8 DOMESTIC SHIPPING DEVELOPMENT POLICIES AND STRATEGIES

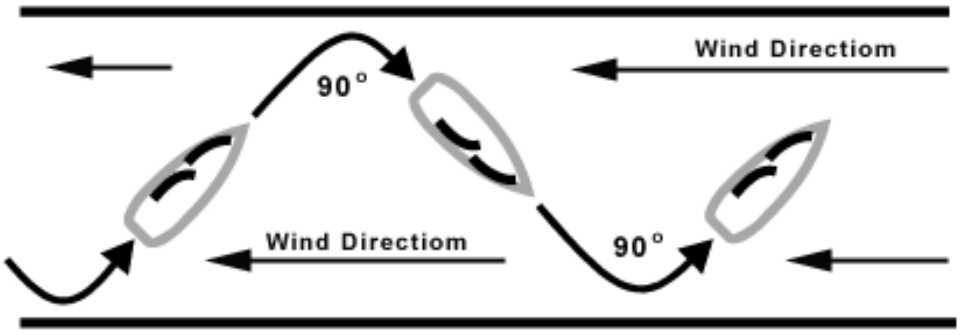
8. DOMESTIC SHIPPING DEVELOPMENT POLICIES AND STRATEGIES

8.1 Shipping Policy and Institutional Development

8.1.1 Re-examination of the Existing Package of Regulations and Incentives for Improving Shipping Services and Lowering Tariff Setting

Policy and development are closely inter-related inasmuch as the former is the cause and the latter is the effect. For shipping to fully develop, the right policies should be in place. Policies give rise to programs and projects that are meant to develop the industry, the ultimate goal of which is for public good.

Policies change over time in response to the business, social, cultural, political and economic environments. It can be likened to the sailing maneuver of "tacking to windward." In order to sail into the wind, a sailor would have to continually zigzag the course, always checking the conditions of the wind and his position with regard to his goal to make the 90-degree turn at the best moment.



In the same manner, in policy setting there are always conditions that seem to hinder the progress towards the end objective, these are like headwinds that hinder the sailboat's forward movement. However, the conditions are always changing, so there is always a need to continually evaluate the status of the industry relative to the goal and the prevailing conditions and re-assess if the policies are still relevant and supportive of the end goal. The new conditions might require a shift in policy direction. For example, a policy that was effective in a regulated environment would not be effective in a deregulated environment.

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

Republic Act No. 9295 (RA 9295), otherwise known as the Domestic Shipping Development Act of 2004 (DSDA) deregulated fare setting with the objective of keeping tariff competitive and affordable. However, there is a need to balance the interests of the ship operators with that of the shippers. When shipping fare was first deregulated in 1996, the Domestic Shipping Consultative Councils (DOSCONs) were organized "to ensure that full opportunity to be heard will still be provided to the public and affected parties on rate adjustments consequent to rates deregulation."[1] Of late, DOSCONs have become dormant.

Albeit shipping fares are deregulated, MARINA still has the inherent responsibility to

[1] MARINA Memorandum Circular No. 117

make sure that the fares are not exorbitant. MARINA should continue to enhance its fare calculation capabilities in conjunction with their function to monitor fares.

RA 9295 only deregulated fare setting but not the entry and exit to the service. Through the years, MARINA has endeavored to make entry into the domestic shipping industry less cumbersome and more favorable for newcomers to enter the field. Nonetheless, the expected influx of new players into the industry is not that great as anticipated. MARINA should introduce reform measures to encourage new players into the industry.

The DSDA has also granted qualified domestic ship owners/operators incentives to ensure the continued viability of operations, and to encourage investments in the domestic shipping industry. The incentives could be viewed by some ship owners and operators to be not substantial enough for the sustained viability of their operations. However, it must also be viewed from the fact that this was enacted when the pronounced thrust of the government was lessening fiscal deficit. It could even be considered a coup for the domestic shipping industry to be able to wiggle out from government these incentives.

To encourage investments in the domestic shipping industry, the government should also make starting up a shipping business easier and sustainable. Domestic Shipping Modernization Programs I and II provided funds for shipping companies to procure vessels. The not so encouraging utilization rate of the second package gives the hint that a better approach than the usual simple “banking and finance with hard collateral” approach is needed.

The newly established Maritime Equity Corporation (MEC) could nicely fill this void in the domestic shipping industry. MEC could also help standardize the design of vessels, since they would be ordering these in numbers. This could be made easier by the fact that DSMP II have preliminary designs on vessels of various types and capacities and the JICA expert in MARINA has commissioned a study that identified prioritized RoRo routes. In order to assure the proper operation and maintenance of these vessels, MEC should also serve as a ship management company.

Apart from incentives from the government, the industry players themselves must plan out marketing campaigns to improve the viability of their business. Although fares are deregulated, the tendency has always been to increase fares to meet rising costs.

Port efficiency has a profound effect on the total efficiency of any shipping service. North Harbor at the Port of Manila has long been crowded and suffering from poor level of service. The transfer of passenger services from Manila to another port, say Batangas, would prove to be very unpopular and uneconomic. PPA should find ways and means to improve efficiency in the port.

Another critical issue is the lack of sufficient “common-use” container yard off major ports, in particular at North Harbor. Currently, container yards are operated independently by large shipping companies. Not only are independently operated container yard inefficient (due to lack of scale economy), it creates a significant hurdle for a new entrant due to large investment needs.

(2) DSDP POLICIES

Deregulation alone is not enough for the domestic shipping industry to be truly efficient and effective in delivering its services. There should also be free competition. Entry of new players with new marketing approach should be encouraged. To encourage entry of new players and foster true competition, it is suggested to implement the following policies:

- Build a close dialogue relation between the Operators and the Shippers;
- Enhance fare monitoring and calculation capabilities of MARINA;
- Further update and streamline franchising requirements and procedures;
- Further relaxation regulatory regime to encourage new market players and marketing approaches;
- Support the Maritime Equity Corporation as the government ship leasing and management company; and,
- Improve port efficiency and facilities at the Port of Manila.

(3) DSDP STRATEGIES

1) For building a close dialogue relation between the operators and the shippers

Taking previous experience concerning regional DOSCONs, rather dialogue and consultation opportunities than regulatory mission should be provided to the shipping operators and the shippers where MARINA plays both an organizer and a Judge role. The results of said consultations and negotiations shall be considered by the MARINA for actions to be taken thereon.

2) For enhancement of MARINA's fare monitoring and calculation capabilities

Since MARINA would be acting as an arbitrator in most DOSCONs consultations and negotiations, it should be able to continually monitor the fares vis-à-vis the financial statements of shipping companies and make a fair assessment on the competitiveness of the rates being charged.

The previous USAID technical assistance titled "Interisland Liner Shipping Rate Rationalization Study" (1991) gave considerable impact on the MARINA's fare policy and its internal monitoring operation. Under the new environments, it is necessary to institute a new fare monitoring structure. Since this task requires substantial professional input, it is favorable for MARINA to request a technical assistance project to a donor agency for this strategic administrative setting.

3) For further updated and streamlined requirements and procedures

All requirements should be clearly enumerated for each type of application and situation. The flowchart should also be clearly presented for easy understanding of applicants. All applications should be lodged with the designated focal office wherein submitted documents shall be checked as to their completeness. The Applicant will be given a specific number for him to track the document within the MARINA bureaucracy. The number would be entered into the MARINA main computer, and the document would be tracked as it moves from office to office, much in the same manner that packages are tracked by express carriers. This is also in line with the vision of an e-MARINA. Each office will also be required to act on the application within a specified number of days. This way, applicants need not be following up their papers with different MARINA offices.

4) For further relaxation of regulatory regime

Although entry into a route would still be regulated, entry should be made easy, even encouraged. For routes that are proved to have no effective competition, it should be opened to new entrants, the approval of the new franchise would just be administrative, i.e., upon submission of all legal requirements.

Encourage long-term contract of carriage with big industrial companies to assure sustained viability of shipping operations.

Encourage marketing strategies to promote sea travel, like one-week advance purchase, bulk purchase with operators, “no-frills” economy, etc.

5) For MEC as the government ship leasing and management company

MEC should use the funds committed by the Development Bank of the Philippines to build vessels domestically to be leased out to shipping companies for deployment at the SRNH and other applicable routes.

To assure proper operation and maintenance of its leased vessels, it shall be a precondition of the lease that the lessee should enter into a ship management contract with MEC.

6) For improved efficiency at the Port of Manila

To help decongest domestic shipping operations at North Harbor, other domestic shipping companies should be allowed to transfer their Manila operations at South Harbor. Pier 15 is currently being used by the Aboitiz Group as their Superferry terminal. An arrangement could be forged with the present South Harbor operator (ATI) and the PPA for other domestic shipping companies to use part or all of South Harbor. South Harbor would then have sufficient space for a common-use container yard.

8.1.2 Provision of Incentives to LGUs for Developing Local Shipping

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

Domestic shipping is a widely dispersed industry. It covers practically all the country, as 70% of the country’s 1,525 municipalities have a coastline. The types of watercrafts and the offered services are also widely varied, ranging from wooden-hulled bancas with outriggers to fast ferries and from pure passenger to cellular container services.

MARINA, the national government agency tasked to regulate this industry, has very limited coverage due to its limited regional offices and personnel, although it is never lacking in its desire to fully dispense its mandate.

For the domestic shipping industry to be effectively supervised, this supervision must be done at all levels of the industry. Considering the coverage handicap of MARINA, its regulatory functions should be devolved to the LGUs.

LGUs also have their own interests to develop their local shipping industry as this would help ensure the economic development of their communities and assure the access of their constituents to basic social services.

Corollary to this, the national government should also extend assistance to local governments in putting up the necessary infrastructures like ports and access roads. The Department of Transportation and Communications (DOTC) implemented the JBIC-assisted Nationwide Feeder Ports Development Program (NFPDP), Phases I and II. DOTC also used to allocate a portion of its infrastructure funds for the development of municipal ports. However, because of its limited budgetary allocation, DOTC has ceased allocating funds for the extension of NFPDP Phase II (Package E), and for locally-funded municipal port projects.

Without even a simple port with RoRo ramp, LGUs would be hard pressed to develop local shipping, let alone spur local economic development.

(2) DSDP POLICIES

LGUs should be given an active role in developing and regulating localized shipping. They should, however, be given proper training and guidelines by MARINA for the proper dispensing of these functions. National government should also provide the needed social overhead for the development of local shipping. To hasten the development of domestic shipping down to the local level, the Study recommends the following policies:

- Devolution of regulatory powers over local shipping routes to LGUs
- Provide infrastructure support for the development of municipal ports
- DOTC to implement Package E of NFPDP Phase II

(3) DSDP STRATEGIES

1) For devolution of regulatory powers

For shipping routes whose nodes are all within the territorial boundary of a city or municipality (local shipping routes), the regulatory powers shall be devolved to the city or municipal LGU. Provided, however, that the maximum passenger carrying capacity of the vessel shall be only up to twenty-five (25) passengers.

For shipping routes whose nodes are all within the territorial boundary of a province (provincial shipping routes), the regulatory powers shall be devolved to the provincial LGU. Provided, however, that the maximum passenger carrying capacity of the vessel shall be only up to one hundred (100) passengers. The provincial LGU shall also have regulatory powers over local shipping routes to be serviced by vessels with passenger carrying capacity of twenty-six (26) to one hundred (100) passengers.

LGUs would have to be given policy directions and guidelines for them to effectively and proficiently dispense this function. MARINA could provide this by: (1) conducting outreach programs and seminars for LGUs and (2) issuing a Shipping Regulation Guidelines for LGUs.

Some topics that could be covered in the seminar and guidelines are:

- Safety regulations;
- Technical evaluation; and
- Economic evaluation.

For all other routes and vessels, the regulatory powers stay with MARINA.

2) For infrastructure support

The Department of Budget and Management should increase the annual budgetary allocation of the DOTC on the condition that this shall be for the implementation of municipal port projects. The design of the basic port facility should be able to handle the simplest short-distance RORO vessel specification to be built by MEC.

3) For the continued implementation of the NFPDP Phase II

The DOTC should realign its infrastructure funds for Foreign-Assisted Projects to include the funding requirements of Package E NFPDP Phase II. The identified port projects therein have long been identified and prioritized and the development thereof has been approved. Furthermore, the Project Management Office has shown its capability to implement the project.

8.1.3 Enhancement of Maritime Safety, Protection of Marine Environment and Increasing Awareness in Maritime Security in Conformity with Relevant International Initiatives

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

The Philippines have made great strides in improving its record on maritime safety. However, the recent spate of maritime accidents underlines the need for continued vigilance.

The collision of Ropax Superferry 12 and the ferry San Nicolas called for a review on the safety of wooden-hulled vessels. As a reaction, MARINA adopted the policy for the phase out of wooden-hulled vessels. This was greeted by protest from ship operators as this would mean phasing out nearly two-thirds of the domestic shipping fleet. Surely there is a need to rationalize the policy and to balance the concern for safety and economic realities.

The International Maritime Organization introduced requirements for the double hulling of oil tankers in 1993 through an amendment to Annex I of MARPOL. Amendments to MARPOL were adopted in April 2001 and became effective on 01 September 2002. These amendments extend the phase out of single-hulled oil tankers to all tankers of 5000 dwt and above and accelerate the existing phase-out schedule for large tankers. The phase out of single-hulled tankers through this amendment commences in 2003 with the final phase out occurring in 2015.

The Philippines has not had a major oil spill. This fact, however, should not lull policy makers on the danger of having a major oil spill and its effect on the environment and the economy. The Philippines should also come up with its policy regarding limits on single-hulled tankers in domestic shipping.

Even before the 9/11 incident, the IMO had already made studies on the need for maritime security considering that ships can be used to transport weapons of mass destruction. The tragic 9/11 incident spurred IMO to act with urgency on this matter. In December 2002, new amendments were enacted into the SOLAS Convention. These amendments gave rise to the International Ship and Port Security Code (ISPS Code), which went into effect on 01 July 2004.The ISPS Code requires most port facilities and ships engaged in international trade to establish and maintain strict security procedures called Ship Security Plans and Port Facility Security Plans. These procedures are specified in ship and port specific, with layered and redundant defenses against terrorism, piracy, smuggling, etc.

Although the DOTC, through the Office of Transportation Security, has complied with IMO requirements for ports and vessels engaged in international trade, there is also a need to beef up security measures in the domestic trade. The Superferry 14 incident clearly brought this to the fore.

Notwithstanding any and all precautions, maritime incidents will still happen and legal issues would arise as to culpability in such incidents. A court handling such cases should be presided over by a judge competent in maritime and shipping laws.

(2) DSDP POLICIES

Maritime safety and security, and protection of marine environment should be the primordial concern of the State as this is a basic requirement of public good. The State should make sure that shipping voyages are safe and that shipping itself is not used to endanger the safety of others. Toward this end the Study recommends the following policies:

- Categorize “Sea Areas” in conjunction with “Protected Waters” regulation;
- Rationalize areas of operations for wooden-hulled vessels;
- Rationalize phase-out of single-hulled tankers;
- Institutionalize security measures for domestic shipping and ports; and
- Designate an Admiralty Court

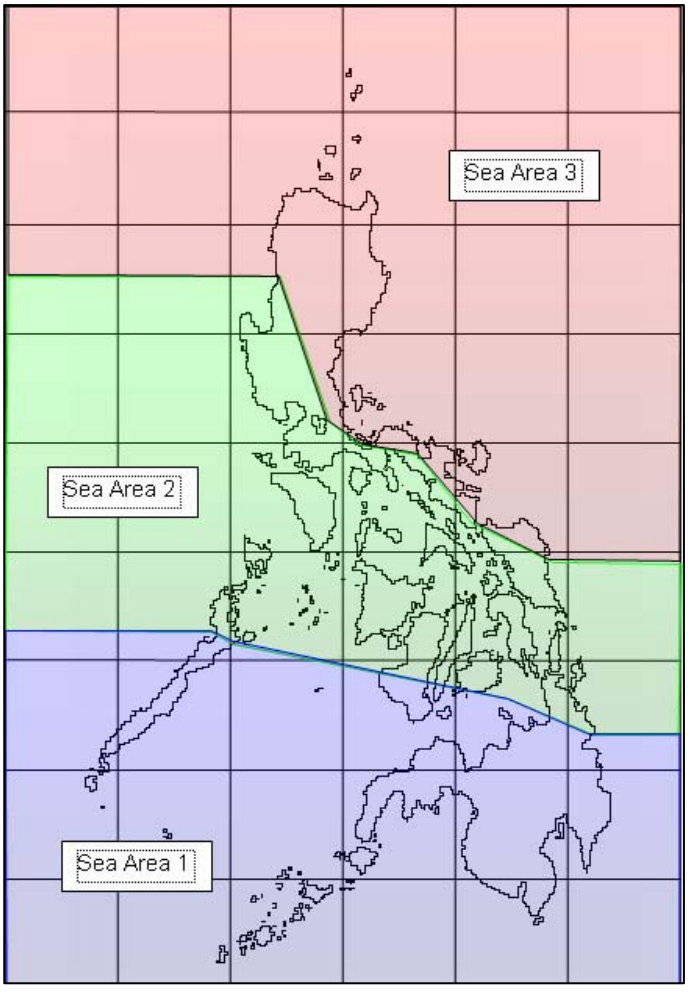
(3) DSDP STRATEGIES

Maritime safety and security, and protection of marine environment should be the primordial concern of the State as this is a basic requirement of public good. The State should make sure that shipping voyages are safe and that shipping itself is not used to endanger the safety of others. Toward this end the Study recommends the following policies:

1) For categorization of Sea Areas

The sea areas of the country can be categorized so as to prescribe limitation of operations for certain types of sea-going vessels. The sea can be categorized according to the frequency of visits of tropical cyclones. One suggestion is shown in Figure 8.1.1. Sea Area 1 would be the sea area with very minimal visits from tropical cyclones. This covers most of the Mindanao Sea and Sulu Sea. Sea Area 2 covers Bohol Sea, Visayas Sea and Southern Luzon Sea. Sea Area 3 is the typhoon belt, which covers the Philippine Sea (facing the Pacific Ocean) and Northwestern Luzon Sea.

Figure 8.1.1 Proposed Sea Areas



The definition of “protected waters” and “partly protected waters” in MARINA MC 190 could be based on distance from shore in each Sea Area as shown in Table below. All other MARINA Regulations contained in MC 190 remains the same.

Table 8.1.1 Matrix of Sea Areas and Protected Waters

	Sea Area 1	**Sea Area 2**	**Sea Area 3**
Protected Waters	Five (5) kilometers from shore	Five (5) kilometers from shore	Three (3) kilometers from shore
Partly-protected Waters	Twelve (12) kilometers from shore	Ten (10) kilometers from shore	Six (6) kilometers from shore

2) For rationalization of area of operations of Wooden-Hulled Vessels

The country would be hard-pressed to implement a complete phase-out of wooden-hulled vessels, as these represent about two-thirds of the total domestic fleet. However, there is also the need to move up to better designed vessels for safety and economy. To find balance between these two important concerns, it is recommended that the operations of wooden-hulled vessels be rationalized and limited to the following:

- The area of operations of wooden-hulled vessels with outriggers (traditional motorized banca), of less than three (3) gross tones, are to be confined to within the boundaries of the city or municipality, and within protected waters (as defined above) only, and shall be allowed to carry up to twenty five (25) passengers only.
- Wooden-hulled ships without outriggers may be allowed to carry up to one hundred (100) passengers only, and within partly protected waters (as defined above) only.
- Wooden-hulled vessels engaged in tramping operations shall be limited by their franchised area of operations and other restrictions that may be imposed by authorities from time to time.

3) For rationalized phase-out of Single-hulled Tankers

(1) Philippine flag tankers over 5,000 tons dwt on international trade shall comply with the revised regulation 13G of Annex I of MARPOL. This will be necessary to trade internationally, in any case.

(2) Foreign flag tankers over 5,000 tons dwt calling on Philippine port or sailing within Philippine waters shall comply with the revised regulation 13G of Annex I of MARPOL.

(3) Philippine flag tankers over 5,000 tons dwt, for light oil, and 600 tons dwt, for heavy oil, plying domestic trade shall comply with the revised regulation 13G of Annex I of MARPOL, but their retirement age shall be extended.

Please see Section 8.2.3 of this Report for a more detailed discussion on the phase-out of single-hulled tankers.

The MEC shall extend assistance to those affected by the phase-out of single-hulled tankers and the restricted area of operations of wooden-hulled vessels with vessel leasing programs.

4) For institutionalizing security measures for domestic shipping and ports

A National Ship and Port Facility Security (NSPS) Code patterned after the International Ship and Port Facility Security (ISPS) Code should be drafted. This is to avert any repetition of the Superferry 14 incident and to deter other illegal activities, such as smuggling, piracy, etc.

5) For designation of an Admiralty Court

An Admiralty Court can be designated to handle all cases arising from a maritime incident. The Admiralty Court should be presided over by a judge with extensive knowledge and experience in maritime and shipping laws. Alternatively, a Regional Trial Court presided over by such a judge shall be designated as the Admiralty Court, wherein all maritime cases shall be heard exclusively.

8.2 Maritime Transport System Development

In this section, the policies and strategies to develop various domestic shipping services are proposed. The objectives of maritime transport system development in the Philippines are to provide for the users an efficient, low-cost and quality transport services under the conditions of sustainable shipping business, safe operation and consideration to marine environment. It should also improve accessibility of passengers and freights to the whole country.

8.2.1 Upgrade of Trunk Liner Shipping Services

(1) CONTEXT

Like other coastal and archipelagic countries, liner operations take a greater role in domestic trade of the country. One of the salient features on the trunk liner routes is the dominance of cargo-passenger vessels such as Ropax (i.e., superferry-type vessel). They provide essential inter-island shipping services for both cargoes and passengers.

With regards to passenger shipping, Ropax vessels and conventional cargo-passenger vessels serving mainly on long-/medium-haul routes have dominant capacity of 360,000 GT and 60,000 GT, respectively, while capacity of other liner operations by passenger ferries, fast crafts and wooden-hull bancas is not significant although these are many in terms of number of vessels and serve different types of shipping requirement such as tertiary and development routes.

As for freight shipping, liner service is provided only for long-/medium-haul routes by container vessels with a total capacity of 109,000 GT as well as above-mentioned Ropax and conventional cargo-passenger vessels.

There is very little pressure or incentive for inter-island shipping operators to change the economics of their operation – in terms of vessel size and type. Thus, the current size of vessels used in inter-island shipping – specifically on high density routes – is too small. For example, there are at least 12 sailings in a week between Manila and Cebu. Economies of scale could be achieved if larger vessels and fewer sailings are realized. Constraints in port depth, container handling productivity, size of back-up area are some of the items that have to be rectified before larger vessels could materialize.

(2) PROSPECTS

The DSDP demand forecast indicates some changing business environments:

1) Sea passenger traffic will continue to increase at a considerable pace of 4.2% yearly. However, it does not mean that sea traffic on all the routes will increase in proportion to socio-economic development of the service areas. Modal competition will become fierce and, thus, sea passenger traffic will increase moderately on the following route groups:
   (1) The heavily trafficked routes in severe competition with air such as Manila – Cebu, Manila – Davao, and Manila – Zamboanga.
   (2) The routes in severe competition with the RoRo-highway network which particularly require not so long travel time, say, within 24 hours.
2) Containerized sea cargo will increase much faster than others.

Table 8.2.1. Future Demand on Trunk Liner Routes

Major Trunk Liner Routes	Passenger (000pax)			Containerized Cargoes (000 MT)		
	2003	2015	Growth Rate (%/yr)	2003	2015	Growth Rate (%/yr)
Manila – Cebu	450	242	-5.5	1,797	3,437	6.1
Manila - Iloilo	153	109	-3.0	594	876	3.6
Manila – CDO	67	71	0.6	995	1,598	4.4
Manila – General Santos	75	65	-1.3	720	778	0.7

(3) CONSTRAINTS

- The type of vessels being used also engenders high unit cost. Combined RoRo/Passenger or Ropax vessels are inefficient both for cargo and passenger operations, but it has emerged as the vessel of choice under the prevailing environment. It could be much more efficient if cargo operation is separated from passenger operation. However, passenger operation cannot be profitable without the cargo revenues – thus the need for Ropax operations. Limitations on increasing fare rates imposed by the air industry preclude the further increase in fares. The only way to extract more revenues is to reduce unit cost per passenger. However, inflexibility of utilizing vessel space – brought about by MARINA regulations – limits the innovativeness of shipping operators to balance fare rates and level of accommodation based on the requirements of the market.
- The nature of cargo handling also perpetuates the use of Ropax. The prevalence of container handling using forklifts supports the Ropax operations, because low container-handling productivity does not translate into shorter turnaround time for a vessel that is constrained by the day-of-the-week schedule of passenger operations. As facilities and equipment need to be shared among port users, pure cargo operators have to contend with the same inefficient cargo operation scheme.
- The level of competition is another constraint. Despite the deregulated fare regime and a framework facilitating entry into the market, the size of the five major players poses major hindrance to full competition. Smaller companies would be at a disadvantage in competing directly with the big players.

(4) DSDP POLICIES

In order to provide efficient and low-cost shipping services for trunk liner routes, the existing Ropax and container services will be further expanded and upgraded under competitive conditions with differentiated services type. For this, the following policies are set for its attainment:

- Provision of more competitive freight service by providing different type of services in terms of transportation time including cargo handling time and freight rates.
- Replacement of aging Ropax with a new-generation Ropax to fit with the characteristics of the inter-island shipping in the Philippines. To maximize the replacement effect through such considerable ship investment, port facilities should ensure efficient ship operation.

(5) DSDP STRATEGIES

1) For Provision of more competitive freight service

- Ropax will still play an essential role in trunk liner shipping routes for both passengers and cargoes. However, it is estimated that the demand of passengers for trunk routes will be gradually decreasing due to the competition with air transport while cargo demand continues to increase. Therefore, both Ropax and container vessels will be expanded in consideration of demand balance between cargo and passenger.
- In order to provide diversified trunk liner shipping services for users in terms of transport time (door-to-door time) and freight costs, the differences of service characteristics between Ropax and container vessels will be more emphasized. Ropax service should be improved more on the cargo handling time at port instead of using forklifts, while container vessel service should provide cheaper freight costs by reducing vessel operating costs and time cost for cargo handling.
- In order to provide competitive environment, the franchising system will be improved to ease the new entry for the services. In this aspect, MARINA will take part in the facilitation of competition in the trunk route liner shipping operation.

2) For replacement of aging Ropax with a new-generation Ropax

- The existing Ropax are already very old and aging year after year. The demand for Ropax will increase in future. Therefore, they should be replaced and expanded properly. It is estimated that the required number of Ropax vessels will nearly double by 2015. However, during this period, the second hand Ropax from Japan (the primary source of Ropax vessels) is not enough to provide necessary second hand vessels. Therefore, new building of Ropax by the domestic shipbuilders should be considered.

Table 8.2.2. Estimated Number of Replaced RoRo/Ropax Vessels in Japan

GT[1)]	2005-2010[2)]	2011-2015[2)]	2016-2020[2)]
0-400	69	42	29
401-1000	57	18	12
1001-5000	39	19	11
5001-10000	16	8	3
10000-	16	14	9
Total	197	101	64

Source: Nikkan Kaiji Tsushin Co., Ltd and Study Team
Note: 1) Japanese Standard
2) Replacement age is assumed as 15 years

- Standard design for new-generation Ropax vessels will be examined to fit with the characteristics of the Philippines inter-island shipping and port such as balance capacity between passengers and cargoes, shallow depth at ports, configuration of RoRo ramps, etc. Introduction of standard vessel results in shorter period for ship building and reduction of ship building cost. It is difficult for individual private shipping companies and shipbuilders to coordinate in this regard because their interest varies. Therefore, in order to facilitate the domestic construction of new

generation Ropax, MARINA as the designated sector administration, will have to take the lead.

- To accommodate new-generation Ropax vessels in an efficient manner, dedicated Ropax terminal will be developed initially at Manila South Harbor and Cebu, and later on, Cagayan de Oro and Davao. Those terminals will be commonly used among Ropax operators with sufficient vehicle parking and container yard. To ensure safe and efficient embarkation and disembarkation, passengers and cargoes will be vertically separated.

8.2.2 Expansion of Dry Bulk Shipping

(1) CONTEXT

In the Philippines, large scale dry bulk shipping is not practiced. There is no designated dry bulk vessel. Barges are mainly utilized for the transportation of dry bulk cargoes. The commodities transported as dry bulk are copra, crude mineral (sand, stone, etc.), mineral fuel (mainly coal), and imported wheat. There are some commodities which is cheaper by shipping as dry bulk. Those are cement, animal feeds, fertilizer, and agricultural products (corn, sugar, rice, and paddy). However, those are currently transported in bag and shipped as break bulk by general cargo vessel, container vessel and Ropax. Because of this inefficient form of shipping, present unit transport cost for dry bulk cargoes is expensive.

There are several reasons why dry bulk shipping is not so significant and mostly played by barges in stead of bulk vessels:

- Transport distance of dry bulk cargoes are relatively short, mostly transported within inland seas and straits.
- There is almost no cargo handling equipment for bulk cargoes at public ports such as belt conveyor, vacuum-style bulk loader/unloader and bulk storage facilities such as silo and open/closed storage. Those are only available at private owned specialized ports.
- As for manufactured products, these are primarily traded in bags in both wholesale and retail. For them bulk shipping service is utilized only for shipping between plants and ports or sales office/warehouses. Shipping distance is also not so long.
- As for agricultural products and for other manufactured goods (e.g. fertilizer), there is a problem of consolidation, due to variations in quality and type. Therefore it is very difficult to mix commodities together as bulk cargoes. Moreover, there is no system to consolidate those products form individual farmers through brokers/buyers. Currently it is difficult to work out a logistics system in bulk.

(2) PROSPECTS

Shipping demand of potential cargoes for dry bulk shipping is estimated to increase in the future. Since transportation of manufactured products, which has high price value, intends to shift to container shipping, there is an opportunity for agricultural products with low unit price to shift to bulk cargoes aside from the existing commodity which are transported by barge. Barges are efficient for the inter-island shipping within inland seas while large scale bulk shipping service is suitable for the long-haul shipping, e.g., Manila-Mindanao.

Table 8.2.3. Shipping Demand of Potential Cargoes for Dry Bulk Shipping

Commodity	(A) 2003 (000MT)	(B) 2015 (000MT)	(B)/(A)	Typical packaging form
Copra	1,023	1,130	1.10	Bulk (Barge)
Crude Mineral	2,465	3,066	1.24	Bulk (Barge)
Mineral Fuel (coal, etc.)	1,158	2,187	1.89	Bulk (Barge)
Wheat	1,576	2,975	1.89	Bulk (Barge)
Cement	2,390	2,508	1.05	Bulk (Barge), Bag
Animal Feeds	1,047	1,707	1.63	Bulk (Barge), Bag
Fertilizer	900	1,029	1.14	Bag
Sugar	1,208	1,763	1.46	Bag
Corn	665	635	0.95	Bag
Rice and Paddy	686	667	0.97	Bag

(3) DEVELOPMENT POLICIES

The basic policy for bulk shipping service is to expand existing services to carry more dry bulk cargoes with lower unit transport cost. This will be reflected in the reduction of retail price of goods. Therefore, it is deemed important to implement the following policies:

- Introduction of large scale bulk shipping service, particularly for the long-haul routes such as for the transportation of agricultural products from Mindanao to Manila
- Establishment of sizable cargo collection and consolidation system and related facilities to support bulk shipping service
- Facilitation of investment for bulk shipping services

(4) DEVELOPMENT STRATEGIES

For introduction of large scale bulk shipping service:

- There is no bulk vessel in the Philippines, large size bulk vessels (such as 3000-5000 DWT, should be determined by route and by cargo type) which can sail on open seas are to be introduced with consideration to transport efficiency and the existing port facilities.
- In the routes for large scale bulk shipping, necessary handling equipment and storage facility which any users can use should be introduced at public ports.
- Business plan should be prepared for the specific bulk shipping by commodity and by routes before implementation. In the plan, it is also very important to consider the back-haul cargoes to make the bulk shipping business more profitable.

For establishment of consolidation system and facilities:

- In order to work out bulk shipping as logistics system, there should be a total system that the commodities are consolidated intensively at production side and distributed properly in consumer side.
- MARINA should coordinate with related agencies such as DA and DTI to facilitate the consolidation of various bulk cargoes effectively.

For facilitation of investment:

- In order to facilitate the investment for the bulk shipping business, appropriate loan facilities such as DSMP II for vessels and ILAF for the related facilities are to be mobilized under the close coordination between DBP and MARINA, as well as other relevant agencies.

8.2.3 Upgrading of Liquid Bulk Shipping

(1) CONTEXT

In the Philippines, petroleum including crude and refined oil products is the largest commodity in domestic shipping, with a volume of 10.4 million MT in 2003. Its distribution between islands is extremely dependent on domestic shipping rather than other transport modes such as land transport or pipeline. Other commodities in liquid bulk are coconut oil (333,000 MT) and molasses (373,000 MT) which are transported by specialized liquid barges and so on.

The Philippines is a net importer of oil and petroleum products, 81% in crude oil and 19% in refined petroleum. There are three major oil companies namely Petron, Shell and Caltex, accounting for 90% of petroleum industry outputs. Petron and Shell have oil refinery and storage facility in Bataan and Batangas, respectively, while Caltex has oil storage facility in Batangas as the base of import and domestic distribution. Typical pattern of petroleum distribution is from those storage facilities in Bataan and Batangas to all over the country particularly to the areas of Visayas and Mindanao.

In domestic shipping of petroleum, currently about 200 tankers are engaged. They are generally small with average size of 900GT and old with average age of 22 years. According to interview with oil companies, aging domestic tankers was pointed out as an important concern in terms of safe and efficient operation. On the other hand, tanker companies complained about short-term chartering contract with oil companies which is an issue in terms of business risk on the investment for tanker renewal.

(2) PROSPECTS

Generally demand for petroleum increases in accordance with growth of population and economic activities. However, it is projected that domestic shipping traffic of petroleum will experience low growth, primarily due to the shifting of energy alternatives from industrial fuel oil and increased direct importation of refined fuel to regional storage centers. Nonetheless, its volume is still huge and is estimated at 11 million MT in 2015.

There are some possibilities to make the domestic distribution of petroleum more efficient. One way is to stop refinery and import refined petroleum directly to regional storage centers, e.g., Bataan and Batangas for Luzon Area, Cebu in Visayas, and Cagayan de Oro in Mindanao Area. This distribution system change will lead to shorter transport distance resulting in lower transport cost as a whole. However, according to interviews with major oil companies which are operating petroleum refinery, it is one of the options but potential is not that great because they intend to maximize the advantage of their existing refinery and storage facilities.

(3) CONSTRAINTS

The Philippine government has ratified IMO's MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships) as summarized in the following table. It is adopted in overseas shipping but not in domestic shipping. As a future policy of the Philippine government, it will be adopted in domestic shipping with some modifications appropriate for the local conditions in order to mitigate maritime pollution. It is discussed in many countries that rules are usually loosened on the domestic fleet.

Further revisions to MARPOL 73/78 13G made in December 2003 restricts the use of single-hull oil tankers of 600 tons DWT and above but less than 5,000 tons DWT, not later than the anniversary of their delivery date in 2008.

In the Philippines, domestic tankers are all single-hull. Those affected by MARPOL will be a few light oil tankers with more than 5,000 DWT and significant numbers of heavy oil tankers with more than 600DWT. If MARPOL is adopted in domestic shipping, huge investment is required from tanker companies by 2008. From the view point of vessel procurement, it is very difficult to get double-hull second-hand tankers from the international market due to the excess demand and short supply. Domestic industry lacks capacity and experience for new building of tankers.

