

The Budget Secured by Vietnamese Side

1. Total of the approved counter budget: 3.800.000.000 VND

2. Reimbursement (since 2001 until the end of 2003): 1.850.000.000 VND

In which:

- Allowance:	350.000.000 VND
- Re-construction and furniture for rooms of provided facilities:	800.000.000 VND
- For transportation:	100.000.000 VND
- For others (translations, stationary...):	300.000.000 VND
- For supporting to installations:	100.000.000 VND
- For consumables (electricity, water, fuel...etc)	150.000.000 VND
- For maintenance:	50.000.000 VND

3. Remained budget for 2004 and after project: 1.950.000.000 VND

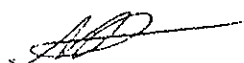
Planned reimbursement:

- Allowance:	150.000.000 VND
- Small repair and furniture for rooms of provided facilities:	150.000.000 VND
- For others (translations, stationary...):	100.000.000 VND
- For consumables (electricity, water, fuel...etc) and maintenance:	1.300.000.000 VND
- Others (workshop, meetings...):	250.000.000 VND

As of June 18, 2004

List of the Equipment Provided by the Vietnamese Side
(For the installation of equipment provided by JICA)

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	17
2.	Exsiccator (16 liters per day)	Samsung	Set	7
3.	Vacuum cleaner (1,500W)	National	Set	2
4.	Automatic voltage stabilizer (30 KVA)	LiOA	Set	6
5.	Automatic voltage stabilizer (20 KVA)	LiOA	Set	1
6.	Automatic voltage stabilizer (15 KVA)	LiOA	Set	2
7.	Automatic voltage stabilizer (7.5 KVA)	LiOA	Set	3
8.	Desk (1.2 x 0.45 x 0.75m)	OKAN	Set	26
9.	Desk (1.2 x 0.65 x 0.75m)	OKAN	Set	11
10.	Collapsible chair	Hoa Phat	Set	82
11.	Swivel chair	Hoa Phat	Set	60
12.	Swivel chair without handrail	Hoa Phat	Set	20
13.	Computer desk (1.2 x 0.8 x 0.75m)	OKAN	Set	29
14.	Computer desk (1.4 x 0.75 x 0.75m)	OKAN	Set	5
15.	Filing cabinet	Hoa Phat	Set	6
16.	Refrigerator (190 liters)	Hitachi	Set	1
17.	Window shade		Sqr. meter	50
18.	Curtain	Austaylis	Sqr. meter	4
19.	Desk (1.4 x 0.75 x 0.75m)	OKAN	Set	5
20.	Computer desk (1.2 x 0.6 x 0.75m)	OKAN	Set	3
21.	Conference table (2.8 x 1.2 x 0.75m)	OKAN	Set	1
22.	Conference table (3.0 x 0.2 x 1.0m)	OKAN	Set	1
23.	Filing cabinet (1.2 x 1.8m)	OKAN	Set	7
24.	Hot and cold water dispenser	Waterman	Set	1
25.	Ventilating fan	Onkyo	Set	20
26.	Telephone	VNPT	Set	3
27.	White board (2.4 x 1.25 m)		Set	2
28.	Floor carpet		Sqr. meter	40




Of which:

1. JICA office

付属资料 6

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	2
2.	Automatic voltage stabilizer (7.5 KVA)	LiOA	Set	1
3.	Desk (1.4 x 0.75 x 0.75m)	OKAN	Set	3
4.	Conference Table (3.00 x 2.00 x 0.75m)	OKAN	Set	1
5.	Swivel chair without handrail	Hoa Phat	Set	14
6.	Filing cabinet	OKAN	Set	3
7.	Ventilating fan	Onkyo	Set	2
8.	Telephone	VNPT	Set	2
9.	Hot and cold water dispenser	Waterman	Set	1
10.	Refrigerator (190 liters)	Hitachi	Set	1

2. Project office (for Vietnamese side)

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	1
2.	Automatic voltage stabilizer (7.5 KVA)	LiOA	Set	1
3.	Swivel chair without handrail	Hoa Phat	Set	4
4.	Computer desk (1.2 x 0.6 x 0.75m)	OKAN	Set	3
5.	Filing cabinet	OKAN	Set	4
6.	Ventilating fan	Onkyo	Set	1
7.	Telephone	VNPT	Set	1
8.	Desk (1.4 x 0.75 x 0.75m)	OKAN	Set	3

3. Radar/Arpa simulator room

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	4
2.	Exsiccator (16 liters per day)	Samsung	Set	3
3.	Vacuum cleaner (1,500W)	National	Set	1
4.	Automatic voltage stabilizer (30 KVA)	LiOA	Set	2
5.	Desk (1.2 x 0.45 x 0.75m)	OKAN	Set	10
6.	Collapsible chair	Hoa Phat	Set	20
7.	Swivel chair	Hoa Phat	Set	2
8.	Filing cabinet	Hoa Phat	Set	1
9.	Ventilating fan	Onkyo	Set	3

4. GMDSS simulator room:

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	3

No	Item/specification	Manufacturer	Unit	Quantity
2.	Exsiccator (16 liters per day)	Samsung	Set	2
3.	Automatic voltage stabilizer (30 KVA)	LiOA	Set	1
4.	Desk (1.2 x 0.45 x 0.75m)	OKAN	Set	10
5.	Collapsible chair	Hoa Phat	Set	26
6.	Swivel chair	Hoa Phat	Set	1
7.	Filing cabinet	Hoa Phat	Set	1
8.	Ventilating fan	Onkyo	Set	3

5. Engine room simulator room

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	4
2.	Exsiccator (16 liters per day)	Samsung	Set	1
3.	Vacuum cleaner (1,500W)	National	Set	1
4.	Automatic voltage stabilizer (30 KVA)	LiOA	Set	2
5.	Collapsible chair	Hoa Phat	Set	2
6.	Swivel chair	Hoa Phat	Set	49
7.	Computer desk (1.2 x 0.8 x 0.75m)	OKAN	Set	26
8.	Computer desk (1.4 x 0.75 x 0.75m)	OKAN	Set	2
9.	Filing cabinet	Hoa Phat	Set	2
10.	Desk (1.4 x 0.75 x 0.75m)	OKAN	Set	2
11.	Ventilating fan	Onkyo	Set	4
12.	White board (2.4 x 1.25 m)		Set	1

6. AC motor starting system room

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	1
2.	Exsiccator (16 liters per day)	Samsung	Set	1
3.	Automatic voltage stabilizer (20 KVA)	LiOA	Set	1
4.	Conference table (2.8 x 1.2 x 0.75m)	OKAN	Set	1
5.	Desk (1.2 x 0.65 x 0.75m)	OKAN	Set	2
6.	Swivel chair	Hoa Phat	Set	8
7.	Filing cabinet	Hoa Phat	Set	1
8.	Ventilating fan	Onkyo	Set	1
9.	White board (2.4 x 1.25 m)		Set	1

7. Steam turbine plant room

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	1
2.	Automatic voltage stabilizer (15 KVA)	LiOA	Set	1

No	Item/specification	Manufacturer	Unit	Quantity
3.	Automatic voltage stabilizer (7.5 KVA)	LiOA	Set	1
4.	Desk (1.2 x 0.45 x 0.75m)	OKAN	Set	12
5.	Desk (1.2 x 0.65 x 0.75m)	OKAN	Set	1
6.	Collapsible chair	Hoa Phat	Set	26
7.	Swivel chair without handrail	Hoa Phat	Set	1
8.	Computer desk (1.2 x 0.8 x 0.75m)	OKAN	Set	1
9.	Filing cabinet	Hoa Phat	Set	2
10.	Ventilating fan	Onkyo	Set	2

8. Main switch board simulator room

No	Item/specification	Manufacturer	Unit	Quantity
1.	Automatic voltage stabilizer (30 KVA)	LiOA	Set	1
2.	Automatic voltage stabilizer (15 KVA)	LiOA	Set	1
3.	Desk (1.2 x 0.45 x 0.75m)	OKAN	Set	4
4.	Desk (1.2 x 0.65 x 0.75m)	OKAN	Set	1
5.	Collapsible chair	Hoa Phat	Set	8
6.	Computer desk (1.2 x 0.8 x 0.75m)	OKAN	Set	1
7.	Ventilating fan	Onkyo	Set	2

9. Hydraulic experimental devices and automatic control system

No	Item/specification	Manufacturer	Unit	Quantity
1.	Air conditioner (12,000BTU)	National	Set	1
2.	Swivel chair without handrail	Hoa Phat	Set	1
3.	Computer desk (1.2 x 0.8 x 0.75m)	OKAN	Set	1
4.	Ventilating fan	Onkyo	Set	2

Budget covered by the Vietnamese side for supporting to facilities of the Project
(The statistic data as of March, 2003)

1. Small renovation/civil work

No.	Room	Expenses	
		VND	USD
1.	JICA project office	21 450 000	1,430.00
2.	Project office (for Vietnamese side)	12 449 000	829.93
3.	Radar/Arpa simulator	50 881 000	3,392.07
4.	GMDSS simulator	49 438 000	3,295.87
5.	Engine room simulator	48 332 000	3,222.13
6.	Main switch-board simulator	31 281 000	2,085.40
7.	AC motor starting system	40 336 000	2,689.07
8.	Steam turbine simulator room	32 449 000	2,163.27
9.	Engine cut-model	8 455 000	563.67
10.	Hydraulic experimental devices and Automatic control system	12 672 000	844.80
Total		307 192 200	20,516.20

2. Purchasing furniture

No.	Room	Expenses	
		VND	USD
1.	JICA project office	35 521 000	2,368.07
2.	Project office (for Vietnamese side)	13 966 900	931.13
3.	Radar/Arpa simulator	81 891 000	5,459.40
4.	GMDSS simulator	85 885 000	5,725.67
5.	Engine room simulator	90 805 600	6,053.71
6.	Main switch-board simulator	69 703 000	4,646.87
7.	AC motor starting system	54 663 000	3,644.20
8.	Steam turbine simulator room	31 091 000	2,072.73
9.	Engine cut-model	3 209 000	213.93
10.	Hydraulic experimental devices and Automatic control system	29 369 000	1,957.93
Total		493 441 500	33,073.63

Average exchange rate (USD/VND): 15 000

List of the Revised Syllabus

As of June 18, 2004

1. Navigation Faculty

No.	Name of Subject	No.	Name of Subject
1	Celestial Navigation	8	Maritime Safety
2	Terrestrial Navigation	9	Ship's Stability and Marine Cargo Operation
3	Meteorology and Oceanography	10	Maritime Law
4	Magnetic Compass	11	Navigational Electronic Equipment
5	Ship Manoeuvring	12	Navigational Electrical Equipment
6	COLREG 72	13	Principle of Automatic
7	Basic Skill of Seamen's Work	14	Maritime Communication

2. Marine Engineering Faculty

No.	Name of Subject	No.	Name of Subject
1	Marine Diesel Engine	11	Fundamental Automation
2	Ship propulsion Plant Operation	12	Ship Automation
3	Engine Room Arrangement	13	Marine Law
4	Ship Steam Propulsion Plant	14	Electrical Machinery and Equipment
5	Thermodynamic and Heat Transfer	15	Electrical Technique
6	Ship Auxiliary Machinery	16	Ship Electricity
7	Ship Refrigerator and Air Conditioner	17	Naval Architecture
8	Repairing and Maintenance	18	Metal and Metallurgy
9	Measurement Technique and Instruments	19	Engineering Drawing
10	Labour Safety	20	Machine Element and Tolerance

3. Refreshing Course

No.	Name of Subject (Navigation)	No.	Name of Subject (Marine Engineering)
1	Maritime Law	1	Ship Automation System
2	COLREG 72	2	Ship Electrical System
3	Watchkeeping	3	Pollution Prevention
4	Emergency and Rescue	4	Marine Diesel Engine
5	Maritime Meteorology	5	Operation of Marine Propulsion Plants
6	Electrical and Electronic Navigation Equipment	6	Marine Auxiliary Machinery
7	Terrestrial Navigation	7	Marine Boilers
8	Celestial Navigation	8	Refrigerator and Air Conditioning System
9	Magnetic Compass	9	Regulations and Occupational Safety
10	Cargo Operation	10	Engine Room Simulator
11	Ship Handling Simulator		

4. Upgrading Course

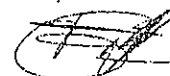
No.	Name of Subject (Navigation)	No.	Name of Subject (Marine Engineering)
1	Maritime Law	1	Marine Diesel
2	Collision Prevention and Manoeuvring	2	Operation of Propulsion Plants
3	Management	3	Ship Automation
4	Maritime Informatics	4	Ship Electrical System
5	Emergency and Rescue Situation	5	Auxiliary Machinery
6	Shipping Law	6	Refrigeration and Air Conditioning System
7	Maritime Insurance	7	Ship Repair Procedures
8	Ship's Stability and Cargo Handling	8	Chief Engineer's Professions
9	Navigation	9	Diagnosis of Engine Trouble
10	Maritime English	10	Naval Architecture and Ship Construction
11	Propulsion Plant	11	Maritime Laws
12	Bridge Team Management	12	Applied Informatics
		13	Maritime English

STCW 95 Table A- II /1

Specification of minimum standard of competence for officers in charge of a navigational watch on ships of 500 gross tonnage or more

Function : Navigation at the operational level

Competence	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	Educational environment (○:improved)
Plan and conduct a passage and determine position	<i>Celestial Navigation</i> Ability to use celestial bodies to determine the ship's Position Terrestrial and Coastal Navigation	○
	Ability to determine the ship's position by use of : .1 landmarks .2 aids to navigation, including lighthouses, beacons and buoys .3 dead reckoning, taking into account winds, tides, currents and estimated speed	○ — —
	Thorough knowledge of and ability to use navigational charts and publications, such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ship's routeing information	○
	<i>Electronic systems of position fixing and navigation</i> Ability to determine the ship's position by use of electronic navigational aids	○
	<i>Echo sounders</i> Ability to operate the equipment and apply the information correctly	○
	<i>Compass-magnetic and gyro</i> Knowledge of the principles of magnetic and gyro compasses	○
	Ability to determine errors of the magnetic and gyro compasses, using celestial and terrestrial means, and to allow for such errors	—
	<i>Steering control system</i> Knowledge of steering control systems, operational procedures and change-over from manual to automatic control and vice-versa	○
	Adjustment of control for optimum performance	○
	<i>Meteorology</i> Ability to use and interpret information obtained from shipborne meteorological instruments	—
	Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems	—
	Ability to apply the meteorological information available	—

Maintain a safe navigation watch	<i>Watchkeeping</i> Thorough knowledge of the content, application and intent of the International Regulation for Preventing Collisions at Sea	<input type="radio"/>
	Thorough knowledge of the basic principles to be observed in keeping a navigational watch	<input type="radio"/>
	Thorough knowledge of effective bridge team work procedures	<input type="radio"/>
	The use of routing in accordance with the General Provisions on Ships' Routing	—
Use of radar and ARPA to maintain safety navigation	<i>Radar Navigation</i> Knowledge of the fundamentals of radar and automatic radar plotting aids (ARPA)	<input type="radio"/>
	Ability to operate and to interpret and analyze information obtained from radar, including:	<input type="radio"/>
	Performance including:	
	.1 factors affecting performance and accuracy	<input type="radio"/>
	.2 setting up and maintaining displays	<input type="radio"/>
	.3 detection of misrepresentation of information, false echoes, sea return, etc. racons and SARTs	<input type="radio"/>
	Use including:	
	.1 range and bearing; course and speed of other ships; time and distance of closest approach of crossing, meeting overtaking ships	<input type="radio"/>
	.2 identification of critical echoes; detecting course and speed changes of other ships; effect of changes in own ship's course or speed or both	<input type="radio"/>
	.3 application of the International Regulations for Preventing Collisions at Sea	<input type="radio"/>
.4 plotting techniques and relative and true motion concepts	<input type="radio"/>	
.5 parallel indexing	<input type="radio"/>	
Principal types of ARPA, their display characteristics, performance standards and the dangers of over reliance on ARPA	<input type="radio"/>	
Ability to operate and to interpret and analyze information obtained from ARPA, including:	<input type="radio"/>	
.1 system performance and accuracy, tracking capabilities and limitations, and processing delays	<input type="radio"/>	
.2 use of operational warnings and system test	<input type="radio"/>	
.3 methods of target	<input type="radio"/>	
.4 true and relative vectors, graphic representation of target information and danger areas	<input type="radio"/>	
.5 deriving and analyzing information, critical echoes, exclusion areas and trial manoeuvres	<input type="radio"/>	

Respond to emergencies	<i>Emergency procedures</i>	
	Precautions for the protection and safety of passengers in emergency situations	—
	Initial action to be taken following a collision or a grounding ; initial damage assessment and control	—
	Appreciation of the procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port	—
Respond to a distress signal at sea	<i>Search and rescue</i>	
	Knowledge of the contents of the IMO Merchant Ship Search and Rescue Manual (MERSAR)	—
Use of Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases and use English in written and oral form	Adequate knowledge of the English language to enable the officer to use charts and other nautical publications, to understand meteorological information and messages concerning ship's safety and operation, to communicate with other ships and coast stations and to perform the officer's duties also with a multi-lingual crew, including the ability to use and understand the Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases	—
Transmit and receive information by visual signalling	<i>Visual signalling</i>	
	Ability to transmit and receive signals by Morse light	—
	Ability to use the International Code of Signals	—
Manoeuvre the ship	<i>Ship manoeuvring and handling</i>	
	Knowledge of :	
	.1 the effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances	○
	.2 the effects of wind and current on ship handling	○
	.3 manoeuvres and procedures for the rescue of person	○
	.4 squat, shallow water and similar effects	○
	.5 proper procedures for anchoring and mooring	○

