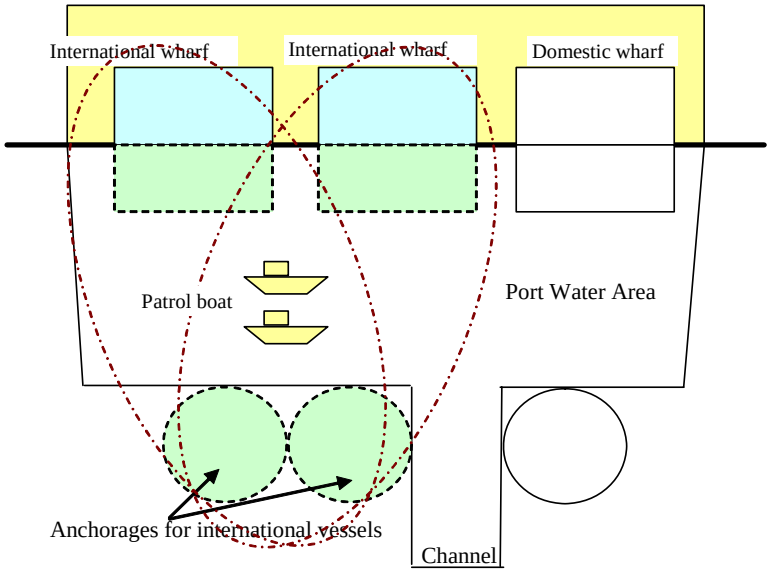


Figure 11-2-2-1 Image of Water Area Patrol by KPLP Boat

11. If there is not enough KPLP patrol boats in a port, KPLP tries to borrow a patrol boat from the Water Police or hire a small vessel of a private company for patrol on the condition that all port management bodies agree.

12. At security level 1, alternative proposal for barges and small vessels for transshipment of cargo is to have a security guard (guards) board a barge or small vessel. Security measures to be described in PFSP are proposed as follows:

1) Security level 1
   - A port management body makes a signed cargo list and hands it to the captain of a barge or small vessel.
   - At least one security guard under control of PFSO gets on a barge/small vessel.
   - The captain of an international vessel receives the cargo list and checks the cargo.

2) Security level 2 (The following measures are taken in addition to Security level 1.)
   - Security guards on a barge/small vessel are increased.
   - KPLP patrols before an international vessel arrives at anchorage and during loading/unloading

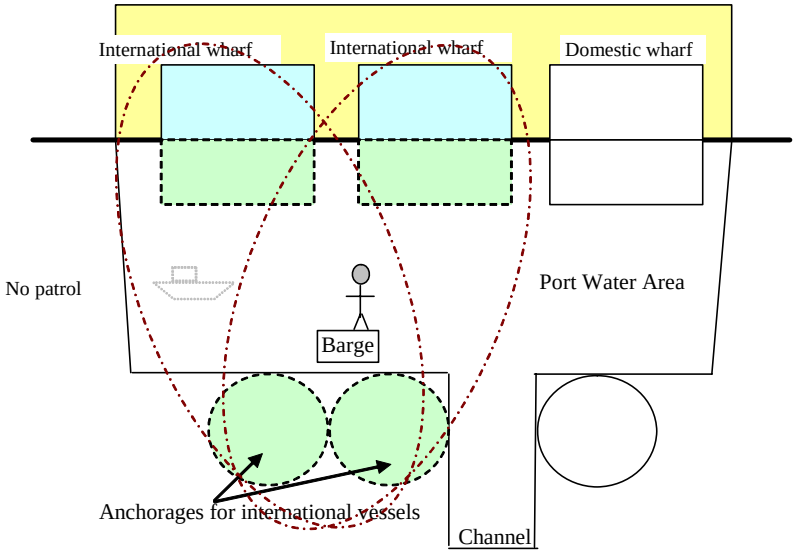


Figure 11-2-2-2 Image of Water Area Security by Security Guard (1)

13. In case of a port which has a long channel, many patrol boats are needed to patrol the water area in a port. In this case, PFSO also has a security guard who is under him board a barge or small vessel to monitor and patrol water area.

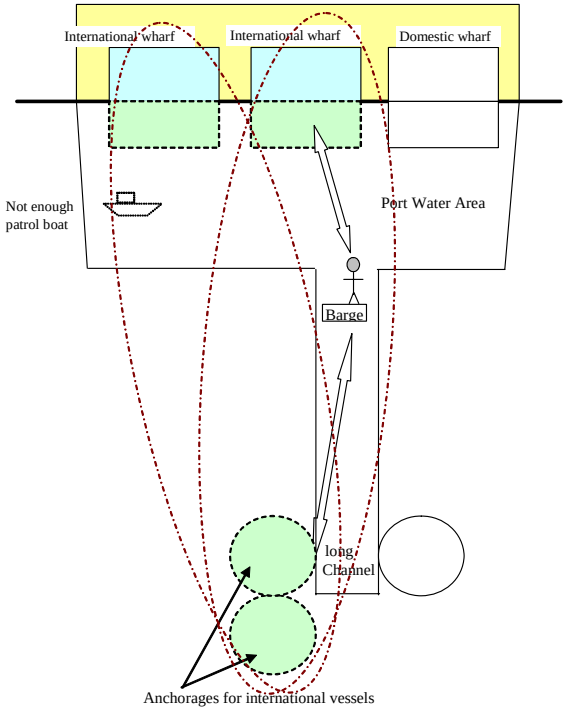


Figure 11-2-2-3 Image of Water Area Security by Security Guard (2)

14. It is recommended that the following measures be taken for other small vessels.

1) Pilot boats and the boats for government organizations such as Customs and Immigrations inform ADPEL/KAMPEL before going to an international vessel. In addition, pilot boats which serve international ships should comply with the ISPS Code.

2) Tug boats, bunker vessels and ship's stores supply vessel which serve international ships inform ADPEL/KAMPEL before going to an international vessel, and are checked if necessary.

11-2-3 Mixed Use of Wharf by International and Domestic Ships

15. In some small port which receives a few international ship, not only an international ship but also domestic vessels berth at the same berth in many cases. In this case, fixed fence to enclose a restricted area becomes an obstacle for domestic cargo handling and instead it is proposed to install mobile fence and to station security guards.

16. This kind of mixed use of a wharf by international and domestic ships is found even in a large port. For example, the mixed use is often implemented at public wharves in Tg. Priok port. These public wharves are very congested and small traffic accidents frequently happen. Terminal operation is delegated to several private companies and this leads to make the situation complicated. Although wharf area for an international ship has to be separated from other area as the restricted area by placing mobile fence and deploying security guards while the ship berths at the wharf, security measures are inadequate. Moreover it is not clear who is responsible for security measures in the site. In the large port like Tg. Priok, international wharves basically should be separated from domestic wharves.

11-2-4 Ports Receiving Few International Vessels

17. Security measures must be taken for all ports where the following types of ships engaged on international voyages call on regardless of the number of calls.

- Passenger ships, including high-speed passenger craft;
- Cargo ships, including high-speed craft, of 500 gross tonnage and upwards; and
- Mobile offshore drilling units.

18. In Japan, among the port facilities which ships engaged on international voyages call at, ports which come under the following items are obliged to make security plans and to take security measures, while other ports have no such obligation.

1) The calling number of passenger ships engaged on international voyages is more than one a year.

2) The calling numbers of ships other than one mentioned in 1) is more than 12 a year.

19. In Indonesia which has so many ports, it is unrealistic to prepare and execute port facility security plans for ports where a limited number of small international ships call. The Study Team deems that it is necessary for Indonesian ports to adopt the same rule as the one in Japan and to incorporate it in the regulations.

CHAPTER-12. PORT SECURITY IMPROVEMENT STRATEGY FOR INTERNATIONAL PUBLIC PORTS

12-1 BASIC POLICY

12-1-1 Premise

1. When formulating the security strategy, it is necessary to consider socio-economic conditions, political factors and international relations etc. of the target country. Port security measures must be pursuant to the ISPS Code. However, the ISPS Code contains the base framework for security measures. When formulating a security plan, port security measures which are most suitable for Indonesia have to be formulated considering the above policies.

12-1-2 Conditions of Indonesia

2. The following items need to be taken into account when studying the port security measures in Indonesia:

- Large numbers of international ports
- River ports
- Budgetary restrictions
- Piracy
- Port operation system

12-1-3 Necessity of Comprehensive Security Measures

3. When formulating port security measures, the following comprehensive security measures should be considered in addition to the measures prescribed by the ISPS Code.

(1) Awareness about Port Security

4. In order to implement port security measures, it is vital for every person in charge of port security to have a clear awareness about security and to carry out their duties surely and steadily.

(2) Responsibility

5. In Indonesia, framework for port security system has been made and the system has been put into practice. However, it is not necessarily clarified where responsibility lies. Chief responsible person should be clarified for every security level and all the information for port security should be concentrated to him/her.

- Security level 1: PFSO (PELINDO)
- Security level 2: PSC-PSO (KPLP)
- Security level 3: PSC (Port Administrator)

(3) Enlightening Residents and Stake Holders

6. When a port facility security plan is formulated and is implemented faithfully, it may be possible that surrounding residents who used to enter a port area without any restriction and vendors who sell daily necessaries, convenience food and so on are excluded from a port area. It is necessary to have meetings with relevant persons to explain and discuss the importance of such measures.

(4) Introduction of Optimum Transport Security System

7. To prevent pilferage from containers as well as to ensure that containers are not used to smuggle weapons, the following security measures should be considered:

- Container seals
- Reinforced hinges for container boxes
- Introduction of GPS
- Automated container management

(5) Cooperation with Other Relevant Organizations

8. Cooperation with Customs, immigration and police is important for passenger and cargo security.

(6) Appropriate Education and Training

9. It is vital that officials in the field and PFSOs respond appropriately when an incident occurs. Appropriate measures must be mastered through Drills and Exercises.

(7) Sharing of Latest Security Information

10. Information on security incidents is important for formulating a security plan on ports. It is vital to make efforts for collecting information not only on security incidents in Indonesia but also on those in foreign countries and to provide this to relevant security officials nationwide.

(8) Security of information on international cargo

11. Leakage of information on international cargo causes thefts. Therefore it is proposed that security regulations to handle the information should be introduced and that handling of the information should be regularly checked.

(9) Formulation of Implementation Plan on Port Security Improvement Strategy

12. It is necessary to formulate an implementation plan (an action plan) for materializing port security improvement strategy for international public ports.

12-2 IDENTIFICATION OF INTERNATIONAL PUBLIC PORTS WHERE SECURITY MEASURES ARE TO BE IMPLEMENTED

13. Security measures for port facilities are classified into categories considering importance of facilities, risk of destructive act occurrence (seriousness of incident impact and possibility of threat occurrence), budget restriction, etc. The Study Team proposes to introduce two groups as below.

1) Group A: Port facilities which need strict security measures
   - Container berths,
   - Passenger berths and
   - Hazardous material berths

2) Group B: Other port facilities
   - Bulk material berths and
   - Multi purpose berths

14. The Study Team proposes that "International hub port", "International port", Group A port facilities in "National port" and Group B port facilities in "National port" satisfying the following conditions should be required to comply with the ISPS Code. As to Group B port facilities in "National port" which do not satisfy the conditions, PFSP is not mandatory, but can be formulated and approved.

- International cargo vessel: more than 12 vessels per year
- International passenger vessel: more than 1 vessel per year

12-3 CONSIDERATION OF PRIORITIZATION FOR PORT FACILITY SECURITY

15. The following port facility security improvement shall be the standard for Group A and B Facilities.

1) For Group A Facility
   - Fence: Fixed type
   - Monitoring: Round-the-clock monitoring by CCTV except the time when no ship and no cargo are at a berth.
   - Patrolling: Check regularly in the restricted area by security guards
   - Others: X-ray inspection apparatus (for liner passenger berths)

   If CCTV and X-ray inspection apparatus are not installed due to the budget restriction, security guards are deployed around the boundary of the restricted area and patrol intervals by security guards are shortened.

2) For Group B Facility
   - Fence: Fixed or mobile type
   - Monitoring: Conducted by security guards. Put security guards every 300m for fixed fence and every 40m for movable fence.
   - Patrolling: Check in the restricted area by security guards.

12-4 BASIC POLICY ON PORT SECURITY ORGANIZATION

12-4-1 DGST

16. In DGST, the Directorate of Sea and Coast Guard is in charge of port security. The Directorate of Sea and Coast Guard assumes responsibilities over formulating policies, extending technical supports, and examining and approving PFSAs and PFSPs.

17. At present, a system and procedure to examine and decide the security level in the whole country has not been established yet. This is a comprehensive and sensitive issue and many organizations have to be involved. This is also related to the security level in other fields including air transportation. DGST should play a vital role in establishing them for port security and they should be realized as soon as possible.

12-4-2 Port Security Committee

18. At many ports which receive international ships, the PSC has already been established. Port Administrator and Head of KPLP have been nominated as the coordinator of PSC and PSO. However, other members of PSC have to be nominated.

12-4-3 Port Administration Office and Port Office (KPLP)

19. KPLP is a sub-organ of port administration office or port office and one of the important members of the PSC. It is expected that the KPLP plays a central role in port security using its close relation with DGST.

20. KPLP is responsible for water area security. However, many of them cannot conduct adequate patrol due to the lack of budget. Therefore, KPLP has to make efforts to increase the budget and adequately patrol water area.

12-4-4 PELINDO

21. PELINDO is an owner and operator of most major ports in Indonesia. PELINDO collects entrance fee at gates and is responsible for matters in its port area. A PFSO who usually belongs to PELINDO assumes the responsibility for all security matters in the restricted area of an allotted port facility.

12-5 ESTABLISHMENT OF DUAL "PLAN-DO-SEE" SYSTEM FOR STRENGTHENING PORT SECURITY MEASURES

22. In order to strengthen the port security measures and maintain the level of port security measures, "Plan-Do-See" systems should be established in both DGST and port management bodies such as PELINDO (see Figure 12-5-1).

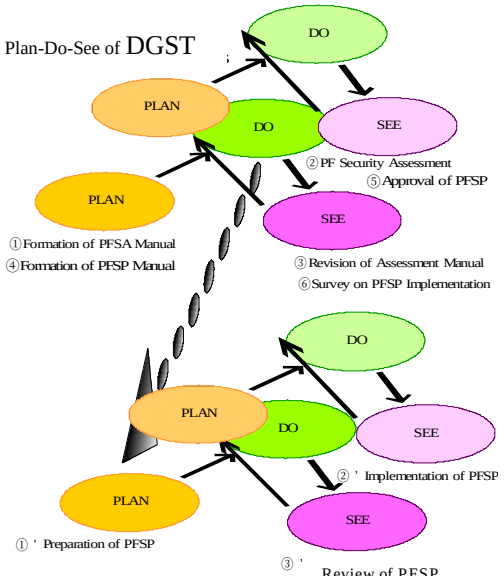


Figure 12-5-1 Dual Plan-Do-See Systems

12-6 PREPARATION OF SUPPORTING TOOLS

23. The following supporting tools should be prepared for ensuring the dual "Plan-Do-See" systems and enhancing the port security measures.

- Technical Standards on Port Security Facilities and Equipment
- Standard Specification for Port Security Facility and Equipment
- Manual of Port Facility Security Assessment (PFSA)
- Manual of Port Facility Security Plan (PFSP)
- Port Security Regulations
- Procedures of Drills and Exercises
- Port Security Development Plan

CHAPTER-13. IMPLEMENTATION PLAN FOR PORT SECURITY IMPROVEMENT STRATEGY

13-1 ESTABLISHMENT OF COOPERATIVE RELATIONSHIPS WITH INTERNATIONAL ORGANIZATIONS AND NEIGHBORING COUNTRIES

1. Indonesia has been actively involved in establishing cooperative relationships with international organization such as the International Maritime Organization (IMO), the International Labor Organization (ILO), the United States of America and also with neighboring countries such as Singapore, Malaysia, Australia, Japan and others in areas of maritime security, namely port security and the ISPS Code.

2. Functional cooperation is good between three littoral countries of Singapore, Malaysia and Indonesia bordering the Malacca Straits. The Police Coast Guard of Singapore, the Malaysian Marine Police and the Marine Police of the Riau region have met regularly for information exchanges. The navies of the three countries have also exercised regularly, albeit more on a bilateral and not multilateral basis. As a result of long established relations between the three navies, bilateral operating procedures are in place and a degree of inter-operability has been developed at the tactical level.

3. The cooperation with Indonesia by international organizations and foreign countries is as follows:

1) United States Trade and Development Agency (USTDA)
   - The USTDA has awarded two grants to help that country meet transportation security objectives that are part of the Secure Trade in the Asia-Pacific Economic Cooperation (APEC) Region or "STAR" Initiative.
   - The USTDA awarded a grant to help the Port of Tanjung Priok develop an information technology and communications infrastructure.

2) APEC Maritime Security Expert
   - The Maritime Security Workshop for APEC Countries are sponsored and jointly conducted by the Office of Transport Security, Australian and the Maritime and Port Authority of Singapore (MPA). Three runs were conducted in Singapore.

3) Singapore
   - Singapore Maritime and Port Authority enter into a Memorandum of Understanding with DGST to provide Indonesian officials maritime related training.

4) Australia
   - DOTARS of Australia is at table to talk with DGST over implementation of capacity-building to enhance port security.

5) Japan
   - Japan strengthens technical cooperation by accepting overseas students to the Japanese Coast Guard Academy, offering Maritime Law Enforcement courses, and implementation of Coast Guard Human Resource Development projects. It will also continue to participate in regular experts' meetings and joint exercises with the coast guards of Malaysia, Indonesia, the Philippines, India, Thailand and Brunei.
   - Japan International Cooperation Agency (JICA) sponsors government officials

from ASEAN countries for port security training in Japan
- JICA conducts study on the port security enhancement program of the major Indonesian public ports.

13-2 IMPLEMENTATION PLAN (ACTION PLAN) FOR PORT SECURITY IMPROVEMENT STRATEGY

13-2-1 Remaining Issues Related to Port Security in Major Indonesian Public Ports

4. A total of 27 port facilities of 22 public ports obtained SoCPF from DGST, the designated authority in Indonesia as of February 2006. Regarding the 27 port facilities which have obtained SoCPF from DGST, the following issues related to implementation of port security measures in accordance with the ISPS Code are still remaining.

- Lack of awareness of port security from security personnel
- Mistakes or errors with application in the field
- Low standards for security equipment, communication system and human resources
- Small budget for port security measures
- Unclear responsibility among security personnel
- Many residents and stakeholders such as vender in port area
- Insufficient cooperation with other relevant organizations
- Inappropriate education and training
- Latest security information is not shared among relevant organizations

13-2-2 ISPS Self-Assessment and Audit

5. In order to realize ISPS implementation, it is important to ensure that security equipment which falls under physical security measures and security organization (organic security) are in good condition. PFSOs should conduct security test by themselves (self-assessment) for good security maintenance. If PFSOs find any inappropriate security measures, they should revise security activities or PFSP. When officers who are independent of PFSP check and make a recommendation for the same purpose, the procedure is called an audit. In both cases, a check list might be useful for PFSOs and auditors.

13-2-3 Actions to Solve the Issues

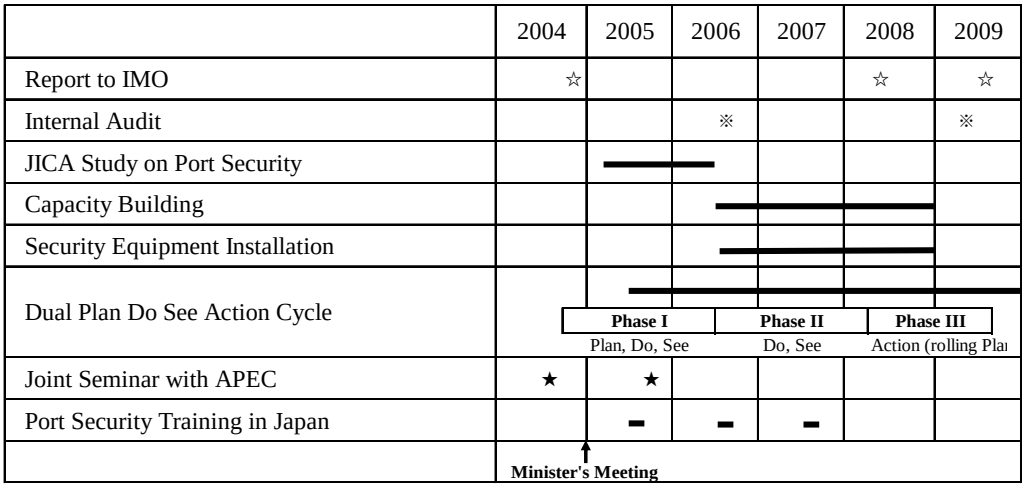
6. As mentioned in Chapter 12, the “Dual Plan-Do-See” systems should be established in DGST and port management bodies such as PELINDO to strengthen the port security measures and maintain the level of port security measures. In order to establish the dual Plan-Do-See systems, the following actions should be implemented.