(4) DSDP POLICIES

Based on the current conditions and issues, the basic policy on liquid bulk shipping, particularly oil tanker shipping, is to enhance its transport efficiency and quality through renewal of tankers in light of its effects to marine environment. Specific policy targets are proposed as follows:

- Facilitation of renewal of old tankers from old single-hull to double-hull to provide more efficient service with less negative effects on marine environment.
- Development of legal framework on the prevention of marine pollution from ships in domestic service considering local conditions.
- Promotion of domestic ship building for double-hull tankers.

Table 8.2.4. Phase Out Schedule on the Single-Hull Tanker

Category of oil tanker	Phase-out Date or year
Category 1 - oil tankers of 20,000 tons deadweight and above carrying crude oil, fuel oil, heavy diesel oil or lubricating oil as cargo, and of 30,000 tons deadweight and above carrying other oils, which do not comply with the requirements for protectively located segregated ballast tanks (commonly known as Pre-MARPOL tankers)	• 5 April 2005 for ships delivered on 5 April 1982 or earlier • 2005 for ships delivered after 5 April 1982
Category 2 - oil tankers of 20,000 tons deadweight and above carrying crude oil, fuel oil, heavy diesel oil or lubricating oil as cargo, and of 30,000 tons deadweight and above carrying other oils, which do comply with the protectively located segregated ballast tank requirements (MARPOL tankers) and **Category 3** - oil tankers of 5,000 tons deadweight and above but less than the tonnage specified for Category 1 and 2 tankers	• 5 April 2005 for ships delivered on 5 April 1977 or earlier • 2005 for ships delivered after 5 April 1977 but before 1 January 1978 • 2006 for ships delivered in 1978 and 1979 • 2007 for ships delivered in 1980 and 1981 • 2008 for ships delivered in 1982 • 2009 for ships delivered in 1983 • 2010 for ships delivered in 1984 or later

Source: IMO

Note: The restriction will also include the use of single-hull oil tankers of 600 tons DWT and above but less than 5,000 tons DWT, not later than the anniversary of their delivery date in 2008 according to further revisions to 13G made in December 2003.

(5) DSDP STRATEGIES

1) For facilitation of renewal of old tankers:

- Renewal of tankers require huge investments. Therefore, in order to facilitate tanker renewal, it is necessary to reduce business risks of tanker companies.

One of the possible incentives is to provide tanker companies favourable conditions of loan from a ship financing institution such as loan facility of DSMP II from DBP, i.e. longer repayment period and low interest rates than ordinary loans. Another possible incentive is to secure a long-term (e.g., 10 years) contract from oil companies.

2) For development of legal framework:

- It is essential to prevent maritime pollution from ships. Therefore, MARINA should introduce a new policy framework not only for overseas vessels but also for domestic vessels like MARPOL but it should be more attuned to local conditions.
- As for domestic tankers, it is practical and reasonable to set phase-out year of 2015 for the existing single-hull heavy oil tankers with more than 2000DWT and light oil tanker with more than 5000 DWT. By that year, most of old tankers will be of age of more than 35 years by 2010 and 30 years by 2015 and will be for replacement. On the other hand, MARINA will prohibit the importation of single-hull tankers immediately in order to minimize the usage of the single-hull tankers even before 2015.

3) For promotion of domestic tanker building

- Procurement of second hand double-hull tankers from international market is not easy. Therefore it is important to promote the domestic ship building industry. However, capacity and experience of local ship builders are limited. To support them MARINA shall give technical support such as providing standard tanker design which can decrease vessel construction cost and mediate technical and financial cooperation between local shipbuilders and foreign shipbuilders to secure the procurement of steel plate and parts.

Figure 8.2.1. Tanker Renewal Model

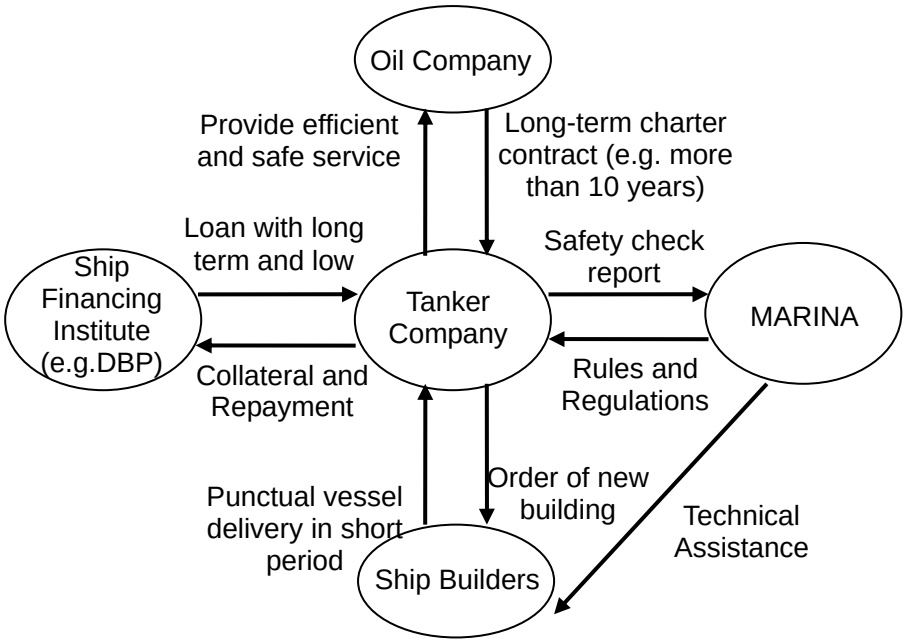


Table 8.2.5. Proposed Phase Out Schedule of Domestic Tankers

1. Heavy Oil Tanker		Ship Age											
Year Built	DWT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1965	170	40	41										
1968	174	37	38										
1974	830	31	32	33	34	35	36						
1977	1,000	28	29	30	31	32	33	34					
1978	588	27	28	29	30	31	32	33					
1978	588	27	28	29	30	31	32	33					
1978	545	27	28	29	30	31	32	33					
1979	690	26	27	28	29	30	31	32	33				
1979	591	26	27	28	29	30	31	32	33				
1979	314	26	27	28	29	30	31	32	33				
1979	2,994	26	27	28	29	30	31	32	33				
1982	2,990	23	24	25	26	27	28	29	30	31			
1982	3,266	23	24	25	26	27	28	29	30	31			
1983	460	22	23	24	25	26	27	28	29	30	31		
1985	470	20	21	22	23	24	25	26	27	28	29	30	31
1986	110	19	20	21	22	23	24	25	26	27	28	29	30
1987	435	18	19	20	21	22	23	24	25	26	27	28	29
1987	682	18	19	20	21	22	23	24	25	26	27	28	29
1987	1,661	18	19	20	21	22	23	24	25	26	27	28	29
1988	1,310	17	18	19	20	21	22	23	24	25	26	27	28
1989	1,330	16	17	18	19	20	21	22	23	24	25	26	27
1990	230	15	16	17	18	19	20	21	22	23	24	25	26
1991	1,430	14	15	16	17	18	19	20	21	22	23	24	25
1991	249	14	15	16	17	18	19	20	21	22	23	24	25
1992	430	13	14	15	16	17	18	19	20	21	22	23	24
1996	1,250	9	10	11	12	13	14	15	16	17	18	19	20
1996	350	9	10	11	12	13	14	15	16	17	18	19	20
1996	350	9	10	11	12	13	14	15	16	17	18	19	20
1996	2,000	9	10	11	12	13	14	15	16	17	18	19	20
1996	2,000	9	10	11	12	13	14	15	16	17	18	19	20
1996	2,000	9	10	11	12	13	14	15	16	17	18	19	20
1996	2,038	9	10	11	12	13	14	15	16	17	18	19	20
1996	945	9	10	11	12	13	14	15	16	17	18	19	20
1997	1,510	8	9	10	11	12	13	14	15	16	17	18	19
2000	1,812	5	6	7	8	9	10	11	12	13	14	15	16

2. Light Oil Tanker		Ship Age											
Year Built	DWT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1967		38	39										
1975	380	30	31	32	33	34	35	36					
1977	540	28	29	30	31	32	33	34					
1979	5,390	26	27	28	29	30	31	32					
1980	2,013	25	26	27	28	29	30	31					
1981	3,222	24	25	26	27	28	29	30	31				
1983	3,351	22	23	24	25	26	27	28	29	30	31		
1983	5,078	22	23	24	25	26	27	28	29	30	31		
1985	1,224	20	21	22	23	24	25	26	27	28	29	30	31
1990	1,430	15	16	17	18	19	20	21	22	23	24	25	26
1990	1,263	15	16	17	18	19	20	21	22	23	24	25	26
1990	2,302	15	16	17	18	19	20	21	22	23	24	25	26
1990	2,302	15	16	17	18	19	20	21	22	23	24	25	26
1991	550	14	15	16	17	18	19	20	21	22	23	24	25
1991	1,425	14	15	16	17	18	19	20	21	22	23	24	25
1992	6,760	13	14	15	16	17	18	19	20	21	22	23	24
1992	2,500	13	14	15	16	17	18	19	20	21	22	23	24
1993	3,367	12	13	14	15	16	17	18	19	20	21	22	23
1994	550	11	12	13	14	15	16	17	18	19	20	21	22
1994		11	12	13	14	15	16	17	18	19	20	21	22
1995	1,420	10	11	12	13	14	15	16	17	18	19	20	21
1995	4,990	10	11	12	13	14	15	16	17	18	19	20	21
1996	850	9	10	11	12	13	14	15	16	17	18	19	20
1996	4,025	9	10	11	12	13	14	15	16	17	18	19	20
1996	1780	9	10	11	12	13	14	15	16	17	18	19	20
1996	2,065	9	10	11	12	13	14	15	16	17	18	19	20
1996	4,990	9	10	11	12	13	14	15	16	17	18	19	20
1997	1,370	8	9	10	11	12	13	14	15	16	17	18	19
1997	4,083	8	9	10	11	12	13	14	15	16	17	18	19
1998	1,200	7	8	9	10	11	12	13	14	15	16	17	18
1998	4,024	7	8	9	10	11	12	13	14	15	16	17	18
1998	1,370	7	8	9	10	11	12	13	14	15	16	17	18
1999		6	7	8	9	10	11	12	13	14	15	16	17
1999		6	7	8	9	10	11	12	13	14	15	16	17
1999		6	7	8	9	10	11	12	13	14	15	16	17
1999	1,914	6	7	8	9	10	11	12	13	14	15	16	17
2000	1,250	5	6	7	8	9	10	11	12	13	14	15	16
2000	1,586	5	6	7	8	9	10	11	12	13	14	15	16

3. LPG		Ship Age											
Year Built	DWT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1974		31	32	33	34	35	36						
1975		30	31	32	33	34	35	36					
1992		13	14	15	16	17	18	19	20	21	22	23	24
1993		12	13	14	15	16	17	18	19	20	21	22	23
1995	2,550	10	11	12	13	14	15	16	17	18	19	20	21
2001		4	5	6	7	8	9	10	11	12	13	14	15

8.2.4 Development of Cold Chains

(1) CONTEXT

Currently perishable goods such as fish, meat, fruits and vegetables, etc. are shipped in various transport forms. Most of them are transported from large production areas such as Visayas and Mindanao to large consumption areas such as Manila and Cebu under either ambient temperature or under chilled condition by icing. This is because cold chain transport service is not well developed so far. There are a few frozen foods which are transported using reefer container in the primary shipping routes.

Current logistic system for perishable goods causes loss of freshness and spoilage during the transportation. This results in the increase of unit transport cost and increases retail prices for general consumers. One example is fish logistics from Panay to Manila. Currently fresh fish are enclosed in ice box and transported from markets at port by ordinary truck using direct shipping service from Roxas to Manila or SRNH route (Caticlan – Roxas – Calapan – Batangas – Manila). It takes about 20 hours by direct shipping and 15 hours by SRNH. Since fish are transported in ice boxes, there are some losses during transportation. Unit prices at production site in Panay are increased by more or less 1.5 times higher as retail market price in Manila. Another example is fruits and vegetable logistics from Mindanao to Manila. Those perishable products are currently transported by ordinary container. An appreciable portion of products is damaged during shipping.

Therefore, there are some room for improvement of existing logistics system for perishable goods, particularly the introduction of cold chain system in the primary shipping route connecting large production areas and large consumer areas. Quality preservation is vital so that perishable commodities retain and increase their market value. Cold chain development has some outstanding advantages. They are (i) to maintain the quality of products for a long time with minimizing product damage and loss; (ii) to stabilize the market price by controlling the supply volume to the market; and (iii) to add product value in processing with increasing job opportunities.

(2) PROSPECTS

There are basically three major classes of perishable commodities in inter-island trading; namely: fish, fruits and vegetables, and meat. Meat can be further divided into live animals; and, meat and meat preparations. Other perishable commodities include manufactured goods – such as ice cream, butter, etc.

Below is the current volume of perishable commodities and projected future sea traffic of perishable commodities. Currently more than 2 million MT of perishable cargoes are being transported by maritime transport, and will increase to nearly 2.8 million MT by 2015.

Table 8.2.6. Perishable Commodity Sea Traffic (000 MT/yr)

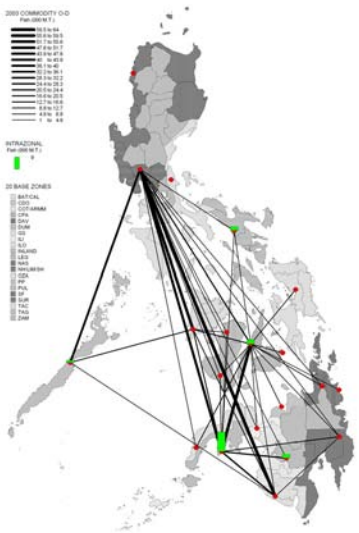
Commodity	2003	2005	2010	2015	2020	2025	2030
Fish	471	519	648	781	915	1,051	1,186
Fruits & Vegetables	1,011	1,061	1,176	1,256	1,345	1,411	1,455
Meat	531	563	643	709	778	838	888
-Live Animals	*247*	*262*	*299*	*330*	*362*	*390*	*413*
-Meat & meat preparations	*284*	*301*	*344*	*379*	*416*	*448*	*475*

The following Figure shows the Origin-Destination structure of perishable cargoes in maritime transport. Clearly, Metro Manila stands out as the primary destination of perishable cargoes. To a lesser extent, Cebu is likewise a key destination area. Sources of perishable cargoes include Palawan and Panay in the Visayas Region;

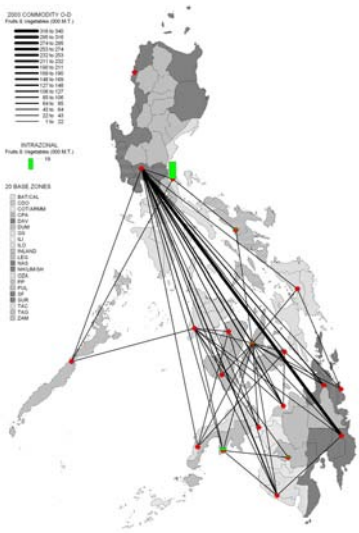
Misamis Oriental/Occidental, South Cotabato, Zamboanga del Sur, and Davao del Sur in the Mindanao Region.

Figure 8.2.2. Origin-Destination of Perishable Sea Cargo

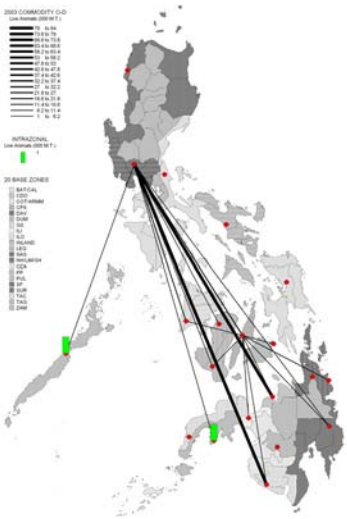
Fish



Fruits and Veg.



Live Animals



Modern methods of transporting perishable commodities through cold chain logistics exists in the Philippines. However the percentage of perishable commodities being transported through modern cold chain facilities is low – roughly estimated to be less than 20% of total volume and this is mostly being undertaken by large scale food manufacturer for processed meat products, and some large scale traders. There is therefore a big potential for further expanding cold chain logistics capacity in the country. Moreover, the continuing increase of volume of perishable commodities being produced in remote regions to be consumed in Metro Manila further highlights the potential for cold chain development in the Philippines.

The following corridors have been identified as candidates for cold chain infrastructure development – based on the level of traffic.

For Fish:

- South Cotabato – NCR
- Zamboanga del Sur – Cebu
- Capiz/Iloilo – NCR
- Zamboanga del Sur – NCR
- Palawan – NCR
- Misamis Oriental – Cebu

For Fruits and Vegetables:

- Davao del Sur – NCR
- South Cotabato – NCR
- Misamis Oriental – NCR
- Agusan del Norte – NCR
- Iloilo – NCR
- Misamis Oriental/Occidental – Cebu

For Live Animals (dressed or processed):

- South Cotabato – NCR
- Misamis Oriental – NCR
- Cebu – NCR
- Iloilo – NCR

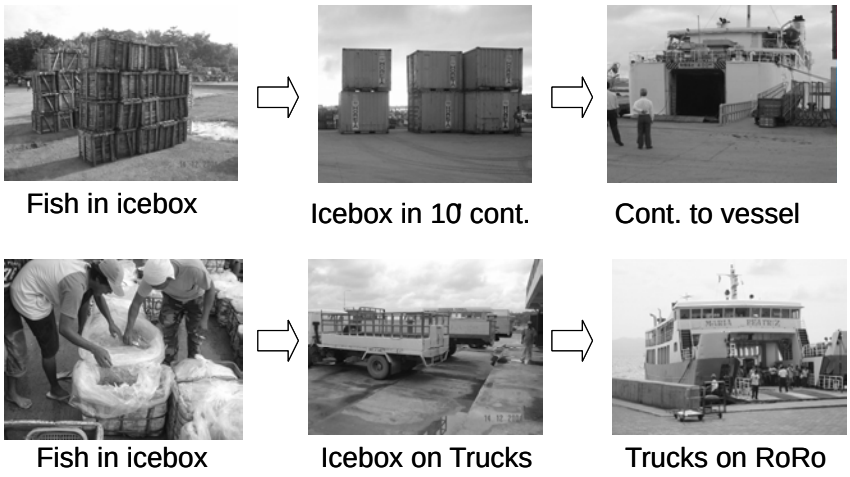
Each corridor would have unique conditions and it is very difficult to derive a general conclusion without an in-depth investigation of each corridor. It is likewise difficult to get a sense of prioritization on which corridor should be developed first – and each corridor would have its own merit.

(3) CURRENT METHOD OF TRANSPORTING PERISHABLE GOODS

1) Fish

The current method of preservation of fish while in transit is by ice and by reefer vans. Generally reefer van transport is used only for transporting fish for longer distances, such as Gen. Santos, Mindanao to Manila. For medium to short distances, the current mode of transport is to transport via ice boxes – either through containers on Ropax vessels or trucks on RoRo vessels. Currently it is roughly estimated that only 30% of transported fish is via reefer vans – mostly from Mindanao to Manila Port.

Figure 8.2.3. Current Mode of Fish Transport



2) Fruits and Vegetables

Fruits and vegetables are mostly being transported without the aid of temperature control – either as break bulk or as containerized cargo. The following picture illustrates this practice.

Figure 8.2.4. Current Mode of Fruits and Vegetables Transport

3) Meat (Live Animals)

Dressed meat and meat preparations are transported in reefer containers. This is a developing trend however, a bulk of transported meat is still in the form of live animals – via livestock container cages. In some cases, the method of transport is via wooden hulled vessels.

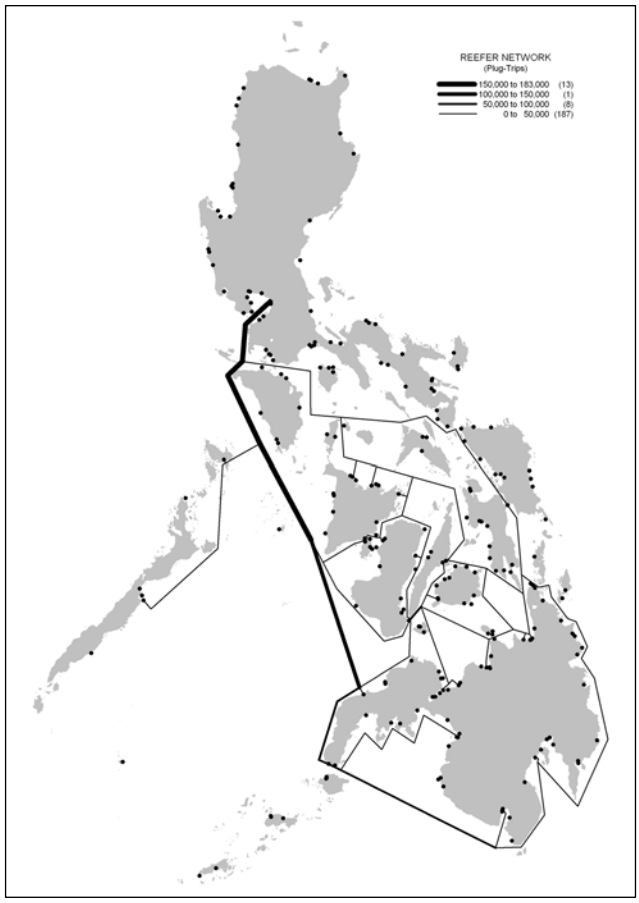
Figure 8.2.5. Current Mode of Meat Transport (Live Animals)

(4) CONSTRAINTS

It is pointed out that there are some constraints in the introduction of cold chain system in the current logistics system including domestic shipping:

- As for availability of service and facilities, shipping routes which can accommodate reefer containers are serving mainly primary routes which Ropax and liner container vessels are operating. However, the number of vessels equipped with power outlets for reefer containers are only 38 with a total of 319 outlets, operated by only 5 shipping companies – an average of 10 outlets per vessel. This is not enough to accommodate increased demand for cold chain in the future. Moreover, the ports and its yards which have power outlets are also limited.
- Cold chain needs not only reefer container but also appropriate cold storage and ice making facilities at both sides of logistics system.
- In general, transport cost using reefer container will be higher than that of ordinary container due to higher price of reefer container and cost of power supply during transportation and at storage sites.

Figure 8.2.6. Existing Capacity of Reefer Container Transport (Plug Trip/Year)



(5) DEVELOPMENT POLICIES

It is clear that development issue for the perishable goods transport is to improve the quality of logistics system including domestic shipping and minimize the losses during transport. Then, final retail prices at consumer areas will be decreased. Basic policy is to establish cold chain system particularly for the routes between large production areas and large consumer areas where there is a sizable demand of cargoes. Therefore it is deemed important to implement the following policies:

- Development of necessary shipping services and related facilities for the establishment of cold chain system; and,
- Examination of viability for each case of cold chain projects.

(6) DEVELOPMENT STRATEGIES

1) For development of necessary shipping services and related facilities

- Most of the existing primary shipping routes are served by Ropax and container vessels which are mostly equipped with power outlets for reefer containers. The primary routes are connecting mostly between large production areas in Mindanao and Visayas and large consumption areas in Manila and Cebu. Therefore, the existing services will be expanded by adding more power outlets for reefer containers. Currently there is no power outlet for RoRo vessels. However, SRNH routes are also essential to provide cold chain system. Necessary power outlets will be installed in RoRo vessels. After the routes of

Ropax, container and SRNH, it will be further expanded to other short-haul RoRo routes as feeder service of cold chains to remote islands and isolated areas and so on.

- Reefer vans are also effective for short-haul cold chains in the case if the time and cost of RoRo services are less than that of direct shipping. Reefer vans can enjoy the advantage of pure RoRo services because it does not require cargo handling at port.
- Cold chain related facilities such as cold storage and ice making plant will be further expanded to accommodate perishable goods. In order to reduce the unit transport cost, perishable goods shall be consolidated as much as possible to enjoy scale economy.
- A cold storage distribution center will be constructed at large consumption areas like Metro Manila and Cebu, enabling an efficient hub-and-spoke cold chain. For instance, a distribution cold center can serve as the distribution hub, integrating long-haul reefer container/reefer van and short-haul reefer van.

2) For examination of viability of the projects:

- In depth study for various cold chain models by commodity type and by route will be conducted before their implementation to examine its viability from various aspects such as finance, technology and marketing. Some potential projects for cold chain are identified as follows:
  - Fish transportation from Panay to Manila (See Chapter 13, Volume 2)
  - Vegetable and Fruits transportation from Mindanao (Davao, General Santos, CDO) to Manila or Cebu
  - Live animal/meat transportation from Masbate to Manila or Cebu
- For financing of the projects, a possible loan facility is the proposed ILAF of DBP which will be utilized to ease the financial difficulties.

8.2.5 Effective Implementation of the Wooden-hull Replacement Program

(1) CONTEXT

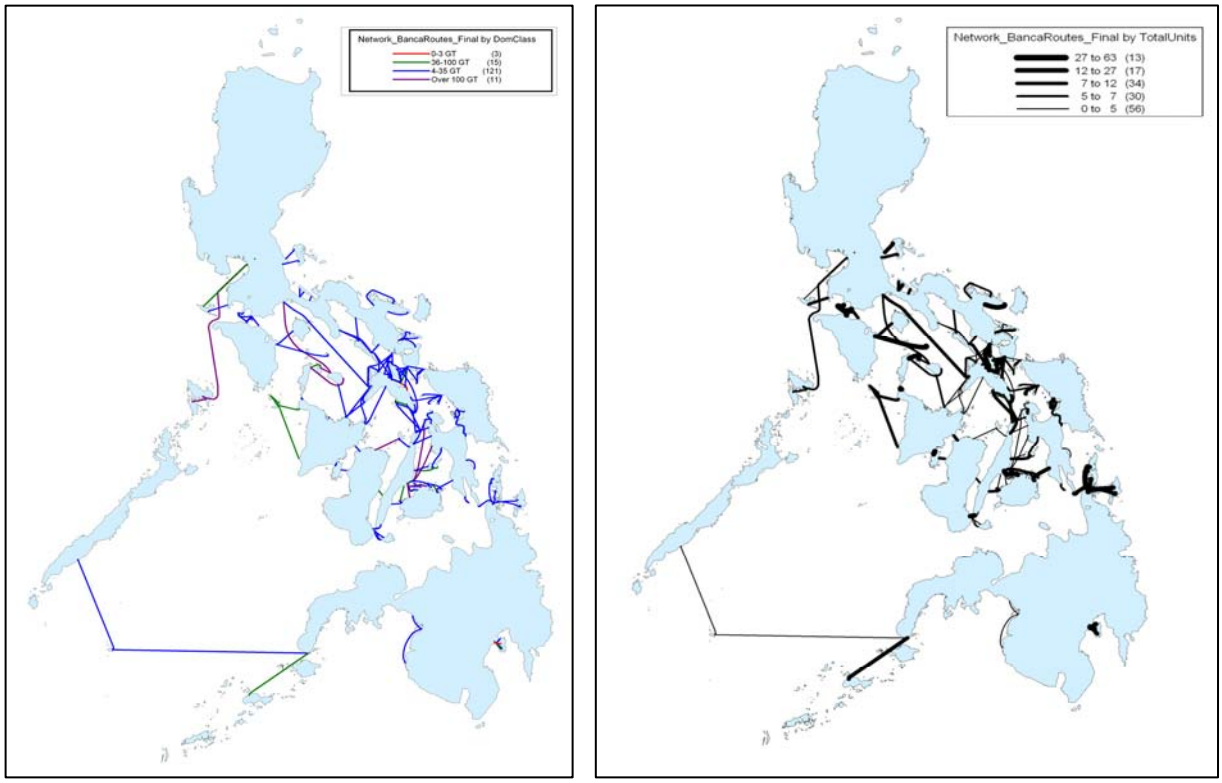
According to MARINA database (updated as of 2003), there are about 2,503 wooden hulled vessels. Majority of these vessels are within 4 to 35 GT in size.

Table 8.2.7. Inventory of Wooden-Hulled Vessels

Size	Units
0 – 3 GT	481
4 – 35 GT	1,816
36 – 100 GT	139
> 100 GT	67
All	2,503

Many of these wooden hulled vessels operate along the eastern regions of Visayas. 0-3 GT wooden hulled vessels generally operate short distances; however 4-35 GT wooden hulled vessels and above operate mid to long distance routes. It is generally thought that small wooden hulled vessels serve disperse demand serving remote coastal areas or island communities, however based on the Figure below, it is evident that wooden hulled vessels also serve the shipping needs between major islands.

Figure 8.2.7. Wooden-Hull Vessel Operation



Wooden hulled vessels (mostly banca boats) are typically small sized and are especially prone to maritime accidents. The table below shows the 10 year record of maritime accidents from the years 1990 to 2000 confirming the high incidence (81%) of capsizing of wooden hulled vessels compared to other vessels. This occurrence is mainly attributed to the instability of bancas when its outrigger beams fail.

Table 8.2.8. Maritime Accident Profile (1999-2000)

Vessel Type	Aground	Sank	Fire	Drifted/ Engine Trouble	Collision	Capsized	Rammed	Missing	Flooding	Others
Motorized Vessels	181	82	69	47	41	18	9	4	4	21
Fishing Vessels	55	125	11	36	12	84	4	26	0	3
Banca	143	240	45	131	58	435	5	89	1	39

Source: Philippine Coast Guard (1990-2000), summarized by Sigua and Aguilar

Perhaps owing to the poor safety record of wooden hulled vessels and inefficiency in operation, MARINA signed Memorandum Circular No. 190 (2003) prescribing the rules on the gradual phase out of wooden hulled ships starting with larger wooden hulled vessels (above 100 GT) by 2006, and small banca (4-35 GT) by year 2010. However, based on the Adjusted MARINA Integrated Plan (2005-2010) – the continued use of wooden hulled vessels is mentioned, thus the implementation of MC 190 is delayed pending a review.

(2) PROSPECTS

Demand for inter-island service will increase and it is projected that if left on its own,

wooden hulled vessels will likewise increase to meet rising demand.

However, given the small scale capacity of wooden hulled vessels, it is not difficult to say that wooden hull shipping services could not provide the desired shipping service to promote country-side development. Operation of 4-35 GT vessels is particularly inefficient, especially for relatively high corridor demand. Small vessels operating a relatively high demand corridor would require more manpower and fuel compared to a larger capacity steel hulled vessel. This is because of the small capacity of these vessels (particularly the 4-35 GT class), it would need to perform more trips (thereby need more fuel) and need more units (thereby more crew) to serve a given demand compared to a large capacity vessel.

Moreover, the poor safety record of small wooden hull vessels not only creates substantial economic loss, but more tragically humanitarian and social loss.

It is therefore timely to introduce modern shipping service alternatives to corridors served by wooden hulled vessels and to gradually phase-out and replace wooden hulled vessels from these routes. However, as previously noted, small 0-3 GT wooden hull vessels generally serve coastal/island communities thus may not be feasibly and practically replaced by larger steel hulled vessels (considering dispersed service routes, port infrastructure, and small demand). Therefore, 0-3 GT vessels may be exempted from the phase out program – so as long as they are regulated to serve within a safe navigation distance range. It is also noted that MC 190 excludes 0-3 GT vessels in its phase out program. The replacement program should not be interpreted as the destruction and prohibition of building of greater than 3 GT wooden hull vessels, but rather, it is should be understood as the phase out of wooden hull vessels from mid to long distance and relatively high volume corridors. Larger than 3 GT vessels can therefore be continued to use, provided that they operate along a prescribed guideline.

Currently, RoRo/Ropax services are being actively promoted by the government through the SRNH and RRTS program and the MEC program. Small sized (say 250 GT) RoRo/Ropax shipping could be a suitable replacement for wooden hulled vessels – especially that distance served by wooden hulled vessels are typically less than 100 nautical miles, which is a short distance range wherein RoRo/Ropax could be most advantageous with its fast loading/unloading capacity and fast turn around time. It should however be noted that the replacement vessel type does not necessarily have to be a 250 GT Ropax vessel.

(3) CONSTRAINTS

The phase out of wooden hull vessels will face several constraints. The extent of these constraints will invariably be different from case to case. Nonetheless, the following are the expected constraints:

- It is roughly estimated that the wooden hull replacement program will displace more than 7,500 wooden hull vessel operators and crew.
- Financial viability of steel hulled vessels will not be feasible in some routes.
- Port infrastructure may not be sufficient to serve RoRo/Ropax in some routes.
- Wooden hulled vessels operate in a wide area that national government agencies may not be able to have enough manpower and coverage to regulate and enforce wooden hull vessel regulations.

(4) DEVELOPMENT POLICIES

To promote countryside development, it is necessary to provide a safe and efficient means for communities to interface socially and economically with other communities. Currently, wooden hull shipping service is the only means for many islands – and is deemed to be unsafe and inefficient. The upgrade of shipping form to more modern vessels is therefore timely and beneficial. However, safety-nets should be in place to cushion the negative effect of displacing numerous people who depend on wooden hull vessel service for livelihood. The proposed development policy is as follows: "Introduce a safer and more efficient shipping service alternative to wooden hull vessels and subsequently institute phase-out regulations from certain routes, while cushioning its negative social effects."

The policy is proposed to prioritize the replacement of the 4-35 GT class wooden hull vessels, because these vessels are quite small yet serve relatively long distance routes – thus are more prone to accidents and are more inefficient compared to larger vessels. Though subject to discussion, the proposed replacement schedule is as follows: full replacement of 3-35 GT vessels by 2010 and subsequent replacement of larger wooden hulled vessels from 2010 onwards.

In coordination with the RoRo development program, 250 GT RoRo/Ropax vessels could be made to replace wooden hulled vessels.

The indicative vessel requirement for wooden hulled vessels and Ropax vessels "without" and "with" the replacement program is as follows:

Table 8.2.9 Indicative Vessel Requirement "With" and "Without" the Wooden Hull Vessel Replacement Program

Without Replacement (Status Quo)							
Wooden Hull	Size	2004	2010	2015	2020	2025	2030
	0-3 GT	481	558	614	619	746	805
	4-35 GT	1,816	2,107	2,317	2,337	2,816	3,038
	36-100 GT	139	161	177	179	216	233
	Above 100	67	78	85	86	104	112
	All	2,503	2,904	3,193	3,221	3,882	4,187
With Replacement							
Wooden Hull	Size	2004	2010	2015	2020	2025	2030
	0-3 GT	481	558	614	619	746	805
	4-35 GT	1,816	-	-	-		
	36-100 GT	139	161	-	-		
	Above 100	67	78	85	-		
Ropax		-	80	116	164	198	213

To be able to meet the need for Ropax vessels, the following schedule of vessel procurement is necessary.

Table 8.2.10. Indicative Ropax Procurement Schedule for Wooden Hull Vessel Replacement Program

	2004-2010	2011-2015	2016-2020	2021-2025	2026-2030
Units to be purchased	80	36	48	33	16
Investment Cost (mill. P)	2,161	968	1,278	879	426

Note: assumes purchase of 10-15 yr old 250 GT Ropax vessel

The following is the indicative cost savings as a result of the wooden hull replacement program. Apart from savings in vessel operation cost, there is also an expected added benefit from the reduction in maritime accidents.