Function : Cargo handling and stowage at the operational level

Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage	<i>Cargo handling and stowage</i>	
	Cargo handling, stowage and securing	○
	Knowledge of the effect of cargo including heavy lifts on the sea-worthiness and stability of the ship	○
	Knowledge of safe handling, stowage and securing of cargoes including dangerous, hazardous and harmful cargoes and their effect on the safety of life and of the ship	○

Function : Controlling the operation of the ship and care for persons on board at the operational level

Ensure compliance with pollution prevention requirements	<i>Prevention of pollution of the marine environment and anti-pollution procedures</i>	
	Knowledge of the precautions to be taken to prevent pollution of the marine environment	—
	Anti-pollution procedures and all associated equipment	—
Ensure compliance with pollution-prevention requirements	<i>Prevention of pollution of the marine environment and anti-pollution procedures</i>	
	Knowledge of the precautions to be taken to prevent pollution of the marine environment	—
	Anti-pollution procedures and all associated equipment	—
Maintain sea-worthiness of the ship	<i>Ship stability</i>	
	Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment	—
	Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy	—
	Understanding of the fundamentals of watertight integrity	—
	<i>Ship construction</i>	
	General knowledge of the principal structural members of a ship and the proper names for the various parts	—
Prevent, control and fight fire on board	<i>Fire prevention and fire-fighting appliances</i>	
	Knowledge of fire prevention	—
	Ability to organize fire drills	—
	Knowledge of classes and chemistry of fire	—
	Knowledge of fire-fighting systems	—
	Knowledge of action to be taken in the event of fire, including fires involving oil systems	—
Operate life-saving appliances	<i>Life-saving</i> Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits an	—
Apply medical first aid on board ship	<i>Medical aid</i> Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	—
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO Conventions concerning safety of life at sea and protection of the marine environment	—

STCW 95 Table A-II/2

Specification of minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more

Competence	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	Educational environment (O:improved)
Plan a voyage and conduct navigation	Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks taking into account, e.g.: .1 restricted waters .2 meteorological conditions .3 ice .4 restricted visibility .5 traffic separation schemes .6 areas of extensive tidal effects	—
	Routeing in accordance with the General Principles on Ships' Routeing	—
	Reporting in accordance with the Guidelines and Criteria for Ship Reporting Systems	○
Determine position and the accuracy of resultant position fix by any means	Position determination in all conditions: .1 by celestial observations	○
	.2 by terrestrial observations, including the ability to use appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix	○
	.3 using modern electronic navigational aids, with specific knowledge of their operating principles, limitations, sources of error, detection of misrepresentation of information and methods of correction to obtain accurate position fixing	○
Determine and allow for compass errors	Ability to determine and allow for errors of the magnetic and gyro-compasses	—
	Knowledge of the principles of magnetic and gyro-compasses	—
	An understanding of systems under the control of the master gyro and a knowledge of the operation and care of the main types of gyro-compass	—
Co-ordinate search and rescue operations	A thorough knowledge of and ability to apply the procedures contained in the IMO Merchant Ship Search and Rescue Manual (MERSAR)	—
Establish watchkeeping arrangements and procedures	Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea	—
	Thorough knowledge of the content, application and intent of the Basic Principles to be Observed in Keeping a Navigational Watch. Effective bridge teamwork procedures	○

<p>Maintain safe navigation through the use of radar and ARPA and modern navigation systems to assist command decision-making</p> <p>Note: Training and assessment in the use of ARPA is not required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned.</p>	An appreciation of system errors and thorough understanding of the operational aspects of modern navigational systems, including radar and ARPA	○
	Blind pilotage techniques	○
	Evaluation of navigational information derived from all sources, including radar and ARPA, in order to make and implement command decisions for collision avoidance and for directing the safe navigation of the ship	○
	The inter-relationship and optimum use of all navigational data available for conducting navigation.	○
<p>Forecast weather and oceanographic conditions</p>	Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather conditions and information received by weather fax	—
	Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centres and the dangerous quadrants	—
	Knowledge of ocean current systems	—
	Ability to calculate tidal conditions	—
	Use all appropriate navigational publications on tides and currents	○
<p>Respond to navigational emergencies</p>	Precautions when beaching a ship	—
	Action to be taken if grounding is imminent, and after grounding	—
	Refloating a grounded ship with and without assistance	—
	Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause	—
	Assessment of damage control	—
	Emergency steering	—
	Emergency towing arrangements and towing procedures	—

Manoeuvre and handle a ship in all conditions	Manoeuvring and handling a ship in all conditions, including:	
	.1 manoeuvres when approaching pilot stations and embarking or disembarking pilots with due regard to weather, tide, headreach and stopping distances	○
	.2 handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response	○
	.3 application of constant rate of turn techniques	○
	.4 manoeuvring in shallow water, including the reduction in under-keel clearance caused by squat, rolling and pitching	—
	.5 interaction between passing ships and between own ship and nearby banks (canal effect)	—
	.6 berthing and unberthing under various conditions of wind, tide and current with and without tugs	—
	.7 ship and tug interaction	—
	.8 use of propulsion and manoeuvring systems	—
	.9 choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used	—
	.10 dragging anchor; clearing fouled anchors	—
	.11 dry-docking, both with and without damage	—
	.12 management and handling of ships in heavy weather, including assisting a ship or aircraft in distress; towing operations; means of keeping an unmanageable ship out of trough of the sea, lessening drift and use of oil	—
	.13 precautions in manoeuvring to launch rescue boats or survival craft in bad weather	—
	.14 methods of taking on board survivors from rescue boats and survival craft	—
	.15 ability to determine the manoeuvring and propulsion characteristics of common types of ships with special reference to stopping distances and turning circles at various draughts and speeds	—
	.16 importance of navigating at reduced speed to avoid damage caused by own ship's bow wave and stern wave	—
	.17 practical measures to be taken when navigating in or near ice or in conditions of ice accumulation on board	—
.18 use of, and manoeuvring in and near, traffic separation schemes and in vessel traffic service(VTS) areas	—	
Operate remote controls of propulsion plant and engineering systems and services	Operating principles of marine power plants	—
	Ships' auxiliary machinery	—
	General knowledge of marine engineering terms	—

Function: Cargo handling and stowage at the management level

Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes	Knowledge of and ability to apply relevant international regulations, codes and standards concerning the safe <u>handling, stowage, securing and transport of cargoes</u>	—
	Knowledge of the effect on trim and stability of cargoes and cargo operations	—
	Use of stability and trim diagrams and stress calculating equipment, including automatic data-based (ADB) equipment and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits	—
	Stowage and securing of cargoes on board ships, including cargo handling gear and securing and lashing equipment	—
	Loading and unloading operations, with special regard to the transport of cargoes identified in the Code of Safe Practice for Cargo Stowage and Securing	—
	General knowledge of tankers and tanker operations	—
Carriage of dangerous cargoes	International regulations, standards, codes and recommendations on the carriage of dangerous cargoes, including the International Maritime Dangerous Goods (IMDG) Code and the Code of Safe Practice for Solid Bulk Cargoes (BC Code)	—
	Carriage of dangerous, hazardous and harmful cargoes; precautions during loading and unloading and care during the voyage	—

Function: Controlling the operation of the ship and care for persons on board at the management level

Control trim, stability and stress	Understanding of fundamental principles of ship construction and theories and factors affecting trim and stability and measures necessary to preserve trim and stability	—
	Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a <u>compartment and counter measures to be taken</u>	—
	Knowledge of IMO recommendations concerning ship stability	—
Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and the protection of the marine environment	Knowledge of international maritime law embodied in international agreements and conventions	—
	Regard shall be paid especially to the following subjects:	—
	.1 certificates and other documents required to be carried on board ships by international conventions, how they may be obtained and their period of validity	—

Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and the protection of the marine environment (continued)	.2 responsibilities under the relevant requirements of the International Convention on Load Lines	-
	.3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea	-
	.4 responsibilities under the International Convention for the Prevention of Pollution from Ships	-
	.5 maritime declarations of health and the requirements of the International Health Regulations	-
	.6 responsibilities under international instruments affecting the safety of the ship, passengers, crew and cargo	-
	.7 methods and aids to prevent pollution of the marine environment by ships	-
	.8 national legislation for implementing international agreements and conventions	-
	Maintain safety and security of the ship's crew and passengers and the operational condition of life-saving, fire-fighting and other safety systems	A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea)
Organization of fire and abandon ship drills		-
Maintenance of operational condition of life-saving, fire-fighting and other safety systems		-
Actions to be taken to protect and safeguard all persons on board in emergencies		-
Actions to limit damage and save the ship following a fire, explosion, collision or grounding		-
Develop emergency and damage control plans and handle emergency situations	Preparation of contingency plans for response to emergencies	-
	Ship construction, including damage control	-
	Methods and aids for fire prevention, detection and extinction	-
	Functions and use of life-saving appliances	-
Organize and manage the crew	A knowledge of personnel management, organization and training on board ship	-
	A knowledge of related international maritime conventions and recommendations, and national legislation	-
Organize and manage the provision of medical care on board	A thorough knowledge* of the use and contents of the following publications:	
	.1 International Medical Guide for Ships or equivalent national publications	-
	.2 Medical section of the International Code of Signals	--
	.3 Medical First Aid Guide for Use in Accidents Involving Dangerous Goods	-

STCW 95 Table A-III/1

Specification of minimum standard of competence for officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room

Function: Marine engineering at the operational level

Competence	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	Educational environment (○:improved)
Use appropriate tools for fabrication and repair operations typically performed on ships	Characteristics and limitations of materials used in construction and repair of ships and equipment	○
	Characteristics and limitations of processes used for fabrication and repair	○
	Properties and parameters considered in the fabrication and repair of systems and components	○
	Application of safe working practices in the workshop environment	○
Use hand tools and measuring equipment for dismantling, maintenance, repair and re-assembly of shipboard plant and equipment	Design characteristics and selection of materials in construction of equipment	○
	Interpretation of machinery drawings and handbooks	○
	Operational characteristics of equipment and systems	○
Use hand tools, electrical and electronic measuring and test equipment for fault finding, maintenance and repair operations	Safety requirements for working on shipboard electrical systems	○
	Construction and operational characteristics of shipboard AC and DC electrical systems and equipment	○
	Construction and operation of electrical test and measuring equipment	○
Maintain a safe engineering watch	Thorough knowledge of basic principles to be observed in keeping an engineering watch including:	-
	.1 duties associated with taking over and accepting a watch	-
	.2 routine duties undertaken during a watch	-
	.3 maintenance of the machinery space log book and the significance of the readings taken	-
	.4 duties associated with handing over a watch	-
	Safety and emergency procedures; changeover of remote/automatic to local control of all systems	○
	Safety precautions to be observed during a watch and immediate actions to be taken in the event of fire or accident, with particular reference to oil systems	-
Use English in written and oral form	Adequate knowledge of the English language to enable the officer to use engineering publications and to perform engineering duties	-

Operate main and auxiliary machinery and associated control systems	<i>Main and auxiliary machinery:</i> .1 preparation of main machinery and preparation of auxiliary machinery for operation	○
	.2 operation of steam boilers, including combustion systems	○
	.3 methods of checking water level in steam boilers and action necessary if water level is abnormal	○
	.4 location of common faults in machinery and plant in engine and boiler rooms and action necessary to prevent damage	○
Operate pumping systems and associated control systems	<i>Pumping systems:</i> .1 routine pumping operations	○
	.2 operation of bilge, ballast and cargo pumping systems	○

Function: Maintenance and repair at the operational level

Maintain marine engineering systems including control systems	<i>Marine systems</i> Appropriate basic mechanical knowledge and skills Safety and emergency procedures:	—
	Safe isolation of electrical and all plant and equipment required before personnel are permitted to work on such plant or equipment	—
	Undertake maintenance and repair to plant and equipment	--

Function: Electrical, electronic and control engineering at the operational level

Operate alternators, generators and control systems	<i>Generating plant:</i> Appropriate basic electrical knowledge and skills	○
	Preparing, starting, coupling and changing over alternators or generators	○
	Location of common faults and action to prevent damage	○
	Control systems:	○
	Location of common faults and action to prevent damage	○

Function: Controlling the operation of the ship and care for persons on board at the operational level

Ensure compliance with pollution prevention requirements	<i>Prevention of pollution of the marine environment</i> Knowledge of the precautions to be taken to prevent pollution of the marine environment	○
	Anti-pollution procedures and all associated equipment	○
Maintain seaworthiness of the ship	<i>Ship stability:</i> Working knowledge and application of stability, trim and stress tables, diagrams and stress calculating equipment	○
	Understanding of the fundamentals of watertight integrity	○
	Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy	○
	<i>Ship construction</i> General knowledge of the principle structural members of a ship and the proper names for the various parts	○

Prevent, control and fight fires on board	<i>Fire prevention and fire-fighting appliances:</i>	
	Knowledge of fire prevention	—
	Ability to organize fire drills	—
	Knowledge of fire-fighting systems	—
Operate life-saving appliances	Action to be taken in the event of fire, including fires involving oil systems	—
	<i>Life-saving</i> Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	—
	Knowledge of survival at sea techniques	
Apply medical first aid on board ship	<i>Medical aid</i> Practical application of medical guides and advice by radio, including the ability to take effective action base on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	—
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment	—

STCW 95 Table A-III/2

Specification of minimum standard of competence for chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion or more

Function: Marine engineering at the management level

Competence	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	Educational environment (O:improved)
Plan and schedule operations Start up and shut down main propulsion and auxiliary machinery including associated systems	<i>Theoretical knowledge</i>	
	Thermodynamics and heat transmission	○
	Mechanics and hydromechanics	○
	Operating principles of ship power installations (diesel, steam and gas turbine) and refrigeration	○
	Physical and chemical properties of fuels and lubricants	○
	Technology of materials	○
	Naval architecture and ship construction, including damage control	○
Operate, monitor and evaluate engine performance and capacity Maintain safety of engine equipment, systems and services	<i>Practical knowledge</i>	
	Operation and maintenance of:	
	.1 marine diesel engines	○
	.2 marine steam propulsion plant	○
	.3 marine gas turbines	-
	Operation and maintenance of auxiliary machinery, including pumping and piping systems, auxiliary boiler plant and steering gear systems	○
Operation, testing and maintenance of control systems	○	
Operation and maintenance of cargo-handling equipment and deck machinery	-	
Manage fuel and ballast operations	Operation and maintenance of machinery including pumps and piping systems	○
Use internal communication systems	Operation of all internal communication systems on board	-

Function: Electrical, electronic and control engineering at the management level

Operate electrical and electronic control equipment Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition	<i>Theoretical knowledge</i> Marine electrotechnology, electronics and electrical equipment	○
	Fundamentals of automation, instrumentation and control systems	○
	<i>Practical knowledge</i> Operation, testing and maintenance of electrical and electronic control equipment including fault diagnostics	○

Function: Maintenance and repair at the management level

Organize safe maintenance and repair procedures	<i>Theoretical knowledge</i> Marine engineering practice	○
	<i>Practical knowledge</i> Organizing and carrying out safe maintenance and repair procedures	—
Detect and identify the cause of machinery malfunctions and correct faults	<i>Practical knowledge</i> Detection of machinery malfunction, location of faults and action to prevent damage	○
Ensure safe working practices	<i>Practical knowledge</i> Safe working practices	—

ANNEX 12.

