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論 文

Comparative Analysis of Maritime Safety Administrative System in the APEC Region

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Abstract

This paper has dealt with the efficiency of maritime safety administrative system in the APEC region, under the hypothesis that officient maritime safety and marine environment

Many factors affect administrative structures, which generate various types of administration. The factors include social, economical and political factors. Further, the addition of historical factors to these factors makes it tougher to draw out an optimal model for maritime safety administration. In this regard, the result of this study will be within the extent of volition capable of accepting it under the existing maritime safety administration system.

The result of the study to help APEC member states(economies) to compare their own system with those of other economies and finally to help to improve their maritime safety administrative structure for safer shipping.

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1. Introduction

The dominance of Asia Pacific region in the world shipping today that accounts for 21 percent of total world fleets in terms of national flags demands a corresponding high level of commitment to maritime safety in the region.

While there has been a growing effort to secure maritime safety and marine environment protection, relatively little attention has been given to how effectively governmental agencies fulfill their flag or port State responsibilities for the implementation of international treaties and standards. As an efficient administrative support from the government will enhance maritime safety and marine environment, efficiency of that support needs to receive a commensurate degree of attention.

In this regard, this paper deals with the findings of the efficiency and structures of maritime safety administrations across the APEC region for the safer and cleaner shipping in the region. In general, administrative organizations encompass all kinds of administrative organs that are vertically and horizontally organized under the administrative head to implement development functions such as policy development, regulation, planning and enforcement in a unified and effective manner for the development of a nation and to achieve welfare of a society. The structures of maritime safety administrative organs differ across the region and their diversity and complexity may make it nonsense to measure the efficiency of administrative structures in a straightforward way. Many agree, however, that organizations are goal-oriented and have systematic structures and resources to achieve their goal.

Although the interaction of many factors such as social, economical, political and historical factors may make it tougher to draw out an optimal model for maritime safety administrations in each respective country, the result of the study will be within the extent of volition capable of accepting it under the existing maritime safety administration system. In addition, the suggestion of this study will help APEC member states(economies) to compare their own system with those of other economies and finally to help to improve their maritime safety administrative structure.

2. Data and Methods

To achieve the objectives of the study, a lot of data and information in both qualitative and quantitative forms were collected through a questionnaire survey, interview, document review and consultation. Although the APEC is composed of 21 member economies, this study excluded some countries such as Papua New Guinea and Brunei Darussalam in the analysis due to insufficient data and materials.

Questionnaire survey was used to obtain baseline information on the specific administrative structures of maritime

safety and marine environment protection. In this study, two types of questionnaires were developed. Type A questionnaires were distributed to government officials who were working with maritime safety administrations, while type B questionnaires were distributed to stakeholders who were involved and interested in maritime safety from commercial sectors. We expected that this would give us a good understanding of not only how efficient the suppliers of maritime safety services see themselves, but also how efficient their clients believe they are.

Several ways were introduced to secure the validity and the reliability of the questionnaire survey. In order to tackle the problem of validity, we developed questions to be as clear and concise as possible to avoid misinterpretation and to permit short (yes/no) response.

Given the selected limited number of respondents, the key informant method' was employed in gathering each economy's statistics on maritime safety. The research questionnaire were made in accordance with this method and sent to the officials in charge in the government agencies and private groups, businessmen and private experts who are involved in the maritime safety and marine environment in the APEC economies.

In case there were incomplete or unclear responses due to the low return rate of respondents, those were completed through the interview or other instruments. The economies invited to interview survey for such purposes are Australia, New Zealand, United States, Mexico, Taipei China, China, Japan, Thailand and Korea.

A total of 138 respondents participated in the questionnaire survey. Among them, 59 responses came from insiders of maritime safety administrations and 79 came from outsiders. Response rate was 45 per cent, based on a total of 310 questionnaires sent out by email, regular mail or fax.

Most respondents to the questionnaire survey had worked with or in the maritime safety sector for more than 10 years. The average period of government officials in the maritime sector is 16 years, and that in commercial sector is 14 years.

For further understanding the structure of administrations of each respective APEC member economies, we tried to collect organization, but we failed to obtain organization charts from Papua New Guinea, Peru and Russia.

3. Key Findings

The comparative analysis was undertaken based on some particular factors such as type of administration, concentration of maritime safety functions and responsibilities in the government. These factors were selected by the respondents to be important components to measure the efficiency or compare the administrative systems.