- Establishing manuals for PFSA, PFSP and DoS
- Establishing commentaries on port security facilities & equipment development standards
- Establishing PFSAs & PFSPs of the remaining 70 public ports serving international ships using the PFSA & PFSP manuals
- Review of PFSAs & PFSPs for ISPS compliant ports if necessary
- Installation of security facilities and equipment using foreign assistance programs such as yen loan package
- Effective implementation of exercises, drills and training and capacity building

including seminars & workshops
- Establishing port security regulations to ensure the implementation of port security measures based on the ISPS Code
- Implementation of self-assessment according to the time schedule
- Implementation of internal and external audit according to the time schedule
- Promotion of cooperation with other countries/parties to enhance the implementation of port security measure

13-2-4 Time Schedule of Action Plan

7. The above-mentioned actions shall be implemented based on the following figure 13-2-4-1. It is proposed that the target completion time of the project will be the end of June 2009, since it will be necessary to report to IMO at that time.



Source: JICA Study Team

Figure 13-2-4-1Time Schedule for ISPS Action Plan

CHAPTER-14. PROGRAM FOR IMPROVEMENT OF EDUCATION AND TRAINING ORGANIZATION

14-1 BASIC POLICY FOR ENHANCING EDUCATIONAL AND TRAINING ORGANIZATION

14-1-1 Study Approach in Policy Development

1. The approach taken in this study comprises the need to provide directions in the capacity build-up of the Training Organization in three stages as follows:

- Approval and Accreditation as a Training Provider
- Continuing Professional Upgrading and Knowledge Currency
- Verification of Standards

2. All ISPS legislated Course Syllabi should be submitted to DGST (Designated Authority) for recognition and accreditation. All trainers for ISPS Courses should be submitted to the Designated Authority for authentication and registration in the list of authorized trainers. As a pre-requisite to be a registered trainer, individual nominated ISPS/PFSO instructor should have successfully completed the International Maritime Organization (IMO) Training - Of -Trainer (IMO TOT) program. All ISPS/PFSO registered trainer(s) should preferably have gained the knowledge on ship security and the experience in conducting PFSA, formulating PFSP and conducting drills and exercises.

3. In order to continue and update professional development requirements of the trainers, ISPS trainers need to be updated on current developments in Governmental Legislation and international requirements promulgated through IMO. It is necessary to establish procedures and processes to audit the competency of trainers and relevancy of subject matter for statutory courses especially those of the ISPS Code to ensure quality control for training organizations.

14-1-2 Role-Sharing of each Educational and Training Organization

4. Concepts of role-sharing of each educational and training organization are as follows:

1) BP3IP - Training and Education Agency is one of the 7 training institutions in Indonesia that provide education courses; refresher and upgrading training to experienced seafarers. Experienced lecturer from the Directorate of Sea and Coast Guard (KPLP), DGST should assist in proliferating the knowledge and experiences to new staff. In addition, permanent staff from BP3IP should be trained in IMO Training of Trainer on Maritime Security.

2) Pertamina Marine Training Centre (PMTC) engages external training consultant to conduct PFSO courses. PMTC can complement BP3IP for such training to the private sectors. However, DGST should recognize her as the authorized training centre and conduct periodic checks for quality and consistency.

3) Recognized Security Organizations (RSO) have the resources and contacts to organize such courses on an ad-hoc basis. They should consult the services of competent staff from DGST to provide such training and updates on compliance and security situations.

14-1-3 Capacity Building Training System

5. The international bodies and neighboring countries have since assisted in the proliferation of the ISPS Code in Indonesia. Capacity building is not a one-off event but rather a progressive build-up to meet the ultimate aim of the Contracting Government. Besides setting up the training organization, there is also the need to sustain the knowledge and skill-set base of trainers that can value-add and maintain the relevancy of the trainers.

6. A comprehensive system must be put in place to ensure that both the:

- Trainers can proliferate relevant and value-added knowledge and skills to the practitioners of the system, i.e., personnel who have the responsibility of security related duties
- Recipients would be trained and know the current situation so that they can remain effective in the performance of their roles and duties.

14-2 EXISTING CURRICULUM AND EQUIPMENT OF EDUCATION AND TRAINING

14-2-1 Syllabus

7. Indonesia being a Member State of the IMO Council has adopted these standards throughout its Education and Training Agency that have been duly authorized by DGST to conduct the PFSO Course.

8. Educational and Training Organizations currently focus on conducting PFSO courses for port facilities in accordance with the ISPS Code. However, there are gaps in the areas of coordination and communications between and within agencies and most of the security personnel are either unaware or uncertain of the ISPS Code requirements.

9. There is a need for security personnel to be trained through periodic training, drills and exercises to the level of understanding of their duties and roles as well as be fully conversant with the requirements so that they can carry out their respective duties and tasks proficiently and efficiently.

14-2-2 Training Resources

10. There is a limited pool of experienced trainers; namely, from KPLP-DGST and Pertamina METC.

11. Currently, the training resources used in support of education and training is sufficient. The resources and techniques used by the trainers/facilitators must be for the purpose of transferring the knowledge, skill and attitude (KSA) from the trainer/facilitator to the participants. In this respect, there is still room for improvement in presentation skills; for example, a presentation could be augmented by the appropriate use of photographs and excerpts of video clips to enhance the participants' learning experience.

12. The curriculum includes neither classroom demonstration nor appropriate equipment available for equipment-based training such as metal detectors, undercarriage mirror or training model of improvised explosive devices.

14-3 RESTRUCTURING OF EDUCATIONAL AND TRAINING CURRICULUM

13. It is deemed that the existing curriculum is sufficient as it is based on the IMO Model Course 3.21. To value-add to the PFSO training DGST should include module on Maritime Security Legislation and Security Situations in Indonesia with inclusions of the responsibilities and coordination between inter-agencies. It is recommended that a standardized syllabus for the PFSO Model Course 3.21 with additional modules be included to adapt to the Indonesian context.

14-4 STRATEGY AND SYSTEM FOR IMPROVEMENT OF EDUCATIONAL AND TRAINING ORGANIZATIONS

14-4-1 Role of each Educational and Training Organization

14. DGST - The Sub-Directorate of Port Safety and Security from the Directorate of Sea and Coast Guard, DGST, is responsible for the enforcement of ISPS Code related matters. They have a team of subject matter experts to oversee the compliance of the ISPS Code. DGST plays a pivotal role in assisting educational & training organizations to conduct ISPS Code training.

15. Training & Education Agencies (TEA) - TEA as accredited by DGST should be the forerunner in conducting maritime security courses for seafarers. Trainers from BP3IP are encouraged to attend the IMO Training of Trainers Course and also the IMO Maritime Security Training of Trainers Course to ensure their international credibility. Trainers from this institution should be actively engaged in workshops and conferences on maritime security issues so that they can be kept current on developments and enhance their understanding and knowledge in such international developments.

16. PELINDOs can play a crucial role in ensuring that training standards and practices are consistent throughout the 4 PELINDOs. In addition, she should synergize with ADPEL to co-provide C4I related training for all personnel who has a role to ensure the safety, security and stability of the ports. C4I is an abbreviation for Command, Control, Communication, Coordination and Information. PELINDOs should have the ability and resources to ensure that her security guards (SATPAM) and PFSO are well equipped and trained. SATPAM undergoes Port Facility Security Awareness Training.

17. RSO - Currently only a limited number of RSO has the ability to conduct PFSO Courses, Training, Drills and Exercises. RSO should also be certified and trained in areas as specified in the following 14-4-2.

18. PSC - The chairman (ADPEL) and members of the Port Security Committee (PSC) are encouraged to attend the ILO Code of Practice for Security in Port. They must attend the ISPS Auditor Course for Port Facility in order to execute the intermediate audit for port facilities that have earned the SoCPF.

14-4-2 Improvement Strategy for each Education and Training Organization

19. TEA - The Training and Education Agency should consistently upgrade the knowledge and skills of their staff. They should incorporate the latest updates in Maritime Security and ISPS Code to their existing awareness syllabus. They can also invite the Subject Matter Expert (SME) from KPLP of DGST as a guest lecturer for seagoing cadets.

20. **RSO** - There are a total of 25 RSOs in Indonesia with 2 more awaiting approval. However, more than 50% of these RSOs are inactive and some do not have the relevant expertise as spelt out in the ISPS Code Annex B/4.5. As such, DGST or the Designated Authority should consider reducing the number of RSO to ensure consistent and quality consultancy. Meanwhile, active RSO should continue engaging with KPLP of DGST in the conduct of PFSO training because KPLP staff is better informed with the latest intelligence and legislation on the maritime security situations in Indonesia.

21. **PSC** - The PSO should assist the PSC chairman in encouraging committee members to participate in awareness training so that they can make more informed decisions during PSC meetings.

14-4-3 Equipment Procurement Plan for Education and Training

22. There is no requirement for procurement of training resources in terms of logistics to support the delivery of training. Most training organizations have adequate equipment such projector and training materials to support their functions. SATPAM personnel would also have completed their equipment training during their basic training.

14-4-4 Education and Training System

23. The training courses for capacity building are recommended for personnel who have a specific security role working in the port and port facility area in Table 14-4-4-1 to Table 14-4-4-5. Although they are not exhaustive it is recommended that serious consideration be given to ensure all personnel, both security and non-security, have the necessary knowledge and skills to complement each other in enhancing the security of their ports.

Table 14-4-4-1 Training Plan for Key Appointment Holder

Appointment Holder	Total KSAs Required	Priority	Training Program
Port Administrator (ADPEL) / Chairman, Port Security Committee (PSC)	Knowledge and awareness of ISPS Code and Maritime Security Threat	High (1-3 months)	Port Facility Security Awareness Course
	Knowledge and skill to assist ADPEL in conduct of audit in port facility based on ISPS Code requirements	High (1-3 months)	ISPS Auditor Training for Port Facility
	Knowledge of concepts and principles of port security, roles and function of inter-agency responsible for port security i.e. PSC	High (1-3 months)	ILO-IMO Code of Practice on Security in Ports
	Knowledge and understanding to perform duties in accordance with ISPS Code Part A/18.2 on training, drills and exercise	High (1-3 months)	Training, Drills and Exercise
Port Security Officer (PSO)	Knowledge and skill to assist ADPEL in conduct of audit in port facility based on ISPS Code requirements	High (1-3 months)	ISPS Auditor Training for Port Facility
	Knowledge of concepts and principles of port security, roles and function of inter-agency responsible for port security i.e. PSC	High (1-3 months)	ILO-IMO Code of Practice on Security in Ports
	Knowledge and understanding to perform duties in accordance with ISPS Code Part A/18.2 on training, drills and exercise	High (1-3 months)	Training, Drills and Exercise
	Enable PSO to conduct maritime security training and courses to selected personnel	Medium (3-6 months)	Maritime Security Training of Trainers
	Knowledge and understanding of ISPS Code and the role of PFSO with regards to Port Facility, DoS exchange and Security Level	Medium (3-6 months)	Port Facility Security Officer Course
	Knowledge and understanding of security principles, structure and management philosophy	Low (6-12 months)	Facility Security Management in Port Area
	Knowledge and understanding of IMO regulation with regards to Port State Control and Flag State Control, MoU and Port State Control Inspection and Detention Process	Low (6-12 months)	Port State Control Officer Course
Port Facility Security Officer (PFSO)	Knowledge and understanding of ISPS Code and the role of PFSO with regards to Port Facility, DoS exchange and Security Level	High (1-3 months)	Port Facility Security Officer Course
	Knowledge and skill to understand the requirements for the conduct of audit in port facility based on ISPS Code requirements	High (1-3 months)	ISPS Auditor Training for Port Facility
	Knowledge and understanding to perform duties in accordance with ISPS Code Part A/18.2 on training, drills and exercise	Medium (3-6 months)	Training, Drills and Exercise
	Enable PFSO to conduct maritime security training and courses to selected personnel	Medium (3-6 months)	Maritime Security Training of Trainers
	Knowledge of concepts and principles of port security, roles and function of inter-agency responsible for port security i.e. PSC	Low (6-12 months)	ILO-IMO Code of Practice on Security in Ports

Note: The word "KSA" means "Knowledge", "Skill" and "Attitude".

Source: JICA Study Team

Table 14-4-4-2 Proposed Course for Capacity Building Based on Role Assignment (1)

S/No	Course Title	Synopsis	Role Assignment	Duration	Trainers	Proposed Future Trainer
01	ISPS Auditor Training for Port Facility	This two-day course which combines ISPS familiarization and security audit elements is designed for those interested in understanding and performing Internal Audits of security management systems based on the International Ship and Port Facility Security (ISPS) Code. The auditor training element meets the requirements of the International Register of Certificated Auditors (IRCA) and Procedure 25 of the International Association of Classification Society.	DGST ADPEL KANPEL PELINDO Immigration Customs KPPP SATPAM	3 days	Import External Training Consultant who has attended and conducted IMO Training of Trainers	DGST ADPEL/PSO
02	Training, Drills & Exercise	To ensure that the port facility personnel are equipped with sufficient knowledge to enable them to perform their assigned duties for port facility security, in accordance with the mandatory ISPS Code Part A, Section 18.2	DGST ADPEL PSO PFSO	3 days	Import/Local External Consultant and DGST	DGST APDEL/PSO
03	Maritime Security Training of Trainers	The aim of the course is to enable instructors to present specialized maritime security training courses to selected personnel. • Conduct maritime security training applying the general principles of learning and instruction • Correctly present validated model maritime security training courses • Identify, select and prepare appropriate teaching aids • Develop or modify training objectives and tests as appropriate to meet national requirements • Identify and use various instructional methods as appropriate	DGST ADPEL PSO PFSO	3 days	Import IMO Consultant	DGST ADPEL/PSO
04	Port Facility Security Officer Course	Ensure that port facility personnel are equipped with all necessary knowledge and skills to competently perform their assigned duties for port facility security, in accordance with the mandatory ISPS Code part A Section 18.2	PSO PFSO Deputy PFSO	3 days	Local DGST	DGST
05	Port Facility Security Awareness Course	The aim of the PFSC is to ensure that port facility personnel are equipped with sufficient knowledge to be able to perform their assigned duties for port facility security, in accordance with the mandatory ISPS Code Part A/18.2 B/18.3.	DGST ADPEL PELINDO Immigration Customs KPPP SATPAM	1 day	Import/Local External Consultant/ DGST	DGST PSO
06	Facility Security Management in Port Area	The aim of this course is to provide PSO, Security Manager, Security Supervisor the principles of security, Security organization structure and Security management philosophy through planning, training, inspections, effective communications, roles & job description of principal & general security staff.	PSO PFSO KPPP	3 days	Import/Local External Consultant / PSO	ADPEL/PSO

Source: JICA Study Team

Table 14-4-4-3 Proposed Course for Capacity Building Based on Role Assignment (2)

S/No	Course Title	Synopsis	Role Assignment	Duration	Trainers	Proposed Future Trainer
07	ILO Code of Practice for Port Security including Supply Chain Security	This workshop will familiarize participants with the concepts and principles of port security as specified in the IMO-ILO Code of Practice on Security in Ports and provide an introduction to the techniques for the conduct of a port security assessment and documenting a plan. Upon completion of the workshop, participants will be able to: • Describe the ILO-IMO Code of Practice on Security in Ports (2004) and its link with the IMO ISPS Code and with the ILO Seafarers' Identity Documents Convention (Revised), 2003 (No. 185). • Analyze the institutional and organizational arrangements necessary for the implementation of the ILO-IMO Code of Practice on Security in Ports (2004). • Identify the roles and responsibilities of governments, employers and workers in the implementation of the ILO-IMO Code of Practice on Security in Ports. • Undertake a port security assessment (PSA) and describe the format and content of a port security plan (PSP). • Provide general advice to their organizations on the implementation of the ILO-IMO Code of Practice on Security in Ports (2004)	DGST ADPEL PSC PSO PFSO KPPP POLAIRUD Immigration Customs	4 days	Import ILO-IMO Consultant	DGST ADPEL/PSO
08	Bomb Incident Management for Non Security Personnel Working in Port	The objective is to educate non-security personnel working in the port area to detect, protect and appropriately report to the relevant authorities on bomb threat. The course will also educate telephone receptionists on how to handle bomb threats over the phone with the aid of a checklist. What to do when suspicious letters, parcels and other objects are detected. What to do for suspicious vehicle, how to conduct bomb sweep, evacuation and making proper PA announcement.	Office Staff Ship Chandler Contractors	1 day	Import/Local External Consultant / PSO	PSO
09	Port State Control Course	Port State Control is a rapidly and constantly changing area for ship owners, operators and maritime administrations. It demands particularly high standards of technical knowledge with respect to ship operations and their related regulations according to international conventions, and other national or regional instruments in order to promote both maritime safety and the flow of commerce. Content: • Origin and Purpose of IMO • International Convention adopted • General Obligation for the Administration under the Convention • Power of Authority for Flag State Control / Port State Control • Provision for Port State Control in IMO Conventions • Memorandum of Understanding(MOU) on Port State Control • Port State Control Inspection / Detention Process	PSO PSCO	3 days	Import/Local External Consultant / DGST	DGST

Source: JICA Study Team

Table 14-4-4-4 Participants for Education and Training

No	Courses	For Whom	Total Participants From								
			DGST	ADPEL	KAMPEL	PELINDO	IMMIGRASI	BEA & CUKAI	KPPP	SATPAM	Total
1	ISPS Auditor Training for Port Facility	DGST/ADPEL/ PSO/PFSO	5	89	20	8	4	4	4	4	138
2	Training, Drills and Exercises	DGST/ADPEL/ PSO/PFSO		25 Facilities							25 Facilities
3	Maritime Security Training of Trainers	DGST/ADPEL/ PSO/PFSO	5	23							28
4	Port Facility Security Officer Course	PSO/PFSO/ Deputy PFSO	7			23					30
5	Port Facility Security Awareness Course	KPPP/Immigration/ Customs/SATPAM	2	4		4	4	4	4	4	26
6	Facility Security Management in Port Area	PSO/PFSO/KPPP	2	37		23	4	4	4	4	78
7	ILO Code of Practice for Port Security including Supply Chain Security	PSC/ADPEL/PSO/ PFSO/KPPP/ Immigration/ Customs/POLAIR	5	89	88	4	4	4	4	4	202
8	Bomb Incident Management for Non Security Personnel Working in Port	PELINDO Staff/ Ship Chandler/ Contractors	5	37		23	4	4	4	4	81
9	Port State Control Course	PSO/PSCO	8	120							128
Total			39	399	108	85	20	20	20	20	711

Note: Number of participants is given by DGST.

Source: JICA Study Team

Table 14-4-4-5 Proposed Schedule

No	Courses	Unit	Quantity	2006				2007			
				1	2	3	4	1	2	3	4
1	ISPS Auditor Training for Port Facility	6	138				⟷	⟷			
2	Training, Drills and Exercises (TED)	25	NA				⟷	⟷	⟷		
3	Maritime Security Training of Trainers	1	28				O				
4	Port Facility Security Officer Course	1	30					O			
5	Port Facility Security Awareness Course	1	26					O			
6	Facility Security Management in Port Area	3	78					⟷	⟷		
7	ILO Code of Practice for Port Security including Supply Chain Security	8	202					⟷	⟷	⟷	
8	Bomb Incident Management for Non Security Personnel Working in Port	4	81						⟷	⟷	
9	Port State Control Course	5	128					⟷	⟷	⟷	⟷

Note: Unit = Number of run, TDE = per port facility

Source: JICA Study Team

14-5 OUTLINE OF EXERCISE AND DRILLS GUIDELINE

14-5-1 Guideline of Exercise

24. It is proposed that the exercise guideline should cover the following topics.

- General (feature, objectives etc)
- Exercise Planning
- Exercise Scenarios
- Developing Exercise Narrative
- Determining the Exercise Time-Table
- Developing Injections and Master Event List (MEL)
- Injection Planning
- Exercise Organization
- Conducting the Exercise
- Control and Safety Management of the Exercise
- Post-Exercise Debrief and Reports

14-5-2 Guideline of Drills

25. It is proposed that the outline of drill guideline should cover the following topics.

- General (feature, objectives etc)
- Planning of a Drill
- Conducting a Drill
- Debrief

CHAPTER-15. TECHNICAL STANDARDS ON PORT SECURITIES AND EQUIPMENT

15-1 GENERAL

1. This draft technical standard is the one having made it in consideration of the current state of Indonesia referring to the case with the foreign country based on the standard of the equipment used in Japan. The draft technical standard can also be serve as a text book for persons involved in port security tasks. Therefore Bahasa Indonesia version has been prepared and submitted.

2. The draft technical standards and its commentaries consist of main body of technical standards, interpretations which describe backgrounds and basis of the technical standards, and reference which shows specific examples already implemented. The main body of the technical standards is composed of functional requirements and standard specifications.

3. It should be noted that the standards are no more than standard specifications to be observed and the practical specific actions should be determined on an individual basis in consideration of the actual using conditions of the relevant facilities. (Use of more stringent specifications may be necessary depending on the situation.)

4. On actual facilities, any specifications that deviate from the standards may be adopted if they are considered equivalent in functionality.

15-2 RESTRICTED AREAS

5. Restricted areas shall be properly designated based on the considerations on the local port arrangements, berthing conditions of international ships, loading & unloading of cargoes, embarkation and disembarkation of international passengers and other conditions and, at the same time, based on sufficient understanding according to the provisions of the ISPS code.

6. The purposes of designating restricted areas according to the ISPS code are to:

- Protect passengers, ship's personnel, port facility personnel and visitors, including those visiting in connection with a ship;
- Protect the port facility;
- Protect ships using, and serving, the port facility;
- Protect sensitive security locations and areas within the port facility;
- Protect security and surveillance equipment and systems; and
- Protect cargo and ship's stores from tampering.