Achievement and Evaluation Grid

Evaluation Criterion and Rating System

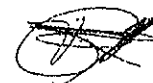
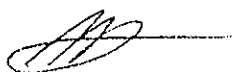
Relevance: The extent to which the project's overall goal and purpose are consistent with the country's current development priorities and with current JICA country and sectoral assistance strategies and corporate goals. Possible *ratings*: High, Substantial, Modest, Low

Effectiveness: The extent to which the project purpose was achieved, or expected to be achieved, taking into account relative contribution of the outputs to achieve the project purpose
Possible *ratings*: High, Substantial, Modest, Low

Efficiency: The extent to which the project's outputs achieved and resources put in, or are expected to achieve or put in, the extent to which resources utilized to generate the outputs
Possible *ratings*: High, Substantial, Modest, Low

Sustainability: The resilience to risk of net benefits flows over time.
Possible *ratings*: Highly Likely, Likely, Unlikely

Impact: Any of the positive and/or negative influence left after the project
Possible *ratings*: High, Substantial, Modest, Low



Achievement Grid

Inputs

Ratings: A=High, B=Substantial, C=Modest, D=Low

Inputs		Descriptions	Source of Information	Focal subjects	Results	Rating
Inputs from Japanese side						
1.	Japanese long-term experts	Project monitoring reports, interview, etc.	To compare man-month and timing of planned with actual input	3 personnel were assigned as Chief advisor / Navigation, Marine Engineering, Project Coordinator for three years. In total, 107 man-months were spent.	A	
2.	Japanese short-term experts	Project monitoring reports, interview, etc.	To compare man-month and timing of planned with actual input	12 personnel were assigned following positions in total: GMDSS Training 2, Maritime Research 1, Engine room Simulator 1, Maritime Research/Engineering 2, Maritime Research/Navigation 2, Main switch Board Simulator 1, Simulator Training 1, Steam Turbine Experiment / Maritime Research 1, Ship Handling Training 1. In total, 8.5 man-months were spent.	B	
3.	Provision of equipment and materials	Project monitoring reports, interview, etc.	Amount of purchase and utilization of the equipment	Simulators and other maritime training equipment were supplied by the Project. Total amount of the equipment was 311 millions Yens. For the details, refer to Annex-4.	A	
4.	Counterparts training in Japan	Project monitoring reports, interview, etc.	Time spent for training courses and appropriateness of course subjects	13 project counterparts were sent to the relevant academic institutions in Japan. Total man-month was 16.8mm.	A	
5.	Supplementary support for operation costs (ordinary running costs and special measures to support the project activities) and for direct provision of physical support in terms of lecture and practice	Project monitoring reports, interview, etc.	How much the operation costs were supplemented by JICA if any	Subjects for the training in Japan was maritime education system, project management (PCM), training onboard, simulator training, research on marine traffic, research on engine room simulator, and training for in-service seafarers.	A	
Inputs from Vietnamese side						
6.	Assignment of the project counterparts	Project monitoring reports, interview, etc.	To confirm necessary and timely inputs were made	In total, 23 lecturers and other personnel in VIMARU are being assigned as the project counterparts as of June 2004. It was reported that, among them, the core counterparts are totaled 7 to 8 in the two faculties. All these core counterparts have regularly attended weekly meetings.	A	
7.	Lecturers in Navigation Faculty, Marine Engineering Faculty and Maritime Training Center	Project monitoring reports, interview, etc.	To compare necessary numbers for manning of the lecturers with actual numbers allocated	Some 30% to 40% of the lecturers listed in the quorum are always absent for jobs onboard. It was told that their absence has not given obstacles for maintaining the lectures and practices so far. The same observation was given by the experts. It is however questionable whether the education quality can be kept if the present increase of the entrants are continued further more in the future.	B	

8.	Facilities: maintenance and expansion	Project monitoring reports, interview, etc.	To confirm necessary and timely inputs were made	For installing the simulators and other training equipment that were supplied by the Project, necessary works for renovating rooms were done by VIMARU. Those works for the renovation included installation of airconditioners, exsiccators, AVRs and all necessary office furniture.	A
9.	Operation costs	Project monitoring reports, interview, etc.	To confirm necessary and timely inputs were made	In the initial stage of the Project, the counter budget was facilitated by the Government that totaled 3.8 billion VND. From 2001 to 2003, 1.85 billion VND was reimbursed for the above renovation, electricity and water charges, fuel costs, transports, maintenance, translations and allowance. The remains (1.95 billion VND) is applied for the operation in 2004 and the post project stage.	A

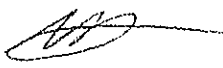
Project Activities

	Descriptions	Source of Information	Methods	Results	Rating
1. Establishment of Project Operation Unit	1-1 Establishment of the Joint Steering Committee (JSC) and Executive Committee (EC).			Both committees were organized in the initial stage of the Project. The JSC has been held annually, twice so far in April 2002 and June 2003. The EC has been held 8 times.	A
	1-2 Allocation of appropriate personnel with their necessary duty and responsibility.	Activity reports, interview, project monitoring reports, etc.	To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.	As the project counterparts, 4 personnel in the International Relation Department (Administration), 8 in Navigation Faculty, 7 in Marine Engineering Faculty, and 4 in Maritime Training Center are being assigned as of June 2004. Through the project term until the present, 36 counterparts in total were involved in the Project. For each department, weekly meetings have been held with the experts to check progress of the assigned duties and direction of the plans.	A
	1-3 Design and implementation of monitoring and evaluation system.			Evaluation and monitoring have been reported to the EC and results were discussed therein.	B
	1-4 Publication of project news letters periodically.			This activity was added by recommendation of the consultation team from JICA in 2003. The newsletters have been published 7 times so far, and distributed to the relevant government offices and institutes.	A
2. Education and Training in Navigation Faculty	2-1 To review and improve the curricula of Navigation Faculty			Following activities have been undertaken in parallel. a) Started in October 2001 and completed in February 2003. b) Curriculum were found mostly unnecessary to revise. In accordance with STCW95, revising of the syllabus were started partly in January 2002, and wholly in July 2002. Provisional version was completed in June 2003, and afterwards reviewing has been undertaken and completed in February 2004. c) By May 2002, audiovisual equipment and video materials had been supplied, and these were applied to the lectures and practices already. d) Reference books and IMO guideline books, based on which teaching materials and textbooks were drafted and compiled, had been supplied from January 2001 to March 2004. Teaching materials and textbooks had been made in parallel to drafting of the revised syllabus and mostly completed by March 2004. Digitalized materials have been continued to work with by the counterparts themselves in sustainable basis.	A
	a) To analyze the existing curricula and teaching method. b) To improve the curricula and teaching method in accordance with STCW95. c) To introduce audio-visual teaching equipment and apply to the development of effective training method. d) To develop necessary teaching materials for the new curricula.				

<p>2-2 To introduce curriculum utilizing Radar / ARPA Simulator, GMDSS Simulator.</p> <p>a) To set up Radar / ARPA Simulator, GMDSS Simulator and other peripheral equipment.</p> <p>b) To improve the existing curriculum to fit education and training utilizing simulator.</p> <p>c) To introduce the new curriculum utilizing simulator.</p> <p>d) To establish the criteria of evaluation for the education and training utilizing simulator.</p> <p>e) To train instructors for the education and training utilizing simulator.</p> <p>f) To train staff for management, operation and maintenance of simulator.</p> <p>g) To conduct the education and training utilizing simulator.</p>	<p>Activity reports, interview, project monitoring reports, etc.</p>	<p>To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.</p>	<p>A</p> <p>a) In July 2002, both of the simulator were installed in designated rooms in VMARU.</p> <p>b) Started at the time of the installation, and the provisional version was completed in June 2003. Afterwards reviewing had been made and the final version was completed in February 2004.</p> <p>c) The new syllabus was applied in trial basis from October 2002. Since October 2003, fully applied and continued afterwards until the present.</p> <p>d) Evaluation sheet for the simulator training was started to draft in July 2003, and finalized in March 2004. Presently the evaluation based on the sheets are applied to the practices.</p> <p>e) Since the time of installation in July 2000, training has been conducted for the lecturers and instructors involved. Those in charge of the simulators training are 8 personnels in the faculty.</p> <p>f) Three staffs are assigned for management of the simulators, 4 for operation and 3 for maintenance. Training for them has been conducted as in the above e).</p> <p>g) The simulator aided education and training for the students have been conducted as in the above c).</p>
<p>3-1 To review and improve the curricula of Marine Engineering Faculty.</p> <p>a) To analyze the existing curricula and teaching method.</p> <p>b) To improve the curricula and teaching method in accordance with STCW95.</p> <p>c) To introduce audio-visual teaching equipment and apply to the development of effective training method.</p> <p>d) To develop necessary teaching materials for the new curricula.</p>	<p>Activity reports, interview, project monitoring reports, etc.</p>	<p>To which extent, the activity was achieved. How these activities could contribute to attain corresponding</p>	<p>A</p> <p>Following activities have been undertaken in parallel.</p> <p>a) Started in October 2001 and completed in March 2003.</p> <p>b) Curriculum were found mostly unnecessary to revise. In accordance with STCW95, revising of the syllabus were started in July 2002. Provisional version was completed in August 2003, and afterwards reviewing has been undertaken and completed in January 2004.</p> <p>c) By May 2002, audiovisual equipment and video materials had been supplied, and these were applied to the lectures and practices already.</p> <p>d) Reference books and IMO guideline books, based on which teaching materials and textbooks were drafted and compiled, had been supplied from January 2001 to March 2004. Teaching materials and textbooks had been made in parallel to drafting of the revised syllabus and mostly completed by February 2004. Digitalized materials have been continued to work with by the counterparts themselves in sustainable basis.</p>

<p>3-2 To introduce curriculum utilizing Engine Room Simulator.</p> <p>a) To set up Engine Room Simulator and other peripheral equipment.</p> <p>b) To improve the existing curriculum to fit education and training utilizing simulator.</p> <p>c) To introduce the new curriculum utilizing simulator.</p> <p>d) To establish the criteria of evaluation for the education and training utilizing simulator.</p> <p>e) To train instructors for the education and training utilizing simulator.</p> <p>f) To train staff for management, operation and maintenance of simulator.</p> <p>g) To conduct the education and training utilizing simulator.</p>	<p>output.</p>	<p>A</p> <p>a) In July-2002, the Engine Room Simulator were installed in a designated room in VIMARU.</p> <p>b) Started at the time of the installation, and the provisional version was completed in August 2003. Afterwards reviewing had been made and the final version was completed in January 2004.</p> <p>c) The new syllabus was applied in trial basis from October 2002. Since October 2003, fully applied and continued afterwards until the present.</p>
<p>4-1. To review and improve the curricula of retraining courses for existing seafarers.</p> <p>a) To analyze the existing curricula and teaching method.</p> <p>b) To improve the curricula and teaching method in accordance with STCW95 and add the necessary retraining.</p> <p>c) To introduce audio-visual teaching equipment and apply to the development of effective training method.</p> <p>d) To develop necessary teaching materials for the new curricula.</p>	<p>To which extent the activity was achieved. How these activities could contribute to attain corresponding output.</p> <p>Activity reports, interview, project monitoring reports, etc.</p>	<p>B</p> <p>d) Evaluation sheet for the simulator training was started to draft in July 2003, and finalized in March 2004. Presently the evaluation based on the sheets are applied to the practices.</p> <p>e) Since the time of installation in July 2000, training has been conducted for the lecturers and instructors involved. Those in charge of the simulator training are 6 personnels in the faculty.</p> <p>f) Three staffs are assigned for management of the simulators, 3 for operation and 2 for maintenance. Training for them has been conducted as in the above e).</p> <p>g) The simulator aided education and training for the students have been conducted as shown in the above c).</p> <p>Activity a) and b) was started in July 2003 at the same time (Before July 2003, tasks for revision of the syllabus were focused on those for the two faculties).</p> <p>Completion of the tasks: scheduled in June 2004 for the navigation, completed in March 2004 for the marine engineering.</p> <p>c) Audiovisual equipment were supplied for the MTC courses in March 2004. In the faculties, rather high achievement has been observed in audiovisual-equipment assisted education. The measures taken in the faculties and those experiences are being applied to the MTC at present.</p> <p>d) The same methods for making teaching aids are being applied to the MTC courses.</p>
<p>3. Education and Training in Marine E</p>		

<p>4. Education and Training</p> <p>4-2 To introduce curriculum utilizing Radar / ARPA Simulator, GMDSS Simulator and Engine Room Simulator to the retraining courses.</p> <p>a) To improve the existing curriculum to fit education and training utilizing simulator.</p> <p>b) To introduce the new curriculum utilizing simulator.</p> <p>c) To establish the criteria of evaluation for the education and training utilizing simulator.</p> <p>d) To train instructors for the education and training utilizing simulator.</p> <p>e) To conduct the education and training utilizing simulator.</p>		<p>B</p> <p>a) While undertaking revision of the syllabus, the simulator assisted training was introduced to the MTC.</p> <p>b) Introduction of the revised syllabus is on-going as of June 2003. Though not finalized yet, it is expected to complete by the end of the Project.</p> <p>c) Evaluation criteria for the simulator-assisted MTC training is not finalized yet.</p> <p>d) The simulator instruction for the MTC are the mandate of the lecturers in the two faculties. 6 instructors are assigned for each of the navigation and marine engineering courses in the MTC.</p> <p>e) Since the revised syllabus are under preparation, the simulator-assisted MTC training is being undertaken in trial bases at present.</p>
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<p>5. Research Activities</p>	<p>5. To enhance the maritime research activities.</p> <p>a) To review the past research outputs.</p> <p>b) To advice for the researchers.</p> <p>c) To hold workshop to enhance of maritime research activities.</p> <p>d) To undertake new field of maritime research.</p> <p>e) To arrange necessary books for marine research.</p> <p>f) To support to send the researchers to the Japanese maritime institutions.</p> <p>g) To submit study reports to maritime institutions.</p> <p>h) To organize some research activities.</p>	<p>Activity reports, interview, project monitoring reports, etc.</p>	<p>To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.</p>	<p>a) By July 2002, the review on outcomes by the past researches in VIMARU was completed.</p> <p>b) Advisory works were started in January 2002 and have been done until the present. Received six short-term experts for the maritime research.</p> <p>c) The workshops were hold every time when received the short-term experts for the maritime research (six times).</p> <p>In each of the two faculties, presentation of the reserch outcomes (rollout) has been done once a year.</p> <p>In each of the divisions in the two faculties, the rollout has been done twice a year.</p> <p>d) Periodical publication on the research achievement has been done 3 times so far. New research subjects can be reviewed in these publications that include air exchange system of diesel engines, Galileo development program, emergencies onboard ships and the solutions, documentary evidence requirements for cargo loss or damage, and fuzzy controller for non-linear objects with multi parameters</p> <p>e) By March 2004, 427 reference books on the maritime were supplied.</p> <p>f) By the counterparts training, 13 personnel have been sent to the maritime education institutes in Japan so far.</p> <p>g) Research works presented to the maritime institutes:</p> <ul style="list-style-type: none"> - Thesis on the engine room simulator assisted education, Japan Marine Engineering Society, collaboration with a professor of Marine Technical College in Japan. - Introduction on the maritime education and training in Vietnam, Asia Navigation Conference(ANC), September 2003 - Presentations in the International Maritime Lecturers Associations (IMLA), planned <p>h) Since November 2003, publications on the research achievement has been done every three months, 3 times in total so far.</p>	<p>A</p>
<p>6. Communication with Foreign Maritime Institutions</p>	<p>6 To increase communication with the foreign maritime institutions.</p> <p>a) To support for the academic information exchange.</p> <p>b) To support to send staff to the foreign maritime institutions for the academic information exchange.</p>	<p>Activity reports, interview, project monitoring reports, etc.</p>	<p>To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.</p>	<p>a) Information exchange with the maritime training project in Turk, November 2003</p> <p>Presentation of the research works to IMLA and ANC, 3 times</p> <p>Join to Nautical Institute (NI) in UK and International Association of Maritime Universities (IAMU)</p> <p>Introduction by the short-term experts on the maritime research in Japan</p> <p>b) At the time of the counterparts training in Japan, 13 personnel in VIMARU could exchange information with the maritime education institutes.</p> <p>Supports for sending a student for education in JAPAN</p> <p>Supports for sending a student for education in World Maritime University (WMU)</p>	<p>A</p>

Project Outputs

	<p>• Joint Steering Committee is established and project is managed smoothly helped by the Committee.</p>	<p>The JSC has been hold annually; twice so far in April 2002 and June 2003.</p>	<p>A</p>
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<p>1. Project operation unit is to be established.</p>	<ul style="list-style-type: none"> • Minute of the Joint Steering Committee Meeting. • Minute of the Executive Committee Meeting. • Project Activity Reports • List of the Counterpart. • Record of the Inputs. • Project news letters 	<ul style="list-style-type: none"> • Enough number of personnel is allocated as planned. • All the responsibility and works are clearly assigned to the appropriate personnel. • Project progress in accordance with plan of operation. • Project monitoring and evaluation are conducted by Executive Committee. • Project budget (Japanese and Vietnamese side) is allocated as planned. • Publicity activities are carried out periodically by project. 	<p>For the project counterparts, 4 personnel in the International Relation Department (Administration), 8 in Navigation Faculty, 7 in Marine Engineering Faculty, and 4 in Maritime Training Center are being assigned as of June 2004. A scale of the deployment is deemed enough.</p>	A
<p>2. Education and training in Navigation Faculty in VIMARU meet the international standards.</p>	<ul style="list-style-type: none"> • Revised curricula. • List of introduced teaching material • Project Activity Reports • List of number of instructors and staff for management, operation and maintenance of simulators. 	<ul style="list-style-type: none"> • All the education and training curricula are established in accordance with STCW95. • Introduction and application of training equipment and materials as planned which meet international standards. 	<p>The TORs for the counterparts were not prepared. Their mandates have been clarified in the Executive Committee meeting and weekly meetings with the experts.</p>	A
<p>3. Education and training in Marine Engineering Faculty in VIMARU meet the international standards.</p>	<p>1) Those in charge of the simulators training are 8 personnel in Navigation and 6 in Marine Engineering. 2) For Navigation, 3 staffs are assigned for management of the simulators, 4 for operation and 3 for maintenance. 3) For Marine Engineering, 3 staffs are assigned for management of the simulators, 3 for operation and 2 for maintenance.</p>	<ul style="list-style-type: none"> • Project progress in accordance with plan of operation. • Project monitoring and evaluation are conducted by Executive Committee. • Project budget (Japanese and Vietnamese side) is allocated as planned. • Publicity activities are carried out periodically by project. 	<p>The activities to improve the maritime education and training (MET) in Navigation and Marine Engineering Faculty have been undertaken mostly as planned. Improvement for the MET in the MTC and the maritime research were started behind the initial schedule. The outputs by those activities will be achieved by the end of the Project.</p>	B
			<p>Evaluation and monitoring have been reported to the EC and results were discussed therein. The EC has been held 8 times so far.</p>	B
			<p>The budgets have been allocated by Japan as scheduled. The Government's approval for the budget application made by VIMARU for the Project was delayed almost a year, but afterwards the disbursements were made without delays.</p>	A
			<p>The newsletters, having a circulation of 300 copies, have been published 7 times so far, and distributed to the relevant government offices and institutes.</p>	A
			<p>In accordance with STCW95, revising of the syllabus were started partly in January 2002, and wholly in July 2002. Provisional version was completed in June 2003, and afterwards reviewing has been undertaken and completed in February 2004. The new syllabus was applied in trial basis from October 2002. Since October 2003, fully applied and continued afterwards until the present.</p>	A
			<p>The simulators, Radar/ARPA, GMDSS, Engine Room, were installed in designated rooms in VIMARU, and have been used for the MET. Likewise, other training equipment was delivered as scheduled and has been used until the present.</p>	A