The savings in operation cost is estimated to be substantial, at nearly 2 billion pesos per year by 2010, while investment cost is estimated to be 360 million pesos per year from now to 2010.

Table 8.2.11. Indicative Cost Savings in Operation under the Wooden Hull Vessel Replacement Program (PhP million)

	2010	2015	2020	2025	2030
w/o Replacement (mill. P/yr)	2,203	2,422	2,443	2,944	3,176
w/ Replacement (mill. P/yr)	292	348	327	378	401
Savings (mill. P/yr)	1,911	2,074	2,116	2,566	2,775

In the case of 0-3 GT wooden hull vessels and displaced larger wooden hulled vessels, the policy direction should be that of regulation such that these vessels operate safely. It is however very difficult for national agencies (such as MARINA and PCG) to monitor these widely dispersed vessels. Thereby, it is advantageous to involve LGUs in the monitoring of these vessels and even devolving jurisdiction of these vessels to LGUs, provided that technical support from MARINA is provided and they operate within specified guidelines. In addition to LGUs monitoring these wooden hull vessels, they are also strategic partners in the replacement program of wooden hull vessels – in terms of providing social safety nets to displaced workers and efficient operation of RoRo/Ropax vessels. Thereby, a secondary policy direction is set: “Involvement of LGU in the monitoring and regulation of wooden hull vessel operation and implementation of wooden hull vessel replacement program”.

(5) DEVELOPMENT STRATEGIES

1) Facilitate the introduction of RoRo/Ropax operation to replace wooden hull operation.
    - Government agency prepares the business plan and operational plan for RoRo/Ropax and markets it to potential operators.
    - It is not expected that necessary port facilities are available to support RoRo/Ropax operations in ports now served by wooden hull vessels. Thus, necessary infrastructure needs to be provided, in case ports are inadequate.
    - Provide guarantees to the pioneering operator that no new operator will be allowed for a certain period.
    - Under certain conditions wherein a small market area requires access but could not generate enough demand to be financially attractive, routing and scheduling needs to be established and guaranteed as part of the operating parameter of the franchise of the Ropax operator. If necessary, direct/indirect financial support should be provided by the national government and/or LGU to remunerate the operator for serving an unprofitable route but socially significant route segment.
    - Tap MEC to support investment in Ropax vessels.
    - Involve LGUs in the planning and implementation of RoRo/Ropax operation.

2) Set clear directive regarding phase out plan and strictly enforce phase out regulations.
    - A phase out schedule needs to be studied in detail, established, instituted, and clearly and widely publicized. Information of the phase out plan needs to be announced significantly ahead of schedule so that existing operators will be

properly guided.

- Create a database of all wooden hull vessels and clearly a establish mechanism to identify and classify wooden hull vessels. The size of the vessel should be clearly and transparently established, thereby there will be no confusion on the size class of the vessel. Moreover, a complete inventory should be conducted and a mechanism to identify wooden hull vessels, its characteristics, and owner should be established. Monitors can then utilize the database to trace the whereabouts of the wooden hull vessels and to easily distinguish if the vessel is violating operation guidelines.
- LGU involvement in promoting the replacement program will help in the social acceptability of the program.

3) Prepare guidelines in safe wooden hull vessel operation and establish an enforcement mechanism involving LGUs as monitors. It is also worthwhile to consider devolving the registration and regulation of wooden hull vessels to LGUs, so as long as safe operation guidelines still emanate from MARINA and sufficient technical training is conducted to responsible LGU staff.

4) Establish social safety nets to cushion displaced wooden hulled operators and crews. For example, identification of alternative use of wooden hull vessels in other areas such as tourism and fishing. Sufficient aid in the form of training should be provided by the government, as well, facilitation to ease their transition from one form of business to another (e.g. in getting business permits and loans for start-up capital).

8.2.6 Development of Short-haul RoRo System

(1) CONTEXT

RoRo service was first introduced in the early 1980s. However, there are very limited facilities which had been built in last 15 years period – although several studies have pointed to RoRo as an efficient alternative mode of sea transport. Institutional, financial, and technical issues hobbled its development.

The recent implementation of SRNH connected the islands of Luzon to Mindoro, Panay, Negros and Mindanao. It was introduced in 2003 to maximize the use of the RoRo system. Currently there is a densely developed RoRo network covering mainly in Visayas Area. According to the DSDP database, there are 81 RoRo vessels of less than 1,500 GT favorably for short-distance services.

Therefore, short-haul RoRo service is essential to improve linkages between islands and provide access for people and goods to markets and activity centers.

(2) PROSPECTS

- In order to promote private sector participation and investment in the development and operation of the Road RoRo Terminal System (RRTS), Executive Order (EO) 170 and 170-A, amendment of EO 170 to expand the coverage of the RRTS were issued.
- The Maritime Equity Corporation of the Philippines (MEC) was established to provide service to lease out the vessels. Initially it will take care of RoRo vessels for the 18 missionary routes identified by DBP.
- There are many potential short-haul RoRo routes which will be used to replace wooden-hull banca operations, based on the wooden hull vessel replacement program.

(3) CONSTRAINTS

- Because the RoRo concept is fundamentally a road with a 'moving bridge', the responsibility for its development fell in between public sector institutions (DPWH, DOTC, PPA, LGUs, MARINA) with no recognized leading agency. Strong inter-agency coordination is clearly required – but knowing past experiences, such inter-agency coordination would be difficult to achieve. For instance, the RRTS cannot function effectively without the road links. But the planning and development of these roads are not currently on the priority list of DPWH or the LGUs, aside from being caught on a 'chicken-and-egg' question on which part of the RRTS components will come first.
- It is difficult for PPA to take the lead in the development of RRTS, since it has a conflict of interest. DOTC has been designated for this under EO No. 170, but it lacks the capability to bring the LGUs, investors, vessel operators, and DBP together on the table. There are, however, a few success stories in the field. The challenge is to replicate these investments in as many areas as possible.
- Another difficult issue is the Executive Order (EO) No.170 on the privatization of existing RoRo facilities of PPA and CPA. Clearly, this requires a large shift in policy which is very difficult to materialize, considering the resistance of PPA and CPA to the concept; labor issues at hand; and inevitable objections of existing cargo handlers.
- Another sensitive issue is the cargo handling charges being levied for RoRo cargo. So far, existing cargo handlers could not accept the fact that RoRo cargoes are exempted from cargo handling charges, or from wharfage. Thus, to this date, there are recurring complaints against impositions that are supposed to be not there.

(4) DSDP POLICIES

To enhance mobility and improve linkages between islands and provide access to markets and activity centers, as well as support the agro fisheries sector, the government shall expand the coverage of the SRNH as trunk network and RRTS as feeder network. This policy is clearly stated in the Medium-term Philippine Development Plan. Therefore the following policies are set to develop the short-haul RoRo network development.

- Acceleration of development of the RRTS
- Fostering of RoRo operators and port operators
- Delivery of new RoRo vessels

(5) DSDP STRATEGIES

1) For accelerate of development of the RRTS.

- Internal governmental coordination such as the DOTC-Expanded SRNH Team and the RRTS Team proposed to be created under the Office of the President will work effectively.
- In order to maintain the continuousness of SRNH and RRTS system, coordinated development of RoRo port and access road to primary road network will be necessary.
- Encourage LGU and private sector to enter the RoRo service and port operation.
- F/S on nationwide RRTS development will be conducted to analyze both existing and missionary routes from demand and supply balance and financial

viability. There are two basic directions, first is to complete the trunk corridors proposed by the MTPDP 2004-2010 featuring SRNH and the Central Nautical Highway. It is to form the backbone of the Road-RoRo transport network and the second is to utilize RoRo to replace wooden hull vessel operation in mid to long distance routes and high demand corridors. (Refer to Appendix 3.1)

2) For fostering of RORO operators and port operators:

- NDC Maritime Equity Corporation (NMEC or MEC) is to support the implementation of the RRTS through the acquisition of modern RoRo vessels to be leased to qualified operators under the ship lease finance scheme which is proposed in the Study.
- In order to provide better services for passenger as well as to increase the income of RoRo and port operator- passenger waiting room, vehicle waiting area, related facilities such as canteen, shops are to be prepared.

3) Delivery of new RoRo vessels:

- A couple of dozen RoRo vessels will be delivered from capable domestic shipbuilders at competitive price and qualified standard. To be able to do so, a standardized and serial construction method must be applied. Administratively DOTC will prepare a RoRo fleet procurement plan and then MARINA will coordinate such shipbuilding project among participating shipyards and financial institutions.

8.2.7 Improvement of Public Port Operation

(1) CONTEXT

For the development of domestic shipping in the Philippines, the condition of inadequate port facilities and its inefficient operations is one the critical issues. For example, Manila Port (North Harbour) is the most important port for domestic shipping but has critical constraints in water depth at berth and channel, container handling productivity, size of back-up area, etc. Low productivity of ports – long waiting time, slow cargo handling - is hindering the improvement of efficiency of shipping operations such as enlargement of vessel size and operation of pure RoRo service and so on. This causes not only high port charges but also high freight rate of shipping.

(2) PROSPECTS

Improvement of public ports and its operation have significant effects for the improvement of domestic shipping service because most of domestic vessels are using public ports except bulk and specialized vessels which are serving specialized private ports.

Currently, more than half of the container cargo is carried by RoRo vessels. It is forecasted, however, that the volume of container cargo carried by non-RoRo vessels will increase. Thus, it is necessary to introduce the quayside cranes such as gantry cranes and mobile cranes at some major domestic container ports.

In relation to the development of SRNH and RRTS system, it is relatively easy to develop the RoRo ramp in terms of investment cost because it dose not require long berth facility and cargo handling equipment.

(3) DSDP POLICIES

Basic policy on public ports and operations is to develop necessary facilities and equipment to support efficient operation of domestic shipping services:

(1) Improvement of major domestic shipping ports in line with development of trunk liner shipping network consisting of Ropax and container vessels
(2) Development of RoRo terminals (i.e. RoRo ports for major corridors, RoRo Ports for mobility enhancement and RoRo Ports for remote island development)

(4) DSDP STRATEGIES

1) For improvement of major domestic shipping ports

- For efficient trunkline Ropax operation, dedicated Ropax terminals will be developed at four (4) hub ports for domestic liner shipping: Manila South Harbor, Cebu, Cagayan de Oro and Davao by the year 2015. Among them, priority is given to Manila and Cebu.
- Up to the 2015, the Study expected that quayside cranes such as gantry cranes and mobile cranes will be introduced at the following major ten ports: Batangas, Cebu, Davao, Iloilo, Zamboanga, CDO/MCT, General Santos, Bacolod, Dumaguete and Manila (North Harbor). Among them, quayside cranes have already been installed at Batangas, Cebu, Davao and Zamboanga as of February 2005.
- Most critical port is Manila (North Harbor). If there is no improvement of its cargo handling for container vessels, it should be considered that its function will be transferred to other regional ports such as South Harbor, Harbor Center Batangas Port and Subic Port.

2) For development of RoRo terminals

Taking into account the archipelagic characteristics of this country, RoRo transportation is a vital mode to enhance the inter- or intra- regional mobility of goods and people. In the Study on the Port Master Plan, therefore, three kinds of RoRo ports are proposed as follows:

- RoRo Port for Major Corridors: There are two major national corridors in the Philippines, i.e. Pan-Philippine Highway (East corridor) and Strong Republic Nautical Highway (West corridor). Since these corridors consist of land and maritime transportation, smooth connection of different modes is crucial.
- RoRo Port for Mobility Enhancement: In order for "National Dispersion through Regional Concentration", not only major nationwide north-south corridors but also minor linkages among islands / isolated areas are indispensable. Thus, the Study on the Port Master Plan selected a hundred (100) ports as RoRo ports for mobility enhancement in 2024 based on the "Nationwide Roll-on Roll-off Transport System Development Study in the Philippines" (1992, JICA Study), "the Master Plan for Trans Visayas Inter-modal Transport Network "(2002, DOTC), "DBP-SLDP Road – RoRo Ferry Network Routes" and the "Reconnaissance Survey" (1999, DOTC) and on site conditions of existing and proposed RoRo ports including road linkage to the port,
- RoRo Port for Remote Islands Development: An improved transportation system cannot only secure a more stable daily life in remote islands but also contribute to economic development. Thus, RoRo ports development are strategically selected considering the growth potential of remote islands as well as accessibility to population centers in main islands and other islands.

8.3 Development of Shipping and Related Maritime Industries

8.3.1 Facilitation of Modern Management in Shipping Business

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

1) Definition of Modern Management

Modernization is a wide and ambiguous term used as a philosophical term. In this study, modernization is defined as to rationalization. Rationalization is the direction to pursue the objective in most rational and optimum way by utilization of limited resources given to the one who would manage something. The management resource of business is composed of four (4) key elements such as personnel, physical asset, money, and technology. When these resources are to be directed into one aim to achieve a projected goal, say increased profit or sustainable operation, etc. proper management of these element is needed. This way of thinking is not old but new since the time of industrialization of this world has started. Therefore, such way of thinking is coined as “modern”. This definition of modernization is not limited in the industrial or in the business society rather it is used in the military world. Often, modernization is misunderstood as it is interpreted as just to introduce or to use the new industrial production asset. The rationalization or optimization of resources given is real meaning of modernization, which may sometime employ new industrial production asset. In the shipping world, such new industrial production asset means a newly designed and sophisticated ship. In this chapter the direction of modernization of the shipping industry in the Philippines is indicated based on such interpretation of modernization.

2) Modern Management in Shipping Business

The most significant measure for making Philippine inter-island shipping active and promoted is to introduce modern management. The greater elements of modern shipping management consist of:

- Financial management;
- Marketing and shipping operation;
- Ship management;
- Safety and security management; and,
- Environment.

For operating the elements above appropriately and effectively, it is necessary to establish and perform Total Quality Management (TQM). That is, in financial management and marketing, and shipping operation area, responding to social requirements such as information disclosure in accordance with Quality Assurance (QA) or International Accounting Standard.

In ship management, and safety and security management, whether a ship is ocean going or not, it is important to have Quality Management that is ISO9002 accredited, or in compliance with international requirements concerning ship inspection and safety regulation for IMO.

For safety and security management, companies need preparation for not only governmental related regulations but also various proper ship inspections based on safety regulations in accordance with SOLAS. Also, it is desirable that shipping companies and ship-management companies have and apply Safety Management System (SMS).

In the environmental area, the standards have been already defined in ISO14000, and now is the time for all related companies to comply with these standards.

For modern shipping management, it is not only important to have shipping measures and TQM-Systems, but it is also important to have the cooperation of governmental agencies including MARINA.

All the identified issues above are the findings based on shipping company interviews conducted for four months during the course of the study (since December 2004).

(2) IDENTIFIED ISSUES IN RELATION TO MODERN SHIPPING MANAGEMENT

1) Financial Management

There are many companies do not properly prepare and record financial statements, such as Balance Sheet and Profit Loss statement. Although MARINA registered shipping companies submit their financial reports periodically, there are many blanks on the submitted forms. Since these companies are not able to analyze their management or discuss their strategy, so the government, of course, cannot understand their management affairs exactly.

Indeed, customers including shipper or forwarder worry to leave their important freight with a shipping company. Insurance companies, moreover, often denies to insure their cargo and ship (Marine hull).

For modern shipping management, it is necessary to create and disclose financial statements, and manage transparent financial / accounting in accordance with the international accounting standard.

2) Marketing & Shipping Operation

The issues in marketing and shipping operation area are follows:

- A medium or large company which operates five or more ships, has a marketing staff for cargo booking. On the other hand, a small company just wait until they have enough cargo booking, thus, the ships need to wait at port for a long time. Consequently, operation efficiency is not good, and shipping freight is cheap.
- A coherent business and operation plan is necessary to be able to manage cost and improve revenues. However, many shipping companies do not possess such tools.
- Small companies, have better shipping operation of inter-island shipping. The small companies do not have enough resources (staffs, goods, and money) to manage costs, plan, service profit, and business analysis. Thus they are out-competed by larger shipping companies.

3) Ship Management

Ship Management has become an integral component of modern shipping management. Having a ship management system is now vital to prevent marine accidents, reduce repairing days and cost, and to prevent early vessel retirement.

There are a few ship management companies in the Philippines as subsidiaries for large shipping companies. It has been observed that many of inter-island shipping companies do not have enough understanding and concern about ship management system. Although the government has made efforts to adopt ISM/NSM Code even into domestic shipping companies, it is part of modern ship management system.

The Study Team considers that ship management is the most important area in

modern shipping management for the Philippine domestic shipping for the time being. Thus it is discussed at the next section separately.

4) Safety and Security Management

Even though marine casualties and cargo handling accidents happened a lot, the jurisdictional government agency, such as MARINA and PCG, have to sufficiently searched the cause of accidents and discussed measures for prevention.

Besides, the number of accidents is announced smaller than the real number because of the low insured vessel rate. Taking into account the ISPS Code, safety and security management system must be established in individual shipping companies.

5) Environment

Governmental officials and persons from the private sector need to have a council to decide measures in environmental protection. Both officials and persons also need to identify their role, and make and effort for environmental protection. It is time for cooperation between administration and private, aiming to follow international environment standards, such as ISO14000.

(3) DSDP POLICIES

To promote modern shipping management, various policy tools will be introduced from institutional, technical, capacity building and industry activation/restructuring viewpoints.

(4) DSDP STRATEGIES

1) Further Development of e-MARINA

MARINA established its website (www.marina.gov.ph) at an earlier stage compared with other governmental agencies sites. Although the website provides abundant information, it was designed in an old-fashioned manner. Thus it has failed to generate dynamics under the internet generation in a more interactive way in which modern management in shipping business can be facilitated.

The DSDP specifies two further development areas for the MARINA website: (refer to the TOR in Appendix 3.2)

- Electronic government: A MARINA accredited shipping company can submit operational and financial reports through internet. The homepage will be equipped with a unique software which helps shipping companies make necessary reports and analyze their vessel operation and company business conditions at the same time.
- Electronic shipping market: MARINA is an authority to issue and deposit shipping franchise by route in the forms of CPC and others. It must be convenient for shippers if the website provides those information with updated service conditions. The MARINA website can also extend its linkage to shipping companies homepages and eventually a bill of lading will be issued through internet between a shipper and a carrier.

2) Establishment of a MARINA Training Center

Although MARINA needs to upgrade various kinds of maritime related human resources, the Study lays stress on capacity building for management personnel. They are ship management experts or so-called superintendents, shipping managers and shipyard managers. Advanced training programs are offered outside the country such as World Maritime University, Singapore Maritime Academy and BIMCO's

education program, it is difficult to get such training opportunities in the Philippines. In addition, the study has identified a need of a vocational training program for shipyard workers since the skilled workers in the 1970's are no longer in abundance and local yards face difficulty in training new ones.

Those advanced and vocational training courses are outlined in Table 8.3.1 and will form part of a MARINA Training Center.

Table 8.3.1. Proposed Training Programs

Name of Program		Coverage
Advanced Programs	Ship-Management	ISM/NMS Code and Manual Class Survey Guidelines Engine Operation Analysis Technical Management for Ship Operation Insurance (Concept and Practice) Manning and Crew Management
	Shipping Business Management	Shipping Development Planning Business Management and Marketing Logistics System and Economics Operation Planning, Costing and Accounting Finance and Risk Management Environmental Issues in Maritime Industry
	Shipyard Management	Repairing and Ship Building Supervision Procurement Management Ship Design Section Management Human Factors for Safety and Productivity Innovation of Yard Management Ship Prolongation Measures
Vocational Program	Shipyard Workers	Melting and Steel Alteration Works Machinery Fitting Works Pipe Fitting Works

3) Promotion of Shipping Industry Restructuring

Modern management is necessary to make shipping business stable and competitive. However too small entities can hardly afford middle to long-span investment. Even middle to large operators need efforts to become competitive with air and road transports and sometimes with foreign shipping lines under liberal trade regimes such as AFTA. The Study has identified two shipping industry restructuring needs: consolidation of small shipping companies by area or by service type and M&A of intermodal enterprises such as forwarding and warehousing companies to transform shipping operators into multimodal transport operators for stronger logistics control.

In order to effectively promote such restructuring efforts, it is suggested that "best practices" be collected and disseminated among local shipping companies with involvement of maritime academies and international organizations such as the ASEAN Secretariat and the OECD logistics group or so-called TRILOG.

8.3.2 Introduction of Ship-management Service for Domestic Fleet

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

On the domestic fleet, even on large liner vessels, it is obvious that ship quality has been degraded seriously from likely satisfactory conditions at least soon construction, based on the Study's onboard survey. The ship must be maintained at a satisfactory level when serving the public. There are many attributors to cause the fleet quality to fall below satisfactory levels:

Shipping Company: There are insufficient ship management practices within the shipping companies. Various factors such as internal inspection system, technical level, information sharing and maintenance works, etc. are not well collaborated with

each other to be able to conduct proper ship management. There is lack of external technical support form shipyards and makers of ship equipment to accumulate technical knowledge. Re-training opportunities for technical personnel and crews are also not sufficient.

Ship Classification: There are eight local ship classification organizations accredited by MARINA. Current situation is that the ship owners can select the organization depending on the condition of ships. Under the situation that organizations have insufficient service level in terms of quality due to no inspection standard, it is very difficult to ensure the homogeneity and integrity of ship inspection.

Statutory Survey: Although MARINA is issuing the convention certificates based on the inspection using check list, it is sometimes not conducted sufficiently. Serious trouble and failure might be overlooked due to inadequate guideline, manpower and budget. Proper guideline and sufficient OJT have to be provided for the surveyors.

Class Survey: In the Philippines, most of large size vessels are classed by IACS members such as ABS, BV, LR, NV, etc. Class certificates issued by those international ship classifications are used as a condition for DBP's loan for vessel purchase and construction, or subscription conditions for hull insurance. The charge of inspection paid to international ship classifications is about US$8,000~10,000 per ship and per year. According to the on-board survey conducted by the Study Team, it was found that there are many of unconformities even on an IACS classed ships and insufficient survey items in regard to ship safety (refer to Appendix to Chapter 3).

ISM/NSM Code: In the Philippines, ISM-code and NSM-code are adopted to domestic shipping operators and their vessels. ISM-Code and NSM-code are a set of comprehensive technical guidelines on ship operation and management. Each shipping operator is introducing the ISM manual, guideline, checklist, etc., and those are purchased from foreign country. However, it is a very heavy and complicated system, that is not suitable for the management ability and culture of domestic shipping operators. Therefore, it will be revised to fit with the scale of shipping operators and actual operation.

Ship Repair and Maintenance: Generally each shipping company has difficulty to purchase spare parts and equipment of their vessels. The major reasons are: 1) unavailability of stocks for old age ships, 2) it takes time to specify the technical details of parts and equipment, 3) higher pricing due to low of ship owners, 5) only small-scale suppliers can deal with orders from shipping companies because of the small quantities and it costs higher due to several "middle-man" margins. In addition to above, the docking period for ship repairing and maintenance is longer and it will decrease working ratio of vessels.

Accident Investigation: Although investigations of maritime incidents are conducted by MARINA, there is no report or news informing ship owners and media. Information should include marine casualty, major accidents, critical deficiencies of each ship, and other technical matters.

(2) DSDP POLICIES

To root ship-management culture in the domestic shipping industry in order to maintain a competitive, bankable and safe domestic fleet.

(3) DSDP STRATEGY

Enactment of a Ship Management Incentive Act: MARINA has proposed this act but

its draft focuses on overseas shipping fleets particularly to attract non-Philippine flagged vessels so that the country will become a regional maritime center. Ship management companies will benefit the domestic shipping industry and, like seafarers, a robust domestic shipping will function as a support base for important elements of a regional maritime center such as ship management, ship repairing and marine insurance. Therefore, the act will be enacted but also will cover of domestic shipping.

In this regard, attempts to institutionalize ship management into domestic shipping in Japan and Indonesia are introduced in column 8-1.

Reorganization of Domestic Classification Societies: Taking its non-profit nature into account, it is necessary to reorganize and strengthen only one domestic classification society, unifying all the existing companies and surveyors. MARINA will take a lead in this effort. At the same time, MARINA will consider that all domestic vessels will be legally required a class certificate from the unified domestic classification. It will improve the technical level and increase domestic employment as well as prevent the outflow of foreign currency. For this purpose, it is urgently necessary to establish inspection rules and to train inspectors.

Fostering of Ship Inspectors and Class Surveyors: The proposed MARINA Training Center will provide several training courses for safety inspectors, enforcers, incident surveyors and class surveyors. It is necessary to cover all aspects of ship management, e.g. naval architecture, navigation, analysis of engine operation, etc. Training will be based on the specific case studies. For this purpose, technical assistance to dispatch the experienced specialists as lecturer will be provided.

Fostering of Competent Superintendents: The proposed MARINA Training Center will also provide a training program to foster competent superintendents from private shipping companies. This training will be on a commercial basis. After completion of the training program, trainees will be issued a certificate from MARINA according to the results of examination. The field of training will be extended to shipbuilding and repairing, and other marine business.

Publishing of Surveyor's Guidelines and Checklists: In order to foster the surveyors and unify inspection quality, guidelines and checklists will be prepared and published by MARINA. A project team consisting of MARINA, PRS and PCG will be established under MARINA to prepare a guidebook with illustration based on the check lists. The guidebook will be distributed and utilized in the training.

Sharing of Ship Databases: The information of the ship inspection results and accident report including causes and problems will be shared among MARINA regional offices, MSO, EO and PCG. In order to utilize the information, computer network system connecting each related office will be established. The selected information excluding those of confidential nature will be open to the public. In addition to this, MARINA will publish periodically the MARINA Technical News to shipping companies and related agencies. It will contain information such as results of ship inspections and analysis results of major maritime incidents.

Preparation of a New NSM Manual: A new NSM audit manual will be prepared in consideration pf the situation of the Philippine's domestic shipping. In order to make it easy to be understood, it will be more simplified and will include specific check lists for shipping operators. By doing this, MARINA may reconsider to draw the line between ISM-Code and new NSM-Code. The ISM-Code is too heavy and complicated system for some domestic operators and some classed domestic vessels.

Establishment of a Publicly-Owned Ship Equipment Procurement Company: In order to support shipping companies and local shipyards in the procurement of necessary ship equipment, materials and spare parts, a publicly-owned ship equipment

procurement company will be established through MARINA's initiative. The package deal by this company will take advantage of scale to reduce price and transportation cost and stock volume.

Establishment of an Admiralty Court: This aims to reduce maritime incidents and to improve vessel safety quality through identification of causes of incidents and legal responsibilities from the viewpoint of vessel structure, operation and administration. Therefore, it will be independent from MARINA. In the beginning of its establishment, it will have external technical assistance for capacity building.

In order to seek for technical assistance from a donor agency, a TOR for ship management training program was prepared and is attached as Appendix 3.3.

Figure 8.3.1 Problems and Proposed Actions for Ship Management

Entities/Aspects of Ship Management	Problems	Proposed Actions
Shipping Company	• Insufficient ship management practice • Inadequate external technical support and re-training opportunities	By MARINA • Enactment of a Ship Management Incentive Act • Fostering of competent superintendents under the proposed MARINA Training Center • Reorganization of domestic classification societies • Fostering of class surveyors and ship inspectors under the proposed MARINA Training Center • Publishing of surveyor's guidelines and checklists • Sharing of ship databases such as inspection and accidents • Preparation of a new NSM Manual • Establishment of a publicly-owned ship equipment procurement company
Ship Classification	• Mushrooming local classification societies with insufficient services in quality	
Statutory Survey	• Limited manpower and budget • Further enhancement of guidelines and OJT for surveyors	
Class Survey	• Many of unconformities on even an IACS classed ship • Insufficient survey items in regard to ship safety	
ISM/NSM Code	• Unfit to scale of company and actual operation	
Ship Repair and Maintenance	• Lengthy docking time • Difficult to procure spare parts and equipment	
Accident Investigation	• Limited report/news informed to ship owner and media	• Establishment of an Admiralty Court, being separated from MARINA

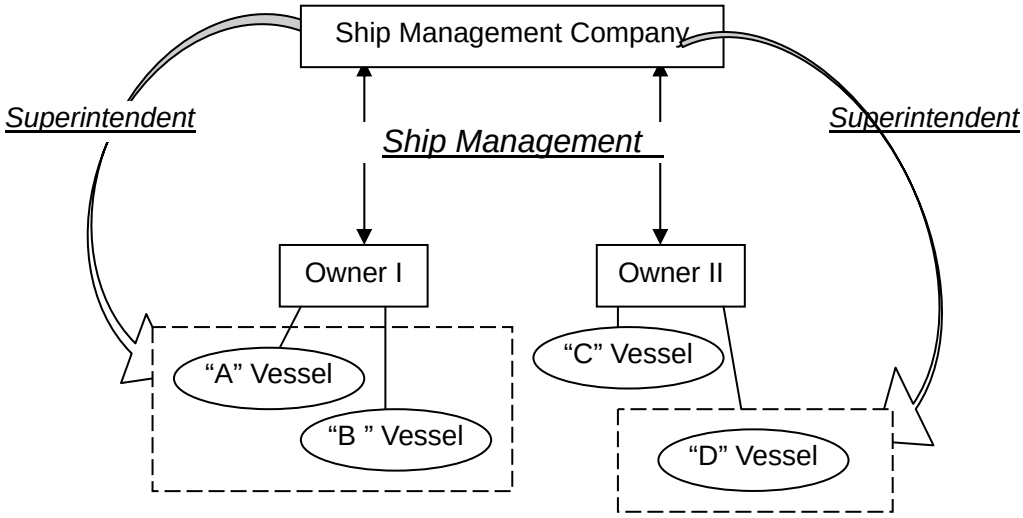
Column 8-1	Institutional Efforts of Ship Management Services

Japan and Indonesia face similar domestic shipping development issues in terms of the ship-management company. Their challenges can be briefly reported as follows:

Japan: The maritime administration intends to institutionalize the ship-management company serving domestic ship-owners. It is expected of the ship-management company to contribute to reduction in shipping cost, provision of better employment and education opportunities to seafarers and ship-owners' business diversification. On the other hand, the ship-management company requests flexible employment conditions as it may endanger the present seafarers' rights by malpractice of flexible labor supply. It is necessary to revise Seafarers Job Stabilization Act to allow sending of seafarers from a ship-management company while seafarers' rights must be preserved.

Indonesia: The maritime administration intends to amend Shipping Law (No.21/1992) to designate ship-management company as one of the shipping ancillary industries. Under the revised law and its regulations, it is expected to foster domestic ship-management companies with competent superintendents to support not only overseas fleet but also domestic fleet.

Figure 8.3.2. General Scheme of Ship-management Contract



8.3.3 Upgrading of Domestic Shipbuilding Capability

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

In the Philippines, large shipyards and some middle shipyards have shipbuilding capability. The magnitude of domestic shipbuilding activity is not so small in comparison with the Philippine flagged vessels, i.e., 378,880 GT in 2003 or 5.8% of the Philippine flagged (6,558,853 GT in 2000). However, the domestic shipbuilding activity can be characterized with low domestic demand and high exportation rate.

The shipbuilding industry delivered 354 vessels or 9,826 GT for domestic shipping use in 2003. The aggregated tonnage merely accounts for 0.6% of the total domestic shipping fleet. The building orders have been limited to tug and barges, banca boats,

passenger ferries and other small and simple vessels. Despite of the relatively low labor cost, the price of locally built vessels is more expensive than that of second-hand imported vessels. Thus, ship owners continue to import second-hand vessels.

Several large shipyards have exported vessels, mostly handy bulk carriers ranging between 20-30 thousand GT. Since they usually receive external resources including foreign investment, marketing, ship designs and training of technical staff and skilled workers, they work like subordinate manufacturing sites rather than independent and self-managed shipyards. Therefore those shipyards are weak in marketing, ship designing and technical sales, and eventually meeting or creating local needs.

In the past, the shipbuilding industry suffered from unstable governmental policy including sometimes clearly favoring second-hand imported vessels. MARINA has failed to formulate policies to provide the shipyards the necessary incentives after the period of "protectionism" in the 1980s.[1] However this issue is addressed by the issuance of RA 9295 which provides exemption of shipyards from the payment of VAT on the importation of spare parts and materials to be used in the construction of ships.

Furthermore, RA 9295 is remarkable among shipbuilders because of "Section 20 Restriction on Vessel Importations". In the coming 10 years MARINA will evaluate and determine the progressive capability of MARINA-registered shipyards to build new vessels for domestic trade, starting from vessels below 500 GT in the first year of evaluation. During the shipyard surveys, the Study Team observed that most of medium-scale shipyards had prepared business plans to start or expand new shipbuilding works although many problems are anticipated as reported in Section 3.3 of this report.

In domestic shipping, about 2/3 of non-wooden hull vessels are smaller than 500 GT. DSDP fleet estimates show a gradual ship size enlargement from 884 GT on the average in 2004 to 1,020 GT in 2015. It predicts that small vessels will be still dominant in the target year of 2015. Taking account of the recent new shipbuilding records among Philippine shipbuilders for the domestic trade, i.e., a peak of 9,228 GT in 2002, it is quite difficult for them to deliver all the small vessels less than 500 GT necessary for additional assignment as well as replacement. It is also noted that the domestic shipbuilding industry has an opportunity to construct larger vessels particularly when a demand-supply gap occurs between the domestic ship owners and the second-hand markets on the condition of competition with foreign shipyards.

Table 8.3.2. Comparison of New Shipbuilding Performance and Demand

	1999-2003		2004-2010	2011-2015	Estimated Shipyard Investment by 2015[3/]
Yearly Average for Constructed Vessels for Domestic Shipping [1/]	6,033 GT		-	-	-
Annual Demand of Small Vessels less than 500 GT [2/]	-		14,000 GT	25,200 GT	$ 77 mil.
Annual Demand of Small Vessels less than 1,000 GT [2/]	-		35,800 GT	51,500 GT	$ 182 mil.
Annual Demand of Small Vessels less than 1,500 GT[2/]	-		56,200 GT	80,600 GT	$ 298 mil.

Source: 1/ MARINA
2/ Study Team, on the condition that restriction on vessel importation is enforced to small vessel less than a specified ship size
3/ Study Team, on the condition that additional shipbuilding capacity requires $ 4,000 per GT

[1] MARINA – Shipbuilding and Ship Repair Sector (SBSR): A Situation Report 1999-2004

(2) DSDP POLICIES

The domestic shipping industry in the Philippines can import vessels unlike USA and therefore the low capacity of Philippine shipbuilding industry is disadvantageous but not a determinant in fleet development. To enhance shipping business viability, the Study has identified some local shipbuilding needs such as tugs and barges, small steel-hull vessels, and that the vessels which are suitable for domestic use are difficult to find in the second-hand markets abroad. Therefore it is deemed important to implement the following policies:

- Facilitation of investment to increase domestic shipbuilding capacity for delivering more domestic vessels;
- Upgrading and modernization of production processes and technology for modernizing domestic fleets; and
- Creation of new domestic shipping system in collaboration with the shipping and shipbuilding industries under clear government policy directions.

In this connection, “Restriction on Vessel Importations” stipulated by RA 9295 are sensitive policy measures which should be implemented carefully in order to avoid any negative externalities such as serious financial burden and operational suspension of the domestic shipping industry.

(3) DSDP STRATEGIES

1) For facilitation of investment in shipyards

- Investment focal areas will be designated and developed. A set of investment incentives and land development may work well in the maritime industry development[1]. The Maritime Industrial Park (MIP) at the PHIVIDEC, a ready-made estate land, will be promoted for development.
- Today there is no limitation for a foreign investor to acquire or set-up a shipyard which is 100% foreign owned. There is a need to strengthen PR activities to lay stress on this liberal arrangement to possible investors. The shipbuilding sector will be included in the Investment Priorities Plan (IPP).
- On the other hand, DSMP will be further utilized to mobilize domestic investment in shipyards.

