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Maritime Security and Cooperation in the Asia-Pacific toward the 21st Century

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PREFACE

The Asia-Pacific region encompasses a huge maritime area, which is rightly to be called as a community of maritime nations. There are few Asia-Pacific states that do not have significant maritime frontiers and strong maritime interests. The commercial and strategic significance of the sea in the Asia-Pacific region requires little elaboration. The sea is a major source of food for the region, and the sea lanes are the life-lines of the Asia-Pacific economies heavily dependent on unimpeded access to raw materials, markets and investment opportunities throughout the region. The region also contains a number of strategic straits, some of which lie across the vital oil supply routes from the Persian Gulf.

This strong maritime orientation dictates the security, political as well as economic outlooks of all states in the region. Any analysis of the geopolitics of the region must account for this maritime character which for long time has been taken for granted. As the economies of the region have prospered and extraregional influences have declined, so have governments turned their attention more closely to the security of their own maritime interests. The result has been a period of considerable growth in the size and capabilities of regional navies.

Currently, maritime issues are at the forefront of regional security concerns. Of the 30 or so conflict points in the region, more than a third involve disputes over islands, continental shelf claims, EEZ boundaries and other offshore issues. Many emerging regional security concerns, such as piracy, pollution from oil spills, safety of SLOCs, illegal fishing and exploitation of other offshore resources, and other important elements of economic activities are essentially maritime.

This book grew out of the 12th International Conference on "Maritime Security and Cooperation in the Asia-Pacific toward the 21st Century," which was held in Seoul, Korea on 6-7 April 1999. The conference was organized by the SLOC Study Group-Korea, a private, non-profit organization composed of scholars and experts inter-

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ested in ocean affairs, under the joint sponsorship of the Institute of East and West Studies, Yonsei University.

As its title suggested, the primary purpose of the conference was to discuss internationally opportunities and challenges in the Asia-Pacific ocean in the 21st century and to explore ways and means to bring about the more stable and peaceful maritime regime in the region. Given the economic and strategic importance of the sea, the SLOC study groups of six countries in the Asia-Pacific region, i.e., the Republic of Korea, the United States, Japan, Australia, Malaysia, and Taiwan, have, since the early 1980s, regularly held international conference addressing major issues related to the SLOC security and maritime cooperation in the Asia-Pacific. As the new century and indeed new millennium approaches, it was very timely and significant to hold this international conference in Seoul, with the maritime issue becoming one of the major security concerns in the region.

The intellectual debts of this book are to the many speakers and participants at the conference who collectively contributed to the awareness and understanding of the various issues related to the oceans. The editors are very appreciative to the authors and participants. Further thanks go to Adm. (Ret.) Mangkee Lee, President of the Korea Line Corporation, and Adm. Soo-Yong Lee, Chief of Naval Operation-ROK Navy, who delivered a welcoming address and congratulatory remarks at the conference respectively. Sincere thanks are also extended to the Korea Line Corporation and the Shipowners' Association of Korea for their constant encouragement and financial support for the conference and other programs of the SLOC Study Group-Korea.

Last but not the least, editors wish to express their gratitude to the staffs of the Institute of East and West Studies, Yonsei University, for their editorial assistance for the publication of this book. Without their dedication, this volume would not have been completed on time.

Editors
December 2000

CONTENTS

PREFACE.....	V
CONTRIBUTORS	IX
INTRODUCTION.....	<i>Sang-Seek Park</i> XI

PART I

STRATEGIC SCENE IN THE ASIA-PACIFIC AT THE TURN OF THE CENTURY

1. East Asian-Pacific Security: An Assessment *Stephen P. Gibert* 3
2. The Navies of the Asia-Pacific in a Revolutionary Age *Geoffrey Till* 17

PART II

NEW OPPORTUNITIES IN THE ASIA-PACIFIC OCEAN IN THE 21st CENTURY

3. Problems of Port Development Competition among
the Ports of Far Eastern Region and Criteria of Selecting
the Hub Port in the Region..... *Joon Soo Jon* 41
4. The Present and Future of Shipbuilding..... *Hiroto Hayashi* 73
5. The Present Status of Taiwan ENC Production
and Applications *Yi-Ching Chern & Shuh-Kuang Wu* 83

PART III

RISKS AND CHALLENGES IN THE ASIA-PACIFIC OCEAN IN THE 21ST CENTURY

6. International Cooperation for SLOC Security..... *Sumihiko Kawamura* 93
7. Potential for Conflicts over Resources:
Fisheries and Oil/Gas *Phiphat Tangsubkul* 109

8. Revolution in Military Affairs and the Sea Lanes
of Communications *Tun-Hwa Ko* 113

PART IV

MARITIME SECURITY AND CONFIDENCE BUILDING: ACTION AGENDA

9. Existing Maritime Cooperation Arrangements
in the Asia-Pacific Region *Stanley B. Weeks* 123
10. Maritime Surveillance, Enforcement
and Information Exchange *Anthony Bergin* 143
11. Law of the Sea and Stable Maritime Regime *Jin-Hyun Paik* 167

PART V

STRENGTHENING REGIONAL MARITIME COOPERATION FOR THE NEW CENTURY

12. Confidence-Building Measures in the Spratlys:
The need to Manage China *B. A. Hamzah* 179
13. Cooperation in Maritime Safety and Emergency
in the Asia-Pacific *Kyung-Rae Min* 197
14. Regional Efforts for Maritime Cooperation:
State and Prospect *Sam Bateman* 215

PART VI

CONCLUSION

- Summary of Discussion *William M. Carpenter* 243
- INDEX 259

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Introduction

NEW MARITIME ORDER IN THE ASIA-PACIFIC TOWARD THE 21st CENTURY

Sang-Seek Park

On the eve of the new millennium, it is my great honour and pleasure to have this opportunity to share my views on the subject of "the New Asia-Pacific Maritime Order in the 21st Century," with such an eminent assembly of scholars, hailing from different continents, yet all prompted by the same concern for the future of our oceans.

All life in our planet is indisputably dependent upon the oceans, one of the essential elements of the biosphere that are vital to our lives, our future and the future of the generations that will follow us. Occupying 70% of the Earth's surface, the oceans provide us with food and energy. They are the stabiliser of the world's climate system as well as the main highways for international transportation, communication and trade. Sustaining the livelihoods of hundreds of millions of people, the traditional human uses of the oceans, such as fishing and navigation, are being increasingly intensified. With the rapid advance of science and technology, new ways to use and abuse the oceans will be constrained only by the limits of the human imagination.

The Asia-Pacific nations attach particular importance to the oceans for geopolitical as well as socio-economic reasons. We lie at the edge of the most extensive ocean of the world, the Pacific Ocean, which occupies 50 percent of the ocean surface of the world. Asia-

Pacific is one of the most populated areas in the world, with densely inhabited coastal zones along the Pacific Rim. The Asia-Pacific nations utilise and rely upon some of the busiest sea-lanes, connecting major ports of the world. We are by far the largest harvesters and consumers of various marine fish stocks.

We look forward to the coming century. I would like to express my conviction that forging a new maritime order should be based on three main pillars: the Preservation of marine resources, the Protection of the marine environment and the Protection of the sea-lanes. Allow me to coin this idea "the three P's approach."

First, we should preserve marine resources.

The oceans provide us with two kinds of natural bounty: renewable resources, and non-renewable resources.

Renewable resources such as fish stocks, marine flora and fauna, and other marine living resources can remain plentiful, if only humanity uses them wisely, bearing in mind the limit of their reproductive capacity. Unfortunately, this was not always the case in the past century. From 1950 to 1988, the total world fish catch increased sharply at an average rate of 4 percent of annual growth. But since 1988, the world fish catch remains at a relatively stable level. This stabilization of the fish catch is not due to any voluntary limitation of fishing efforts or conservation, but a result of a severe reduction of sustainable productivity of the oceans. The world annual fish catch has already reached the maximum sustainable yield, which is estimated at the level of about 100 millions tons a year. In the wake of these alarming reports, the international community endorsed a fundamental principle, sustainable yield, as embodied in the UNCLOS and many other international treaties and declarations. The principle of sustainable use of renewable resources is clear in concept, yet complicated in practice. To ensure that succeeding generations have as much access to the renewable resources as we have now, we must harvest them at a rate lower than, or at most equal to, the rate at which they regenerate. In short, we should manage marine living resources just as we might manage the protection of the principal in

an interest-bearing savings account.

As a means of realising the ideal of sustainable use, the regime of the EEZ was adopted. When the international community agreed to create this *sui generis* regime, it was widely, and somewhat naively, believed that coastal states would zealously conserve the resources in their EEZ over which they have exclusive rights, for purely selfish reasons if nothing else. Today, it has been amply proven that resources in the EEZ have been overexploited and are seriously endangered. Considering the fact that more than 80 percent of fishing resources exist in coastal zones covered by the outer limits of EEZs, the problem of over-exploitation can be ascribed mainly, if not completely, to coastal states, which are responsible for the conservation and management of maritime resources under their EEZ.

Non-renewable marine resources, which are mostly minerals such as metals and fossil fuels, do not reproduce themselves in nature. Because of this natural constraint, non-renewable resources pose serious problems of distribution. The problem of distribution confronts not only contemporary people but also future generations. Once we deplete these resources, future generations will be forever deprived of them. Recognising the rights of future generations, the idea of intergenerational equity has recently surfaced. It is the duty of mankind to develop this conceptual scheme into a paradigm guiding the activities of humanity in the exploitation of resources.

The major portion of non-renewable seabed resources has been appropriated by coastal states by the creation of the EEZ and the enlarged continental shelf regimes. As for the management of mineral resources in the seabed beyond the limits of national jurisdiction, the UNCLOS founded an innovative regime of seabed mining on the basis of the concept of Common Heritage of Mankind. The International Seabed Authority was launched recently. It is a crucial human experimentation to manage common goods by a universal organization for the benefit of mankind as a whole. Today, it is believed that the commercial exploitation of the seabed resources of the area beyond national jurisdiction is still premature for technological and economic reasons. But in the coming century, humanity will by

necessity be forced to rely upon the deep seabed resources. Before this situation arises, international society should refine the legal and managerial system of exploitation of these common goods.

Second, we should protect the marine environment.

The marine environment is under serious stress caused by the human species. If you listen to the warnings given by pessimistic environmentalists, the marine environment has already crossed the ecosystem threshold of disaster. But more optimistic scientists assert that the marine environment still maintains an oscillating balance in the limits of the ecosystem homeostasis. Whatever perceptive filters through which we may view the reality, no one can deny that the carrying capacity of the marine environment is finite and limited, and this limit is being inexorably approached, if not already behind us. Mindful of this critical situation, the international community has shown special concern over the marine environment, as evidenced by the United Nations Conference on the Human Environment held at Stockholm in 1972 and the United Nations Conference on Environment and Development held at Rio in 1992.

Pollution of the seawaters affects not only marine living resources, but also human health itself, by a boomerang effect through bioaccumulation of radioactive materials and heavy metals. Because of its transboundary nature, marine environment pollution may become a source of international disputes in the future.

In dealing with this enormous problem, we must establish and put into practice concrete action plans under a comprehensive set of objectives for the protection of the marine environment as set out in Agenda 21, Chapter 17, adopted in the UNCED of 1992. In mobilising international efforts for protecting and restoring the marine environment, we should combine moral, technological and politico-legal approaches.

We should establish sound environmental ethics that will be embraced by all people. Traditionally, Asian people have had the wisdom to aspire to live in harmony with nature, in the belief that

man is merely a part of nature. During this century, the Asian people began to undervalue and disregard this environmentally sound philosophy, in its headlong West-like rush toward unchecked economic development. Now, in the Western world, some enlightened ecologists have begun to recognise the merits of this old Asian way of life. Reflecting this trend, the concept of the *intrinsic value* of nature and the postulate that "mankind is a part of nature" began to be introduced in some international treaties. In order to create a new paradigm of human attitudes vis-a-vis nature, these budding ideas have yet to be refined and reconciled with deeply entrenched human-centered value systems.

We should consider how to employ modern technology in the service of nature. Until now, modern technology, combined with an anthropocentric perspective, has served as an all too effective tool for human dominance over nature. Now humans are conscious of the external costs, which may eventually completely offset the benefits of technology. As it is impossible for us to fully return to a state of nature, we are obliged to find a way out from the present dilemma of environmental catastrophe, not by abandoning technology, but by developing more environmentally friendly technology to be shared by all humanity.

We should also resort to politico-legal measures at global, regional and national levels. At the global level, the UNCLOS provides a comprehensive set of principles and norms for the protection of the marine environment. In some fields, the international community has created special regimes at the global level, such as the London Dumping Convention and MARPOL 73/78. At regional or sub-regional levels, several regimes have been created under the UNEP Regional Seas Programme. As identified in Agenda 21 of the UNCED, land-based sources represent 70% of the total source of the marine pollution. This means that most marine pollution comes from realms under sovereignty. Therefore, national legislation is by far the most important legal tool in combating marine pollution.

These moral, technological, and politico-legal approaches for the protection and preservation of the marine environment are not mutu-

ally exclusive ideas, rather they complement each other. For example, without a sound moral foundation, legal norms cannot hope to realise their objectives, however stringent they might be. Without well-elaborated legal norms and rules, technology can be and will be used and abused to the detriment of the environment.

Third, we should protect the sea-lanes of communication.

Counterbalancing the adoption of distended national jurisdiction toward the seas, the UNCLOS established three important regimes in securing the freedom of navigation, namely, 'innocent passage' through territorial waters, 'transit passage' through international straits, and 'archipelagic sea-lanes passage' through archipelagos, in addition to the traditional freedom of the high seas. In spite of this considerable development in the law of navigation, I might say that many problems still remain. Without a clear definition of 'international navigation,' the laws regarding sea-borne passage have been subjects of continuing controversy.

Considering the geo-political and socio-economic environment of the Asia-Pacific Basin, we can easily understand the importance of sea lanes to the people in this region. The sea-lanes are literally the lifeline of the Asia-Pacific Basin. Geographically, Asia-Pacific countries, mostly coastal or archipelagic states adjoining the Pacific, are connected to each other through many international straits from the Middle East to North America. The great economic dependency on the flow of essential materials ranging from energy to food resources and the export-oriented economic structure of the region will render maritime transportation even more critical in the future.

However, there are many potential threats to the safety of sea-lanes in the Asia-Pacific Basin.

Firstly, recent steps taken by some coastal states to control the sea lanes in their territorial waters or archipelagic waters has aroused the deep concern of other countries, especially those who are heavily dependent on international straits. Considering the fact that most main sea-lanes in the region pass through the territorial sea of some

state, this kind of political, territorial aspiration is an object of concern for many people.

Secondly, there is a threat involving a military factor. Considering the uncertainty of the political situation and escalating naval build-up among major powers in the post-cold war era, the risk of naval confrontation still persists in this region.

Thirdly, another difficult task for the international community to combat is the threat from non-military violence at sea, such as piracy, maritime hijacking, drug trafficking, and the migration of the 'boat people'. Piracy and armed robbery in South-East Asia is known to account for about sixty percent of the total reported piracy in the world.

Sea-lanes are crucial to the survival and prosperity of the nations of the Asia-Pacific region. But, no nation can defend the wide radius of the sea-lanes in the region by itself. We must make every effort to establish regional mechanisms aimed at combating threats to sea-lanes. As ASEAN countries jointly combat piracy, the development of a more collective and comprehensive security network for sea-lanes is urgent and a vital necessity in the new era.

The UNCLOS should be a pillar for the establishment of the maritime order in the 21st century. It is designed not to provide specific rules to cover every contingency, but to set out general guiding principles and norms. It should be, therefore, supplemented by consistent and equitable interpretation to be made not only by international courts, but also by the teachings of qualified experts.

Under the umbrella of the UNCLOS, many issue-specific and area-specific regimes should be created to form a comprehensive, world-wide regime governing all human activity on the seas. Already in effect are several issue-specific regimes, such as the dumping convention and the convention for the prevention of pollution from ships, and many area-specific regional regimes. The UNCLOS can also be supplemented by bilateral agreements, or by national legislation.

Since statutes are, by their very nature, rigid, while the reality is ever changing, codified regimes should be complemented continuously by international customary law. Besides legal decisions of international courts and practices of states, the *opinio juris* of legal experts constitute an essential element in the formation of the customary law. For this, scholars, such as members of the SLOCs, must and can play an important role.

In order for any legal norms to be effective, they should be constructed on a sound moral foundation incorporating the concept of equity, reciprocity and co-operation. This is especially the case in the Asia-Pacific region, where peoples' actions and thinking have traditionally been spurred by moral and religious guidance more than impersonal legal control.

In the Twentieth Century, Asian people have faced grave moral conflicts. The conflict between conserving the environment and promoting industrial development, and the difficult choice between preserving the traditional way of life and embracing the western culture. In the new century, the challenge for the Asian people is to create a new culture, one that will transcend these seemingly unresolvable conflicts. The new maritime order in the Asia-Pacific region in the 21st century should be founded on a new culture so created.

Thus, the task before us is to fashion a new era of peace and prosperity in the use of the oceans. This will involve forging new attitudes and values that will enable mankind to rise above petty squabbles and myopic thinking. Together we can, as we must, rid the world of hunger and acrimony by a peaceful and prosperous existence on the seas.

PART I

STRATEGIC SCENE IN THE ASIA-PACIFIC AT THE TURN OF THE CENTURY

EAST ASIAN-PACIFIC SECURITY: AN ASSESSMENT

Stephen P. Gibert

There are several problems which could bring about a crisis in the Asian-Pacific region. Nevertheless, on the whole the situation today appears to be more stable than it has been for some years, despite growing concerns about China and some deterioration in Sino-American relations. This more favorable situation is primarily the result of the collapse of the Soviet Union and the resulting end of the Cold War. In discussing the end of the Cold War, analysts normally concentrate on the easing of tensions between the United States and the Soviet Union. But actually a second Cold War also ended, namely that between China and the Soviet Union. This defused what was possibly the most dangerous confrontation in the Asian-Pacific region.

This is not to argue, however, that problems do not remain. In particular, uncertainties always arise with the emergence of a new Great Power on the scene as occurred when Germany rose to prominence at the beginning of this century and with China today. Still, although changes in the Asian-Pacific region in the last decade have not been as dramatic as in Europe, the situation is now different and improved over what it was when all feared the heavily-armed Soviet Union.

In this emerging post-Cold War context, this essay briefly addresses the following topics: first, current relationships among the Pacific great powers; second, the most immediate threat to the peace,

the North Korean-South Korean situation and the problem of nuclear and missile developments in North Korea; third, the other significant obstacle to East Asian peace, which is the continued threat that the PRC poses to the Republic of China on Taiwan; fourth, present and anticipated American national security policy in the Asian-Pacific area; and finally, a recommendation to work toward establishing a more durable security regime in Northeast Asia.

Relationships Among the Northeast Asian Great Powers

Possibly the most significant impact of Soviet collapse has been on Chinese-American relations. After the Sino-Soviet alliance collapsed in the early 1960s, both Beijing and Washington had strong motives to coordinate policies or at least establish normal relations in order to counteract an aggressive and well-armed Soviet Russia. The Taiwan issue was the obstacle which prevented normalization of Sino-American relations in 1972. The Carter Government, however, was less solicitous of Taiwan's security than it was of the perceived need to establish diplomatic relations with China. In Washington, Carter's decision to transfer relations from Taipei to Beijing was known as "playing the China card." Undoubtedly in Beijing the policy was known as "playing the American card." Whatever the case, both powers had a strong motivation to align their policies and, although differences between the two meant that the relationship was never close, still there was a degree of cooperation.

Now, however, absent the Soviet threat, neither country faces the same imperative to reconcile differences. To be sure China needs foreign investment and technological assistance, and trade between China and the United States has become important to both countries and especially to China. Still, economic relationships do not have the same degree of urgency as do security ties. Thus it is to be expected that serious Sino-American differences will continue over Taiwan, human rights, weapons proliferation, technology transfer, and Chinese restrictive trade practices. To this list has now been added accusations concerning illegal Chinese contributions to American political campaigns and espionage with regard to nuclear warhead technology.

The threat which Russian military power posed in Northeast Asia and the Soviet occupation of Japan's Northern Territories has been an important fact in maintaining close security relationships between Japan and the United States. There have been, of course, serious strains in the alliance, especially over the issues of security burden-sharing and Japan's annual large surplus in trade with the United States. Despite these differences, Washington remains committed to Japan's defense; each year security consultations between the two governments are held in Hawaii in which the respective roles of each country in the event of conflict are reviewed.

To date, security issues and economic problems have been kept on separate tracks. Now, however, as in the case of Sino-American relations, absent the Soviet threat there is less incentive for either Tokyo or Washington to submerge economic differences in the interest of preserving strong security ties. Illustrative of strains in the relationship was an article in the July/August issue of the journal *Foreign Affairs*, by former prime minister Morihiro Hosokawa. Hosokawa argued that American military forces in Japan should be withdrawn now that Russia no longer posed a security threat. This is a minority point-of-view but it is to be expected that opposition to US military forces in Japan will gain increased adherents in Washington as well as Tokyo unless some new security threat emerges.

Soviet collapse has not had a significant impact on Sino-Japanese relations. Once Chinese-American diplomacy was normalized in 1979, American-Japanese security cooperation was a less significant issue between the PRC and Japan. At present, there do not seem to be serious obstacles to satisfactory Sino-Japanese relations, although recent suggestions that the US and Japan would cooperate in establishing a theater missile defense system has resulted in Chinese criticism of Japanese-American security plans. Although in her recent trip Secretary of State Albright assured Beijing that such a defensive system was years away, if ever, the Chinese authorities seem determined to make this an issue as well.

Finally, there is the role of Russia in the Post-Cold War context. Moscow has met the so-called "three obstacles" to a Sino-Russian rapprochement. Also, Soviet SS-20 intermediate range missiles, targeting both China and Japan, have been removed. Russian troops along the Chinese border have been reduced. The Soviet Far Eastern

Fleet, once the strongest of the four Soviet navies, is no longer of military significance. In general, Soviet armed forces in Northeast Asia are not a threat to either China or Japan. These developments have enabled Russia to improve its relations with both countries. Also China has purchased both aircraft and other arms from Russia. And with regard to Japan, Moscow seems to be seriously considering some compromise with regard to the Northern Territories issue. In short, Russia is no longer a concern to either of the two East Asian Great Powers. This is a most hopeful development and one which has contributed to the stability of the Asian-Pacific region. In sum, the relationships between the three Great Powers in Northeast Asia, China, Japan, and Russia, are a cause for optimism that solutions to remaining problems will be peaceably solved.

North Korea, South Korea, and the Nuclear/Missile Problem

Now that NATO and the Warsaw Pact no longer confront each other with massive military forces, the only significant heavily-armed border in the world is that along the demilitarized zone (DMZ) which divides North Korea (the Democratic People's Republic of Korea) and South Korea (the Republic of Korea). For nearly fifty years, almost two million soldiers have faced each other, only a very short distance from Seoul. Although this was and is a dangerous situation, several hopeful developments have occurred. These include the decision by Moscow in 1990 and Beijing in 1992 to recognize South Korea and the 1991 admission of the two Koreas to the United Nations.

In response to this improved situation, President Bush announced the withdrawal of about 7000 US troops and the phasing out of all US ground- and sea-launched tactical nuclear weapons from South Korea. This was followed in 1992 by an agreement between North Korea and the International Atomic Energy Agency (IAEA) on an inspection program designed to confirm that North Korea's nuclear program was for peaceful uses only. Unfortunately, North Korean cooperation was short lived; after only a few IAEA inspections, confrontations escalated and the nuclear issue remained unsolved.

Some progress on the nuclear problem appeared to have been

made when, in 1994, a Nuclear Agreed Framework arrangement was negotiated. Under that accord, North Korea undertook to "mothball" a facility capable of producing weapons-grade plutonium in exchange for energy assistance from South Korea, Japan, and the United States.

Disagreements have arisen, however, between Seoul and Washington. Under the so-called "sunshine approach" to North Korea, President Kim Dae Jung favors an incentive package to be offered Pyongyang. Under this plan, diplomatic relations between North Korea and the US and Japan would be normalized, the US would end its trade embargo on North Korea, and an economic aid program would be arranged. In return, North Korea would pledge to discontinue efforts to develop a nuclear weapons capability. President Kim believes these measures would result eventually in a normal, that is, peaceful, relationship between the two Koreas. It might also avoid a North Korean political collapse with problems similar to that which occurred when East Germany ceased to exist. Mindful of the problems the Federal Republic of Germany faced after the Berlin Wall came down in 1989, Seoul is concerned that if unification happens, it will occur in an orderly fashion.