7. The following items which are provided in the PFSP should be controlled in restricted areas.

- Access by individuals;
- Entry, parking, loading and unloading of vehicles;
- Movement and storage of cargo and ship's stores; and
- Unaccompanied baggage or personal effects.

8. The restricted areas may include the following facilities:

- Shore and waterside areas immediately adjacent to the ship;
- Embarkation and disembarkation areas, passenger and ship's personnel holding and processing areas including search points;
- Areas where loading, unloading or storage of cargoes and ship accessories is undertaken;
- Locations where security sensitive information, including cargo documentation, is held;
- Areas where dangerous goods and hazardous substances are held;
- Vessel traffic management system control rooms, aids to navigation and port control buildings, including security and surveillance control rooms;
- Areas where security and surveillance equipment are stored or located;
- Essential electrical, radio and telecommunication, water and other utility installations; and
- Other locations in the port facility where access by vessels, vehicles and individuals should be restricted.

15-3 BARRIERS

15-3-1 Fixed Fences

9. The following shows the functional requirements for barriers.

- The installation of the fencing must be able to increase the watching capability of the guards by providing psychological restraint to any possible intruder, retarding any intruding actions or by providing clear zones.
- Sufficient height to prevent any person from intruding
- Sufficient strength and durability to withstand assumed loads
- Wire mesh or grid rod diameter that will not be easily cut
- Structure that will not allow detour for entry at water edge sections of borders with neighboring land
- Signs posted to prohibit any trespassing
- Clear zone provided on both sides of fences

10. The following shows the standard specifications for barriers.

- Effective height of 2400 mm or over for Group A facilities and 1800 mm or over for Group B facilities (less the height of spike for both cases)
- Spike added on top as overhung outward (length of 450mm or over, angled 30 deg or over outward and barbed.
- The assumed load is wind load (standard speed of 34m/sec).
- Mesh of a size (diamond side of 50 mm or less) or grid of a width (50 mm or less) that will not provide foothold
- Mesh wire diameter of 3.2 mm or over (without cladding) and grid rod diameter of 6.0 mm or over.
- Prevention against any curling up, or construction against any crawling under the fence.
- Fence used at port must be highly resistant to corrosion in consideration of salt damage.
- Intrusion prevention fence must be provided as on large-sized drainage trench that passes across under the fence.
- Intrusion prevention fence must be provided on structures or communicating

passage that pass across over the fence

- Standard clear zone should be 3 meters inside the fence and some width on the outside as necessary for the early detection of any unauthorized intrusion.

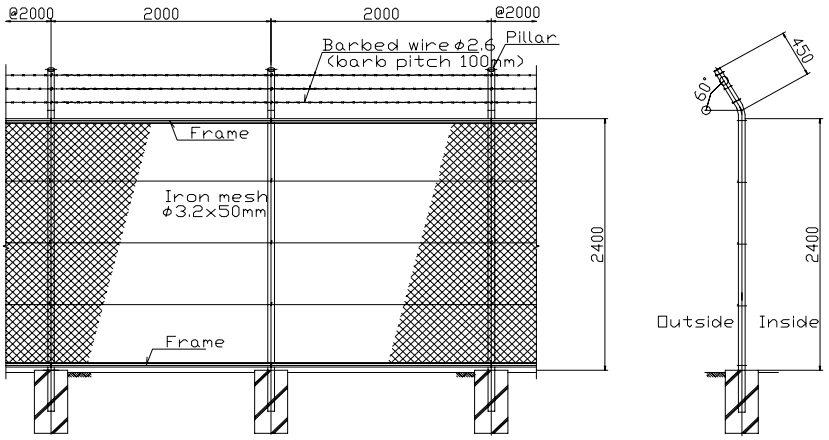
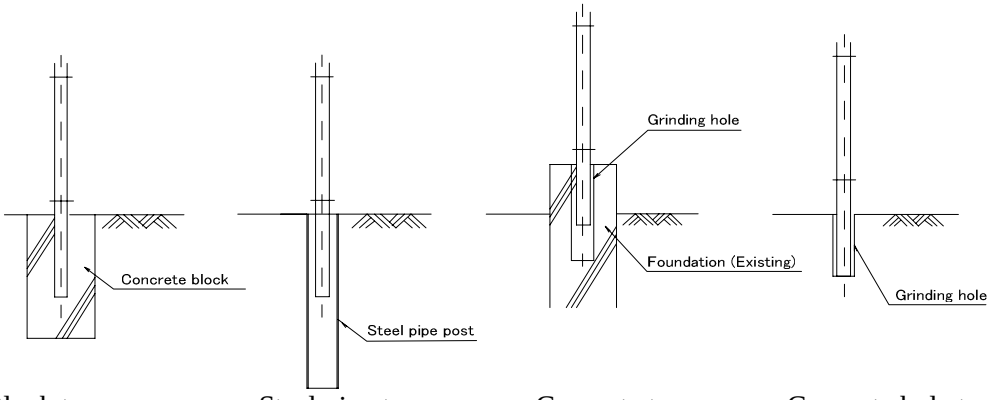


Figure 15-3-1-1 Example of Fence with Correct-Direction Top Guard

(1) Basement of Fence

11. Examples of fence basement and improvement are shown in Figure 15-3-1-2 ~ 15-3-1-4.



Block type Steel pipe type Concrete type Concrete hole type

Figure 15-3-1-2 Fence Basement Type

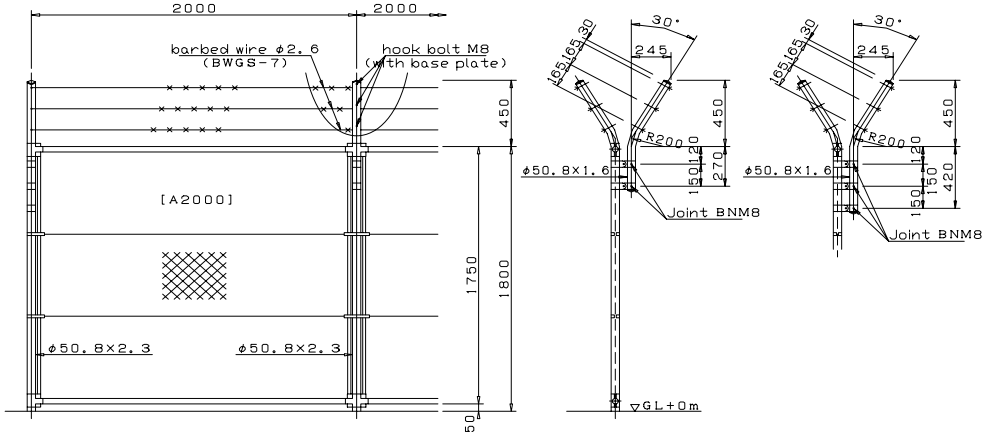


Figure 15-3-1-3 Example of Improvement (Correct-direction top guard is added.)

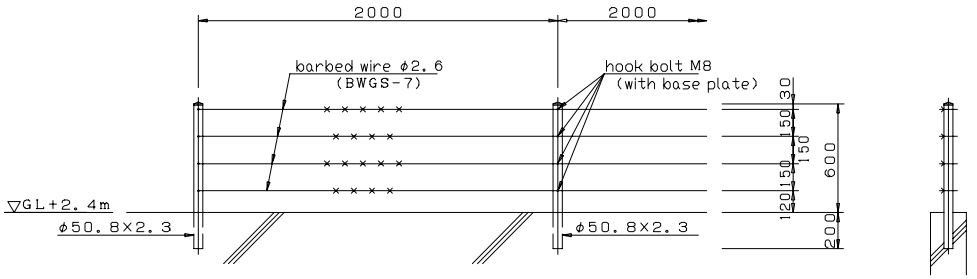


Figure 15-3-1-4 Example of Installation of Erect Top Guard (Barbed wire) on the Wall

(2) Grid Fence

12. Grid fence is mainly applied in Indonesian ports and its interval is 100 mm without top guard. Its height is usually below 2 m and does not meet the standard requirement. However, it is necessary to study the specification by each port facility because there is a difference between an effective height of fence in a port facility of Group A and that of Group B.

13. The next photos show the existing fence and its improvement plan (Example). The study on its performance and economical aspect is needed to decide how to improve the existing fence considering the existing condition of the port facility.

Photo 15-3-1-1 Improvement Plan of Grid Fence

Existing Condition | Improvement Plan

- Grid bar should be added between the existing grids to reduce its interval to below 50 mm. (Red lines in the right photo mean the grid bars to be installed.)
- Correct-direction top guard should be installed on the existing fence. (Green lines in the right photo mean the top guard to be installed.)
- There is a wide space between the ground and the lowest edge of the fence. This space should be reduced to below 50 mm by installing the additional horizontal beam. (Yellow line represents the additional horizontal beam.)
- This additional horizontal beam should be installed inside the existing fence and should not function as a step in climbing over the fence.

(3) Various improvement plans for existing fence

14. In case that the effective height does not meet the requirement, new fence which meets the standard specification should be installed or the existing fence should be improved by the installation of additional parts to meet the requirement. The existing fence must not be a foothold for climbing the new fence. Depending on the nature of the modification of the existing fence, installing a new fence may be more economical. In practical application of any modification, the actual situation of the facility should be considered for proper judgment. Examples of improvement plans are shown below.

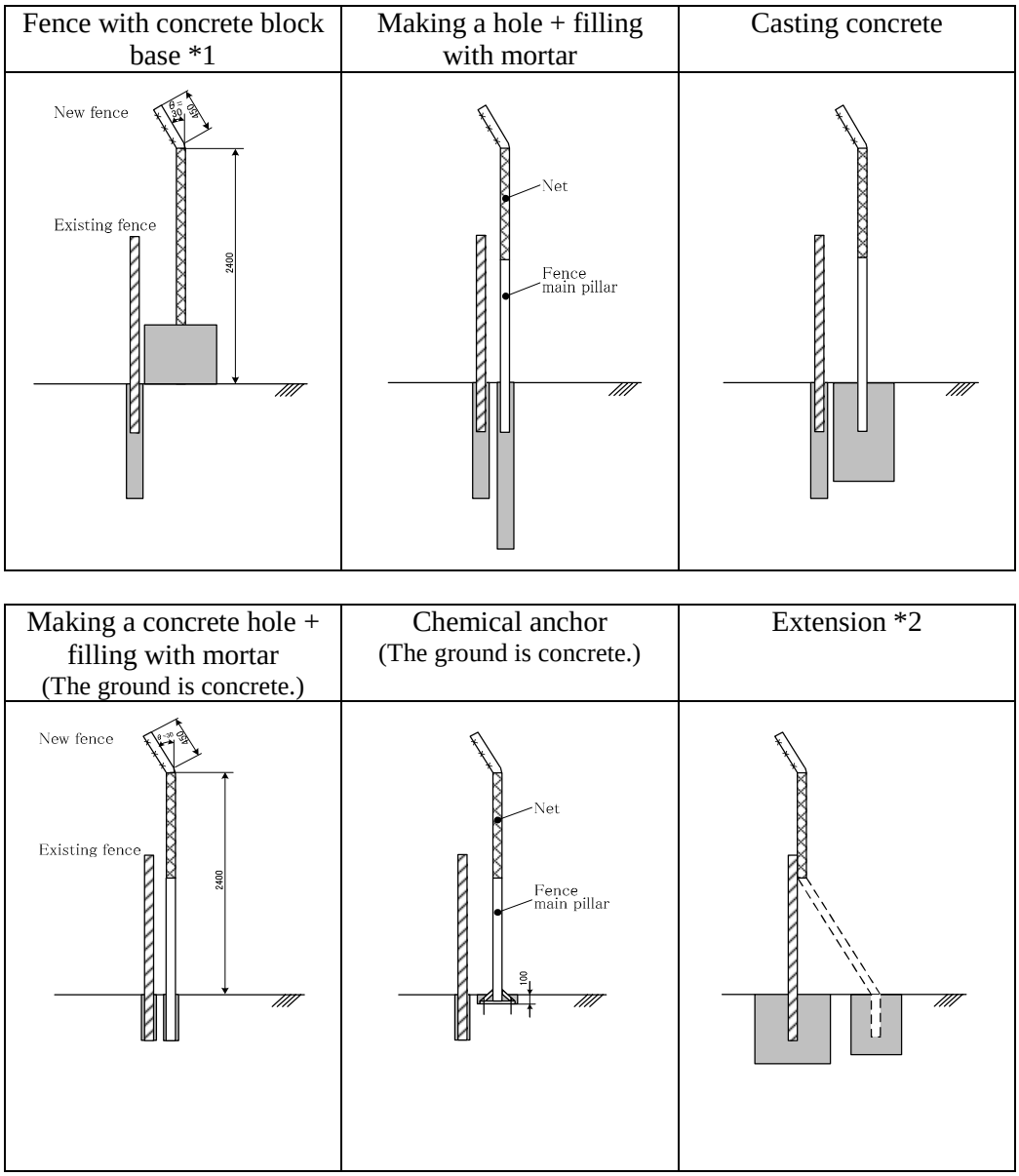


Figure 15-3-1-5 Examples of Improvement Plans for Existing Fence

*1: The distance between the new and existing fences must reflect the contents of the "Remarks" shown below.

*2: New fence will be reinforced by support in case of insufficient strength.

(Remarks)

- New fence may be made of mesh or grid for the entire surface even when no mesh or grid is required for its lower part. Alternatively, the lower part of the fence that does not require any mesh or grid may be covered with barbed wire.
- To prevent the existing fence from being a foothold for climbing the new fence, the distance between the new and existing fences should be made as small as possible so there is no room for a foot to enter.
- Where the new fence is installed away from the existing fence, the distance between both fences must be 1.7 m or over so the existing fence will not provide any foothold for climbing the new fence.

15. The following photos show the fence before and after the improvement.

Photo 15-3-1-2 Fence before and after Improvement

Before improvement

>>

After improvement

Mesh fence and upright top guard added on top of the existing fencing

Before improvement

>>

After improvement

Outward angled top guard added on top of the existing fencing

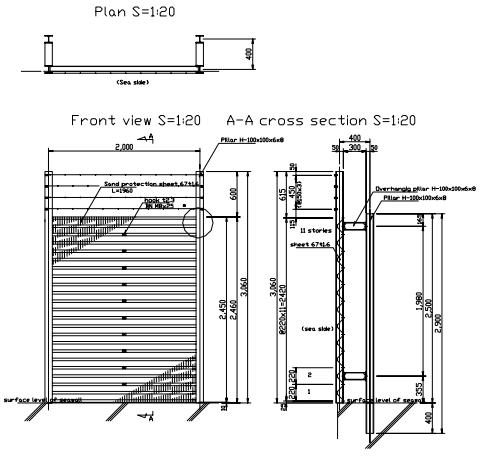
(4) Measures to prevent detour of fence

16. Measures to prevent intruders from making a detour to avoid a fence are as follows. There are two measures to prevent a detour of the water area; prevention wall and additional fence.

(a) Prevention wall

17. Setting up a plat wall along the berth line prevents anyone from making a detour to avoid the fence. This advantage of this type of wall is that it does not project into the sea.

Photo 15-3-1-3 Detour Prevention Wall



(b) Additional fence

18. Setting an additional fence that projects into the sea from the berth prevents anyone from making a detour to avoid a fence. It will be more effective to install barbed wire on the additional fence.

Photo 15-3-1-4 Additional Fence (1)

The left photo shows the additional fence attached to an entry gate. When the door is closed, the fence will be projecting into the sea. However, two points should be improved.

- No top guard on the entry gate.
- The existing fence is so low that a person can climb over it.

Top guard should be installed on the gate, and the existing fence should be higher and improved with top guard.

Three points should be improved.

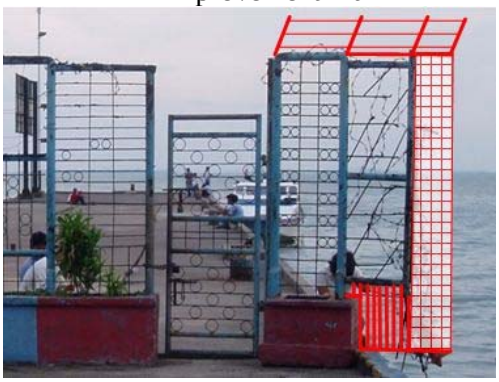
- There is enough space between the additional fence and net fence on the right for someone to come in through the fence.
- Beams of the additional fence can function as steps for person to climb the fence.
- No top guard on the prevention fence.

Photo 15-3-1-5 Additional Fence (2)

An example of improvement plan of a prevention fence is shown below.

Existing Condition

Improvement Plan



The above photo shows a fence projecting into the sea. This projecting fence has barbed wire on it. However, as this fence is not wide, it should be improved as illustrated in red on the right photo.

- The lower end of the additional fence should extend down to the surface of apron.
- Top guard should be installed on the fence.
- Barbed wire should be installed on the extended projecting fence.

Fence and gate should also be improved.

15-3-2 Mobile Fences

19. The following shows the functional requirements for mobile fences

- It can clearly indicate the boundaries to restricted areas to identify any intruder.
- Signs are posted to prohibit any trespassing.
- Clear zone is provided.

20. The following shows the standard specifications for mobile fences.

- It has self-supported construction that will not easily fall.
- Standard clear zone should be of a width both inside and outside the fence that is necessary for the early detection of any unauthorized intrusion etc.

21. The following photos show the site condition of mobile fence.

Photo 15-3-2-1 Mobile Fence

In storage

In use as a partition between passenger berth and general cargo berth

Fence is moved in accordance with the size of restricted area.

Mobile fences are in use as a partition between international vessel and domestic vessel.

Mobile fence made of container (The inner bent part is a door.)

Empty containers are used as a physical barrier. (Mobile fence is used on the apron.)

Mobile fence with sign board

Mobile fence is used for the fence to prohibit vehicles to pass through.

15-3-3 Gates

22. The following shows the functional requirements for gates

- The installation of a gate is intended to prevent any intrusion of persons and vehicles for increased control of ingress and egress by restricting or closing the entrance to and exit from a restricted area.
- Gates shall have the same height as fixed fences and shall be of a construction of strength and durability to withstand assumed loads.
- Car bump or cross bar shall be provided at the gate.
- Gate shall be of a construction that allows locking. When locked, the lock and key shall not allow any easy removal, replacement or replication.
- The construction shall allow separate access control of humans and vehicles.

23. The standard specifications shall be the same as with fixed fences. Gate types include swinging and sliding constructions. The following are the examples.

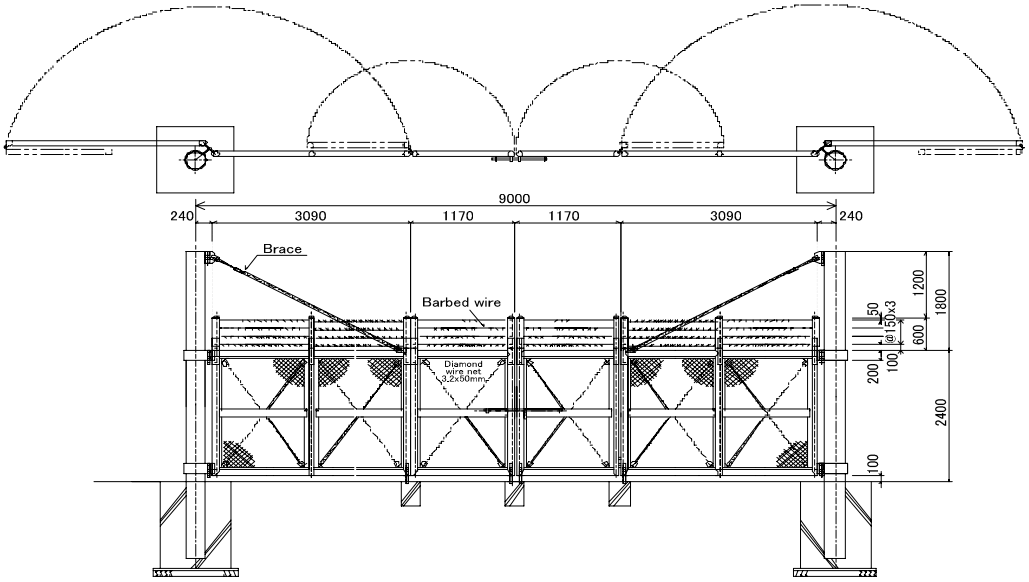


Figure 15-3-3-1 Example of Swinging Construction Gate

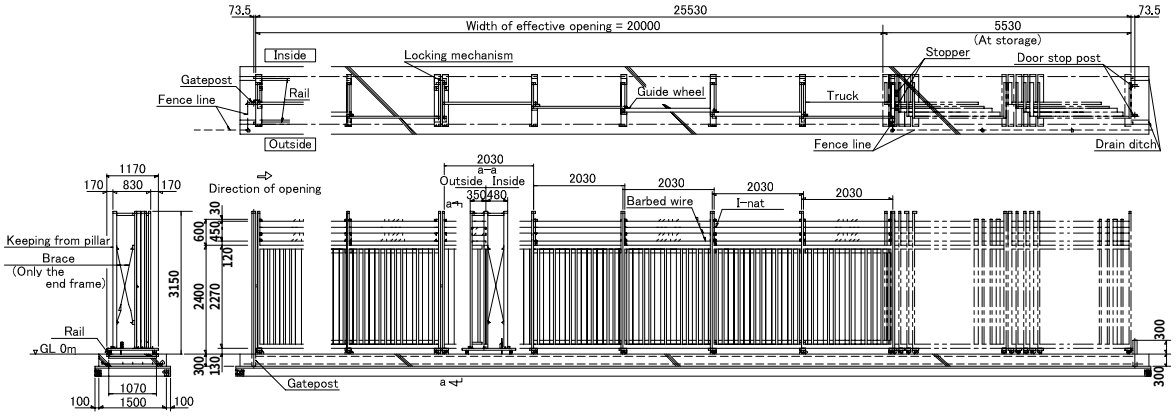


Figure 15-3-3-2 Example of Sliding Construction Gate

24. Any unmanned gate shall be of a construction to allow locking in order to prevent any intrusion of suspicious individuals. For the storage of the keys, dedicated personnel shall be assigned and be responsible for strict custody of the keys. The locks shall not be easily destroyed.