2) For upgrading and modernization of shipbuilding technology

- Partnership with advanced foreign shipyards will be strengthened. A package deal or a cooperative construction contract between a Filipino shipyard and an advanced foreign shipyard is effective to improve the current problems such as low ship quality, and delayed construction and delivery.
- External assistance programs will be introduced particularly towards small to medium scale shipyards. Without a substantial contract volume, a foreign shipyard may not help a domestic counterpart. However training capability of shipyard association, shipbuilding administration and educational institutions may not be sufficient. The last resort must be external technical assistance channeled by donor agencies.

3) For creation of new relation between the shipping and shipbuilding industries

- Short-distance RoRo system will be expanded by a combination of suitably designed RoRo ramp and RoRo ship. The development of short-distance RoRo system throughout the country particularly the inter-island waters between

[1] Since 1981 the Batam Industrial Development Authority has successfully attracted 43 shipyards and dockyards in Batam and Karium islands in Riau, Indonesia.

Luzon and Mindanao holds a high political priority and thus can justify tapping public development finance to the system.

- Some supply-demand gap in fleets will be identified and covered with the most desirable ship designs to meet local needs. Unlike overseas shipping fleets, inter-island fleets are not widely operated over the world. The second-hand markets cannot guarantee to supply all kinds of vessels the Philippines need for domestic use. For instance, the Study points out a decreasing Ropax fleet in Japan. It must be a challenge to assign medium to large brand-new vessels in the domestic waters and therefore an integrated effort to effectively operate such new vessels are required.

8.3.4 Providing Sufficient Ship Repairing and SBSR Ancillary Services

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

The ship repairing sector must fully support the domestic shipping fleet which can meet necessary requirements and maintain fleet quality. According to statistics, the industry has a bright market potential because of continuous increase in repairing works. From the industry's viewpoint, overseas shipping vessels are bigger customers than domestic ones since their shares are roughly 70% and 30% respectively in terms of repaired tonnage. One management issue is how to serve passenger ferries in an efficient and effective manner since they are small and are obliged to undergo annual drydocking.

SBSR ancillary services are necessary but importation can be substituted to a large extent. To compete with international markets, however, a strong SBSR industry must be supported by excellent local ancillary services. One of the differences between competitive shipyards and uncompetitive ones is on-time delivery. For this, important factors are the procurement management of materials, components and equipment. Under the present situation, Filipino shipbuilders, in many cases, do not have a choice but to use imported raw materials, components and equipment for new shipbuilding. But such information network and procurement management capability quite differs between competitive and uncompetitive shipyards particularly when a shipyard stands and operates alone, and far from excellent SBSR ancillary service providers.

In the mid 1970s, the government recognized the inability to source steel plants and spare parts locally, and then created an incentives program for the SBSR sector through PD 666. Again RA 9295 gives tax incentives to the SBSR industry regarding the importation of equipments and spare parts. Such incentives may work to some extent. But it would not be able to shorten the gap between competitive and uncompetitive shipyards.

(2) DSDP POLICIES

- To develop the ship repairing industry to become more efficient and lucrative business
- To develop the SBSR ancillary service industries and/or make a close network with those industries in other countries.

(3) DSDP STRATEGIES

1) For provision of efficient repairing service

In principle, shipping companies request ship repairing yards to provide fast and reasonable services. As to repairing time, two weeks per regular docking and maintenance are internationally acceptable.

Thus, ship repairing yards need to stress more marketing and preparatory works such as preparation of a ship repair and maintenance plan at least one month prior to regular docking. MARINA may support such improvement in shipyard management through a shipyard management training course.

2) For receipt of more ship repairing orders from foreign vessels

A strong maritime nation like Singapore can get a lot of ship repairing orders from foreign vessels. One reason can be attributed to the accumulated shipping support industries including professional ship management companies and marine insurers. The Philippines may direct its attention to tap such synergy effects where seafaring, shipbuilding, repairing and shipping supportive services are entwined.

For the time being, however, the country had better recognize its geographic configuration and focus on the neighboring ASEAN fleets. Rather remote areas such as northern Luzon, Palawan, southern Mindanao area, on the other hand, are convenient for some of ASEAN fleets. To allow such areas to get foreign ship repairing orders, the Immigration and Customs regulations on under guarding of foreign vessels will be revised.

3) For conduct of a study on SBSR ancillary industries

The government eventually decides to make a strong SBSR industry within the country after a long dispute since the 1980's. Although a more closer relation between shipping and shipbuilding is favorable, domestic shipbuilding will have to just assemble imported materials, parts and equipment without sufficient SBSR ancillary industries which include, among others, ship design firms, engine and equipment manufacturers, steel plants and ship chandlers.

In line with increasing investment in shipyards, it is the right time to design the coverage and volume of SBSR ancillary industries to be rooted in the country. An industry study is desirable by a team of consultants from strong maritime countries through an external technical assistance scheme.

8.3.5 Facilitation of Supply Chain Management through IT

(1) PROBLEMS AND ISSUES TO BE ADDRESSED

Philippines, being an archipelago, is especially dependent on ports and shipping for most of its long-distance logistical needs. Sadly, inter-island maritime transport is highly uncompetitive and constitute a large share in logistics cost.

Table 8.3.3. Cost Adders to the Logistics Chain in the Philippines

Activity	% of wholesale price in the Philippines
Post Harvest Services	3.1 – 5.4
Non-Port Handling	3.5 – 10.0
Port Services	2.6 – 5.4
Shipping	8.0 – 21.0
Trucking	7.0 – 11.0
Total Transport and Logistics Cost	24.2 – 52.8

Sources: Cash Crop Distribution Systems in the Philippines (JBIC, 2002);
Transport of Agricultural Products (UA&P Industry Monitor, 2002)

Logistics, particularly in inter-island distribution, exhibit variability among products. The Study Team has conducted a series of field surveys and interviews with logistics stakeholders. Observations are summarized as follows:

- Agricultural products: An examination of the inter-island shipment of agricultural

products from the farm gate in Mindanao to production facilities and wholesale markets in the Visayas and Luzon suggested that the small scale of post harvest and storage activities, damage while in transit, and the small consignment sizes are the major causes of the high logistics costs. Small and dispersed farms lead to multiple intermediaries, large spoilage, low-volume storage, and small consignments. On the other hand, some improvements have been recognized. For instance, the processed food industries based in Luzon established factories near to the agricultural production areas in Mindanao to take advantage of lower-cost rural labor and reduce the amount and cost of land transport. The goods produced at these factories had sufficient value to justify the additional costs for containerized shipments.

- Processed foods: The distribution of processed foods revealed a different pattern. The larger and more sophisticated producers maintain a network of warehouses throughout the Philippines. However, there are often multiple small warehouses in one area each handling different products. Delivery times from production to warehouses on other islands are generally 8-11 days because of delays in arranging space on a vessel and transferring cargo at the port. While there is increasing interest in reducing the number of warehouses and increasing the level of cross-docking, it is not clear whether the shipping lines can provide the timely deliveries necessary to support cross-docking. Moreover, the fragmented nature of the retail market (more than half of revenues come from small scale retail outlets) makes cross docking very difficult to realize.
- Fresh meat: The shipment of fresh meat in the Philippines is problematic because of difficulties in maintaining a cold chain. There are a number of trucking companies that provide refrigerated trucks and their availability has increased as a result of a recent decline in demand for ice cream. However, smaller suppliers continue to use their own trucks, which are 2-10 ton trucks that are often insulated but not refrigerated, while wholesalers fail to insure the quality and continuity of the cold chains. Processed meat requires larger industrial facilities. Traditionally, these have been located in Luzon with distribution to other islands done through refrigerated containers. The rates for these shipments are quite high and only a few of the shipping companies are able to provide a reliable service. Since both the ports and vessels have limited outlets for the refrigeration equipment, there are often delays in obtaining space. However, shelf life is quite long if the cold chain is properly maintained.

Domestic shipping always shares a large proportion of the logistics costs. The shipping services are not competitive in comparison with other countries' economies. It should be noted that the freight rate on trucks is higher in the Philippines (P8.8/ton-km), compared to Thailand (P5.4/ton-km) and Vietnam (P5.1/ton-km). Although the Study has not compared warehousing and other cargo transaction costs, there are many reports from the site, such as a high damage of perishable goods, not sturdy enough packaging, no systematic labeling, no computerized cargo management, and so on. Therefore it is necessary to improve overall logistics management.

In principle, fast delivery and low-cost service are not necessarily the ultimate goals in logistics management. The most important thing is to achieve the customer's satisfaction through an entirely optimized and balanced operation process from the birth of a product to the point of delivery to the end customer's hand. In this sense, logistics consists of six (6) operational sections: transportation, storage, loading and unloading, packaging, processing and information. The last element – information – is the key to enable whole logistics management. Today, thanks to IT revolution and internet, even small shippers and small transport service providers can analyze and participate in optimum supply chain management. Nowadays almost all the logistics business entities have adopted IT in management. However, to cover whole logistics

chains under information network, the government initiatives must come in like "Trade.net" in Singapore, "Dagang net" in Malaysia and " TradeSiam" in Thailand with bridging individual agencies' information systems.

Figure 8.3.3. Operational Segments in Logistics

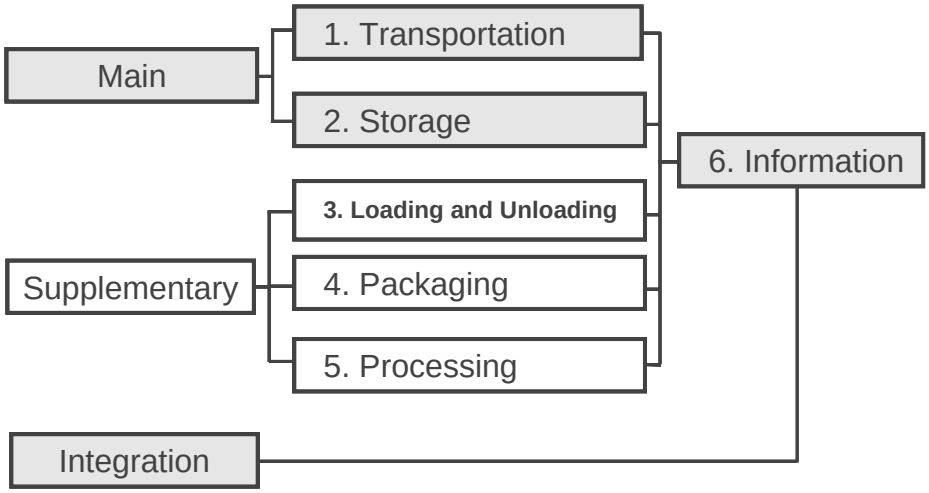


Table 8.3.4. IT Logistics Benefits and Barriers

IT Logistics benefits	IT Logistics barriers
• Quick access to information • Better customer service • Reduced paperwork • Better communications • Increased productivity • Improved tracing and expediting • Cost efficiency • Stays ahead of competitors • Accurate • Improved billing	• High setup costs • Incompatible hardware/software • Lack of standard formats • Lack of customer sophistication • Lack of awareness of EDI benefits • Customer education/training • Customer resistance • Corporate culture

Source: ASEAN Maritime Transport Development Study (2002, ALMEC Corporation)

(2) DSDP POLICIES

Nationwide logistics development policy will be formulated as a national policy.

(3) DSDP STRATEGIES

1) Conduct of periodical statistical surveys to gauge logistics costs and services

Logistics costs are usually vague ignored in economic statistics and companies' financial statements. Under liberated trade regimes, competitiveness of Philippine products should be assessed in cost and quality even in domestic trade. The cost data should be also divided into production, logistics, transaction and others. Concerned efforts and theoretical methods must be needed to accomplish this task. Periodical surveys are more appreciated to assess logistics costs in a long time span.

2) Conduct of an IT development and utilization study for nationwide supply chain management

Nowadays, sophisticated supply chain management has been recognized as a competitive edge in business, more importantly among cargo owners and traders. Supply chain management enables optimum management over a set of business transactions from a producer to an end user. In order to practice nationwide supply chain management, it is necessary to develop its platform where adequate transport and telecommunication infrastructures are provided, and transport and logistics service providers work together with information service providers on those infrastructures.

DOTC is considered the most appropriate agency to conduct such a nationwide logistics study although the study must involve MARINA, PPA, ATO, LTO and other transport, communication and trade administration. To incorporate other countries best practices and advanced technologies which have not been adopted in the Philippines, it is suggested to seek for external technical assistance.

COLUMN 8-2: LOGISTICS REFORM AS A NATIONAL POLICY IN JAPAN

To reactivate Japanese economy after a long sluggish period since the early 1990s, a Japanese think-tank organized a committee so-called “Task Force on Strategic Reform of Logistics System”. The titled policy paper was published in January 2005. The recommendations are composed of seven strategies as follows:

1 To reform intensively port logistics

2 To develop the high standard container terminals following the nomination of “super centralized ports”

3 To rationalize the domestic transport system centralizing on domestic shipping

4 To achieve the integrated management for the sea ports, airports, roads and rails together

5 To foster professionalism in the various logistics field to develop the logistics industry

6 To lead the world with the “vein logistics” such as goods recycle system and waste collection (vein vs. artery)

7 To make assurance for safety logistics

Note: The above recommendations were reported for consideration among Philippine participants during the DSDP Second Workshop, on 14 May 2005 at Manila Diamond Hotel

9. SUSTAINABLE SHIP MODERNIZATION SCHEME

9. SUSTAINABLE SHIP MODERNIZATION SCHEME

This chapter aims to examine various ship procurement schemes for the domestic shipping industries and develop the most desirable public financing scheme for the sustainable domestic shipping development on the basis of the shipping demand as well as the required fleet in the future (Chapter 7) and the development policies and strategies (Chapter 8).

For this purpose, past and current government policies are briefly reviewed (9.1), the magnitude of fleet procurement and the level of fleet modernization up to the year 2030 are envisaged (9.2), then, the comparative analysis of ship procurement alternatives is made (9.3), the roles of public finance is identified (9.4) and further public finance options are discussed (9.5).

9.1 Framework of Beneficial Fiscal Regimes for Domestic Shipping

The current government policy and financial incentives on domestic shipping development and programs and measures for shipping finance are summarized in Figure 9.1.1.

1) Incentives in taxation

A) The development incentives in taxation have been provided continuously or with some interruption since 1970's. For instance, the exemption of import tax has been applied as an investment priority plan since 1987. In case of ship building industry, such measure has been introduced by Presidential Decree No.666 in 1970's. However, such treatment was terminated in the ship building industry in 1990's, while continued in the domestic shipping industry. It resulted in the acceleration of the procurement of used ships from overseas market.

B) Incentives in taxation is still regarded as an important political tool for industrial development. Its necessity is designated in the Domestic Shipping Development Act (DSDA, RA 9295) for both of domestic shipping and ship building industries. DSDA offers a set of investment incentives as follows:

- Exemption from value-added tax on the importation and local purchase of passenger and/or cargo vessels of 150 tons and above with age limitation by ship type. For example, the age limit of tankers is ten (10) years old.;
- Exemption from value-added tax on the importation of life-saving equipment, communication and navigational safety equipments and others for transport operations.;
- Exemption from value-added tax on the importation of capital equipment, machinery, spare parts and others to be used in the construction and repair of any vessels for domestic trade.;
- Net operating loss carry-over as a deduction from gross income for the next three (3) consecutive taxable years.; and,
- Accelerated depreciation of fixed assets.

2) Public Finance for Domestic Shipping

A) Together with the incentives in taxation, it has been long discussed that public finance should be applied to domestic shipping development. In the beginning of 1980's, the World Bank tried to provide a loan to domestic shipping as an on-lending scheme, however, it was not implemented because the Bank did not recognize the characteristics of the industry, particularly its self-sustainability.

B) The delay in the domestic shipping development by means of public loan finance in the early 1980's has led to the aggravation of the domestic shipping industry. It was in the latter part of the Marcos Presidency that the devaluation of peso was proceeding under the unstable political/economic conditions at that time. Accordingly, the domestic shipping industry suspended the procurement of used ships from overseas due to the unforeseeable business perspectives and became oligopolistic through CISO.

C) The profit-oriented business with obsolete fleet and neglecting maritime safety, has caused a number of large tragic accidents in the late 1980's. DSMP I started in 1995 with the replacement of obsolete fleet as a priority issue. This measure was effective in the modernization of domestic fleet and the improvement in safety, and was succeeded by DSMP II by expanding its scope from 1999.

3) Public Finance for Development

A) DSMP II has become less movable scheme due to the increase of overdue and application of tighter conditions for mortgage after the Asian financial crisis. Moreover, there are distorted conditions such as a concentration of lending to only several big shipping companies.

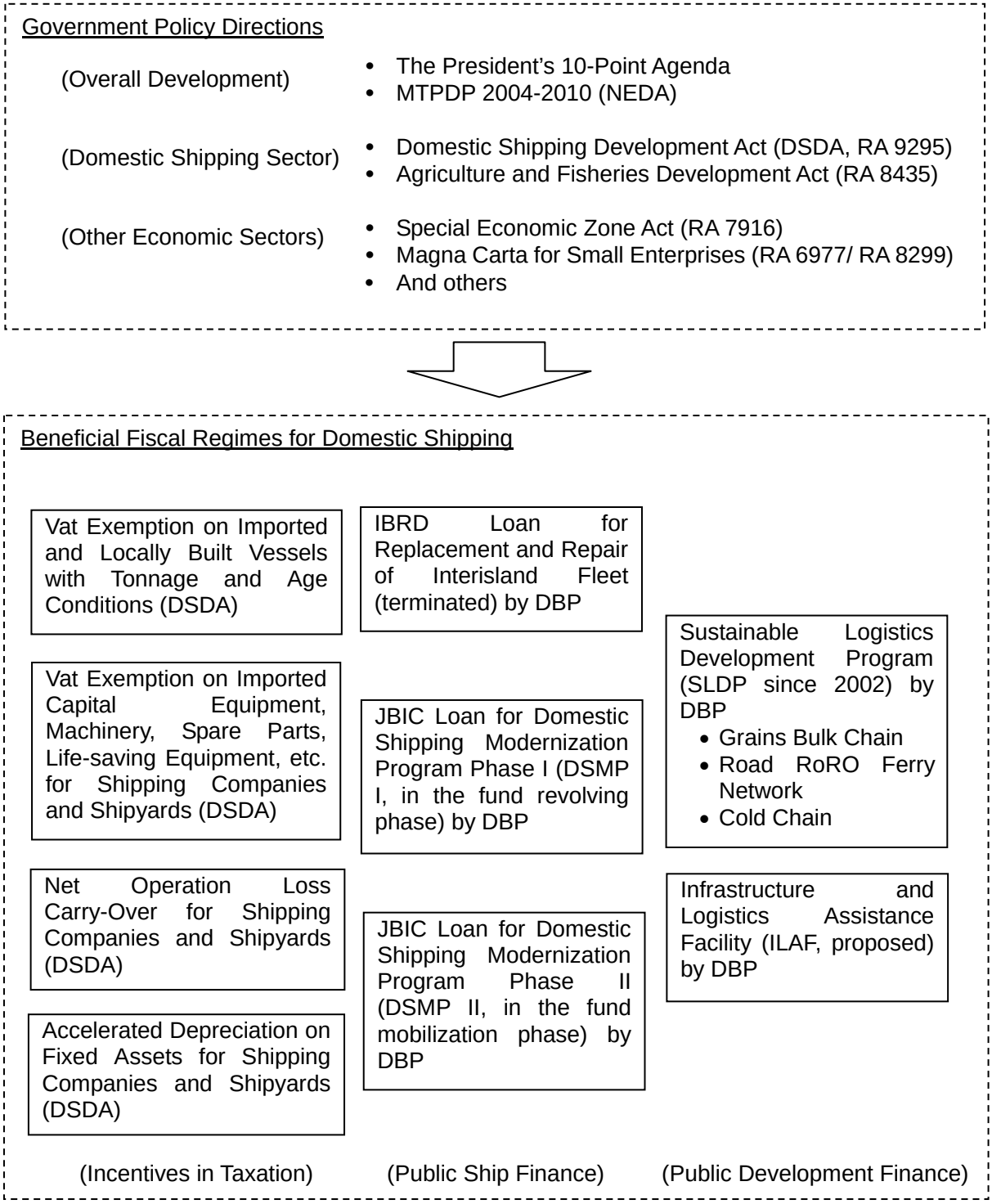
B) The need and political importance of a more balanced development over the country is increasing. The Administration of President Arroyo is also enhancing those measures such as the "Strong Republic Nautical Highway" as part of her 10-point agenda.

C) Based on regional development needs, DBP also has an intention to provide public finance for domestic shipping. For this purpose, DBP aggressively examined and proposed new financing schemes, including public finance for domestic shipping, since 2002. These are as follows:

- In 2002, DBP launched the Sustainable Logistic Development Program (SLDP), an expanded financing program for a comprehensive and integrated transport and related infrastructure system to bring about cost-effective ways for moving people and goods. One of SLDP's components, the Road RoRo Terminal System (RRTS), aims to create a seamless highway throughout the archipelago by connecting islands through integration of roads, port terminals and RoRo vessels.
- In 2003, President Arroyo signed Executive Order (EO) 170 promoting private sector participation and investments in the development and operation of the RRTS, and mandating DBP under Section 7 of EO 170 to make available long-term loan/financing to eligible and qualified borrowers under the DBP's SLDP.
- In 2004, DBP conceptualized the Infrastructure and Logistics Assistance Facility (ILAF) as an innovative development program to address the need for adequate infrastructure facilities, and efficient logistics for the distribution of goods and services in the country.
- In 2005, DBP supported NDC to register Maritime Equity Corporation (MEC) in providing ship leasing services to the domestic shipping industry.

D) These financing measures for development are to involve more entities or stakeholders compared to the provision of incentives in taxation or the sub-loan system of ODA to shipping companies, otherwise, more difficulties may be encountered during its implementation. The measures had just begun and are gradually materialized.

Figure 9.1.1. Framework for Beneficial Fiscal Regimes for Domestic Shipping



9.2 Fleet Procurement and Modernization Plan

This section intends to gauge the magnitude of fleet procurement volume in terms of tons and pesos towards the year 2030. For developing sustainable shipping modernization schemes, as the main objective of this chapter, it is important to invest in younger and competitive vessels. Vessel competitiveness has been discussed in the previous chapter with diversified domestic shipping services. Therefore, vessel age is a planning parameter in this section.

(1) INVESTMENT UNDER SEVERAL SCRAP AND BUILD POLICY SETTINGS

Scrap and Build Policy defines the government regulations and guidelines on scrapping age and buying age of domestic vessels. It aims to modernize the fleet by decreasing average age.

The mechanism for its implementation are varied – for example: (i) strict mandatory age requirement legislation; (ii) fiscal disincentive such as accelerated depreciation of vessels; (iii) stringent vessel maintenance requirement; (iv) financial incentives, such as low interest rates on new vessel purchase; (v) improvement of operating conditions for new vessels, such as improving port efficiency; and, (vi) others. The choice of a mechanism or a combination of mechanisms, to encourage or force vessel operators to modernize their fleet, will be up to the decision of the administrators, with consideration to local conditions at that time. However, it important to understand, the effect of differing levels or degrees of scrap and build policy in fleet performance and investment requirements.

As a basis of analysis, the following “degrees” of scrap and build policies are assumed. It should be noted that even though the assumptions are based on a mandatory mechanism, this does not necessarily have to be the case – other mechanisms may be utilized with similar effects. The mandatory mechanism is assumed simply for ease of analysis and clarity. In addition, an option wherein new building is required for small vessels (i.e. < 500 GT) is added, because MARINA is at present considering the restriction on the importation of small vessels.

Table 9.2.1. Comparison of Cases of Scrap and Build Policies

	Government Intervention	Scrap Age	Purchase Age
Case 1	None	Such that average age is maintained	
Case 2	Yes	By 2010: 35 yrs By 2015: 30 yrs By 2020: 25 yrs	2nd hand: max. 15 yrs 70% 10-15 yrs 30% 5-10 yrs
Case 3	Yes	By 2010: 35 yrs By 2015: 30 yrs By 2020: 25 yrs	2nd hand: max. 15 yrs 70% 10-15 yrs 30% 5-10 yrs <500 GT: new build
Case 4	Yes	By 2010: Non-passenger: 30 yrs Passenger: 25 years	2nd hand: 10~15 yrs
Case 5	Yes	By 2010: Non-passenger: 30 yrs Passenger: 25 years	2nd hand: 10~15 yrs <500 GT: new build

To be able to analyze these cases, a basic framework of the domestic shipping system is required. The “base case” scenario described in Chapter 7 is assumed.

(2) EFFECT ON FLEET AGE

The direct impact of the assumed scrap and build policy is the reduction of fleet age. The following Table illustrates this effect and shows that average age significantly drops as a result of scrap and build regulation.

Table 9.2.2. Fleet Average Age under Scrap and Build Policy Cases

(1) Case 1

Type	Year					
	2005	2010	2015	2020	2025	2030
Container	27	26	30	30	30	28
General Cargo	22	21	21	22	22	22
Passenger Ferry	16	15	17	16	15	16
Tanker	20	20	22	23	23	20
Passenger Cargo	25	21	24	22	24	24
Ropax / RoRo	29	27	28	29	27	28
Dry Bulk	21	22	24	22	21	19

(2) Case 2

Type	Year					
	2005	2010	2015	2020	2025	2030
Container	27	19	16	16	17	16
General Cargo	22	19	16	17	16	16
Passenger Ferry	16	17	16	17	16	16
Tanker	20	19	17	18	16	16
Passenger Cargo	25	20	15	16	17	16
Ropax / RoRo	29	17	15	18	16	15
Dry Bulk	21	18	17	18	15	16

(3) Case 3

Type	Year					
	2005	2010	2015	2020	2025	2030
Container	27	19	16	16	17	16
General Cargo	22	18	12	12	12	14
Passenger Ferry	16	15	12	11	11	12
Tanker	20	19	15	15	13	15
Passenger Cargo	25	20	11	10	10	11
Ropax / RoRo	29	15	12	15	15	15
Dry Bulk	21	16	14	14	12	14

(4) Case 4

Type	Year					
	2005	2010	2015	2020	2025	2030
Container	27	18	17	18	21	20
General Cargo	22	17	17	20	21	18
Passenger Ferry	16	13	16	19	16	17
Tanker	20	17	18	21	22	18
Passenger Cargo	25	14	16	19	16	17
Ropax / RoRo	29	13	16	20	15	17
Dry Bulk	21	16	18	20	22	18

(5) Case 5

Type	Year					
	2005	2010	2015	2020	2025	2030
Container	27	18	17	18	21	20
General Cargo	22	15	13	15	16	16
Passenger Ferry	16	9	11	12	12	13
Tanker	20	15	16	18	18	16
Passenger Cargo	25	11	11	12	11	12
Ropax / RoRo	29	10	13	17	14	16
Dry Bulk	21	14	15	16	18	15

(3) INVESTMENT REQUIREMENT

The Table below shows the investment requirement for each Case.

Case 4 and Case 5 instill a more aggressive scrap and build policy in the early periods– thus resulting in a much higher investment requirement in the first few years.

It is noted that investment requirement is particularly heavy during transition periods – i.e. periods wherein scrapping age is lowered. This is because, the age profile of the domestic fleet is skewed, wherein there are many vessels that have ages close to the scrapping age.

Table 9.2.3. Required Fleet Investment under Five Levels of Scrap and Build Policy (mil. P)

	'05-'10	'11-'15	'16-'20	'21-25	'26-'30	Cum. Sum
Case 1	33,815	26,130	28,451	48,700	53,507	190,604
Case 2	40,055	49,077	32,427	64,168	60,012	221,587
Case 3	41,475	52,427	33,969	60,317	51,398	221,796
Case 4	52,268	35,890	21,880	46,917	64,631	245,739
Case 5	55,865	37,728	22,313	46,815	59,075	239,586

(4) OPERATIONAL COST SAVINGS

The direct impact to operating cost of reducing vessel age is the reduction in repair cost and increased commissionable days (explained in Chapter 7). Consequently, fleet operation cost is reduced. Increasing commissionable days likewise results in lowered fleet requirements.

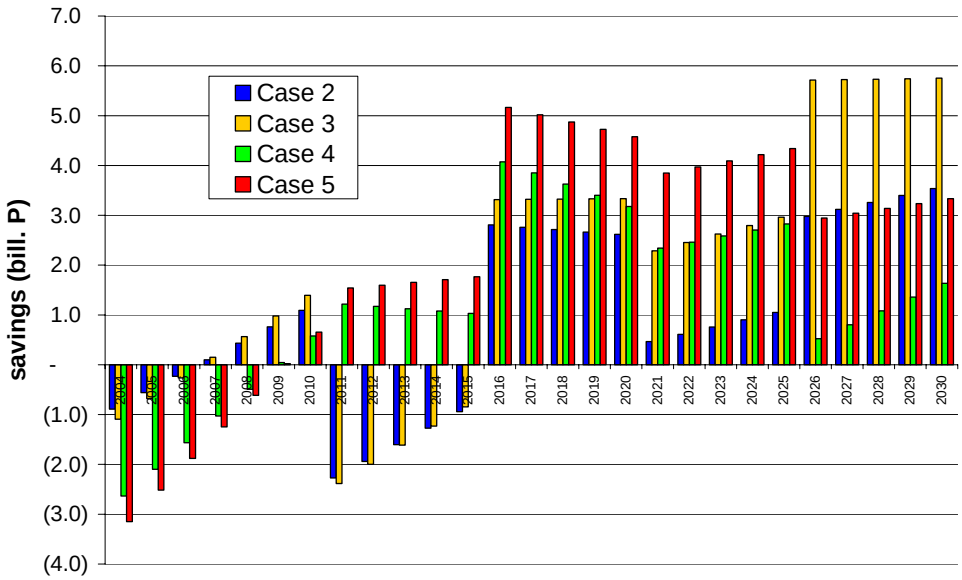
Table 9.2.4. Operating Cost Savings under Four Cases of Scrap and Build Policy (mil. P/yr)

	2010	2015	2020	2025	2030
Case 2	1,984	3,649	3,413	4,143	4,837
Case 3	2,489	4,414	4,439	5,285	5,329
Case 4	3,215	2,985	1,864	2,470	3,862
Case 5	3,805	4,085	3,351	3,962	4,447

(5) TRANSPORT COST SAVINGS

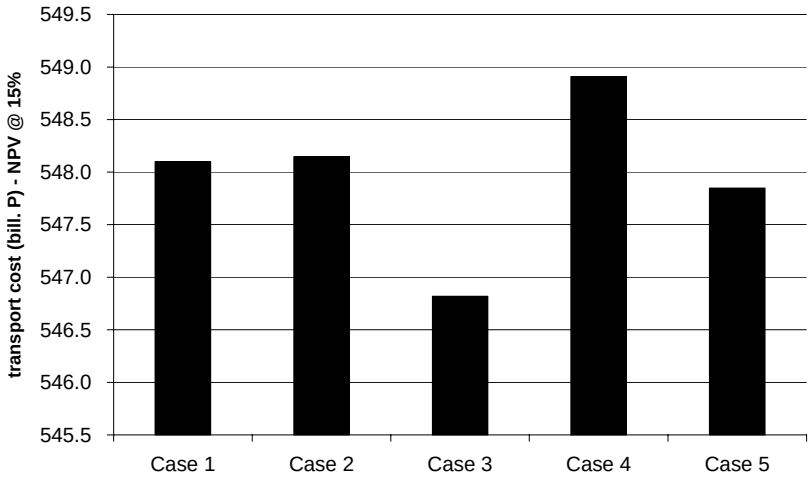
The following Figure illustrates the potential savings in fleet investment and operating cost. Savings stems from lowered fleet requirement because of reduced repair down time and reduced repair cost. From the Figure it is clearly shown that the benefits of scrap and build policy will be felt in the long term – however in the short term, the costs involved far outweigh the benefits. This is primarily because the fleet age profile of vessels are skewed towards the retirement age of about 30 years – thereby, initial costs are very high. In the future, when the vessel age profile is more or less distributed evenly, fleet investment will normalize to levels close to Case 1, thus significant benefits will start to accrue as vessels become younger.

Figure 9.2.1. Savings in Investment Cost and Operating Cost (Case 1 less Case X)



Comparison of the Net Present Value of Transport Cost (i.e. investment cost + operating cost) reveals that the optimal level is along the line of Case 3, and the resulting net present value of transport cost is lower than in the case of the status quo (i.e. Case 1) at the social discount rate of 15%. Thus, Case 3 scrap and build policy is considered worthwhile from an economic viewpoint (i.e. IRR = 19%).

Figure 9.2.2. NPV of Transport Cost



(6) FLEET PROCUREMENT PROGRAM UNDER CASE 3

Fleet requirement is lower compared to Case 1 (i.e. Base Case); this is because of increasing commissionable days. This is reflected by the following Figure.