Currently the concern regarding developments in North Korea has shifted somewhat from the emphasis on nuclear proliferation to that of North Korean missile developments. In August 1998, North Korea flight-tested the Taepo-Dong one missile. A successor, Taepo-Dong Two, could have a range of more than 4000 kilometers. There is anxiety that North Korea could place chemical warheads on these missiles which would pose a threat throughout the East Asian-Pacific region. Negotiations between the US and North Korea on this problem have not yet produced results.

It seems likely that some change in the situation will come about if progress on both the nuclear and missile problems is not accomplished. In that event, the US is likely to toughen its sanctions against North Korea and, through multilateral diplomacy, attempt to isolate the regime. Such a course of action, however, will be resisted by the present South Korean government. This difference in approach to Pyongyang could lead to tensions between the US and South Korea. Such a development would be counterproductive to the cause of peace on the Korean peninsula. For that reason, it is essential that

Seoul and Washington continue to agree on a coordinated policy toward North Korea.

China and Taiwan

Perhaps the most dangerous situation in the East Asian-Pacific region is Beijing's continued hostile attitude and blunt threats toward the Republic of China on Taiwan. The PRC for many years has threatened Taiwan with military attack if Taiwan did any of three things: declared independence, developed a nuclear capability, or signed a security agreement with the Soviet Union. Of course the latter is no longer relevant, now that the Soviet Union is no more, but the other two conditions remain. Subsequently, to those two conditions the PRC added a third, albeit vague, threat: the PRC will attack Taiwan if Taipei refuses unification for a long period of time.

In addition to constant threats, China has consistently pursued a policy of attempting to isolate Taiwan diplomatically. Beijing will not continue normal diplomatic ties with any government which has diplomatic relations with Taipei. However, Beijing has accepted, albeit reluctantly, the ROC's relations with other countries based upon the Washington-Taipei model as provided in the April 1979 Taiwan Relations Act.

In 1995, succumbing to pressures by Taiwan's supporters in the US Congress, President Clinton agreed to permit the first Taiwan-born President, Lee Teng-hui, to visit the United States to speak at an alumni reunion at Cornell University. Although President Lee did not meet with top US government officials and did not hold a press conference, Beijing reacted with surprising belligerence. Indeed, the PRC's attitude was far more hostile over a mere visit than it had been over a much more meaningful event, namely President Bush's decision in 1992 to sell Taiwan 150 US F-16 fighter aircraft.

This very disproportionate reaction by China to Lee's visit suggests that Beijing is increasingly concerned about political developments in Taiwan. This impression was reinforced in March 1996 during President Lee's reelection campaign—the PRC not only carried out missile tests near Taiwan, but also urged the KMT to dump Lee and replace him with someone more accommodating to taking steps

toward reunification. These actions backfired; the US sent two aircraft carriers to the Taiwan area and President Lee won reelection.

In February 1999, China once again demonstrated its disdain for world public opinion when it vetoed a UN Security Council resolution to extend a 1100 member United Nations peacekeeping force in Macedonia. This action was taken in retaliation for Macedonia's decision to establish diplomatic relations with Taiwan. The Chinese veto was an especially irresponsible action since there is a danger that the present conflict between Serbs and Albanians in nearby Kosovo threatens to spill over into Macedonia.

Finally, on February 25, 1999, the Pentagon released a report to Congress on the military balance in the Taiwan strait. This report argues that China is engaged in an intense buildup of ballistic and cruise missiles in eastern and southern China, primarily opposite Taiwan. The Pentagon report does not claim that China will attack Taiwan; it does say, however, that by the year 2005, if this buildup continues, the PRC will have gained an overwhelming military advantage over Taiwan which it can use for intimidation purposes if not for actual armed attack. Whatever the case, China's policy toward Taiwan does not augur well for continued peace and stability in the East Asian-Pacific area. Indeed, it is fair to say that China is now emerging as the principal obstacle to a stable and peaceful East Asia.

American Security Policy

The United States does not have a national security policy which commands a broad bipartisan consensus and is supported by the American public. Containment, which was the guiding concept in American foreign policy for nearly fifty years, from the Truman Doctrine in 1947 to the fall of the Berlin Wall in 1989 and the 1991 collapse of the Soviet Union, no longer provides the rationale for an activist national security policy just as it takes at least two nations to fight an international war, so the United States required a dangerous Soviet Union to justify a global containment strategy.

Containment was not only expensive in resource costs, it was revolutionary in the changes it wrought in the United States itself. From a country which had pursued its international involvement unilaterally

ally, America became a country in which multilateral foreign policy became the only method of international engagement. By the end of the Eisenhower Administration in 1960, the United States had mutual security alliances with forty-two states. Some involved large multi-state arrangements such as NATO. Others were bilateral in character, such as the one with the Republic of China prior to its 1979 abrogation. All involved American commitments which would have been unheard of prior to 1947. And all were directed, in one form or another, against communist states, first the Soviet Union in the 1949 NATO alliance and, after the Korean War, against the People's Republic of China.

This incredible edifice has now collapsed. To date, no convincing, consensus-building national security strategy has emerged nor is one likely anytime soon. If there is no Great Power enemy for the US to contain, what strategy is left? The Pentagon's answer is the "two MRC" approach. By this is meant that US strategy should be to prepare to cope militarily with two major regional contingencies simultaneously. The two potential regional conflict areas are, of course, the Persian Gulf and the Korean peninsula. But this is not a strategy. Rather, it is a force-sizing methodology intended to answer how much and what kinds of military forces the US needs in the post-Cold War world.

Under these circumstances, it is not surprising that the Clinton Administration's approach to national security, rather than being innovative, has consisted primarily of continuing those policies which, in addition to containment, have been priority concerns for many years. Toward Europe this means continued US participation in NATO but with a military presence reduced from its Cold War high of over 300,000 to the present force of about 100,000. In the Asian-Pacific area, the US military presence has not been reduced nearly as much as in Europe although the total number of American armed forces personnel is also around 100,000. This consists of the US Eighth Army and Seventh Air Force in Korea, the Third Marine Expeditionary Force and Fifth Air Force in Japan, and the US Seventh Fleet.

In terms of alliance commitments, the arrangements in the Asian-Pacific region are quite different from those in Europe. In Europe security commitments are multilateral in character while in the

Asian-Pacific area there are a series of bilateral pacts: US and Japan; US and South Korea; US and Australia (the US-New Zealand alliance was been suspended); US and the Philippines; US and Thailand; and through an act of the US Congress, the US and Taiwan.

A second significant difference between American commitments to NATO versus East Asia is the result of the terms of the 1960 US and Japan Security Treaty. Article 5 of the NATO Treaty obligates all members of the Treaty to come to the aid of any attacked member. In contrast, and by coincidence also in an Article 5, in the Japanese-American Treaty, the US is obligated to defend Japan but Japan has no reciprocal responsibility to defend the US outside of Japanese territorial waters. This had led to the accusation that Japan is a semi-protectorate rather than a true alliance partner. Thus, despite protestations in both Tokyo and Washington that the Japanese-American alliance is the most important contributor to Asian-Pacific security, the relationship is not as sturdy as is usually assumed. To date, however, despite concerns about this issue, burden-sharing, trade imbalances, and other frictions, the Japanese-American alliance remains the centerpiece of US policy in the Asia-Pacific region.

To further strengthen the alliance, in September 1997 new defense guidelines were agreed upon. These outline Japanese rear area support to US forces responding to a regional contingency. This agreement is in addition to the long-standing Japanese obligation to fulfill three tasks in the event of a conflict: to defend the Japanese homeland and surrounding waters; to blockade the three straits leading from the Asian continent to the Pacific should this be necessary; and to help safeguard the sealanes 1000 miles south of Tokyo. Of course, as in the case of the US, there is no automatic response but Japan will decide according to its own constitutional provisions what action it should take in the event of a military contingency. Also, whether Japan has the military forces sufficient to fulfill the agreed-upon tasks, especially the safeguarding of the sealanes for 1,000 miles, is another question. In sum, the US-Japan Treaty of Mutual Cooperation and Security is not entirely satisfactory but is probably the best that can be achieved at the present time.

Next to Japan and Germany, the US has more military forces in Korea than in any other country. Because American troops are located near the DMZ, there is no question but that the US will assist

South Korea in the event of a North Korean attack. Given present nuclear and missile problems with North Korea, there is no pressure in the US to remove the American forces from Korea as President Carter once contemplated in early 1977. Still the fact that South Korea has twice the population and perhaps fifteen times the GDP of North Korea has raised questions as to why South Korea cannot defend itself without American help. Of course should unification occur, US military personnel will be neither necessary nor welcome in South Korea. But pending some serious change in the present circumstances, American forces will remain in South Korea.

With regard to Taiwan there is some difference in view between the Clinton Administration and the Congress just as there was between President Carter and the Congress in 1979. In the spring of 1998, President Clinton became the first US Chief Executive to accept the PRC's "three no's" with regard to Taiwan: no one Taiwan, one China; no independent Taiwan; and no membership for Taiwan in any international institution for which statehood is a requirement.

President Clinton's statement accepting Beijing's three no's was vociferously denounced in the Congress and even in the liberal press such as *The Washington Post*. It seems likely, therefore, that the US would act should the PRC use force against Taiwan. Thus the China-Taiwan problem, as is the case with North Korea versus South Korea, could seriously threaten peace in the Asian-Pacific region.

In April 1999, the NATO alliance will celebrate its fiftieth anniversary in Washington. At the time, three new members, Poland, the Czech Republic, and Hungary, admitted in March 1999, will join the ceremonies to commemorate this occasion. It is also expected that at the Washington meeting there will be pressure on the alliance to further expand, possibly including Romania and the Baltic states of Estonia, Latvia, and Lithuania. Such a development will most certainly worsen American-Russian relations which have already deteriorated in the last several years. One ominous possibility would be a Russian reaction to move much closer to China. While there seems to be little possibility of a new Chinese-Russian alliance as existed in the 1950's, cooperation between Moscow and Beijing could have a serious impact on East Asian security.

The recent decision of the Clinton Administration to request six billion dollars toward developing ballistic missile defense may be the

current step to take. Nevertheless, this also will further exacerbate American-Russian relations. Clearly Washington needs to be more sensitive to Moscow's concerns and, at a minimum, cease any discussion of the further expansion of the NATO alliance.

Finally, we come to the most serious question of all, that is the China problem. Despite Clinton's acceptance of Beijing's three no's and a policy of "constructive engagement," it seems likely that Sino-American relations will deteriorate. As noted earlier, China is harshly criticizing what it sees as American plans to encourage Taiwan's defiance of unification by providing Taiwan with a theater missile defense system. By implication China is also threatening Japan. Since a theater missile defense system does not endanger China but only helps defend other countries, Chinese threats reinforce the growing American perception that China seeks hegemonic power in the Asian-Pacific region.

This perception of a belligerent China is also reinforced by Chinese actions in the South China Sea. The United States is officially neutral in the disputes in this area. Nevertheless, the geostrategic importance of the South China Sea is undeniable. Thus there is international concern over the fate of the Spratly Islands since a hostile power controlling the area could in the event of war interdict shipments through the area.

In consideration of these facts, the US, while maintaining a neutral status, should contribute to regional efforts to oppose Chinese hegemony over the region.

Another issue likely to further worsen Sino-American relations concerns human rights. After the Clinton visit to China in the Spring of 1998, a subsequent State Department report alleges that China's human rights abuses actually worsened rather than improving as the Clinton Government had hoped. In February 1999, responding to this, the US Senate unanimously passed a resolution urging the Clinton Government to put forward a resolution at the United Nations condemning China's human rights record. In March 1999, the House of Representatives unanimously passed a similar resolution. These resolutions have no legal effect; nevertheless, they are important in demonstrating increasing Congressional opposition to Clinton's policy of constructive engagement.

In sum, unless changes occur, Sino-American relations are likely

to deteriorate. This will certainly impact adversely on the East Asian-Pacific region even though no crisis is to be anticipated.

A final problem which may not be conducive to maintaining the presently stable situation in East Asia concerns American domestic politics. President Clinton, despite favorable public opinion poll ratings, has lost all standing with the Washington political elite. In addition, he is a "lame duck" president with a Congress in the control of the opposite political party. Also the year 2000 presidential campaign is now underway. In these circumstances, the Clinton Government is not able to play a strong role in international politics. No serious American security initiatives in East Asia are to be expected. Rather, Washington will simply react to events in an ad hoc fashion as they occur.

Toward a Multilateral Security Regime

It is unreasonable that after more than fifty years the US has to be the principal guarantor of East Asian security. In a famous article in the October 1967 issue of the journal *Foreign Affairs*, presidential candidate Richard Nixon said, "Asian hands must shape Asian Futures." Thirty-two years later American hands are still shaping Asian futures.

There are many indications that the Congress and the American public are growing impatient with the U.S. role of "world policeman." For example, in January 1991 the Senate authorized President Bush to use force against Iraq by a vote of 52 to 47. If only three votes had changed sides, authorization would have been withheld despite the long-standing American commitment to Persian Gulf security.

In March 1999 President Clinton and Secretary Albright, joined by former Republican presidential candidate Bob Dole, appealed to the Congress not to debate the proposed deployment of 4000 U.S. troops to Kosovo. This appeal was ignored although finally Congress passed a resolution supporting the deployment.

These two incidents are among the numerous signs which suggest a growing disenchantment with the American role in world affairs. It is prudent to conclude that the disproportionate reliance of East Asian states on the United States will end, not immediately to be

sure, but it will end.

What needs to be done in the years that remain is to devise some kind of multilateral security regime to replace American hegemony. This is being done in Europe; it needs to be done in East Asia as well. Steps that need to be taken to create a multilateral security regime in the East Asian-Pacific region are beyond the scope of this essay. And one cannot deny the difficulty of accomplishing such a task. Further, it is not appropriate for the United States to take the lead in this endeavor; this is an initiative which the Asian states themselves must undertake. The important message is that the status quo, with the Asian nations dependent on the United States, is not appropriate for the coming twenty-first century.

This is not argue that the US will renounce a security role in the Asian-Pacific region. On the contrary, if some form of a regional security regime can be established, it is very likely that the United States will continue to incur the political and economic costs necessary to be an important participant in such a regime. But it is unlikely that the United States will continue much longer to be the dominant actor in preserving East Asian-Pacific security. As President Nixon said so long ago, Asian hands must shape Asian futures.

THE NAVIES OF THE ASIA-PACIFIC IN A REVOLUTIONARY AGE

Geoffrey Till

The Navies of the Asia-Pacific in a Revolutionary Age

The dramatic changes that have affected the world since the end of the Cold War have affected their navies too. This paper will consider whether such changes constitute a "Revolution in Maritime Affairs" and how such a Revolution might affect the role, importance, structure and function of the navies of the Asia-Pacific region.

Technological Change and the Revolution in Maritime Affairs

The notion of there being a "Revolution in Maritime Affairs" derives of course from the debate that there is a much wider "Revolution in Military affairs" by which navies and maritime air forces are being affected. Although the term and the concept are Soviet in origin, the debate has been dominated by American writers, who have tended, perhaps not surprisingly, to focus their gaze on the influence of technology in general and of information technology in particular. Where Generals command men, Admirals command ships. Navies as mechanised forces, have therefore always been peculiarly susceptible to the consequences of technological change.

One of the most "revolutionary" aspects of the situation, indeed,

is the extent to which military developments are being led by civilian industrial and business technology. It now seems much less to be the case that war, or preparation for war, is the mother of invention. Navies are much more likely to be affected by external technological developments over which they have no control than they have been before. They are floating on a fast running current of technology and steering; they are not directing it.

This technological change affects, platforms, fleets and the environment in which navies operate. Changes to the shape, propulsion systems, sensors and weapons of the platforms are very well documented, the subject of lively debate and often remarkable in themselves. They are leading to the production of warship classes like US Navy's evidently revolutionary DD-21 surface combatant. But around the world, navies are acquiring advanced warships, submarines and aircraft that are faster, more manoeuvrable, leaner-manned and fitted with significantly better sensors and weapons capable of precise engagement. Their shape and appearance are also fast evolving partly in order to increase their stealthiness and partly, as in the case of the Trimaran and SWATH ships being considered by the Royal Navy, for more hydrodynamic efficiency.

Even more radical than this, however, is the notion of the "system of systems" outlined by Admiral Owens in his seminal Proceedings article of 1995 which is fast revolutionising attitudes to squadrons, fleets and other such aggregations of maritime power. It seems that Information Technology can now link together ships, submarines and aircraft so tightly together that it hardly makes sense to think of the efficiency of the individual unit anymore. This networking hugely increases the flexibility and efficiency of the group. Space-based and other command, control, communications, computers, intelligence, surveillance and reconnaissance assets [which now are mysteriously referred to by the cogniscenti as C4ISR] can provide "total situational awareness" for all units; everyone can see everyone else's tactical picture and can operate each others sensors and weapons. At least potentially, sea-based units can 'co-operatively engage' with aircraft and land forces and with the equivalent forces of other nations, and can bring their collective power to bear ashore much more efficiently than ever they could before.

But perhaps still more radical, though much less remarked by

maritime strategists and policy makers, is the impact of technology on the maritime environment itself. At the highest level, technology has induced the developing impact of global warming. The increasingly serious potential consequences of this have focused attention on the world ocean which is often seen as a barometer of the health of the planet. For example, irrespective of the effects of global warming, human disease pathogens leaking into the sea through sewage systems are apparently killing three quarters of the coral reefs off the Florida Keys and are likely to affect shellfish, fish and swimmers. According to Professor James Porter of the University of Georgia at Athens,

These are the little cries and whispers which when you look at the ocean carefully, and really think about what is going on, begin to affront you with the dangers that lie ahead...Things are folding on top of each other at a rate that we are unable to keep up with.

But the ocean is more than a passive indicator of the harm that we all, rich and poor alike, are doing to our own futures, it helps determine that level of harm by changing sea levels, currents and weather patterns. It is likely to increase the need for systems designed to explore, monitor and protect all aspects of the ocean environment.

We know remarkably little about the ocean, especially about its depths and bottom topography. We may be moving into an era when the sailor's attitude to the environment in which he operates will be transformed. The deep sea bed, instead of being dark, mysterious and frightening, something to be avoided at all costs may become a familiar area to be exploited for its scientific interest and its commercial and strategic value. The Soviet Navy, with its huge associated oceanographic fleet and its development of the bastion strategy under the canopy of the Arctic ice was something of a pioneer in this regard. But now the expanding efforts of the US Navy's Hydrographic Service strongly suggests that navies are likely to be involved in the accumulation and exploitation of knowledge of the ocean and will certainly play a part in its protection. Knowledge, after all, is power.

The world ocean is also increasingly valued for its resources in oil, gas, fish, minerals and perhaps ultimately for its enormous energy

potential—all technology-related issues. Such concerns have resulted in the long and difficult process of negotiating, agreeing and ratifying the UN Convention on the Law of the Sea which has transformed the way we think of the sea. Now the extent of the open ocean has been drastically reduced, and many littoral states have vast new areas over which they will need to exercise their jurisdiction, if it is to be effectively recognised by other people. Most of the world's navies are pre-occupied by the requirement to protect national interests within the 200 mile Exclusive Economic Zone. To do this properly, coastal navies are becoming noticeably less coastal. This tendency is particularly marked where jurisdictions are disputed, as they are for example around the South China Sea.

To summarise so far, modern technology has affected maritime purposes and maritime conduct in a variety of ways. Despite its advocates, and despite those who point to the analogy of pocket calculators and computers which have become cheaper in real terms, the sensors, weapons and platforms of modern navies, have become progressively more expensive. Over the past half century the unit cost of most types of military equipment has risen about 10% per year. In consequence, financial resources available for defence being considered finite, most of the world's navies have fewer platforms than they did, although each is a good deal more individually capable and is usually significantly larger. Such shrinkage has been particularly noticeable amongst the erstwhile antagonists of the Cold War, but rather less so with the navies of the Gulf and the Pacific Rim, at least until the onset of the economic crisis of the mid-to-late 1990s.

Technological developments appear to enable modern navies to project maritime power ashore with much more assurance than before. Maritime power projection can now be confidently extended several hundreds of miles behind the shore line. But that same technology appears to be blurring the lines of demarcation between sea, space, air and land power in a way which both mandates and facilitates closer co-operation between the services. The issue of whether new maritime technology helps or hinders co-operation between different national contingents remains controversial. Observers most impressed by developments in IT tend to argue that with gateway systems, modern technology can link up the C4ISR systems of differ-

ent navies much more easily than was possible before. Sceptics, on the other hand, argue that IT widens rather than narrows the gap between the great and the small. Americans appear to predominate in the first group, their allies in the second. It is probably too early to tell who is right.

At the same time, operations within the world's littoral areas makes maritime forces more vulnerable than they were because even countries in the developing world have access to the civilian technology which underpins so many military developments. Area denial weapons ranging from mines, through modern coastal submarines and fighter/attack aircraft to theatre ballistic missiles are increasingly commonplace. Accordingly, navies around the world are having to devote thought to how they respond to such threats. Even interest in defence against theatre ballistic missile attack is far from being a preserve of the US Navy.

All this, at least at first glance, certainly seems sufficient to warrant the description of another phenomenon dear to the hearts of former sovietologists, "a military-technical revolution," a period of unusually rapid technological advance in the military sphere. But even here, something of a divide can be seen between platform-dominated traditionalists who stress the prospect, and the need, for incremental adaptation on the one hand and information-oriented modernists who think that something much more fundamental is in progress. This is not such an arcane and academic [in the worst sense of that word] issue as it may seem. Navies have to decide their strategy for investment in new platforms, sensors and weapons. If they conclude that the world is at the beginning of rapid and fundamental technological change, it may make sense for them to wait a while until the dust settles. If, on the other hand, they foresee no more than steady and general development they may decide to invest and build now before further price rises take the systems out of reach.

Sceptics make the persuasive point that Vietnam shows that modern technology does not win wars on its own and argue that the effects of modern technology even in the Gulf War were often overdrawn. The Coalition's obvious advantages in the C4ISR dimension notwithstanding, there were few if any successes in the hunt for Iraqi Scuds, defensive Patriot missiles were much less effective than was thought at the time, and Battle Damage Assessment suggested that

the strategic effects of the cruise missile/air bombardment of Iraq had been exaggerated.

Moreover, this is not the first time that there have been dramatic periods of technological change. Krepenevich identifies 10 in Europe since the 16th Century, some of them purely naval. Previous experience suggests that the advantages conferred by being decisively ahead in key military technologies often prove quite fleeting as the adversary either catches up, or finds an appropriate response. In many cases that response may itself be technological [for example answering the threat of the U-boat with ASDIC or Sonar]. But as in the Vietnam war, where the Viet Cong and the North Vietnamese Army found many very low-technology or tactical or political answers to American air superiority, the response may be quite asymmetrical, hardly technological at all in fact. Thus in 1993, Akbar Torkar, the Iranian Minister of Defence spoke for many when he remarked:

Can our air force for example take on the Americans, or our navy take on the American navy? If we put all of our country's budget into such a war we could have just burned our money. The way to go about dealing with such a threat requires a different solution entirely.

Moreover, previous such periods of dramatic technological change only seem to become truly revolutionary, when the technological impulse is reinforced, or directed, by other social and political changes. For a start, whether such technological potentialities are fully or sensibly exploited is dependent on the political or strategic judgement of the decision-makers:

More than anything else, it is perceptions of future contingencies and likely enemies that determines whether, and when, there is full exploitation of the advantages offered by the military revolution.

All this suggests that there is significant danger in being seduced by advanced technology. In some ways, navies may be facing a repeat of the situation that afflicted the Royal Navy in the period

before the First World War where there was a damaging division of opinion between the materiel school who believed that technology provided all the answers and the historical school who argued that experience showed that it did not.

Centuries ago, Musashi complained of those who put all their faith in extra long swords:

In this world it is said "One inch gives the hand advantage," but these are the idle words of one who does not know strategy. It shows the inferior strategy of a weak spirit that men should be dependent on the length of their sword, fighting from a distance without the benefit of strategy.

Operational Change and the Revolution in Maritime Affairs

The notion that there is much more to a Revolution in Military Affairs than mere technology, however advanced it may be, is reinforced by those who focus on the world scene more generally. Thus Lawrence Freedman:

The future development of the military art will be more the result of the changed structure of international politics than of advances in military technology.