1) Type of Administration

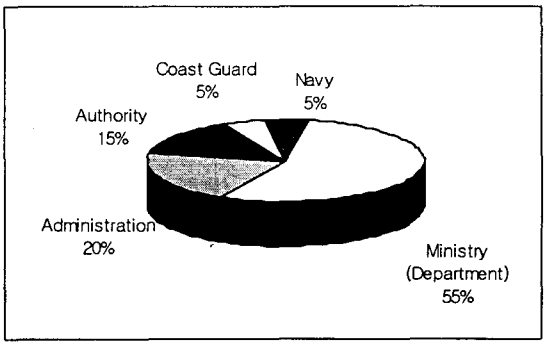
The maritime safety administrations of the APEC member economies can be grouped into three types: Ministry (Department) type, Agency type, and Military (including Marine Police).

Among 20 APEC member economies except Papua New Guinea, 11 economies take type of Ministry (Department). This Group includes Brunei, Canada, Hong Kong, Indonesia, Japan, Korea, Malaysia, Mexico, Peru, Thailand, and Vietnam. In general, Ministry type takes the hierarchy like 〈Ministry Bureau Division〉.

Australia, China, New Zealand, Philippines, Russia, Singapore, Chinese Taipei takes type of Agency. Agency type includes Authority system and Administration system.

Chile, and USA are under the military (Marine Police) system. For Chile, The Navy is solely responsible for maritime safety activities, while in the USA, Coast Guard is responsible for maritime safety services. In addition, Hong Kong, Canada, Korea, Philippines have given some of maritime safety responsibilitiesto marine police/coast guard/navy.

In Canada, Committee system is under operation. The Marine Safety National Management Committee is comprised of several ministries and is responsible for long- term plan on maritime safety.



〈Figure 1〉 Type of administrations

2) Concentration of Maritime Safety Function and Responsibilities

The study focused on identifying whether maritime safety functions (including marine environment protection) are concentrated in one administration or diffused in several administrations.

In case all the maritime safety functions

〈Table 1〉 Type of administrations

Types	Economies	%
Ministry (Department)	Brunei, Canada, Hong Kong, Indonesia, Japan, Korea, Malaysia, Mexico, Peru, Thailand, Vietnam (11 Economies)	55%
Administration	China, Philippines, Russia, Taipei (4 Economies)	20%
Authority	Australia, New Zealand Singapore (3 Economies)	15%
Coast Guard	USA (Japan) (1 Economy)	5%
Navy	Chile (1 Economy)	5%

Cf. Papua New Guinea excluded

are concentrated in single administration, the administration will enjoy the merits of coordination, and consistency in policy development and planning, and faster decision making.

In the APEC economies, 10 economies integrate the roles and responsibilities of maritime safety into single administration. Australia, Chile, China, Indonesia, Japan, Malaysia, New Zealand, Peru, Russia and USA are included in this category. While, 9 economies disperse the responsibility of maritime safety into a couple of administrations. Canada, Hong Kong, Korea, Mexico, Philippines, Singapore, Thailand, Taipei and Vietnam are included in this category. Among them, Canada, Japan, Korea, Singapore and Vietnam have three separate administrations respectively. Japan and Korea demonstrate a special case. These two economies have apparently an integrated administration at the level of Ministry, but different agencies perform sectionally governments maritime safety functions. For Korea, Maritime Police who is responsible for SAR (search and rescue) and oil spill response is also charged with.

The result of survey shows that some of the economies with dispersed administrations are facing problems in coordination between related administrations.

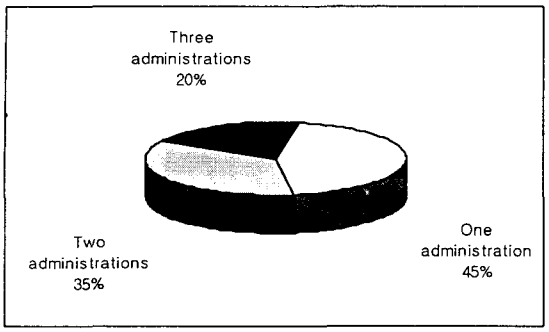
Among the functions of maritime safety and marine environment protection, oil spill response, SAR (search and rescue) and salvage are the functions that are dispersed into several different administrations. For most cases, Coast Guard or Marine Police takes secondary responsibility of maritime safety activities, for example, SAR or oil spill response. Notably, Philippines Coast Guard is responsible for greater portion of maritime safety activities. It is responsible for investigation of marine accidents, SAR, salvage, port State control, flag State, and oil spill response.