4.	Education and training in retraining courses in VIMARU meet the international standards	<ul style="list-style-type: none"> Revised curricula Records of Retraining courses List of number of instructors and staff for management, operation and maintenance of simulators. 	<ul style="list-style-type: none"> All the education and training curricula are established in accordance with STCW95. Number of the maritime officers taking retraining course. Number of instructors and staff for management, operation and maintenance of simulator. 	<p>For the marine engineering courses in the MTC, revision of the syllabus was completed in February 2004. For the navigation courses in the MTC, the revision will be completed by the end of June 2004.</p> <p>Number of the enrollments in the MTC in the project term for the navigation: 883 persons for the marine engineering: 922 persons</p> <p>The simulator instruction for the MTC are the mandate of the lecturers in the two faculties. 6 instructors are assigned for each of the navigation and marine engineering courses in the MTC. The numbers of staffs for management, operation and maintenance are same as those for the two faculties.</p>	B
5.	Research activity in VIMARU is to be enhanced	<ul style="list-style-type: none"> Data from Scientific Research Department, VIMARU Academic papers of maritime institutions. Record of the study in maritime institutions. Activity Reports of short term experts. Record of the counterpart training in Japan. List of the books for maritime research. 	<ul style="list-style-type: none"> Number of undertaken research works increases. Study reports in VIMARU are submitted to maritime institutions. Times of workshop and/or seminar. 	<p>According to the periodical publication on the research achievement that has been published 3 times so far, following number of the research works have been done;</p> <p>No.1 (November 2003): 8 articles No.2 (January 2004): 5 articles No.3 (April 2004): 7 articles</p> <p>1) Thesis on the engine room simulator assisted education, Japan Marine Engineering Society, collaboration with a professor of Marine Technical College in Japan 2) Introduction on the maritime education and training in Vietnam, Asia Navigation Conference (ANC), September 2003 3) Presentations in the International Maritime Lecturers Associations (IMLA), planned</p> <p>The workshops were held every time when received the short-term experts for the maritime research (six times). In each of the two faculties, presentation of the research outcomes (rollout) has been done once a year. In each of the divisions in the two faculties, the rollout has been done twice a year.</p>	A
6.	Communication with the foreign maritime institutions is to be increased	<ul style="list-style-type: none"> Record of information exchange. International maritime journals Record of research students who study abroad. Record of counterpart training in Japan. 	<ul style="list-style-type: none"> Maritime information is exchanged with international maritime institutions. Reports are carried on the international maritime journals and/or internet web site 	<p>1) Information exchange with the maritime training project in Turk, November 2003 2) Presentation of the research works to IMLA and ANC, 3 times 3) Join to Nautical Institute (NI) in UK and International Association of Maritime Universities (IAMU), April and May in 2004</p> <p>Refer to the second OVI in the output 5.</p>	A

Project Purpose	Descriptions	Source of Information	OVIs in the PDM	Results	Rating
	Vietnam Maritime University (VIMARU) produces educated and refreshed navigation officers and marine engineers who qualify international standards.	<ul style="list-style-type: none"> Data from Certificate Registration Office, VIMAMARINE Data from Dept. of Academic Affairs, VIMARU 	<ul style="list-style-type: none"> Number of the refreshed First/Second class Deck officers becomes 800 by the year 2004. Number of the refreshed First/Second class Engine officers becomes 580 by the year 2004. 	Number of the enrollments in the MTC in the project term as of June 2004 for the navigation: 883 persons	A
			<ul style="list-style-type: none"> Increased number of VIMARU graduates who are employed by ocean going shipping companies. 	Navigation Faculty Bachelor course: 98 (2002), 111 (2003), 118 (2004, expected) Diploma course: 57 (2002), 78 (2003), 103 (2004, expected) Marine Engineering Faculty Bachelor course: 60 (2002), 80 (2003), 107 (2004, expected) Diploma course: 45 (2002), 66 (2003), 87 (2004, expected)	A
			<ul style="list-style-type: none"> Number of students who undergo the improved training in Navigation Faculty during the cooperation period amount to 600. 	For the Navigation Faculty, some 640 students can undergo the improved MET in the project term.	A
			<ul style="list-style-type: none"> Number of student who undergo the improved training in Marine Engineering Faculty during the cooperation period amount to 540. 	For the Marine Engineering Faculty, some 550 students can undergo the improved MET in the project term.	A
			<ul style="list-style-type: none"> Number of students who undergo the improved training in other Faculties during the cooperation period. 	For the Marine Electrical Engineering Faculty and Marine Electronics and Communications Faculty, some 340 students can undergo the improved MET in the project term.	-

Relevance

Descriptions		Source of Information	Focal Subjects	Results
1.	Relevance of the overall goal and the project purpose to the national policy of the Government of Socialist Republic of Vietnam	Policy papers, Decree, interview	Development needs for the international and domestic fleets of the Vietnamese flag for meeting the increased maritime transports	For meeting the increased maritime transport in Vietnam, the demands for developing the international and domestic fleets of the national flag have been noted by the Government for a long time. To meet such demands, the development strategy (2003 to 2010) was formulated by the Government as summarized in the Prime Minister Decree No. 1195/QĐ-TTg, 4 November 2003.
2.	Needs of the project operation unit (VIMARU)	Project documents, interview	Needs to improve institutional capabilities of VIMARU for meeting STCW95 requirements in terms of human resources and educational facilities	Fulfillment of the STCW78/95 requirements and pursuance of "international standards" in the education of seafarers has been a core mandate of VIMARU since its establishment in 1976. For performing the mandate, needs to improve institutional capabilities of VIMARU was noted when the Project was designed in 2000 and 2001. Directed with the above strategy that prioritizes human resources development in the maritime sector, VIMARU has also come to face a rapid increase of the enrollments in the recent years.
3.	Needs of the beneficiaries (direct beneficiaries: students and re-trainees for the 1st and 2nd class maritime certificates)	Interview or data from MTC, Certificate Registration Office or VINAMARINE	Position of VIMARU among the seafarers education institutes in Vietnam	Presently VIMARU and HCMUT (Hochiminh City University of Transport, established in 2001) provide education and re-training for the 1st and 2nd class certificate. In the two maritime secondary schools, education for 3rd and 4th class certificate are provided. For those who need to be educated for the 1st or 2nd class certificate, VIMARU has been their first choice because of its historical position as a main source of the upper class seafarers and wider range of educational resources and well equipped facilities.
			Employment opportunity in the international and domestic shiplines	Among the graduates from the VIMARU's bachelor course for navigation in 2003, 82% are employed by ocean-going shiplines and 12% by domestic lines. For marine engineering, 67% are employed by ocean-going shiplines and 12% by domestic lines. The same tendency is observed in the diploma course. Thus, a majority of the VIMARU graduates are situated to be able to find employment in shiplines for either of ocean-going or domestic route.
4.	Consistency with the Japanese ODA policies in the recipient country	Recent ODA guide line for Vietnam	Do the overall goal and project purpose comply with the policies of JICA?	Human resource development is one of the prioritized guide lines for the official development assistance for Vietnam by JICA. The Project has been aimed at improving of the institutional capabilities of a representative maritime education institute in the country. Both of the design and resulted outcomes of the Project well comply with the guide line.

General conclusion
 The relevance of the Project is high. It was able to confirm that the Project has been operated in the last 3 years in a direction suited to the national policy, and with deep relation to the needs of the implementation institute and the direct beneficiaries. Hochiminh City University of Transportation (HCMUT), a former Hochiminh branch of VIMARU, was made independent in 2001, and since that time has been serving for the upper class maritime education as well. This means the beneficiaries have been given another alternative for their education. VIMARU has however played a leading role in the superior education for the maritime sector, and hence can be deemed still appropriate as the operation unit of the Project.

Remark: Definition of the "international standards"

In this evaluation, the international standards mean the criteria for employment of the 1st and 2nd class officers. Generally, these criteria are prepared to clarify applicant's particulars in five views; professional qualification, English skills, behavior conducts, health status and possible employment term. Required level of these are given respectively by ocean-going shiplines depending on demand and supply conditions in the seafarers markets.

Effectiveness

1.	Accomplishment of the project purpose	Accomplishment Grid	To conclude as to whether the project purpose is achieved	The project purpose was modestly achieved. Although all the indicators are being cleared as of June 2004, these attainments seem not to assure a true achievement of the project purpose, since it was aimed at something that cannot be measured by the indicators provided. VIMARU has come to be able to send out the graduates and re-trainees qualified with the requirements of the convention STCW78/95. However, according to results of interview with a shipline representing the maritime transport industry in Vietnam, it is difficult yet to say the graduates can meet the international standards.
2.	Contribution of the project outputs to the project purpose	Accomplishment Grid	To measure the net contribution of the outputs to the project purpose	The Project has been aimed at improving of the institutional capabilities of a representing maritime education institute in the country. Through a process for generating three outputs directly related to enhancement of Navigation and Marine Engineering Faculty, as well as Marine Training Center for two re-training courses (refreshing and upgrading courses), VIMARU's education system - schedule planning, syllabus, teaching methods and aids - could be improved to a considerable extent. By other two outputs in research and exchanges with foreign maritime institutes, the lecturers could have various opportunities to develop their abilities for maritime education.
<p>General conclusion The effectiveness of the Project is substantial. The project purpose was set out aimed at educating the graduates and re-trainees to a level of the international standards. Though the project documents do not give a clear definition, it is apparent that the international standards denote something that exceeds or wider than the STCW95 requirements, in the level of which the officers can be enough competent in the international or regional seafarer's markets. As one of such competency, English skills of the graduates are needed to enhance more. This partly unfulfilled outcome gave a reason for this evaluation on the effectiveness. In the meanwhile, it was noted the project purpose should have been described in a clearer way enough for giving a specific level to be achieved. This unclarity might have limited the resources made available to the Project. For an example, the Project was not given a component for enhancing English skills of the students and re-trainees.</p>				

Efficiency

1.	Input Accomplishment	Accomplishment Grid	General conclusion	<p>Japanese side: Inputs by the Japanese side were executed in time. Teaching aids that include the simulators, IMO guideline and other reference books in total of 427 volumes, and some audiovisual equipment were supplied to fill the requirements and improve the education environment.</p> <p>Vietnamese side: Project counterparts were assigned as planned. Costs for the room renovation and operation necessary for the Project have been totally borne by the Government through the counter fund provided for the three years project term.</p>
2.	Output Accomplishment	Accomplishment Grid	General conclusion	The outputs were evaluated to achieve in either of a high or substantial level. Those evaluated as substantial achievement are "Project progress in accordance with the plan of operation" and "Project monitoring and evaluation are conducted by the Executive Committee" of the output-1, as well as "All the education and training curricula are established" in the output-4. Achievement of all other outputs are evaluated as high.
3.	Efficiency in conversion of inputs to outputs	Comparison of outputs with inputs	Can the extent to have achieved the outputs justify the level of the resource inputs? And how did efficiently the inputs turn into the outputs?	All the inputs were done as planned and there were no influencing defects in quality of the inputs. All the inputs could give the project activities the resources to attain the respective outputs. Most of the outputs are evaluated to achieve in a high or substantial level. It is hence concluded that inputs were efficiently converted to outputs.

4.	Appropriateness of the planned inputs		Whether all the inputs can contribute the project purpose?	Though its extent differs, all the inputs could contribute to achieve the project purpose; that is to say, there were input that were useless or irrelevant to the project purpose. Furthermore, similarly to the net contribution of the outputs to the project purpose, a process to utilize the inputs could give the counterparts good opportunities to develop their capability.
<p>General conclusion</p> <p>The efficiency of the Project is high. Most of inputs were made as planned and there were no defects in quality of the inputs. Among the project resources, a considerable part was spent for purchase of the equipment that includes Engine Room simulator, Radar/ARPA simulator and other teaching equipment (For the details, refer to Annex-4). To clarify whether the rather expensive procurement costs can be justified, a cost analysis may be helpful.</p> <p>1) The convention STCW95 stipulates a curricula for some classes be subject to training by use of Radar/ARPA simulator. If the simulator was not available, VIMARU would have to send the students to VINIC or maritime universities in the regional countries where the simulators are equipped with. However, VINIC could accept only limited number of them as it is specialized for re-trainees from the shiplines. The situation is thought same in the regional maritime universities. Even if they could accept the VIMARU's students, VIMARU would have to bear their travel expenses that are roughly estimated as \$0.2 millions/year in the minimum. In addition to this, VIMARU would be charged for use of the simulator. In comparison with such opportunity costs, an amount of the purchase of the simulator can be justified.</p> <p>2) Furthermore, the economic analysis may give other clarifications. Based on the inputs made by the Japanese and Vietnamese sides during the project term, the total project costs can be estimated as \$4.8 millions. Deference of salary between the 1st class officers not lower than C/O of the Vietnam nationals on board ocean-going ships of the Vietnam flag and the foreigners, if the latter are needed to hire, would be roughly estimated as \$1,400/month. The number of the 1st class officers of the Vietnam nationals (newly certified) was 215 in 2000. If this workforce could not be maintained or increased towards the future, which would be actually possible without the Project, the national economy would have resulted in losing \$3.6 millions every year in the maximum. This means a deference between the benefits with and without the Project can well exceed the project costs.</p>				

Impacts

1. Achievement of the overall goal				
1-1.	Appropriateness of the project design and its important assumptions to accomplish the Overall Goal of the Project.	Interview with various sources including international shiplines	<p>Demands for ocean-going seafarers (especially for the officers) in the international and domestic shiplines</p> <p>VIMARU is situated at an enough contributable position to achieve the overall goal in terms of provision of the upper class certificates?</p> <p>Any influence on the project cycle management by the three years project term</p>	<p>As planned in the Project Planning Development for Vietnam Navigation Fleet to the Year 2010 (MOT), which was validated in the Prime Minister Decree in 2003, the demands for seafarers have been strong in recent years. Likewise, the demands for the VIMARU graduates will be significantly increased in coming years, as shown in the recent increased numbers of the entrants in the two faculties assisted by the Project.</p> <p>VIMARU has been positioned as a superior maritime educational institute in Vietnam and the first choice for those who need to be educated for the 1st or 2nd class certificate still after HMCUT was commissioned to have the similar mandate.</p> <p>The project started in October 2001 and will be terminated in September 2004. The entrants in 2001/2002 will graduate in February 2005 in case of Diploma course, and in August 2006 in case of Bachelor course. Their stay in VIMARU is not to be fully covered by the Project. However, since the Project is to leave the improved environment for education, such a less overlapping of the project term will not influence an extent of benefits both for the two courses, as well as the post project management.</p>
1-2.	Possibility to accomplish the Overall Goal of the Project.	Interview with various sources including international shiplines	Other possible conditions to perform the overall goal	To increase the 1st and 2nd class officers capable of being qualified in the international standards, VIMARU will have to enhance education of the students in terms of English skills and behavior conducts to a level that meets the recruitment criteria by ocean-going shiplines.