The much-discussed concept of globalisation, for a start, will have a significant effect on the navies of the region, since it implies a commonality of interest and of response to phenomena that affect the whole world. It suggests that, in due course, the navies of the region will be affected by the same trends as other navies and that many of these trends will encourage co-operation between them, and indeed between them and outsiders. Commentators frequently remark on the area's lack of a collective identity, compared, say, to the European Union, but urge that it be developed in order to improve the region's capacity to respond to common problems. If things do go that way, then a significant decline in the "naval independence" characteristic of the region can be expected.

Such political and international changes will also have their effect

on what navies do. The end of the Cold War, some analysts claim, may not signify merely the end of the latest round of the endless conflict of great powers; instead, it may foreshadow the end, at least for the time being, of the whole idea of warfare between great powers. Especially in the nuclear age, the costs of such war are too high and the rewards, even of victory, are too low. War, it is said, is no longer the paying proposition that it might once have been.

Clearly, it is important not to exaggerate the hypothesis. The end of major war will not necessarily prove permanent. Prudent military policy makers might well conclude that they still need to take precautions against its possible re-appearance. Nor does the end of major war between the great powers imply the end of conflict. A glance at today's newspapers shows the disappearance of neither war between minor powers, nor one sided conflicts between great powers and small ones nor, still less, of intra-state conflicts and wars of one sort or another. The great powers at least appear to be moving into an era of wars of choice, rather than wars of necessity. Where they lead, optimists argue, others might follow - in due time.

The implications of this, if true, could well be described as revolutionary. Taken with the necessarily uncontrollable and unpredictable consequences of a world in which so many variables in the equation are quite unfamiliar, the whole notion of "strategy" itself seems to be under threat. Strategy, after all, is supposed to be a conceptual framework that enables us not only to understand past campaigns but to conduct present ones and prepare for coming campaigns as well. In the last analysis, strategy is about shaping the future and seeking to determine outcomes. At the moment this seems a more than usually presumptuous aspiration. Of course diplomats and their military servants must continue to do their best to mould their environment, but probably in a less confident spirit and in a more incremental, more tactical, way than they did in the past.

More solidly, the form that strategy takes is likely to be different too, since its basic and most familiar concepts, have been derived, at least in the West, from the study of great powers at war with each other. With very few exceptions, Westerners have rarely tried to draw out the lessons of even their own conflicts with minor powers, say in the 19th Century. Easterners may have much to teach us here since their concepts derive from more modest entities - the armies of

princes and warlords in the case of Sun Tsu, and of individual swordsmen in the case of Musashi. It is no coincidence that Sun Tsu and the Eastern way in warfare [with its emphasis on the limitation of means, aspirations and the victor's costs] has become so fashionable in recent years.

At the very least such uncertainties require policy-makers to rethink their approach to maritime strategy.

Naval Responses

Around the world, navies have responded to this challenge with the development of serious conceptual thinking and in the creation of impressive sets of doctrinal conclusions. This world-wide process, perhaps in some sense the equivalent of the intellectual surge that produced Mahan, Corbett, Richmond and all the rest of them in the period just before and just after the First World War, is likely to have a number of important consequences for the maritime future.

Firstly, doctrine is a great force multiplier, enabling the best use to be made of limited means. Secondly, it encourages comparative analysis of the doctrine of the other services and of other nations in a manner that facilitates co-operation with armies and air forces and with the military services of friends and allies in joint and combined operations. Thirdly, it encourages the notion that thinking about maritime purposes and procedures in a time of turmoil is a front-line task, not something to be conducted by consenting adults in private. All of these consequences are likely to make maritime forces more professional, more useful, more cost-effective—better able to cope with a confusing world.

And what have been the conclusions drawn from this current and very welcome outburst of naval creativity?

Navies around the world have drawn perhaps five broad and inter-related conclusions from all this.

Keeping the Edge. First, navies usually seem to feel that is important to retain the technological edge, even when the tasks is question are of a humdrum and routine character in an environment where the operational risks are low. For the politicians, this traditional military preference for erring on the side of safety is reinforced by their

dislike of incurring casualties, especially in messy situations around the world [Somalia, Bosnia, Kosovo] where vital national interests are not involved, but where the news media are.

Assuming Control. The world's major navies generally acknowledge a shift from winning command at sea, to exploiting it from the sea. For Western navies, this is a natural conclusion to draw from the substantial reduction in the naval power of their erstwhile opponent, the Soviet Union. It has led to the claim that "naval" strategy [as represented by a Mahanian struggle for sea control] has been replaced by a Corbettian "maritime strategy," in which the focus is on projecting military power ashore. Few would go so far as to argue that naval strategy is "dead" but, certainly for Western navies, it seems to be ailing at the moment. Nonetheless, the re-appearance of a major naval adversary would quickly revive it. Moreover, it does not seem to follow that having control of great chunks of the world ocean, necessarily means controlling the littorals. Finally, the world's smaller navies may be able to be able to mount asymmetric challenges to the larger ones, and may eye each other in distinctly "traditional" sea control terms.

An expeditionary future? Thirdly, amongst the greater navies, there is the near universal view that future maritime warfare is likely to be expeditionary in nature, conducted in the world's littorals rather than the open ocean, at some distance from the homeland, fought in the company of other services and other nations, with limited means, limited aims and probably limited expectations. For the time being, the future looks expeditionary.

Looking to the Moat. Fourthly, there is general acceptance that maritime responsibilities have grown, and are likely to grow still further. Thanks to the UN Convention on the Law of the Sea, littoral states now have much bigger areas over which they need to exercise their jurisdiction. This is no accident; changes in the law of the sea derive from the manifest increase in the importance of the sea, relative to the land. In this respect, the general responsibilities of the maritime agencies [navies included] appear to be growing.

Maritime Operations Other than War. Finally, there appears to be of something of a move away from the large-scale and highly intense activities that characterise major war towards the diverse gaggle of activities sometimes lumped together under the umbrella-term of

"Maritime Operations Other Than War," and which now seem so much more appropriate to the task of managing the turmoil of the Post Cold War world.

This really quite significant shift in the attitude and focus of many of the world's navies does indeed seem to constitute a degree of historic change that could reasonably be regarded as revolutionary. Already, the maritime policies and activities of the navies of the Asia-Pacific are showing the effects of this.

Implications For the Navies of the Pacific Rim.

These implications will be discussed under three headings :

- Gaining and Exploiting Sea Control
- Maritime Power Projection
- Good Order At Sea

Gaining and Exploiting Sea Control in the Pacific

The strategic literature of maritime warfare has tended to be defined by the struggle between the great maritime powers, even though history is replete with naval actions between small ones or between small ones and their larger adversaries. Accordingly as we have seen, the end of the Cold War is seen as ushering in a novel era in which the requirement to gain sea control has been much de-emphasised. At the moment, it is hard to see where in the Asia-Pacific there really could be a major struggle for the command of the sea. The former Soviet Pacific Fleet is a now barely more than a shadow of its old self, and the US 7th Fleet though reduced still dominates the scene.

This situation might not apply in the future, however. For some time, concern has been expressed about the apparent blue-water aspirations of the PLA[N]. Although Chinese intentions in regard to a carrier programme remain ambiguous, they have certainly acquired Su 27 fighters, Kilo submarines, an effective missile programme and have produced their own capable diesel submarines,

and good ships like the 4500 ton *Luhu* class and the 2200 ton *Jangwei* class frigate. Their interest in submarine support ships, replenishment/resupply ships like the *Dayun* and *Fuqing* classes and a growing band of intelligence gathering ships all point to an aspiration for forward deployment. To an extent this impression is reinforced by declaratory statement. Thus Admiral Huaqing Liu a few years ago,

Offshore should not be interpreted as 'coastal' as we used to know it... 'Offshore' is a concept relative to the 'high seas.' It means the vast sea areas within the second island chain.

While few analysts expect the Chinese navy to be able, even if they should want, to dominate the area west of the Bonin, Mariana, Guam and Palau islands for very many years it seems reasonable to conclude that the long-term aim is to develop more blue-water sea control capacity. Nor is the PLA[N] alone in this regard. The destroyer and frigate programmes of the Japanese and ROK navies, and the general acquisition of modern land-based aircraft like the Su-27 and the Mig 29 around the region suggest similar ambitions and challenge the proposition that the PLA[N] is pulling ahead of the others in terms of quality. The first Asian aircraft carrier, after all, was Thailand's.

The acquisition of such capacities could in the future certainly facilitate familiar struggles for maritime mastery; in the meantime, current capabilities suggest more modest possibilities conducted in more local littoral waters and in the tradition of the coastal navies common in Europe. This style of sea control warfare is characterised by the use of fast attack craft and other smaller surface combatants, coastal artillery, mine warfare, coastal submarines and land-based aircraft. The general principles of maritime warfare as espoused by Mahan, Corbett and all the rest would apply perfectly well, but in lower case as it were. Irrespective of perceived likelihood, this still appears to be a significant measure of aspiration in the Pacific Rim area.

One of the reasons for this is the historic inadequacy of the alternatives to such traditional approaches. From the *Jeune Ecole* in the late 19th Century onwards, smaller navies have felt the seductive lure of new technology used in ways which promise to narrow the

gap between the great and the small. [The Soviet New School of the late 1920s, the German U-boat theorists, the Chinese mosquito fleet of the 1950s, the great expectations of fast attack craft and naval missiles from the late 1960s onwards, are obvious examples] But so far at least they have failed to deliver what was expected and required. Either the technology could be countered, or the approach did not yield the strategic effects required - or both. There is little sign in the Pacific Rim of navies going down this path.

This is not to say, however, that sea denial is a meaningless aspiration. Another, often neglected, area of naval experience, even in Europe is of asymmetrical encounters such as that between Finland and the Soviet Union 1940-5. Here the accent was not so much on the weaker side seeking sea control for itself as of denying it, and all the advantages it conferred to the stronger power. This too could be a persuasive model for maritime decision-makers, perhaps especially if the PLA[N] is seen to become a threat in the area.

Nor should the basic requirements of the control of very local waters, or coastal defence be neglected. Although few countries in the region face the clear and present threat of hostile incursions into local waters as does the ROK, when dealing with North Korean submarines, throughout the region there is a natural focus on making sure, first of all, of one's own waters.

But the overall impression gained from a look round the navies of the Pacific is that, despite the onset of economic recession, the region has emerged from what some have called "The Age of Vasco da Gama" into an era in which confident navies are more and more interested in sea control and in acquiring the kind of naval forces that this requires. They have become interested in the attractions of maritime power ["the capacity to influence other peoples behaviour by what you do at or from the sea"] and increasingly have full possession of what Mahan and others have called the elements of maritime power, most particularly a large and growing merchant marine [up by well over 50% over the past decade], a strong interest in the sea, and increasingly sophisticated and capable naval forces.

Maritime Power Projection

In the Asia-Pacific region, only the American, Russian and Chinese navies have significant interest in maritime operations in support of the *strategic nuclear deterrent*. In the first two countries, all such forces have been de-emphasised, reduced in number, de-targeted and are the subject of interminable START negotiations. The Chinese acquisition of their SSBNs remains a remarkable story with an ambiguous outcome for the region as a whole.

The controversy over the firing in August 1998 of a Taepo-Dong 1 missile over Japan by North Korea has re-ignited concerns about the need for some form of theatre ballistic missile defence, to which some of the region's navies could make a significant contribution. Their incentive for doing so is that their countries or they themselves could be the target for such missiles. In the future, therefore, the region may well see increasing attention paid to the acquisition of *Aegis* type systems, however expensive and technologically demanding these might be.

Few if any of the navies of the region have serious pretensions for the kind of *expeditionary capacity* exemplified by the more traditional maritime powers although the PLA[N]'s formation of 'rapid combat groups' comprising mixes of larger and small warships, submarines and embarked marines might be a tentative step in this direction. The PLA [N] appears also to have studied the lessons of the Falklands and Gulf conflicts [both expeditionary in all senses of the word] and come to conclusions suggested by the controversial book "Can China's Armed Forces Win the Next War?" which appeared in Beijing in 1993. The Japanese LST Osumi and the Thai aircraft carrier *Chakri Naruebet* may suggest a burgeoning interest in this sort of capability around the region.

For most navies in the region, however, it is more a question of their choosing whether to participate in expeditionary operations that largely depend on the maritime capacities of their allies—most obviously the Americans. While their motives for 'co-operative engagement' with the US 7th Fleet in the form of regular exercises and exchanges are mainly diplomatic, one consequence is an enhanced capacity to share in such expeditionary activity later should they wish to. The "Carat" exercises between the US and

Malaysian navies is but one example of this local tendency to maintain the option of co-operation with the United States. The despatch of Japanese mine warfare vessels to the Gulf is an obvious example of this in action. There is, nonetheless, little sign of the navies of the Asia-Pacific entering into this kind of activity, to the extent, say the Europeans have over the past few years.

Maritime Diplomacy. There is, however, plenty of evidence that the advantages of maritime diplomacy are well recognised in the region. Thus China's Admiral Chen,

As the navy plays a role in all historical periods, whether peace or war, it is also a means of pursuing national foreign policy. Navies possess many specific characteristics that differ from those of the other armed forces. The navy has international capabilities of free navigation on the high seas, and in peacetime can cruise the world's seas, even conducting limited operations outside the territorial waters of hostile countries...but even more important is its peacetime national foreign policy role.

In recent times, there have, regrettably, been several illustrations of the coercive end of the spectrum of maritime diplomacy in the Asia-Pacific region. The Yellow Sea incident of 1994 involving the *USS Kitty Hawk*, the Taiwan Straits crisis of 1995-6, and the continuing dispute over Mischief reef in the South China Sea all show maritime power being used for coercive effect.

But even if they are not deliberately used for coercive purposes, the mere existence of naval forces can in some circumstances be regarded as a source of international tension. For this reason, it is seen to be important to monitor, even control, their expansion. - and there is little doubt that the navies of the region are getting much more capable. Some argue indeed that until it was interrupted by the recent economic crisis that there was something of a naval arms race beginning in the Asia-Pacific area. For evidence, they pointed to the increase in quality and range of naval forces throughout the region, which when allied to a general absence of external maritime threat on the one hand and a series of disturbing jurisdictional disputes on the other suggested a deteriorating trend.

This is contested by those who argue that the perceived draw

down in US naval force levels and the gaps that might reveal, an increased awareness of the importance of sea areas to national security and an accidental and cyclical need to the evident need to renew obsolescent naval forces have all coincided to produce a common arms dynamic throughout the region. This is distinguished from an arms race in that it is not necessarily aimed against anyone. But even sceptics accept that such arms dynamics can degenerate into arms races if there are other tensions around to first stimulate, and then be aggravated by them.

For this reason while *maritime arms control* is dead in the water in the Atlantic, Mediterranean and Norwegian Sea, it is alive and well in the Asia-Pacific. Here, there is still considerable interest in attempts to monitor naval construction and activity and to explore ways of reducing any threat they may have for international relations in the area. In the last days of the Cold War the kind of maritime arms control that aimed at reducing the size and power of naval forces, or limiting their activity, failed dismally. But the more modest variant which consists of seeking more contacts, of exchanging visits, of engaging in academic debate helped allay suspicions and improve the atmosphere. The local interest in developing INCSEA agreements suggests that it will probably be the same in the Asia-Pacific region.

Nevertheless, a substantial gap between what states have to defend, and the maritime resources required to defend them, increases the need for allies, either local or distant. Navies have always provided an effective means of building alliances. Joint exercises, staff college exchanges, visits to other ports, participating in maritime meetings in the region have all proved effective ways of establishing the importance of national perspectives and interests in the region. The original emphasis was on bilateral arrangements with the United States [or in some cases with Britain]; but increasingly a move towards multilateral togetherness can be seen in the region, as is evidenced by the *Rimpac* and *Starfish* exercises and the recent "Flying Fish-97" exercise of the FPDA countries. Nonetheless, the levels of naval co-operation reached in the Asia-Pacific, are far less than those enjoyed in NATO.

In order to participate in this kind of *maritime coalition-building*, nations need naval forces, no matter how small; nations without them risk being ignored by maritime policy makers in the region. It

can play important part in the creation and work of regional security gatherings like the Western Pacific Maritime Symposium. In the future it could help shape the future development of the ASEAN Regional Forum, and elsewhere has certainly done so for the United Nations.

Before leaving the matter of maritime diplomacy it is worth making the point that using navies in this way is a matter of strategy. We should remember Liddell Hart's useful definition:

Strategy is the art of employing military force to achieve the ends of national policy.

This is a variant of strategy which aims at meeting national objectives and moulding the international environment in desired directions by influencing the behaviour of friends, rather than enemies. The more relatively powerful your friends are, the more important it may be to participate in such activities.

Good Order at Sea

With the ratification of the UN Convention on Law of the Sea, the security of their EEZ is the major preoccupation of most of the world's navies. The bigger navies are also concerned with good order on the high seas, and perhaps in the EEZs of other nations. Good order at sea breaks down into four areas of concern:

Securing Maritime Transportation

The security and prosperity of the Asia-Pacific region is dependent on sea trade. Something like 40% of the world's trade crosses the Pacific in ships but although sea trade is likely to expand considerably over the next 30 years, possibly tripling in fact, it faces many threats and challenges. Naval forces and coastguards provide the necessary response, in peacetime by a series of tasks designed to control threats associated firstly with shipping and secondly with cargoes:

Shipping. In the Asia-Pacific there is a manifest need to reducing

the manifest risk of *intentional harm* being done to shipping posed for-
 eign attack, terrorist attack, and piracy. Throughout the region, there
 is a general acceptance of the need to improve maritime security in
 areas such as the Malacca Straits and the East China Sea by control-
 ling the menace of piracy. Piracy is the most serious of these threats,
 and appears endemic in the Malacca straits area and the South and
 East China seas. While in overall terms interference with perhaps two
 hundred or so of the 50,000 local sea passages a year may not be very
 significant, the human and potentially environmental costs are high.
 Worse, both the piracy itself and the counters to it complicate, and
 are complicated by a number of jurisdictional disputes.

There is also the risk of *unintentional harm* being done to interna-
 tional shipping through its inadvertent involvement in other peoples'
 wars. The so-called "Tanker War" during the first Gulf War between
 Iraq and Iran is the most obvious example of this. Concerns have
 been expressed that the same might happen in the critical South
 China Sea should the complex dispute over the Spratly islands
 degenerate into armed conflict. The Taiwan Straits crisis implied sim-
 ilar such threats.

Nor should the more mundane prospect of shipping accidents in
 busy but unregulated seas and straits be forgotten. The arrangements
 between Malaysia, Singapore and Indonesia to co-ordinate their reg-
 ulation of traffic in the Malacca Straits is an indication of a develop-
 ing global trend in this direction.

Cargoes. This is a question of controlling the maritime transporta-
 tion of cargoes that threaten national, regional or global security,
 which might take the form of violations of UN sponsored sanctions
 restrictions, destabilising arms trafficking, or the transport of haz-
 ardous [nuclear] cargoes

More obviously cargoes may be illegal or prejudicial to the pros-
 perity of the state. Controlling the smuggling of untaxed cargoes is
 an obvious means of protecting state revenues. The organised smug-
 gling of illegal drugs and immigrants also threatens domestic order
 and is regretfully at least as common in the Asia Pacific as it is else-
 where. Both can be threats to the global rather than merely the
 regional order. Both encourage the kind of creeping jurisdiction that
 is likely to exacerbate international disputes over who owns which
 waters.

Securing Marine Resources

The world commercial fishing catch has more than quadrupled
 since 1950. The demand for edible fish produce is likely to rise from
 80 million tons now to 115 million tons by 2015 as the population
 rises. Already most world fishing grounds are under severe pressure,
 and many local fishing communities around the world are threat-
 ened by the advent of highly mechanised distant-water fishing fleets
 from elsewhere. Over the last 3 years, there have been ten fishing
 crises in which lethal force has been used and people killed. The
 waters of the Asia-Pacific are particularly contentious from this point
 of view, with much local rivalry in the Gulf of Thailand, the South
 China Sea and the Sea of Okhotsk.

Such competition calls for supervision of fishing grounds against
 illegal fishing both from the nation's own fishermen and against
 those from elsewhere. This is largely a constabulary matter, calling
 for wide levels of coverage and inspection but, usually, low levels of
 physical force. However where such concerns become enmeshed in
 jurisdictional disputes, as they do throughout the region, the matter
 becomes much more serious. On the one hand, the South China Sea
 dispute enormously complicates the regulation of fishing and so
 threatens the long-term viability of the whole area. On the other hand
 intense local competition for the fish exacerbates the dispute and
 sometimes even seems to set its pace.

Much the same can be said about concern for the security of oil
 and gas resources at sea. One third of the world's petroleum reserves
 are at sea, and these are likely to be of increasing commercial interest
 as land sources become depleted. Moreover exploitation of these
 resources is steadily being conducted in deeper and deeper waters,
 currently reaching 10,000 feet in some cases. Oil and gas resources
 also need to be defended against all manner of intentional and unin-
 tentional harm. Here too the focus of concern is on disputed areas
 like the South China Sea.

Maritime Sovereignty

All this becomes much more difficult when the waters in question
 are disputed. UNCLOS does not in itself resolve these disputes, it

provide a set of parameters by which such disputes should be resolved with the agreement of all parties concerned. Manifestly, this is but a distant aspiration throughout the Asia-Pacific. In the meantime, therefore, local navies have a basic national duty to exercise maritime sovereignty since it is a fundamental principle of international law that for sovereignty to be recognised, it needs to be exercised.

It is because the protection of its [in this case] marine territory and its citizens from all enemies domestic and foreign is the basic duty of, and justification for, the state, that these matters are taken so seriously. But, in the Asia-Pacific, these disputes are relatively so much more important to the nations involved than their equivalents elsewhere [with the possible exception of the Aegean dispute between Greece and Turkey] that the exercise of maritime sovereignty is more central to naval concerns here than in most of the rest of the world.

The evident difficulties of the Philippines in responding effectively to the Chinese occupation of Mischief Reef show that it is difficult to exercise sovereignty if naval forces are allowed to decline excessively. Even weak forces can make a difference in maintaining sovereignty through a kind of "Existential Deterrence" in that the mere existence of low level forces which the more powerful may physically need to brush aside can impose severe *political* limits on the actions of great states. This symbolic activity can be regarded as a particular application of the maritime diplomacy already discussed.

Protecting the Marine Environment

It is now frequently said that poor countries and rich countries, the industrial world and the developing world, the great and the small, are all co-operating in different ways to destroy the marine environment they share. In 1998, the UN "Year of the Ocean" and its associated reports and exhibitions, drew world attention the extent to which the marine environment is under threat. This is especially true in the littoral area and is likely to get worse as world population increases. Our prosperity, even our health, perhaps even our existence depends on getting marine pollution under control.

In consequence, increasing recognition is now given to the need to regulate activities at sea, and activities on land which pollute the sea.

This is as true of the Asia-Pacific as of anywhere else. This impulse is taking the form of a growing body of national and international regulation which naval and coastguard forces will increasingly need to monitor and enforce. The bigger their EEZ, the greater their responsibility. The Asia-Pacific's ideological commitment to unfettered free trade may make some forms of regulation, and their enforcement distinctly unpalatable however.

The Maritime Requirements of Good Order

Coping with the diverse requirements of Good Order, the navies of the Asia-Pacific will probably need a mix of at least FPBs and patrol craft. Good order appears to require specialist craft to deal with particular problems of the littoral. Even the US Navy found itself outwitted by the so-called "go-fast" boats used by drugs smugglers in the Caribbean, the semi-submersibles and the 25' cigarette boats. Simply using conventional naval high seas forces against this kind of threat often will not work. There is also an increasing emphasis on partnership between naval and usually cheaper and often more politically acceptable coastguard forces.

As their areas of responsibility extend, navies exhibit an increasing emphasis on maritime patrol aircraft and larger Corvette or Light Frigate sized vessels of the sort needed to increase coverage further away from the land. The need for higher levels of co-operation with the other services and with the forces of friendly nations mandates good command, control, communications and intelligence facilities to ensure that data can be shared amongst all participating units.

Manifestly, this is no easy option. This set of tasks is important, but it is not cheap. The navies of the Asia-Pacific will face real difficulty in deciding their new priorities in the wake of the revolution in maritime affairs described in this paper.