In a few economies, coast guard or the administration in charge of onshore environment is involved in marine environment protection. Taipei, Korea, New Zealand, Philippines, and Vietnam fall under this category.

〈Table 2〉 Concentration of maritime safety function and responsibility

Category	Economies	%
One administration	Australia, Chile, China, Malaysia, Indonesia, New Zealand, Peru, Russia and USA (9)	45%
Two administrations	Brunei Darussalam, Hong Kong, Japan, Korea, Mexico, Philippines, and Thailand (7)	35%
Three administrations	Canada, Singapore, Taipei, Vietnam (4)	20%
Total	20 Economies	

Note : Papua New Guinea is excluded



〈Figure 2〉 Concentration of maritime safety responsibility

3) Core Functions in Maritime Safety Activities

As mentioned before, maritime safety activities can be defined in several different ways. For the sake of consistency in the analysis, this study adopted the classification used in the Canadian Report.

In this study, maritime safety activities were classified into 5 groups: safety assistance, inspection, navigational aids, pollution, and international cooperation and others. These groups were again classified into 20 functions (see Table 3). Through the questionnaire survey, the study investigated what activity is most important for their government by asking How much priority do you think your government places on policy with respect to the following maritime safety activities?

Respondents comprised of both government officials and stakeholders regard such services as pollution prevention, provision of oil spill response (including HNS), administration of safety regulation, passengers safety and implementation of international maritime conventions as most important activities, while safety culture, pilotage, port State control are regarded to be important by the government officials alone. Especially, it needs to be noted that the functions of marine environment protection and implementation of international maritime conventions are perceived to be very important by both the insiders and by outsiders.

〈Table 3〉 Responsible agencies of maritime safety in individual economies

Economies	Responsible Agency
Australia	Australian Maritime Safety Authority
Brunei Darussalam	Marine Department Navy (marine pollution)
Canada	Directorate General of Marine Safety under Ministry of Transport Canadian Coast Guard (marine pollution, SAR) DFO (marine pollution)
Chile	General Directorate of Maritime Territory and Merchant Marine (DIRECTEMAR) of Navy

China	Maritime Safety Administration Salvage by Salvage Bureau
Hong Kong	Marine Department under the Ministry of Finance Marine Police under the Ministry of Administration (SAR)
Malaysia	Maritime Department
Indonesia	Direcrorate General of Sea Communication under the Department of Communications and Telecommunications SAR by DGSC and SAR
Japan	Maritime Bureau Coast guard (SAR, marine pollution, navigational aids)
Korea	Maritime Safety Bureau Marine Police (SAR, marine pollution, salvage)
Mexico	General Direction of Merchant Marine Navy (SAR, salvage)
New Zealand	Maritime safety Authority SAR by MSA, Civil Aviation Authority, Police, Defense Force.
Peru	Bureau (ENAPUS) of Ministry of Transportation, Communication, Vinienday Construction
Philippines	Maritime Industry Authority (MARINA) Coast Guard (marine accidents, SAR, salvage, PSC, FS, marine pollution)
Russia	Maritime Administration under Ministry of Transport
Singapore	Maritime and Port Authority (Safety) Public Coast Guard (SAR) Ministry of Environment (marine pollution)
Thailand	Harbor Department under Min. of Transport and Communications Navy (SAR, navigational aids)
USA	Coast Guard MARAD (maritime labor and training)
Vietnam	National Maritime Bureau Vietnam Marine Police (SAR) Ministry of Science, Technology and Environment (marine Pollution)

On the other hand, salvage, vessel manning services, vessel survey, vessel classification, VTS and reporting system are regarded to be less important activities.

When we compare the responses from insiders with those from outsiders (clients) about the importance of individual maritime safety functions, some interesting findings were identified. First, there was a substantial difference in some functions between two groups, even though they are not controversial. For instance, vessel manning service was

assessed to be little important for public administration by outsiders. It is assumed that outsiders regard the vessel manning service as the function that can be or should be undertaken by commercial sector, while insiders regard it to be undertaken by public sectors. Secondly, insiders tend to put greater importance on maritime safety functions than outsiders do. It can be interpreted that insiders are well aware of the importance of maritime safety and therefore it reflects the unwillingness of public sectors to privatize the role of public sectors. In this study, it is hard to tell what it should be, but at least we can read what the outsiders have in their mind.