2.	Economic and technical impacts by the project	Interview with various sources including international shiplines	Whether or not the project will leave any impacts in political, institutional, technical or economic aspects?	<p>Since the Project has not passed enough time yet, it was difficult to identify the impacts. As a technical impact however, several visible effects by the Project could be observed in a process of the technical transfer by the experts.</p> <p>Navigation: One example is shown in the reassembling of one of the Radar/ARPA simulators that was undertaken to build a ship handling simulator. Although this reassembling was done with a JICA expert initiative, several counterparts were involved in the process and they could note what would be able to do with the resources available. Especially it was a remarkable effect that a counterpart could be engaged in development of drivers for an interface between the main unit of the simulator and a position plotting display, the system of which was also built manually from a personal computer and a package software.</p> <p>Marine Engineering: Likewise, similar examples were observed in the Marine Engineering Faculty. An overhead hoist was installed at one of the engine workshops by an expert advise so that cylinders of an unused large marine diesel engine can be pull out. This is another case to show the counterparts how to use the resources at hand.</p>
<p>General conclusion The impact of the project is modest. The Project has not passed enough time to generate visible impacts yet in various aspects. The overall goal seems to be well possible to attain under the present level of demands, though VIMARU will have to pay further efforts to enhance the education to meet the international standards.</p>				

Sustainability

1.	Political and institutional aspects			
1-1.	Institutional capability of VIMARU		<p>Rapid increase of the students</p> <p>How to ensure keeping enough number of qualified lecturers for the two faculties and Maritime Training Center</p>	<p>Directed with the Prime Minister Decree in 2003 that prioritizes increase of the seafarers, VIMARU has come to face a rapid increase of the entrants in the recent years. This rather newly developed situation may have two meanings; VIMARU will be able to increase the tuition, favoring the financial stability. However, not to degrade the education quality, the university will have to keep a level of lecturers and instructors, difficulty of which depends on how many the entrants will be increased in the coming years.</p> <p>The quorum of the lecturers and instructors in VIMARU is connected to the numbers of the students under the guideline of the MOT. It was said that, even around a 30% to 40% of the enlisted lecturers in the two faculties is regularly absent for jobs on board, it has not raised a significant problem for conducting lecturers and practices.</p> <p>VIMARU has conducted the quality assured procedures to appraise the lecturers and instructors. The university established the Board of Lecturer Appraisal led by the President/Rector for evaluating all the lecturers every year. For awarding the title of senior lecturers, it was said that a Board of Senior Lecturer Appraisal will be established by the MOT in due course. For a higher title such as professor, associated professor, it was said that the Board of Professor Appraisal will also be established by Ministry of Education and Training (MOET).</p>

1-2.	Institutional capability of VIMARU (continued)		Capability of managing the two faculties and Maritime Training Center	VIMARU has a long time history as an education institute. Any shortfalls were not observed in daily management of the faculties and the center. In the course of the Project implementation, so as to strengthen the institutional capabilities, a procedure to coordinate time schedules for lectures and practices formulated by different divisions has been instructed by the experts. This procedure was called "planning before acting" and appreciated by the lecturers concerned in VIMARU to be effective to conduct daily lectures and practices.
2.	Financial aspect			
2-1.	Financial conditions of VIMARU		Budgetary allocation for education and research activities	Budget allocated for education and research in VIMARU has been limited under the state distribution every year. It was said that a level of the amount would be very difficult to improve.
2-2.	Additional financial source for continuing the activities covered by the Project.		Any financial sources other than the government budgets including schooling fees	Through its history, VIMARU has improved the above shortage in the budgets by introducing profitable business such as shipping companies, joint ventures and consultant centers that have been run by themselves effectively under the permission of the Government. The profits from these businesses have been contributed to the university's revenue every year in addition to the state budget. Further more, the donation and support by the companies and partners outside the university have also contributed considerably to the revenues.
3.	Technological aspects			
3-1.	Stability as work force of C/P to continue and develop their duties		Reasons for high percentage of the lecturers in VIMARU who need another employment	The reasons were said as follows; - The lecturers have to improve their competence to meet qualifications as an actual officer or engineer. - During working on board ship as the officers/engineers, they will be able to have chances to update the actual knowledge and experience that enable them to revise their lecture more lively. - They can have good chances to improve their incomes for concentrating to lecturing careers.
3-2.	Development of desirable and timely activities for the maritime education		Skills to develop various scenario for the simulators	The simulator that needs to develop the various scenario is the Radar/ARPA simulator. The present counterparts assigned for this simulator can design new scenarios and run these appropriately on the system.
General conclusion				
The sustainability of the Project is likely. Within the near future after termination of the Project, the benefits of the Project will be able to sustain to a higher extent. However, for a longer term, it should be deemed that the sustainability may decrease year to year, especially in institutional and financial aspect. If the well trained lecturers for the simulators move to services on board ships without materializing technical transfer to other lecturers, the human resource for the simulators will be reduced considerably. If budgets enough for repairing of a serious malfunction of the simulators are not allocated, the results will also easily reduce the benefits down to null. These two foreseeable risks can be prevented if VIMARU have itself prepared.				

Attendance List for the Joint Steering Committee Meeting (JSCM) on June 18, 2004

I Vietnamese Side

Ministry of Transport

Dr. Tran Doan Tho	Vice Minister, Chairperson of JSCM
Mr. Tran Duc Hai	Deputy Director General, Planning and Investment Department
Mr. Khuat Minh Tuan	Deputy Director General, Organizing, Personnel and Labour Department
Mr. Nguyen Tuong	Deputy Director General, International Relations Department
Mr. Bui Thien Thu	Senior Expert, International Relations Department
Mr. Tran Bao Ngoc	Senior Expert, Organization, Personnel and Labour Department
Mr. Do Duc Hinh	Senior Expert, Scientific & Technology Department
Mrs. Nguyen Thanh Hang	Expert, Planning and Investment Department

Vietnam Maritime University

Dr. Dang Van Uy	Rector
Mr. Pham Xuan Duong	Manager, International Relations Department

II Japanese Side

Evaluation Team

Mr. Masami Fuwa	Team Leader
Mr. Makoto Endo	Navigation
Mr. Toshimichi Fukuoka	Marine Engineering, Post Evaluation Team
Mr. Toyomitsu Terao	Evaluation Analysis

JICA Vietnam Office

Mr. Hiroshi Izaki	Senior Deputy Resident Representative
Mr. Katsutoshi Komori	Deputy Resident Representative

JICA Experts

Mr. Toshiaku Sakamoto	Chief Advisor
Mr. Koichi Sakimura	Marine Engineering
Mr. Yuji Katsumata	Coordinator

ATTACHMENT

CONTENTS:

Part I: プロジェクトの自立発展性に係る議論

Part II: プロジェクト終了時評価の結果

Part III: プロジェクトの自立発展性を確保するための対策

本件プロジェクトは2001年10月に開始され、以後、2年8ヶ月が経過した。JICAはこの時点で終了時評価調査団を派遣し、プロジェクト及びベトナム海事大学（VIMARU）の将来展望、評価、対策に関する議論を試みた。この文書は、3部から構成され、第1部はプロジェクトの自立発展性に係る議論、第2部はプロジェクト終了時評価の結果、第3部はプロジェクトの自立発展性を確保するための対策が記載されている。

Part I: プロジェクトの自立発展性に係る議論1. プロジェクトの成果ともたらされる事態についての一般的認識

日本側は、本件プロジェクトの成果とプロジェクトによってもたらされる事態についての一般的認識について、以下のように述べた。

第一に、日本側としては、本件プロジェクトのベトナム側カウンターパート及び日本人専門家による多大な努力に感謝する。本件プロジェクト開始以降、VIMARUは航海・機関の教育訓練の質と実施能力について顕著な進展をした。プロジェクト目標と各成果の評価については第二部において記載されている。

第二に、プロジェクトの自立発展性について、その確保と将来にわたるVIMARUの任務を達成するための重要な諸点を日本側は指摘した。それらの要点の中で、2つが特に重要でありミニッツに記載することにする。即ち、1) 優秀な教官の再生産システム、2) 海事教育訓練の改善に関する要点、である。

2. VIMARUが優秀な教官を再生産するシステム

プロジェクトの究極の目的は、VIMARUが優秀な教官を再生産するために有効で機能するシステムを作り上げることであり、単に特定のカウンターパートに技術移転することではないことを日本側は指摘した。他のプロジェクトの場合、再生産システムは適切な昇格・待遇の仕組みを作ることにより確保されることがある。VIMARUの場合は、以下に述べる点について考慮することにより、教官の間で技術の移転が効果的にされ、継続されると思われ、それらを考慮し検討する必要がある。

A) VIMARU教官の乗船勤務と大学での勤務の調整

VIMARUにおいて優秀な教官の再生産システムを継続するために、教官の人事システムを再検討する必要がある。VIMARUにおいては、実務的な経験を得るために教官は定期的に乗船勤務をすることになっている。(注：乗船実習ではなく実船に1年程度乗船勤務すること) 乗船勤務は、教官にとっては高収入を得るために必要とも考えられている。

しかし、VIMARUにおいて優秀な教官の再生産システムを継続することに鑑みると、乗船勤務は、その再生産にとって制約となっている可能性がある。特に航海・機関のシミュレータ教育訓練のためには、教官はシミュレータをフルに活用するために知識と技術を向上させ続けることと、後任者に対してその知識と技術を移転することを続けなくてはならない。

従って日本側は、VIMARUが教官、特にシミュレータ教官については、その乗船勤務シフトをうまく計画することを依頼する。シミュレータ教育訓練に関する知識と技術の向上については第3節に記載する。

ベトナム側は、シミュレータ訓練の教官について、その乗船勤務を十分配慮して計画すると回答。そのために VIMARU はシミュレータ・センターを設置したが、その目的は全てのシミュレータ訓練を継続的に監理するためである。シミュレータ・センターの教官の配置は安定的であり、乗船勤務はないこととしている。

B) VIMARU における教官の待遇と昇格システム

教官の待遇と昇格システムは、透明で公平な人事政策のためばかりではなく、適切な人事配置の時期を明確にするためにも必要である。日本側は、VIMARU における教官の評価システムについて有効と思われるものを提案した。この考えは、段階的な能力開発と評価システムが必要かつ機能的であるとの認識に根ざしている。シミュレータ教官の継続的な育成を考えると、それら教官の人事異動特に乗船勤務への異動は、訓練を受けた教官から後任者への技術移転が失敗しないよう、中断されないように、注意深く計画する必要がある。

本件プロジェクトが終了するまで3ヶ月を残した現在、VIMARU のシミュレータ教官は「インストラクター」としての知識と技術は有するが、「シニア・インストラクター」や「スーパーバイザー」レベルの能力を持つには至っていないと評価される。段階的評価についての日本側の提案は、VIMARU のシミュレータ教官グループが、「オペレーター」「インストラクター」「シニア・インストラクター」「スーパーバイザー」の全階層から構成されるべきとの組織編制論に行き着く。

現在のシミュレータ訓練部局が「オペレーター」「インストラクター」のみであり、もし「インストラクター」が突然、乗船勤務することになった場合は、訓練の質を保持することも、教官が技術水準を向上させる上でも厳しい制約を受けることになる。

この点に関して、神戸大学の福岡教授は、以下のように、機関学部教官を例として、教官の評価シート案を提示した。

学科内容・施設・機材	ランク (1-4)	ウェイト	スコア=ランク x ウェイト
Engine Room Simulator			
Main Switch Board Simulator			
Automatic Control Unit			
Starter System for AC Motor			
Hydraulic System			
Cut Model			
Measuring Apparatus			
Steam Engine Equipment			
Total Score:			

Rank 1: <Operator> level

Rank 2: <Instructor> level

Rank 3: <Senior Instructor> level

Rank 4: <Supervisor> level

注釈: 各教官の達成度は、最下段の<Total Score>に定量的に示される。(訳注: 要は、オペレーターレベルに要求される能力レベルは上位のレベルより小さく表され、またシミュレータ訓練のような学科はカットモデルの指導などより重く大きく評価されるので、これらの「積」で表された「評価」は各レベル x 各学科の達成度を現しているとの考え。)

上記の評価システムは、各レベルの教官のランク(1-4 で表す)と学科のウェイトの評点を前提として、定量的に評価するものである。スコアは「ランク」と「ウェイト」の積で計算される。このように評価する意味は、例えばシミュレータ訓練技術などでは、機関学部の教育訓練に関する全体的な知識を基本としているので、VIMARU においてはいろいろなレベルの教官を同時に配置しておくことにより、教官の間での技術移転が確保されるということが望ましいということになる。

(訳注1: 各教官の達成度が各レベル別に現れてくるので、人事異動するときに、各レベルの各教官の達成度の分布を見て異動時期が判断できる。例えば、教官間の技術移転が進み、インストラクターがシニアインストラクターに昇格するときに、上位のシニア・インストラクターを異動させる等の処置が明示的に

明らかになるので、継続的な教官の再生産が可能になるという考え方である。)

(訳注2：今回のプロジェクトの場合、このような階層的な教官の育成というシナリオが、元の技術移転計画には入っていなかったこと。「オペレータ」「インストラクタ」「シニア・インストラクタ」「スーパーバイザ」の仕事と資格の定義がないため、どのような目標に向かって C/P が能力育成されるかという基本計画がない。従って、人事の昇格システムがない。C/P の能力育成のルート図や各段階の達成レベルが明示的になっていない。このため、人材再生産システムは、まだ検討されていない段階であった。多くの案件でこのような事態が見られる。終了時評価調査団の提案により、プロジェクトの終了までの3ヶ月で、まずは C/P の段階的能力開発の計画が検討され、これまでの進捗が明らかになるとともに、今後の能力育成の方向性と達成度が試論として提案されることとなった。)

C) 優秀な教官の再生産システム

日本側は、シミュレータ教官について、その再生産が滞ることのないように教官の継続的な再訓練システムを検討するよう VIMARU に依頼した。そのためには、乗船勤務計画と段階的評価システムを検討することが肝要である。

プロジェクトの残りの期間、日本人専門家は C/P の知識とスキルに関する段階的評価システムを開発し提案するよう努力することとする。

3. 海事教育訓練(MET)の改善に関する要点

シミュレータ教育訓練の質を維持するために技術面、財務面で如何なる方策がありうるかを日本側は説明した。

A) 海事教育訓練の計画策定と実施体制の改善

日本人専門家は、教材作成、視聴覚機材の効果的な活用等、教育環境の改善に関する知識とスキル(技術)をベトナム側に移転してきた。

訓練計画の策定方法については、コースワーク時間割を総合して整合的でよく噛み合ったものにする事を日本人専門家は強調してきた。

日本側は、このような教育環境の改善は適切な予算と人材配置によりなされるべきであると指摘した。VIMARU は海事教育訓練の向上のために上記の条件を維持し、できれば改善することが求められる。

富山商船高等専門学校の遠藤教授による教育の質の確保に関する質問に応え、ベトナム側は以下の説明を行った。即ち、「海事教育訓練の質の向上と大学の経営管理の有効性を高めるため、VIMARU はベトナムの QUARCERT 社と日本海事協会に ISO9001(2000 年版)の認証を求めている段階にある。現時点では、航海学部、機関学部、他の管理部門に適用する全ての認証手続きが検証されている段階。2004 年第 3 四半期には VIMARU が上記の機関から認証を得られると期待している。」

B) シミュレータ訓練に要する技術・知識の範囲

シミュレータ訓練に要する技術・知識の範囲について、日本側は、以下のような要点についての検討を行う必要があると指摘した。

- ① 海事教育訓練システム全体の構想、及び訓練システム全体と整合したとシミュレータ教育訓練の将来計画
- ② シミュレータ施設に関して必要な知識・技術の水準の向上とシミュレータ施設に関する将来計画への対応
- ③ シミュレータ教育訓練に関して必要な知識・技術の水準向上とシミュレータ教育訓練の将来計画への対応
- ④ 将来計画実現に不可欠なシミュレータ施設とシミュレータ教育訓練に関する知識・技術の向上策

ベトナムでは、STCW 強制項目のみの訓練を実施するための必要最小限のシステムを保有(Radar/ARPA Simulator, GMDSS Simulator)、STCW と IMO モデルコースに基づいた教育訓練を実施。(操船シミュレータ、荷役シミュレータは未導入) VIMARU の教官は、オペレータ或いはインストラクタのレベルにあ

り、現有シミュレータ施設の操作（オペレーション）には十分な能力を有するが、インストラクタを指導するシニア・インストラクタ或いは更に上位のスーパーバイザとしては、施設についての知識・技術、シミュレータ教育訓練の知識・技術は不足している。

より高い知識・技術の習得と蓄積のために、海事教育訓練法に関する知識・技術を向上させる必要があるが、その具体的な向上策としては以下の諸点を将来に渡り改善する必要がある。

シミュレータ訓練は以下の点について合理的に設計・計画されなければならない。

(1) 訓練する技術・スキルの特定

STCW95 が要求する技術の中でシミュレ外により訓練すべき項目、船員の専門性のうちシミュレで訓練すべき項目を適切に抽出すること。

(2) 訓練シラバスの開発

訓練シラバスは、教育訓練法・シナリオと修得技能評価方法をカバーしなければならない。

(3) シミュレータの各機能と訓練項目

上記のシナリオを再現するために必要なシミュレータの機能を特定できなくてはならない。

(4) 訓練期間

目標とされた技術 (Skill) を修得するために適当と思われる訓練期間を設定すること。

VIMARU のスタッフはシミュレータ訓練を合理的に計画するために上記の点に関する知識と技術 (Skill) を向上する必要があることを日本側は指摘した。

C) シミュレータ訓練に関する財務的な持続可能性

JICA は初期投資として、シミュレタ施設など総額凡そ 3 億円の機材を供与した。これからの課題は、STCW 条約の改定、要件の改定に伴い、ベトナム側がソフトウェアを含めた機器の維持と更新を如何にして行っていくかということである。

条約の要件改定とは別の、通常の維持管理について、今後数年間に発生しうる故障等に対応するためのコストをベトナム側は捻出しなければならない。

日本側としてはベトナム側に対し、シミュレータを維持・更新するための特別予算を確保することと VIMARU の財務分析、特にコストと収入構造の分析をするよう勧告する。

Part II: プロジェクト終了時評価の結果

1. 概要

2000 年に本「ヴェトナム高等海事教育向上計画」に係る事前調査が実施された時に、PCM 手法により問題分析が行われた。その際にワークショップ参加者は中心問題を「卒業生および船員の資質が国際的要件 (international requirements) を必ずしも満たしていない」と設定している。その後数回にわたって幾分か表現は変更されたが、事前調査で指摘された「国際的要件」への対応は現在に至るまで本計画の主要課題となっている。事前調査の問題分析で他に取り上げられた主な問題は、外航船会社におけるヴェトナム国籍船員の雇用が低調であること、海難事故の増加、および船舶の非能率運航などがあった。

上記の問題分析に基づいて、2000 年に本計画のデザイン・マトリックスが設計され、2003 年に至るまでに数回改訂された。本最終評価調査は、2003 年版 PDM (付属資料 1) に基づいて行った。まずプロジェクトに係る投入、活動、成果およびプロジェクト目的の達成状況を評価し、次いで、以下のような基準に基づいて 5 項目評価による分析を行った。詳細結果を付属資料 12 の評価グリッドに示す。