PART II

**NEW OPPORTUNITIES IN THE AISA-PACIFIC
OCEAN IN THE 21st CENTURY**

PROBLEMS OF PORT DEVELOPMENT COMPETITION AMONG THE PORTS OF FAR EASTERN REGION AND CRITERIA OF SELECTING THE HUB PORT IN THE REGION

Joon Soo Jon

Introduction

Ports are important economic catalysts for the countries that they serve. Many ports have traditionally practised what has been termed a "ports business" philosophy, in which the primary focus is on handling goods for ocean carriers.

More recently, however, acceptance of the integrated logistics concept, together with the increasing globalisation of business, has led major ports to adopt a "goods distribution" philosophy.

Many countries in ASIA are competing with each other to establish an efficient international logistics system and to become a center of international logistics activities. The ports of Singapore, Hong Kong, Kobe, Shanghai and Pusan, for example, are all working hard to become international distribution centers.

The new concept of "Hub Port" facilitates the globalisation system of the major ports and enable them to provide facilities to accommodate ships of over 4,000 TEUs.

Many large shipping companies are setting their long-term management goals to become logistics mega-carriers in the new century. To achieve this they have introduced the "Hub Port" concept to nationalize their logistics systems. Voyage costs are much reduced by

skipping minor ports to minimize the length of round-the-world voyages.

Meanwhile governments are developing policies to intensify logistics competitiveness which will become one of major elements in increasing national competitiveness.

Efficient logistics strategies in the shipping and port industry will contribute to the national competitiveness to achieve the status of international logistics center.

Now let us look at the Far Eastern Economic Zone which I take to comprise Korea, Japan, China and Far Eastern Russia. Although Korea is experiencing economic difficulty at a moment, its economy is expected to grow continuously in the long run.

China is also showing dynamic growth in economy. Japan is the mighty power in the world economy despite of its current economic depression. To cope with the expected rapid growth of trade volume and its need for international logistics system, the governments in the region have ambitious plans to develop international logistics system and eventually see their main port become the regional "Hub Port".

The competition to become the "Hub Port" in this region is now fierce. The anticipated investment to improve port facilities and develop new terminals to accommodate the mega-carriers are immense, to the extent the effort could cripple the region's economy given the limited financial resources of some countries. We must face the disastrous possibility that massive investment could be channeled into port which will never become hub ports.

In an attempt to avoid such disastrous waste of resources this paper suggests criteria that could be used to evaluate the region's major ports in the region to identify regional "Hub Port" and to allocate of roles between the major ports of the region.

The Concept of "Hub Port" and Its Function

1. The concept of "Hub Port"

The Hub means the central part of a wheel or propeller and it also means the center of activity. The terminology of "Hub" has been

used for "air-hub, inland-hub, hub-port" and also used for transport-hub, load-center, hub and load-center.

Conceptually, that is large amounts of traffic moving through a limited number of facilities. The popularity of load centering during the 1980s and into the 1990s is largely due to the growth of containerization and the development of large-capacity ocean vessels. With the increased availability and use of containers, many steamship lines and shippers have found it more economical to load-off all cargo at a single port. Using the intermodal and feeder services free the container ship from calling at numerous ports.¹

As a result, ship operators have found that it can be uneconomical to stop at a number of ports in a particular region to pick up/deliver limited amounts of freight; rather, operators of large ocean vessels prefer to stop at only one port in a particular area. Certain ports are then ignored.

On the other hand shippers of countries whose ports are not hub ports have to bear additional feeder costs to transport containers to the regional hub port.

Consequently, there has been tremendous competition between ports to be the hub port for their region. Without exception all countries in the Far Eastern region are desperate for being the hub port in the region and carrying out massive development plan simultaneously.

2. The function and condition

(1) Function

Traditionally, ports have monopolistic positions over their hinterlands. But hub ports have their own traffic-generating power that comes from their size, function and location within a region. The total traffic volume determines the handling capacity of a port.

The spatial relationship between a port and its hinterland is "centrality".

Ports close to large commercial areas have become large ports.

1. Union Pacific System, A Great Transportation System Makes a World of Difference. Omaha, NB, Union Pacific System 1985, p17.

However, since the 1980s every major container port has catered to two fundamental kinds of revenue traffic flows. One is locally generated and stimulated by the port's centrality with respect to a regional hinterland. The other is distantly generated by the interactions of widely separated places and stimulated by the port's en route location or intermediacy.

The hub-port acquires through its transport function the spatial quality of intermediacy. It may be central but it is also intermediate.

Local services may connect with national and international services. Also one mode of transportation connects with another. Depends on centrality and intermediacy, ports have been determined hub-port or municipal ports.

Centrality generates what can be called true origin and destination container traffic from and to the local hinterland.

Intermediacy generates long-distance, in-transit and transshipment traffic.

Conceptually, it is difficult to separate these two locational attributes unless we pay close attention to distinctions in geographical scale.

A place favored by centrality in its local region can also be a favored en route location at the intercontinental or global scale.

Hub-Port provides sufficient facilities to handle various needs of logistics in accordance with the expanding role of hub port as a load-center.

The mega hub ports such as Hong Kong, Singapore, Kaohsiung and Rotterdam handle a container volume exceeding 10 million TEUs a year.

The various ports directly or indirectly involved in transshipment operations may be divided into four main categories such as dedicated hub ports, hub and load-center ports, direct-call ports and feedered ports.

(2) Conditions

Ports in earlier days were created as regional or national gateways to serve and promote the economic development of their respective regions and nations. With the globalization of the world economy and the world-wide restructuring of production and distribution, sea

<Four Categories of Port>

Category	Centrality	Intermediacy	Trade volume in the hinterland	transshipment ratio	Calling in the main route	Example
Feedered ports	strong	weak	small	low	excluded	Municipal ports
Dedicated hub ports	weak	strong	small	high	included	Algeciras, Colombo
Direct-call ports	strong	weak	large	low	included	Pusan, Kobe
Hub and Load-center ports	strong	strong	large	high	included	Hong Kong, Singapore, Kaohsiung, Rotterdam

ports now have to assess their role in a global system. Ports become cogs in the wheel kept in motion by a world economic system.

Hayuth & Fleming emphasized "Centrality" and "Intermediacy" to determine the validity of being a hub port.

There are changes in the transport carriers' perceptions of which places in their networks are most strategic.

The hub port's modality in its regional tributary area is akin to centrality and its role as a gateway between the region and transoceanic points reflects its intermediacy.

Several factors determining whether a port can be a hub port including: efficient linkage to inland points, flexible operation of terminals and sufficient facilities.

Port selection choices made by logistics managers play an integral role in the efficiency of their global logistic pipeline. When individual ports had fairly captive hinterlands, port selection was often determined by the location of the facility. Although location is still an important consideration, it is no longer the overriding factor in port selection. Nowadays shippers and carriers place greater importance on service quality and cost in port selection.

Competitive Factors Between Ports

Scholars	Year	Hub-port selection factors					
		Location	Cost	Service quality	Facilities	Linkage to hinterland	Social system
Slack	1985		O	O			
Fleming & Hayuth	1989 1994	O					
McCalla	1994		O	O	O	O	O
Starr	1994	O		O	O	O	
UNCTAD	1990	O					
	1992	O	O	O	O	O	
KMI	1993	O	O		O	O	O
	1995	O	O	O	O	O	O

3. Shipping companies' hub port strategies

In the past few years, carriers and ports have recognised that there are definite efficiencies and economies to be made through handling larger numbers of containers. Container handling equipment requires a large fixed investment, and as with any high fixed cost option, larger output (i.e., the number of containers handled) leads to lower unit costs. Moreover, the development of large-capacity ocean container vessels provides the opportunity to carry more containers. As a result, ship operators have found that it can be uneconomical to stop at a number of ports in a particular region.

Through strategic alliances, ship operators seek to diversify their trading routes using such approaches as Round-The-World and Pendulum service. Significantly, the number of vessels available for these services is increasing while the number of ports calls is declining.

This strategy reduces the time of the round voyage and increases the quality of the service to shippers as well as reducing overall fixed costs.

As a result, large operators, formed through merges or alliances, are pursuing the economies of scale by introducing the concept of "hub port". Consequently there has been tremendous competition between ports to be the hub ports. Currently ports are engaged in massive investment aimed at : providing modern port facilities, dredging, increasing warehousing capacity and upgrading links to other modes of transportation and intermediary services.

Recently ship operators have tended to diversify their operation in relation to the ports. Firstly, they have deployed large ships at the hub ports which accomodate all kinds of transshipment requirements including substantial traffic of their own bound for or from their hinterland.

Secondly they have deployed large and medium size carriers to service other direct call ports on the main transoceanic routes.

Lastly, they have deployed small sized vessels on the branch routes between hub ports and feeder ports.

Possible Hub-Ports in Major Areas on the World

Douglas K. Fleming and Yeucia reported several theses concerning hub-ports. Hayuth found common features of hub-ports through case studies in terms of location and infrastructures of ports, port operation, information and control and so forth.

We will look into status and features of hub-ports based on data obtained from case analysis of ports which are located in North America and Europe conducted by Hayuth during 1970-1988. And we will discuss

factors affecting characteristics of regional cargo assembly, competition trends and environmental considerations.

1. Status and features of hub-ports in North America

Recent statistics indicate cargo distribution at ports within the United States.

Total cargo volume in the United States ports in 1988 was about 13,500,000. Of this total about 7,300,000 TEU (54.1%) was handled by five major container ports(New York, Los Angels, Long Beach, Seat-

tle, Oakland) (Lambert, 1990).

The competition between ports in the United States became even more fierce due to : transportation, de-regulation policies, multimodal transportation developments and the increase of vessel size during 1980s.

(1) Hub-port of the east coast area of North America

Port of New York is very dominant in the east coast area of North America. The handling cargo volume at Port of New York is about 2,100,000 TEU which stands at 31.2% of the total cargo handling volume of the east coast.

But New York has declined in relative terms, from 61.6% of the region's total in 1970, to 43.5% in 1980, to 31.2% in 1988 and to 27.6% in 1996 (See Table III-1). This decline was partly due to fierce competition from neighboring ports but the primary reason was the competitive challenge from the ports of the east coast area (Gulf area) and the inauguration of the Minibridge which allowed the east coast ports to be by-passed.

The competition to be hub-port for the east coast focused on the improvement of the service quality for DST (double-stack train) transportation connecting to the US area. This competition prompted, the improvement of on-dock rail facilities to attract the major large shipping companies. But cash incentives to the shippers (in New York) and the development of a night trains network to inland hubs (eg. Charleston port) also played a part.

During the 1980s both shipping companies and ports adopted the Mega-hub center approach, prompted by transport regulation policies, multimodal transport developments, larger vessels and round-the-world trip services. Accordingly, competition between ports expanded to cover the entire continent and focussed on the accessibility to multimodal transportation services using DST.

Just as the relative share of port of New York has been reduced, that of the five other ports, out of the 12 major east coast ports has also decreased, from 89.5% in 1970 to 80.0% in 1980 and then to 69.2% in 1988 but it recovered somewhat to 74.0% in 1996.

But even the weakening of New York, New York has still maintained its dominant position, according to Hayuth's report.

<Table III-1> Portion of container cargo of the east coast (Atlantic Sea) ports of North America

Port	unit; 1,000 TEU, %				portion of 1996
	1993	1994	1995	1996	
New York	1,973	2,034	2,276	2,269	27.6
Charleston	838	971	1,031	1,151	14.0
Baltimore	482	531	535	475	5.8
Hampton Roads	786	896	1,078	1,141	13.9
Jacksonville	459	824	911	1,046	12.7
Other	2,244	1,715	1,600	2,133	26.0
Total	6,782	6,971	7,431	8,215	100.0

reference : *Containerization International Yearbook*.

(2) Hub-port of the west coast area of North America

There are 8 major container ports in the west coast of North America. Five large ports (Los Angeles, Long Beach, Seattle, Oakland, Tacoma) in the west coast area took 90% of cargo volume from the entire region in 1988 and 78.8% in 1996. This contrasts greatly with the dominant position of port of New York on the east coast (Refer to Table III-2).

In the Hub Port competition in the west coast area, multimodal transportation from Far East to North America route is considered to be the important factor. Consistent development of the DST transportation system which connects the west coast area and the Mid-West, the east coast area and the Gulf area resulted in cargo switching from the east coast to the west coast (Abbott 1990).

We can see three gateway centers in the west coast of North America including the Pacific Southwest (PSW) and the competition between ports has been heightened by the development of multimodal transportation.

Even though port of Los Angeles and port of Long Beach are competing with each other in the PSW, total cargo handling portion form

two ports increased from 34.0% to 35.0% in 1980, to 46.3% in 1985, to 47.8% in 1988 by jointly developing multimodal transportation facilities but this proportion dropped slightly, to 46.0%, in 1996.

In the case of port of Oakland which is a gateway center in the central area, its cargo share dropped from 34.9% in 1970 to 24.9% in 1980, to 15.2% in 1988 and then slumped to 12.2% in 1996.

There is another example of competition existing between neighboring ports within the same region. It is the competition between port of Seattle and port of Tacoma in PNW area. Port of Tacoma improved on-terminal rail facility and was able to attract Maersk and Sea-land (US) from Seattle by improving on-terminal rail facilities. As a result, Tacoma share of regional cargo increased from 3.0% in 1980, to 10.3% in 1985, to 11.7% in 1988, but held back a little at 8.7% in 1996. On the other hand the cargo handling portion at port of Seattle has dropped to 24.9% in 1980, to 17.2% in 1985, to 15.3% in 1988 and to 11.9% in 1996.

So port of Los Angeles and port of Long Beach succeeded through a joint competition strategy in the west coast while port of Tacoma was successful in the PNW area. These three ports enjoyed increase of cargo share while port of Oakland and port of Seattle, previously ranked the first and the second place in their respective regions, declined all the way to the third and the fourth.²

Hayuth pointed out the centrality and the intermedicacy as a strategic advantage of location of the largest ports; port of New York on the east coast area and port of Los Angeles on the west coast area.

He argued that port of New York and port of Los Angeles have the strong centrality as a gateway to the vast hinterland, New Jersey and California preserve an intermedicacy for multimodal transportation from Asia to the North American route of long distant transportation service connecting to inland area; Chicago, Houston, Dallas, Kansas and other points. He also evaluated that port of New York has intermedicacy to inland area of USA for multimodal transportation from Europe to North America.

2. The shipping companies which are taking part in the Far East - North America Route selected two ports of the west coast of North America to make a stop on transit.

<Table III-2> Portion of container cargo of the west coast ports of North America

unit : 1,000 TEU, %					
Ports	1993	1994	1995	1996	portion of 1996
Seattle	1,151	1,414	1,479	1,474	11.9
Tacoma	1,075	1,028	1,092	1,074	8.7
Oakland	1,305	1,491	1,550	1,498	12.2
Los Angeles	2,319	2,519	2,555	2,683	21.7
Long Beach	2,079	2,574	2,390	3,007	24.3
Others	2,679	2,445	2,607	2,637	21.2
Total	10,608	11,471	11,673	12,373	100.0

reference : Containerization International Yearbook.

2. Status and features of hub-port of Europe.

Europe has started containerization from 1960s. Port of Rotterdam handled 3,300,000 TEU in 1988, 4,940,000 TEU in 1996 and it takes up approximately 20.0%.

Cargo handling volume by five major ports (Rotterdam, Hamburg, Antwerp, Felixstow, Bremen/Bremerhaven) reached to 53.1% in 1988 and increased a little to 57.6% in 1996 (Refer Table III-3). And four major ports of the north western Europe³ handled 93.2% of the whole area (Lambert 1990).

In addition, the cargo handling portion of major five ports in Europe has steadily increased differ from the United States from 39.9% in 1970 to 47.3% in 1975, 53.1% in 1988, 57.6% in 1996. Therefore, Load Centering phenomenon is clearly appeared in Europe.

Hayuth evaluated that the integration of European markets which has been started from 1992 will change the pattern of port competition in a great deal. Europe has been troubled with cargo transportations between each nation⁴ and even the domestic transportation has

3. Excluding the ports of Mediterranean

4. Movement of goods and cargo transportation among European countries

<Table III-3> Portion of container cargo of European Ports

unit : 1,000 TEU, %					
Ports	1993	1994	1995	1996	portion of 1996
Hamburg	2,486	2,726	2,890	3,054	12.4
Bremen	1,358	1,502	1,526	1,543	6.2
Rotterdam	4,161	4,540	4,787	4,936	20.0
Antwerp	1,876	2,208	2,329	2,654	10.7
Fleixtow	1,639	1,735	1,898	2,042	8.3
Le Havre	895	873	970	1,020	4.1
Others	5,876	5,697	7,936	9,446	38.3
Total	18,921	19,281	22,336	24,695	100.0

reference : *Containerization International Yearbook*.

been considerably regulated. However once an unitary market system is settled, national barrier can be removed and the entire Europe can be a hinterland for all ports. Every ports might try to be a Load Center reaching to every direction to Europe through a multimodal transportation with truck, rail, barge and costal transportation. Another important means of competition among the ports is the use of EDI which has been developed in recent.

By operation of large vessels (4,000 TEU) on the European route connected to a giant market such as the United States, Japan, the deep concentricity of cargo transportation on certain ports would be expected. There is a prospect that every ports will try to improve the service level especially Mediterranean ports will make efforts to become a Hub Port of Far East-Europe route.

faced with some obstacles such as quota system between countries, border inspection or control, adaptation of weight limit regulations and environmental standards different from the countries. After advent of an unitary transportation market in 1992 these obstacles are being eliminated (Chun Joon Soo, Lim Jong Kwan, op, cit. 1990)

3. Suggestive point for construction of hub-port of the North East Asia.

The North-East Asia has been accomplished much more rapid growth compared with other parts for last 20 years in terms of economy and trade, and this trend will be seen for quite a while in the future. Looking into economic scales of the North East Asia, the combined size with South Korea, Japan, China, Russia and North Korea is about 2,700 square kilometers corresponding to 12 folds of 12 nations of EU, and 3 folds of the United States.

But actual land space available to be included into the North East Asia economic group⁵ is approximate 9,920,000 square meters which is corresponding to 4.3 times of EU territory and it is slightly larger than the United States.

The Population of the North-East Asia economic sphere is roughly 770,000,000 which is more than a double of EU population. GNP of the North-East Asia is 3 trillion 870 billion dollars which stands 82.0% of US trade volume.

About the economy size of the North East Asia, it is the largest one over the world beyond EU and USA.

Referring to the status of container cargo volume of major ports of the North-East Asia, specifically in China, it has showed a trend of increase until 1993 and is showing a rapid increase from 1994 onwards.

The cargo volume of port of Shanghai which is the largest container port in China has increased by 17.7% every year during 1985 - 1990, and continues to indicate an increase to 27.3% for five years since 1990(Refer Table III-4).

Competition for logistics concentricity will be far more accelerated by the potential growth power of China, the economic development of South Korea and the super economic power of Japan, and will increases the possibility that the North East Asia could be the centricity for world trade and cargo transportation. Following this trends each nation (Korea, China, and Japan) is trying to do their best to dominate the regional economy by inviting the hub-port in their own country for next century.

5. Among the diverse opinions about areal scope of the North East Asian economic sphere, it is in general to take regard to contain South Korea, North Korea, Japan, Far East Area (7 administrative districts), north east area of China (14 administrative districts).

<Table III-4> Trend of container cargo volume of main ports in North East Asia

unit : 1,000 TEU, %

		Year								
		1985	1990	1991	1992	1993	1994	1995	1996	1997
China	Shanghai	202	456	576	717	900	1,130	1,527	1,930	2,520
	Tianjin	148	286	339	-	-	631	702	-	-
	Dalian	-	131	173	217	256	300	370	-	-
	Qingdao	-	136	184	222	264	430	600	-	-
	Nanjing	-	42	52	73	89	90	150	-	-
	Sub total	369	1,051	1,324	1,229	1,509	2,581	3,349	-	-
Total		447	1,204	1,506	2,011	2,785	4,064	4,679	-	-
Japan	Kobe	1,852	2,596	2,636	2,608	2,696	2,916	1,464	2,229	2,100
	Yokohama	1,327	1,648	1,816	1,887	2,168	2,317	2,757	2,375	2,330
	Tokyo	1,004	1,555	1,784	1,729	1,538	1,805	2,177	2,311	2,322
	Nagoya	422	898	1,001	1,098	1,155	1,224	1,477	-	-
	Osaka	422	484	541	633	680	655	1,159	-	-
	Sub total	5,027	7,181	7,778	7,955	8,237	8,917	9,034	-	-
Total		5,511	7,956	8,782	8,965	9,349	10,417	12,381	-	-
Korea	Pusan	1,148	2,348	2,447	2,673	2,998	3,575	4,130	4,725	5,234
	Inchon	61	112	119	118	113	227	296	-	-
	Sub total	1,209	2,460	2,566	2,791	3,111	3,802	4,426	-	-
Total		1,279	2,469	2,638	2,799	3,131	3,836	4,488	-	-

reference : Containerization International Yearbook.

Situations and Problems of Competition for Hub-Port in the North East Asia.

1. Status of ports in the North East Asia.

(1) Japan

Japan has invested 7 trillion & 49.9billion yen in major ports during the 9th five-year-port revision plan(1996-2000) for development

of international container ports especially concentrating on the north port of Kyushoo as well as three major bays; Tokyo, Yise, Osaka.

1) Kobe

Port of Kobe is the largest container port in Japan which is located in the northern coastal area of Osaka bay at the distance of 30km from the west to Osaka port, and it was the entire western part of Japan as their hinterland which is composed of 7,900ha of water area, 1,800ha of ground including 1,100ha of commercial district.

Port of Kobe and its all facilities had been almost reduced to ashes because of Hansin earthquake on Jan. 1995.

Prior to the accident, container terminal of Kobe port was consisted with 21 berths of a total 7,530m and 12-14m of water depth, three berths of Maya terminal, 11 berths of Port Island and 7 berths of Rokko Island. But 21 berths and 55 sets of Gantry Crane were destructed from the accident.

In 1994 port of Kobe was proud of the world 6th largest port by handling 2,020,000 TEU, but it was yielded to other ports in Japan thereafter.

Current container cargo handling performance of port of Kobe has been reduced to merely 1,460,000 TEU at the 24th rank in the world.

Port of Kobe is currently rebuilding in a rapid progress. It has been operating 18 berths including two new born berths of port of Island II, partially recovered berth and slightly damaged public wharf on June, 1996. The recovering work for existing facilities will be completed until March, 1997.

Prior to the outbreak of the earthquake, port of Kobe received 21 calls of liners from the west coast of North America, 7 stops from the east coast of North America, 7 stops from Europe, 47 stops from China, 21 stops from South East Asia, 16 stops from Korea per week. From the first half of 1996, almost 1 year later, the earthquake had happened, it is getting start to receiving the calls of container ships and its volume is almost same as before the accident.

2) Osaka

Port of Osaka located at the north east side of Osaka bay is called as a gateway port of the western part of Japan and provides services

for the hinterland for 19,000,000 people centered in Osaka city. Port of Osaka is consisted with 1,700ha of ground including 5,600ha of water area and 690 ha of commercial district. Port of Osaka had showed 1.8 times of increase of container cargo volume for last 10 years and marked 5th in Japan with 650,000 TEU in 1994. In 1995, its volume has increased dramatically to 135 TEU due to the transfer of cargoes from port of Kobe. Port of Osaka is receiving 6 calls of liners per week from the west coast of North America, 5 calls from Europe, 20 calls from China, 9 calls from the South East Asia and 7 calls from Korea. Port of Osaka is equipped with 10 berths which reach to 2,670m in total.

3) Tokyo

Port of Tokyo is near from the central part of the country because it is based on the remotest depth of Tokyo bay. It covers the hinterland with 32 million people and the entire eastern part of Japan. Port of Tokyo is consisted with 1,160ha of the ground including 5,360ha of water area and 790ha of commercial district.

Port of Tokyo is the 3rd largest container port of Japan and its container cargo volume had increased to 1.7 times for last 10 years. Port of Tokyo handled 1,900,000 TEU which has increased to 25.9% compared with last year because of the transferred cargo from port of Kobe, the increase of import volume of commodities according to the economic growth of Japan and opening the new route toward China.

Consequently, port of Tokyo is positioned on 2nd rank right after the Osaka in Japan and 15th in the world.