Figure 9.2.3. Fleet Requirement: Case 1 vs. Case 3

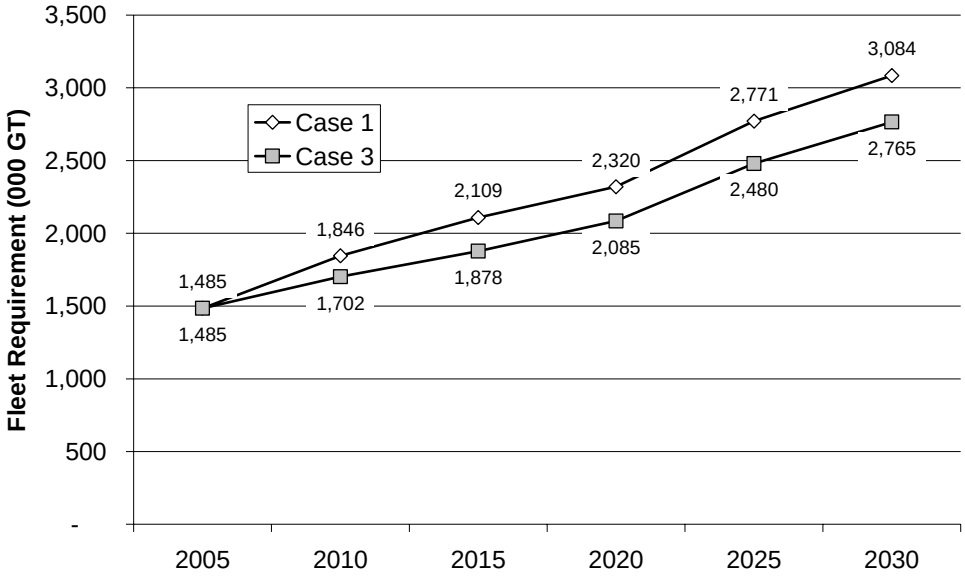


Table 9.2.5. Fleet Requirement Estimate under Case 3 (units)

Type	Size (GT)	2004	2010	2015	2020	2025	2030
Container	0-3000	12	9	14	11	12	7
	3001-6000	13	12	7	10	8	13
	> 6000	3	8	13	16	21	25
	All	**28**	**29**	**33**	**36**	**41**	**45**
Conventional	0-275	279	268	255	209	251	260
	281-550	346	397	410	438	531	602
	551-4100	215	265	297	328	386	430
	> 4100	14	16	16	18	31	35
	All	**854**	**945**	**978**	**993**	**1200**	**1327**
Passenger Ferry	0-140	81	101	108	120	130	143
	141-800	66	78	85	93	102	112
	> 800	3	0	0	0	0	0
	All	**150**	**178**	**193**	**212**	**232**	**255**
Tanker	0-300	61	63	58	47	53	52
	301-800	78	79	73	55	65	76
	> 800	66	77	80	85	90	92
	All	**205**	219	211	188	208	219
Conventional Passenger/ Cargo	0-250	75	49	53	61	74	88
	250 - 500	31	7	0	0	0	0
	> 500	10	8	7	8	7	0
	All	**116**	**64**	**60**	**69**	**81**	**88**
RORO/ RoPax	0-500	45	60	62	73	85	101
	501-1500	36	48	38	44	42	48
	1501-5000	34	29	32	36	25	22
	5001-10000	23	30	37	44	55	64
	> 10000	11	14	18	21	26	31
	All	**149**	181	187	218	234	265
Dry Bulk (barge)	0-350	64	59	56	51	56	57
	351-1600	107	127	136	142	163	176
	> 1600	7	7	6	7	6	6
	All	**178**	**194**	**199**	**199**	**225**	**240**
Total fleet (excl. WHV)		**1,680**	**1,810**	**1,862**	**1,915**	**2,221**	**2,439**

Table 9.2.6. Fleet Requirement Estimate under Case 3 (000 GT)

Type	Size (GT)	2004	2010	2015	2020	2025	2030
Container	0-3000	24	19	29	22	24	15
	3001-6000	66	56	30	46	37	60
	> 6000	23	61	100	121	167	191
	All	**113**	**137**	**159**	**189**	**228**	**267**
Conventional	0-275	51	49	47	38	46	48
	281-550	148	170	175	187	227	257
	551-4100	261	308	345	381	448	500
	> 4100	79	93	93	105	184	203
	All	**539**	**620**	**661**	**712**	**905**	**1,009**
Passenger Ferry	0-140	4	5	5	6	7	7
	141-800	21	25	28	30	33	36
	> 800	7	-	-	-	-	-
	All	**32**	**30**	**33**	**36**	**40**	**44**
Tanker	0-300	11	12	11	9	10	9
	301-800	38	39	36	27	32	37
	> 800	135	157	165	175	185	189
	All	**184**	**207**	**211**	**211**	**227**	**235**
Conventional Passenger/ Cargo	0-250	13	8	9	11	13	15
	250 - 500	13	3	-	-	-	-
	> 500	9	7	7	7	7	-
	All	**35**	**19**	**16**	**17**	**19**	**15**
RoRo/ Ropax	0-500	12	17	17	20	23	27
	501-1500	34	42	36	41	37	40
	1501-5000	105	91	98	113	77	67
	5001-10000	172	223	278	328	412	479
	> 10000	160	207	258	304	383	445
	All	**484**	**580**	**686**	**805**	**932**	**1,059**
Dry Bulk (Barge)	0-350	13	12	11	10	11	11
	351-1600	66	79	84	88	101	109
	> 1600	18	19	17	17	17	16
	All	**97**	**109**	**112**	**114**	**128**	**137**
Total fleet (excl. WHV)		**1,485**	**1,702**	**1,878**	**2,085**	**2,480**	**2,765**

To be able to realize Case 3 scenario, the following vessels have to be scrapped (or decommissioned) and purchased.

Table 9.2.7. Scrapped Vessels under Case 3 (000 GT)

	2005~10	2010~15	2015~20	2020~25	2025~30
Container	39	40	36	49	64
General Cargo	96	208	135	172	163
Passenger Ferry	10	6	7	6	4
Tanker	26	72	47	67	62
Passenger Cargo	19	11	3	3	8
Ropax/RoRo	262	169	46	249	292
Dry Bulk	15	31	24	35	18
Total	**469**	**537**	**297**	**581**	**611**

Table 9.2.8. Purchased Vessels under Case 3 (000 GT)

	2005~10	2010~15	2015~20	2020~25	2025~30
Container	67	63	66	88	103
General Cargo	185	249	186	366	266
Passenger Ferry	8	9	11	9	8
Tanker	49	75	47	83	70
Passenger Cargo	3	8	4	5	4
Ropax/RoRo	358	275	165	376	419
Dry Bulk	28	34	26	49	27
Total	**697**	**714**	**504**	**977**	**896**

Because of the policy focus of the government on RoRo/Ropax vessels, detailed estimates for Ropax/RoRo vessels to be purchased are as follows. It should be noted that under Case 3, the 0-500 GT class vessels are to be new shipbuilding.

Table 9.2.9. Procurement Requirements for RoRo/Ropax under Case 3

Class (000 GT)	2005~10	2010~15	2015~20	2020~25	2025~30
0-500 (new)	36	21	16	17	18
501-1500	34	6	6	15	18
1501-5000	17	13	6	0	11
5001-10000	18	15	9	25	25
> 10000	9	7	5	12	12
All	**115**	**62**	**43**	**69**	**84**

(7) NEW SHIPBUILDING DEMAND UNDER CASE 3

In an effort to develop the shipbuilding industry, the policy of restriction on <500 GT vessel importation is being discussed. Such policy scenario is considered under Case 3. Critical consideration is the capability of local shipyards to absorb the new building demand. The following figure illustrates the demand for new shipbuilding of vessels <500 GT.

Figure 9.2.4 <500 GT Vessel New Building Demand under Case 3

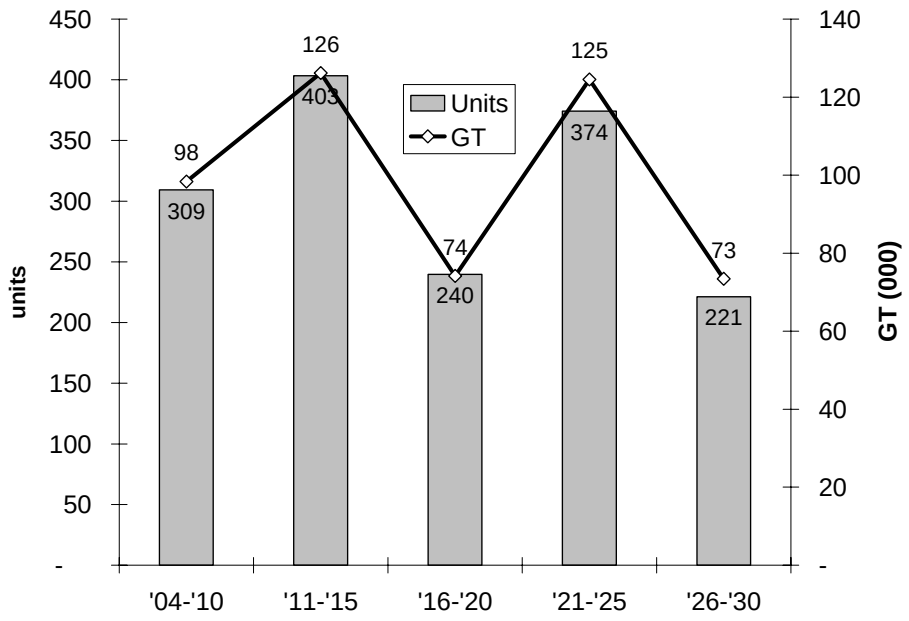
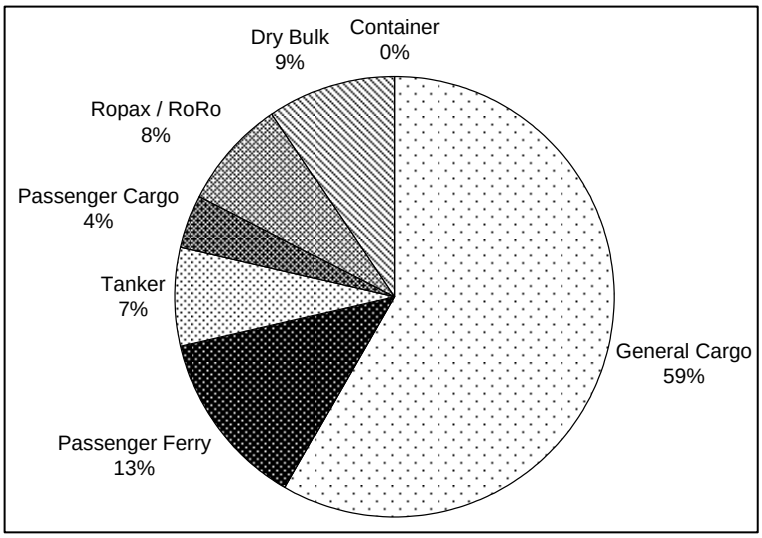


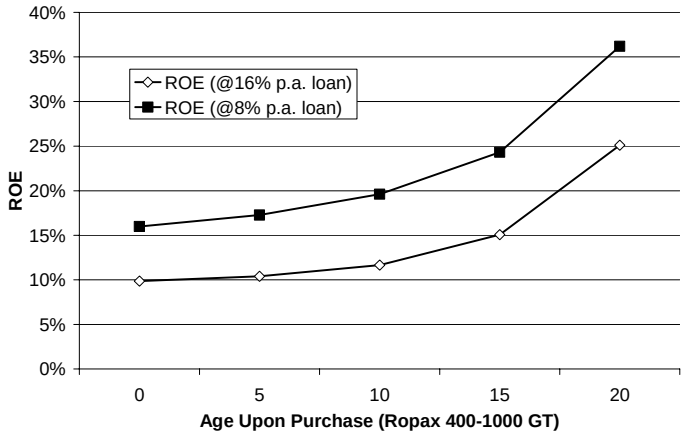
Figure 9.2.5. Composition of <500 GT Vessel New Building Demand under Case 3 (2004 – 2015)



Column 9-1	Apprehension about the restriction on vessel importation

Under the business and administrative environments which favor and accept old second-hand vessels, it is very difficult to convince ship operators to invest in newer vessels and support any scrap and build policy strategy. As shown in the financial simulation results below, Return on Equity is much better when older vessels are utilized. Thereby, resistance of ship owners is understandable and justified.

Figure 9.2.6. ROE vs. Age of Vessel Upon Purchase



The industry thereby requires support and appropriate combinations of incentives and disincentives for the scrap and build policy to work.

The responsiveness of domestic shipyards are likewise critical, especially if the scrap and build policy includes provisions for restriction of vessel importation.

Several issues therefore confront any scrap and build policy debate:

- What kind of mechanism is suitable for scrap and build implementation?
- How to be absorb or mitigate the high level if investment during the inception of the scrap and build policy?
- How to encourage ship operators to participate in the scrap and build policy?
- If the local shipyards could not meet with the demand for new vessels, what kind of support is required?

9.3 Comparative Analysis of Ship Procurement Alternatives

9.3.1 Ship Procurement Alternatives Subject to the Study

For a shipping company to determine its ship procurement requirements, it should make efforts to identify market needs by itself. Provided that it holds enough marketing capability, its work may include present and future cargo and/or passenger demand by route, demand characteristics, physical route conditions, shipping patterns, port infrastructure and facility, the market in port hinterland particularly the connectivity with major shippers, and so on. As a result, the company prepares a suitable ship design and an investment plan including capital investment and cash flow analysis during an investment project span.

The next step is the financial arrangement. A shipping company determines the best method for a particular ship procurement project, taking into account its business philosophy, financial capability, and the risks involve. Then, it applies to and negotiates with a financial institution. To determine ship procurement method, the first important decision that a shipping company must make is to choose whether a ship is owned or not owned. There are several alternatives under each choice:

Ship owning (on balance)

1) Ordinary finance based on collateral
2) Project finance
3) Ship co-ownership with the public sector
4) Increase in company equity and issuance of CP in the capital markets
5) Securitization of ship investment among investors

Non-ship owning (off balance)

6) Lease finance
7) Bare-boat charter
8) Ship charter within a certain period (time charter)

Among those alternatives, “4) Increase in company equity and issuance of CP in the capital markets” and “5) Securitization of ship investment among investors” are not analyzed in this Section since the Study focuses on public finance mobilization for sustainable domestic shipping development. In addition, the country accepts “7) Bare-boat charter” but not “8) Ship charter within a certain period” under the cabotage regime. Therefore, the remaining five (5) methods were being examined in this Study for their adaptability to the Philippine domestic shipping and possible effective ways of using them.

9.3.2 Characteristics and Philippine Conditions by Procurement Alternative

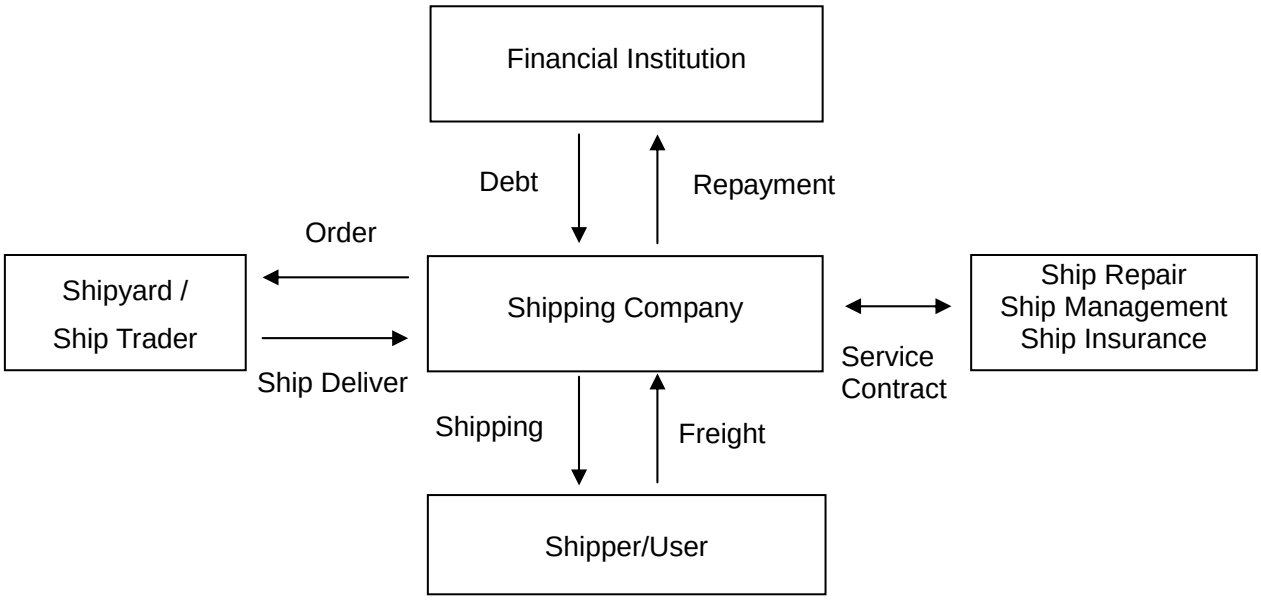
(1) ORDINARY FINANCE BASED ON COLLATERAL

Under the DSMP II loan scheme, ceiling loan amount is 80% of the vessel acquiring cost; the remaining 20% is the investor’s equity portion. Mortgage requirements are, as explained in Chapter 5, 50% covered by the vessel and 30% is covered by REM, which means that the finance is made on secured basis. Upon receipt of the application from a proponent, DBP/PFI conducts appraisal based on the following:

- Financial standings and management capability;
- Past performance on the banking transaction, particularly repayment records;
- Profitability of the investment project; and
- Availability of the mortgage

According to DBP, they have recently adopted a new loan valuation for RoRo vessels. Ceiling amount of the loan is now 60% for internationally classed RoRo vessels servicing the RRTS routes. For the other types of shipping projects, the BSP regulation of only 50% loan value for chattels still apply unless revised by BSP or DBP management.

Figure 9.3.1. Outline of Ordinary Ship Finance

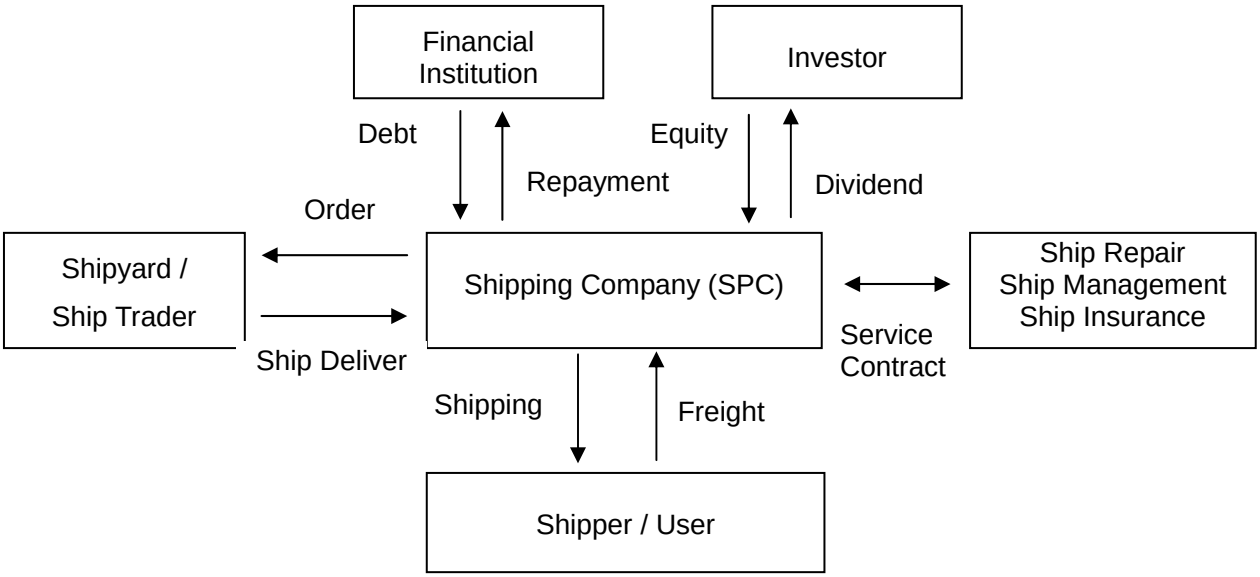


(2) PROJECT FINANCE

In a narrow sense, project finance is defined to be a financing method for providing finance to a specific project, which itself is the sole and sufficient mortgage and is assumed to be the sole resources of cash-flow for the debt services of principal and interest. According to DBP, the bank started to apply the project finance method to their loans and actually some sub-projects under DSMP II so far, although for most of the sub-loans they conducted appraisal in collateral-based traditional way to make judgements.

When the assignment contract of freight revenue is duly confirmed for the ship to be operated under long-time service contract between the shipping company (end-user) and shippers, DBP/PFI is recommended to take such contract as an improved and effective means of mortgage and to reduce the percentage of REM or even give it away.

Figure 9.3.2. Outline of Project Ship Finance



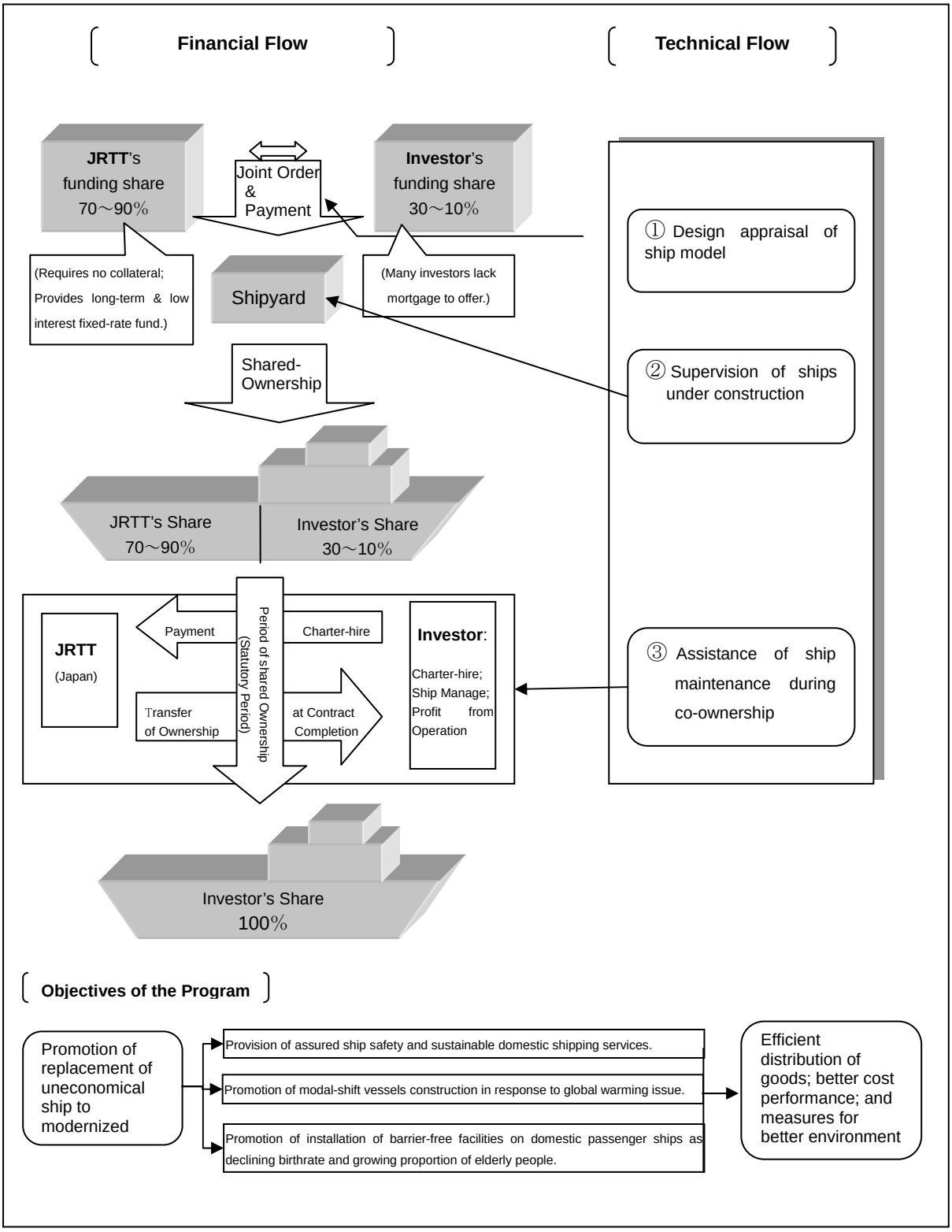
(3) CO-OWNERSHIP WITH THE PUBLIC SECTOR

Program of co-ownership with public entity in Japan was established in order to promote, as a primary objective, the replacement of uneconomical ships. The program further aims at promoting: 1) assurance of ship safety and sustainable shipping services; 2) modal shift vessels construction in response to global warming issue; and 3) installation of barrier-free facilities on domestic passenger ships. Finally, the program has a long-term view of realizing efficient distribution of goods; better cost performance; and measures for better environment. Assistance provided by JRTT has two aspects: financial assistance and technical assistance. (Refer to the conceptual figure below.) Co-ownership or equity sharing is a desirable means to alleviate financial burden of ship owners when building or acquiring specific-purpose vessels. The public sector's involvement may not be limited to financial support since it can take part in preparing a shipping business plan or long-term contract, and control ship quality as a co-ship owner.

NMEC has been designed to provide financial assistance under the current business plan. However, it should have technical capability and function to insure that the shipping companies manages and operate the vessels in accordance with accepted norms and corporate governance, so that the value of the leased vessels are preserved and replacement of overage ship is promoted.

Specific capabilities that NMEC should have are design appraisal, supervision of ships under construction, and assistance of ship maintenance during the lease contract. Therefore, technical capability of NMEC should be achieved.

Figure 9.3.3. Overview of Shipbuilding Program under Co-ownership by JRTT, Japan

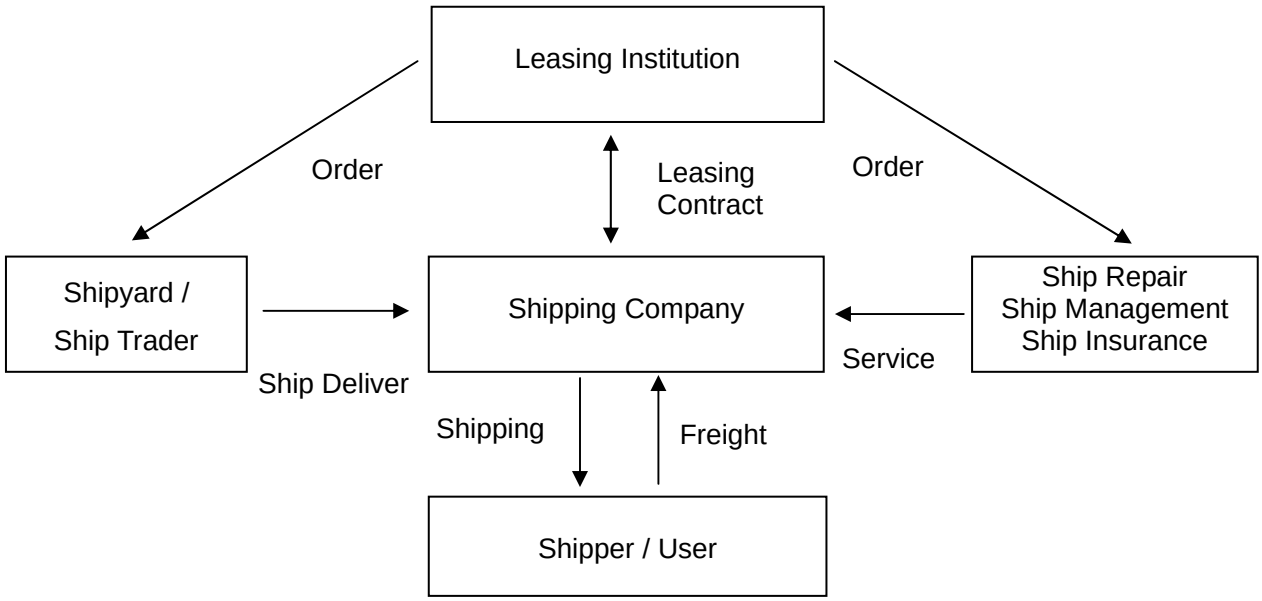


(4) LEASE FINANCE

Conceptual figure of the lease scheme is depicted below. Although it has been decided for NMEC to support the RRTS development on missionary routes, leasing is an attractive method to apply to other shipping investment projects.

Although lease finance is easy to access and has many advantages over bank loan, it is not always inexpensive, but rather it could be costlier than bank loan. For example, when a proponent is a big enterprise and is in tax position, bank loan is cheaper than lease due to tax merit of the depreciation as expense. Therefore, primary target end-users of NDC-MEC should be, for the moment, SMEs.

Figure 9.3.4. Outline of Ship Leasing

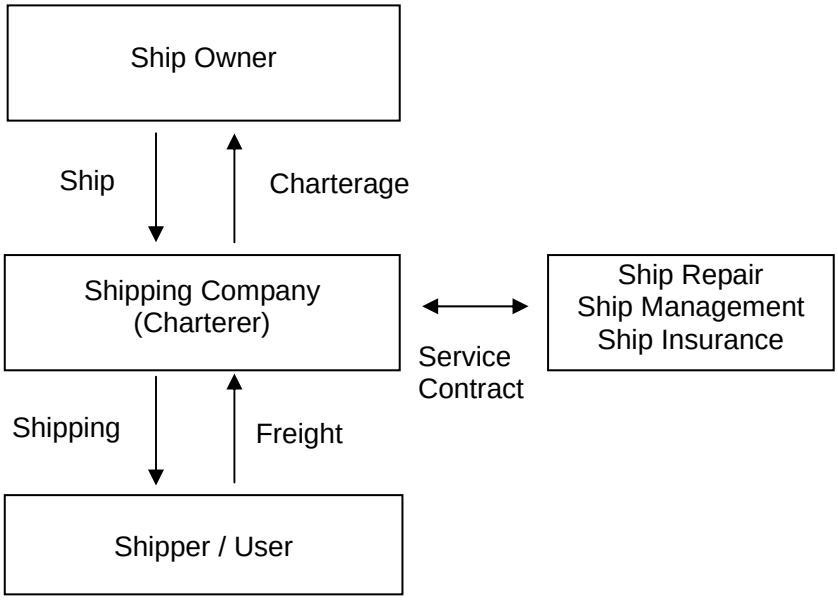


(5) BARE-BOAT CHARTER

It is widely used among shipping operators and countries. In view of the scarcity of finance for purchasing ships by national carriers, bare-boat charter arrangement is considered as a relaxation measure in the requirements for ship registration. The U.N. Convention on Conditions for Registration of Ships (1986) provides certain criteria in that respect, including the registration of bareboat chartered-in ships.

There are merits and demerits from a domestic shipping development viewpoint. As merits, flowing out of foreign exchange for large part of ship's cost (other than capital expenses) can be saved and domestic demands for employment of seamen and for ship-management can be secured. With purchase option, it may contribute to national tonnage development. Adversely, one of the serious demerits is its hampering of domestic shipowners' real acquisition of ships, provided that overseas capital cost is lower than domestic cost.

Figure 9.3.5. Outline of Bare-Boat Charter



9.3.3 Conclusions

Ship procurement requires considerable amount of financial source, but the market price of ships is variable with a wide range due to market conditions. The ship building industry is active in the recent years, while the unit price for ship building is rather stable because of the competitive condition among the ship builders.

On the other hand, the unit price of used ships is soaring reflecting the unit price increases in scrap iron and scrap ships. The charter fee also rose in 2001 and once became stable, then after again had been increasing.

It is said that it is modern and desirable management to use charter vessels instead of holding vessels since it can be flexible to the demand-supply condition in the market and can make business without heavy burden of initial investment. In developing countries, however, freight charge increase due to the charter price increase is not easily accepted by the local industries; hence the rise in the charter price tends to cause a shortage in the total fleet.

It is highly important to gradually promote the modernization and expansion of vessel fleet. It is most desirable from the national economic viewpoint to be able to economically procure the new preferable type of ships produced by local ship building industry.

Ordinary finance based on the collateral will continue to be a basic ship financing measure in the Philippines. It is necessary to make an institutional improvement for setting ships as a collateral and settlement of mortgage and for accepting the ship management as a common sense in order to upgrade the socio-economic value of ships as an asset.

Project finance should be introduced as a more sophisticated measure in the future. There are many issues of public-private cooperation in the domestic shipping in the Philippines, because of many fields to be developed and services to be improved. For this purpose, public financing scheme is important together with the supporting policy and infrastructure development in order to realize a sound cash-flow.

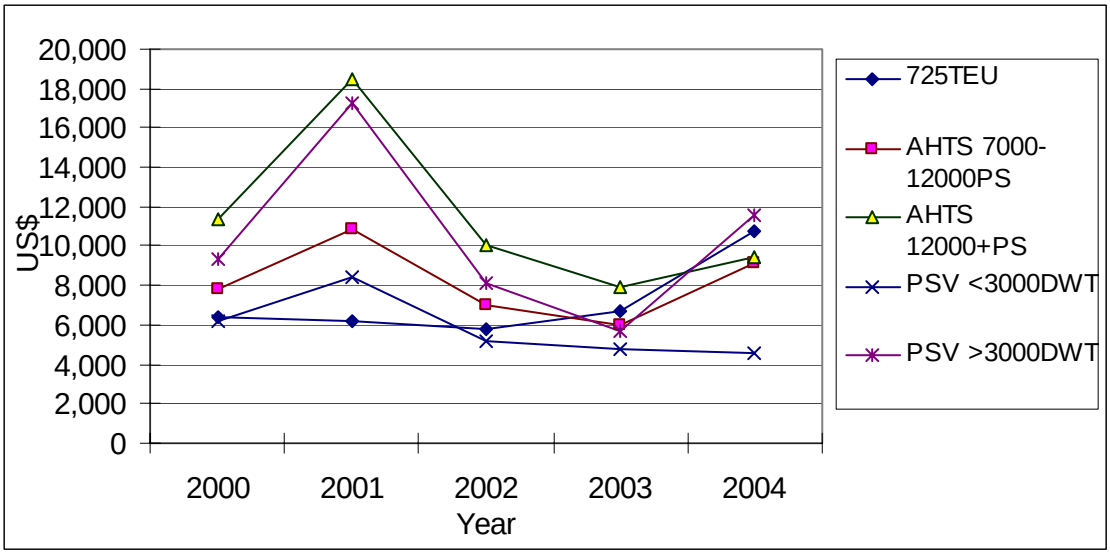
The issuance of securities with the lease credit or loan credit can be said as a project finance, since the project itself will be the source of debt services of principle and interest. Project finance in general, however, mainly indicates bank loans for the project. The consideration of the risks may differ between the former and the latter. The market of the credits in the Philippines is still premature compared to developed countries such as Japan; it is difficult at present to employ such scheme of the securities issuance. Taking into account the future financing market and the infrastructure development in addition to the perspectives in the development and diversification of securities scheme in the future, the possibility of securities issuance of lease credit by NMEC that is seemingly comparatively easy to realize judging from the case in Japan, will be studied in the next step.

Lease finance scheme is suitable for local shipping supported by LGUs, since even small/medium shipping companies can start business without large initial investment. The scheme that public sector leases ships, is an effective measure when new shipping system is started with public-private partnership.

Co-ownership with the public sector is a quite new concept in the Philippines and therefore it requires due preparatory works for implementation, particularly not to cause a moral hazard in the shipping company. Moral hard, originally coming from an insurance term, indicates that the management of business entities may lose financial self-control in decision making because of too much dependence on possible external support such as government guarantee, public lending and investment insurance. The co-ownership method may induce such problematic cases. To prevent or minimize the problem, a set of new procedures must be institutionally provided in advance against overdue and when a public financial institution have to withdraw a co-owned ship from a co-owning partner in order to protect its credit.

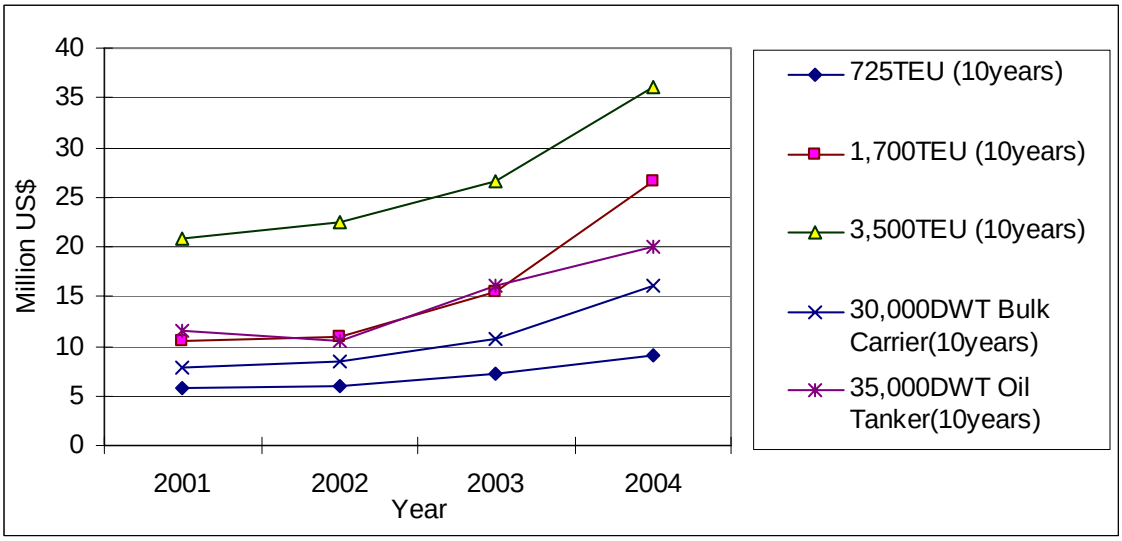
Bare-boat charter is not preferable because of the outflow of charter fees to overseas. However, it is a system rooted in domestic shipping since 1975, and will be one of the ship procurement measures to be able to promptly meet shipping market needs. In other words, the role of bare-boat charter will decrease as much as the domestic procurement measures are developed.