- 妥当性: 国家レベルの優先開発施策および JICA の国別・セクター別援助方針に対して、本計画の上位目的とプロジェクト目的はどの程度合致しているか。
格付け: 高い、一応高い、そこそこ、低い
- 有効性: プロジェクト目的の達成状況あるいは達成状況の見込み。プロジェクト目的達成上、各成果が果たした相対的な寄与も考慮。
格付け: 高い、一応高い、そこそこ、低い
- 効率性: 成果と投入の達成状況あるいは達成状況の見込み。成果を醸成する上で投入が活用された程度も考慮。

- 格付け: 高い、一応高い、そこそこ、低い
- インパクト: 本計画実施に伴う正または負の影響の程度。
格付け: 影響大、一応大きい、そこそこ、影響小
- 自立発展性: 様々なリスクに対するプロジェクト便益の持続可能性。
格付け: 高く見込まれる、一応見込まれる、見込まれない

2. 妥当性

本計画の妥当性は高い。関連国家政策の目標並びにプロジェクト実施機関および直接裨益者のニーズに沿って本計画が実施されてきたことが確認された。ホーチミン市運輸大学(前身はVIMARUのホーチミン分校)が2001年に独立して以降、VIMARUと同様に、同大学も上級海技資格に係る海事教育訓練を提供することとなった。これは、本計画の裨益者が海事教育を受ける上で、別の選択肢を与えられたことを意味している。ただし、海事セクターの高等教育機関として、なおVIMARUが主要な役割を果たしているため、VIMARUを本計画の実施機関としてきたことは妥当と見なすことができる。

3. 有効性

本計画の有効性は一応高いと言える。国際水準(international standards)のレベルにまで卒業生と再教育船員の資質を高めることを目指してプロジェクト目的は設定されている。プロジェクト文書では明確な定義を与えられていないものの、国際水準の意味するところは、対象となる海技資格者が国際または地域国間の船員市場で十分に競合し得る能力水準を指すのであって、STCW95の要件より広くかつ高度であることは明らかである。そのような能力の一つに含まれる英語について言うと、卒業生の英語能力は、もっと強化する必要があった。

プロジェクト目的は、達成基準を特定できるように、より明確な形で記述されるべきであったと考えられる。プロジェクト目的が不明確であったために、本計画に投入すべく計画された種々の人的物的資源が制限された恐れがある。学生および再教育船員の英語能力強化のためのコンポーネントが本計画には含まれていないことがその一例である。

4. 効率性

本計画の効率性は高い。投入はほぼ計画どおりに行われ、また投入内容には品質上の欠陥は認められない。種々の投入資源の内、相当部分が機関室シミュレーター、レーダー/ARPA シミュレーターその他、教育用機材の調達に充当された(付属資料4)。以上の機材の調達に要した経費が高額であったことから、調達に妥当性があったか明確にする上で、コスト分析を行う必要がある(付属資料12)。

5. インパクト

本計画のインパクトは一応の水準にある。プロジェクトの経過期間が不十分なために、種々の側面におけるインパクトは眼に見える程度にはまだ生じていない。現下の船員需要があれば、上位目的を達成することは十分に可能と考えられる。ただし、VIMARUには国際水準に見合う教育強化へのさらなる努力が求められる。

6. 自立発展性

本計画による便益の持続可能性は一応見込み得る。プロジェクト終了後、近い将来の範囲内では、相当高い程度で便益を維持し得ると考えられる。しかしながら、より長期間について見ると、特に組織面および財務面で、年を経るにつれて、持続可能性は減少し得ると考えるべきである。仮にシミュレーター担当の熟練教官が他の教官に技術移転を行うことなく船上勤務に移動するようなことがあれば、シミュレーターの人的資源は相当に減少する。また、シミュレーターの重大故障に対応可能な予算措置がなされないと、プロジェクトの便益が即座に減少する結果を招きかねない。現時点でもこれらのリスクは眼に見えており、VIMARUがよく準備するならば、防止することは可能である。

7. 評価分析の結論

プロジェクト目的は一応達成された。卒業生の英語能力をさらに強化する必要がある。プロジェクト期間は相当に制限されていたが、海事教育訓練の環境改善を通じて、本計画はVIMARUに相当に貢

献し得た。現在 VIMARU 構内には計画便益が種々の形で存在している。例えば、改訂シラバス、教科書の新規編集、教育方法のリフレッシュ、シミュレーター支援による海事教育訓練体制の構築、カウンターパートの能力向上などが挙げられる。これらはいずれも今や VIMARU の資産となっている。

Part III: プロジェクトの自立発展性を確保するための対策

1. 自立発展性を確保するための VIMARU の政策の必要性

プロジェクトの自立発展性を確保するための政策について、VIMARU がこれを明確に策定する必要があることを指摘した。VIMARU はパート 1 において議論された事項、即ち、「VIMARU の優秀な教官を再生産するためのシステム」「海事教育訓練を向上させるための要点、特に質の高いシミュレータ訓練を維持するための方法」これら諸点を含む政策を、VIMARU は提示していただきたい。

ベトナム側は、VIMARU には五カ年計画があり、暫定的な優先課題は以下のとおりであると述べた。

- ① VIMARU の教育訓練の目標を、船員の国際市場における需要に見合った質、「国際水準」に適合するように向上させること。
- ② VIMARU の教官及び他大学の教官のための訓練システムを構築すること。
- ③ VIMARU の「インストラクタ」を「シニア・インストラクタ」に向上・育成すること。
- ④ VIMARU において海事研究活動を向上させること。現在「研究者」と呼べる者は居ない。
- ⑤ 教育・訓練・研究に必要な機材と施設を改善すること。

特に海事研究活動について、VIMARU は 2004 年中に海事科学技術研究所 (“Institute of Marine Science and Technology”) を設立する計画があることをベトナム側は述べた。研究の優先分野は、造船技術、情報科学、海運である。日本側の助言としては、VIMARU が教育と研究の活動のバランスをうまくとることが大切であると指摘した。

2. 優秀な教官の再生産のための業務要件定義

上記のとおり日越双方は、VIMARU において優秀な教官を再生産するためのシステムを構築し機能させる必要があることに合意した。そのために最初に行うべきは、オペレータ、インストラクタ、シニア・インストラクタ、スーパーバイザの業務要件を定義することである。(但し、これらの階層は暫定的なものに過ぎない。) 加えて、これら各階層の教官を評価する段階的評価システムを確立する必要があると日本側は指摘。そのために日本人専門家はプロジェクト終了までの 3 ヶ月間に、VIMARU 教官の業務要件定義の作成を支援し、カウンターパートの段階的評価システムを策定することとする。

VIMARU は教官のための教育訓練、a training course for trainers. を確立することとすると述べた。

3. プロジェクト終了後のフォローアップ活動の可能性

日本側の認識として、プロジェクトの終了後、航海と機関について日本人短期専門家を投入しプロジェクトの自立発展性を確保するための助言とモニタリングを行うことが適当であると述べた。ベトナム側は、VIMARU の教官・研究者を日本の関連海事機関（海事大学や航海訓練機関等）に派遣することが必要と思うと述べた。

いずれにせよプロジェクト終了後の活動についてはベトナム側の意思と確約 (commitments) が最重要であることを指摘した。

訳注： プロジェクト終了後の活動については、ベトナム側の努力を引き出すため、過度の約束はしない方針とした。そのため、短期専門家を 2 名投入することだけを具体的に述べることで、(事前に事務所や大使館とすり合わせていた) 長期専門家の常駐体制などを議論することは避けた経緯がある。6 月 18 日の Joint Steering Committee において交通運輸副大臣は何度も、「今後の協力の提案は日本側からしないのか。」と日本側に問うたが、敢えて将来の協力についてミッションは言及しないこと、今後の協力は終了時評価協議ミニッツを基に、ベトナム側が主体

的に考え、JICA ベトナム事務所と協議することをミッションとしては勧めると述べた。

このようにした理由は、将来に向けた VIMARU のビジョンが現時点でも明確ではないこと、そうした展望を描くための作業は JICA 側もこのプロジェクト外の計画の中であまり注力してこなかったことも関係している。

従って、JICA の反省としては、プロジェクト期間及びその後の期間においてどのような目標を掲げていくかを事前評価の段階から常に議論・調査し、プロジェクト実施中はその仮説（将来展望）と現状の情報を更新・モニターしていく活動が重要であると認識すること。またモニタリングにおいて将来展望を検討しなおす作業をビルトインしておくことである。

その一環として C/P の能力育成の道筋がモニターできるような段階的能力育成のモニタリング方法（成果の達成過程をブレークダウンしたモニタリングシートなどを作ること）を当初計画に入れておくことが大切である。海事教育、省エネ、環境モニタリングなど JICA 技協の経験が蓄積した分野では、過去のプロジェクトの分析により、そうした段階的能力育成のモニタリング方法を確立することが可能である。一部は実施している。今後トルコ海事案件に反映していくことが有益である。

4. 政策オプションにかかる調査

日本側の最後の指摘として、海事資格制度や海事教育訓練システムに関する政策を策定するための調査をベトナム側が行うことを提案した。これらの政策オプションを検討することは、ベトナム政府が現行の資格制度と教育システムを再検討するために役立つ。例えば以下のような調査項目が考えられる。

- ベトナムの海事国家資格制度と海事教育訓練システムとの関係を検討することは有益である。日本側の経験に基づく助言として、国家資格制度と海事訓練制度は切り離されたほうがいい。（ベトナムは事実上一体化している。）理由は、分離されていたほうが資格審査が透明かつ公平で適切に運用されるからである。その結果、ベトナムの海事資格が国際的な認知を得ることにつながる。（ベトナムでは資格の付与は交通運輸省が、研修は VIMARU などの教育機関が行うとされているが、実際には VIMARU が海技資格試験をしており、その結果を受けて交通運輸省は免状を出すだけ、資格審査を省としてしているわけではない。）
- 海技資格審査の方法と資格の質について、ベトナムでは機関によってばらつきがある。資格制度の将来展望が検討されるべきである。日本側としては、統一された資格審査システムがあって初めて、異なる訓練機関が行う海事教育訓練の質（成果目標）が確保され改善されると考える。（例えば航海士と機関士については VIMARU とホーチン交通大学との間で方法論と成果目標の質の統一が必要である。）
- 日本側は、ベトナム側により船員の国際市場の調査が行われる必要があると指摘。特に国際水準の船員の能力の範囲とレベルを調査すること、その上で VIMARU における海事教育訓練の将来需要を展望することが必要である。
- その他の調査項目として、VIMARU で英語教育を強化するための適当な方法などが挙げられる。英語能力は船員の国際市場における決定条件の一つである。
- 最後に繰り返すが、プロジェクト終了後の活動についてはベトナム側の意思と確約 (commitments) が最重要であることを指摘する。

訳注：政策オプションにかかる調査についても、ミッションは日本側から協力をする提案は避けた。理由は、上記 3. と同じ。但し、ここに記載した調査内容は、もしベトナム事務所で VIMARU の自立発展性を伸ばすために協力プログラムを組む場合は、有用な情報を与えるものである。在外基礎調査のようなスキームで、政策オプションを策定し、根拠情報とともに VIMARU や交通運輸省に提示して、ベトナム側の検討と判断を求める方法が、一方的な提案に墮すことを回避する手段である。今後の計画は、ハノイにてベトナム事務所、JICA 専門家と VIMARU 等の協議を通じて適当な計画を策定することを期待するものである。このことは、6月18日の Joint Steering Committee にて、日本側としてベトナム側に述べた。

以上

ヒアリング調査結果

6月7日及び8日

専門家 3名

(最大の課題は何か)

自立発展性を維持する上で最大の課題はシミュレーション機器の保守管理。いったん日本から技術者 2 名を呼ぶような修理が必要になると 3 日間で 150 万円を請求される。

プロジェクトの実施経緯

VINAMRINE に提出したカリキュラム (教育内容の項目を含むので簡単なシラバスと見ても良いような内容) があつた。これが STCW95 に適合するか、まず確認した。確認は IMO のモデルコースに含まれるシラビと比較することで行つた。その結果判明したこと。航海学部は全項目が網羅されている。機関学部は不足の点があつた。機関学部は推進、補機関、保守維持、制御の 4 学科に分かれるが、いずれの学科でも不足点が見られた。以上の不足を埋めると同時に、より詳細なシラバスを作成した。カリキュラムは原案のまま変更は加えなかつた。シラバスを詳細にすることにより、学期中途に担当教官が交代しても講義内容が変更・重複することのない体制が整つた。

シラバスに沿って教科書を作成した。教科書は学生に配布するものではなく一種の指導要領に類するものである。ヴィエトナム語で準備しているが英語版のものもある。教科書は航海学部では約 10 種類、機関部では 12 種類作成した。(写真とリスト有り)

実施計画作成能力の向上。実習の実施など、カリキュラムはあつても計画どおり実施していないケースが目立つた。講義でバツティングが生じることも多々あつた。両学部はそれぞれ 4 学科で構成され、学科毎に・実習の実施計画を作成することはできていたが、調整者が存在しないために、学部レベルで実習の時間割を統合する体制にはなかつた。計画作成と達成に係る意識が不足あるいは意識自体が異なつていた。

教官不足。2004 年 5 月 31 日現在の教官数は以下のとおり。

航海学部	在籍 76 名
	稼働 43 名
機関学部	在籍 47 名

	稼働 32 名
機関実習	在籍 12 名
	稼働 8 名

在籍数と実際の稼働数の差は乗船中の員数を示す。この不足が教育体制に与える影響は航海・機関ともあまり出ていないとの意見。(C/P の一部は異なった意見を持つ) 不足の影響は休講として現れるかもしれない。ただし、休講の統計は無いように思われる。

(休講は多いかとの質問に対し、Duong 氏は、休講はあるが、これは教官不足のためではなく、運輸省からの訪問など、大学の活動予定の変更によるものと回答)

副学部長以上と管理部門は常勤で執務室有り。一般の教官は、非常勤で執務室無し。各教官は年間 280 単位 (Duong 氏によれば 280 単位) の講義・演習を受け持つ。1 単位=45 分

航海・機関学部は、それぞれ 4 学科で構成。各学科では履修計画の作成可能。ただ、全体の調整者がいないので、学部単位の計画作成には至っていなかった。計画の作成と達成に係る問題意識が不足している。あるいは、日本人とこの辺の認識が違う。例えば、造船所では、工程表を作らないで船を建造している。工程はリーダーの頭の中に納まっている。したがって、納期を守れないことがよくある。大学でも同様。リーダー一人の頭に計画がある。

学科が独立していて、その間の調整なし。

(観測) 幹部クラスの年齢がとにかく若い。50 代前後の教官を見かけることが少ない。ベトナム戦争は 60 年代後半。その頃 10 代後半であれば現在は 50 代。戦死者による人口ピラミッドの凹みありと。

研究活動

悪条件が多い。給与安い。副業必要。時間無い。非常勤。執務室が無い。C/P の作業部屋を設置してもらった。電話回線も敷設。ネットにアクセスするため。通常は、先生方はネットカフェでアクセスしている。VIMARU には LAN 無し。専用回線も無い。近々導入?