Port of Tokyo is equipped with facilities on the 166 berths in total. It also has 14 berths and 29 G/C in container terminals including Shinagawa container terminal which was built in 1967 at first.

The lengthening of wharf reaches 420m, size of land is 140ha. Aomi terminal has the deepest berth and its depth is almost 14 meters.

4) Yokohama

Port of Yokohama is located at the west coast area of Tokyo bay 30km off south to Tokyo and the port is consisted with 2,670ha of the ground including 7,500ha of water area, 880ha of commercial district.

Container cargo handling volume of the port had increased by 2.2

folds for last 10 years which is equivalent to 2,320,000 TEU. It is the 2nd largest port in Japan and positioned 10th rank in the world. In 1995, during the struggling of Kobe, Yokohama handled 2,730,000 TEU which reached to the 1st rank in Japan and the 8th in the world.

Port of Yokohama invites 16 calls for the north west coast of North America, 6 calls for the east coast of North America, 3 calls for Europe, 42 calls from East Asia, 14 calls from South East Asia, in addition to the South Africa, and the around-the-world route per week which links the entire world. Port of Yokohama has 113 berths of public area, 123 berths of private area, 21 berths of container, and the total length reaches to 5,160 meters.

(2) Taiwan

1) Kausheung

Port of Kausheung had started its function as an auxiliary port to An-Ping port which is a result of Chonjin agreement between European powers and China in 1963.

Port development project for Kausheung had been undertaken in 1908 and dedicated in 1929. It had kept in order during 1946-1955, 1956-1965 according to a gradual revival and development plan and further renovated the entire port through the 12-year-port expansion plan.

Its water area has become 12.7km, four times larger than before, built up 544ha of reclaimant land for creating Qingtao commercial harbor area, export processing zone, water manufacturing area and has fulfilled all the conditions for being a central port of Taiwan after the 2nd port which is including 1-4 container terminals was completed.

In recent, Port of Kausheung is handling two third of import and export cargo of Taiwan which succeeded in handling 80,000,000 tons of cargo in 1994 and positioning at the 3rd port of the world with taking care of 4,900,000 TEU of container cargoes.

It has been operated with 4 container terminals, and the 5th terminal with Hynudai commercial shipping has been recently completed in parts. It also has long range plan for constructing the 6th terminal is undergoing. Except a few berths for public use, most of the seats are fully assigned to shipping companies. These shipping companies are responsible for all facilities needed for operations at terminal such as loading and unloading equipments because the port provides

minimum basic facilities with their terminals. This manner of terminal lease is favored because the port authority can reduce their investment and the shipping companies can manage the terminal system appropriately for their size of capital.

(3) China

1) Shanghai

Port of Shanghai has been enjoyed its time-honored history and it is the largest container port of China which had handled 1,200,000 TEU in 1994 and 1,530,000 TEU in 1995. It has a good prospect of further development with the continuous increase of cargo volume following the economic growth of China. Even though it has three container terminals and seven berths, it does not seem to be easy to invite the large vessel to make a stop because the port of Shanghai is only 9.4-10.5m which is not deep enough for over than 3,000 TEU.

2. The Current Status of Port Development in the North East Asia

(1) Japan

1) Kobe

In the master plan set up in Feb. 1995 after the earthquake, the plan of quick restoration of the port targeting the year of 2005 and expanding plan for developing a gateway port are suggested.

First they planned to expand Port Island II which is 390ha along with the direction from existing Port Island to seashore.

There are 6 container berths which have 15m of water draft, and 84ha of yard size, and three of them were opened in 1996. The estimated budget is the amount of 124 billions.

Also the Rokko Island Minami which has 330ha area in front of the Rokko Island sea is newly developed.

In this 110-billion-budget terminal, 4 container berths, 2 multi-purpose berths and 2 feeder berths are planned to be added.

For the construction of new highway from Port Island to downtown, the undersea tunnel will be completed by 1999 and they plan to connect two artificial islands and seashore city area by constructing the port highway crossing Port Island and Rokko Island

2) Osaka

In Osaka port, they plan to develop seven 2,450m-long container only berth. 3 berths are in Hokko-Minami terminal and 4 are in Shin-to terminal. These container terminals are planned to be constructed on the island which is made with dredging soil and wastes.

3) Tokyo

There are eight container berths which are 250-300m long.

The developing plan which is one sort of new 5-year port development has a plan for constructing 3 berths by 2000. Besides this, they have new construction plan for new container terminal which is capable for big container ship.

In the Tokyo port, the construction of new highway connecting the port and the neighbors is under construction.

In 1993 the Rainbow Bridge was completed so that became to connect Anomi terminal and Tokyo downtown and in 1994 it was opened the Tokyo highway connecting Tokyo, Kawasaki, and Yokohama.

Currently there is one big project targeting by 2000, that is 8km-long and 4-lane port highway. After completion it will cross the outside area of the port horizontally.

4) Yokohama

In Yokohama, they plan to develop two container berths at Honmoku and further add two more berths at Daikoku. In addition, they plan to dredge existing four berths with 14-15m draft. By the year 2005, they plan to invest 150 billion yen to construct 1,400m long berth to accommodate four berths container terminal on the 220ha land with 15m draft. Besides, by the year 2,000, they invest further 150 billion yen to construct new 5km road to connect all container terminals such as Yamanouchi, Shinko and Yamashita in this area.

(2) Taiwan

1) Kausheung

The volume of Kausheung is continuously increased because of the rise of container cargoes of transshipment in addition to the volume of Taiwan itself.

The Kausheung port has been in the position of transshipment port

next to Hongkong in East Asia because of geographical and natural attributes.

Taiwan has a plan that develop Kausheung as a hub port to achieve 'Asia-Pacific Operation Center' plan which is proclaimed in May 8, 1995 and announced in end of 1993.

It is said that the 100ha-large 5th terminal (8 berths) in Ta-Jen upper port is one part of this big plan.

Also until now the specific port development plan is not yet announced but the possibility of 6th container terminal in Tae Lin upper port is currently considered.

This area is able to be developed to have 5 big-depth container berths for it is 112ha big and 1,600m long.

(3) China

1) Shanghai

For the processing of 250-300 million TEU in 2000 and 600-700 million TEU in 2010, Shanghai has made these 3 plans like these.

- It is required to deeper the draft of Yangtz River
- To extend the port facilities in the outside port, Waigaoqiao, this includes the big plan for developing port areas in large scale.
- It is needed to re-locate function of Huangpu to improve the efficiency.

(4) Korea

1) Pusan

According to the rise of transshipment, the container's transshipment of Pusan port has been increased and it is forecasted that the volume will be 6,130,000 TEU by 2001 and 8,680,000 TEU by 2011.

For the effective processing of estimated cargo volume and the being hub port of Northeastern Asia, there are several port development plans in Table IV-1.

2) Kwangyang

A large scale of container's terminal is under construction in Kwangyang port. East terminal of that is to reduce the delay of Pusan port which is full of capability and enforce the good situation as a northeastern's hub port.

<Table IV-1> The container terminal development plan in Pusan port

Port Name	Berth Size	Depth of Front Sea (m)	Total Square (m2)	Number of G/C	Start of Operation	Capacity per Year (TEU)
Gamman port	50,000ton, 4 berths	14	310,000	5	2001.1	480,000
Extention area	5,000ton, 1 berth					
Gadukdo New Port	1step 50,000ton, 7berths 20,000ton, 3berths	15	-	-	2006	2,001,000
	2step 50,000ton, 8berths 20,000ton, 6berths	15	-	-	2011	2,562,000

<Table IV-2> The container terminal development plan in Kwangyang port

Step Division	1 Step ('87-'97)	2 Step ('95-2001)	3 Step (2002-2006)	4 Step (2007-2011)	Total
Berth	50,000ton 4 Berths	50,000ton 4Berths 20,000ton 4Berths	50,000ton 4Berths	50,000ton 8 Berths	50,000ton, 20Berths 20,000ton, 4Berths
Operation Capacity (1000TEU)	960	1,388	960	1,920	5,228

3. The problem of competition for Northeastern Hub Port

The Northeastern ports whose growth and development are deeply influenced by the cargo originated from China's northeastern area are Kausheung in Taiwan, Kobe, Osaka, Tokyo and Yokohama in Japan, Pusan and Kwangyang in Korea and Shanghai in China.

For these ports' growth as a Hub Port, it should be available to accommodate large scale ships more than Post Panamax level, 5,000-6,000 TEU and for the docking of these large scale ships it should be required more than 300m berth.

Therefore Table IV-3 shows facilities and development plans according to more than 300m berths.

<Table IV-3> Status & development plan for berth in the main container ports of the North Eastern Asia

Unit : berth

Division		1995		2000	2005	2010	remarks
Port		under 300m	over 300m (over 350m)	development plan(over 300m quay length/class of 50,000ton vessel)			
Japan	Kobe	18	19(10)	Port Island 2step 6berths(1998) South Rokko Island 4berths (2000)			
	Osaka	5	5(1)	Hokko-Minami 3berths(1999) Shinto 1berth	Shinto 3berths (2005)		
	Tokyo	4	9(2)	Reducing the berths from 8 to 7 but extending the length to 300-320m(3berths) in Ohi completion of iberth in Aomi (1996)	extending the rest 4berths in Ohai dredging Aomi		examining construction plan for new large-terminal
	Yoko-hama	13	8(2)	Honmoku 2berths, Daikoku 2berths security of depth of sea	Minami-Hon moku 4berths (2005)		
Taiwan	Kaush-eung	8	11(2)	5th terminal 8berths(1998)	5berths possibility at 6th terminal (2002-2011)		
China	Shang-hai	7	-	2step 3berths (1999) 1step (1998 -)	2step-4step 20berths (Time is not fixed yet)		under 50,000ton
Korea	Pusan	-	7	Kamchon wharf 2berths(1996) Shinseondae 1berth(1997) 4step wharf 4berths(1997)	Kamman wharf 2berths(2001)		
	Gaduk-do	-	-	1step 4berths(1997)	7berths(2005)	8berths (2011)	
	Kwang-yang	-	-	1step 4berths(1997)	2step 4berths(2001) 3, 4step 12berths(2001)		

The Plan of Establishing the Hub Port System in the North East Asia

1. The requirements and the criteria of Hub Port

The hub port of the North East Asia should be located basically in the geographical center of the Northeastern area as a gateway for the outer territory trade and the backbone of intra-Far Eastern region trade. The volume of the intra and outer of the region trade of the North East Asia is expected to be increased, so the hub port of the Northeastern Asia should have sufficient port equipments and transport facilities handling and linking the cargo volume of this area. The value-adding activities of logistics such as storage, manufacturing, framing, packing as well as financing and information technology is necessary in the process of cargo linking transportation. In the future, as the formation of the Northeastern economic bloc is realized more and more, the importance of logistics which adds economic value through the flow of cargo volume without any restriction will be increased too. Therefore, the North East Asian hub port should have sufficient logistical equipments and facilities so that it can play a role as a distribution center as well as a simple transportation node.

The criteria such as geographical location, logistical equipments and facilities are necessary but not sufficient conditions to be a hub port in the North East Asian region. The hub port in this area ought to meet the needs for inexpensive and high quality logistical services in the port so that it can be selected as the hub port among many candidates by the cargo owners and carriers. In addition, the logistics industry as well as the related industries such as transport, storage, and materials handling etc. should be developed and the support from information system and financial industry is also necessary.

The specific requirements and criteria for the hub port in the North East Asia are suggested and analyzed below.

(1) The central location in the geographical viewpoint

Generally there are two types of the cargo flow in the hub port. The one is transportation of cargo from its hinterland, and the other is transit cargo between another destinations. It is difficult to classify these two types of cargo flow clearly in the geographical viewpoint.

The port which has enough cargo from its hinterland is also preferred in the global linking transport. Therefore the criterion of central location in the view of geographics should be evaluated on the geographical importance for the transitting capacity of cargo in addition to the centrality of a port, which consists of the population of backside area, economic indicator like GDP, intensity of cargo volume etc.

For example, the Rotterdam port called the gateway of Europe is the typical hub port which has outstanding features on the criteria of geographical centrality and its intermediacy. The Rotterdam port has abundant cargo volumes from the neighboring places like Germany, Belgium as well as near Amsterdam. In addition, it has advantages of being linked deeply into the inland of Europe by roadway, railway, and barge system of the Rine river.

In the North American area, Los Angeles, Long Beach in the west coast and New York in the east coast have been grown and developed as a hub port on account of the distinct advantages on the criteria of locational centrality and intermediacy.

The port New York, Los Angeles and Long Beach has strong centrality as a gateway port covering the tremendous hinterland like New Jersey and California respectively. In addition, the port of Los Angeles and Long beach are evaluated to have a good linking ability towards the inland of America such as Chicago, Houston, Dallas and Kansas etc. in view of the combined transport between Asia and North America.⁶

Conclusively a hub port ought to play a role as a mediator linking long distance areas beyond its own hinterland for generating cargo flow.

(2) Sufficient equipments and facilities

As a gateway of outer territory cargo, a hub port play a role of a maritime transport base handling the huge amount of cargo and linking hub ports all over the world. Therefore the critical factor for being a hub port is to have sufficient port equipments and facilities to treat the rushing cargo volumes smoothly from the neighboring countries as well as the cargo volume of its own country.

6. Douglas K. Fleming and Yehuda Hayuth, *op. cit.*, 1994, p. 12.

Especially in case of transit cargoes, much more facilities are needed in comparison with the cargoes of its own country to accommodate the twice cargo handling volume occurred for discharging and reloading. In addition, the transit cargoes require a lot more equipments because it should be stored in the port warehouses until they are reloaded, compared with the cargoes of their own country that can be placed in container yard or inland container depot outer side of the port. The lack of equipments and facilities causes an extreme delay of cargo flow in the port, and leads to damages of total cargo handling capabilities of the port. So it is necessary to have enough space for port equipments and facilities.

In case of the Rotterdam, the hub port of Europe, the dual hoist crane is used to increase capabilities for container cargo handling and facilities of calling vessels. More efforts are being made to increase the operational efficiency of terminal through the full automation of the container flow and positioning into the container yard. All these methods can not be used without enough space for equipments and facilities

The North East Asian hub port should have a transportation network linking each intra-region economic zone. Henceforth sufficient feeder network ought to be established towards the Pan East Sea, the Pan Yellow Sea, and the south China economic zone, and especially it should be able to link each economic zones between the Pan East Sea and the Pan Yellow Sea territories by roadway, railway etc.

The functions of hub port are not restricted simply to the role of cargo transportation. As the bloc of regional economy grows more and more, the distribution centers of firms are functionally integrated. The cargoes are discharged once, and then distributed towards neighbouring countries or areas through value-added logistics systems such as repacking, attaching brands or labels, simple manufacturing and quality control etc.

It tends to be increased that firms are needed to delay the final manufacturing process as long as possible to flexibly accommodate changes of a market environment. It means the situation that factory only finishes the common manufacturing processes for the customers of various regions, and then after mass transportation into the distribution center and storage, finished goods are distributed to end customers through the final processes such as additional manufacturing,

framing, labeling brands, quality control etc. Therefore the hub port should be able to give enough logistical facilities so that the cargo owners can perform the value-adding activities

(3) Low price and high quality service

Cargo owners focus on not only just total transportation cost including shipping freight or trucking cost, but also the entire logistics cost including inventory cost. These tendencies have changed the criteria of transport route choice, which is different from the past having selected the nearest distance port. These also have put influence on the decision making process of carriers selecting the calling port, and brought the competition among ports.⁷

Especially shipping companies want to directly control the total physical distribution processes including terminal works in the port and trucking in addition to the shipping route. Therefore the port operation needs to be approached in these point of view.

(4) The efficiency of logistics industry and supporting industry

It is above mentioned that the North East Asian hub port should be the center of logistics and trade linking each intra regional economic territories into the worldwide. All the system and the institution of hub port, henceforth, ought to be opened internationally and be operated on the autonomous base.

It is difficult in the countries retaining closed and regulative policy to lead the smooth flow of cargo on account of the various restrictions on the international trade and physical distribution. Moreover, it should not be looked down upon that these regulations and checks decreases the advantages of the geographical centrality, intermediacy and the efficiencies of enough equipments and facilities.

The hub port as a logistical base should also be established together with the supporting industries such as commerce, finance, information etc as well as cargo handling, storage, transportation, packing etc. In conclusion, being the center of logistics is possible only where it can play a role of trade base as a international city. We can find this

7. James H. Foggin and Gary N. Dicer, "Disappearing Hinterlands: The Impact of the Logistics Concept on port Competition", Canadian Transportation Research Forum Proceedings, Twenty-sixth Annual Meeting, Vol. 26, No.1, 1985, pp. 385-390.

lesson from all the global hub ports like Rotterdam, Singapore, Hong Kong etc, which has grown up as the center for international trade and cultural interaction including the industry, finance, information etc. in addition to the logistical center.

2. Evaluation of the major ports in the region

(1) Japanese Port

Japanese ports are well situated for a role as a hub-port to the North America direction of sea transportation and Kobe, Yokohama, Tokyo are subject to be used for this trade. Japan is most developed in transportation facilities including ports in Northeast Asia, and since overall marine environment including transport related system, is most well formed, its ability to create service is the best in Northeast Asia. However, Japanese port's disadvantage is that overall social cost including port charge, is by far higher compared to the other countries. Due to the fact that Japan is an island which is the biggest obstacle to make it impossible to connect through overland transport to South and North Korea, China, Russia etc. Considering these situations, there are some limitations for the Japanese ports to perform as a role for hub-port.

Since Japan has a huge import-export trade volume, it cannot be excluded from main ports of calling for large container vessels. Japan's trade volume will amount to be 16.4 million TEU in 2000, and 27 million in 2010.

China's export trade bound for North America transit through Kobe port, however, from 1995 chinese vessels started to use Pusan as a trans-shipment port. This is because Pusan port's transit cost is by far cheaper than Kobe port's trans-shipment costs. Especially due to the influence of Kobe earthquake which happened in January, 1995, Pusan port's transshipment volume has increased dramatically and as Kwangyang port operated from 1998 adding the sufficient capacity of facilities. As a result, Kobe port as a role for hub-port in Northeast Asia has reduced considerably.

(2) Chinese ports

Chinese ports(Dalian, Tianjin, YonWun, Shanghai) are expected to share their Eurasian railroad transportation's role with Russia. The

advantage of Chinese port as an Eurasian railroad transportation base is that it could diversify several routes like TCR, CMGR, TMR and it can use a lot of ports in northward of Hong Kong as a starting point. That is, freights which use Eurasian railroads can be absorbed extensively. However, the disadvantage of Chinese port is that whatever route, it has to pass Russia's territory. Chinese port has not been utilized due to a difficulty with Russia's toll negotiation. Because of these disadvantages it seems that it will be difficult to overcome its limitation with TSR's cost competition. Chinese port's another disadvantage is that compared to the possibility of extensive freight absorption the railroad and port facilities are not appropriate and sufficient. Considering the increasing trends in import-export trading and hereafter prospect, it seems that railroads connected from China to Russia, North Korea and South Korea will increase rapidly. It also seems that cargo volume passing through Russia connected from China to the Middle East and Europe will increase greatly. The secure of railroad and port facilities are a hot issue at hand at a moment.

In sea transportation of Europe direction, Shanghai port is in the possible geo-economical location as a role for hub-port, with the hinterland of the whole Northeast Asia area. However, in spite of these geo-economical location, Shanghai port is not appropriate due to draft problem of the port and the capacity of facilities therefore, it is in a difficult situation for large container vessels 4,000TEU to call. The overall social cost including port charge is in most competitive position however, overland transport facilities including road and railroad have fallen behind and insufficient. In aspect of overall transport system and the ability to create service is inferior to Korea and Japan. Therefore, Shanghai port is urgent to construct a large container terminal with the draft over 13m. It seems that Shanghai port's trade volume is going to be 1.7 million TEU in 2000, and 3.7 million TEU in 2010. Shanghai port needs a lot of investment and time to expand port facilities to handle these cargo volumes.

(3) Korean Port

Korea's Pusan and Kwangyang port zone in sea transportation can play a role as hub-port for the whole area of the Northeast Asia. It is well situated with the best geo-economical location as to play a

role for hub-port for whole area of Northeast Asia. The advantage of Pusan and Kwangyang port zone is that it is geographically centered in Northeast Asia and it can perform as a hub-port considering the geo-economical circumstance of freight's moving direction. As Pusan and Kwangyang port zone started to operate as a hub-port in Northeast Asia from 1998, it secured, little by little, abundance of facilities to absorb other country's transit cargoes. Also it is possible to connect to inland points of the continent by railroad and road. Even though railroad and inland road facilities are insufficient at a moment, the massive development plan is being designed. Korea's overall social cost including port charges, is higher than China however it is far below than Japan. In aspect of total capability to create logistics service including integrated transportation system and supporting industries is inferior to Japan however is in superior situation than China.

The expected volume of cargo generating in the South China below the port of Shanghai and Taiwan will be 24.9 million TEU in 2000 and 47.5 million TEU in 2010, therefore there is physical limitation to handle the entire volume of cargo in the region for Hong Kong only.

It would be more feasible to allocate the role to Pusan and Kwangyang port zone to handle the transit cargo from this reason.

Conclusion & Recommendation

In conclusion, the Pusan and Kwangyang ports zone seems to be most suitable to play the role as hub-port in Northeast Asia. It can take advantage of the geopolitical location and also could facilitate the flow of the trade with minimizing the reverse flow of the trade.

Many large liner shipping companies in this region have ambitious program to diversify their operations and to introduce sophisticated logistics systems. Inland transport networks are being upgraded to satisfy diversified needs of shippers. Pusan is promoting itself as the starting point of an efficient railroad network including the Trans China Railway and Trans Siberian Railway. In the future the region's container railroad system will be operated intensively, like the one in U.S.A. At present facilities and handling capacity of Pusan

and Kwangyang port zone are less competitive in comparison with the ones in Japan.

Nevertheless, in viewing the fact that Japan, as an island, doesn't have linkage to the continent and most of major ports are situated along the pacific coast line, the Pusan & Kwangyang ports zone could effectively cover the transit trade through Korean ports destined to inland points in China, Manchuria and Siberia for inbound trade and also further to European countries for outbound trade.

Also considering the fact that ports in China do have draft problems which prevent them handling large container vessels over 4,000 TEUs. Also China's inefficient inland networks require enormous investment to improve its conditions.

However, selection of the hub-port should take other factors into accounts. So called, the complementary competitiveness should be taken into accounts. China has great potential, with abundant natural and human resources, but it will take time to reach the stage which requires the sophisticated national logistics system. At present an international logistics system is required only for the export oriented industrial sites. Hence export-related logistics needs can be handled more effectively through the nearby minor ports and feedering services to Pusan and Kwangyang ports zone.

Japan has its competitive edge in its high technology and capital, Korea is situated just in between Japan and China but geoeconomically it is in an ideal position to combine the competitive advantages of the region.

In response to global competition and to the need for international cooperation, cooperative regional blocs are emerged around the world. Emergence of the Northeast Asia bloc is directly related to the rapid increase in the inter- and intra- regional trades. Rapid economic growth, global competition and rapid development of transportation technology increase the benefit of regional cooperation. On the other hand, they also require the build-up of efficient integrated transportation network.

Korea is one of the major trade partners in this region, following Japan and China, and its economy has a complementary relationship with the other countries in the region.

However, inter- and intra-regional trade volume of Northeast Asia will be affected by the following.⁸ First, the future of the Chinese

economy, linked to its participation in WTO, will be the most important. Whether China can enter WTO as a developed economy or developing economy will greatly affect the structure of the Northeast intra-regional trade.

Second, the progress of Tuman River Economic Development Area (TREDA) program led by the UNDP, focusing on the development of Rajin-Sunbong area in North Korea. Northeast provinces of China and Russia in Far East, will greatly increase the intra-regional trade in natural resources. This will also strengthen the complementarity among the economies in this region, thus accelerating the economic integration and growth of the intra-regional trade volumes.

Finally, of most significant factor to affect the economy of this region especially to the Koreans, will be the change in the relationship between South and North Korea including the possibility of reunification. South-North Korea relationship will also play a key role in building up an efficient, integrated transportation network in this region.

Considering all these factors and geoeconomical location, it is quite suitable for Korea to play a role as a logistics hub in this region.

In order to be the logistics hub of Northeast Asia, Korea should act as a landbridge connecting from Korean peninsula to China, Russia and further to European countries with Japan with integrated transport network by roads, railways, airport and sea transport as well.