〈Table 4〉 Comparative importance of individual maritime safety functions

Maritime Safety Activities		Total	Insiders	Clients
Safety Assistance	Administration of safety regulation	○	●	○
	Investigation and reporting of marine accidents	○	●	○
	Vessel manning services	×		☒
	Passengers safety	○	●	○
	Education and training of seafarers		○	
	Marine search and rescue	○	●	○
	Salvage	☒	☒	☒
Inspection	Vessel registration			
	Port State control inspections		○	
	Flag State inspections	○	○	○
	Vessel survey	×		×
	Vessel classification	×	×	
Navigational Aids	VTS and reporting system	×		×
	Provision and maintenance of navigational aids	○	●	
	Pilotage		○	
Pollution	Provision of oil spill response (including HNS)	●	●	●
	Pollution prevention	●	●	●
International cooperation and others	International and regional Cooperation program (including IMO. ILO)	○	○	○
	Implementation of international maritime conventions	●	●	●
	Promotion of safety culture		○	

● : highly important, ○ : important, ☒ : not important, × : less important

4) Privatization of Maritime Safety Functions

According to the results of the survey, some of maritime safety functions have already been privatized. Among 14 safety activities classified in this study, functions of vessel manning services, vessel classification, salvage, and pilotage have already been privatized in a number of economies. The main reason for such privatization comes from high level of technical specialty in some functions, particularly such as vessel classification and marine pilotage.

Vessel classification has been privatized in almost all individual economies and is undertaken mostly by Classification Society. Vessel manning service is undertaken by commercial sector in Australia and Canada, while salvage is undertaken by private company or government agencies in many economies such as Chile, Thailand, New Zealand, and USA and pilotage is undertaken by private associations in Hong Kong, New Zealand, Korea and Philippines.

5) Role of Coast Guard, Marine Police and Navy in the Maritime Safety Activities

For some economies, Coast Guards (including Marine Police, Navy) play active role in undertaking maritime safety activities and marine environment protection. Mostly, they undertake a portion of responsibility and roles of maritime safety and marine protection, while USA Coast Guard, Chilean Navy and Japanese Coast Guard are entirely responsible for their economys maritime safety and marine environment protection services.

Coast Guards, Marine Police and Navy are in some sense very similar in organizational structure. They have military or quasi-military organizational structure. Such organizations have merits as followings: faster response to emergency, abundant manpower and equipment resources, and strong enforcement. On the other hand, they are sometimes criticized to be inefficient

〈Table 5〉 Privatized activities of maritime safety

Economies	Privatized Activities
Australia	Vessel manning services, Salvage, Vessel classification
Canada	Vessel manning services, Vessel classification
Chile	Salvage, Vessel classification
China	Vessel classification
Thai	Salvage, Vessel classification
Hong Kong	Vessel classification, Pilotage
Indonesia	Vessel classification
Korea	Vessel classification, Pilotage
New Zealand	Salvage, Pilotage, Vessel classification
Philippines	Pilotage, Vessel classification
USA	Salvage, Pilotage, Vessel classification

because they are too bureaucratic, unwilling to coordinate with other agencies and difficult in making access by clients.

〈Table 6〉 Role of coast guard, police and navy in maritime safety

Economies	Coast Guard	Marine police	Navy
Canada	SAR, Oil spill response		
Chile			Primary agency
Hong Kong		SAR	
Japan	SAR, Oil spill response, Navigational aids		
Korea		SAR, Oil spill response, Salvage	
Mexico			SAR, Salvage
New Zealand		SAR	
Philippines	Marine accidents, SAR, PSC, Salvage, FS, Oil spill response		
Singapore	SAR		
Thailand			SAR, Navigation aids
Taipei	SAR, Oil spill response		
USA	Primary agency		
Vietnam		SAR	

6) Marine Environment Protection

In this study, the scope of marine environment protection is limited to the oil spill response. Marine environment protection is ever increasing in the maritime activities. And this study focused to see what agency is responsible for oil spill in each economy.

In 14 economies of 21 APEC member economies, oil spill response is undertaken by the same administration responsible for maritime safety activities. In the remaining 7 economies, marine environment protection is carried out by other administrations. Taipei and Vietnam have different administration (ministry), namely, the ministry who is responsible for onshore environment, to undertake oil spill response. Although their oil spill response is carried out by the Coast Guards, Korea and Philippines have similar system where ministries contain the Coast Guard.