6月8日

VOSCO、役員 3 名。Duong 氏同席

ベトナムの最大級船会社。国営。船腹量 340,000 トン。国際航海・内航では商売にならないが、船員は VIMARU 出身者が多い。他に、ロシア、中国、日本の教育機関の出身もいる。外国人船員はほとんど居ない。タンカーの船長に一部居るだけ。

船員数 1,500 人。士官 600 人。毎年 10%程度が定年退職。ただし将来は退職者数が減る見込み。2004 年は 100 人程度採用の見込み。HMCUT からの採用は非常に少ない。

新卒者は乗船前に訓練しなければならない。1 ヶ月から 1.5 ヶ月程度。自社の訓練センターを設ける予定あり。シミュレータ支援の訓練など。新卒者の最大の問題は英語の能力不足。訓練内容には、コンピュータ訓練（全士官対象、書類作成等）、SMMS（Ship Management and Maintenance System）など含む。

本年は 3 隻増船（7 万～8 万 DWT）の計画。1 隻(2.8 万 DWT)だけ契約成立。船価が高くて落札しないため。

6 月 8 日

国際関係部、Duong 氏

STCW95 は最小限の要件。国際船員市場+船隊海外進出、両方の必要性から、条約を超える高い qualification が必要とされた。

VINIC は 1997 年から業務開始。日鉄海運との合併。今までに延べ 370 人を同社に斡旋。毎年 50 人程度か。甲板 25 人、機関 25 人。Bachelor コース卒業者が主。Diploma は採用されていない。

船会社による採用。学年 3 年目でも採用内定あり。その際は月 30US\$の奨学金が支給される。学生の志望は、VINIC、VICMAC、他の船会社の順。

船会社の採用基準。5 項目。資格、英語、行動素行、健康状態、雇用期間。

VICMAC (VIMARU CREW MANNING CENTER)。斡旋は韓国が主。他に日本欧州船会社が若干。毎年 50 名から 70 名程度が雇用されている。Diploma を含む。

練習船 SAO BIEN。30mOAL。富山高専の中古。VIMARU 自営の船会社の一つ

Flying Dragon から乗員が派遣されている。定員 48 名。履修をやりくりしないと、乗船実習が消化できない。休講の理由の一つでもあると。

6月8日及び9日

機関学部、シミュレータ・センター、航海学部の C/P にヒアリング。各自の担当科目、講義・実習に当って生じている問題点、取り組んでいる研究課題を質問。

ベトナム高等海事教育向上計画プロジェクト
第3回 Joint Steering Committee Meeting 議事録
 (終了時評価調査団との協議)

1. 日 時 : 2003年6月18日 (9:00~11:00)
2. 場 所 : 交通運輸本省第12会議室 (ハノイ)
3. 出席者 : 21名

(1) ベトナム側

① 交通運輸省関係者

1. Dr. Tran Doan Tho (交通運輸省副大臣/合同調整委員会議長)
Vice Minister / Chairperson of JSCM
2. Mr. Tran Duc Hai (計画投資局副局長) * ミニッツ署名者
Deputy Director General, Planning and Investment Department
3. Mr. Khuat Minh Tuan (組織人事労働局副局長)
Deputy Director General, Organizing, Personnel and Labour Department)
4. Mr. Nguyen Tuong (国際関係局副局長)
Deputy Director General, International Relations Department)
5. Mr. Do Duc Hinh (科学技術局上級専門官)
Senior Expert, Scientific & Technology Department
6. Mr. Tran Bao Ngoc (組織人事労働局上級専門官)
Senior Expert, Organization, Personnel and Labour Department)
7. Mr. Bui Thien Thu (国際関係局上級専門官)
Senior Expert, International Relations Department
8. Mrs. Nguyen Thanh Hang (計画投資局上級専門官)
Expert, Planning and Investment Department

② ベトナム海事大学

9. Dr. Dang Van Uy (学長/当プロジェクトマネージャー) * ミニッツ署名者
Rector / Project Manager
10. Mr. Pham Xuan Duong (国際関係部長)
Manager of International Relations Department

(2) 日本側

① 終了時評価調査団

11. 不破 雅実 (団長)
12. 遠藤 真 (航海)
13. 福岡 俊道 (機関)
14. 寺尾 豊光 (評価/分析)

② JICA ベトナム事務所

15. 井崎 宏 (次長)
16. 小森 克俊 (所員: 担当)
17. Nguyen Thi Ngu (同事務所 Assistant Program Officer)

③ プロジェクト専門家チーム

18. 阪本 敏章 (チーフアドバイザー/航海)
19. 崎村 浩一 (機関)
20. 勝俣 祐二 (業務調整)
21. Ms. Nguyen Thi Huong (プロジェクト秘書)

4. 今回委員会開催の主旨:

- (1) 終了時評価調査団からの調査結果報告を受け、その内容について合同調整委員会において協議する。
- (2) 上記協議内容をミニッツ (Minutes of Meeting: M/M) にとりまとめ、日/越代表者による署

名交換を行う。

5. 議事内容等：

(1) 議長(Dr. Tho 交通運輸省副大臣)開会挨拶

(2) 終了時評価調査団不破団長挨拶

-調査団員紹介

-JICA、JBIC 案件はこの数年で 10 倍程度増加している。これまで当国における 4 つの人材育成プロジェクトに関わってきたが、全ての案件で越側関係者の向上意欲の高さを感じている。今回もこの 3 年間でベトナム海事大学(VIMARU)の Uy 学長、C/P、専門家との連携がよく図られていると感じた。学長、専門家側の努力、またそれを支えてくれた交通運輸省に感謝したい。今後 VIMARU においてはハード(設備/機材)の充実からソフト面(教育/教官育成)の向上が重要となる。

(Dr. Tho 副大臣より)

-JICA、JBIC と当国との関係を高く評価したい。JICA の人材育成プロジェクトは当国の全体的な能力向上をはかるものとして評価されている。また JICA については地方農村部の交通改善も実施していることから全国に広く知られている。

-ベトナム側出席者の紹介

(3) 終了時評価調査団からの調査結果報告

① 不破団長による調査結果概要・ミニッツ案骨子説明および提言

- (一般的認識事項として) プロジェクトの目標/体系を事前に作成し、それに対しきちんと考えることが必要である。当プロジェクトの場合でいえば VIMARU がどのようにベトナム国に貢献していくのか、本当に実施しなければならないことは何か、そしてベトナム船員が国際水準をもつための具体的な計画(定義)を考えることが必要であり、そのうえで活動を実施するにあたっての参加者、投入を考えていくことが重要である。

-ベトナムにとって船員の輸出は外貨獲得手段として極めて有効である。また他の当国案件と同じく VIMARU のポテンシャルは高いと感じている。国際的な船員ソースについては地域的にはアジアが重要であり、国としてはフィリピン、インドネシアが先行し、マレーシア、ベトナムが追随している現状である。今後ベトナム船員の国際市場における(需要/供給の)ポテンシャルを高めることが我々の目標である。

-副大臣に申し上げたいのは、本プロジェクトの 3 年間は短い期間であるが、その制約のなかで得た成果は高いものであったということである。プロジェクトの成果については M/M の Part-II に記載してある。ただし当方が Uy 学長と目指しているのはもっと高いところにあり、それについて同 Part-I に示してある。

-こうした技術協力は世界中で実施されているが、共通理解を得ることは決してたやすいことではない。人材育成案件の場合にはフィージビリティスタディ(F/S)よりもバックグラウンド(の見極め)が重要である。ベトナム側の考え方を日本側が理解すること、またベトナム側が日本側の背景を考慮し、日本側の考え方を理解すること、その前提にたつて日本/ベトナム側が一緒になって今後のことを考えていくことが必要であり、そのことを我々は Uy 学長との協議で共に認識するに至った。我々の目指すものは更に先のことであり、重要なポイントは二点ある。一つは「教官の再生産システムの確立」、もう一つは「海事教育訓練(MET)の向上をはかるための改善点」である。これについて我々は協議した。

-教官の再生産とは専門家が特定の C/P に指導して終わりということではなく、その C/P が高いところに立って他の教官に指導を行っていくシステムのことである。シミュレータ訓練では Supervisor から Operator まで各階層を(重層的に)作る必要がある。今回のプロジェクトでは Operator, Instructor は育成できたが、今後は上級階層を育成していく必要

がある。ただしこれには時間がかかる。VIMARU は今後のターゲット（上級階層の育成）を考えており、日本側としてはプロモーションとしての支援をはかりたい。そのためプロジェクト期間中に（ベトナム側が）デザインを行うことについて協力したい。

-シミュレータ訓練においては STCW95 条約の位置付け、今後の改訂に向けて、2010 年を目途としたアップグレード、また故障対策を考慮する必要がある。今回導入したシミュレータは日本製であり、修理・維持費がどうしても高価になってしまう。その費用の確保のため政府から措置された予算以外に別途収入源をもつ必要がある。

以上の結果をもとに M/M の Part-III において、今後どのようなことをすべきかを協議した。主体はベトナム側にあることを強調しており、自立発展を確保するためのポリシー策定、また教官再生産方法の検討を行うことが必要である。今後の日本側の対応として短期専門家によるモニタリング指導が必要と思われるが、あくまでもベトナム側のプロポーザルによる。

-M/M の Part-II では現段階でのプロジェクトの評価分析を示している。しかしいわばこれは現時点でのスナップショットに過ぎず、今の状態および今後の方向等を合わせて評価することが重要である。その意味でこの3年間は難しいことをやってきており、このことは評価されてよい。ここで終わったのではなく更に行わなくてはいけないことがある。これを行うことが Sustainability につながる。本案件はポテンシャルが高く、JICA としてもこの先のステップのための方策を支援したい。しかし重要なのはベトナム側が具体的な方向性をもつことである。プロジェクトは終わるがベトナム側としての方針を JICA 事務所と協議願いたい。

-人材育成は困難であるが、VIMARU 卒業生の就職率は 95% であり、船員の国際市場に向けていかに取り組むか、目指すことは明白である。そのためにはどうするか。英語力の向上はポテンシャルを高めるに必要である。方向と Vision があれば JICA 事務所にいつでも話してほしい。

-JICA では独立行政法人になり、成果と効率性について説明責任がある。これまでは「投入」について評価することが多かったが、今後は「結果」について問われることになる。その意味で3年後(2007年)に再度訪問し、その後の成果をみたい。またプロジェクトの成果を日本・ベトナム双方で広く発信することが必要である。ここで福岡・遠藤両団員から意見、提言を話して頂くことにしたい。

② 福岡団員（機関分野担当）からの提言

-教員の再生産システムについて述べたい。欧米諸国と日本の海事教育の体系に違いがあるが、ベトナムの場合には日本型に近く、日本で成功した教育方法をベトナムに応用することは重要と思われる。

-VIMARU 教官の意欲は高いと思う。シミュレータを始め、各機器（の教育）に熱心に取り組んでいる。この成果を維持発展させるためには、教官の努力、貢献度に対する評価システムを作り上げることが必要である（*M/M 記載の評価シート案を説明）。このシステムによって急な教官の異動があった場合にも対応が容易となる。

-VIMARU の学生は急速に増加しており、ここ数年は確実に船員数が伸びるであろう。しかし数が増えれば必然的に賃金も上がり、他国船員との競合となる。数年後の国際船員市場におけるベトナム船員の需要確保に向けての対策について今から考えておくこと（英語力の強化等）が重要である。

③ 遠藤団員（航海分野担当）からの提言

-昨年 12 月に VIMARU を訪問し、C/P と意見交換したが、その時より格段に能力向上しているのに驚いている。プロジェクトの成果が現れたものと評価している。

-VIMARU では設備、テキスト、カリキュラム、シミュレータ等は充実してきており、Operator, Instructor は育てている。しかし今後の継続的發展を考えると、海事教育者の再生産システムの確立が重要となっており、これの推進をベトナム側の強い意志で進めて頂き、日本側も共に頑張っていきたい。

(4) Dr. Tho 副大臣からのコメント

-評価調査団からの意見、提案に賛同する。Sustainability の重要性については当方もよく認識している。機材のメンテナンスの問題、今後の人材（教官）育成の方法が重要である。

-政府から VIMARU への支援として、学内ネットワーク構築費用として US\$1,000,000、学生寮の増築費として同じく US\$1,000,000 の予算措置が決定している。

-モニタリングに対する支援の提言を興味深く思う。ベトナム側としては今後のフォローアップをぜひとも期待したい。これからの 10 年を展望し、新たなフレームワーク、フェーズ II の可能性も探っていきたいので、日本側でも協議願いたい。M/M の Part-III に記載された事項（自立発展のための提言等）についてはさっそく取り組むよう指示したい。
（* その場で副大臣より Uy 学長ならびに他のベトナム側出席者に対し指示発令した）

-日本・ベトナム双方における JICA 事業の広報について必要と考える。これについては当省の国際関係局 (International Relations Department) が担当したい。

-実はホーチミン市交通大学からも日本の支援要請を受けている。将来的に（当該分野における）ベトナム南部への協力を考慮して頂けるとありがたい。ホーチミン市交通大学の学長は VIMARU 出身でもある。

(5) 不破団長からのコメント

-ホーチミン市へは以前から訪問したいと思っていた。今回は時間の制約もあって叶わなかったが、いずれぜひ訪問したいと思っている。

-これまでの成果をステップとして今後の取り組みを図って頂きたいが、そのためにはベトナム側の強い関与（コメント）が必要である。JICA ベトナム事務所の規模・権限も大きいので積極的に関わって行って頂きたい。モニタリングのための短専派遣は効果的である。また研究活動についてはリサーチの目的を明確にすべきである。

(6) Dr. Uy 学長からのコメント

-プロジェクトは終了するが、未だ「子供」の段階であり、今後将来的な成長を考慮する必要がある。その成長に向けてのフォローアップ支援の可能性があることを期待したい。副大臣より今後の取り組みへの指示を受けた。計画を進めていきたい。

(7) 井崎 JICA ベトナム事務所次長からのコメント

-JICA 事務所と交通運輸省 (MOT) とは定期的に同省大臣と JICA 事務所長との話し合いの場をもっており、良好な関係を保っている。またセクター協議においても運輸交通分野は重要であることが認識されている。

-本プロジェクトは 3 年間という短期間で大きな成果を得てはいるが、これから実施しなければならないことも多くあり、事務所としてもフォローしていきたい。しかしそのためにはベトナム側からの明確な計画（なにをやっていくのか、どのような投入が必要なのか）をしっかりと示してもらわないと困難である。またベトナム側投入（人的・予算的措置）につ

いては MOT からのサポートを望みたい。今後とも担当の小森所員とともに協議していきたいので、よろしく願いたい。

(Dr. Tho 副大臣より)

-日本側の支援／協力を感謝したい。

(8) ミニッツへの署名

終了時評価合意議事録 (M/M) オリジナル 4 部に以下の 3 者により署名を行った。

日本側：不破雅実 終了時評価調査団長

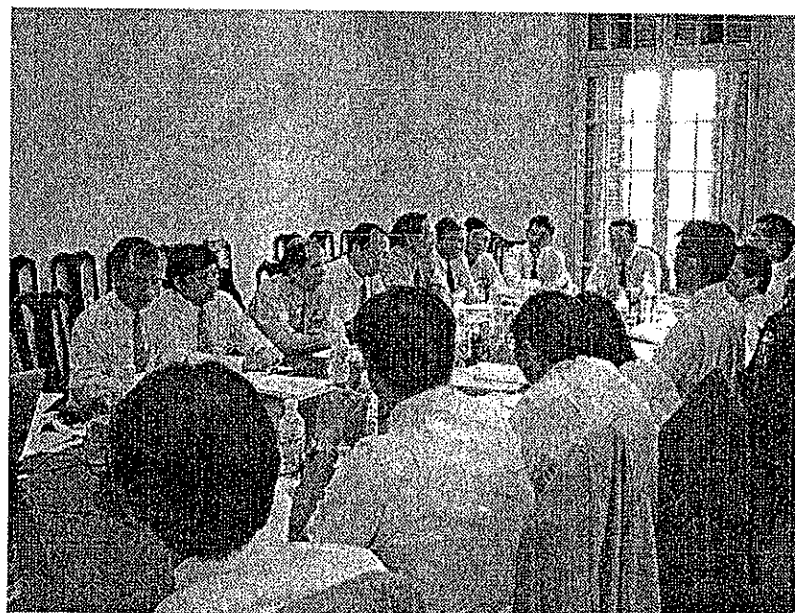
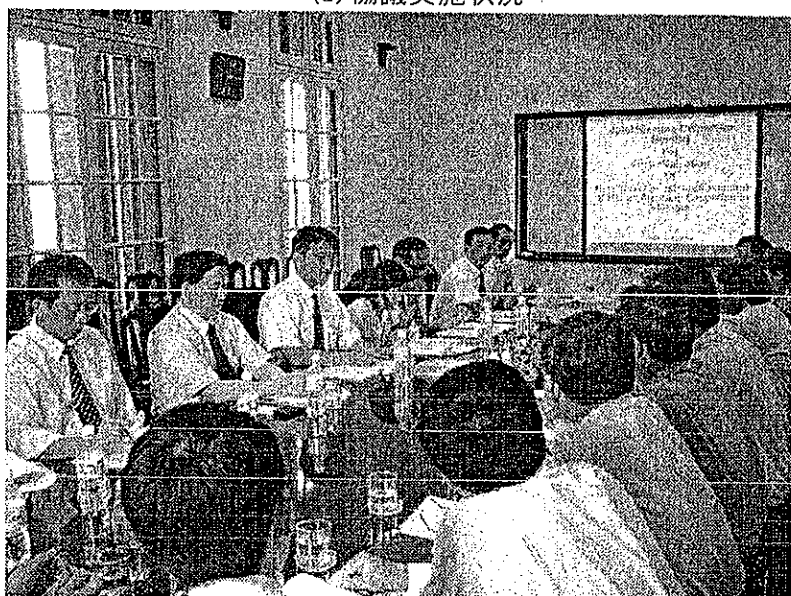
ベトナム側：Mr. Tran Duc Hai 交通運輸省投資計画局副局長

Dr. Dang Van Uy Vietnam Maritime University 学長

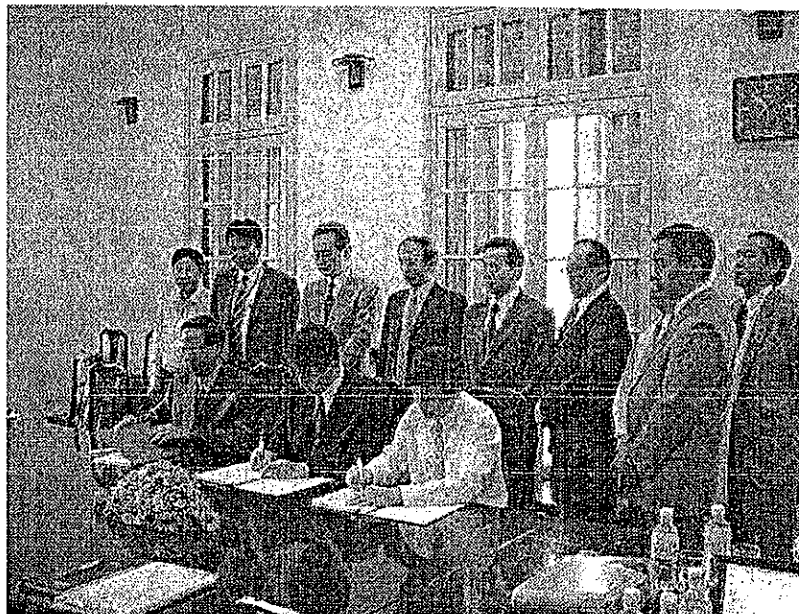
別添：

(1) 写真

(a) 協議実施状況



(b) ミニッツ署名式



Efficiency: How much the inputs could be converted to the outputs?