8. Lee Kyu-Bang and Kim Dong-Ju, "Strategies of developing Northeast Asia Logistics Hub in Korea", by KRIHS, 1998, Seoul

THE PRESENT AND FUTURE OF SHIPBUILDING

Hirotarō Hayashi

Introduction

In order to discuss the given topic (shipbuilding), it is necessary to examine more than simple shipbuilding capabilities, because capabilities are only one aspect of this theme.

In this session, the Korean representative will make a presentation on marine transportation and harbor facilities, and the Taiwanese group will refer to marine science and technologies respectively. With regard to the current shipbuilding industry, Korean and Taiwanese discussions may cover the subject. In order to discuss and evaluate the future of the shipbuilding industry, it is necessary to take the above two relevant factors into consideration in addition to exploring the future direction of the global economy.

Please forgive me if my presentation does not cover well what the conference organizer intends because I have prepared my presentation before I know what are explored by the representatives of Korea and Taiwan.

The Changes and Current Situation of Shipbuilding

The idea of using ships for transportation developed first in Egypt around 4000B.C.. The purpose of using ships has changed many

times over the ages. They have been used for naval warfare, as means of furthering territorial expansion (such as the discovery of the Americas) and maintenance of acquired overseas colonies, or simply conducting international trade, and so forth.

In the years from the 19th century through the early 20th century, mass transportation was promoted by the evolution of ship material mainly attributed to transition from wooden vessels to iron-built ships, together with advance in propulsion which made ships larger. These changes increased the variety and quantity of products that were transported over sea. Improvements in producing rivets, molding and steel-processes goods have also contributed to increasing the ship construction in volume.

Although the Japanese shipbuilding industry first flourished and grew from the high demand for marine transportation created by the economic boom right after World War I, and it can be said that European and American shipbuilders dominated the market up to the end of the first half of the 20th century. However, Western shipbuilders have lost their dominance in the market, due to the combined effects of labor conflicts with labor union, a conservative management style and so forth increased labor costs and a decline in the numbers of skilled workers.

The Japanese shipbuilding industry has learned modern large scale shipbuilding technologies from their Western counterparts. Helped by demands created by replacement of old ships, they have acquired approximately 40-50% of the global market for newly-built vessels, and maintained this record for 33 years from 1965 to 1998.

In the 1990s, the Korean shipbuilding industry has improved its production facilities dramatically. It has acquired competitiveness enabling it to surpass Japan. Since 1995, China has been also focusing on gradually improving their shipbuilding capability. Some sources say that China is aiming to acquire 10% of the global market share by the early 21st century.

The following data is given to reinforce my argument.

The first graph shows the amount of the world's newly-built ships on a completion basis. It reveals the gradually declining share of Western shipbuilders, the increase in Japanese share, and then the rising Korean share since the 1990s.

It is extremely difficult to aggregate the combined capabilities for

constructing new ships because there are differences in skills, shipbuilding facilities, and labor forces among the countries, along with cyclical changes in demands. In consideration of these factors, 32-34 million tons is a rough estimate for the year 2000.

The second graph shows the changes in the total tonnage in the respective types of merchant vessels. In 1997 the total tonnage of bulk carriers has surpassed that of tankers, and tankers and bulk carriers make up to 65% of the total.

The table 1 shows the trends in orders received for new ships.

Comparing these figures with the total for newly-completed ships, it can be said that the supply exceeds demand. It can be easily assumed that the competition among shipbuilders will become more crucial when comparing the volume of the ships built and shipbuilding capability, taking the volumes of the placed orders and declining trends of orders for new ships after the year of 2000 into account, further, taking the circumstance such as the increase in productivity and competitiveness of the Chinese and Taiwanese shipbuilders into consideration.

The Future of Shipbuilding

When we determine the required total volume of ships to be built, in general, we first estimate the total volume of seaborne cargoes and available ship volume which is obtained by deducting the volumes of lost, scrapped and moored ships from the currently held total tonnage. Also as mentioned above, the majority of shipping amount are by tankers and bulk carriers. This figure can change largely also by energy demand, the modifications of industrial structure, and demand for grain distribution. Therefore, replacement with new ships have to also be considered within a package of development of transportation efficiency including improvement of distribution systems which include port facility, enlargement of hulls, and increases in speed.

As seen above, many uncertain factors make it difficult to foresee the future. In this presentation, I would like to show a sample of my estimation up to 2010.

The third graph shows real and predicted figures for seaborne

trade on a ton/mile scale and it shows 1% annual growth.

The table 2 shows the variation in the amount of lost or scrapped ships. It is relatively easy to predict these figures from the age of ships and the recent tendency to adopt dual-hull structure.

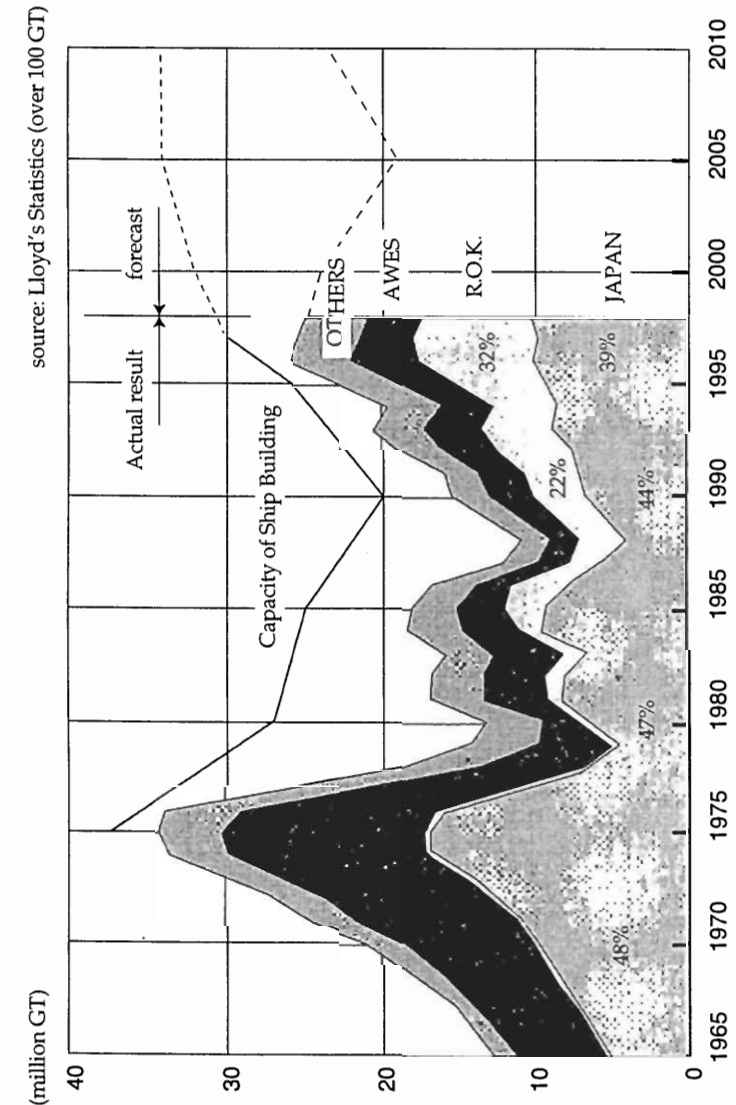
However, considering economic efficiency, we can not argue on a simple standard. If we assume the increasing number of scrapped tanker around 2002 and bulk carriers in the years around 2000 due to their superannuation and ship-hull modification, and grant that the tendency of the ships of other type will remain the same, the annual amount of lost and scrapped ships will be 17.7 million tons, and the total demand for new ships will be 21 million tons.

Conclusion

Shipbuilding industries all over the world will focus on increasing the productivity of ship design, construction, and furnishing.

At the same time, they will make efforts to cut costs and prices, such as by shortening the period of construction. However, globalization of information will accelerate globalization of technology. Therefore, the affects from fluctuations in currency exchange rates will have a bigger impact on shipbuilders in the future, than efforts made by shipbuilders to improve production capability or reduce costs. Hence, progressive growth in the shipbuilding industry will depend primarily on the stable growth of the world economy.

Graph 1. New Shipbuilding (completion base)



Graph 2. Total SHIP TONNAGE

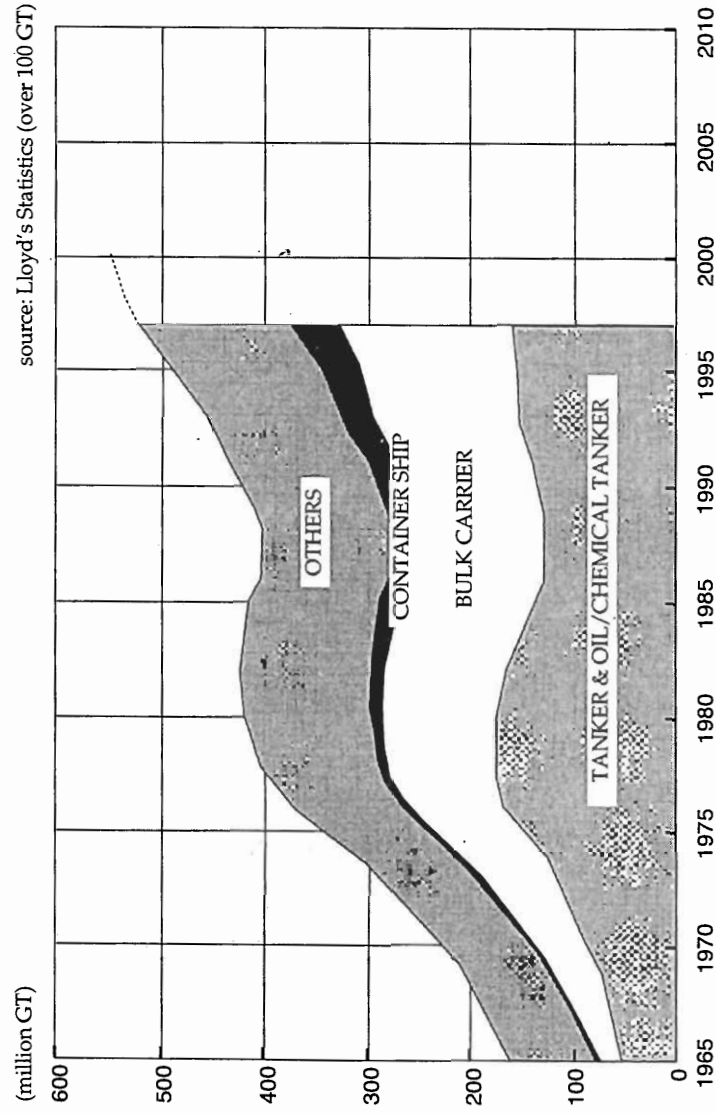


Table 1. New Shipbuilding Contacts

year	items	New Shipbuilding order					Order Backlog	
		Japan	R.O.K.	Awes	China	Others	Total	Total
1955		2.87	-	7.98	-	0.69	11.54	12.60
1960		0.96	-	2.28	-	0.80	4.04	20.77
1965		11.11	-	7.96	-	1.63	17.44	33.64
1970		18.33	-	17.59	-	3.07	38.99	59.91
1975		6.80	0.51	2.78	-	3.76	13.85	113.35
1980		10.00	1.71	4.47	-	2.91	19.09	34.63
1985		6.36	1.34	2.04	0.28	2.89	12.91	25.86
1990		11.14	5.74	4.23	0.60	2.36	24.07	39.79
1991		8.07	5.11	3.05	0.61	3.07	19.91	43.16
1992		5.21	2.21	2.36	0.99	2.03	12.80	37.33
1993		7.53	8.32	4.11	0.59	2.10	22.65	39.24
1994		11.72	5.66	3.34	0.78	3.85	25.35	45.79
1995		8.91	7.76	4.31	1.11	3.44	25.53	48.53
1996		9.72	6.74	3.12	1.67	2.80	24.04	46.96
1997		15.69	13.54	3.26	1.61	2.46	36.57	56.62

Source: Lloyd's Statistics (over 100 GT)

Graph 3. Shipping Cargo Flow

source: Fearnley's Statistics etc.

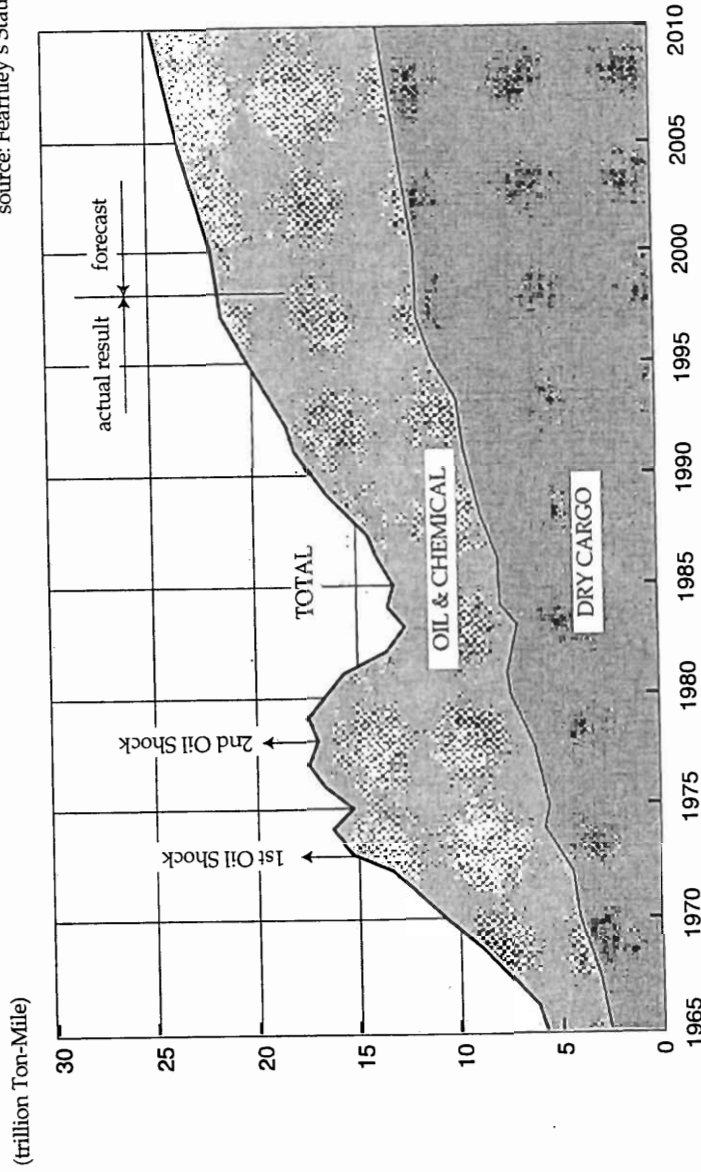


Table 2. Ship's Loss

items	Casualty		Scrap		Total		Inactives	
	number	1000 GT	number	1000 GT	number	1000 GT	number	1000 GT
1950	222	260	399	914	621	1,174		
1955	178	255	503	920	681	1,175		
1960	171	358	830	3,285	1,001	3,643		
1965	273	739	762	2,523	1,035	3,262		759
1970	352	613	1,030	4,311	1,382	4,924	117	271
1975	336	995	626	5,077	962	6,072	614	20,421
1980	387	1,804	903	6,022	1,290	7,826	394	8,085
1985	307	1,651	2,360	22,229	2,667	23,880	1,273	34,036
1990	244	1,412	468	1,645	712	3,057	287	2,525
1991	321	1,937	587	2,306	908	4,243	304	2,855
1992	260	1,430	594	6,652	854	8,082	379	5,450
1993	262	962	841	10,284	1,103	11,246	413	5,673
1994	214	1,746	873	11,768	1,087	13,514	378	4,837
1995	225	950	838	9,660	1,063	10,610	335	4,101
1996	179	891	711	9,668	890	10,559	274	3,493
1997	132	804	732	8,707	864	9,511	297	3,792

Source: Lloyd's Statistics (over 100 GT)

THE PRESENT STATUS OF TAIWAN ENC PRODUCTION AND APPLICATIONS

Yi-Ching Chern & Shuh-Kuang Wu

Introduction

CNHOO is the first echelon technical organization under the Chinese Navy Headquarters. It was first established in Shanghai on April 1922. In June 1974, after a series of organization reform, it was renamed to Chinese Naval Hydrographic & Oceanographic Office and stationed at Tsoying Naval Base till now. The traditional tasks of this office are printing nautical charts and issuing Notice to Mariners in order to secure maritime safety. Nowadays, its tasks are diversified. In order to fulfill the readiness of the fleet, and fully support the combat requests of new generation ships, this office is continuously undertaking various oceanic environmental data collections, analyses, distributions, and applications. One of the most important achievements in recent years was to improve the chartmaking process from manual labor to computer cartography using digital data. Those digital spatial data which came from digitizing tables and field survey, included totally 350 layers, 307 symbols and 100 linetypes using a hierarchic structure, are now been integrated as a digital chart databank, that allow the development of our own ENC possibly come true.

IENC (International Electronic Navigational Chart)

The maritime transportation and trade are the primary lifeline to the development of Taiwan's economy. For aiming of national policy "Plan for Developing Taiwan into an Asia-Pacific Regional Operations Center", satisfying international and national shipping requirements, and providing an overall maritime safety transportation service in Taiwan's water, the development of international standard ENC plays a very important role in establishing Taiwan as an East Asian hub for the shipping center.

To accomplish the request of the 1974 SOLAS Convention and the objective of national policy "Plan for Developing Taiwan into an Asia-Pacific Regional Operations Center", the developing of ENC is imperative. Currently, the official ENC data of those great maritime powers, i.e. U.S.A., Canada, Japan, U.K., and Norway, are produced by the authority of a government authorized hydrographic office in the worldwide. In spite of a little delay in the ENC data production, the CNHOO is not only to bear responsibility for the developing IENC (in distinction with the CVENCS and any other country's ENC) data but also to be the task of the greatest urgency at present. The CNHOO is the sole government authorized hydrographic office and nautical chart publisher of Taiwan which storing the huge digital chart data and the rich cartographic knowledge. Basically, the CNHOO has the foundation of capability to implement the IENC data production. In 1998, CNHOO has developed the first prototype Taichung Harbor IENC data (IHO S-57, Version 3) using CARIS GIS and CARIS Object Manager. Figure 1 shows the flow chart of IENC production; Figure 2, a hard copy from IENC display monitor.

CVENCS (Chinese Vector Electronic Navigational Chart System)

The CNHOO has established the computer aided cartographic system in producing nautical chart since 1990. This milestone has laid the good foundation in chart production and digital chart know how for the future development. In 1995, the CNHOO analyzed the advantages of raster chart and vector chart also studied the Special

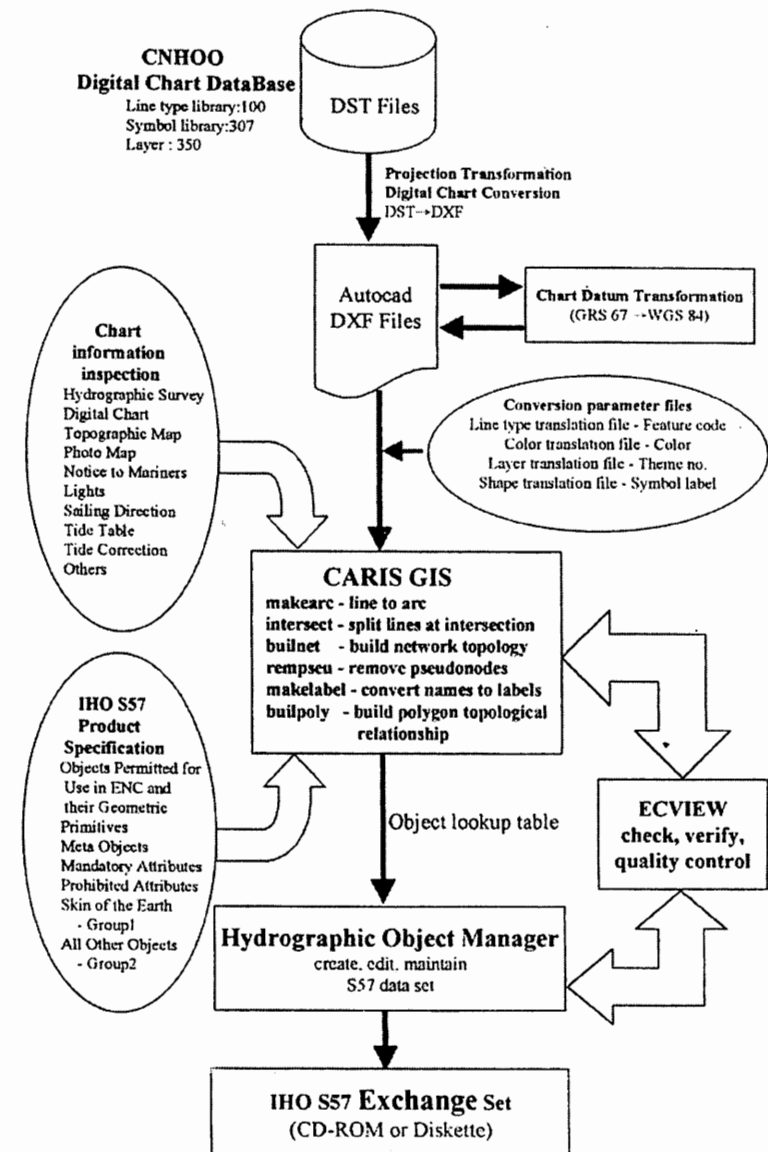


Figure 1. The flow chart of IENC Production

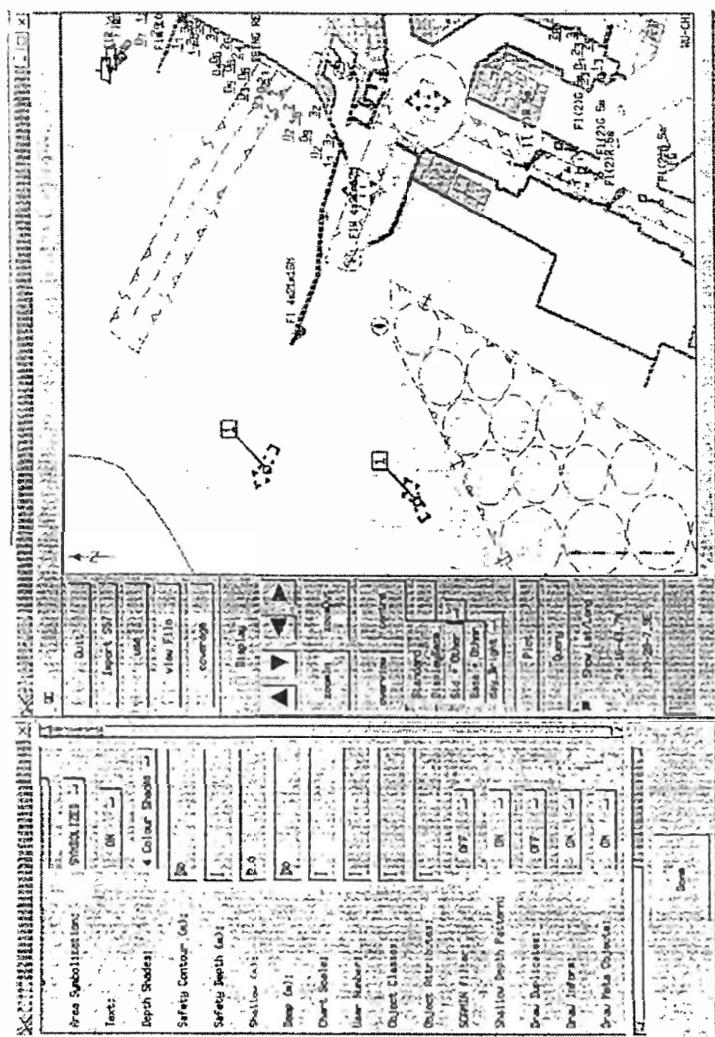


Figure 2. A hard copy from IENC display monitor

Publication No.52 (Specifications for Chart Content and Display Aspects of ECDIS) of the IHO. After lots of brainstorm, the CNHOO has developed the CVENCs which is an integration system including six modules: navigational function, electronic chart database, route planning, surface modeling, GPS receiver, and electronic compass receiver. Owing to the rapid improvement in computation and graphic capabilities of personal computer and decreasing in their prices, the CVENCs can easily be implemented on PC using NT operation system. Please refer to figure 3 shows the system configuration of CVENCs.