In Canada, Singapore and New Zealand, responsibility of marine environment protection is shared by the administration responsible for maritime safety and other administration, mostly the environment ministry.

〈Table 7〉 Economies that have different administration for marine environment protection

Economies	Agency Responsible for Oil Spill Response
Korea	Maritime Police and Private companies
Philippines	Coast Guard
Taipei	Coast Guard and Environmental Protection Administration
Vietnam	Ministry of Science, Technology and Environment

7) Policy and Enforcement

It is important to investigate whether policy and enforcement is undertaken in the same administration. In most economies, policy and enforcement of maritime safety activity is undertaken in the same administration.

〈Table 8〉 Policy and Enforcement by Different Administrations

Economies	Policy and Enforcement
China	Policy by the Ministry, Planning and enforcement by MSA Policy, planning, implementation by MSA (Inspection, Oil)
Chinese Taipei	Policy by the Ministry of Transportation and Communications
Japan	Maritime safety functions are shared by Ministry of Land, infrastructure and Transport and Japan Coast Guard
Korea	Marine Police Agency has no policy function for oil pollution
Mexico	SAR (Navy)
New Zealand	MOT has policy function for some functions
Philippines	Coast Guard has no policy function
Russia	Policy by the Ministry Enforcement by the Administration
Taipei	Policy by the MOTC
Vietnam	Policy by the MOT Planning and Enforcement by NMB

8) Other Findings

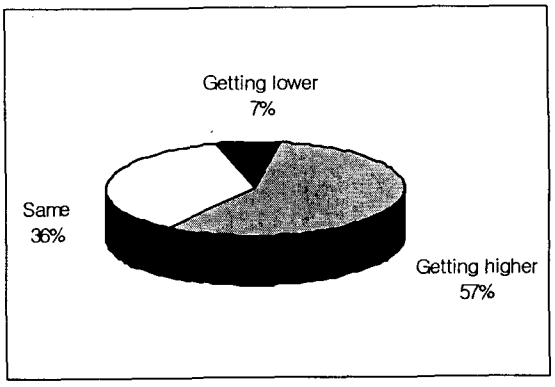
It is notable that Canada and Vietnam, respectively has an administrative unit for STCW.

In addition, most economies have institutions for marine education and training. Most of them are funded by the government. However, Brunei Darussalam, Malaysia and Taipei is not known whether they are government-funded or not, due to unclear response to the survey.

9) Priority of Maritime Safety in Government

The importance of any sector in the government can be measured in qualitative and/or quantitative ways. Investigating the trend of government budget for maritime safety sector can be one of straightforward and quantitative way. In the beginning we attempted to use this method, but it proved to be a difficult job to get budget data for a relatively long period in a number of economies. At least 5 10 year statistics would be needed to identify a certain trend. Further, in case an economy has two and more maritime safety adminis trations, it would be a troublesome task to aggregate each administrations budget. For these reasons, we used questionnaire survey by asking What is the political priority of maritime safety administration in the government?

Among 138 respondents, 57 per cent answered the importance of maritime safety in the government is getting higher, while 7% of respondent answered it is getting lower. The remaining 36% answered the priority of maritime safety will remain the same as before. This result shows that the portion of insiders recognizing that the priority of maritime safety would be getting higher was greater than the portion of outsiders.



〈Figure 3〉 The importance of maritime safety in the future.

The analysis across the economy shows that two thirds of APEC member economies responded that the importance of maritime safety in their government is getting higher, whereas there was no member economy that answered the importance of maritime safety is lowering. One third of total economies including Indonesia, New Zealand and Peru answered the priority of maritime safety will remain the same as before.

We also identified any possible difference between insiders and outsiders across the economy. Prominently, Australia and Canada shows a conflicting result: insiders responded the importance of maritime safety in their economies is

getting lower, while outsiders responded it is getting higher. It can be interpreted that the demand for maritime safety services is likely to increase in the future, whereas there is a concern among government officials over the lowering government priority.

〈Table 9〉 Priority of maritime safety in the government

Classification	Insiders	Outsiders	Total
Higher priority	32(65%)	39(52%)	71(57%)
Same	14(29%)	31(41%)	45(36%)
Lowering priority	3(6%)	5(7%)	8(7%)
Total	49(100%)	75(100%)	124(100%)

4. Assessment of Efficiency

138 respondents from 21 economies answered this questionnaire. How efficiently the respondents in individual economies assess their maritime safety administration was investigated by asking Do you think your economy's maritime safety administration is efficient in general?