No.	Questions		A: Appropriate			B: Mostly appropriate C: Inappropriate			Reasons for your evaluation or comments on subject if any
			A	B	C	BLK	BLK	BLK	
Inputs by Japan	1	Timing to receive the	Long-term experts	14	1	0	0		
	2	Japanese experts were	Short-term experts	13	2	0	0		
	3	Man-months allocated for the experts were appropriate?	Long-term experts	12	1	0	2		
	4		Short-term experts	12	1	0	2		
	5	Specialty and career of the experts were suitable?	Long-term experts	14	1	0	0		
	6		Short-term experts	15	0	0	0		
	7	Communication skill of the experts	Long-term experts	12	3	0	0		
	8		Short-term experts	7	8	0	0		
	9	How was the equipment supplied under the project?	Timing of delivery	13	2	0	0		
	10		Specifications	11	4	0	0		
	11		Quantities	13	2	0	0		
	12	How effective was training in Japan, if you received?	Timing of training	12	0	0	3		
	13		Period of training	11	1	0	3		
	14		Curricula and syllabi	12	0	0	3		
Inputs by Vietnam	15	Vietnamese counterparts were assigned in time?		11	4	0	0		
	16	Numbers of the counterparts were appropriate?		12	3	0	0		
	17	Expertise and skills of the counterparts		6	9	0	0		
	18	Facilities and equipment prepared by Vietnam	Facilities	10	5	0	0		
	19		Equipment	8	7	0	0		
20	Availability of operation costs		7	6	0	2			
Project Management	21	Above project resources were well managed for achieving the project outcomes and purpose?	Staffs assigned	7	4	0	4		
	22		Facilities	10	2	0	3		
	23		Equipment	11	1	0	3		
	24		Operation costs	8	1	0	6		
	25	Performance of the Joint Steering Committee	Problem solving	10	2	0	3		
	26		Decision making	11	1	0	3		
	27	Performance of the Executive Committee	Problem solving	11	1	0	3		
	28		Decision making	12	0	0	3		
	29	Coordination for sharing the resources with different sections/units within VIMARU	Operation costs	8	2	0	5		
	30		Equipment	9	3	0	3		

Effectiveness: To which extent the project purpose was attained by respective outputs?

No.	Questions		A: Fully achieved, B: Partly achieved, C: Not achieved, BLK: Blank				Reasons for your evaluation or comments on subject if any
			A	B	C	BLK	
Relevance of Outputs to Project Purpose	31	How much do you evaluate the project purpose was fulfilled? (Project purpose: VIMARU produces educated and refreshed navigation officers and marine engineers who qualify international standards.)	7	6	0	2	
	32	How much do you evaluate the output 1 could contribute to the project purpose? (Output-1. Project operation unit is to be established.)	14	1	0	0	
	33	How much do you evaluate the output 2 could contribute to the project purpose? (Output-2. Education and training in Navigation Faculty in VIMARU meet the international standards.)	10	3	0	2	
	34	How much do you evaluate the output 3 could contribute to the project purpose? (Output-3. Education and training in Marine Engineering Faculty in VIMARU meet the international standards.)	5	4	0	6	
	35	How much do you evaluate the output 4 could contribute to the project purpose? (Output-4. Education and training in retraining courses in VIMARU meet the international standards.)	8	6	0	1	
	36	How much do you evaluate the output 5 could contribute to the project purpose? (Output-5. Research activity in VIMARU is to be enhanced.)	4	11	0	0	
	37	How much do you evaluate the output 6 could contribute to the project purpose? (Output-6. Communication with the foreign maritime institutions is to be increased.)	4	9	0	2	

Impact: Positive and negative effects by implementing the project that include unexpected effects

A: Fully achieved, B: Partly achieved, C: Not achieved so much

Questions		A	B	C	BLK	Reasons for your evaluation or comments on subject if any
38	How well do you think the overall goal can be achieved in Vietnam?	9	6	0	0	
Overall Goal: In Vietnam, it increases the number of Vietnamese navigation officers and marine engineers who qualify		A: Greatly arose, B: Partly arose, C: Less arose				
39	As a result of implementing the project, do you observe any unexpected positive or negative impacts in your area?	A: Greatly arose, B: Partly arose, C: Less arose				
	Political aspect	4	2	2	7	
40	Technical aspect	4	4	0	7	
41	Environmental aspect	4	2	2	7	
42	Social and/or cultural aspect	4	3	1	7	
43	Institutional aspect	6	2	0	7	
44	Economic or financial aspect	6	1	1	7	

Relevance: Conformity of the overall goal to the present national policy and conformity of the project purpose to the present needs of the project operation units and the beneficiaries

A: Totally relevant, B: Partly relevant, C: Not relevant

Questions		A	B	C	BLK	Reasons for your evaluation or comments on subject if any
45	Does the overall goal comply with the national policies of the MTP?	12	0	0	3	
46	Does the project address the needs of the project beneficiaries (navigation officers and marine engineers) in Vietnam?	11	2	0	2	

Sustainability: In the post project stage, to which extent the project benefits can be sustained?

A: Highly likely, B: Likely, C: Unlikely

Questions		A	B	C	BLK	Reasons for your evaluation or comments on subject if any
47	How well do you think project activities can keep being in line with the students for a long time?	A: Highly likely, B: Likely, C: Unlikely				
	By ensuring enough number of lecturers	10	4	0	1	
48	By improving and developing the curriculum and syllabus more	9	5	0	1	
49	By increasing the budgets from the government	4	5	2	4	
50	By enhancing financial capabilities other than the	3	4	2	6	
	Please list up any other measures than the above, if you have more feasible ones for sustaining project benefits.	A: Highly likely, B: Likely, C: Unlikely				
51	Can you manage to remedy malfunctions of the machine or equipment under your duties in	6	8	0	1	
52	Can you plan and prepare for a training program (curriculum, lecture note and other training materials) related to your expertise or duties in VIMARU when STCW is revised in the future?	10	5	0	0	

End of questionnaire: Thank you for your cooperation!

Name : Than An Duong

Division : Marine Electronic & Navigation Equipment

★ Join to project

Competence		2001	2002	2003	2004
Simulator Lesson		October	End of June	Enf of June	End of June
1	make a plan of simulator lesson properly(time table)	*			
2	operate simulator				
3	produce a structured lesson plan				
4	manage and lead group learning				
5	relate style to size of group				
6	make the evaluation sheets for students				
7	make feedback system for improvement lesson				
8	make and use a guidance book for simulator				
9	produce instructors				
General lesson					
New teaching aids					
1	make teaching aids (Except Audio Visual)				
2	make Audio Visual teaching aids(Video, DVD,CD)				
3	operate projector effectively				
4	justify choice of teaching aids for different teaching situation				
5	introduce how to operate the projector to another teachers				
Others					
1	get maritime information from internet				
2	utilize some knowledge obtained training in Japan				
3	make a presentation about training in Japan to expand the knowledge to another teachers				
4	obtain good cooperation from another teachers due to smooth working				

Name : Pham Van Trach Division : Ship Manoeuvring ★ Join to project

Competence		2001 October	2002 End of June	2003 End of June	2004 End of June
Simulator Lesson					
1	make a plan or simulator lesson properly (time table)			*	↑
2	operate simulator				↑
3	produce a structured lesson plan				↑
4	manage and lead group learning				↑
5	relate style to size of group				↑
6	make the evaluation sheets for students				↑
7	make feedback system for improvement lesson				↑
8	make and use a guidance book for simulator				
9	produce instructors				
General lesson					
New teaching aids					
1	make teaching aids (Except Audio Visual)				↑
2	make Audio Visual teaching aids (Video, DVD, CD)				↑
3	operate projector effectively				↑
4	justify choice of teaching aids for different teaching situation				↑
5	introduce how to operate the projector to another teachers				↑
Others					
1	get maritime information from internet				↑
2	utilize some knowledge obtained training in Japan				
3	make a presentation about training in Japan to expand the knowledge to another teachers				↑
4	obtain good cooperation from another teachers due to smooth working				↑

Name : Ha Nam Ninh

Division : Ship Manoeuvring

★ Join to Project

Competence	2001		2002		2003		2004	
	October	End of June	End of June	End of June	End of June	End of June	End of June	End of June
Simulator Lesson								
1 make a plan of simulator lesson properly (time table)		★						
2 operate simulator								
3 produce a structured lesson plan								
4 manage and lead group learning								
5 relate style to size of group								
6 make the evaluation sheets for students								
7 make feedback system for improvement lesson								
8 make and use a guidance book for simulator								
9 produce instructors								
General lesson								
New teaching aids								
1 make teaching aids (Except Audio Visual)								
2 make Audio Visual teaching aids (Video, DVD, CD)								
3 operate projector effectively								
4 justify choice of teaching aids for different teaching situation								
5 introduce how to operate the projector to another teachers								
Others								
1 get maritime information from internet								
2 utilize some knowledge obtained training in Japan								
3 make a presentation about training in Japan to expand the knowledge to another teachers								
4 obtain good cooperation from another teachers due to smooth working								

Name : Nguyen Minh Duc Division : Navigation ★ Join to Project

Competence	2001 October	2002 End of June	2003 End of June	2004 End of June
Simulator Lesson				
1 make a plan of simulator lesson properly (time table)				★
2 operate simulator				
3 produce a structured lesson plan				
4 manage and lead group learning				
5 relate style to size of group				
6 make the evaluation sheets for students				
7 make feedback system for improvement lesson				
8 make and use a guidance book for simulator				
9 produce instructors				
General lesson				
New teaching aids				
1 make teaching aids (Except Audio Visual)				↑
2 make Audio Visual teaching aids (Video, DVD, CD)				↑
3 operate projector effectively				↑
4 justify choice of teaching aids for different teaching situation				
5 introduce how to operate the projector to another teachers				↑
Others				
1 get maritime information from internet				↑
2 utilize some knowledge obtained training in Japan				
3 make a presentation about training in Japan to expand the knowledge to another teachers				
4 obtain good cooperation from another teachers due to smooth working				

★ Join to Project

Division : _____

Name : _____

Competence	2001	2002	2003	2004
	October	End of June	End of June	End of June
Simulator Lesson				
1 make a plan or simulator lesson properly (time table)				
2 operate simulator				
3 produce a structured lesson plan				
4 manage and lead group learning				
5 relate style to size of group				
6 make the evaluation sheets for students				
7 make feedback system for improvement lesson				
8 make and use a guidance book for simulator				
9 produce instructors				
General lesson				
New teaching aids				
1 make teaching aids (Except Audio Visual)				
2 make Audio Visual teaching aids (Video, DVD, CD)				
3 operate projector effectively				
4 justify choice of teaching aids for different teaching situation				
5 introduce how to operate the projector to another teachers				
Others				
1 get maritime information from internet				
2 utilize some knowledge obtained training in Japan				
3 make a presentation about training in Japan to expand the knowledge to another teachers				
4 obtain good cooperation from another teachers due to smooth working				

海技資格試験制度に係る調査結果

MTC（再訓練コースを行うセンター）担当教官とのヒアリング（6/9）

海技試験は VIMARU/MTC においてだけ実施。MTC の各コース実施後に試験を行うから、試験の実施数はコース開催数と同じ。

各コースの参加者は、VIMARU の他に、第 1 及び第 2 海員学校卒業者、HMCUT 卒業者、海軍訓練施設（Nhatrang 州？）修了者等。VIMARU 卒業生は全参加者の 70-75%程度。

海技資格試験の場所は VIMARU。試験委員は VINAMARINE が任命。VIMARU 教職員が何名程度試験委員に任命されるか不明（質問し忘れたので）。

コース参加者のおよそ 95%が合格している。

阪本氏へのヒアリング（6/10）

海技試験の試問は、短冊に出題が書かれており、これを受験生に配布することで行われる。出題内容は全員違っている。出題用紙の紙代、コピー代等の予算が無いためか。

考察

出題内容は共通ではないし、この方法では、恐らく短冊は毎回同じものが配布されるのであろうから、事後に出題内容を公表することも憚られると思われる。試験の中立性を検証する視点として、ベトナムの場合、「試問内容の同一性」と「事後の公表」は適当でないかも。

シミュレータインストラクターの定義について

シミュレータは現場の状況を模擬できる設備と理解されているが、機種によりその性質が異なる。例えば、レーダ/ARPA シミュレータ（操船シミュレータ）は、状況を模擬できる教材設備であるが、機関室シミュレータはシミュレータという名が付けられているものの、現場の状況をパソコン画面で模擬した卓上教材と表現した方が相応しい。

このことから、シミュレータインストラクターの格付けについては各シミュレータ毎に定義すべきと考える。

各シミュレータのインストラクター格付けは次のとおり。

1 レーダ/ARPA シミュレータ

Operator

シミュレータの運転、シナリオの入力、編集ができる能力

Instructor

学生用レーダ/ARPA シミュレータ訓練のシナリオ、評価シートを作成し、訓練を実施できる能力

Senior Instructor

現職航海士用 操船シミュレータ訓練のシナリオ、評価シートを作成し、訓練を実施できる能力

Supervisor

Instructor 及び Senior Instructor を養成できる能力

Senior Instructor に多少の学術知識が備わった能力

2 GMDSS シミュレータ

Operator

各無線機器の操作、シナリオの入力、編集ができる能力

Instructor

訓練シナリオ、評価シートを作成し、訓練を実施できる能力

Senior Instructor

無線法規に基づいて、無線機器運用の訓練を実施できる能力

Supervisor

Instructor 及び Senior Instructor を養成できる能力

通信士が望ましい。

3 機関室シミュレータ

Instructor は機関長クラス、一等機関士クラス、2 機関士クラスの3つくらいでいいと思っています。

2/E class Instructor (学生用)

E/R Simulator にある 12 item の運転、指導
補機関係と発電機が主。授業の進め方のシナリオ作成。
評価シート作成

1/E Class Instructor (出来れば実務で 1/E 経験者) —— (乗船前学生及び機関士用)

Simulator にある 12 item の運転、指導
2/E class 内容に加えて主機発停(暖機、冷機含む)の指導。
実際の現場と画面上の違いを説明できる。
授業の進め方のシナリオ作成。
評価シート作成

C/E Class Instructor (機関士用)

運転中の機器のトラブルの原因と処置の指導。
2/E, 1/E class の instructor の指導ができる。
授業の進め方のアドバイスをする。

【補足】

航海と機関の Simulator 教育の位置付けは若干異なっています。
実際、現場を見ていただいで分かるように、機関の simulator は分かりやすく言うと机上で画面を見て、机上で操作。もっと分かりやすく言うとテレビゲームです。
機関の場合は、Simulator 教育とそれに関連した実習を結びつけ、有効に理解させていくかを考える必要がある。

1 長期専門家派遣

阪本 敏章	チーフアドバイザー/航海	2001/10/1~2004/9/30
崎村 浩一	機関	2001/10/1~2004/9/30
勝俣 裕二	業務調整	2001/11/1~2004/9/30

2 短期専門家

		10人 8.5M/M
H13	①船舶通信、②海事研究	2人、1.5M/M
H14	①船舶通信:GDMSS、②機関室シミュレーター	4人、3.0M/M
	③海事研究:機関、④海事研究:航海	
H15	①配電盤シミュレーター、②海事研究:航海	4人、2.5M/M
	③シミュレーター教育、④海事研究:機関	
H16	①蒸気原動機/海事研究、②操船訓練	2人、1.5M/M

3 機材供与

¥310,615,804

3-1 本邦購送

¥291,805,470

H13	①機関室シミュレーター (106,050千円)	¥212,705,470
	②GMDSSシミュレーター (59,016千円)	
	③レーダー/ARPAシミュレーター (34,172千円) 他	
H14	①配電盤シミュレーター (42,000千円)	¥58,000,000
	②油圧回路実習装置 (8,900千円) 他	
H15	①蒸気原動機実習装置 (7,200千円)	¥21,100,000
	②六分儀 (4,000千円) 他	

3-2 現地調達

¥13,433,941

H13	マルチメディアプロジェクター	¥2,116,180
H14	測定機器	¥52,132
H15	Radar/ARPAシミュレーター機能拡張機材 (4,085千円) 他	¥11,265,629

3-3 携行機材

¥5,376,393

H13	本邦調達 (1,801千円)、現地調達 (244千円)	¥2,045,322
H14	本邦調達 (729千円)、現地調達 (722千円)	¥1,450,964
H15	本邦調達 (1,620千円)、現地調達 (260千円)	¥1,880,107

4 研修

13人、16.8M/M

H13	①海事教育 (航海)、②海事教育 (機関)	3人、4M/M
	③プロジェクト/海事教育管理	
H14	①海事教育 (航海)、②海事教育 (機関)	4人、5.1M/M
	③海事教育/運営管理、④海事研究	
H15	①海事教育 (航海)、②海事教育 (機関)	4人、5.2M/M
	③海事研究 (機関)、④海事研究 (航海)	
H16	①海事教育 (航海)、②海事教育 (再訓練)	2人、2.5M/M

5 活動費

¥23,395,000

H13		¥3,845,000
H14		¥5,463,000
H15		¥9,162,000
H16		¥4,925,000