Figure 9.3.6. Charter Rate



Source: Clarkson

Figure 9.3.7. Second-hand Ship Price (2001-2004)



Source: Clarkson

9.4 Identified Roles of Public Finance in Combination with a Dedicated Ship Finance Institution

9.4.1 On-lending Program Scheme using ODA Fund

(1) AREAS TO BE PRIORITIZED

The DSMP II was more featured as a public sector's finance by adding maritime education institute, etc. as the recipients. The original mission as a public finance did not seem to be accomplished since the actual fund user was mostly large shipping companies. There is no basic policy in DBP to prioritize small/medium shipping companies.

Since DSMP is one of the GOP's policy-based development programs financed by Japanese bilateral ODA programs, the program should address the needs of those who cannot get funding and depend on such public assistance as the prioritized groups of end-users. Such prospective end-users as SMEs have faced the constraints of fund raising for their long-term investment due to various reasons mentioned before. In the past, however, majority of fund releases under DSMP II had gone to large shipping companies, shipyards, and public entities like LGUs and port authorities who could expect external financing through other sources and even public assistances through other means such as subsidies and central/local government budget.

Thus, it is recommended to review the implementing policies and measures associated with future public ship finance facility like JBIC TSLs including on-going DSMP II, that loan conditions are more affordable to qualifying and promising SMEs. Specifically, introduction of mandatory credit allocations to DBP and PFIs in those programs is recommended. Also, BSP should closely watch and guide those financing institutions to apply credit incentive such as lower risk weight on capital adequacy ratio (CAR) and single borrower's limit (SBL).

(2) THE SCHEME TO BE REVISED

As a risk of two-step loan from JBIC, a risk for changes in exchange rate due to the devaluation of Pesos to Yen and business risk for disability in credit recall can be considered. In the case of the on-going DSMP II, DBP has such business risk solely as the borrower of JBIC loan, while the substantial exchange risk is shouldered by the Department of Finance (DOF)[1].

DBP does not need any discussions with the corresponding department of government or its line agencies for the matter of the loan execution for sub-projects. In case of DSMP I, the discussions with such government agencies were held but no one could tell the substantial effectiveness of the discussions.

DSMP II has become more conservative than DSMP I, which resulted in the delay of loan execution and the concentration in the recipients.

This study has confirmed that it is highly necessary to enhance the public financing schemes for domestic shipping in the Philippines. The following improvement measures are recommended for continuing on-lending schemes.

a) The financing scheme should be shifted from the traditional finance based on collateral to project finance and lease finance.

b) In order to keep sound financial condition in the sub-projects and increase the development effects yielded by investment, not only an Apex Financial Intermediary (AFI) but also government agencies including the corresponding department for the policymaking should take part as the executing body. The development effects should not be irregularly reviewed by sub-project basis, but should be periodically reviewed by the department directly concerned with the policy making from the viewpoints of the policy objectives and the overall development effects as a project.

c) AFI and MARINA will be jointly in charge of the daily tasks of the executing agency. MARINA, as the policy setter and regulator for domestic shipping, will prepare favourable shipping business environments and particularly coordinate business incentives and ship finance for missionary routes.

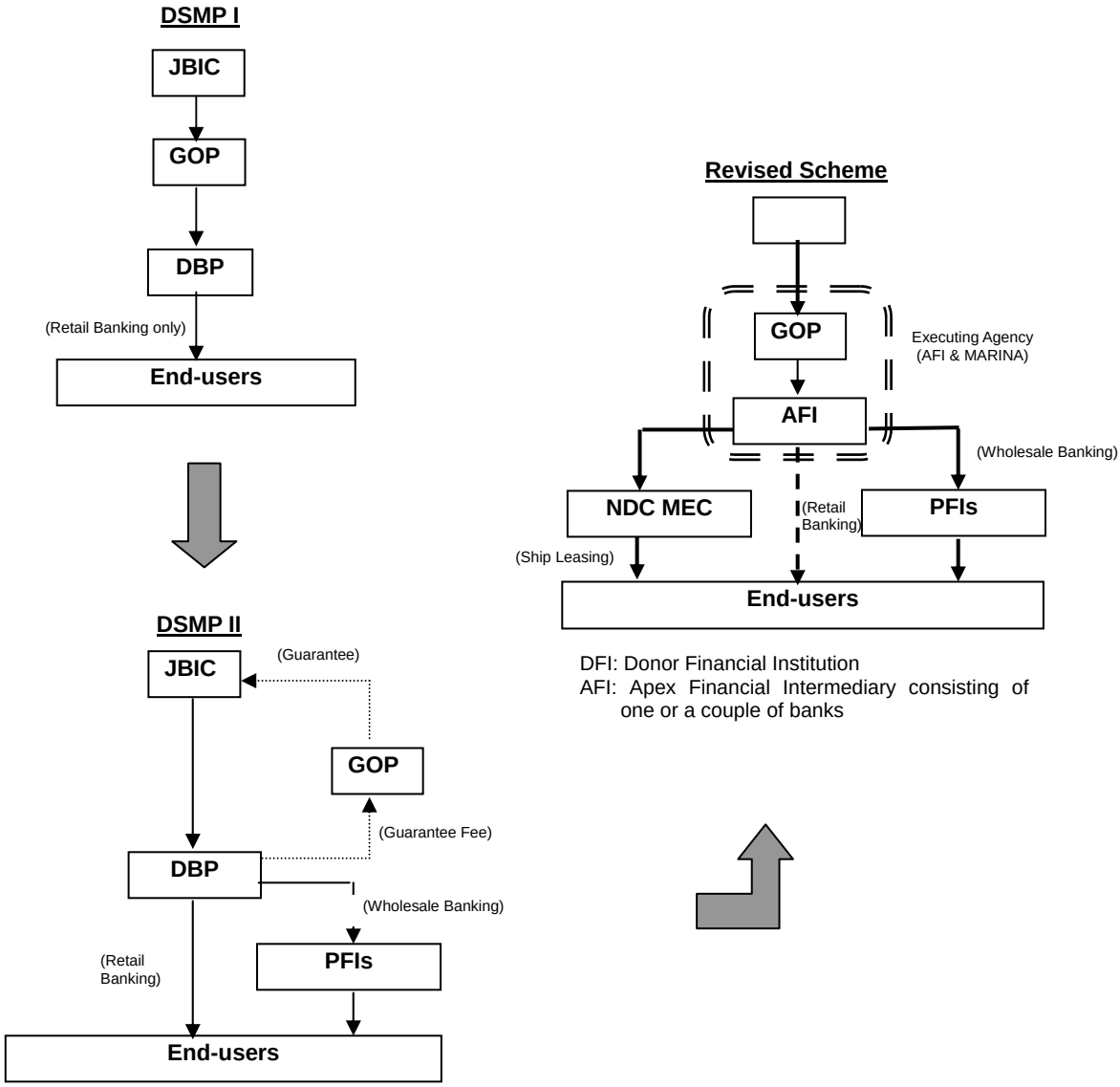
d) It should be examined that not only DBP as before but also other several institutions such as the National Development Company (NDC) should be examined as the alternative AFI in the future scheme.

e) In the case of NDC, it is difficult to expect the corporation to provide retail banking service since NDC has no branch unlike DBP operating 77 branches over the country although it can legally work as a Government Financial Institution (refer to Column 9-2).

f) NMEC should be developed, as the implementing body of lease finance, by not only accumulating expertise of lease business, but also upgrading the capabilities of shipping business management or technical aspects, as illustrated in Figure 9.4.1.

[1] More precisely, up to Peso depreciation against the Yen of up to 2% is shouldered by DBP, and eventually end-users. Exchange rate fluctuations of more than 2% is born by DOF.

Figure 9.4.1 Proposed Public Finance Scheme (in case of ODA fund utilization)



Column 9-2	What is NDC?
Introduction	The National Development Company (NDC) is one of the oldest companies in the Philippines since 1919. Today, it is somewhat a focal institution in national development since the MTPDP 2004-2010 instructs NDC to establish two subsidiaries such as NMEC and PIC (Philippine Infrastructure Corporation). This column profiles NDC particularly its financial functions in accordance with the Revised Chapter (PD 1648) in 1979.
Company Profile	NDC is DTI's investment arm and is mandated to be a critical catalyst for the promotion of national socio-economic development. Very recently, NDC was reorganized under AO183 in 2003. The reorganization was necessary for NDC to fulfill its new mandate, that of providing equity investment in pioneering developmental projects. Today, NDC is again at the forefront of the government's economic agenda mainly in the provision of infrastructure and developmental projects. (www. ndc.gov.ph)
Empowered Financial Functions (Revised Charter, PD 1648)	Sec. 4: **Powers and Functions of the Company** – (1) Engage or invest in or extend loans and guarantees to, or enter into joint ventures with Filipino and foreign investors ----, (16) Organize subsidiary companies to undertake any of the activities ---- Sec. 9: **Issuance of Tax Exempt Bonds** – The Company, upon the recommendation of the Minster of Finance and with the approval of the President is hereby authorized to issue bonds, other securities, which are tax-exempt and guaranteed by the government, to finance its operation. ----- Sec. 11: **Compensation Law** – For the purpose of determining the compensation of its officers and employees, and for the purposes of PD 985 and Civil Services requirements, the Company shall be considered as a governmental financial institution, such as the Central Bank and the DBP -----. Sec. 12: **Foreign Loans; Republic Guarantee**. – (a) The Company is hereby authorized to contract loans, credits, and other indebtedness from time to time, in any convertible foreign currency or capital goods, from foreign governments, or any international financial institutions or fund sources or any other entities, on such terms and conditions it shall deem appropriate for the accomplishment of its purposes and to enter into and execute agreements and other documents specifying such terms and conditions. ----- (b) The payment of all loans, credits and other indebtedness contracted by the Company pursuant to the preceding paragraph (a) shall be and are hereby fully and unconditionally guaranteed by the Republic of the Philippines. ----- Sec. 13: **Government Financial Institutions and Guarantees.** – The provision of any law to the contrary notwithstanding, any financial institution owned or controlled by the Government of the Republic of the Philippines, other than the Central Bank, Government Service and Insurance System and the Social Security System, shall give preference to any loan by the Company and its subsidiaries and is hereby empowered to guarantee acceptance credits, loans, transactions, undertakings, or obligations of any kind which may be incurred by the Company, ---- Sec. 14: **Privileges and Incentives**. – The subsidiaries of the Company, created and registered with the Securities and Exchange Commission, shall be entitled to all the incentives and privileges granted by law to private enterprises engaged in business activities.

(3) IMPLEMENTATION PLAN

According to the DSDP framework, the investment in domestic fleet up to the year 2015 was estimated at 93 billion pesos or 186 billion yen (PhP 1 = JPY 2). The Study has prepared a subsequent package for the current JBIC's two-step-loan finance or DSMP II, i.e., so-called DSMP III of 20 billion yen. It intends to meet about 20% of the overall investment requirement within the initial five years: 2008-2012.

The scheme is equipped with two financing windows: sub-loan financing and lease financing. An Apex Financial Intermediary (AFI) will directly provide sub-loan financing service to end-borrowers or via Participating Financial Institutions (PFIs), and indirectly provide lease financing service via NMEC. An anticipated ratio of sub-loan financing and lease financing is 50:50. It means that NMEC will receive 10 billion yen or currently equivalent to 5 billion pesos to acquire its holding tonnage between 2008 and 2012 which is equivalent to about 60% of the required investment during the same period.

The scheme does not require the government to prepare counterpart fund. In the scheme, end-borrowers must be eligible to make down payment in the case of sub-loan projects and deposit in the case of ship leasing projects.

Interest rate is to be decided as a result of loan negotiation between JBIC and GOP. For the study's assumption, the current JBIC standard TSL rate is adopted, i.e., 1.5% p.a. in yen with 30 years loan period including 5 years grace period. On the Philippine side, commissions and risk premiums will be added on the JBIC fund. Thus, it is assumed that interest rate to end-borrowers ranges from 9.0% to 12.0% (fixed, 20 years at the maximum). However actual end-borrower's loan conditions will be determined adequately taking repayment period and capability into account.

Since the country already has a ten years experience in JBIC ship finance, the third phase can be prepared on the fast track as follows:

- In 2006: A feasibility study will be conducted and an implementation program will be prepared. The GOP will submit the proposed Phase III for the annual Japan – Philippine meeting.
- In 2007: Both countries will sign the loan agreement (L/A). After signing, the Philippine Government will organize an Executing Agency (EA: MARINA and AFI) which will firstly select the project management consultant (PMC).
- In 2008: The EA and the PMC will prepare operational guidelines and other implementation tools and modalities. AFI/NMEC/PFIs will start to receive applications for appraisal and the JBIC fund will be mobilized.

Table 9.4.1 Assumed Fund Scale

Financing Methods	Development Target	Fund Allocation
AFI / PFI Sub-loans	Domestic Ships, Shipyards, Port Facilities	JPY 10 billion
NMEC Ship Leasing	Domestic Ships	JPY 10 billion
Consulting Fee	Technical Support to Executing Agency	JPY 1 billion
Total		JPY 21 billion

Table 9.4.2 Assumed Interest Rate

Financing Process	Currency	Interest Rate %	Aggregated %
JBIC loan	Yen	1.5	1.5
Guarantee Fee	Peso	1.0	2.5
Foreign Exchange Cover	Peso	3.0	5.5
Gross Receipt Tax (GRT)	Peso	0.5	6.0
AFI Administration Fee	Peso	1.0 – 2.0	7.0 – 8.0
PFI / NMEC Spread	Peso	2.0 – 4.0	9.0 – 12.0

9.4.2 Ship Leasing through NMEC

Although detailed analyses and suggestions are made in Chapter 14 “Fostering Program for NMEC”, this section intends to sketch the uniqueness of NMEC in the ship finance sector.

(1) ORGANIZATIONAL ADVANTAGE

NDC registered MEC in March 2005 to act as an alternative ship finance particularly to address one issue of DBP-DSMP underutilization, i.e., strict real estate mortgage (REM) requirement. With the lease finance provided through NMEC as additional and effective means to enhance credit absorptive capacity of the domestic shipping sector, the following benefits to the prospective proponents will be extended:

Table 9.4.3. Benefits Obtainable through NMEC

Financing Requirements	Current Bank Policy	Policy Reforms
Financing Method	Direct Loans	Financial Lease
Loan Value of Vessel	50%	None
Equity Required	10 – 40%	None
Loan Value of REM	60%	None
Lease Deposit	None	10% of vessel cost
Documentation	Loan Agreement	Lease-Purchase Agreement
In case of default	Foreclosure	Takeover & Operate, or Award to new operator

It may be possible that several ship lease companies to operate their business at the same time in the Philippines. The competitiveness in the lease price may be dependent on the company’s expertise and the way of management; the type of shipping business in specialty, the type of ships to be procured and leased, etc. Even under such circumstances, there may be a certain role of NMEC in leasing ships as a channel of public finance for ship procurement.

(2) POSSIBLE SCOPE OF BUSINESS

Unlike the previous DBP-DSMP financial services, theoretically NMEC has a wide variety of tools to support small to medium shipping operators. For this purpose, the scopes of business are well worth examining are as follows:

A) Ship leasing

- Leasing ships to domestic shipping companies with no limitation to the 18 missionary routes.
- Syndicated lease financing should be considered to be taken up with other leasing companies who show interests in providing credit services in domestic shipping and related industries. Some private leasing companies such as PCI Leasing and UCPB Leasing Company have existing lease finance credits. (For example, PCI Leasing has provided lease financing to three ships with 1,849 Gross Registered Tonnage.)

B) Ship management

- To protect the asset value of leasing ships and to lessen non-operation tasks among lessees, ship management services will be provided inclusive of, inter alia, ship repair and maintenance, ship insurance and crew training for onboard maintenance.

C) Ship loan guarantee

- Providing guarantees to PFIs on the borrowings of end-users under the directed credit program like DSMP. Small and medium-sized shipping companies are considered that they are very much in need of such financial service of NDC NMEC because they have had difficulties in availing long-term loans from commercial banks.
- In lieu of guarantee provision, those shipping companies will have to pay guarantee charges to NMEC. With the charges, NMEC as a guarantor will supervise vessel operation and provide ship-management service to the guaranteed vessels.

D) Ship operation after foreclosure

- When a lessee cannot fulfill the obligation in accordance with the contract, NMEC will have to withdraw the vessel from the lessee to avoid increasing overdue. To keep contract with shippers and others, NMEC is required to continue ship operation until a new lessee is found.

(3) POSSIBLE FUND RAISING

During its inception, NMEC will tap DSMP II fund in partnership with DBP. As increasing ship leasing need, NMEC will be able to mobilize various funds optionally as follows:

- Other ODA on-lending programs such as DSMP III. Particularly when the parent company, NDC, manages such a program, it may be easier to access the fund than DBP management.
- Export credit facility such as a JBIC's export loan and other EXIM banks in developed countries. NMEC can directly make a contract with an exchange risk. However there must be a condition to receive a counterpart country's supply (equipment, parts, etc.) in shipbuilding or to build a vessel at a counterpart's shipyard.
- According to its Revised Charter, NDC can issue a tax exempt bond for NMEC (refer to Column 9-2). NMEC will be able to issue CP and take on other securitization measure after it gains a good market reputation as a robust non-bank financial institution.

- Lastly, NMEC can increase its capital base through a third-party allocation shares. However as a subsidiary of NDC, it may limit to public financial institutions such as IFC.

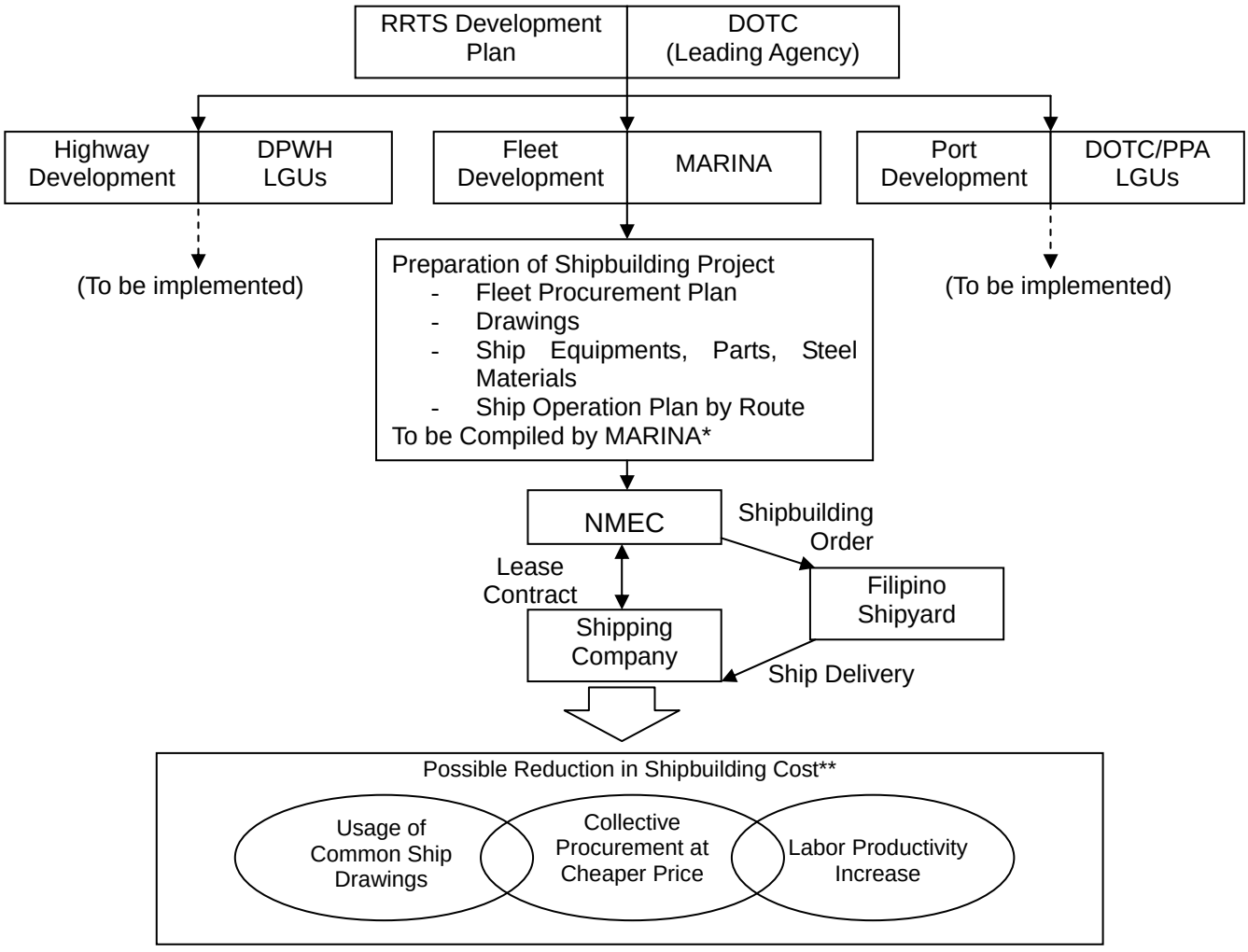
(4) STANDARDIZED AND SERIAL SHIPBUILDING PROJECT

NMEC is a suitable organization to be an implementation body of a Government initiated shipbuilding project. NMEC can order, own and lease such project vessels. When a standardized and serial shipbuilding method is applied, the project must benefit shipping companies who can operate new ships at reasonable leasing fees because the method can bring about considerable cost reduction through reduction in ship design fee, equipments and parts procurement cost and labor cost.

The Study proposes to apply the standardized and serial shipbuilding method in the country specifically for trunkline Ropax fleet (refer to Chapter 10) and RRTS RoRo fleet (refer to Chapter 11). The implementation mechanism for building RRTS RoRo vessels is depicted below.

Figure 9.4.2 Proposed Implementation Scheme for NMEC Shipbuilding Project

(in the case of RRTS RoRo vessels)



Note: * In collaboration with shipping and shipbuilding industries, ship chandlers and NMEC.

** An empirical cost reduction target of 20% on condition that more than 10 vessels are built under the same design.

Vessel construction cost is broadly composed of ship design cost, material procurement cost and costs for labor and management. Proportion of these cost items are shown in the table below. Each cost item will be reduced if mass-construction of same design vessels is implemented.

- Vessel Design Cost: this shares 8-10% of the total cost. If common vessel design is used, this cost will be shared among the same design vessels to be constructed. If 10 same design vessels are constructed, cost for ship design will be reduced 90% of the total cost.
- Material Procurement Cost: this shares the biggest proportion of the total cost, about 55-65%. Since mass-construction is proposed, this cost will be reduced by 5-10% through package deal method.
- Labor Cost: this shares 30-35% of the total cost. The number of required labor (man-day) will gradually decrease up to fifth vessel, then after it will become stable. As a result, labor cost will be reduced by 25-30% if 10 of the same kind design vessels are continuously constructed.

As mentioned above, each cost item will be reduced. Therefore it is expected that 17-26% of the total cost will be reduced.

Table 9.4.4. Possible Reduction of RoRo Vessel Cost through NMEC Shipbuilding Project

Cost Item	Cost Proportion	Possible Reduction Rate (When 10 standard vessels are constructed continuously)
Vessel Design	8-10%	-(90)%
Material Procurement	55-65%	-(5-10)%
Labor and Management	30-35%	-(25-30)%
Total	100%	-(17-26)%

In order to effectively achieve the cost reduction, the following issues for local shipyards are considered:

- Facility and equipment of local shipyards shall be improved and upgraded;
- Technical assistance from foreign shipyard is necessary in the beginning of the shipbuilding project; and,
- Limited number of local shipyards (one of two) is dedicated for the shipbuilding project.

9.4.3 Innovative Financing with Empowering Local Shipping

As Section 8.3.1 already discussed, modern management in shipping business must be facilitated. Taking fragmentation of the sector to small uneconomically sized operation into account, investment capacity should be developed in line with modernization efforts particularly shipping industry restructuring such as consolidation of small shipping companies by area to provide modern shipping services and with intermodal enterprises to provide overall logistics services.

(1) CONSOLIDATION METHOD

Although M&A is a typical industrial restructuring method, it seldom happens in underdeveloped and low demand industrial segments. To address the fragmental and small unit industry structure issue in domestic shipping, the proposed alternative is then to pool and integrate the small shipping companies in order to complete transport

service systems needed to be efficient and be able to offer reliable shipping services and still be profitable. In other words, once pooled and integrated, operators and or service providers might be able to pursue economy of scale and/or synergy in their operations and stronger competitive power in their investments.

Pooling and integration of small companies through larger integrated corporations and cooperatives have been tried, but generally this legal mechanism has failed in the past. The smaller members are reluctant to join a corporation because the larger capital- based companies will tend to dominate and control the rest through larger stock holdings and membership in the Board. Unifying under a cooperative is likewise risky and unsustainable because of the weak management structure of cooperatives and difficulty of ensuring consistency to be able to operate as a fully self-sufficient enterprise. Moreover, there is no permanence in the structure of relations and commitments of the parties under these two mechanisms since a change in the management or Board leadership can likewise change the basic relationship and terms of cooperation originally agreed upon. This lack of permanence in the fundamental commitments and structures of the agreement makes it difficult for a number of cooperating enterprises to unify and work together (refer to Table 9.4.5).

A combination of trust and asset pooling makes use of the trust mechanism to simplify the pooling and integration of ships, port services, cargo facilities, marketing, and land transport links operated by a number of companies – big and small. Individualism can be preserved and the relation with asset installment (mostly new investment) and earnings can be clearly gauged based on a defined and fixed Trust Agreement and its Business Plan.

Table 9.4.5 Comparison of Trust with Other Forms of Legal Organization

FEATURES	TRUST	CORPORATION	COOPERATIVE
1. Nature	A Contract Agreement to Invest individual assets and earnings thereof, or operations assigned to a pool, to be used in accordance with the Trust Agreement.	A Legal Entity registered with the Securities Exchange Commission, to pursue business operations within ambit of the corporation law.	A Legal Entity pooling individual activities, to gain advantages of bigness, and access to common facilities and services. Registered with Cooperative Dev. Authority
2. Mission & Operations	Defined and fixed by the Trust Agreement, based on the agreed Business Plan and agreement of Trustors on how they relate with each other.	Defined and modified as need be by the Board of Directors of the Corporation thru policies and decisions by the Board	Defined and modified as needed by the Board of Directors of the Cooperative, thru policies and decisions by the Board.
3. Governance of Entity	Board of Trustees whose task and authority is to enforce the Trust Agreement and see to it there is no deviation from the Agreement and approved Business Plan.	Board of Directors is the decision and policy making authority, and formulates these as they see fit the situation.	Board of Directors is the decision and policy making authority, and formulates these as they see fit the situation
4. Permanence of Relations and Commitment	Permanence is assured by the Trust Agreement, as enforced by the Board of Trustees as their fiduciary duty.	No Permanence, can be redefined by Board Members	No Permanence, can be redefined by Board Members
5. Distribution of Benefits	In accordance with agreement in the Trust Agreement	In accordance with shares of stock held by stockholder.	In accordance with shares of stock held by stockholder

(2) APPLICABLE AREAS

The Study has identified a variety of possible trust arrangements to meet diversified shipping modernization needs. Some examples are as follows:

- Feedering operations: When shipping companies change their traditional services to modern ones such as short-haul RoRo service, individual motor banca operators' efforts may be limited. Ports may also need to be improved such as installation of RoRo ramp and others. In such a case, possible pooling of assets include small modern ships and part of local port facilities.
- Area-wise common facilities such as bunkering: Small to medium operators are suffering from higher oil fuel costs more than large operators because they don't have exclusive bunkering facilities at homeports and they have limited negotiation leverage. By putting up bunkering and other necessary assets into a pool, they may be able to compete with large operators on those cost items[1].
- Dry bulk shipping: Dry bulk shipping requires a large bulk ship of several thousand tons and exclusive terminal facilities at both port ends. Currently most of sizable cargoes are bagged and transported in a container or on conventional general cargo vessels of several hundred tons each. Therefore, possible pooling schemes are large bulk carriers and dedicated port terminal facilities among conventional cargo operators. A more efficient logistics chain management can be done when the pooling trust includes relevant traders and their facilities such as post harvest facilities and trucks.

(3) PROPOSED TRUST AND POOLING SYSTEM UNDER THE REVISED DSMP SCHEME

The Asset Pool Trust entails the pooling of resources or assets under a trust or special purpose vehicle. The assignment of the assets to the trust is covered by a Trust Agreement which includes a Business Plan defining the use of the assets in business and the disposition of the assets and its earnings. The documentation needs experts' support and policy advocacy from central and/or local governments.

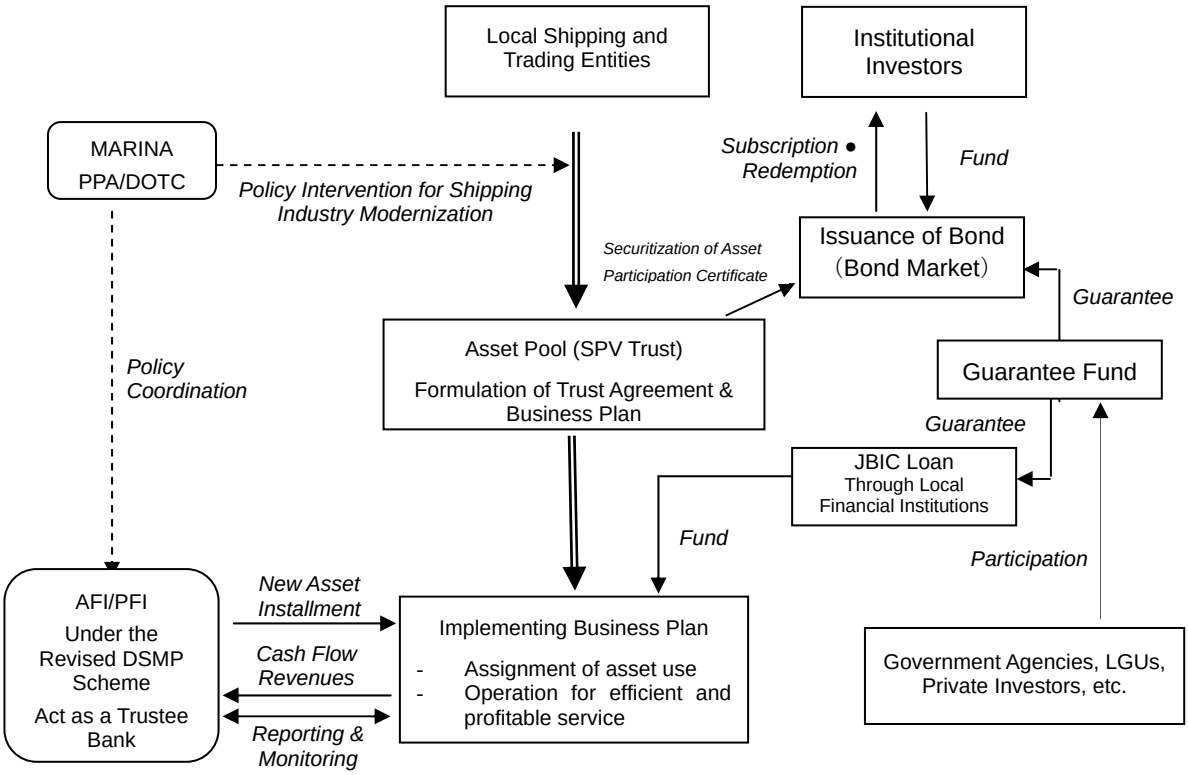
The trust is established with a Trustee Bank, and is governed by a board of trustees. The asset pool is managed by a service consortium, appointed by the Trustees, who executes the business plan. The Trustee bank acts as the custodian of the assets, enforcer of the agreement and the administrator of the funds. Under the revised DSMP scheme, an AFI or one PFI will act as a Trustee Bank.

The heart of the Trust framework is a feasible Business Plan with good and sufficient cash flow which will serve as the road map to operate for efficiency, profitability, service and growth. The Business Plan will necessarily determine the players in a most acceptable configuration including the resources/inputs these parties/players will convey to the Asset Pool. Here, the financial parameters, and the securities instrumentation (Asset Participation Certificates, Class A, B, etc./Subordinated APC) become critical. The financial motivation of each player must be clearly manifested and addressed. A financial plan detailing the sharing/distribution of the Asset Pool's revenues, operating costs, profits including the residual assets by the players/participants would have to be an integral part of the Business Plan.

Except an experienced trust with favorable tracking records in the past, a trust needs guarantee when it issues bond in the market and borrows money even public development fund. Theoretically there are two possible ways: (i) setting up new guarantee fund within a scheme; and (ii) utilization of ready-made guarantee facilities such as SBGFC under DFI (refer to Section 9.5), in both cases, adequate charges must be paid to the guarantor after calculating overdue probability and others. To avoid a moral hazard in the trust agreement, it is suggested to use an external guarantee facility. For piling up internal guarantee fund, a proper source must be secured. It is to be noted that JBIC may provide funds directly to public projects and to private projects through an on-lending mechanism rather than for guarantee use.

[1] This idea was raised among local shipping operators during the Workshop on a Maritime Trust and Pooling System on June 3, 2005.

Figure 9.4.3 Financing Service based on Trust Agreement



9.4.4 Necessary Legal and Regulatory Framework to Support Public Ship Finance

(1) SHIP VALUATION AS COLLATERAL

DBP has maintained their policy of secured basis lending in DSMP II, and in most of the credits extended in other programs, too. As indicated in 5.2.3, one major reason which has led to slow disbursement in DSMP II is DBP's rigid and strict requirement of real estate, commonly called REM, covering 30% of the ship value which is not covered by ship mortgage. For the acquisition of ship, 50% can be covered by the mortgage of the ship itself. Remaining 20% is an investor's equity portion. Complaints by shipping companies have been aired to the Study Team during interview surveys. The complaints are frankly recognized and reported in the project completion report of DSMP I and the progress reports of DSMP II. According to DBP, REM is flexible only to some customers with highest credit rating and long track record of good performance under the bank's present appraisal system, although it is gradually becoming flexible.

It is recommended that in retail banking, DBP should consider taking more flexible stance by easing REM to the proponents who could not avail of the loan due to the requirement, in addition to the limited ones with highest rank as mentioned above. DBP should be able to manage their credits provided and should not be concerned about the repayments from the borrowers by instituting stronger and more frequent monitoring of operation result of each financed ship and other businesses of the customers, as well, if necessary. For the ship to be operated under long-time service contract with shipper(s), assignment contract of freight revenue between the shipping company (end-user) and DBP/PFI is recommended as an improved means of mortgage – loan management – monitoring. Tanker and oil and/or ore carrier would be fitted to be finance under assignment contract of freight revenue.

(2) AMENDMENT OF THE PHILIPPINE MORTGAGE LAW

According to PISA, foreign banks have continued to shy away from Philippine mortgages because of the ambiguity in the Ship Mortgage Law has resulted in a difficulty in enforcing the mortgage and foreclosure of the vessel. It is necessary, therefore, to amend the law, that foreign banks could give credits to the domestic shipping companies based on the ship mortgage allowable to foreign banks. Actually, the amendment of the law has been recognized to be one of the measures to accelerate the implementation of RRTS by government agencies and concerned business associations. Therefore, deliberations and discussions on the amendment among the concerned parties should be stepped up.