As 〈Table 10〉 states, more than half of 20 APEC member economies answered to have efficient maritime safety administration, while 7 economies responded to be difficult to answer. It is notable that an economy is not necessarily assessed its maritime safety administration to be not efficient. One interesting fact is that China and Chinese Taipei show different results with the results of assessment of individual efficiency attributes. In conclusion, it can be said that maritime safety administrations in the APEC member economies are not inefficient.

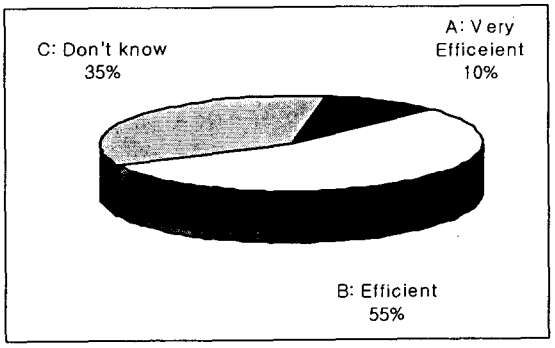
Efficient Group includes Australia, Canada, Chile, Hong Kong, Indonesia, Malaysia Mexico, New Zealand, Papua New Guinea, Singapore, Chinese Taipei, United States and Vietnam.

There is an interesting finding enough to draw an attention. The answers from the outsiders (clients) are less positive toward the efficiency of the maritime safety administration than the insiders (mostly government officials). This trend appears in most economies except in Indonesia, Peru and United States. It can be interpreted in two ways. The one is that the outsiders usually concern about short term and revealed effect of public investment on the maritime safety, while insiders might consider unrealized effect of the public investment. The other is that the provision of maritime safety service is not so satisfactory from the viewpoint of clientoriented services.

〈Table 10〉 Efficiency in general

Economies	Assessment of efficiency*			Total Losses Rate
	Total	Insiders	Outsiders	
Australia	B	B	B	0.004
Canada	B	B	B	0.010
Chile	B	B	B	
China	C	B	D	0.002
Hong Kong	A	A	A	0.003
Indonesia	B	C	B	0.006
Japan	C	B	C	0.005
Korea	C	C	C	0.007
Malaysia	B	B	B	0.004
Mexico	B	B	C	
New Zealand	B	B	B	0.008
Papua New Guinea	B	B		
Peru	C	C	B	0.150
Philippines	C	B	C	0.004
Russia	C	C		0.007
Singapore	A		A	0.002
Chinese Taipei	B	B	C	0.010
Thailand	C	C	C	
U.S.A	B	B	A	0.045
Viet Nam	B	B		0.001

* A: Greatly efficient, B: Efficient, C: Dont know, D: Less efficient, E: Not efficient
Source : Total losses from World Casualty Statistics 2000 published by Lloyds Register)



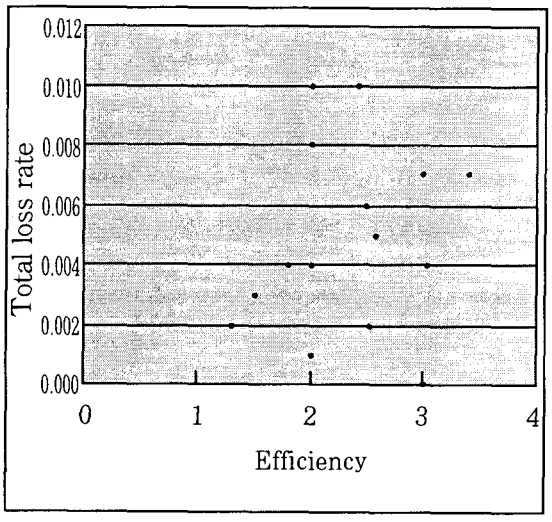
〈Figure 4〉 Efficiency in general

Total loss statistics from World Casualty Statistics 2000 published by Lloyds Register refer to propelled sea-going merchant ships of not less than 100 G/T. And it includes total losses by registration, not total losses by the nationality of ship owners. Number of total ships was cited from Canadian Project published in 1999 and refers to ships of 300 G/T and over. Total losses

rate was calculated using number of annual total losses averaged for 1995 2000 and number of total ships.