25. Entrances are separated for humans and vehicles to prevent any suspicious persons or goods from entering in the midst of any congestion.

15-4 SECURITY LIGHTING EQUIPMENT

26. Shown below are functional requirements for the security lighting equipment.

- The lighting shall provide an illuminance that allows surveillance for any suspicious individual's behaviors by the sentinel's naked eyes or through surveillance cameras.
- The height of the lighting shall be considered so no light source be within the scope of the cameras.
- The lighting arrangement shall be considered not to be utilized for any intrusion across the fence.
- To watch for any intrusion from the pier or any access to ships, the lighting shall

be able to illuminate the entire apron.
- In case of surveillance through cameras, uniform illuminance at the borders shall be secured
- Considerations shall be given for securing a sufficient illuminance as at any narrow places.
- It shall be able to illuminate the entire range within the yard.
- It shall provide a sufficient level of illuminance at the gate that allows viewing certificate documents required for the authorization of the entry.
- It shall be provided with emergency power source that is available for the surveillance of the boundary in case of power outage.

27. Shown below are standard specifications for the security lighting equipment.

1) Boundary area
   - The illuminance should basically be 3 lux to allow surveillance by the naked eye. Where cameras are used for the surveillance, the illuminance should be a level that allows camera-based surveillance (assumed to be 3 lux). The illuminance level and lighting equipment should be determined based on the capacity of the camera used.
   - The equipment shall be of a construction that will easily prevent any vehicle from intrusion as by onrushing, running over or under.
2) Yard
   - Work lighting should be utilized and any deficiency be supplemented by providing additional lighting.
3) Gate
   - Spot lighting shall be provided at the position of the standing sentry. The standard illuminance should be 30-50 lux that will allow reading 10 point (approximately 3.5 mm) characters almost effortlessly.
4) Other
   - Backup measures shall be provided for any power outage to ensure the minimum level of surveillance functionality including the surveillance of boundary areas.
   - Group A facilities shall be equipped with emergency power source. With Group B facilities, while having emergency power source is recommended, alternative measures may be used such as enhancing the patrol surveillance upon any power outage.

15-4-1 Illuminance

28. luminance includes the horizontal illuminance and the vertical illuminance. The horizontal illuminance represents the amount of light incident on a horizontal plane of unit area and the vertical illuminance the amount of light incident on a vertical plane. Normally, the illuminance represents the horizontal illuminance.

29. The figure below shows approximate brightness for different illuminance levels.

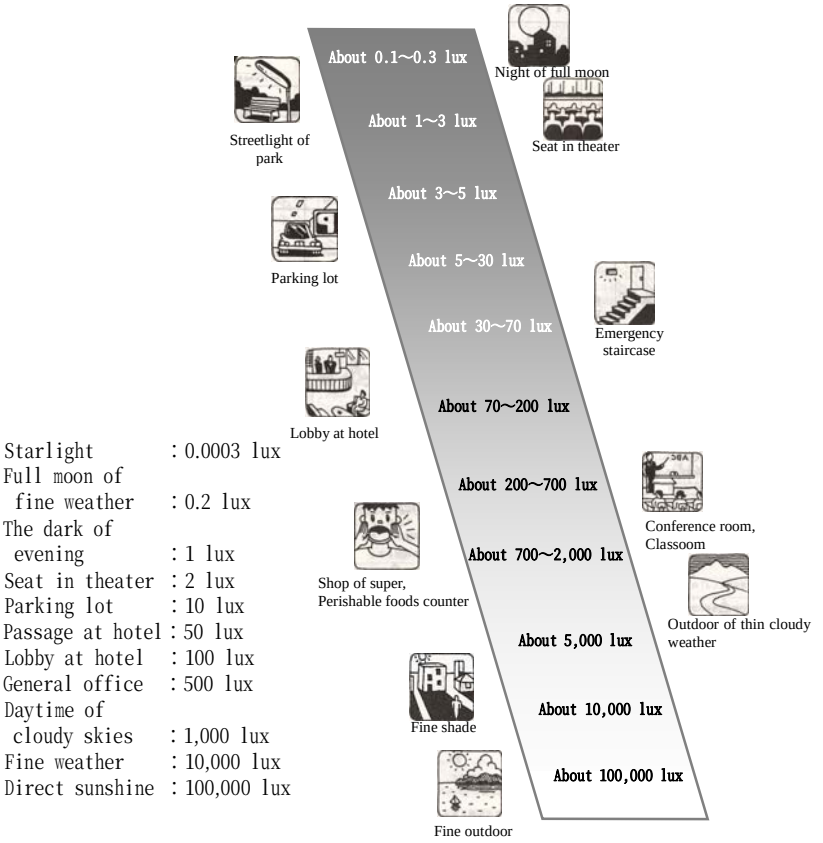


Figure 15-4-1-1 Brightness and illuminance

15-4-2 Lighting Lamps along the Boundary

30. As an example of lighting lamps along the boundary, 270 W street lamp with a height of 12 meters is shown below.

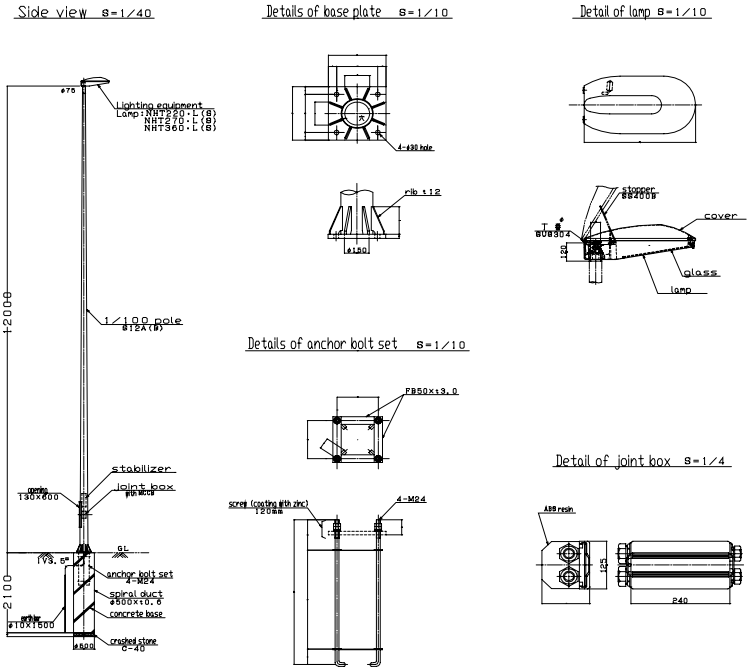


Figure 15-4-2-1 270 W Street Lamps

Photo 15-4-2-1 Site Condition of Lighting Lamps along the Boundary

Above ↑
Lighting lamp on the wall of warehouse
Left ←
Lighting lamps along the boundary face outside of the yard to illuminate the boundary. A lighting lamp points inside of yard to illuminate the yard.

15-4-3 Floodlight for the Wharf

31. The installation of lighting poles in the yard and apron is not allowed because it obstructs cargo handling. Thus, lighting lamps illuminate the yard and apron from the back of the yard and the edge of the apron respectively.

32. The following figure shows an example layout of three 970 W floodlights with a height of 15 m. In the actual layout, the capacity, its number and setting height of floodlights should be examined considering the site condition.

33. In addition, it is recommendable that shield plate or hood be installed on the floodlight to prevent interference with vessels navigating offshore.

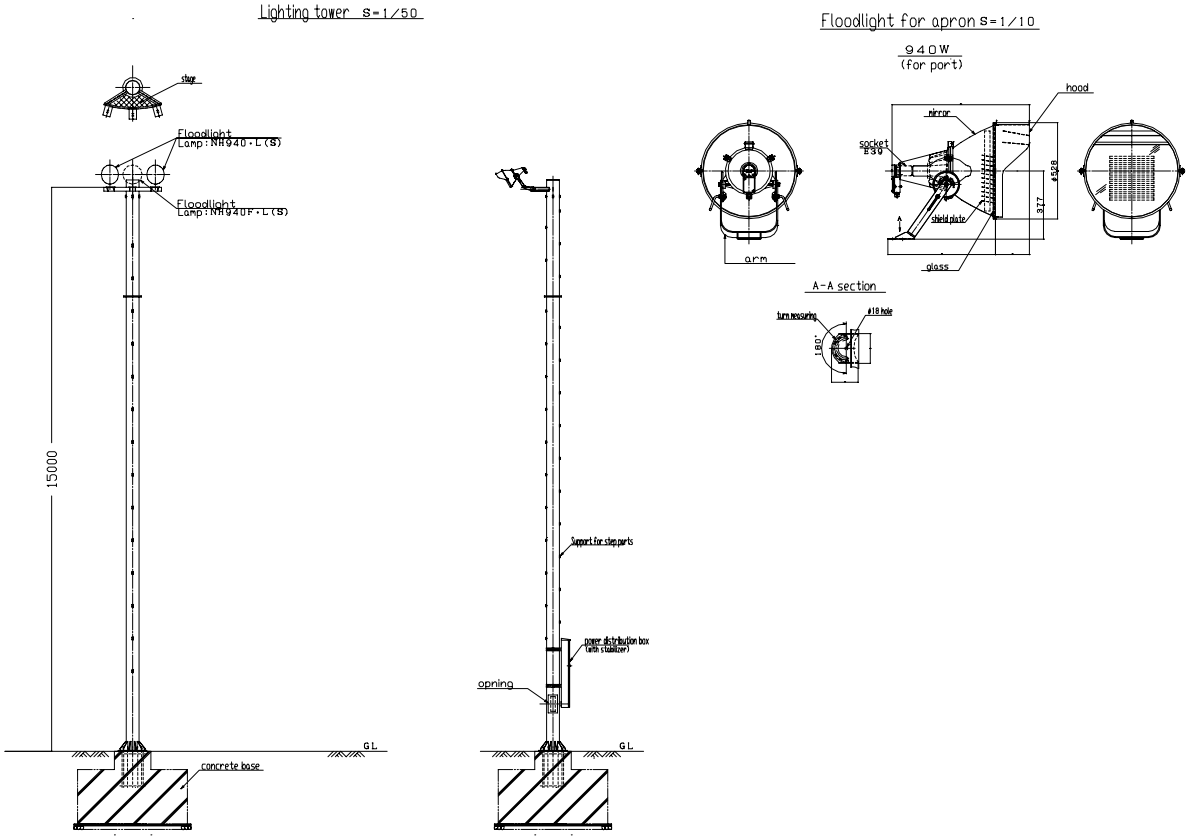
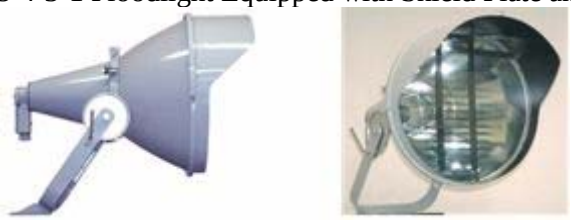


Figure 15-4-3-1 Floodlight for the Wharf

Photo 15-4-3-1 Floodlight Equipped with Shield Plate and Hood



15-5 SURVEILLANCE CAMERA UNIT

34. Shown below are functional requirements for the surveillance camera units.

- It must be able to cover all boundary areas of the restricted area for surveillance.
- It must be able to watch any particular area in the camera operating range within the restricted area.
- With the combination of surveillance equipment and lighting equipment, it must be possible to identify specific actions of any suspicious person when such person's intrusion or tampering with the fence is underway.
- Camera images must be recorded for a certain period of time.
- The functionality of the surveillance equipment must be maintained for a certain period of time upon any power outage.

35. Shown below are standard functional requirements of the camera system.

- It must have the place and time of the shooting recorded at the same time.
- The frame rate of the recorded images must satisfy the surveillance camera requirements.
- Preventive measures must be provided against any potential functional disorder resulting from electromagnetic interference.
- Where there are network connections with the outside, preventive measures must be implemented against any virus infection, network troubles, unauthorized access etc.
- It must be able to do automatic sequential surveillance in a preset sequence.
- It must be able to prevent any diversionary actions by coordinated action with other cameras than the one shooting the detected point.
- It must be able to monitor multiple areas at the same time.
- It must be able to turn at speeds that will not constitute any obstacle to the detection of an intruder.
- Measures shall be provided against any condensation, ingress of raindrops, lightning and salt damage.

36. Shown below are standard specifications for the surveillance camera units.

- Group A facilities shall be provided with surveillance cameras. With Group B facilities, it is recommended to install surveillance cameras depending on the using conditions.
- In the assumed illuminance of 3 lux at night, the camera and lens shall be of the specifications that enable to identify the motions of a person in black clothes at the largest shooting range.
- Pier cameras must be installed at such positions as at the end of apron that will not interfere with the loading / unloading operations. The maximum range covered by a single camera shall be 50 - 350 m from the ordinary extension of a pier in consideration of common pier extentions. (The optimum range is to be determined depending on the specifications of the pier for the camera installation.)
- The surveillance cameras used in buildings, such as passenger terminal, shall be of specifications that allow the monitoring of major traffic lines in the environment within such buildings.
- Surveillance images shall be preserved for the period of transportation to the destination plus about one week or over.
- There shall be ability provided to capture image data from the preserved surveillance images for transferring to external media.
- Images shall be in color.
- Monitor screen shall be 20 inches or over.
- There shall be telescopic function and auto-focusing function (any object in the scope of the camera gets automatically in focus irrespective of night or day) provided.
- The turning range shall allow surveillance of the pier, boundary areas and the inside of the yard.
- In order to turn the camera to one of the preset observation points based on a report (or alarm from the intrusion detection sensors) and to zoom in on any suspicious person, the standard preset turning speed shall be 180 deg /second or over horizontally and 60 deg /second or over vertically. The turning speed under manual operation shall allow the tracking of a running person.
- For coordinate action with the intrusion detection sensor signals at the boundary

areas and for the fixed point observation within the yard, the points must be preset. The number of preset points is selected as required for the observation.

- The surveillance cameras used at the port shall be of a robust and highly reliable outdoor oriented construction that will withstand long period of service, with sufficient consideration of salt damage, weather etc.
- In consideration of winds, rain, humidity and temperature changes, the cameras should be equipped with wiper, defroster and other devices for securing visibility or be of the construction that allows equipment of such devices.
- Sufficient consideration shall be given against any lightning strike.

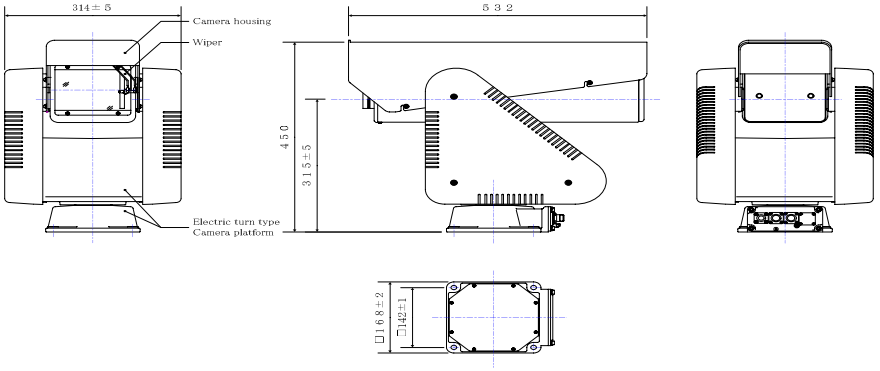
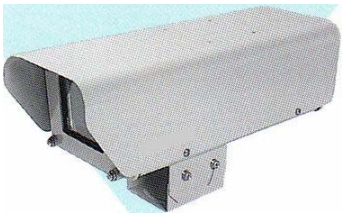


Figure 15-5-1 Turning Type CCTV Camera (Monitoring capacity within 350 m or more)
314(W) x 450(H) x 532(D) mm

Photo 15-5-1 Reference Photograph of CCTV Camera

Turning type CCTV camera (monitoring capacity within 350 m)
430(W) x 460(H) x 450(D) mm



Fixed type CCTV camera (monitoring capacity within 80 m)
153(W) x 202(H) x 425(D) mm

Dome shape CCTV camera for inside the building

37. Examples of installation of CCTV camera is shown blow. (Control panel is also set on the pole.)

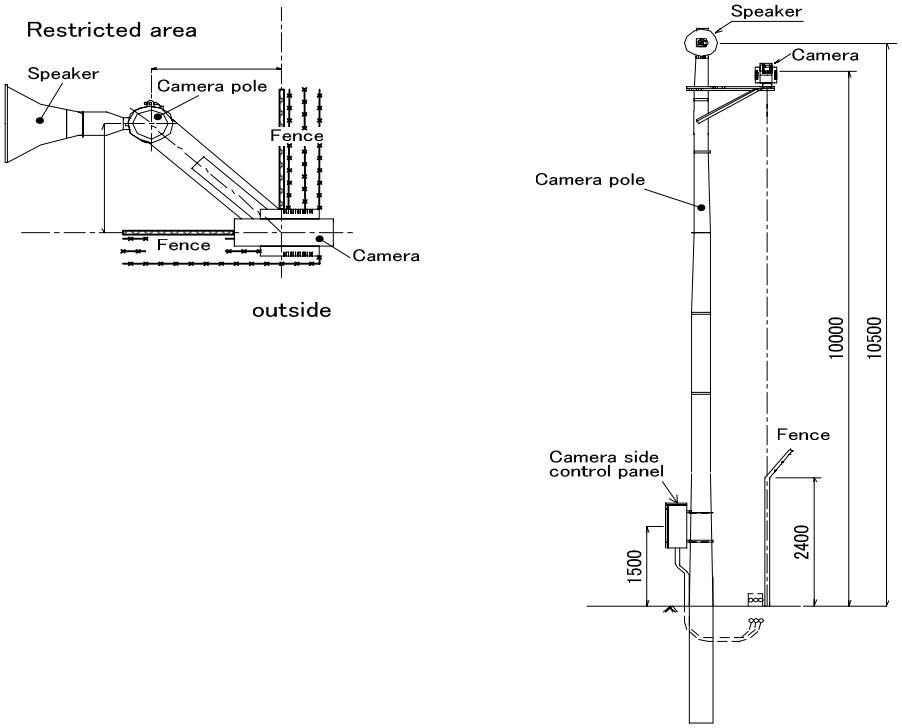


Figure 15-5-2 Example of Installation of CCTV Camera

Photo 15-5-2 Site Condition of CCTV Camera System

Above ↑
Speaker is also on the CCTV camera pole.

Left ←
The arm was utilized to set CCTV camera over the fence.
The control panel is on the lower part of the pole.

Above ↑
CCTV camera is on the lighting tower.

Left ←
CCTV camera and speaker are on the lighting tower.

Right →
CCTV camera and speakers are on the wall of an administration building.
(Speakers are directly fixed on the wall.)

15-6 HAND LUGGAGE INSPECTION EQUIPMENT

38. Shown below are functional requirements for the hand luggage inspection equipment.

- It must be able to easily detect weapons, explosives and other objects that are prohibited to bring onto the ship.
- For the inspection of hand luggage, every inspection site must be equipped with a set of X-ray inspection device and portal-type metal detector as well as handheld metal detector.
- To prevent any concealed carriage of hazardous materials, the inspections of hand luggage must be conducted through the X-ray inspection device simultaneously with the inspection of the person carrying the luggage through the portal-type metal detector. For that purpose, the X-ray inspection device and the portal-type metal detector must be positioned in parallel.
- Handheld metal detectors must be provided at the inspection site so they can be used at any time as necessary.

39. Shown below are standard specifications for the hand luggage inspection equipment. It is desired that international passenger facilities that international regular passenger liners routinely come and go and are visited by a lot of passengers be provided with X-ray inspection devices and portal-type metal detectors for the inspection as of hand luggage.