To secure an effective and efficient enforcement procedure when a mortgagor is in default, it would be important for the Government to hold absolute enforcement power, i.e., arrest of ships within the territorial waters together with international cooperation under the respective international convention.

(3) SECURITIZATION OF ASSET BACKED SECURITIES (ABS)

In order to make a securitization arrangement of ship asset such as RoRo vessels under NMEC, laws and regulations on securitization of asset backed securities (ABS) are imperative. They include among others:

- Special Purpose Company Law;
- Special Law on Transfer of Assets (for Securitization);
- Regulation on Credit Collection Agent; and,
- Amendment of accounting rules and regulation on off-balancing of ABS.

Column 9-3	**Different Law Provisions on Mortgage**
Regarding the ceiling loan amount secured by mortgage, "The General Banking Law of 2000 (Republic Act No.8791)" and "Manual of Regulations for Banks (provided by BSP)" give different provisions.	
The General Banking Law of 2000	It provides in Sec. 37 that "-- loans and other credit accommodations against real estate shall not exceed 75% of the appraised value of the respective real estate security --." and in Sec. 38 that "-- loans and other credit accommodations on security of chattels and intangible properties --- shall not exceed 75% of the appraised value of the security --."
Manual of Regulations for Banks (provided by BSP)	Current ceiling amounts for Banks are much lower than The General Banking Law. Manual of Regulations for Banks provides in Sec. X311 that "Loans against real estate security shall not exceed 70% of the appraised value --" and in Sec. X312 that "Loans on the security of chattels shall not exceed 50% of the appraised value --."
Apparently, percentages provided by these two rules do not tally, and DBP had been following the percentage provided by Manual of Regulations for Banks, so the ceiling percentage applied to the DSMP II loans secured by vessels is 50%. According to DBP, they have recently adopted a new loan valuation for RoRo vessels. It is now 60% for internationally classed RoRo vessels servicing the RRTS routes. For the other types of shipping projects, the BSP regulation of only 50% loan value for chattels will still apply unless changed by BSP or DBP management.	

Column 9-4 Collateral in The Case of World Bank On-lending Programs

The World Bank has been implementing to formulate new loans with on-lending mechanism in the Philippines. The bank's on-going loans are now three.

Project Name	Borrower as well as Executing Agency	End-User	Interest Rate (In US$)	Loan Period
Water Districts Development Project	LBP	LGU	12% (fixed)	N.A.
LGU Urban Water Supply and Sanitation Project	DBP	LGU	15 % (fixed)	15 years (grace: 3 years)
Local Government Finance and Development Project	Borrower: DOF E/A: Municipal Development Fund Office	LGU	14 % (fixed)	15 years (grace: 3 years)

Regarding Water Districts Development Project, the project information obtained through the Internet provides illustrative and helpful contents for the solution of one of the problems that DSMP has faced. It is about the requirement of mortgage, which has caused the delay of disbursements under DSMP I and II, particularly after the Asian Economic Crisis. In the above World Bank project, the requirements of collateral to each LGU that applies the sub-loan to carry out capital investment in sewerage, sanitation, and drainage and wastewater treatment infrastructure are as follows:

- Real Estate Mortgage (REM)
- Chattel Mortgage
- Hold-out of deposits
- Assignment of the LGU's regular income including portion of Internal Revenue Allotment (IRA) which in no case shall exceed 20% of the LGU's regular income
- Assignment of a portion of the LGU's Internal revenue Allotment for the payment of the sub-loan

Among the required collaterals, assignment of the LGU's regular income suggests as one solution which may be adapted to DSMP and future direct credit program as one of the collaterals and means to improve loan management and monitoring by DBP and PFIs at the same time.

9.5 Further Public Finance Options in Tandem with the Development of Public Ship Finance

As a result of the conservatism of commercial banks which has influenced the role of development financial institutions, there have been a number of alternative mechanisms for development finances that have emerged. When such a facility is applied together with public ship finance, an integrated and multi-facet impact can be expected. The most important thing is how to enhance absorptive capacity of small to medium shipping companies. Before discussing some possible options below, it is to be noted that NMEC would be able to guarantee loan-financed vessels if it could provide ship management service like NMEC leasing vessels. NMEC would receive guarantee fee at its service and then guarantee ship loan. With having that in mind, the section outlines further guarantee options.

(1) SMALL BUSINESS GUARANTEE AND FINANCE CORPORATION

Together with guarantee services extended by NMEC, utilization of guarantee services of the Small Business Guarantee and Finance Corporation (SBGFC) may be considered in order to complement affordability of the prospective proponents of DSMP II to meet the mortgage requirement such as REM, especially SMEs. SBGFC is a financial institution, established under Magna Carta, 1991 and under administrative control of Department of Trade and Industry (DTI). SBGFC is guided

by policy, programs and supervision of Small and Medium Enterprises Development Commission, SMEDC. The secretary or the undersecretary of DTI is one of the nine directors of SBGFC. (Refer to Appendix 4.1)

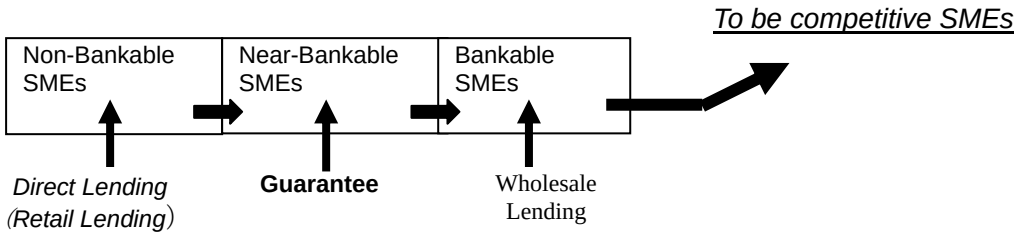
SBGFC categorizes SMEs, in responding to different levels of development of SMEs, into the following three types, i.e. Already Bankable SMEs, Near Bankable SMEs, Viable but Non-Bankable SMEs, each of which corresponds to the following assistance programs, i.e. retail lending, guarantee, and wholesale lending. Retail lending is for SMEs that are not able to have a loan from financial institution due to lack of loan experience and insufficient mortgages.

The SBGFC strategies for SME assistance in different levels of development is described below:

Table 9.5.1. Financial Strategies of SBGFC

Type of SMEs	Conditions of SMEs	Assistance Programs
Already Bankable SMEs	・good work record and scale ・established management system ・good repayment record ・sufficient mortgage	Wholesale: ・access to low-interest fund ・access to long-term fund ・access to financing fund for SMEs in rural areas
Near Bankable SMEs	・good work record and scale ・established management system ・lack or shortage of good repayment record ・insufficient mortgage and/or inferior mortgage	Guarantee: ・assist SMEs to make use of formal loan system ・assist banks to take positive attitude and to lend to Near Bankable SMEs
Viable but Non-Bankable SMEs	・limited work record and scale ・limited management system ・lack of repayment record or bad repayment record (in case of enterprises in reconstruction) ・insufficient mortgage and/or inferior mortgage	Direct Lending: ・assist SMEs to access to fund with better interests compared to informal finance ・training of SMEs regarding utilizing formal finance and loan recording ・assist SMEs for their growths to relevant scales in their industries by continuous funding

Figure 9.5.1. SBGFC Strategies for SME Assistance



DBP and PFIs as well as the prospective end-users are recommended to seek ways and means to avail SBGFC's credit facilities, specifically guarantee on loans, to complement the insufficient affordability of REM by SMEs.

(2) LOCAL GOVERNMENT FINANCING

To support the development financing needs of local governments, a scheme has been developed by the Banker Association of the Philippines together with DBP of establishing a Guarantee Corporation to cover the investment needs of a local government. The guarantee is backed up by the pledge by the local government of

its IRA – Internal Revenue Allotments. In this way LGUs have been able to either secure loans or issue bonds against these projected receivables to finance projects, such as public markets, transport terminals, post harvest facilities, etc.

This type of financing may be relevant to the shipping sector to support the establishment of common service facilities for cargo consolidation, warehousing, e-commerce or information systems to support a transport network, etc. This can be an effective way for the ship financing system which must go beyond financing ships or ship services, but likewise support the other elements of a logistic chain. For example, LGU financing could support the establishment of storage facilities to support the warehousing requirements of grain producers, who at this point have no choice but to sell their products at low prices to traders, because they do not have a storage facility. In this way producers may be able to escape the exploitive hold of traders and integrate their activities directly with transport system.

(3) INVENTORY FINANCING

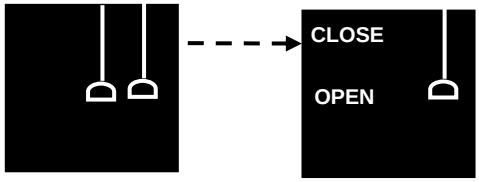
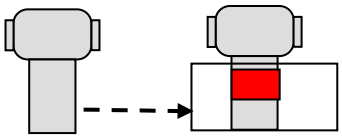
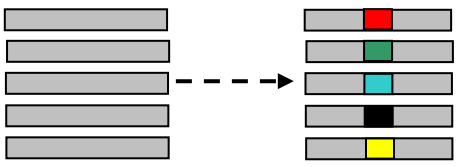
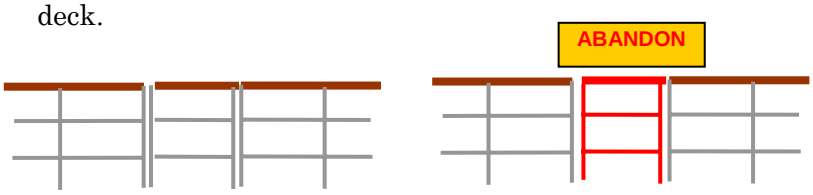
It refers to the financing of products (usually commodities, agricultural harvests) which are stored in a warehouse as evidenced by a warehouse receipt issued by the asset custodian. The warehouse receipt can then serve as a financial instrument which is negotiable and can be the source of financing. The warehouse receipt and the products stored serves as the security of the financial instrument or inventory financing.

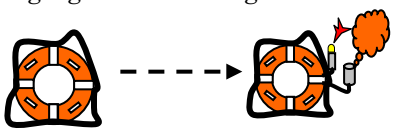
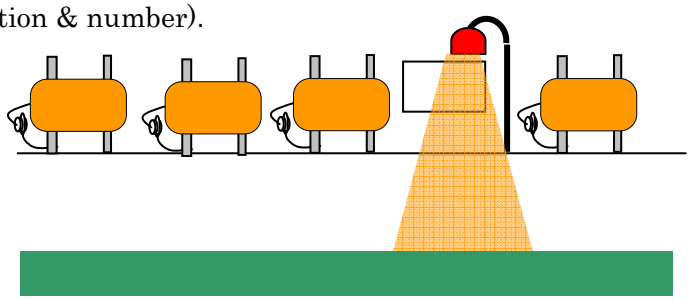
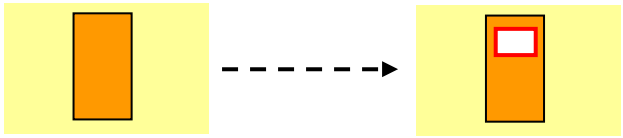
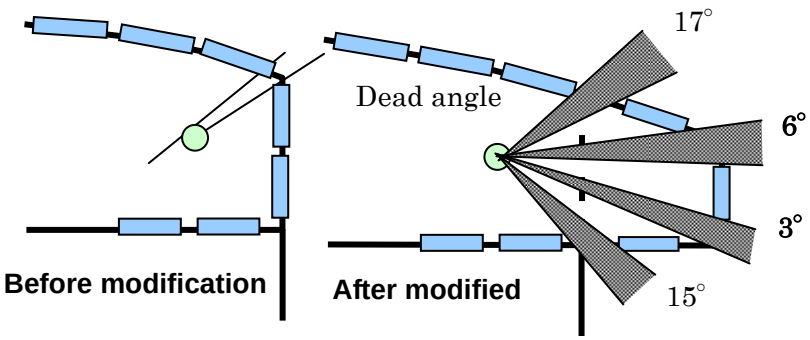
This used to be provided by Quedan Credit and Guarantee Corporation, Government Corporation under the Department of Agriculture which used this inventory financing for sugar, rice, and corn. This facility has declined in use because of administrative problems in the past, but this can be revived as a vital part of a shipping system – logistic solution. This will support small producers to consolidate their produce and enable them to sell their goods at a better price directly to wholesalers or institutional buyers.

APPENDICES

APPENDIX 1 (APPENDIX TO CHAPTER 3)

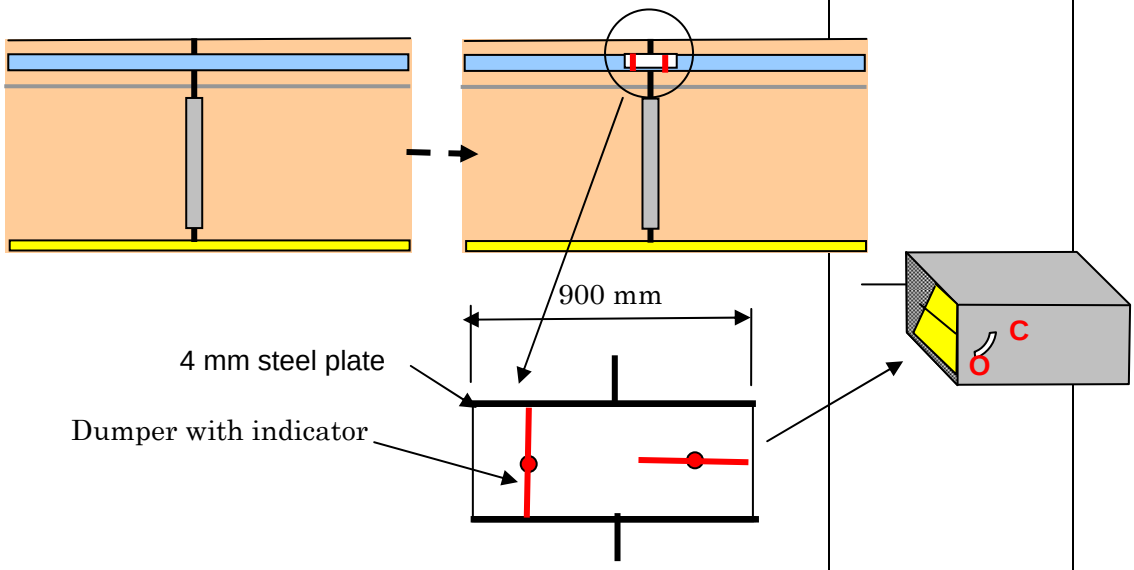
Appendix 1.1 ONBOARD SURVEY FILE NO. 1

ONBOARD SURVEY FILE No. 1					
1	**Date:** 2004/2/2		**Inspected by:** SAKAGUCHI Kazuaki, JICA Ship Management		
2.	**Gross Tons:** 15,223	**Age**：1984	**Route:** Manila-Cebu		
3.	**Type of Ship:** ☐Container, ■Passenger ferry(pns), ☐RO-RO, ☐Cargo, ☐Tanker				
4.	**Certificated:** ISO N Y ( ), ISM N Y ( )				
5.	**Overall Remarks:** 1. Good security system onboard 2. Generally the ship is in good condition. 3. Require to correct management of ship publication, management of main engine operating state data, to improve procedures for analyze & corrective action of nonconformity and internal audit 4. It must be necessary to review procedures of audit for ship machinery & equipment maintenance.				
6.	**Detailed Observations:**				
	6.1	**Identification:**			
		1. No-sign (open-close) of shut-down wire at funnel damper. 			
		2. No-sign (identification of name & color) and oil spill tanks at all air vent pipe 			
		3. No colour-identification for deck piping 			
		4. Too difficult to identify the opening of handrail at life raft deck. 			

	6.2	**Life buoy:** 1. No line of life buoy at stern.  2. No self-lighting light / smoke signal on the life buoy at stern. 	
	6.3	**Life raft lights:** 1. Insufficient emergency light(24V) which is lighting instruction manual of life raft and surface of the sea (location & number). 	
	6.4	**Muster station information:** 1. No muster station information in the passengers cabin. 	
	6.5	**Drawings:** 1. No drawing (all deck arrangement) is posted at each deck. (All deck arrangement must be posted at each deck.) 2. No posted of Capacity plan, General arrangement, Pumping plan at crew acom. area	
	6.6	**Wing bridge:** After reconstruction, the dead angle from repeater comes huge due to wing deck frame is modified too wide. 	

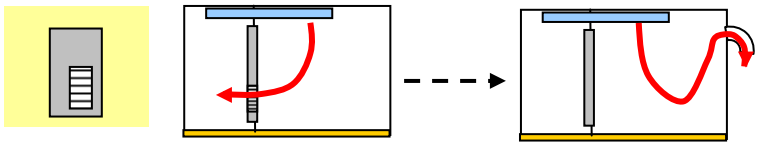
6.7 Air-con duct arrangement:

1. No faire damper (attached indicator) is installed at air conditioning duct (service & circulation) through bulkhead penetration at all.
2. The danger of conflagration is high and we are anxious about human life damage



6.8 Hospital room arrangement:

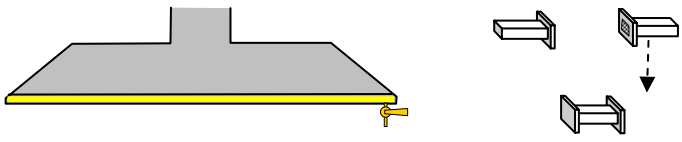
1. Install a hospital at stern area and its pollution prevention by the wind is desirable.
2. The return grid of an entrance door must not install. It discharges directly to the open air..
   When such as SARS etc. it generates, there is fear of air pollution expansion.



6.9 Galley :

1. Since it is very easy to slip on a galley floor, the measure against a skid is required.
2. There is a defect of oil disclosure and a drain tap from the connecting position of a duct.

Installation of the removal type duct for cleaning is required.

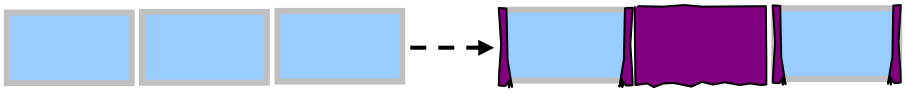


Drain cock at aft side

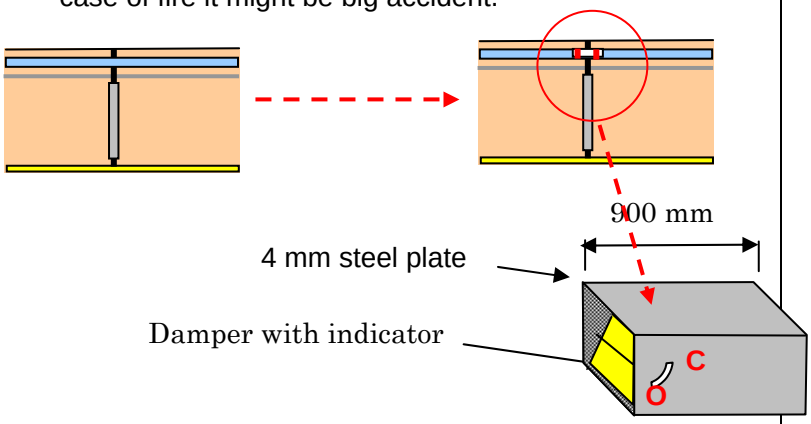
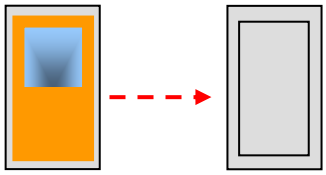
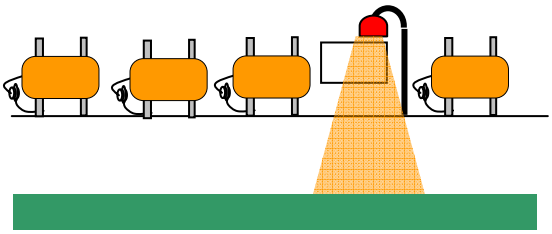
Removal duct at horizontal area

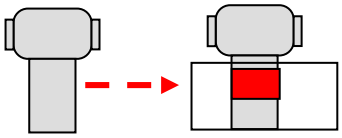
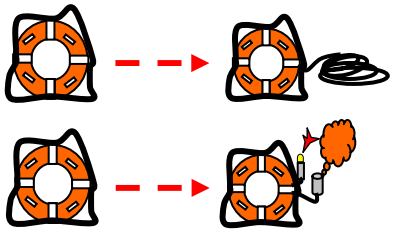
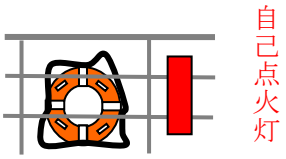
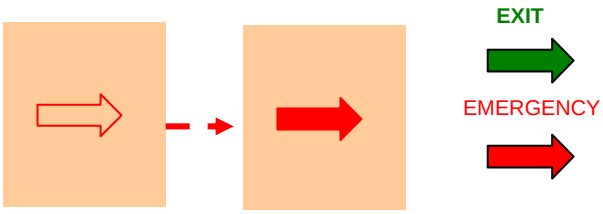
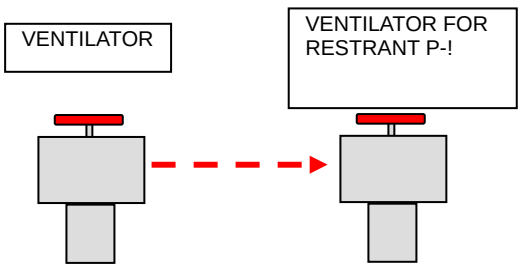
	6.10	**Main engine data analysis:** 1. Analysis of a situation is not performed although the chief engineer has submitted the main engine operating data to the company. 2. As compared with remarkable falling down of Press. Max. and turbocharger rotations numbers, the Blow-by tendency of combustion gas can see from the remarkable rise of Scav. Air. 3. It can be said that a critical situation and is required in immediate correction disposal. It is very severe critical deficiency. 4. English instruction manuals are unavailable at all. 5. No-body grasps the main engine operating condition and situation. Review of resources (hard and soft), considering the specialist attendance at carrying the internal audit and in-house training/education are immediately provided.	

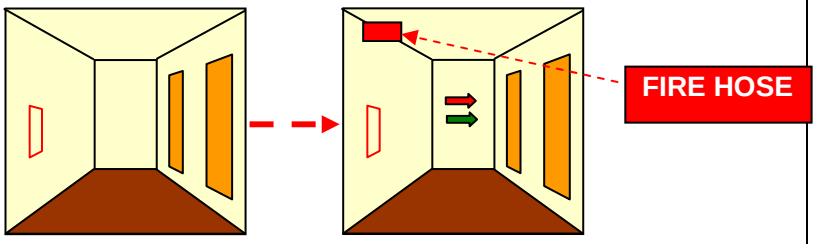
ONBOARD SURVEY FILE No. 2				
1	**Date:**	2004/2/3	Inspected by: SAKAGUCHI Kazuaki, JICA Ship Management	
2.	**Gross Tons:**	458	**Age**：1990	**Route:** Dumaguete – Cebu
3.	**Type of Ship:**	☐Container, ■High speed craft(pns), ☐RO-RO, ☐Cargo, ☐Tanker		
4.	**Certificated:**	ISO N Y ( ), ISM N Y ( )		
5.	**Overall Remarks:**	1. All seafarers are controlled and trained, such as sincere working attitude and smiling to passengers. Thus high-class service can be provided on board. 2. The procedure of ship departure, such as 3 short and stern checking by chief officer, etc., was excellent. 3. It was good maintained and controlled in the bridge. 4. Although I asked to show ISPS, the chief officer as SSO replied “I am sorry but I can show ISPS only to a ISPS auditor of authorization body.” It was a perfect reply.		
6	**Other Notes:**	The Master is 50’s old and experienced with oceangoing ships of big shipping company for many years. The chief officer is in his 30’s but very skillful.		

ONBOARD SURVEY FILE No. 3				
1	**Date:**	2004/2/5	Inspected by: SAKAGUCHI Kazuaki, JICA Ship Management	
2.	**Gross Tons:**		**Age:**	**Route:** Cebu - Ormoc
3.	**Type of Ship:**	☐Container, ■High speed craft (pns), ☐RO-RO, ☐Cargo, ☐Tanker		
4.	**Certificated:**	ISO N Y ( ), ISM N Y ( )		
5.	**Overall Remarks:**	1. Seafarers' attitude & guide when passengers on boarding were not satisfied. 2. No whistle on astern. 3. Front glass was so dirty (checking pre-departure was not carried out) 4. Rear window is covered with silver paper to protect sunshine. 5. The ship was going into a bunkering group of fishery ships and one fisherman was missing when ● the Master was reading a newspaper. ● the chief officer was responsible for navigation 6. Review for manning are necessary.		
6.	**Other Notes:**	The Master and the chief officer is the same age, it not favorable. As the Fisher boat has Freeboard only 30~50 cm and wooden color it is very difficult to found out earlier. It is the most recommendable under control of the government to force to provide some measures to avoid the same kind accident, for example, such as radar reflecting plate or reflecting tape. Anyhow a good counter measure should be taken not to repeat the same accident.		
7.	**Detailed Observations:**			
	7.1	**Brained curtain on the front** 1. curtain in passengers cabin front window to be provided. * night view is not good. 		
	7.2	**W/T Front door** Damaged packing		

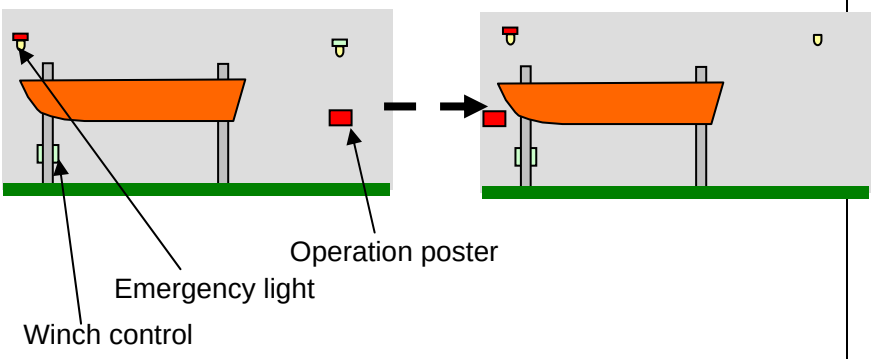
ONBOARD SURVEY FILE No. 4				
1	**Date:**	2004/2/7-8	Inspected by: SAKAGUCHI Kazuaki, JICA Ship Management	
2.	**Gross Tons:**		**Age:**	**Route:** Cebu - Manila
3.	**Type of Ship:**	☐Container, ■Passenger ferry(pns), ☐RO-RO, ☐Cargo, ☐Tanker		
4.	**Certificated:**	ISO N Y ( ), ISM N Y ( )		
5.	**Overall Remarks:**	1. Measures against fire are not sufficient and not ready to protect passengers. Any measures such as reconstruction and damper installment can be taken with reasonable cost. 2. Emergency sign sticker was not sufficient and adequate in position. 3. The running condition of main engine was in critical. Document control, ship maintenance plan, analyze, corrective action, internal audit, etc. should be reviews immediately. 4. Staff of the office and all seafarers should be retrained together with reviewing the training plan. 5. The ship was not controlled under good management. The company must review the management system. It is difficult to specify all the management problems. But representatives ones which we experienced are as follows: • Although reservation was made, we could not get to the reserved cabin. • The cabin was dirty and dusty. Rubbish was coming out from the air-conditioning cover. Hot water was not tapped into bathtub. Tapped water was dirty. • The discotheque above the floor of suite rooms was so noisy until the mid-night and passenger in the rooms cannot get sleep. • Portable hand talkie was often used for announcement and communication within crew.	

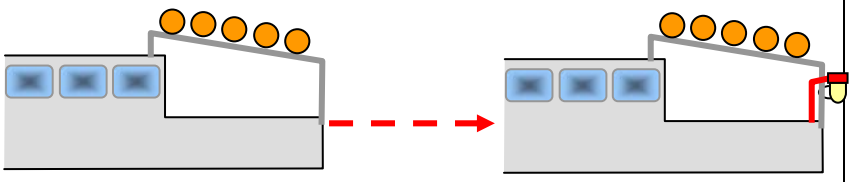
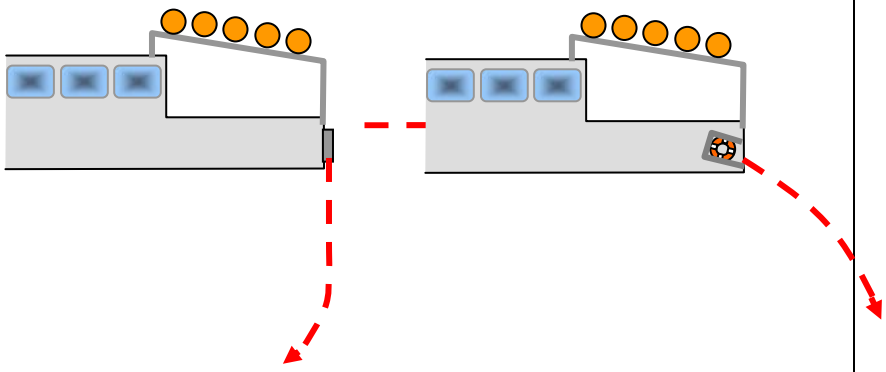
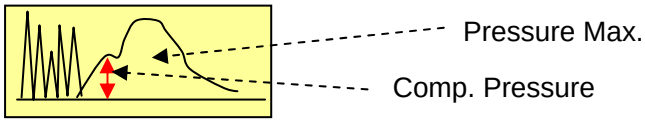
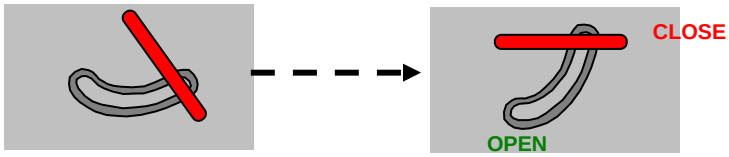
6.	**Detailed Observations:**		
	6.1	**Air-con duck Damper** 1. Damper to be provided at air-conditioning system supply and return duct in each bulkhead of cabin. ＊ damper with indication (open/close) is not provided, in case of fire it might be big accident. 	
	6.2	**Fire doors** 1 . Take off hock of all fire-tight doors. * keeping the all doors opened with hock. The condition is very dangerous in case of fire. 2. wooden door with glass window to be modified auto closing type fire tighten door. *fire tighten accom. area 	
	6.3	**Life raft Light** 1 . Provide emergency light (24V) at liferaft instruction and sea-face position. 	

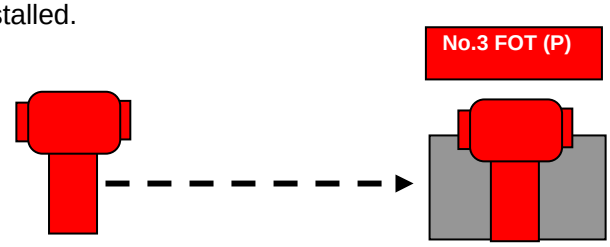
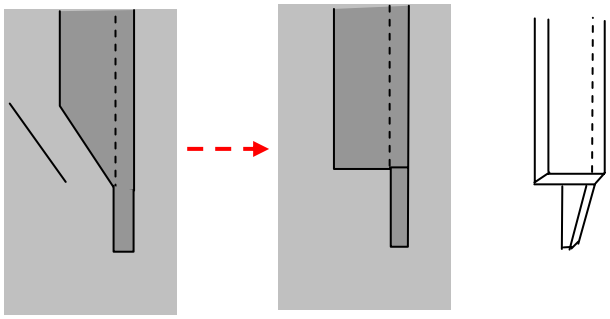
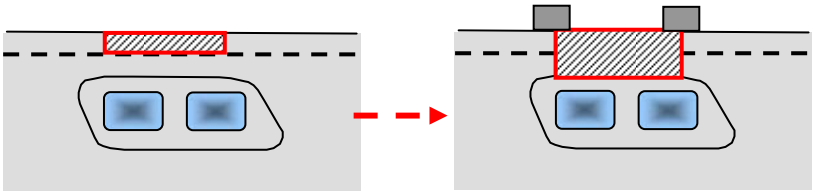
	6.4	**Air pipe ESH** 1. indicate name of tank air-vent and its color painting on deck no-indication of all tank, cannot identify the tank in accident happens. 	
	6.5	**Liferings** 1. Provide smoke signal and life ring with lighting at stern. * at night missing person in the sea cannot find the lifering soon. 	
	6.6	**Self igniting light** No light for lifebuoy in the box 	
	6.7	**Arrow marks for exit or emergency route** 	
	6.8	**Ventilator Identification** All ventilator name must be identified with paint. 	

	6.9	**Location of emergency equipment etc** Name plates of life saving etc must be clearly posted. 	
	6.10	**Main engine data** 1. Insufficient frequent check of important（critical）machinery 2. Insufficient indicator checks and luck of analyzing skill 3. Reviewing and improving internal audit of ISM code appropriately.	
	6.11	**Ship's Document** Every instructions manual for each important machinery & equipment should be provided in English (currently Japanese only).	