To achieve the function of CVENCs, the system was built in modular bases and each module was written by Visual C++ 4.0. programs. They are shown as follows:

- Symbol Compiler
- Chart Compiler
- Coordinates Separation and Join
- Coordinates Transformation
- GPS Receiver
- Electronic Compass Receiver
- Receiver Simulation
- Navigation System
- Route Planning System
- Three-Dimension Viewer (Surface modeling)
- Chart Database Management System

To meet the needs of the CVENCs, the chart database uses the technology of BLOB (Binary Large Object) to store the information of Electronic Navigational Chart. Mariners can follow the chart catalogue of CNHOO to select the right chart for navigational purpose. For extending CVENCs's flexibility and efficiency, the chart data are stored in the vector format (e.g. point, line, polygon, text, and sounding spot). After initial CVENCs in the navigational mode is achieved, the chart (vector) data will convert to raster format and store in system buffer. The purpose of this methodology is to extract the advantages of vector data that can support the algorithm for special navigation purpose (e.g. danger area alarm - using the algorithm of point inside/outside a polygon) and the advantage of raster data that can

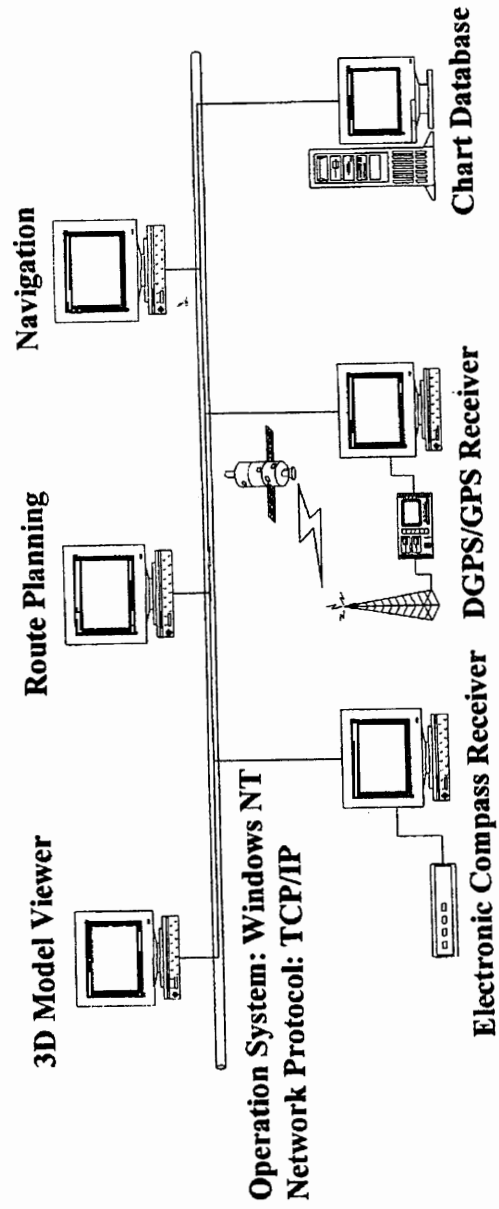
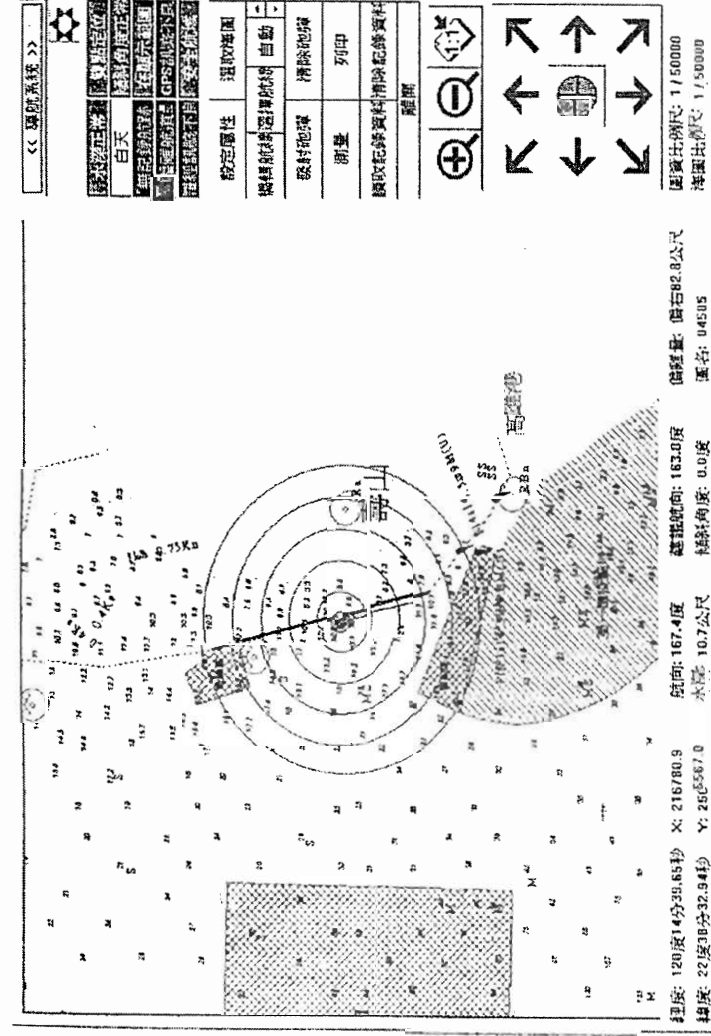


Figure 3. CVENCS system configuration



be very fast and easy to display. Figure 4 shows a hard copy from CVENCS display monitor.

Applications

In the following project during this year, CNHOO will also concentrate on the IENC data verification and the application for country code and agency code from IHO. In the near future, the CNHOO will achieve the international standard ENC dataset and then proceed to establish IENC database for Taiwan's water and evaluate the possibility to attend East Asian RENC(Regional Electronic Navigational Chart Coordinating Centre). The CNHOO will challenge the fate of the modern times to achieve the ENC data production and the result will support the national shipping and expand Taiwan's economic development.

Although CVENCS is still under improvement and not on commercial market yet, Taiwan Navy has undertaken many test using various ships in various exercises and missions. The convenience and accuracy of monitoring real-time ship positions could be the most attractive advantage of CVENCS. An island-wide exhibition of CVENCS has just been done. Potential user such as coastguard, fishery units, ferry and yacht proprietors are shown highly interesting in it.

Conclusion

To secure the safety of navigation and to improve the efficiency of shipping management, undoubtedly the development and implementation of ENC and its application are necessary. Two versions of ENC have been developed by CNHOO to satisfy the different requirements. As an entity of international society, Taiwan has the responsibility to dedicate our efforts on regional and international navigation. Hopefully in year 2000 most of the IENC of major harbors in Taiwan will be published to fulfill the common use of ECDIS.

PART III

RISKS AND CHALLENGES IN THE ASIA-PACIFIC OCEAN IN THE 21st CENTURY

INTERNATIONAL COOPERATION FOR SLOC SECURITY

Sumihiko Kawamura

Introduction

Since the summer of 1997, regional economic troubles have besieged the Asia-Pacific region. Until this current crisis, however, rapid economic development drove the states of the region to become increasingly united within Asia-Pacific and linked the areas via the seas. To date, the basis of economic activity has resided with the steady flow of shipping of essential daily goods such as energy and food resources. When capital investments enter the region, the rising flow of manufactured goods supplement fundamental regional trade patterns, engendering even more prosperity for the region. Many expect this trend of a regional economic orientation toward maritime shipping to expand even further in the next century, once the region breaks out of the on-going economic crisis.

In order to invigorate the investment of capital that accelerates the flow of manufactured goods, a stable trade order must be maintained. To that end, both secure maritime shipping, as well as regional stability must be ensured as indispensable conditions for protecting a stable trade regime. Thus, the stability of regional sea lanes should continue to grow in importance as a fundamental political issue in Asia-Pacific.

Moreover, we no longer live in the days of sea lanes monopolized by a single nation or power. We have entered an era that will be

defined by the extent of success various nations can achieve in continuing to develop together in a way that will ensure safe sea lanes and will adequately provide for their shared use.

Vulnerability of Sea Lines of Communication

The issue of apportionment of marine resources grows in scope and importance, involving the interests of each nation in the Asia-Pacific region. In conjunction with the rise in dependence on fishing resources, the areas of overlapping claims by numerous nations in the East and South China Seas present cases that pose a high risk for eventual naval enforcement of rights.

Moreover, estimates of not only energy resources, but also mineral deposits on the sea bottom of these waters have fueled hopes of resources exploitation and development, increasing the value of these disputed waters to the claimants. As with fishing rights, a battle to partition and apportion waters will intensify with a forecast of sea bed resources in waters totally or partially enclosed by disparate claimants.

If the presence of oil and natural gas is confirmed in the waters surrounding the Spratly Islands or other similar areas, disputes among the various claimants will certainly worsen, perhaps eventually leading to conflict in Southeast Asia. Such conflict would endanger the third countries dependent on key sea lanes in the region.

Should a conflict erupt in a restricted area, third nation shipping also suffers major restriction on its freedom of navigation within the surrounding waters. As seen in the Iran-Iraq War, third nation tankers became entangled in the conflict. The conflict brought tanker traffic to a standstill for a long period of time, and even led to damage to ships, injury to crews, and environmental destruction as a result of crude oil leaked from damaged tankers. The impact on sea lanes due to such conflict-related disruption is dramatic, especially in waters characterized by complex traffic patterns.

As to the vulnerability of sea lines of communication (SLOC), Vice Admiral Makoto Yamamoto (JMSDF, Ret.) stated in his paper presented in the 11th International Conference on SLOC Studies in Tokyo as follows,

SLOCs can function as a vast transportation network for shipping with relative ease so long as terminals and vital international sea routes are maintained. But, at the same time, these SLOCs remain very fragile and prone to external disruption. Dominant factors that may obstruct the free use of SLOCs may be divided into six general categories:

1. disruption due to maritime accidents or disasters at sea
2. damage due to piracy
3. disruption to the maritime system
4. unilateral declaration restricting specific waters
5. disruption due to regional conflict
6. international obstruction which deny usage

VADM Yamamoto also pointed out that of the six SLOC obstructions listed above, the first three result from either natural disasters, accidents, or crimes which do not necessarily mandate a military response. However, the challenges posed by the last three obstacles remain difficult to resolve without the employment of a military response. Particularly, intentional obstruction represents the worst case. In such case, a nation or power may intentionally create obstructions to free access to a sea lane causing severe consequences. The power that exercises sea denial remains free to choose means and course of its actions so as to maximize its own interests, carefully monitoring unfolding events. This places SLOCs in a considerable amount of danger. Psychological pressure will also intensify the crisis, especially if the act of sea denial employs the stealthy employment of submarines or the threat of mines. Sea denial committed near choke points and harbors can be lethal blows to a system unable to formulate effective counter measures.¹

The Current State of Regional Maritime Cooperation

As to security cooperation in the Asia-Pacific region, particularly

1. Makoto Yamamoto, *Sealanes in the Asia-Pacific region today and their Vulnerabilities* (Paper presented to the 11th International Conference on SLOC Studies, 1997, p. 6) Much of the discussion below is drawn from his categorization

once the U.N. Convention on the Law of the Sea (UNCLOS) came into effect in November 1994, interest in pursuing maritime cooperation has heightened. Efforts to promote frameworks for cooperation have thus far centered on the Council for Security Cooperation in the Asia Pacific (CSCAP), particularly on the Maritime Cooperation Working Group, which has achieved significant fruit in materializing multilateral maritime cooperation such as Confidence Building Measures (CBM), environmental and navigational safety issues, and marine information exchange.²

However, it should be noted that consensual and procedural approaches along the lines of the ASEAN style simply cannot work if all the parties will not play. As a result, the scope of planned cooperation remains limited to non-military aspects such as education and training, environmental protection, search and rescue (SAR), anti-piracy measures, safety of navigation, resource protection, and disasters relief measures, to date efforts have failed to touch on cooperation necessary for dealing with the types of crises categorized by VADM Yamamoto as items 4-6 above.

Frameworks for security cooperation—including military cooperation—in the region do exist. The U.S. maintains alliance relationships with Japan, Korea, Australia, Thailand, and the Philippines respectively, and The Five Power Defense Agreement (FPDA) is still effective among the U.K., Australia, Malaysia, Singapore, and New Zealand.

Today, the regular deployment of Australian naval and air resources, and regular joint exercising, provide a continuing commitment to common defense concerns. The current dominant activity under FPDA is integrated air defense system, which is the continuing basis for Malaysia, Singapore, Australia, and New Zealand to operate together for the air defense of the Malay Peninsula and Singapore.³

The Western Pacific Naval Symposium (WPNS) is another mecha-

2. See Sam Bateman, Report of the Fourth Meeting of the CSCAP Maritime Cooperation Working Group in Sam Bateman (eds), *Shipping and Regional Security* (Strategic and Defense Studies Centre, The Australian National University, Canberra) p. 103.

3. James A. Nockels, *Defense Cooperation in Southeast Asia and the South Pacific*, Ralph A. Cossa (eds), *The new Pacific security environment: challenges and opportunities* (National Defense University Press, Washington, D.C.) p. 136.

nism that has also been instituted for regular dialogue among regional navies. The WPNS started in 1988 as a forum for a frank exchange of views on a wide range of issues, including the law of the sea and SLOC protection. It is a unique and significant forum that take steps forward for a better understanding between regional navies.⁴

However, in the Asia-Pacific region, military aspects such as standing Naval Forces Mediterranean, are unlikely to be materialized in the foreseeable future, because insufficient assets, legal constraints, lack of interoperability, and particularly the absence of mutually held doctrine limit the formation of such regional maritime cooperation.

In reality, however, conflict deterrence and peace promotion in the Asia-Pacific region stem from the military presence of the United States, especially from the forward-deployed U.S. Navy. Only the U.S. Navy possesses the strength and capability to guarantee sea control throughout the entire Asia-Pacific region. Furthermore, only the U.S. enjoys the trust of most of the regional states due to its obvious lack of territorial ambitions. A variety of sources of instability threaten the Asia-Pacific region; but, as long as the U.S. remains engaged, it is possible to prevent conflict effectively from erupting. Fortunately, the U.S. presence remains in keeping with its own national interest of maintaining peace and stability in the region, preserving a balance of power to prevent the emergence of a regional hegemon, and guaranteeing freedom of navigation.

Various types of bilateral and multilateral exercises between the U.S. and the navies of its allies and friends take place annually in the seas off Hawaii, Japan, Korea, Australia, Thailand, and the Philippines. These exercises demonstrate U.S. commitment to the region and the ability to organize coalitions, and to improve interoperability. Some impediments in forming effective cooperation remain in the region however. Differences in security policies among regional states are the most notable obstacles to the formation and development of coalitions.

These impediments include legal constraints within regional states, the inability to share applicable technology or technical publications, and unresolved command structure issues. Three examples

4. See Hirotarō Hayashi, *History of WPNS* (Paper presented to the 11th International Conference on SLOC Studies, 1997).

of such impediments which hinder regional cooperation includes: Legal, constitutional hurdles prevented Japan from taking part in the Gulf War and continue to prohibit Japan's coalition participation except for limited bilateral cooperation with the United States; the absence of mutually held operational publications or advanced technology has hindered combined training and effective operations and has frustrated cooperating counterparts for many years; and the regional states are reluctant to accept foreign command of their forces.

However, in Northeast Asia, remarkable progress has been observed in a Korean-Japan track two security dialogue on maritime cooperation. Dialogue participants have reached a conclusion that Korea-Japan naval cooperation is best suited and is the most attainable course of action.⁵

In the U.S.-Japan joint security declaration in April 1996, the leaders of the two nations publicly expressed their strong convictions to re-vitalize the U.S.-Japan alliance in the wake of the Cold War. They confirmed the purpose of the alliance is not only to defend Japan, but is also to cooperate in the maintenance of stability in the Asia-Pacific region. As such, the declaration represented an epoch-making step in achieving regional peace and stability.

Meanwhile, we can detect some movement within the U.S.-Korea alliance towards preparing for a similar role in ensuring regional stability once Korean reunification has been achieved. If this latter effort is realized, both the U.S.-Japan and U.S.-Korea security arrangements will serve to support the forward deployment of U.S. forces. Japan and Korea will supplement U.S. forces, and a functionally overlapping security system covering a broad scope of activities will result.

If both Japan and Korea wish to maintain U.S. military presence efficiently, some sort of common framework must be established among the three nations. However, they must deal with some obstacles to realize a healthy and functional trilateral system of cooperation. Some impeding factors include long-standing distrust, no precedent for security cooperation, Japan's self-imposed restriction on exercise of collective defense right, and China's sensitivity, if not hostility towards potential Korea-Japan-U.S. security cooperation.

5. KJ-Shuttle Documents, <http://www.glocomnet.or.jp/okazaki-inst/>

Fortunately, positive dynamics that may propel trilateral security cooperation forward include overlapping SLOCs on which both Japan and Korea absolutely depend for national survival and prosperity, shared political and economic values, and existing security treaties between the United States and both Japan and Korea.

These factors make a persuasive case for maritime cooperation efforts as the ideal avenue for consideration of prospective security cooperation. Both Japan and Korea depend on the sea for survival and prosperity, with the vast majority of their key sea lanes overlapping. Moreover, we must anticipate a domestic and international backlash to security cooperation that expands into the military realm; but such a reaction will be less severe in the case of maritime cooperation as compared to ground force cooperation. In terms of military cooperation, the nature of naval activity presents a lower political profile. Thus, in this context, maritime activity is the ideal front on which to initiate trilateral security cooperation.

Thus, for the new century, it is being proposed to organize a security scheme consisting of relatively invisible security cooperation triangle composed of the two bilateral security arrangements (the U.S.-Japan and the U.S.-ROK alliances) with the U.S. as the apex. This triangle will be much easier to shape and less provocative because it is a scheme evolving from the existing security arrangements and does not have to constitute a formal trilateral alliance.

This scheme will also create new dimensions of Japan-ROK security relationships, currently the weakest leg of the triangle and will pave the way for a new framework of security cooperation in the Asia-Pacific region. If this cooperative triangle is materialized, it will be the first maritime security scheme which has great potential for future enlargement in terms of the number of participants and in substantive areas of regional cooperation.

International Cooperative Scheme for SLOC Security

Almost all of the states in the Asia-Pacific region depend on the sea for survival and well-being, they also share their key sea lanes. Some territorial disputes within the region may develop into crisis for regional stability and freedom of navigation, so we should seek

means for the affected states to cooperate on an effective response. In this context, maritime activity is the ideal front for which to initiating regional security cooperation.

It should be noted that the CSCAP has been and currently is successful in promoting multilateral security cooperation within the region in the areas including CBM, SAR, and safety of navigation. In addition, we should establish a scheme which can effectively respond to the aforementioned three destabilizing factors hindering the free use of SLOCs: 1) unilateral declaration restricting specific waters; 2) disruptions due to regional conflict; and 3) intentional obstructions to deny use of sea lanes.

The assumption of responsibility for SLOC protection and direct contributions to SLOC maintenance can have long-term implications for regional stability, and thereby can contribute to the national interests of respective countries. The ideal formulation of a regional maritime security cooperation scheme can be established making use of the existing bilateral security arrangements with the U.S. In this regard, the naval cooperative aspects of U.S.-Japan security arrangements could be a working model.

Strong U.S.-Japan navy to navy ties exist in mutually complementary functions in roles and mission sharing, and in interoperability. Thus, a scheme can be created which places the United States at the hub, and which allows bilateral systems with the regional states, much like a hub and spokes in structure.

In such a cooperative security structure, each nation would naturally protect its own interests. However, the U.S. Navy, situated in the center will also hold responsibility for coordinating closer contacts between regional navies and for acting as the sole key strategic player. The regional states should share geographic and operational responsibilities in accordance with their location and capabilities respectively. In order to choose the most appropriate burden sharing formula, the following roles are suggested in accordance with capabilities and geographic conditions:

- for the U.S. Navy: maintenance of sea control throughout the Pacific Ocean in addition to the Indian Ocean and the Persian Gulf
- for regional navies: protection of shipping, including surveil-

lance, SAR, and law enforcement within their areas of responsibility, and support to U.S. forward presence by means of host nation support and/or access agreements

The Role of the United States

Forward Presence

A visible U.S. force presence in the Asia-Pacific region demonstrates firm determination to defend U.S., allied and friendly interests in the region. Only the U.S. Navy has the capability to maintain sea control through out the Pacific. The U.S. Navy is vital to regional stability and to keeping crises from escalating into full-scale wars.

Any attempt to assume the U.S. role by such countries as China, Russia, India, or Japan is unlikely to be welcomed in the region. In this regard, the 1998 East Asia Strategy Report released by the U.S. Department of Defense in November 1998 reaffirmed the continuation of comprehensive U.S. engagement including the presence of approximately 100,000 U.S. military personnel in Asia.⁶

As to U.S. naval forward presence, Admiral Jay L. Johnson, Chief of Naval Operations stated as follow: "There are four basic tenets to international security in today's world; prevention, deterrence, crisis resolution, and war termination. The underlying assumption of these tenets is that the U.S. and its allies should not be forced into winning a war in an overwhelming (and expensive) fashion. Instead, it is much better and cheaper to resolve a crisis before it burns out of control." The forward-deployed U.S. naval forces are always on-scene and ready for prevention, deterrence, conflict resolution, and termination.⁷

Prevention

The U.S. Navy's role in peacetime engagement is to mention a for-

6. The Secretary of Defense, The United States Security Strategy for the East Asia-Pacific Region 1998 (The Department of Defense, Washington, D.C.) p. 10.

7. See Admiral Jay L. Johnson, USN, Forward...from the Sea, the Navy Operational Concept (The Office of Chief of Naval Operations, Washington, D.C., 1997).

ward presence in support of regional efforts to shape the security environment in ways that promote regional economic and political stability. U.S. naval forces are engaged in the region in peacetime as a visible tool for peace and stability, and their global presence ensures freedom of navigation of international trade routes.

U.S. forward-deployed naval forces support peacetime cooperative efforts to improve mutual understanding, confidence and respect among the navies in the region. Although the following experience did not involve the U.S. Navy, it demonstrated well how naval presence works.

In 1991-93, a total of 78 piracy incidents were reported in the East China Sea, where foreign vessels (including Russian vessels) were boarded or shot at by (presumably Chinese) vessels having neither national flags nor ship names. In late 1992 and early 1993, there was a substantial upsurge in incidents.

However, Russia deployed several naval ships to the area in mid-1993 with orders to attack any threats to shipping-whereupon such attacks promptly ceased.⁸

Deterrence

Presence does not prevent every crisis. When crisis reach a certain thresholds, active measures must be taken. Signaling with military forces is an important element of deterring aggression and preventing conflicts, and forward-deployed naval forces are a superb means of signaling capabilities and resolve to friend and foe alike. Deterrence is accomplished by putting potent combat power where it cannot be ignored, and by serving as a highly visible symbol of the overwhelming force the United States can deploy to defeat aggression.

Conflict Resolution

If a crisis is neither prevented or deterred, prompt and decisive crisis resolution is imperative before the crisis threatens vital inter-

8. Stanley B. Weeks, *Law and Order at Sea: Pacific Cooperation in Dealing with Piracy, Drugs, and Illegal Migration*, Sam Bateman (eds), *Calming the Waters: Initiatives for Asia-Pacific Maritime Cooperation* (Strategic and Defense Studies Centre, The Australian National University, Canberra, 1996), p. 51.

ests. U.S. forward-deployed naval forces have a vital role in halting aggression early in a conflict.

Conflict Termination

The U.S. Navy may remain on scene after a campaign concludes to enforce sanctions and to maintain a U.S. presence for regional stability. Its most significant contribution will may be to prevent the next conflict entirely through forward presence for engagement and deterrence.

The Roles of Regional States

Peacetime Roles

The roles of protection of shipping including surveillance, search and rescue (SAR), and law enforcement within respective areas of responsibility can appropriately be borne by the regional states. They should also provide the United States with support for maintenance of its forward presence.

As stated in East Asian Strategic Report 1998, U.S. bases in Japan and Korea remain the critical component of U.S. deterrence in the region. These bases enable the United States to respond more rapidly and flexibly in other areas. In this context, host nation support (HNS) rendered by both Japan and Korea is a great contribution toward U.S. forward presence.