1) X-ray inspection device
   - It must display the entire object being inspected
   - It must have sufficient capacity to distinguish
   - It must have sufficient penetrating power
   - It must be able to obtain information on the material of any explosives or any other hazardous objects

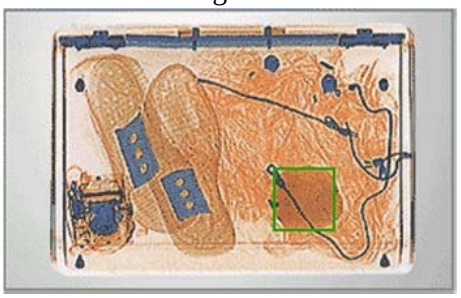
2) Metal detector
   - It must be able to detect metallic objects irrespective of their directions and positions
   - It must be able to detect stainless steel and non-ferrous metals such as aluminum
   - It must be sensitivity adjustable
   - Portal type metal detector and handheld metal detector are used for the inspection of personal effects of the passengers

40. The following are examples of photos from an X-ray inspection device.

Photo 15-6-1 Material Detection Function

Material identified and such identified material shown colored (3 colors)

Photo 15-6-2 Suspicious Object Tracking Function



Specific material automatically identified and shown in frame of a color specific to the material (3 colors)

41. Shown below are photos of metal detectors.

Photo 15-6-3 Walk-through Type Metal Detector (Gate dimensions: 2055 x 700 mm)

Photo 15-6-4 Handheld Metal Detector (Outside dimensions: 140 x 400 mm)

15-7 MAINTENANCE OF PORT SECURITY FACILITIES

42. In order to properly maintain the functions of port security facilities, inspections and services shall be conducted on a regular basis. Maintenance work for keeping the facilities in proper working conditions includes routine inspections, scheduled inspections and maintenance.

- Inspection: In order to keep the security facilities in proper working conditions, inspections must be conducted on a scheduled basis.
- Maintenance: Once it has been determined that the security facilities are not functioning properly as a result of routine inspections, scheduled inspections or report, maintenance work must be conducted without delay.

43. Shown below is the outline of the maintenance work.

Table 15-7-1 Outline of the Maintenance Work

Maintenance category	Purpose	Action
Routine inspection	Visually inspect the equipment for any unusual conditions. Or, check in the course of daily operations for any fault.	・ Check the inspection items and follow the inspection procedures in accordance with the using instructions. ・ Actions by the operators
Scheduled inspection	Check the operating conditions of each piece of the equipment and at the same time conduct the maintenance with the sections that cannot be checked in routine inspections for early detection of any fault and for prevention of fault that may arise as a result of deterioration by ageing.	・ To be conducted based on the scheduled inspection contract. ・ To be conducted by the maintenance service contractors or equipment manufacturers.
Maintenance	Take remedial actions upon any accidental malfunction or fault.	・ To be conducted by on-call maintenance service contracts. ・ To be conducted by the maintenance service contractors or equipment manufacturers.

44. Maintenance plans must be developed in a period of 10 years with the items that should be inspected on a regular basis.

Table 15-7-2 Long Term Scheduled Maintenance List (Summary) (Example)

Category	Device	Maintenance	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Remarks
Barrier	Fence	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Gate	Replacement part											
	Vehicle stopping device	Other											
Security lighting equipment	Lighting equipment	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Distribution panel for lighting	Replacement part	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	Lamp etc.	
		Other											
Surveillance camera equipment	Surveillance camera	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
		Replacement part		Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	Wiper etc.	
		Overhaul						12 units/year	12 units/year	12 units/year			
		Other											
Instrusion detection sensor	Sensor	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
		Replacement part											
		Other											
	Sensor relay panel	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
		Replacement part		Packing etc.		Packing etc.		Packing etc.		Packing etc.		Packing etc.	
		Other											
Hand luggage inspection devices	X-ray inspection device	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Metal detector	Replacement part		X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	X-ray tube etc.	
		Other											
PA equipment	Loudspeaker	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Power amplifier	Replacement part											
		Other											
Control system	Surveillance control panel	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Local control panel	Replacement part		Packing etc.		Packing etc.		Packing etc.		Packing etc.		Packing etc.	
		Other											
	Surveillance control server	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Video recording device	Replacement part											
		Device renewal						35%	35%	30%			
		Other											
	Surveillance monitor	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
	Operation terminal	Replacement part											
		Device renewal						35%	35%	30%			
		Other											
Power equipment	UPS	Scheduled inspection	-	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	Once/year	
		Replacement part											
		Battery renewal						1 unit/year	1 unit/year	1 unit/year			
		Other											

1. "Other" includes maintenance expenses (such as repair expenses for any unexpected fault).
2. Surveillance cameras are to be overhauled at a rate of 1 unit a month starting in the sixth year (cycle time of 6 years).
3. Surveillance conntrol servers, video recording devices, surveillance monitors and operation terminals (servers) are to be renewed progressively (30%/year) each year starting in the sixth year.
4. UPS batteries are to be renewed progressively each year (1 unit/year) starting in the sixth year.

Table 15-7-3 Long Term Maintenance Costs (Summary) (Example)

Item (category)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Remarks
Total of scheduled inspection expenses												
Total of replacement part expenses	Scheduled replacement, device renewal etc.											
Total of maintenance expenses	Unscheduled fault remedies											
Communications and running costs	Security communication lines etc.											
Power consumption	Security equipment, security lighting etc.											
Other												
Total expenses												

45. Dedicated personnel must be designated in advance for the maintenance and service of the port security facilities and be held responsible for the proper maintenance of the facilities.

- The personnel must know where to contact the representatives of the maintenance service contractor or maintenance personnel of the equipment manufacturers. Personnel must also know the contents of maintenance work that can be conducted for immediate remedy including the time for those maintenance personnel to arrive at the site.
- Once it has been made clear that any of the security facilities is not properly maintained, notify the maintenance contractor promptly by telephone for the execution of the maintenance work.
- It is recommended to have the organization / assignment of employees and education and training programs developed for the execution of some of the scheduled inspections and remedial actions for any accidental fault or malfunction.

46. If it is impossible to take immediate maintenance actions, some provisional actions shall be taken to supplement the functionality until the functions of the relevant security facility are restored.

CHAPTER-16. OUTLINE OF PFSA AND PFSP MANUALS

16-1 PORT SECURITY MEASURES IN INDONESIA

1. The International Convention for Safety of Life at Sea was revised and the ISPS Code was ratified by 122 Contracting Governments in December 2002. The Contracting Governments were obligated to enhance security measures in cooperation with all ports and vessels in the world. Indonesian government also ratified the SOLAS Convention and decided to comply with the ISPS Code.

2. The government nominated DGSC (now DGST: Directorate General of Sea Transportation), Ministry of Communications (now MOT: Ministry of Transportation) as the designated authority by laying down Ministerial Decree (KM33:2003 and KM3:2004).

3. Director General of DGSC gave instruction through a letter to ADPEL/KAMPEL dated March 19, 2004 that ADPEL/KAMPEL shall make the port facility security assessment (PFSA), shall prepare the port facility security plan (PFSP) and shall implement it. In addition, the letter indicated that the port security officer (PSO) shall be designated to manage the port facility security officers (PFSOs) designated for each port facility and that the port security committee (PSC) shall be established for each international public port to exchange information and make decisions related to security measures.

4. The recognized security organization (RSO) is authorized to carry out the port facility security assessment (PFSA) and to prepare and evaluate the port facility security plan (PFSP). At present, there are 25 RSOs in Indonesia, a number which some criticize as being too large. Some RSOs are also criticized for having insufficient knowledge and experience.

5. A port facility security plan (PFSP) is formulated on the basis of a port facility security assessment (PFSA), for each port facility, adequate for the ship/port interface. A PFSP prepared by a RSO is examined and approved by DGST. Security measures are implemented according to the PFSP.

16-2 OUTLINE OF PFSA MANUAL

16-2-1 General

6. The Port Facility Security Assessment (PFSA) is the initial step of implementing port facilities security measures and is an essential and integral part of the process of developing and upgrading the port facility security plan. The PFSA must correspond to the provisions of Chapter XI-2 of the SOLAS Convention and ISPS Code.

7. Basically, the port facility security assessment shall be carried out by the Contracting Government within whose territory the port facility is located. Alternatively, the Contracting Government can delegate a recognized security organization (RSO) to carry out the port facility security assessment and then review and approve it for compliance with the ISPS Code. In Indonesia, the latter is adopted. The preparation of PFSA and the subsequent procedures are shown in Figure 16-2-1-1

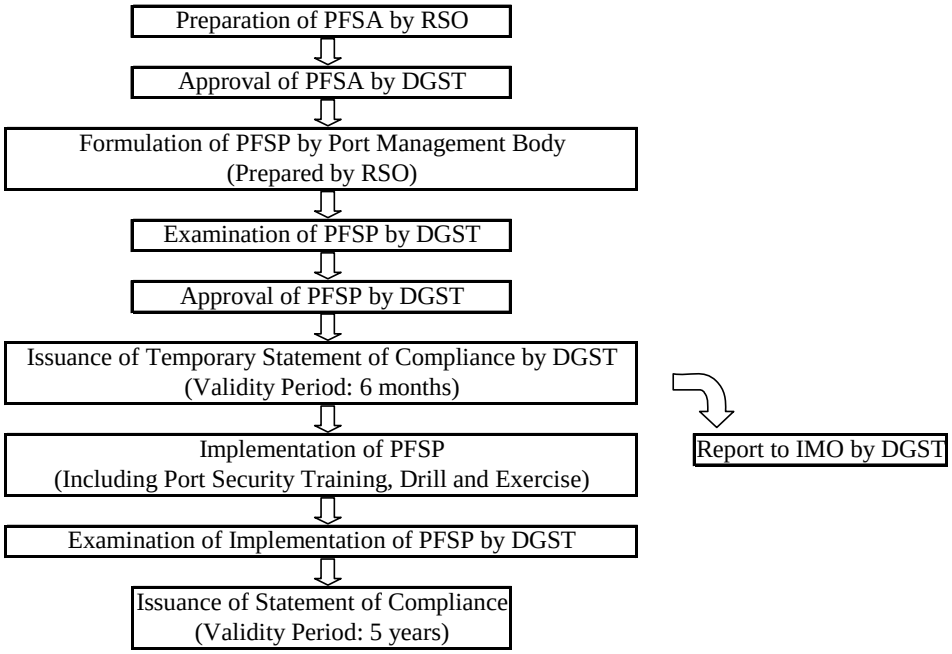


Figure 16-2-1-1 Procedure Chart

8. The port facility security assessment shall periodically be reviewed and updated, taking account of changing threats and/or minor changes in the port facility and shall always be reviewed and updated when major changes to the port facility take place.

9. According to the ISPS Code, the port facility security assessment shall include, at least, the following elements:

- Identification and evaluation of important assets and infrastructure it is important to protect;
- Identification of possible threats to the assets and infrastructure and the likelihood of their occurrence, in order to establish and prioritize security measures;
- Identification, selection and prioritization of countermeasures and procedural changes and their level of effectiveness in reducing vulnerability; and
- Identification of weakness, including human factors in the infrastructure, policies and procedure

10. The overall formation flow of PFSA is as follows;

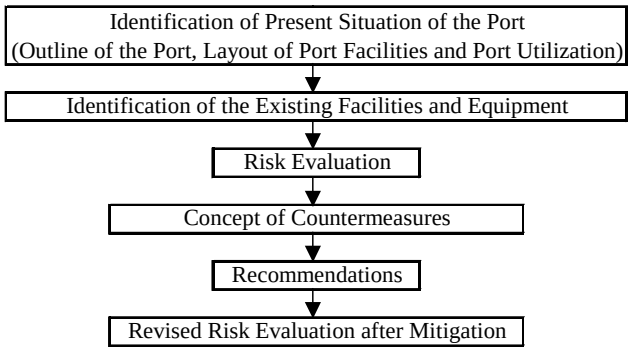


Figure 16-2-1-2 Formation Flow of PFSA

11. The framework of PFSA is as follows;

1) Present situation of the port
2) Identification of the existing facilities and equipment
3) Risk evaluation
4) Concept of Countermeasures
5) Recommendations
6) Revised risk evaluation after mitigation

16-3 PORT FACILITY SECURITY PLAN

16-3-1 Objective of PFSP

12. According to Part A of the ISPS Code, Port Facility Security Plan means a plan developed to ensure the application of measures designed to protect the port facility and ships, persons, cargo, cargo transport unit and ship's stores within the port facility where there are risks of a security incident. PFSP is prepared for port facilities serving the following ships engaged on international voyages.

1) Passenger ships, including high-speed passenger craft
2) Cargo ships, including high-speed craft, of 500 gross tonnage and upwards
3) Mobile offshore drilling units

13. PFSP shall be in the working language of the port facility (Bahasa Indonesia) and shall address, at least, the following:

1) Measures designed to prevent weapons or any other dangerous substances and devices intended for use against persons, ships or ports and the carriage of which is not authorized, from being introduced into the port facility or on board a ship;
2) Measures designed to prevent unauthorized access to the port facility, to ships moored at the facility, and to restricted areas of the facility;
3) Procedures for responding to security threats or breaches of security, including provisions for maintaining critical operations of the port facility or ship/port interface;
4) Procedures for responding to any security instructions the Contracting Government (the government of Indonesia), in whose territory the port facility is located, may give at security level 3;
5) Procedures for evacuation in case of security threats or breaches of security;
6) Duties of port facility personnel assigned security responsibilities and of other facility personnel on security aspects;
7) Procedures for interfacing with ship security activities;
8) Procedures for the periodic review of the plan and updating;
9) Procedures for reporting security incidents;
10) Identification of the port facility security officer including 24-hour contact details;
11) Measures to ensure the security of the information contained in the plan;
12) Measures designed to ensure effective security of cargo and the cargo handling equipment at the port facility;
13) Procedures for auditing the port facility security plan;
14) Procedures for responding in case the ship security alert system of a ship at the port facility has been activated; and
15) Procedures for facilitating shore leave for ship's personnel or personnel changes, as well as access of visitors to the ship including representatives of seafarers' welfare and labour organizations.

16-3-2 PFSP Form

14. Each individual PFSP varies depending on the circumstances of a port facility or port facilities, possible threats and the likelihood of their occurrence, weakness including human factors in the infrastructure, policies and procedures, etc. However, the minimum contents which should be included in a PFSP are prescribed in the ISPS Code as mentioned above. Moreover, port security measures to be employed are limited. Therefore PFSP can be standardized and the standard form is shown in Part 2.

15. When an inexperienced person tries to formulate a PFSP or a person in charge prepares or examines many PFSPs, the PFSP form is quite useful for avoiding omissions. This form can be used by an RSO who formulates a PFSP, members of a Port Security Committee who examine it as an outsourcer or a responsible person and DGST officials who examine it as an official of a designated authority.

16. A person who wants to formulate a PFSP follows the procedures below:

1) Cover page: Replace phrases written in red letters including XXX with suitable phrases
2) Main part: Replace phrases written in red letters including XXX with suitable phrases
   Unnecessary items are deleted.
3) Supplementary Figures:
   a) Location of the Facility
      Indicate a port facility or port facilities in a port layout map.
   b) Location of the Restricted Area
      Indicate the restricted area in a port facility layout.
      The restricted area shall be decided according to the technical standards and its commentaries.
   c) Layout Plan of the Facility
      Indicate main port security facilities and equipment in the port facility layout. Necessary facilities and equipment are decided based on PFSA.
   d) Security Organization
      Indicate the security organization.
4) Appendices
   a) Procedure of Security Measures during Interim Period
      Replace phrases written in red letters including XXX with suitable phrases
   b) Procedures of Access Control for Personnel and Cargo
      Basically describe without modification.
   c) Procedures of Monitoring Security
      Described items may change according to a port facility group. For example, CCTV system is not required for a group B port facility.
   d) Procedure of Maintenance Works for Port Security Facilities
      Described items may change according to a port facility group.
      Unnecessary items are deleted. Specifications of each item are decided according to the technical standards and its commentaries.
      Fill in required quantities.
   e) Document Management Rules
      Basically describe without modification.
      Replace phrases written in red letters including XXX with suitable phrases

f) Procedures of Emergency Management Plan
g) Procedures of Declaration of Security
h) Evacuation Route

After deciding appropriate evacuation routes, indicate them on the port facility layout.

5) Annexes
   a) Composition of the Port Security Committee

   Fill in the name of the PSC chairman on the column of PSC, and fill in the name of the PSC members on the right hand column of PSC.

   Fill the names of PSO, PFSOs and Deputy PFSOs on other columns.
   b) Emergency Contact List

   Fill in on each column of Organization/Title, Name, Tel. and Remarks (if necessary) using sample form.
   c) Format of a Declaration of Security

   Describe without modification. This format is the same as that shown in the ISPS Code.
   d) Format of the Security Log

   Describe without modification.
   e) Contrast Chart for ISPS Code and PFSP

   Describe without modification.

16-3-3 Contents of PFSP Manual

17. The following contents shall be included in the manual

1) General Provisions
2) Port Facility Security Measures Pegged to Security Level
3) Installation and Maintenance of Port Security Facility
4) Designation of Port Facility Security Officer
5) Training, Drills and Exercises on Port Facility Security
6) Audit Regarding Works for Ensuring Security of Port Facilities
7) Information Management Method Regarding Security of International Port Facilities
8) Response to Occurrence of Security Hazard
9) Amendment of PFSP
10) Contrast Chart for ISPS code and PFSP

CHAPTER-17. PORT SECURITY REGULATIONS AND OTHER SUPPORTING TOOLS

17-1 PORT SECURITY REGULATIONS

1. The port security regulations that have been established in Indonesia until now are as follows.

1) Ministerial Decrees (KM33: 2003 and KM3: 2004) prescribed the following items.
   - International Convention for the Safety of Life at Sea (SOLAS), 1974/ISPS Code in Indonesia is effective in July 1, 2004.
   - DGST (DGSC) is appointed as Designated Authority (DA).
   - The following policies to implement International Convention for the Safety of Life at sea (SOLAS), 1974/ ISPS Code are decided by DGST (DGSC)
   - The DGST (DGSC) is responsible for supervising implementation of the Decree.

2) Circular Letter of Director General of DGST (DGSC) dated March 19, 2004 prescribed the following items.
   - ADPEL/KAMPEL shall make the port facility security assessment (PFSA), shall prepare the port facility security plan (PFSP) and shall implement it.
   - The port security officer (PSO) who manages the port facility security officers (PFSOs) designated for each port facility shall be designated
   - The port security committee (PSC) shall be established for each international public port to exchange information and make decisions on security measures.

2. In addition to the abovementioned regulations, the Study Team proposes the port security regulation that should be established to ensure the implementation of port security measures. The contents of proposed port security regulation are as follows.

Port Security Regulation for Implementation of Port Security Measures (Draft)

Chapter 1: General Regulations

- Purpose (Article 1)
- Definitions (Article 2)
- Setting of Security Levels (Article 3)

Chapter 2: Security of International Port Facility

- Measures Necessary for the Security of International Port Facility (Article 4)
- Measures corresponding to Security Levels (Article 5 and 6)
- Technical Standards on Port Security (Article 7)
- Port Security Committee (PSC) (Article 8)
- Port Security Officer (PSO) (Article 9)
- Port Facility Security Officer (PFSO) (Article 10)
- Drills and Exercises (Article 11)
- Port Facility Security Plan (Article 12)
- Revision of the PFSP (Article 13)
- Measures Necessary for the Security of International Port Facilities other than Those Prescribed in Article 4 (Article 14)
- Improvement advice (Article 15)
- Reports (Article 16)

- On-site Inspection (Article 17)
- Measures Necessary for the Security of International Water Area (Article 18)
- International Water Area Patrol and Monitor (Article 19)

3. The following procedures should also be established for the effective implementation of port security measures

- Procedure for internal audit conducted by port management body (PMB) staff other than PFSO
- Procedure for external audit conducted by DGST Headquarters staff or ADPEL staff other than PSO
- Procedure for drills and exercises involving related organizations

17-2 DECLARATION OF SECURITY (DOS)

17-2-1 General

4. According to the revised SOLAS Convention Chapter XI-2, declaration of security means an agreement reached between a ship and either a port facility or another ship with which it interfaces specifying the security measures each will implement.

5. Basic procedures of completing DoS have already been established in Indonesia. In a port which complies with the ISPS Code, PSO and PFSO must have good knowledge of DoS because DoS in included in PFSP; all PFSOs have attended the PFSO training course. On the other hand, DoS is requested even in a port which has not complied with the ISPS Code. In such ports, it is difficult for the Port Administrator and PSO to understand the ISPS Code and security measures in the port, complete the DoS and take security measures. More detailed procedures and training are needed.

17-2-2 Procedure to Complete DoS at a Port which is not Compliant with the ISPS Code

6. Usually these ports receive very few international vessels, and international ships and domestic ships use the same berth. In addition, there are few officials who have sufficient knowledge and experience on port security and DoS in the port, because PFSP has not been formulated.

7. Advance preparation items are as follows:

1) It is necessary to establish port security system which has to be initiated when DoS is completed.
   a) A signer of DoS in a port is the Head of KPLP when DoS is requested from a ship. This fact shall be notified to all relevant organizations.
   b) It is suggested that the Head of KPLP be trained on the duties of PFSO.
   c) A responsible official shall be selected from a port management body such as PELINDO for implementing port security tasks after completing DoS. This official should be an official responsible for the wharf which the international ship berths at and also be assumed to be a PFSO in the future. This fact also shall be notified to all relevant organizations.
   d) ADPEL/KAMPEL has to learn how to set out the security level.

2) Location of the wharf where an international ship berths and the restricted area where unauthorized vehicles and persons are prohibited from entering shall be set out. It is advisable to set out the restricted area so that there is enough space to load/unload and place international cargo and so that neighboring domestic cargo handling is not affected. Details are found in the technical standards.

3) Mobile fence to partition the restricted area from other areas and simplified gates to conduct access control of entering vehicles and persons shall be prepared (2a+b). They should be able to be used at any time.

Note: If enough security guards are stationed in the restricted area, even mobile fence can be omitted. Containers and other structures can be proxy for mobile fence.