〈Figure 5〉 shows the relationship between efficiency and total losses rate. We can assume that if maritime safety administration is efficient, the casualty will be decreased. Efficiency occurs when cost decreases or benefit increases. Total losses are widely accepted to be a good indicator for maritime casualty. Total loss rate here was an average value during the period of 6 years from 1995 to 2000.

〈Figure 9〉 shows that a weak relationship between efficiency of administration and total losses.



Correlation ratio : 0.32

〈Figure 5〉 Correlation between administrative efficiency and total loss rate

In addition, through the survey, the problems that the APEC member economies has encountered in terms with administrative system were identified.

The most critical problem proved to be insufficient budget for the maritime administrations. It takes on 32 percent of total 206 responses. The respondents were allowed to choose more than one from the given choices. The subsequent problems are Inappropriate expertise (17%), difficulty in coordination within administration (17%), Insufficient autonomy (14%), no appropriate legislative framework (14%) and other reasons (6%) in order.

When we analyzed the problems identified in the questionnaire survey by dividing into two groups, say, insiders and outsiders, we can find that there are some differences.

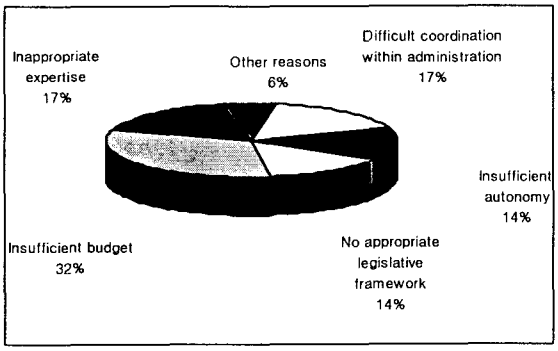
Insiders working at maritime administrations have regarded insufficient budget as the most critical problem with 33 per cent of total insider respondents. Next, difficulty in coordination within administration (19%), no appropriate legislative framework (15%), insufficient autonomy (12%), inappropriate expertise (12%), and other reasons (6%) are following. This pattern is very similar to the one that total respondents demonstrate.

While, outsiders show a little different pattern from that of insiders, where inappropriate expertise represents secondary critical problem.

The pattern of problem distributions is shown in Table 11 and Fig. 5.

〈Table 11〉 Problems for maritime safety administrations

Group	Difficult coordination within administration	Insufficient autonomy	No appropriate legislative framework	Insufficient budget	Inappropriate expertise	Other reasons
Total	17%	14%	14%	32%	17%	6%
Insiders	19%	12%	15%	33%	12%	9%
Outsider	17%	16%	13%	30%	22%	4%



〈Figure 5〉 Problems for maritime safety administrations

5. Conclusions

The study has identified the current maritime safety administrative system of the APEC member economies

Most of the APEC member economies have marginally efficient administrations, and no economy responded their administrations to be inefficient. One of noteworthy findings is that the outsiders of maritime safety administrations are less positive toward the efficiency of their maritime safety administrations. In addition, the functional differences across the region revealed the degree of importance on their own government deserve to draw attention of practioners and researchers in the maritime safety sectors. Commonly, most of the economies have encountered the shortcomings of stable budget and expertise.

The data and informative results will be very helpful for maritime safety studies, considering there have been very few studies on the administrative matters, particularly covering a large number of economies (countries). It will be helpful for government reform and long-term development plan of maritime safety sector. Nevertheless, the results of the study need to be interpreted and applied in a cautious way. The study covers the APEC region alone, remaining countries in other continents untouched.

References

[1] A Comparative Study on the Maritime Safety Administrations (in Korean), 1998, KMI

[2] Administrative Organizations (in Kore

an), S. J. Cho, Seoul National Univer sity, 1994.
[3] Annual Report on Port State Control in the Asia-Pacific Region, 1996, Tokyo MOU Secretariat.
[4] Annual Report on Port State Control in the Asia-Pacific Region, 1999, Tokyo MOU Secretariat.
[5] Safer Shipping in the Asia Pacific Re gion Project (Phase 1), Dec 1999. Asia pacific Maritime Institute, Asia Pacifi c Economic Cooperation Secretariat.
[6] Shipping in the Asia-Pacific Arena, A Major Perspective, 2001, International Symposium on Safer Shipping in the APEC Region.
[7] 18th APEC Transportation Working Group Meeting, 2000, KMI.