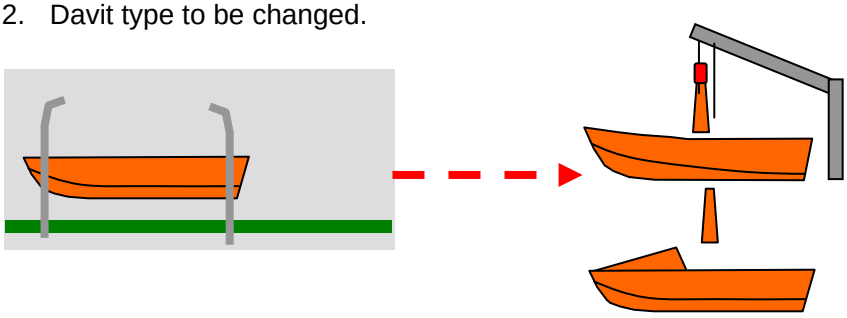
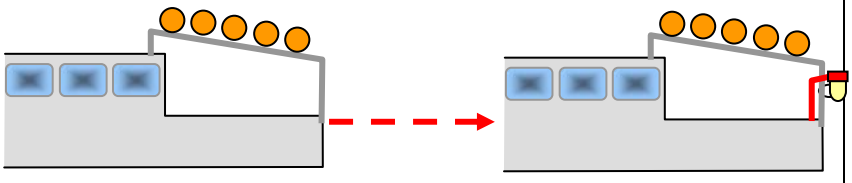
ONBOARD SURVEY FILE No. 5

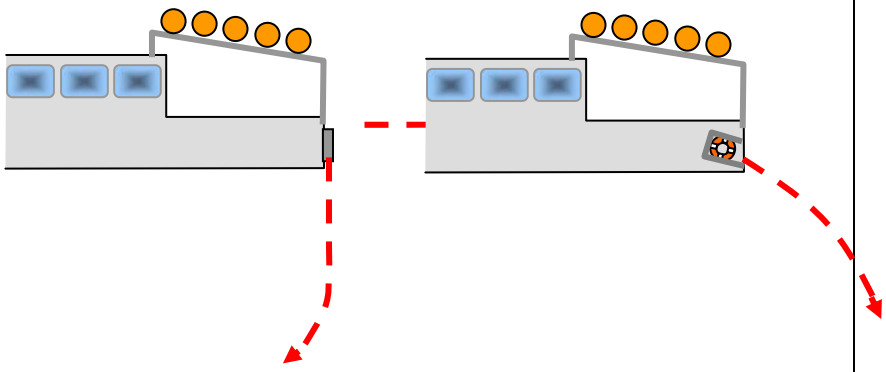
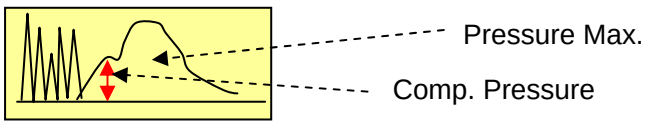
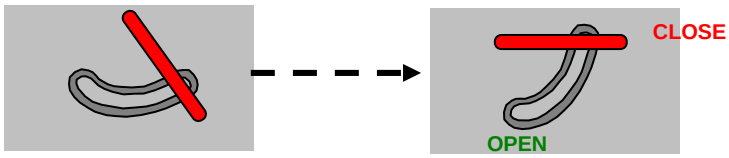
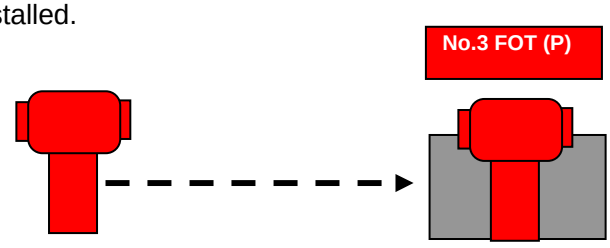
1	**Date:**	2004/2/26	**Studied by:** SAKAGUCHI Kazuaki, JICA Ship Management	
2.	**Gross Tons:**		**Age:**	**Route:** Manila - Bacolod
3.	**Type of Ship:**	☐Container, ■Passenger ferry(pns), ☐RO-RO, ☐Cargo, ☐Tanker		
4.	**Certificated:**	ISO N Y ( ), ISM N Y (ABS)		
5	**Overall Remarks:**	1. The attitude of the crew was excellent. They greeted all the passengers warmly. It must give a good impression to the Company 2. Emergency (muster station) instruction in the each cabin has been posted and can be clearly understood. 3. The company's staff and the vessels crew were very interested in the survey on board the vessel. They showed strong desire to learn ship-management. 4. The company manager requested us to organize a workshop among engine officers and others at the port of Bacolod where necessary corrective actions are to be discussed based on the nonconformity findings from a series of the onboard surveys.		
6	**Detailed Observations:**			
	6.1	**Liferings** No lights, smoke on the lifering at stern area.		
	6.2	**Rescue boat lunching instruction** The position of Instruction should be properly positioned under the emergency light and winch operation position.  		

	6.3	**Liferaft** No emergency lights at instruction of liferafts operation position and sea face. 	
	6.4	**Quick release liferings on the wing bridge** Direction of gravity dropping to be changed 	
	6.5	**Chart room** Isolated glass chart room should be removed to have a clear stern view and horn signal by other ships.	
	6.6	**Ship's drawings and instruction in the E/R** Sea-trial record of main engine can not be found. Therefore, can't analyze engine running condition. Indicator for taking drew curve must be supplied.  	
	6.7	**Ventilator shut down handles** Handle position of damper for open/close to be marked and direction of handle position to be conceded at next modification.  	

	6.8	**Air vent pipe head of tanks on deck** All AEP head to be identified with paint and oil spill tanks of all FOT to be installed. 	
	6.9	**Shape of stiffener** Snip end of stiffener design should be changed. 	
	6.10	**Main engine analysis** Main engine condition should be checked with performance curve of sea trial record. Found in very critical condition. (pressure max and T/C rev. is very low) See attached performance curve.	
	6.11	**Ashtray on the promenade deck** Ashtray should be installed. There are a lot of cigarette puts on the deck, it is very danger of the fire.	
	6.12	**Gavages container** Plastic, food and metal must be provided	
	6.13	**Shape of gunnels** Height of renewal plate should be kept more than 300mm and tab plate to be welded. 	

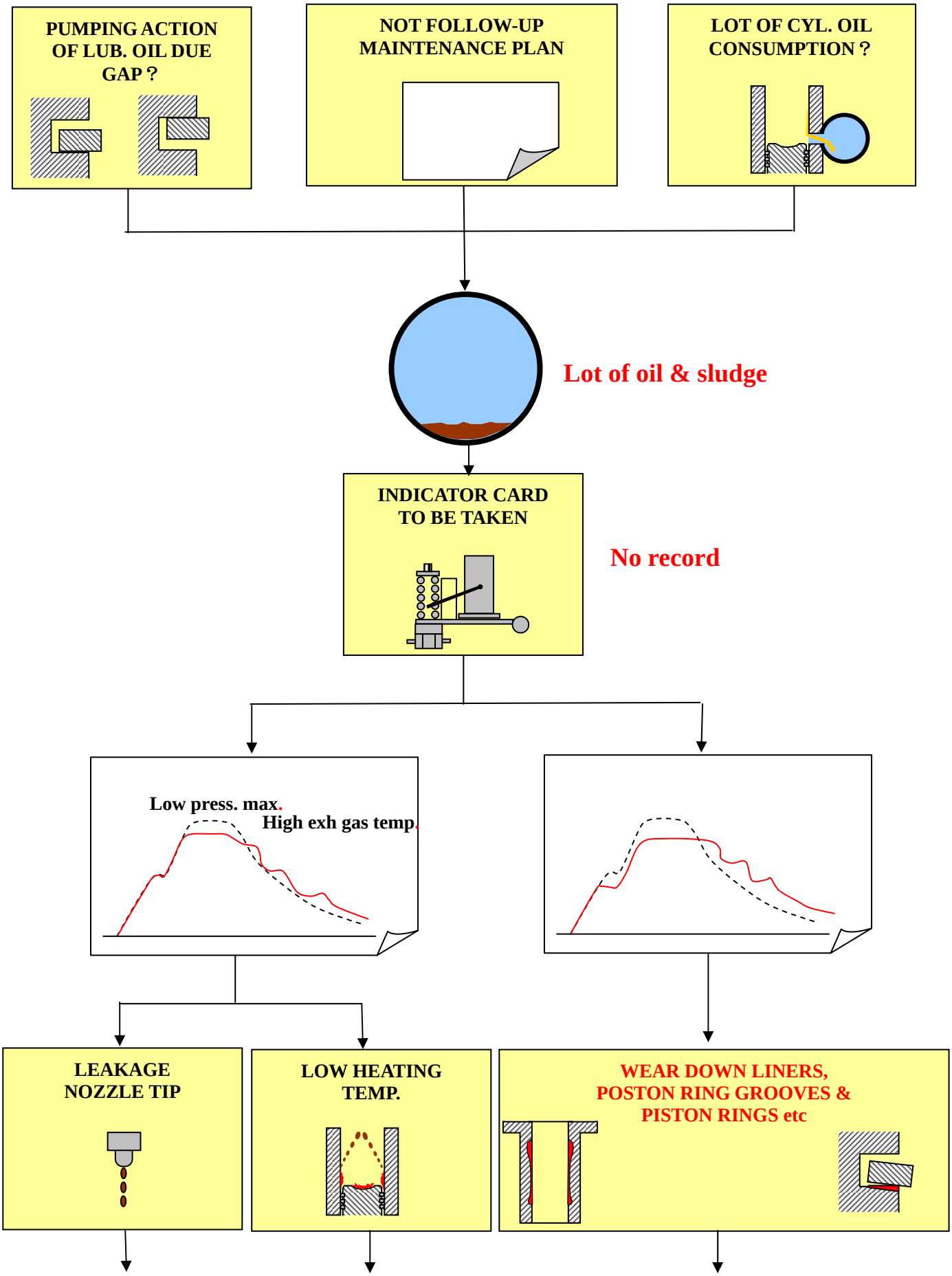
ONBOARD SURVEY FILE No. 6

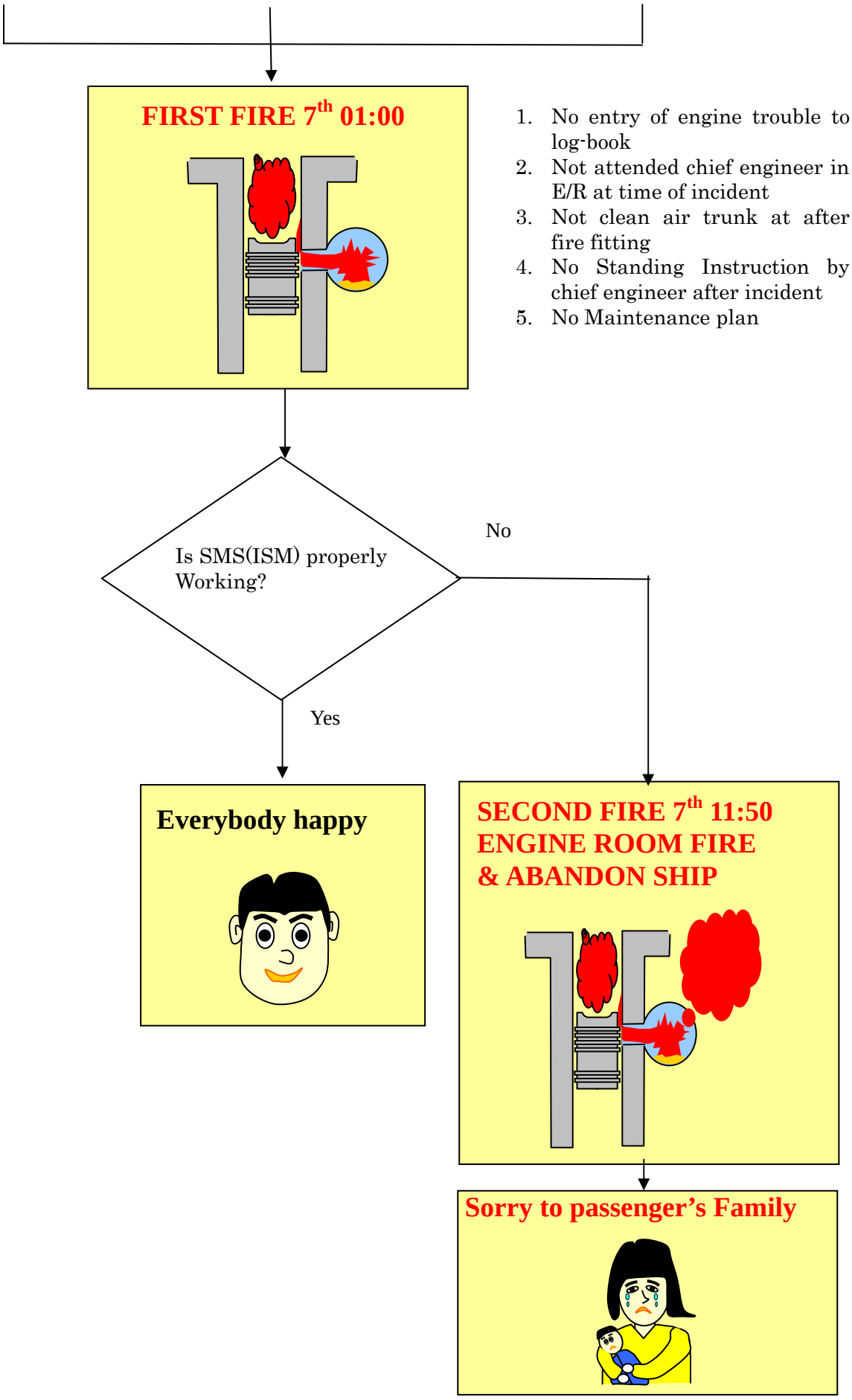
1	**Date:** 2004/2/26	**Studied by:** SAKAGUCHI Kazuaki, JICA Ship Management	
2.	**Gross Tons:**	**Age:**	**Route:** Iloilo - Manila
3.	**Type of Ship:** ☐Container, ■Passenger ferry(pns), ☐RO-RO, ☐Cargo, ☐Tanker		
4.	**Certificated:** ISO N Y ( ), ISM N Y (ABS)		
5	**Overall Remarks:**	1. The attitude of the crew was excellent. They greeted all the passengers warmly. It must give a good impression to the Company 2. Emergency (muster station) instruction in the each cabin has been posted and can be clearly understood. 3. The company's staff and the vessels crew were very interested in the survey on board the vessel. They showed strong desire to learn ship-management. However, specialized crew is lacking for maintenance of ship and time of maneuvering at docking. 4. Emergency (Muster station) instruction in the each cabin has been posted and can be clearly understood.	
6	**Detailed Observations:**		
	6.1	**Liferings** No lights, smoke on the lifering at stern area.	
	6.2	**Rescue boat type** 1. SOLAS required hull shape should be applied. 2. Davit type to be changed. 	
	6.3	**Liferaft** No emergency lights at instruction of liferafts operation position and sea face. 	

	6.4	**Quick release liferings on the wing bridge** Direction of gravity dropping to be changed 	
	6.5	**Ship's drawings and instruction in the E/R** Sea-trial record of main engine can not be found. Therefore, can't analyze engine running condition. Indicator for taking draw curve must be supplied.  	
	6.6	**Ventilator shut down handles** Handle position of damper for open/close to be marked and direction of handle position to be conceded at next modification.  	
	6.7	**Air vent pipe head of tanks on deck** All AEP head to be identified with paint and oil spill tanks of all FOT to be installed.  	
	6.8	**Ashtray on the promenade deck** Ashtray should be provided. Found lot of cigarette put on deck and inside of FOT air vent pipe tray.	

Appendix 1.2 Engine fire and total lost

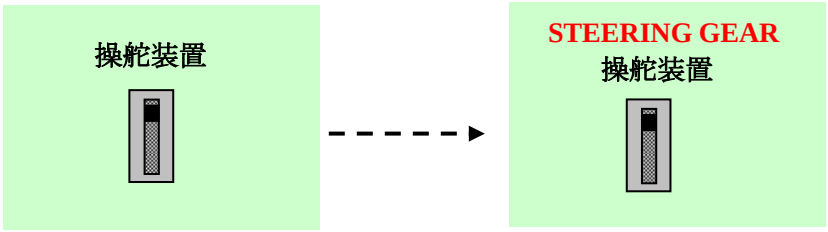
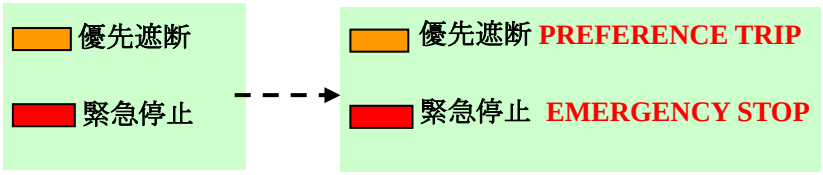
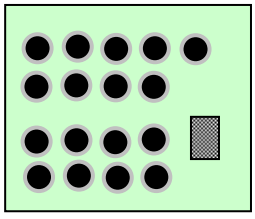
Ship name:	M/V "YYYYYYYY"		
Date of inspection:	7－10. July.2005		
Inspection was done:	Zamboanga,		
Nationality:	Republic of the Philippines	Class :	IACS Class
Purpose for Inspection :	Cause of fire and total loss	Authorization Class for I.S.M. :	IACS Class
Purpose for participation:	1. Assigned as a consultant for a special enforcement of MARINA.		
Cause of the accident:	Fire took place at starboard Scavenging Air Trunk of the Main Engine by Combustion Gas blow-by and fire extended to engine room and accommodation area. See flow chart of mechanism of combustion gas blow-by.		
History of fire:	1. AT 01：00 on 7th JULY 05, a fire took place near of the no. 1 cylinder of the starboard main engine was stopped about 1 hr. engine crew stopped a fire and started the main engine. 2. At 11：50 same day Off Siocon Cebu, the fire took place again at the Scavenging Air Trunk trunk. the engine crew fight the fire, but 4 crew were burned then escaped from the engine room. 3. Many passengers told as a witness that they saw white smoke coming out from the funnel and it changed black during the first stage of the fire. 4. Emergency shut off button was worked. 5. Black-out tool place and it stopped the announcement to the passenger. 6. All damper of ventilation were ordered to be closed. 7. Abandoned ship was ordered and executed properly.		
Non Conformity:	1. No record at the engine log book regarding the first fire took place and the final fire. 2. Duty engineer did not report to the chief engineer and the ship has no standing instruction. 3. Engine crew of 04-08 duty did not report about the first fire and their extinguishing to 08-12 duty. 4. Inspection for normal running of critical machinery was not done. 5. Non conformity for the Ship Equipment Maintenance Plan 6. Non conformity for SMS books, such as Result of Sea-Trial record. 7. Non conformity for Internal Audit. 8. Manpower, material are not sufficient. Non conformity for education, training, and drills.		

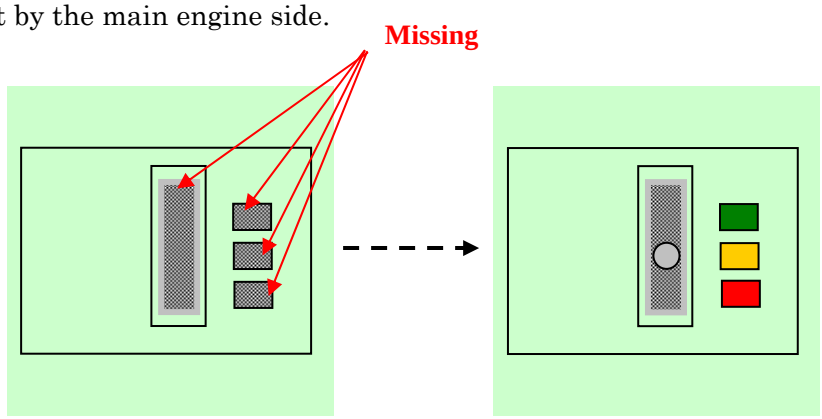
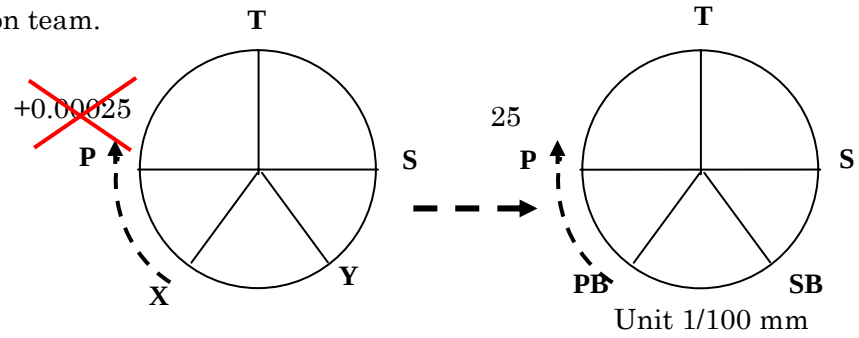

PUMPING ACTION OF LUB. OIL DUE GAP ?
NOT FOLLOW-UP MAINTENANCE PLAN
LOT OF CYL. OIL CONSUMPTION ?
Lot of oil & sludge
INDICATOR CARD TO BE TAKEN
No record
Low press. max.
High exh gas temp.
LEAKAGE NOZZLE TIP
LOW HEATING TEMP.
WEAR DOWN LINERS, POSTON RING GROOVES & PISTON RINGS etc

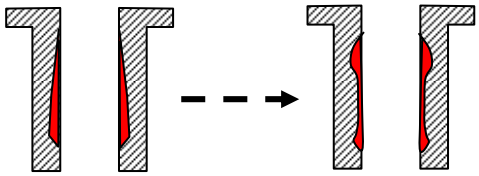
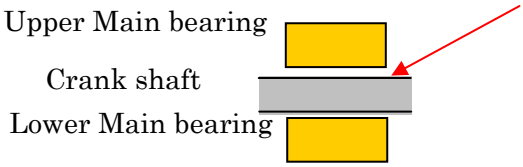
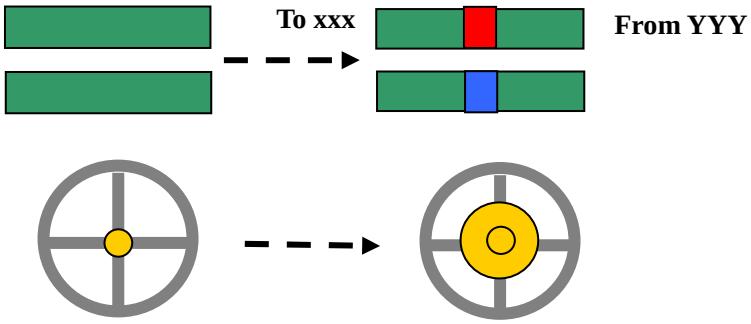

FIRST FIRE 7th 01:00
1. No entry of engine trouble to log-book
2. Not attended chief engineer in E/R at time of incident
3. Not clean air trunk at after fire fitting
4. No Standing Instruction by chief engineer after incident
5. No Maintenance plan
Is SMS(ISM) properly Working?
No
Yes
Everybody happy
SECOND FIRE 7th 11:50
ENGINE ROOM FIRE
& ABANDON SHIP
Sorry to passenger's Family

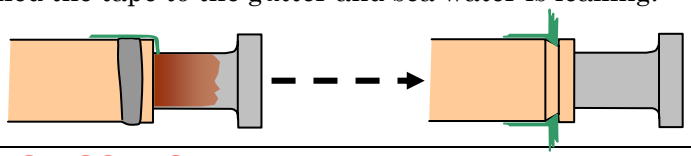
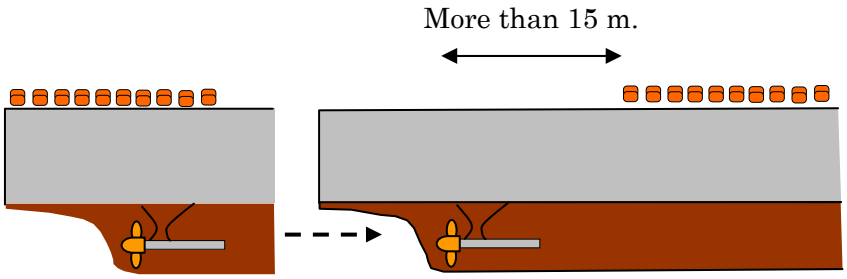
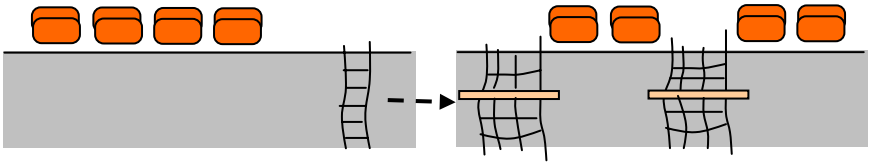
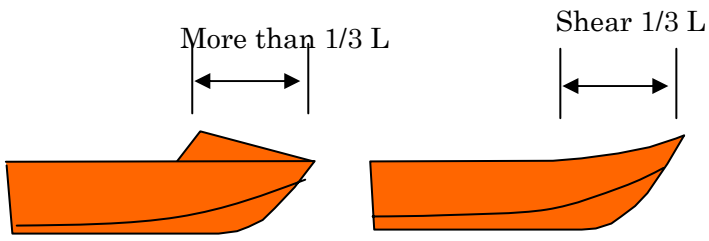
Appendix 1.3 Special inspection of xxx company

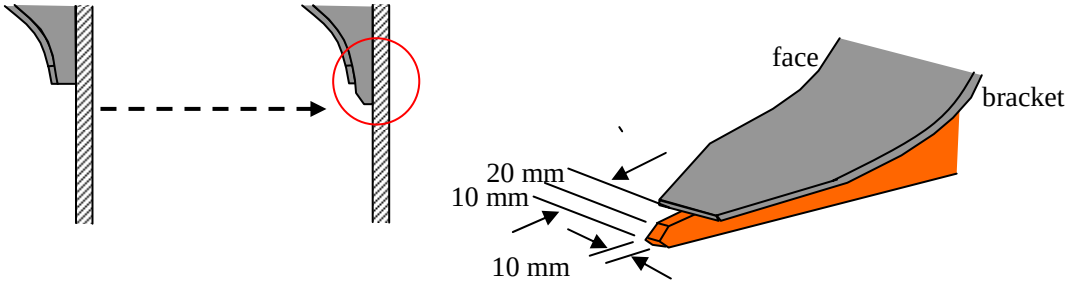
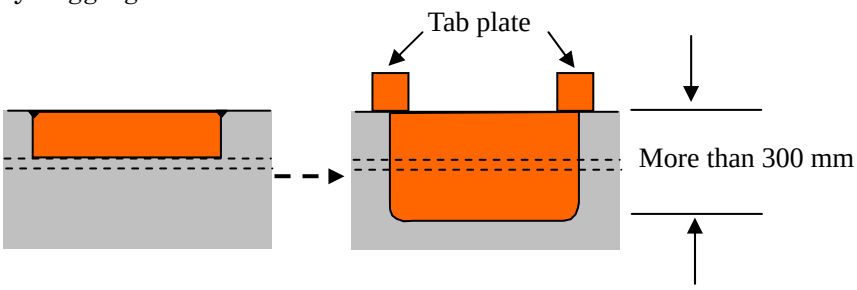
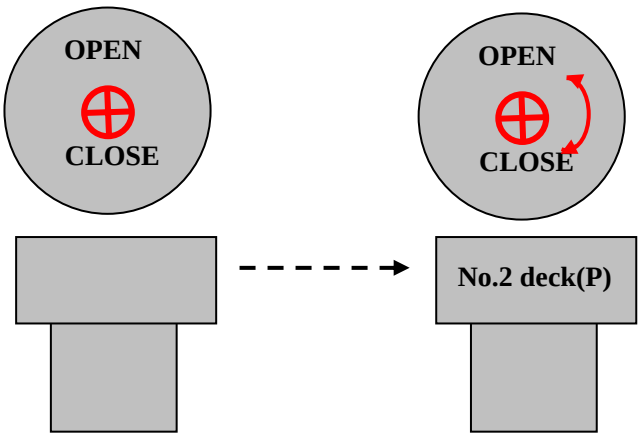
Ship name :	M/V "XXXXXXXXXXXXXXX"		
Date of inspection :	27. July. 2005		
Inspection was done :	Port of Manila		
Purpose for Inspection :	Special Inspection	Consultant : Study team	Mr. Kazuaki Sakaguchi
Purpose for joining special Inspection :	1. Owner a fire accident and a total loss by non conformity of the ISM system it is the reason why special inspection was required and study to inspect all company ships was done. 2. Administrator of Marina ordered Mr. Sakaguchi to join special inspection team as a consultant.		

No.	Items of Non Conformity
1.	**CRITICAL NON CONFORMITY** The name plates of the main switch board in the engine control room were written only in Japanese. There were no translation in English. No engineer can't identify a starter. It's better to translate them in English. Ex.: 
2.	**CRITICAL NON CONFORMITY** Engineer can't identify which is preference trip or emergency stop on the main switch board. Ex.: 
3.	**CRITICAL NON CONFORMITY** Emergency shut off and alarm panel of the engine control room are out of order. Engineer can't stop the main engine for emergency. Ex.: 
4.	**MAJOR NON CONFORMITY** Sea water pumps have never been overhauled

No.	Items of Non Conformity
5.	**MAJOR NON CONFORMITY** There are too much oily bilge.
6.	**CRITICAL NON CONFORMITY** Engineer is cooling overheated lubricator oil pump attached to the generator engine by pouring sea water.
7.	**MAJOR NON CONFORMITY** Engine room is very, very dirty.
8.	**CRITICAL NON CONFORMITY** There is a missing operating handle of the engine control panel. Engineer starts and operates it by the main engine side. Ex.: 
9.	**CLITICAL NON CONFORMITY** Data of main engine deflection are not correct. Scale of dial gauge is 1/100 mm. Engineer would have made fictional data, because the notice was given by the special inspection team. Ex.: 

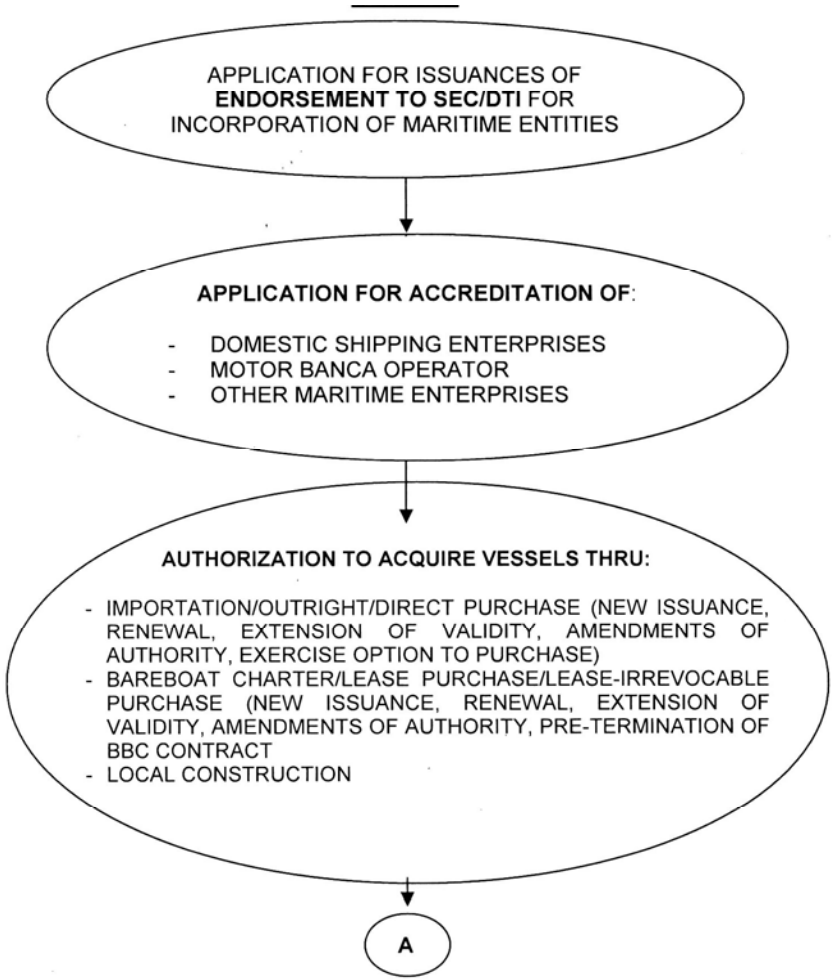
No.	Items of Non Conformity
10.	**CLITICAL NON CONFORMITY** Measurement of main engine liner wearing figure is unreliable and fictional. Maximum wearing part should be upper part of the liner and 2nd should be lower part of it. Most of the middle part of it should be small. Ships record shows that the lowest part of it is big wearing. Engineer would have made fictional data, because the notice was given by the special inspection team. 
11.	**CRITICAL NON CONFORMITY** Measurements of the distance of main bearing are fictional and unreliable. There are no same figure for fore and after part of the main bearing Ex.: fore part 0.28mm, after part 0.28mm. Ship has no record of the measurement, and special inspection team gave a notice to SLI, then SLI requested to postponed the inspection, and the special inspection team gave 1 week to SLI. They would have made fictional data. Ex.: 
12.	**MAJOR NON CONFORMITY** Pipelines in engine rooms are not painted properly, engine crew can't identify the purpose of the lines, and no name plates set to them. Familiarization is not possible in engine room. Ex.: 
13.	**MAJOR NON CONFORMITY** Boiler has not been used for a long time because of bad condition. Inspection record of the class is using.

No.	Items of Non Conformity
14.	**CRITICAL NON CONFORMITY** Rust comes to the draining gutter of edge part of the sleeve of propeller shaft because engineer applied the tape to the gutter and sea water is leaking. Ex.: 
15.	**CRITICAL NON CONFORMITY** Position of Life rafts re not correct. Emergency lights and instruction board for them are not installed. Life raft should be located more than 15 m from the propeller position. 
16.	**CRITICAL NON CONFORMITY** Position of the rope ladders for abandon ship is not correct, the size is too small and the number is not enough. The rope ladder is not for many passenger, but only for one passenger. And also the rope ladder has no anti turning over spreader. 
17.	**CRITICAL NON CONFORMITY** The ship has no life boats. 
18.	**MAJOR NON CONFORMITY** Throwing direction of life buoy is not correct. 

No.	Items of Non Conformity
19.	**CRITICAL NON CONFORMITY** The ship has no books such as instructions and sea trial record.
20.	**CRITICAL NON CONFORMITY** Brackets of the main structure at after part of hull are not in good shape, it cause cracks at each part of the brackets. 
21.	**CRITICAL NON CONFORMITY** Renewal size of gunnel part of the shell plating, especially at mid ship, is not enough and not in good shape Welding of Tab Plate is not applied and there is a possibility of occurring many cracks by hogging. 
22.	**MAJOR NON CONFORMITY** There are no marks of arrows showing the direction to OPEN and CLOSE on the Ventilators head. There is no mark of the name of the damper. 

APPENDIX 2 (APPENDIX TO CHAPTER 5)

Appendix 2.1 STAGE 1 – CONSTRUCTION/ACQUISITION OF DOMESTIC VESSEL



ISSUED DOCUMENT	OFFICE RESPONSIBLE	REFERENCE
ENDORSEMENT	MLAO	-
ACCRE. CERT.	DSO	MC 79
ACCRE. CERT.	DSO	MC 79-A
ACCRE. CERT.	DSO	MC 9
LETTER APPROVAL	DSO	MC 104/121 124/124-A
LETTER APPROVAL	DSO	MC 104/121/ 124/124-A
LETTER APPROVAL	SRO	MC 104

ISSUED DOCUMENT	OFFICE RESPONSIBLE	REFERENCE
INSPECTION REPORT	MSO	MC 104
INTERNAL MEMO	MSO	MC 104
INTERNAL MEMO	MSO	MC 104
APPROVED PLAN	SRO	MC 89
INSPECTION/ SURVEY REPORT	SRO	-
CERTIFICATION	SRO	-

Appendix 2.2 STAGE 2 – OPERATION (REGISTRATION / DOCUMENTATION / LICENSING/MAINTENANCE / FRANCHISING

ISSUED DOCUMENT	OFFICE RESPONSIBLE	REFERENCE
ADMEASUREMENT REPORT	SRO	MC 89
TONNAGE MEASUREMENT CERTIFICATE/ ITC, 1969	SRO	-
CERTIFICATE OF OWNERSHIP/ CERTIFICATE OF VESSEL REGISTRY	MSO	MC 90
NEW CO/CVR	MSO	-
COASTWISE LICENSE/BAY & RIVER LICENSE/ PLEASUSE YATCH LICENSE	DEPUTIZED TO PCG	MC 110

ISSUED DOCUMENT	OFFICE RESPONSIBLE	REFERENCE
AUTHENTICATED LOADLINE CERTIFICATE	SRO	-
ACCREDITATION CERTIFICATE	MSO	MC 108
AUTHENTICATED STABILITY CERTIFICATE	SRO	-
CI/ICI/SCI	DEPUTIZED TO PCG	MC 89
ACCREDITATION CERTIFICATE	MSO	MC 155
DOC/SMC	MSO	MC 143/159

ISSUED DOCUMENT	OFFICE RESPONSIBLE	REFERENCE
ACCREDITATION CERTIFICATE	MSO	MC 165
CLASS CERT.	DELEGATED TO CLASS SOCIETY	MC 124
FINANCIAL EVALUATION	DSO	MC 161
PRESCRIBED RATE	DSO	MC 62/92/153
ISSUED FRANCHISE (CPC/PA/SP)	FO	MC 161
CANCELLED CPC	FO	MC 161
LETER APPROVAL	DSO	-
CERTIFICATE OF DELETION	MSO	MC 90
LETTER APPROVAL	SRO	

(Source: MARINA, Revised Service Guide Manual)