4) Officials to implement security works when an international ship enters a port shall be nominated. In case that security guards are employed from an outside company, a contract shall be preliminarily made with the company. It is preferable that these security guards have been trained for port security. The above mentioned officials and security guards are obligated to bring a communication tool including mobile phone with them to communicate with the relevant persons. Required number of officials and/or security guards is decided considering the extent of the restricted area. Minimum of three shall always stay in the restricted area.

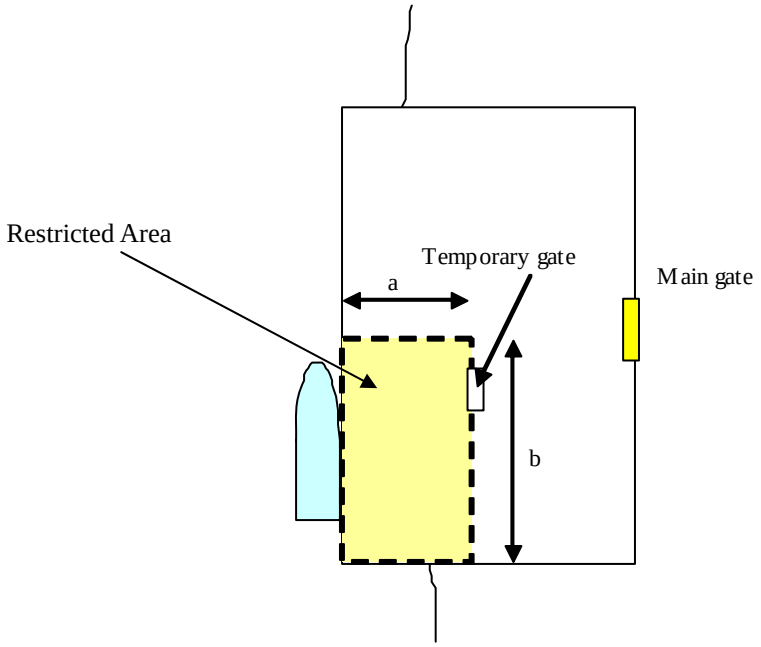


Figure 17-2-2-1 Restricted Area and Mobile Fence

5) Communication network shall be formulated for the time when an emergency or a question arises. It shall be printed and tacked so that all relevant persons can see it.

8. DoS completion procedures are as follows:

1) A ship submits a pre-arrival notification of ship security to ADPEL/KAMPEL at least 24 hours in advance. In addition, SSO requests the port side to conclude DoS, if necessary. In case that an international passenger ship berths at a wharf and that security facilities such as X-ray device are requested for checking passenger's baggage, an earlier request is needed.

2) SSO sends the DoS form to the port side in which "Name of Ship", "Port of Registry", "IMO Number", "Security level for the Ship" and "Security measures implemented by the Ship) are described. As to the last item, SSO writes his/her signature in the columns which describe the security measures the ship implements. In addition, SSO indicates the items to be confirmed or coordinated, if necessary.

3) The port side indicates "Name of port facility", "Security level for the Port" and "Security measures implemented by the Port". The port side writes his/her signature in the columns which describe the security measures the port implements and puts "–" in the columns if no measures will be implemented. The port side also confirms any points raised by SSO. In addition, the port side indicates the items to be confirmed or coordinated. Then the form is sent to SSO.

4) After confirmation, both sides conclude DoS. The final signatures are exchanged through an agent or FAX, or both sides meet and exchange signatures after the ship arrives.

9. Items implemented before an international ship berths at a wharf are as follows:

- Mobile fence and simplified gates are placed on the border of the restricted area.
- The officials and/or security guards patrol in and around the restricted area and check whether suspicious goods are placed in the area or not.
- Access control of vehicles and persons is conducted.
- Ability to communicate with the ship is confirmed.

10. Items implemented while an international ship is berthing at the wharf are as follows. Official and/or security guards take the following security measures:

- To check vehicles and persons entering the restricted area by looking at IDs or cargo documents.
- To monitor suspicious vehicles and persons and ensure they do not to approach the ship
- To monitor cargo handling
- To check ship's stores at the gate
- In the case of an international passenger ship, to check passengers and their belongings including baggage by metal detector to prevent dangerous goods from being brought onto a ship.
- In the case of an international passenger ship, to prevent passengers from entering other areas through monitoring.

11. Items implemented after an international ship leaves the port are as follows:

- Mobile fence and simplified gates are taken away.
- The responsible person belonging to the port management body has custody of the signed DoS for the predetermined period and also records the completion of DoS in the log.

12. It is proposed that DoS shall be retained for three years from the date of completion.

13. In principle, a DoS should be documented every time an international ship is berthed at the port facility. The Japanese government has decided valid durations of DoS to be as follows. Once a DoS is completed, if the ship comes to the port facility many times within the valid duration, consultation on the security measures is not needed. If the security level changes during the above periods, DoS becomes invalid.

a) Security level 1: 90 days
b) Security level 2: 30 days
c) Security level 3: only one time

17-3 AUDIT

14. In Indonesia, the intermediate audit to examine whether various measures for port security including PFSP and its implementation are being appropriately conducted is scheduled to start from December 2006. The ISPS Code stipulates that each Contracting Government shall communicate to IMO a revised and updated list showing all the approved PFSPs at five year intervals. The time coincides with the halfway point of 5 years.

15. According to the ISPS Code, audits are implemented for the following targets:

- To check whether PFSP responds to changes of a port
- To check whether security measures implemented at a port complies with PFSP
  To check whether PFSP complies with the ISPS Code

16. In addition to the above, the following can be targets. In a certain country, they were actually audited.

- To check whether PFSA complies with the ISPS Code
- To check whether PFSP is formulated based on PFSA
- To check whether laws and regulations on port security comply with the ISPS Code
- To check whether central government's tasks on port security comply with the ISPS Code

17-4 PORT SECURITY COMMUNICATION SYSTEM AND PROCEDURE

17. The communication systems for port security are classified into the following three types; communications between ships and port facilities, communications within port facilities and communications with PSC, police and other security organizations. Immediate and assured procedures shall be required in all cases.

- Communications between ships and port facilities: Ordinary international VHF radiophone or telephone and fax using INMARSAT telecommunication satellite are often used for communications between land and ships on a voyage.
- Communications within port facilities: Most of the port facility security personnel use walkie-talkie or mobile phone as the primary communication device. Public Address (PA) System is very effective to announce to the workers inside the restricted area or deck of the ship in case of emergency.
- Communications with PSC, police and other security organizations: At the time incident occurs, it is necessary to prepare communication devices which can contact those relevant organizations immediately and securely.

CHAPTER-18. PORT SECURITY DEVELOPMENT PLAN

18-1 GENERAL

1. This port security development plan is composed of the development plan for port security facilities and equipment and the development plan of port security human resources including education and training.

2. Since 12 ports among total 26 ports have already complied with the ISPS Code, the Study Team surveyed the state of implementation of their PFSPs and pointed out matters in question. Based on the survey, the development plan for port security facilities and equipment which are needed for more reliable security measures is drafted.

3. The remaining 14 ports have not complied with the ISPS Code. The Study Team conducted a site survey for 10 ports, carried out PFSAs and formulated PFSPs. In the process, port security facilities and equipment which are thought to be required to make the ports comply with the ISPS Code were proposed and integrated into the development plan.

4. When discussing port security facilities and equipment, the Study Team classified the ports receiving international ships into two groups, Group A and B, and proposed the facilities and equipment which is thought to be required for each group.

- Group A Container wharf, passenger wharf and hazardous material wharf
- Group B Other wharves

5. As to Group A ports, advanced security measures including CCTV camera are taken. In addition, it is proposed that an X-ray device to check baggage be installed in passenger terminals.

6. The Study Team submitted to DGST the Urgent Security Development Plan for the application to 2006 yen-loan package last summer. The Urgent Security Development Plan is composed of the improvement of existing security facilities and installation of new security facilities and equipment such as CCTV camera motoring system for seven public ports. However, DGST did not submit the above Urgent Plan to BAPPENAS for the application last year because the coordination between relevant organizations such as PELINDO had not yet been completed. Therefore, the Study Team included the above Urgent Plan in the Port Security Development Plan.

7. According to the JICA study on maritime safety plan concerning search and rescue prepared in 1989, 164 patrol boats should be stationed at 45 major ports in Indonesia. However, not all the required patrol boats have been stationed yet. For the ports which receive international ships, at least two patrol boats should be stationed. In case of the international port which has more than two patrol boats but no patrol boat of which age is less than 20 years, it is proposed that at least one patrol boat be replaced.

18-2 DEVELOPMENT COST

8. The cost is estimated here at the preliminary feasibility study level. The exchange rate applied for the cost estimate adopts the buying rate of PT Bank Mandiri (PERSERO) Tbk Cabang Jakarta Menara Thamrin dated 1st August 2005 as:

US$ 1.0 = Rp. 9,770 JY 1.0=Rp. 86.79

Table 18-2-1 Development Direct Cost

Unit:US$

	Port	Facilities and Equipment	Patrol Boat	Total
I	Belawan	2,780,000		2,780,000
	Dumai	1,211,000	722,000	1,933,000
	Pekanbaru		722,000	722,000
	Tg.Pinang	724,000		724,000
	sub total	4,715,000	1,444,000	6,159,000
BDA	Batam	244,000	1,444,000	1,688,000
II	Teluk Bayur	855,000	722,000	1,577,000
	Palembang	1,416,000		1,416,000
	Panjang	1,000		1,000
	Tg.Priok	4,100,000		4,100,000
	Pontianak	1,054,000	722,000	1,776,000
	Banten	61,000	722,000	783,000
	sub total	7,487,000	2,166,000	9,653,000
III	Cilacap	254,000		254,000
	Tg.Emas	1,000		1,000
	Tg.Perak	4,100,000		4,100,000
	Benoa	123,000		123,000
	Kupang	1,438,000	722,000	2,160,000
	Banjarmasin	501,000		501,000
	sub total	6,417,000	722,000	7,139,000
IV	Samarinda	44,000	722,000	766,000
	Balikpapan	7,000		7,000
	Bitung	269,000		269,000
	Kendari	5,000	1,444,000	1,449,000
	Makassar	1,660,000	722,000	2,382,000
	sub total	1,985,000	2,888,000	4,873,000
Total		20,848,000	8,664,000	29,512,000

Source:JICA Study team

Table 18-2-2 Detailed Direct Cost for Facilities and Equipment

Unit:US$

	Name of Port	Gate and Fence		CCTV Camera System	X-ray system	Lighting System	Communication System	Hand hole Wiring	Miscellaneous	Total
		New	Repair							
1	Belawan	7,500	94,500	1,390,000	87,000	200,000	87,000	914,000		2,780,000
2	Dumai	113,000	13,300	506,600	87,000	150,300	87,000	243,800	10,000	1,211,000
3	Pekanbaru									0
4	Tg.Pinang			515,000	87,000			122,000		724,000
5	Batam	97,700	13,400			70,000		62,900		244,000
6	Teluk Bayur		6,600	679,400				169,000		855,000
7	Palembang	32,100	19,100	641,000		230,300	87,000	406,500		1,416,000
8	Panjang	1,000								1,000
9	Tg.Priok				4,100,000					4,100,000
10	Pontianak	56,300	67,900	640,900		90,100	87,000	111,800		1,054,000
11	Banten	37,400	23,600							61,000
12	Cilacap	110,000	12,600			50,100		81,300		254,000
13	Tg.Emas	1,000								1,000
14	Tg.Perak				4,100,000					4,100,000
15	Benoa	8,600	17,600		87,000				9,800	123,000
16	Kupang	102,000	31,400	641,000		170,200	87,000	406,400		1,438,000
17	Banjarmasin	66,800	70,100			160,500		203,600		501,000
18	Samarinda	44,000								44,000
19	Balikpapan	7,000								7,000
20	Bitung					60,100	87,000	121,900		269,000
21	Kendari	5,000								5,000
22	Makassar	4,900	203,200	755,100			87,000	609,800		1,660,000
	Total	694,300	573,300	5,769,000	8,548,000	1,181,600	609,000	3,453,000	19,800	20,848,000

Source:JICA Study team

9. The total development cost for facilities and equipment and patrol boats is estimated and tabulated in Table 18-2-3.

Table 18-2-3 Total Development Cost

Unit:thousand US$

	Cost Items	Amount
1	Direct cost *1	29,512
2	Traning cost of operators for facilities and equipment by experts from manufactures or agents *2	240
3	Land acquisition and Compensation cost (1% of 1)	295
4	Administration expenses (2% of 1)	590
5	Engineering service cost (20% of 1) *3	5,902
	Total	36,540

Notes *1 Including spare parts cost of 5% of the direct cost for 2 years operation
*2 Assuming 4 man-months by two experts for the objective ports (US$ 30,000/person/month)
*3 Consulting Services to review the feasibility study, execute detailed design including tender documents preparation, conduct and coordinate the procurement, supervisory services for installation works, advising and training PELINDO, KPLP on management and other incidental engineering services.

Source: JICA Study Team

10. The cost for human resource development such as training on port security in Indonesia is estimated assuming maximum number of participants, duration of training and the trainers cost. Almost same cost will be needed every two years. An overview of the development cost for human resources is shown below.

Table 18-2-4 Cost for Human Resource Development

Unit: US$

Security Related Human Resource Development Program		Unit	Quantity	Unit cost	Amount
Cost for participants					
1	ISPS auditor training for port security	persons	138	700	96,600
2	Training, drills and exercises	port facility	25	8,000	200,000
3	Maritime security training of trainers	persons	28	600	16,800
4	Port facility security officer training	persons	30	600	18,000
5	Port facility security awareness course	persons	26	90	2,340
6	Facility security management in port area	persons	78	600	46,800
7	Code of practice for port security in the supply chain	persons	202	800	161,600
8	Bomb incident management for non security personnel	persons	81	90	7,290
9	Port state control	persons	128	600	76,800
Cost for trainer					132,000
Total					758,230

Source: JICA Study Team

18-3 IMPLEMENTATION SCHEDULE

11. The time frame could change depending on the financial situation of port management bodies. The implementation schedule of Japanese Yen Loan is shown in the following table. In case of emergency grant aid, it may take almost two years for completion. The following schedule is for the case of yen loan. Training on the installed equipment will be carried out within the above duration.

Table 18-3-1 Schedule of Development Plan

Year	2006	2007	2008	2009
Phasing	Phase I	Phase II		Phase III
Pre-feasibility Study				
Structural Measures				
Non-structural Measures				
Key Milestone : Report to IMO after 5 year interval				

Source: JICA Study Team

18-4 MAINTENANCE AND RENEWAL

12. The following table outlines the maintenance work for the introduced port security facilities and equipment.

Table 18-4-1 Outline of Maintenance Works for Port Security Facilities and Equipment

Maintenance category	Purpose	Action
Routine inspection	Visually inspect the equipment for any unusual conditions, and check in the course of daily operation for any fault.	- Check the inspection items and follow the inspection procedures using instruction manuals. - Action by the operators
Scheduled inspection	Check the operating conditions of each piece of the equipment and at the same time conduct the maintenance with the sections that cannot be checked in routine inspections for early detection of any fault and for prevention of fault that may arise as a result of deterioration by ageing.	- To be conducted based on the scheduled inspection contract. - To be conducted by the maintenance service contractors or equipment manufacturers.
Maintenance	Take remedial actions upon any accidental malfunction or fault.	- To be conducted by on-call maintenance service contracts. - To be conducted by the maintenance service contractors or equipment manufacturers.

Source: JICA Study Team

13. Annual operation and maintenance cost for the port security facilities and equipment is estimated at 5% of the direct cost including procurement and installation cost. Cost for periodic check and cleaning and periodic renewal parts is 3.3% on average as shown in Table 18-4-2. In addition, cost for change parts and other necessary cost for port security substituted by security guard during check, cleaning, repair, etc. have to be allocated. Accordingly, an annual operation and maintenance cost of 5% is reasonable.

Table 18-4-2 Percentage of Maintenance Cost to Initial Direct Cost

Unit: %

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	Ave.
CCTV Camera System																	
Monitoring room equipment				0.5		10.9			0.5		19.7			0.5		32.0	
CCTV camera			1.0		9.0		1.0	4.6	9.0		7.4		9.0		5.5	46.4	
Periodic check and cleaning	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	9.0	
Total	0.6	0.6	1.6	1.1	9.6	11.5	1.6	5.2	10.1	0.6	27.7	0.6	9.6	1.1	6.1	87.5	5.8
Communication System																	
Public address equipment											13.3					13.3	
Peridic check and cleaning	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.5	
Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	13.6	0.3	0.3	0.3	0.3	17.8	1.2
X-ray Inspection System																	
X-ray inspection equipment							25.3							25.3		50.6	
Periodic check and cleaning	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	9	
Total	0.6	0.6	0.6	0.6	0.6	0.6	25.9	0.6	0.6	0.6	0.6	0.6	0.6	25.9	0.6	59.6	3.0
Simple average																	3.3

Source: JICA Study Team

18-5 URGENT PORT SECURITY DEVELOPMENT PLAN FOR STRATEGIC MAJOR PUBLIC PORTS

14. Among the ports in the above-mentioned port security development plan, the Study Team has proposed the urgent port security development plan for the 9 strategic major public ports with large population centers i.e. Belawan, Dumai, Tanjung Pinang, Teluk Bayur, Palembang, Pontianak, Benoa, Bitung, Makassar.

15. Belawan Port, Dumai Port, Tanjung Pinang Port and Palembang Port face the Malacca Strait in which many serious piracy incidents occur every year, while Pontianak Port, which faces the Karimata Strait connecting to the Malacca Strait, is one of the biggest international ports in Kalimantan Island. Teluk Bayur Port, which faces the Indian Sea, is an important international port in the west coast of Sumatra Island. Benoa Port is the only international port in Bali and very important for tourism. Bitung Port faces Mindanao Island of the Philippines where terrorists are active behind the scenes. Makassar Port is the biggest international port in the eastern part of Indonesia but its security measures lag behind other major international ports such as Tanjung Priok and Tanjung Perak.

18-5-1 Port Security Facilities and Equipment for Urgent Port Security Development Plan

16. The urgent port security development plan is composed of the development plan for the following port security facilities and equipment which shall be developed within 2-3 years.

- New gate for access control
- New fence surrounding the restricted area
- CCTV camera monitoring system
- New lighting system
- X-ray inspection system
- Walk-through type metal detector
- Communication system (Public announce system)

17. The details of the port security facilities and equipment which shall be developed in each port are shown in Table 18-5-1-1 and 18-5-1-2.

Table 18-5-1-1 Port Security Facilities and Equipment in 9 Port (1)

Name of Port	Security Facilities/ Equipment	Unit	Q`ty
Belawan	New fixed fence	m	30
	CCTV camera, outdoor(1) (Visibility: 350m)	unit	7
	CCTV camera, outdoor(2) (Visibility: 100m)	unit	4
	CCTV camera, indoor (Visibility: 80m)	unit	3
	CCTV monitoring system, large type	unit	2
	X-ray inspection apparatus, pasenger terminal	unit	1
	Lighting system	unit	20
	Communication system	lot	1
	UPS (10min, 10kVA)	unit	2
	Emergency generator (2/30kVA, 1-hour)	unit	2
	Hand hole, undergraound pipe and cable	m	4,500
Dumai	New gate for access control (6m/1-gate)	m	12
	New fixed fence	m	275
	CCTV camera, outdoor(2) (Visibility: 100m)	unit	2
	CCTV camera, indoor (Visibility: 80m)	unit	4
	CCTV monitoring system, large type	unit	1
	X-ray inspection apparatus, pasenger terminal	unit	1
	Lighting system	unit	15
	Walk through type metal detector	unit	1
	Communication system	lot	1
	UPS (10min, 10kVA)	unit	1
	Hand hole, undergraound pipe and cable	m	1,200

Source: JICA Study Team

Table 18-5-1-2 Port Security Facilities and Equipment in 9 Ports (2)

Name of Port	Security Facilities/ Equipment	Unit	Q`ty
Tanjung Pinang	CCTV camera, outdoor(2) (Visibility: 100m)	unit	1
	CCTV camera, indoor (Visibility: 80m)	unit	5
	CCTV monitoring system, large type	unit	1
	X-ray inspection apparatus, pasenger terminal	unit	1
	UPS (10min, 10kVA)	unit	1
	Emergency generator (2/30kVA, 1-hour)	unit	1
	Hand hole, undergraound pipe and cable	m	600
Teluk Bayur	CCTV camera, outdoor(1) (Visibility: 350m)	unit	4
	CCTV monitoring system, small type	unit	1
	UPS (10min, 10kVA)	unit	1
	Emergency generator (2/30kVA, 1-hour)	unit	1
	Hand hole, undergraound pipe and cable	m	830
Palembang	New fixed fence	m	130
	CCTV camera, outdoor(1) (Visibility: 350m)	unit	4
	CCTV monitoring system, large type	unit	1
	Communication system	lot	1
	UPS (10min, 10kVA)	unit	1
	Hand hole, undergraound pipe and cable	m	2,000
Pontianak	New gate for access control (6m/1-gate)	m	15
	CCTV camera, outdoor(1) (Visibility: 350m)	unit	4
	CCTV monitoring system, large type	unit	1
	Lighting system	unit	9
	Communication system	lot	1
	UPS (10min, 10kVA)	unit	1
	Hand hole, undergraound pipe and cable	m	550
Benoa	X-ray inspection apparatus, pasenger terminal	unit	1
	Walk through type metal detector	unit	1
Bitung	Lighting system	unit	6
	Communication system	lot	1
	Hand hole, undergraound pipe and cable	m	600
Makassar	CCTV camera, outdoor(1) (Visibility: 350m)	unit	6
	CCTV monitoring system, large type	unit	1
	Communication system	lot	1
	UPS (10min, 10kVA)	unit	1
	Hand hole, undergraound pipe and cable	m	3,000

Source: JICA Study Team

18-5-2 Development Cost for Urgent Port Security Development Plan

18. An overview of the development direct cost for security facilities and equipment is shown in Table 18-5-2-1.

Table 18-5-2-1 Direct Cost for Security Facilities and Equipment in Urgent Port Security Development Plan

Unit: US$

	Name of Port	New Gate and Fence	CCTV Camera System	X-ray System	Walk-through type Metal Detector	Lighting System	Communi-cation System	Hand Hole Wiring	Total
1	Belawan	7,500	1,390,000	87,000		200,000	87,000	914,000	2,685,500
2	Dumai	113,000	506,600	87,000	10,000	150,300	87,000	243,800	1,197,700
3	Tg. Pinang		515,000	87,000				122,000	724,000
4	Teluk Bayur		679,400					169,000	848,400
5	Palembang	32,100	641,000			230,300	87,000	406,500	1,396,900
6	Pontianak	56,300	640,900			90,100	87,000	111,800	986,100
7	Benoa	8,600		87,000	9,800				105,400
8	Bitung					60,100	87,000	121,900	269,000
9	Makassar	4,900	755,100				87,000	609,800	1,456,800
Total		222,400	5,128,000	348,000	19,800	730,800	522,000	2,698,800	9,669,800

Source: JICA Study Team

19. The total development cost for security facilities and equipment is estimated and tabulated in Table 18-5-2-2.

Table 18-5-2-2 Total Development Cost for Urgent Port Security Development Plan

Unit:thousand US$

	Cost Items	Amount
1	Direct cost *1	9,670
2	Traning cost of operators for facilities and equipment by experts from manufactures or agents *2	78
3	Land acquisition and Compensation cost (1% of 1)	97
4	Administration expenses (2% of 1)	193
5	Engineering service cost (20% of 1) *3	1,934
Total		11,972

Notes *1 Including spare parts cost of 5% of the direct cost for 2 years operation
*2 Assuming 1.3 man-months by two experts for the objective ports (US$ 30,000/person/month)
*3 Consulting Services to review the feasibility study, execute detailed design including tender documents preparation, conduct and coordinate the procurement, supervisory services for installation works, advising and training PELINDO, KPLP on management and other incidental engineering services.

Source: JICA Study Team

CHAPTER-19. FEASIBILITY OF THE PORT SECURITY DEVELOPMENT PROJECT

19-1 PRESUPPOSED CONDITION

1. Foreign Trade Vessels are only able to call ports which comply with the ISPS code. Whenever a foreign trade vessel calls a port which has not complied with the ISPS code, it is necessary to enter into DoS. Procedure of DoS conclusion is very intricate but the general consensus is that ports which require DoS are not secure enough. As a result foreign trade vessels will stop calling those ports. Consequently, foreign trade activities are carried out only at ISPS compliant ports while other ports are assumed to become domestic feeder ports of the ISPS compliant ports.

2. The basic measures to comply with the ISPS code include setting up movable fence with guards. This is minimum requirement. Installation of CCTV camera at container terminal and installation of X-Ray inspection apparatus are also adopted in general. Therefore, required capital expenditure is not large compared with port facility investment.

3. In the case of a port facility development project, large capital investment is required. However, new facilities activate port business and create a large benefit by increasing vessel calls and cargo volumes as well as increasing revenue.

4. On the other hand, as to port security facility development for ISPS code compliance, main benefit is to prevent the loss of damage caused by ISPS code incompliant. Before the introduction of ISPS code, all foreign trade vessels can call all ports, however, foreign trade vessel will not call port which has not complied ISPS code after the introduction of ISPS code.

5. The benefit of complying with the ISPS code is to maintain normal foreign trade activity with all foreign counties. Ports which do not comply with the ISPS code will suffer large revenue losses due to a decrease in foreign trade vessel calls. In addition, cargo owners have to bear the additional working capital interest due to the need to transport cargo to an alternative port which complies with the ISPS Code.

19-2 ECONOMIC ANALYSIS

19-2-1 Purpose and Methodology of Economic Analysis

6. The purpose of the economic analysis is to appraise the economic feasibilities of the Development Plan from the viewpoint of the national economy. The economic analysis is conducted to study the economic benefits as well as the economic costs arising from this project, and to evaluate whether the benefits of the project exceed those that could be obtained from other investment opportunities in Indonesia.

7. The port security facility development plans will be compared to the “Without the project” case. All benefits and costs in market price of the difference between “With the project” case and “Without” case will be calculated. The economic internal rate of return (EIRR) is used to appraise the feasibility of the project.

8. It is calculated by using the following formula.

$$\sum_{i=1}^{n} \frac{Bi - Ci}{(1+r)^{i-1}} = 0$$

where, *n*: Period of economic calculation (project life = 30 years)
Bi: Benefits in i-th year
Ci: Costs in i-th year
r : Discount rate

9. Development cost of port security facilities and equipment is generally fairly smaller than that of port facilities including wharves, although benefits of them are almost same. Therefore EIRR of the port security facilities and equipment is usually higher than that of port facilities.

19-2-2 Prerequisites for Economic Analysis

(1) Project Life

10. Considering the long-term loans and service lives of the port facilities, the project life in the economic analysis is assumed to be 30 years from the initial operation year 2006. The Study Team assumes the durability of equipment is 15 years. It is necessary to renew some parts of equipment every 15 years. Neither inflation nor an increase in nominal wages is considered during the project life. Table 19-2-2-1 shows project activity schedule.

Table 19-2-2-1 Implementation Activity Schedule

Activity	Year
Project Implementation	2006
Interest Payment start	2007
Principal Repayment start	2016
Equipment Renewal	2024

(2) Foreign Exchange Rate

11. The exchange rate adopted for this analysis is US$ 1.00 = 9,770 Rupiahs, the same rate as used in the cost estimation.

(3) "With Case" and "Without Case"

12. A cost-benefit analysis is conducted on the difference between the "With" case (where security measures are taken and a port facility complies with the ISPS Code) and the "Without" case (where security measures are not taken and the port facility does not comply with the ISPS Code).

13. If a target port fails to fully comply with the ISPS code, port may lose its international trade function. However, port users will continue to use the target port, because alternative ports are quite far away. In this case, international cargo is transported to an international port which is compliant with the ISPS Code and then the cargo is transported to the target port as domestic shipment. Alternative ports with sufficient cargo handling capacity would be Tg. Priok port and Tg.Perak port. However, maritime transportation time becomes longer and cost becomes higher.

14. A port facility which complies with the ISPS Code by taking security measures can have an international trade function as before. Project benefits in this case are listed below.

1) Port handling international cargo
   - Savings in sea transportation cost
   - Savings in working capital interest of cargo owners
2) Port receiving international cruise vessels
   - Impact which passengers of an international cruise vessel gives to local economy

(4) Study Ports

(a) Port handling International Cargo

15. The Study Team analyzes the feasibility of the projects in the Development Plan of Port Security Facilities and Equipment for three standard models of container terminal, Belawan port, Dumai port, Palembang port, Pontianak port, Kupang port, Banjarmasin port, Bitung port and Makassar port.

(b) Port receiving International Cruise Vessels

16. The Study Team analyzes the feasibility of the projects in the Development Plan of Port Security Facilities and Equipment for Benoa Port.

19-3 FINANCIAL ANALYSIS

19-3-1 Purpose and Methodology of Financial Analysis

17. The purpose of the financial analysis is to evaluate the financial feasibility of the project. The analysis focuses on the financial soundness of the management body during the project life.

18. The foreign trade capability will not be fully realized if a port fails to comply with ISPS code. As a result, port revenues obtained from service to foreign vessels would decline. In most port facility development projects, FIRR (Financial Internal Rate of Return) is used to calculate the increase in port revenue as a result of the investment in facilities. In this case, however, investment in port security facilities is to prevent revenue reduction, not to increase revenue. Therefore, the FIRR calculation is not appropriate to prove the viability of a port facility security development project.

19. Financial soundness is appraised with its projected financial statements (income statement, cash flow statement and balance sheet). The appraisal is made in terms of loan repayment capacity using the following ratios.

Loan repayment capacity

$$Debt\ Service\ Coverage\ Ratio = \frac{Net\ Operating\ Income\ before\ \text{Depreciation}}{Repayment\ of\ Principal\ and\ Interest\ on\ Long\text{-}Term\ Loan} \times 100\%$$

20. Debt service coverage ratio shows whether the operating income can cover the repayment of principal and interest on long-term loans. The ratio must be higher than 1.0 and World Bank requires more than 1.75.

(1) Project Term and Condition

21. The Study Team adopts the fixed amount of operating revenue and expense for the financial statements calculation through the examination period. Adopted amount of operating revenue and expense are average value for the past few years in each port. Annual 5% of initial direct cost is applied for maintenance. The Study Team assumes the durability of equipment is 15 years. It is necessary to renew some parts of equipment every 15 years.

(2) Fund Raising for Port Facility Security Development

22. Fund raising is divided into foreign and equity. In this study, referring to funding conditions of soft loan by international financial institutes, the upper limit of finance for foreign funds is assumed to be the total amount of 75% of initial investment costs. The remaining initial investment costs (25%) and all renewal investment are assumed to be raised by equity of self-fund. Conditions of loans are assumed as follows.

Foreign fund
- Amount: 75% of total initial cost
- Loan period: 30years, including a grace period of 10 years
- Interest rate: 1.5%
- Repayment: Fixed amount repayment of principal

Equity (self-fund)
- Amount: 25% of initial cost

Weighted average interest rate 1.5%×0.75 = 1.125%

19-4 MODEL CASES OF CONTAINER TERMINAL

19-4-1 Standard Model of Container Terminal

23. As a standard guideline to judge the pre-feasibility of port security facilities, the Study Team first sets up three standard container terminals, large scale, medium scale and small scale. Figure19-4-1-1 shows port security facilities layout plan of large and medium size container berth models.

24. Shown below are the size and handling capacity of each container berth model.

Table 19-4-1-1 Size and Handling Capacity of each Container Berth Model

	Large Scale	Medium Scale	Small Scale
Wharf Length (m)	350	275	200
Wharf depth (m)	14	12	10
Container Yard Area (m²)	122,500	62,500	40,000
Annual Handling Capacity (TEU)	250,000	150,000	100,000

25. Port security facilities and equipment to be installed are fence, gate, lighting equipment (to illuminate in a terminal and around fence) and CCTV cameras (4 cameras are installed at each corner in Large and Medium Scale terminals and 2 cameras are installed diagonally in a Small Scale terminal).

26. The Study Team assumes a reduction in the number of calling foreign vessels if an Indonesian port fails to comply with the ISPS code as follows. International vessels on European and North American routes would likely stop calling the port. The decrease in vessel calls would be in proportion to the trade value with those countries. The average share of

import volume and export volume in the total trade value with US and EU countries from 1989 -2003 has been almost 10%. The Study Team assumes that 10% of the of international container cargo trade with the US and EU countries could potentially be diverted elsewhere if it fails to comply with the ISPS code. Accordingly, 1% of the international container cargo with the US and EU countries would have to be transported by domestic coastal vessel between the port and an alternative port.

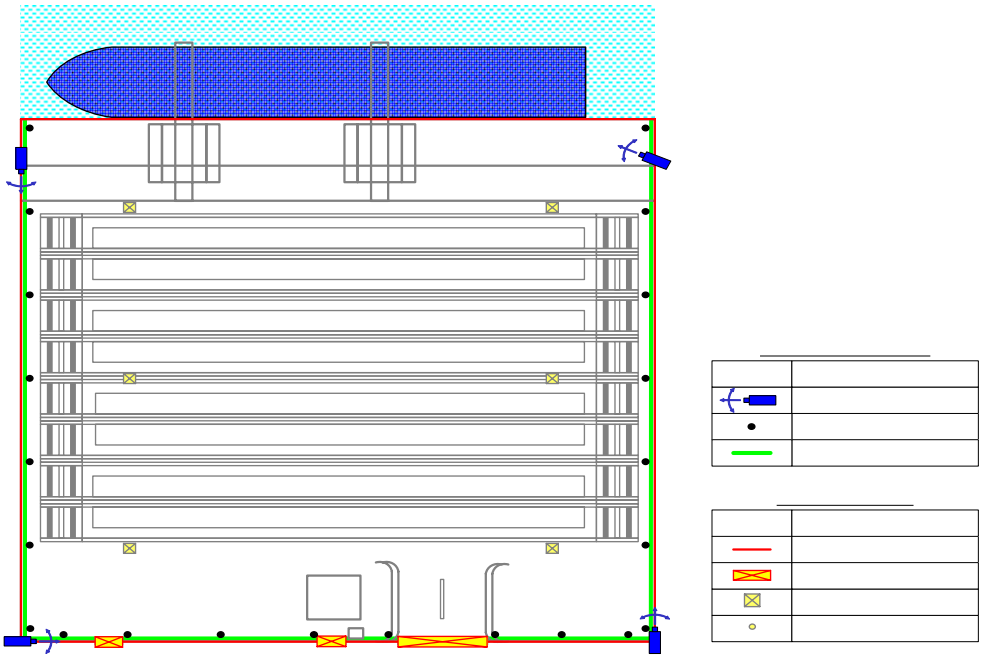


Figure 19-4-1-1 Port Security Facilities Layout Plan for Large and Medium Size Container Terminal

19-4-2 Economic Analysis of Large Scale Container Terminal

(1) Benefit of the Project

27. The Study Team applies the data of Belawan port for the Large Scale Container Terminal.

(a) Saving in working capital interest of cargo owners

28. By shipping cargo through an alternative port, longer transport time and higher capital interest born by cargo owner are required. Increase of working capital interest can be calculated as: Value of cargo × Time difference of transportation × interest.

29. To estimate cargo value of standard model port, the Study Team refers to container cargo throughput data of Belawan port. Average unit rate of foreign trade cargo in Belawan port is 424 US$/ton.

30. The Study Team assumes that it takes at least three days for transshipment of cargo from a foreign trade vessel to a domestic vessel at an alternative port which complies with the ISPS code.

Cargo unloading from foreign trade vessel at alternative port		1 day
Waiting time for domestic trade vessel		1day
Cargo loading to domestic trade vessel at alternative port		1 day
Transportation time from alternative port to Belawan 802 mile / 15 knot/h	=	2.2 days
Total		5.2 days

31. In Indonesia, the annual interest rate on a bank loan is generally 15%. In case of the Large Scale container terminal where 1% of annual container volume is lost, increase of working capital interest of foreign trade cargo owners is 221 million rupiahs.

(424US$/ton x 25,000ton x 5.2days x 0.15/365days x 9,770rupiahs/US$ = 221,311,000 rupiahs)

(b) Saving in Sea Transportation Cost

32. Additional sea transportation cost is calculated by multiplying cargo volume going through alternative ISPS compliant ports by shipping cost between the target port and the alternative port. It is assumed that ocean freight between the target port and the United States and EU countries is same as that between the alternative port and the United States and EU countries. The ocean freight between the standard model port and an alternative port is calculated in the following way.

- From the correlation between domestic ocean freights and distance of existing trade route in Indonesia, the Study Team estimates each ocean freight between the target port and an alternative port.
- Ocean freight rates of general cargo and container cargo are estimated respectively
- Weighted average ocean freight rate is calculated using the foreign cargo volume ratio of general cargo and container cargo

33. The Study Team applies the transport distance of 802 miles from Belawan port to Tg.Priok port to estimate ocean freight to an alternative port. The weighted average ocean freight between Belawan port and alternative port (Tg.Priok port) is 263,000 rupiahs/ton. The increase of ocean freight between a large scale terminal port and an alternative port is 6,575 million rupiahs.

(263,000 rupiahs/ton x 25,000 ton = 6,575,000,000 rupiahs)

(c) Total Benefit

34. Annual total benefit is 6,792,480,200 rupiahs.

(2) Implementation Cost

35. Implementation cost is composed of initial investment cost and maintenance cost. Maintenance cost is assumed as 5% of initial direct cost per annum. Study team assumes the durability of equipment is 15 years. Accordingly, it is necessary to renew some parts of equipment every 15 years. Table 19-4-2-1 shows initial investment cost for port security facility development of Large Scale Terminal. Table 19-4-2-2 shows implementation cost during the project period.

Table 19-4-2-1 Initial Investment Cost of Port Security Facilities at Large Scale Terminal

	US$
Direct Cost	1,265,264
Indirect Cost	632,632
Total	1,897,896

Table 19-4-2-2 Implementation cost for Port Security Facility Development at Large Scale Terminal

Year	cost (Rupiah)			
	Ininitial investment	Maintenance	Renewal	total
2006	7,416,977,568			7,416,977,568
2007	11,125,466,352			11,125,466,352
2008		618,081,464		618,081,464
2009		618,081,464		618,081,464
2010		618,081,464		618,081,464
2011		618,081,464		618,081,464
2012		618,081,464		618,081,464
2013		618,081,464		618,081,464
2014		618,081,464		618,081,464
2015		618,081,464		618,081,464
2016		618,081,464		618,081,464
2017		618,081,464		618,081,464
2018		618,081,464		618,081,464
2019		618,081,464		618,081,464
2020		618,081,464		618,081,464
2021		618,081,464		618,081,464
2022		618,081,464	7,971,147,600	8,589,229,064
2023		618,081,464		618,081,464
2024		618,081,464		618,081,464
2025		618,081,464		618,081,464
2026		618,081,464		618,081,464
2027		618,081,464		618,081,464
2028		618,081,464		618,081,464
2029		618,081,464		618,081,464
2030		618,081,464		618,081,464
2031		618,081,464		618,081,464
2032		618,081,464		618,081,464
2033		618,081,464		618,081,464
2034		618,081,464		618,081,464
2035		618,081,464		618,081,464

Source:JICA Study team

(3) Calculation of EIRR

36. As the result of calculation, EIRR of the port security facilities and equipment development project for Large Scale Terminal is 29.53%, and it shows result is feasible in the view point of national economy.

19-4-3 Summary of Analysis Result

37. Table 19-4-3-1 shows result of Economic Analysis for Large Scale Container Terminal, Medium Scale Container Terminal and Small Scale Container Terminal. Three type of model shows that port security facility development project is feasible, however, there is a tendency that EIRR becomes small as following terminal scale change.

Table 19-4-3-1 EIRR Calculation Result of Standard Model Ports

	EIRR (%)
Large Scale Container Terminal	29.53
Medium Scale Container Terminal	19.99
Small Scale Container Terminal	14.93

19-5 BELAWAN PORT

19-5-1 Demand Forecast

(1) Foreign Trade Cargo volume

38. Table 19-5-1-1 shows foreign trade cargo volume throughput at Belawan port.

Table 19-5-1-1 Foreign Trade Cargo Volume Throughput at Belawan Port 2000-2004

Unit:ton

	2000	2001	2002	2003	2004
Import	1,533,722	1,620,437	1,821,771	1,549,805	1,197,823
Export	2,830,044	3,187,903	3,665,220	3,828,293	4,530,070
total	4,363,766	4,808,340	5,486,991	5,378,098	5,727,893

(2) Estimation of Foreign Trade Cargo Volume Handling Capacity

39. Belawan Port operates around clock. Study team estimates annual cargo handling capacity of the Conventional Wharf and International Container Terminal, the two foreign trade wharves at Belawan port. Conventional Berth has a total length of 1,195 m and water depth of 9m, and its annual cargo handling capacity is estimated to be 4.9 million tons. International Container Terminal has a total length of 500m and depth of 10.5m. Its estimated annual cargo handling capacity is 3.6 million tons. Total annual cargo handling capacity for foreign trade cargo is 8,600,000 tons.

Table 19-5-1-2 Foreign Trade Cargo Handling Capacity at Belawan Port

Year	Cargo Handling Volume (ton)
2010	8,600,000

(3) Demand Forecast of Future Foreign Trade Cargo Volume

40. Figure19-5-1-1 shows the result of foreign trade cargo volume projection at Belawan port which is calculated using correlation between foreign trade cargo volume of Belawan port and National GDP. Annual foreign trade cargo volume will reach its annual handling capacity of 8,600,000 tons in the year 2010.

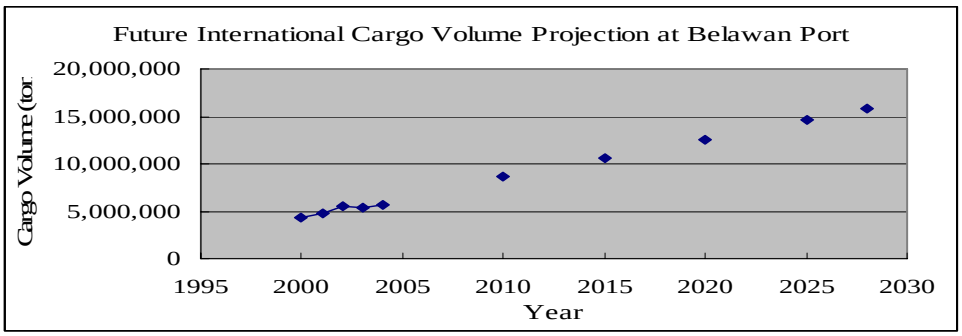


Figure 19-5-1-1 Future Foreign Trade Cargo Volume Projection at Belawan Port

19-5-2 Economic Analysis

(1) Calculation of Benefits

(a) Savings in working capital interest of cargo owners

41. Increase of working capital interest can be calculated as: Value of cargo × Time difference of transportation × interest.

(i) Value of Foreign Trade Cargoes

42. Table 19-5-2-1 shows international cargo volume and value at Belawan port from 1999 to 2004. The average unit values of export cargo and import cargo from 1999 to 2004 are 486.7

US$/ton and 288.6 US$/ton respectively. Average unit rate of foreign trade cargo is 424 US$/ton.

Table 19-5-2-1 Average Value of International Cargo at Belawan Port from 1999 to 2004

	unit	1999	2000	2001	2002	2003	2004	total
Export ave.value	US$/ton	512.7	473.1	424.5	436.1	499.3	554.5	486.7
Import ave.value	US$/ton	270.5	299.8	281.9	273.7	301.8	303.6	288.6

Source:BPS

(ii) Increase in transport time

43. The Study Team assumes that it takes at least three days for transshipment of cargo from a foreign trade vessel to a domestic vessel at an alternative port which complies with the ISPS code.

Cargo unloading from foreign trade vessel at alternative port	1day
Waiting time for domestic trade vessel	1day
Cargo loading to domestic trade vessel at alternative port	1day
Transportation time from alternative port to Belawan 802 mile / 15 knot/h =	2.2 days
Total	5.2 days

(iii) Increase of additional interest

44. In Indonesia, the annual interest rate on a bank loan is generally 15%. Additional interest is calculated as: 15%/year × 5.2 days ÷ 365 days = 0.21%

(iv) Affected cargo volume in Without case

45. Indonesia's foreign trade with the United States and EU countries from 2000 to 2004 represented 10% of the total foreign trade cargo volume of Indonesia. The Study Team assumes that 10% of the trade cargo with the United States and EU countries will be affected in case the port fails to comply with the ISPS code.

46. Table 19-5-2-2 shows Increase of working capital interest of foreign trade cargo owners at Belawan Port. Increase of working capital interest is calculated by multiplying the projected cargo volume and additional interest.

Table 19-5-2-2 Increase of Working Capital Interest of Cargo Owners at Belawan Port

	Foreign Cargo Volume	Cargo Value	Total interest
	ton	Rp	Rp
2005	62,052	257,050,998,555	539,807,097
2006	66,826	276,825,175,164	581,332,868
2007	71,599	296,599,351,773	622,858,639
2008	76,373	316,373,528,382	664,384,410
2009	81,146	336,147,704,991	705,910,180
2010	86,000	356,253,280,000	748,131,888

Source:JICA Study team

(b) Savings in sea transportation cost

(i) Examination of Domestic Ocean Freight

47. The ocean freight between the target port and an alternative port is calculated in the following way.

- From the correlation between domestic ocean freights and distance of existing trade route, study team estimates the each ocean freight between target ports and an alternative port.

- Ocean freight rates of general cargo and container cargo are estimated respectively
- Weighted average ocean freight rate is calculated using the foreign cargo volume ratio of general cargo and container cargo

48. From the result of calculation, the weighted average ocean freight between Belawan port and an alternative port (Tg.Priok port) is 263,000 rupiahs/ton.

(ii) Increase of Ocean Freight

49. Table 19-5-2-3 shows the annual increase of ocean freight between Belawan port and an alternative port in case Belawan port fails to meet standard security port facility development.

Table 19-5-2-3 Annual Increase of Ocean Freight between Belawan Port and Alternative Port

	Cargo Volume ton	Ocean freight Rp/ton	Total freight Rp
2005	62,052	263,000	16,319,792,158
2006	66,826	263,000	17,575,225,727
2007	71,599	263,000	18,830,659,295
2008	76,373	263,000	20,086,092,863
2009	81,146	263,000	21,341,526,432
2010	86,000	263,000	22,618,000,000

Source:JICA Study team

(c) Total Benefit

50. Table 19-5-2-4 shows annual total benefit of Belawan port to comply with ISPS code.

Table 19-5-2-4 Annual Total Benefit of Belawan Port to Comply with ISPS Code

	Total Benefit Rp
2005	16,859,599,255
2006	18,156,558,595
2007	19,453,517,934
2008	20,750,477,273
2009	22,047,436,612
2010	23,366,131,888

Source:JICA Study team

(2) Implementation Cost

51. Implementation cost is composed of initial cost, maintenance cost and security guard cost. Maintenance cost is assumed as 5% of initial direct cost per annum. Table 19-5-2-5 shows implementation cost for port security facility at Belawan port.

(3) Evaluation of Project

52. As the result of calculation, EIRR is 36.78% and it shows result is feasible in the view point of national economy.

Table 19-5-2-5 Implementation Cost for Port Security Facility Development at Belawan

year	Initial Investment	Maintenance	Renewal	Total
2006	379,603,401			379,603,401
2007	9,490,085,025			9,490,085,025
2008	18,600,566,649			18,600,566,649
2009	9,490,085,025			9,490,085,025
2010		2,855,047,825		2,855,047,825
2011		2,855,047,825		2,855,047,825
2012		2,855,047,825		2,855,047,825
2013		2,855,047,825		2,855,047,825
2014		2,855,047,825		2,855,047,825
2015		2,855,047,825		2,855,047,825
2016		2,855,047,825		2,855,047,825
2017		2,855,047,825		2,855,047,825
2018		2,855,047,825		2,855,047,825
2019		2,855,047,825		2,855,047,825
2020		2,855,047,825		2,855,047,825
2021		2,855,047,825		2,855,047,825
2022		2,855,047,825		2,855,047,825
2023		2,855,047,825		2,855,047,825
2024		2,855,047,825	6,785,509,250	9,640,557,075
2025		2,855,047,825		2,855,047,825
2026		2,855,047,825		2,855,047,825
2027		2,855,047,825		2,855,047,825
2028		2,855,047,825		2,855,047,825
2029		2,855,047,825		2,855,047,825
2030		2,855,047,825		2,855,047,825
2031		2,855,047,825		2,855,047,825
2032		2,855,047,825		2,855,047,825
2033		2,855,047,825		2,855,047,825
2034		2,855,047,825		2,855,047,825
2035		2,855,047,825		2,855,047,825

Source:JICA Study Team

19-5-3 Financial Analysis

(1) Revenue and Expense

53. The Study Team adopts the fixed amount of operating revenue and expense for the financial statements calculation through the examination period. Adopted amount of operating revenue and expense are average value for the past few years in each port. Calculation using average value is on the side of prudence because if cargo volume increases, revenue also increases.

(2) Loan repayment capacity

54. Projected Financial statement is projected and debt service coverage ratio is calculated. Debt service coverage ratio is more than 14 though the repayment period. Therefore, Belawan port has enough financial capacity for loan repayment of port security facility development.

19-5-4 Feasibility of the Project

55. Same analysis method is adopted to evaluate the feasibility of project implementation for Dumai port, Palembang port, Pontianak port, Kupang port, Banjarmasin port, Bitung port and Makassar port.

19-6 BENOA PORT

19-6-1 Demand Forecast

(1) International Cruise Passenger Volume

56. Table 19-6-1-1 shows international cruise vessel passengers throughput at Benoa port from1996 to 2004.

Table 19-6-1-1 International Cruise Passenger Volume Throughput at Benoa Port 1996-2004

		1996	1997	1998	1999	2000	2001	2002	2003	2004
Disembarkation		8,441	13,942	4,919	3,621	3,569	1,320	2,943	315	885
Embarkation		4,303	7,506	3,586	3,621	3,569	1,320	2,943	315	885
Total		12,744	21,448	8,505	7,242	7,138	2,640	5,886	630	1,770

57. According to an interview with port management, the number of passengers on an international cruise vessel ranges from 250 to 500. Average length of stay in Benoa port is two days.

58. Before the first bombing incident in 2002, the number of international cruise passengers had shown a decline tendency after peaking in 1997. Monetary crisis in 1997 was one of the main reasons for the decline in passengers. In 2002, there were signs of recovery, however, the bombing incident sparked another decline. According to an interview with Benoa port management, 4 cruise vessels called from this January to March.

59. However, Bali island is still an attractive tourist destination and it is expected that the number of cruise vessel will increase in future. In fact, once the threat of terrorism is lowered as a result of enhanced security, peak numbers can be expected.

60. Figure 19-6-1-1and Table19-6-1-2 show international cruise vessel projection at Benoa port.

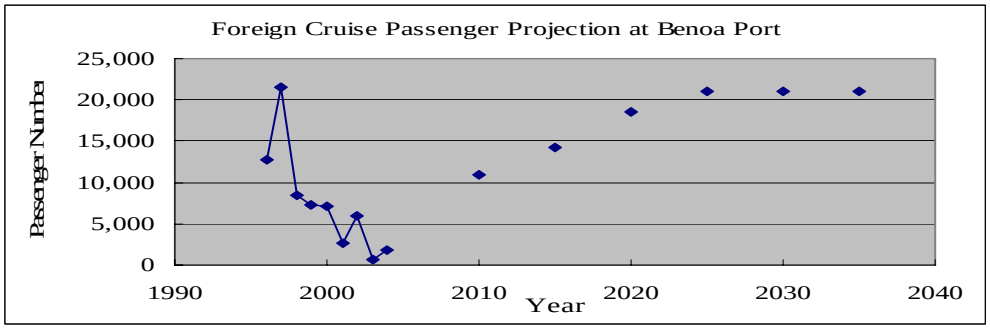


Figure 19-6-1-1 Future Foreign Cruise Passenger Volume Projection at Benoa Port

Table 19-6-1-2 Future Foreign Cruise Passenger Volume Projection at Benoa Port

Year	Passenger
2010	10,000
2015	13,500
2020	17,500
2025	21,000

19-6-2 Economic Analysis

(1) Calculation of Benefits for Economic Impact from Cruise Passenger to local Economy

61. The Study Team adopts expense of passenger in Bali island as regional economic benefit of cruise vessel calls. Study team estimates average expense in Bali is 45US$ per person. Table 19-6-2-1 shows passenger expense projection.

Table 19-6-2-1 Cruise Passenger Expense Projection at Benoa Port

	Foreign Passenger number	Expenses Rp
2005	2,121	932,497,650
2006	3,700	1,626,705,000
2007	5,300	2,330,145,000
2008	6,900	3,033,585,000
2009	8,500	3,737,025,000
2010	10,000	4,396,500,000
2011	10,700	4,704,255,000
2012	11,400	5,012,010,000
2013	12,100	5,319,765,000
2014	12,800	5,627,520,000
2015	13,500	5,935,275,000
2016	14,300	6,286,995,000
2017	15,100	6,638,715,000
2018	15,900	6,990,435,000
2019	16,700	7,342,155,000
2020	17,500	7,693,875,000
2021	18,200	8,001,630,000
2022	18,900	8,309,385,000
2023	19,600	8,617,140,000
2024	20,300	8,924,895,000
2025	21,000	9,232,650,000

(2) Implementation Cost

62. Implementation cost is composed of capital cost, maintenance cost and security guard cost. Maintenance cost is assumed as 5% of initial direct cost in annual. Table 19-6-2-2 shows implementation cost for port security facility development at Benoa port.

Table 19-6-2-2 Implementation Cost for Port Security Facility Development at Benoa Port

Unit:Rupiah

year	Initial Investment	Maintenance	Renewal	Total
2006	17,283,000			17,283,000
2007	432,069,000			432,069,000
2008	846,855,000			846,855,000
2009	432,069,000			432,069,000
2010		1,451,247,000		1,451,247,000
2011		1,451,247,000		1,451,247,000
2012		1,451,247,000		1,451,247,000
2013		1,451,247,000		1,451,247,000
2014		1,451,247,000		1,451,247,000
2015		1,451,247,000		1,451,247,000
2016		1,451,247,000		1,451,247,000
2017		1,451,247,000		1,451,247,000
2018		1,451,247,000		1,451,247,000
2019		1,451,247,000		1,451,247,000
2020		1,451,247,000		1,451,247,000
2021		1,451,247,000		1,451,247,000
2022		1,451,247,000		1,451,247,000
2023		1,451,247,000		1,451,247,000
2024		1,451,247,000	381,030,000	1,832,277,000
2025		1,451,247,000		1,451,247,000
2026		1,451,247,000		1,451,247,000
2027		1,451,247,000		1,451,247,000
2028		1,451,247,000		1,451,247,000
2029		1,451,247,000		1,451,247,000
2030		1,451,247,000		1,451,247,000
2031		1,451,247,000		1,451,247,000
2032		1,451,247,000		1,451,247,000
2033		1,451,247,000		1,451,247,000
2034		1,451,247,000		1,451,247,000
2035		1,451,247,000		1,451,247,000

(3) Evaluation of Projects

63. As the result of calculation, EIRR is 89.10% and it shows result is feasible in the view point of national economy.

19-6-3 Financial Analysis

64. Projected Financial statement is projected and debt service coverage ratio is calculated. Debt service coverage ratio is more than 17 though the repayment period. Therefore, Benoa port has enough financial capacity for loan repayment of port security facility development.

19-6-4 Feasibility of the Project

65. Project is quite feasible in both view points of national economy and port management body.

19-7 RESULT OF ANALYSIS

66. Table 19-7-1 shows summary of analysis result. All projects are well feasible in the view point of national economy and port management body except for Kupang port. However, project of Kupang port also become feasible once it's container cargo volume incearses.

Table 19-7-1 Result of Analysis Summary

Port Name	EIRR (%)	Debt Service Coverage Ratio
Belawan	36.78	14
Dumai	41.79	39
Palembang	13.12	29
Pontianak	12.77	8
Benoa	89.10	17
Kupang	—	—
Banjarmasin	34.06	53
Bitung	33.05	29
Makassar	19.02	19

* Kupang port (-) means the result of caluculation rea minus.

CHAPTER-20. RECOMMENDATIONS

20-1 GENERAL

1. The ISPS Code requires port facility personnel to be proficient in all assigned security duties, at all security levels, and to be able to identify any security related deficiencies. It is important to conduct training, drills and exercises in an honest way.

2. Threats to port security are becoming increasingly complex. In order to cope with these threats, it is necessary to obtain information from all over the world, prepare appropriate counter-measures, and put them in practice. In addition, it is indispensable to randomly review the existing security measures and improve them as necessary. This entails of the "Plan-Do-See" system.

3. Port security measures are incomplete without cooperation and concerted implementation with many other countries. Therefore it is advisable to participate in international meetings and symposiums on port security in a positive way and to contribute to the realization of a secure world through such discussions.

20-2 ESTABLISHMENT OF PORT SECURITY SYSTEM

4. The study team has completed draft PFSAs and PFSPs for the foreign trade ports which have not complied with the ISPS Code. It is recommended that all foreign trade ports follow the prescribed procedure using the draft PFSAs and PFSPs and comply with the ISPS Code as soon as possible.

5. Although the framework and system on port security in Indonesia has become regular in shape, actual situation of security measures is not always satisfactory. The reasons for this are thought to be as follows:

1) Lack or inadequacy of security awareness
2) Security facilities and equipment cannot be installed due to shortage of the fund.
3) It is difficult to judge whether the situation is good or bad due to the absence of technical standards.

6. The study team pointed out the problematical points in detail in the study. In addition, the team members had discussion with officials who were in charge of port security and the team held seminars and workshops. It is recommended that the Indonesian officials take proper security measures using what they have learnt during the study as reference.

7. The study team proposed the development plan for port security facilities and equipment and suggested that expensive facilities and equipment be developed by foreign loan and/or grant. It is recommended that the Indonesian government make efforts to ensure that these proposals are carried out. Other facilities and equipment such as fence and gate should be installed at an early date using Indonesia's own funds.

8. The study team proposed the draft technical standards for port security facilities and equipment. It is recommended that this technical standard be amended as necessary and be distributed to officials in charge of port security at an early date. The technical standards can

be a textbook on port security facilities and equipment and it is advisable that it become required reading for persons related to port security.

20-3 BUILD-UP OF SYSTEM

9. In the present port security system in Indonesia, only some officials belonging to the Directorate of Sea and Coast Guard, DGST have wide knowledge on port security and have to assume all responsibilities in responding to port security incidents in Indonesia. In the future it is expected that PSC will fully function and PSO will be able to undertake his/her role. However, strengthening of the organization assigned to port security in the Directorate of Sea and Coast Guard is an urgent issue because the intermediate audit is forthcoming and the officials will have many works to handle in updating the PFSPs in the days to come.

10. In addition, the officials have to handle confidential information in many cases and a vast number of related documents have been accumulated. Therefore it is recommended to refurbish and improve the office where documents are reviewed and filed.

11. Although the ISPS Code prescribes provisions to be observed, it can be interpreted in several ways and thus a variety of methods can be adopted. This study has showed the basic approach to port security in Indonesia. However, Sea and Coast Guard of DGST still needs technical supports to put the contents of the study into effect and technical advice for the intermediate audit to come. It is recommended that port security specialists be dispatched from foreign countries to give technical guidance.

20-4 CONCRETIZATION OF RESPONSIBILITY

12. It is found that sharing of roles between KPLP and KPPP and between PSO and PFSO is not clear in some ports. It should be clarified in PSC that the responsible person at each security level makes a judgment on security measures and that all information related to security incidents be conveyed to upper responsible persons.

13. One of the problems which complicates port security measures in Indonesia is the budget of ADPEL/KAMPEL. KPLP cannot sufficiently patrol the water area due to the inadequate budget for patrol boats. ADPEL/ KAMPEL should make its best effort to increase the budget. In case that it is difficult to increase the budget for the time to come, ADPEL/KAMPEL should create a structure in which related port management bodies including PELINDO are required to bear part of the cost burden.

20-5 GROWTH OF SECURITY AWARENESS

14. Port security incidents may have a serious impact on transportation and economic development in Indonesia. Therefore it is important that officials directly in charge of port security not only have full knowledge of port security incidents and measures but also make efforts to get various influential persons to understand the importance of port security.

15. Strict implementation of port security measures may give some inconvenience to related persons. It is recommended that security officials explain the necessity of port security measures and make efforts to acquire their understanding.

16. A port is a facility where many organizations are involved and some organizations have information on thieves and crime. Therefore it is important to maintain close relations with

these organizations and exchange information frequently. It is advisable to make the most use of PSC.

17. Moreover it is important to grasp and analyze the port security incidents which occur in Indonesia to prepare effective security measures. It is recommended to make a unified report form and to establish a system to report security incidents to DGST as soon as possible. Sea and Coast Guard of DGST should summarize the information and make it public periodically.

20-6 INTRODUCTION OF NEW SECURITY MEASURES

18. It is recommended that DGST encourage shipping companies and operators to positively introduce new security equipment and system which are thought to be more effective for port security.

19. DGST is now developing AIS in major ports. AIS is originally devised for safety navigation of a vessel, but it can be applied to port security by using with a radar. It is recommended that AIS be placed in many foreign trade ports for vessel safety and port security.

20. Several cases were reported in which only valuable goods were stolen from a container. It is recommended that port operators adopt strict information control and DGST encourage moral improvement of persons involved in information handling.

20-7 EDUCATION AND TRAINING

21. It is indispensable that Port Administrator, PSO, PFSO, KPPP and SATPAM acquire knowledge on the ISPS Code and related port security measures respectively and can practically apply them to daily works in order to introduce correct port security measures.

22. It is necessary for PSO to attend at least the ISPS course because PSO is requested to make a final judgment on PFSO's work including completion of DoS.

23. PFSO is not always familiar with the PFSA and PFSP of his/her own port, although he/she has basic knowledge on the ISPS Code. In this study, the study team proposed the draft PFSA and PFSP manuals. Officials in charge of port security can easily prepare PFSA and PFSP by using these manuals and can deeply understand the contents by comparing them with the existing ones. It is recommended that these draft PFSA and PFSP manuals be modified as necessary and distributed to all persons in charge of port security works.

24. It is recommended that the following measures be taken to realize more effective training:

1) All ISPS legislated course syllabi should be submitted to DGST.
2) All trainers for ISPS courses should be submitted to DGST and registered.
3) ISPS trainers need to be updated on current developments in governmental legislation and international requirements.
4) Procedures and processes to audit the competency of trainers and relevancy of subject matters for statutory courses should be established.

25. PELINDO, being a state-owned enterprise, is recommended to have their own training center or PELINDO academy for effective training. ADPEL and personnel with security related duties in PELINDO ports should also hold their training in the center. BP3IP, the

existing government training school responsible for training seafarers should incorporate an awareness program in maritime security and the ISPS Code.

26. It is indispensable for each port to conduct drills and exercises which are prescribed in the ISPS Code in order to rapidly and appropriately cope with actual security incidents. One problem on drills and exercises is that no evaluation on the implementation was conducted. It is recommended that a system which identifies points to be improved and reflects them in the existing security measures be established.

20-8 DEVELOPMENT OF PORT SECURITY FACILITIES AND EQUIPMENT

27. The study team proposed the development plan of port security facilities and equipment for proper implementation of port security measures. It is advisable that DGST make efforts to realize the plan.