A series of access agreements and other arrangements between various Southeast Asian countries and the United States have supported continued U.S. military engagement. These arrangements, including port calls, repair facilities, training ranges and logistic support, have become increasingly important to U.S. forward presence. Also Australia has long provided key access to training facilities for the U.S. forces.

The existence of such arrangements throughout the region underscores the increasing importance of Southeast Asia and Australia to regional security, and the commitment of these nations to a credible and potent U.S. forward presence as a cornerstone of their security.

Also, combined exercises with the U.S. Navy remain useful for preparing multinational forces for such eventualities through both practice and the development of compatible equipment, communications, and procedures.

The Roles in Deterrence

Regional states should cooperate closely together with other nations which share the same interests in order to ensure the safety and freedom of navigation of their SLOCs. Particularly, in addition to the roles in peacetime, support for U.S. efforts to deter and prevent conflict is another important role of the regional states.

When tension is heightened, combined exercises with the U.S. Navy may enhance the credibility of the deterrence by demonstrating their capabilities of defending or destroying. A good example was provided by the two U.S. carrier battle groups which deterred Chinese attempts to intimidate the people in Taiwan during the exercise of their democratic process in March 1996.

The Roles in Conflict Resolution

When a crisis can be neither prevented nor deterred, it is necessary to resolve the situation in a prompt and decisive manner. Regional states should support U.N. resolution to restore peace and stability in the region in addition to carrying out their normal peacetime roles. They are also encouraged to participate in the international cooperative efforts under U.N. auspices.

Future maritime cooperation will require greater international consensus such as the U.N. seals. However, it is difficult to expect U.N. measures whenever required. Thus, in conducting international peace keeping operations, U.S. forward deployed forces will continue to assume the vital role for a significant number of operations for the foreseeable future. Regional states are expected to cooperate with the international peace keeping operations when their national interests (safety and freedom of navigation) so dictate. Even though their forces are small or of limited capability, their presence adds value by increasing the legitimacy and credibility of the operations.

The Roles in Conflict Termination

In case when the regional states take part in Peace Keeping Operations (PKO), they should remain on-scene after the conflict resolution ends to enforce sanctions or to clear laid mines for safety of navigation. It should be noted that it usually takes a long period of time to ensure safety of navigation as the case after the Gulf War. Multinational minewarfare forces were engaged in combined minesweeping operations in the Gulf for a long time.

Roles of Australia and Japan

Australia and Japan should be assigned as regional promoters of maritime cooperation bearing extra roles suited to their capabilities and locations. Both countries should conduct shipping protection including surveillance and SAR beyond their Exclusive Economic Zones (EEZs). The rationale for these responsibilities can be listed as the following:

- high proficiency level as blue water navies
- long experience of close cooperation with the U.S. Navy.
- high level of interoperabilities with the U.S. Navy in equipment, communications, and procedures.
- high degree of dependence on SLOC safety and freedom of navigation.
- sufficient capabilities in long-range surveillance and shipping protection beyond their EEZs.

In Japan, the Asia-Pacific Naval College Seminar, which is aimed to build confidence among the participating members from the region through dialogue, is becoming a regular event. In Australia, the RAN has established the Maritime Studies Program which has the objective of building a better dialogue with regional navies on maritime strategic issues.

Also the Australian Defense Cooperation Program (DCP) could be used to provide graduate education and training in strategic studies and defense planning for young officers from the region.⁹ Today,

in East Asia, trilateral maritime cooperation among the U.S., Japan, and Korea is being explored; and the prospects are bright. In the Southern hemisphere, Australia's greater commitment to help shape the wider regional security environment will also encourage Japan to play an enhanced political role in Southeast Asia, as foreshadowed by Prime Minister Hashimoto's visit to the region in early in 1997.

The existence of Australia and Japan in their respective hemispheres has significant implications to support U.S. presence in the Asia-Pacific region, and underscores increasing importance of closer cooperation between the two countries for pursuing peace and stability in the region. Australia and Japan have been contributing indirectly to each others security for more than 40 years, through their separate alliances with the United States. Australia, for example, appreciates Japan's role in boosting U.S. forces which play a wider role than just providing for the defense of Japan because Japan-based U.S. forces deploy throughout to the Western Pacific and the Indian Ocean.

At the same time, Japan will welcome Australian efforts to develop cooperative relationship with her neighboring countries and working closely with her counterparts in the opposite hemisphere in order to promote security cooperation throughout the Asia-Pacific region. Australia and Japan also contribute to stability in waters around Southeast Asia, astride the vital straits that connect the Indian and Pacific Oceans.

With the end of the Cold War, U.S. alliances in the Asia-Pacific region, as well as in Europe, are likely to become more collegial. So the individual nations in these alliances will need to cooperate more effectively, as the United States looks to its allies to share more of the security burden.¹⁰

9. See Desmond Ball, *Building Blocks for Regional Security: An Australian Perspective on CSBMs in the Asia/Pacific region* (Strategic and Defense Studies Centre, National Australian University, Canberra, 1997), p. 49.

10. See Robyn Lim, *Australian's Stake in Asia Pacific Regional Security*, Peter King and Yoichi Kibita (eds), *Peace Building in Asia Pacific Region* (the Research Institute for Asia and the Pacific, and the Public Affairs Research Centre, University of Sydney, Sydney 1998), p. 84.

Conclusion

It should be remembered that free trade is supported by stable sea-lanes, and that free trade is one of the vital elements supporting democracy. The regional states have several important tasks to undertake. Among all aspects of regional cooperation, it is maritime security that we must be striven for together, first and foremost, in the Asia-Pacific region.

In response to the regional states' greater willingness to promote peace and stability in the region, this paper has offered for consideration a concept of shaping a new maritime security cooperation scheme in the Asia-Pacific region, in particular recognition that the following destabilizing factors of unilateral declarations restricting specific waters, disruption due to regional conflict, and intentional obstruction to deny use of sea lanes are impossible to resolve without the employment of a military response.

Even though there have been recent efforts in seeking multilateral maritime cooperation within the ASEAN Regional Forum (ARF) framework, in the Asia-Pacific region as a whole, a mutually held maritime strategy which includes military aspects has not been forthcoming, despite of deep regional dependence on safety of shipping and freedom of navigation.

Traditionally, regional states have relied on American maritime protection, with their own contribution being mainly host nation support, access rights, and combined exercises with the U.S. forces within the framework of bilateral arrangements. This maritime cooperation scheme should be promoted on a burden sharing basis retaining the U.S. as the key strategic player.

The regional states need to be able to protect their areas of responsibility and to support U.S. forward presence in recognition of being a part of the scheme. The existing bilateral security arrangements with the U.S. can be a basis to shape a new regional maritime cooperation scheme because it is easier to evolve as spokes which form the scheme together with the U.S. hub. It is sincerely hoped that this paper will help trigger a lively discussion on how to materialize regional SLOC security cooperation scheme in the Asia-Pacific region.

POTENTIAL FOR CONFLICTS OVER RESOURCES: FISHERIES AND OIL/GAS

Phiphat Tangsubkul

UNCLOS III is in a way a large-scale exercise in re-allocation of resources. Vase stretches of ocean space, which was used to be high seas, became Exclusive Economic zone and the coastal states have gained the sovereign right over the resources within the EEZ. Such exercise placed the much-needed resources in many of the less developed coastal nations. Yet, people who were free to exploit those resources when the area was considered as high sea could no longer gain access to them. It has been difficult for the latter to adjust to such changes. For many it means taking away their livelihood. This was what happened to the Thai fishermen.

In the 1960s, with the technical assistance of Germany, Thailand began to develop its trawler fleet. It was a great success and in two decades, it has established a substantive distant water fishing industry and is presently ranked sixth among the largest fishing nations in the world. The effective capture methods and equipment have led to overfishing problems in the Gulf of Thailand in particular and in the Thai EEZ in general. On one hand, as fishing resources dwindled, there is a growing conflict among small scale and commercial fishermen as well as illegal fishing in the water of other littoral states, causing fines, imprisonment and confiscation. On the other hand, as other states in the region strengthen their monitoring of their EEZ and enforcing their law, more fishermen are under pressure not only in fishing in, but also in transit through neighbouring countries' EEZ.

While these conflicts are generally at local level, they can easily "flare up" to government to government level when the "penalties" are perceived as too severe or unreasonable. The burning of fishing boats can often be traumatic to fishermen whose entire livelihood is dependent on them. Such act and unduly long imprisonment can provoke very strong reactions from the fishing communities and/or media.

Sometimes conflicts between neighbouring states over fishery resources can be further complicated by other factors, such as irregularity of local administration and overlapping boundaries. For example, in the Andaman Sea, Thai fishermen often pay fees to fish in the Burmese waters. Yet, collection of fees are usually done by local authorities who often raise and lower the fees as they see fit, without any consistent criteria, leading to conflicts with the fishermen. On the other hand, not all fishermen observe the neighbouring countries' EEZ or pay fees, leading to conflicts with their law enforcement. The existence of territorial dispute does not help the matter. As in the case of the Burmese/Thai Border, three small islands are under dispute. They are Lam, Kahn and Kheenok.

Furthermore, there is a unique situation with the Burmese marine border control. In Burma, the army is in dominant power. It is the navy personnel who operate the patrol boats but it is the army officer in the boat that takes command. The Thai navy finds that the Burmese patrols often do not follow the conventional naval code of conduct and communication.

Because of the relative lack of resources, fishing boats were often confiscated for official use by some of the neighbouring countries, such as Cambodia and Vietnam in the earlier period. But after negotiation over acceptable conduct and penalties, court procedure and fines have, to certain extent, replaced such seizures.

One main problem underlying such conflicts is the inability of the Thai government to convince its fishermen of the change in jurisdiction brought about by the new United Nations convention of the Law of the Sea. As they have fished in the same area for generation without any restriction, it is difficult for them to accept the fact that they can no longer do so when the area is turned from the high sea to the EEZ of another country. In real life, it is also difficult to change their occupation and find livelihood in work other than fishing. It takes

education and time. It is not possible for the government to micro-control at the community level.

As for conflict over oil and gas, I have a slightly different view from the conventional perception. Many of the conflicts, including the disputes over Spratlys Island, are perceived as conflicts over resources, especially over oil and gas. But if we look at the cases of conflict and cooperation over oil and gas around the world, most of the disputes are over speculated potentials. They are, in reality, positioning over disputed claims. This is the case of the Spratlys or south China Seas Disputes. For the known and accessible finds which are readily exploitable, there are, in fact, greater likelihood of cooperation. The Joint development Area between Malaysia and Thailand is a case in point. Although it took more than ten years to realize, it demonstrated that cooperation is a more likely route to go when resources are ready to be exploited.

In the case of Thai-Cambodia border in the Gulf of Thailand, there is an overlapping area and there has been proposal of joint development of oil and gas in the area just like that of Malaysia/Thai JDA. But, different from the Malaysia/Thai overlapping jurisdiction over JDA, Thailand does not recognize the legitimacy of the Cambodian maritime delimitation which cut through a Thai island. Under the circumstances, there is very little likelihood for the Thai government to consider joint exploration.

To help to reduce potential conflicts in the region, the Royal Thai Navy participates in combined/joint patrolling of the adjacent maritime areas. For example it has established joint patrol with the Vietnamese Navy. Besides from the multilateral joint exercises with the United States and Australia, it has also participated in exercises with Thailand's neighbouring countries such as "Thalay Laut" with the Malaysian Navy, "Sing Siam" with the Singapore Navy and "Sea Garuda" with the Indonesian Navy.

REVOLUTION IN MILITARY AFFAIRS AND THE SEA LANES OF COMMUNICATIONS

Tun-Hwa Ko

In Brief

Given the time limit of 20 minutes for oral presentation, this paper refrains itself from being lengthy. The author only wants to describe one of the many definitions under debat on what do we mean by RMA. There must be many factors, pertaining to hardware or software, causing the revolution in military affairs; of which innovations in weaponry making and employing are the dominating ones.

The innovations, however having been going on all the times as the mankind progress. There have been times when the changes occure more abruptly and unexpectly than other times. On such times, we would tend to feel and consider them as revolutionary.

In warfare, there must be somethings which are more fundamental than others. Since wars are fought by mankind, if the nature of man has not changed much, so the nature of war should also mainly remain unchanged.

There are also other physical factors that have not been changed much for instance, the buoyancy of water that keeps ships and cargos afloat needs no extra cost of expense. It is due to the buoyancy works against the gravitation of the earth. War is also largely a matter of logistics. Seaborne transportations are still in need. That is why in the revolution of military affairs, the fighting for SLOC is still relevant.

The Concept of RMA

The word 'revolution,' by its general usage, means a complete and forcible overthrow of an established government or political system, and replace it by a new political regime; such as:¹

- The French revolution in 1787,
- The Chinese revolution in 1911.
- And the Russian October revolution in 1917.

Revolution does not have to imply, however, a sudden and violent change, it could also be used to denote a kind of continuous process, such as: the revolution of planets around the Sun in our solar system. The term, revolution has the notion of either being continuous or discrete; so it has been the development of technologies which goes side by side with the stories of mankind.

In America, men like the futurist, Heidi Toffler who came to Taipei a few years ago to promote the Chinese translation of his book, *The Third Wave* defined the RMA on the macro-level of economic structure. as follows: "A military revolution, in the fullest senses, occurs only when a new civilization arises to challenge the old, when an entire society transforms itself, forcing its armed Services to change at every level simultaneously, from strategy, tactics, training, doctrine and logistics.

According to Steven Metz and James Kievit, RMA is characterized by four types of changes.²

- Extremely precise, stand-off strikes,
- Dramatically improved command, control, and intelligence.
- Information warfare, and
- Nonlethality.

1. Steven Metz and James Kievit, *Strategy and the Revolution in Military Affairs: From Theory to Policy*, Strategic Studies Institute, U.S. Army War College, p. 3, 1995 Washington D.C.

2. Ibid., p. 3.

The Levels of Technologies are but Relative

Technology means essentially 'how to make things.' When some primitive human tribes discovered how to make fire by friction when they rubbed two pieces of wood or stones, they were more advance than those tribes who had not learned how to do it. In the prehistoric eras, early mankind, being physically weaker than those wild beasts surrounding them, had to dwell inside of some caves for protection against the stronger beasts, as well as against the severe cold weather. They created fire inside the caves. Here they needed the simple way of ventilation, to prevent them-selves from being suffocated by the toxic smoke (the carbon monoxide). Those tribes who knew how to make fire and ventilation stood better chances of survival. Those tribes who did not learn it would perish.

From the displays in the Palace Museum in Taipei visitors can see the early swords, spear heads made of alloy of aluminum, coppers and other metals by Chinese who therefore had better against some northern tribes around China. According to some legends, more than four thousand years ago, the first Chinese Yellow Emperor won the battle against "Chi Yu" because of the compass. Chinese managed to find the directions in the fog while the Chi Yu's troops got lost.

In the 16th century, Korean designed & constructed the unique, super powerful warship³—the turtle boats that defeated the Japanese invaders. The design of turtle boats was indeed the most gifted in the histories of naval architect. We all know the elements of speed, armor and fire power contradict one with another. One element can not be increased without sacrificing the other. Yet, Korean could optimize the three elements. Not only that, there were the good strategies, tactics and the commanders and men to fight the war.

The Impact of Gulf War upon the RMA

It seems more enthusiastic studies of RMA have popped up after the Gulf war of 1991-92, in which, the most modern weapon systems

3. Dupuy R. Ernest, *The Encyclopedia of Military History* p. 1; Dupuy and Dupuy, Harper Row, 1985, Washington D.C.

were used in one scenario. It might not have been so. But, the watchers of TV, especially the watchers of CNN who reported the war round the clock, and who brought every minute of war into people's living room, must have revolutionary feeling about the war. In the ancient times, the great general of battles used to stand at a high hill to see and conduct the battle. His theater of war was no larger than his eye sight before the telescope or binocular' times. Even as recent as the early period of WWII. President Roosevelt, the supreme Commander of the U.S. Armed Forces by Constitution; he was also the highest political leader, could not see the fightings in the White House. He could only write letters or instructions and discussed the matters of war with the commanders in Chief in the theaters. Even General Eisenhower could not see the operation of his divisions in the fields. Now, in the Gulf war, people could see the bombs and the targets at homes It included

The Apache (AH-64 A)

B1, Lancer

B2 Spirit

F-14 Eagle

F-16 Falcon

F-18 Hornet

F-22

F-117 (Precision attack (2000 lb. bombs), AGM-65 Lasser-guided Maverick

Tornado (U.K.)

And others.

The attackers, with weapons made of higher and newer technologies do enjoy having the initiative of choosing when, where and how to strike while keep the enemy in dark without knowing precisely where the enemies are, and without being able to command, communicate and control their own force. The attacker can, win and terminate a campaign with minimum causative and duration of combat.

Gulf War does make for the first time, the warriors and the scholars feel the emerging of Revolution in Military Affairs.

Nature of Maritime Wartime Warfare

While doctrine, tactics, combat, training, organization, equipment, and communications must be changed due to the technological changes, yet there must be something that would remain unchanged. We might call the unchanging part—the nature of war. In this regard, there seem to have two schools of thought, one may called the 'material' school, and the other 'historical' school. Advocates of the material school assert that the technical change revolutionize the entire subject of war. The historical school argues that strategy and war are unchanging in the essentials. Even at the turn of twenty century,⁴ in 1900, there were the debates in the British Navy, between the materialist, like Admiral Jackie Fisher, and the historical thinkers like Admiral Reginald Custance. The different thinking still persist to this day with evolving levels of detail.

Here let me tell very briefly an ancient sea battle for illustrating the nature of maritime warfare.

At about 480 B.C., the Persian King,⁵ Exerts, son of the powerful King Darius, decided to launch a final attack on the Greek City of State. The King had some 660 triremes, plus some smaller fighting craft. An immense Army estimated at 1,700,000 effective infantry. The Army marched from Asia Minor, for 7 days and got to Helle-spont along the eastern bank of Aegean sea. The Persian Navy had the mission of protecting the Army's flank and solving a very difficult problem of transporting food for the Army along shore (SLOCs' mission).

Facing the formidable enemy, the Greek's only chance to defeat the aggressive invaders was to smash the Persian navy by using the smaller but better tactically and technically built fleet. Fortunately, for the Greek, the number of Persian ships were reduced by a disastrous gale to the number of some 350 as against the Greek ship, numbering some 300. To make a long story short, the sea battle was fought in water north of Athens, and was known as Battle of Salamis. Greek ships were smaller in size and more trim and narrower. (the

4. Cillin S. Gray, *RMA and the Dimensions of Strategy*, p. 51, Autumn & Winter 1997-98/JFQ Washington D.C.

5. William Oliver Stevens and Allan Westcott, *A History of Sea Power*, pp. 1-19, Chapter 1, Doubleday & Company, INC. 1942 Garden City, N.Y. New York.

length is about 8 times her beam) At the bow and under water, there were one or more heavy metal shods. The projecting timbers were to be used to ram the enemy ships. They were beaklike secret weapons to be used against the more clumsy round-belly ships of the Persia. The Greek ships were powered by 3 free men on each. The mode of attack was to exploit its speed and maneuverability for swift approach and ramming the Persian ship and then pull back quickly. Four men stationing at the bow and stern of each ship using bow and arrow to prevent the Persian soldiers in the taller ships from jumping down to the Greek ship for close combat. Persian Navy was thus destroyed: and their Sea Lanes of Communications (SLOC) were cut. As a result, their Army on the land were defeated due to the lack of supplies.

Conclusion: RMA and SLOC

The outcome of war is caused by numerous factors, some of which have been recognized, some others may not have been comprehended. Any war college of any nation has its own 'Principles of war' (though not much different) yet, wars have been won and lost by different factors in different cases.

In maritime warfare, there are some conditions which are different to that on land. Generally speaking, sea water are alike everywhere. The surface of sea in Indian Ocean is essentially the same as that in the Pacific Ocean (of course, the seabed terrains are as different as the terrain at the different land locations). The sea routes have no definite lines as the roads on land. The sea "roads" can not be destroyed by artillery shells as the land road or airport runways. The bombs that hit the sea lines would sink into the water, leaving the sea 'roads' intact. The sea 'roads' after being hit by bombs need no repair. They heal themselves at once.

The ships floating on the sea need no energies to keep them floating. The energies are mainly spent for running the ways. Aircraft need energies to be airborne (against the earth's gravitation), and to get to their destinations. The buoyancy of water is a natural physical phenomenon that cause the sea transportation to be the cheapest means of lifting the cargo. Air lift may be faster than the sea lift,

depending on the total amount of the cargos. If it is very huge to be moved, then, the sea lift could get the total amount moved faster than the airlift (Of course, the combined uses of air and sea lift is the best way). Air transportation is catching up the sea transportation in term of money. But, airlift cannot replace the sea lift. The more aircraft employed, the more ships will be needed for supplying oil to fly the aircraft.

Even though, an aircraft carrier can steam by her nuclear power plant for a long distance and for a long duration; but it takes tankers to fuel the aircraft on board to fly from the decks.

Wars have many dimensions but, nevertheless, logistics is the dominating factor that keeps the war machine running. Economy is the underpinning logistics of a nation, logistics is the economy of the military. RMA is an unending process. Roles of SLOC would remain constant for a long time to come.

PART IV

MARITIME SECURITY AND CONFIDENCE BUILDING: ACTION AGENDA

EXISTING MARITIME COOPERATION ARRANGEMENTS IN THE ASIA-PACIFIC REGION

Stanley B. Weeks

Background

Shipping and security and access to sea lines of communication are of increasing importance in the Asia Pacific region, as the sea lines and the shipping on them are ocean highways for vast trade flows critical to regional economic growth and development. Figure 1 illustrates the major sea lanes and critical straits in the ASEAN and East Asian region, notably the South China Sea and the straits of Malacca (including the Philip Channel and the Strait of Singapore), Sunda and Lombok.¹ More than half of the world's merchant fleet capacity sails through these straits and the South China Sea, much of it bound to or from Northeast Asia. The Strait of Malacca, where more than 200 ships a day pass, is the main passage between the Indian Ocean and the South China Sea, although relatively shallow in places and as narrow as 1.5 miles at its eastern end, leading to the preferred use of the deeper Lombok Strait by the largest tanker ships. Figure 2 illustrates the flow of oil in tankers from the Middle East to Northeast Asia. The South China Sea, larger than the Mediterranean, extends over 1,800 miles from Sumatra to Taiwan, with the critical sea lines connecting South Asia/Southeast Asia and Northeast Asia.

1. Note, John H., *Chokepoints: Maritime Economic Concerns in Southeast Asia*, National Defense University Press, 1996.

Shipping over these sea lines accounts for over a trillion dollars in trade—a large percentage (as much as a fifth) of the GDP of Asia Pacific regional nations.²

Value of Regional Maritime Cooperation

In view of the critical importance of shipping and sea lines of communication to the Asia Pacific region, regional maritime cooperation to help safeguard both the seas and the shipping on them is an area of increasing interest and promise. This survey will thus consider the current status of regional maritime cooperation (including support for global international maritime agreements) in the areas of maritime/shipping safety, law and order at sea, and marine environment. This overview will also examine the potential value of the "Guidelines for Regional Maritime Cooperation," developed by the unofficial Council for Security Cooperation in the Asia Pacific (CSCAP) and recently forwarded for consideration to the official ASEAN Regional Forum.

Maritime Safety

In considering regional cooperation in maritime safety, five areas merit attention—regional nations' adherence to key safety conventions of the International Maritime Organization (IMO), the Tokyo Memorandum of Understanding (MOU) on Port State Control, regional cooperation in Search and Rescue (SAR), cooperation in dealing with maritime disasters, and regional cooperation in training.

At the initiative of the United Nations, the International Maritime Organization was established fifty years ago as a specialized agency of the UN, head quartered in London. The IMO is a technical organization of about 160 nations, with shipping safety and pollution pre-

2. For details, see Stanley B. Weeks, "Sea Lines of Communication (SLOC) Security and Access," in *Maritime Shipping in Northeast Asia: Law of the Sea, Sea Lanes, and Security*, Policy Paper #33, February 1998, University of California Institute of Global Conflict and Cooperation (IGCC) Study commissioned for the Northeast Asia Cooperation Dialogue VI at Harriman, New York, 2-4 April, 1997.

vention as its highest priorities.³ Figure 3 summarizes the status of Asia Pacific nations' ratification of six major IMO conventions regarding maritime safety.⁴ Perhaps the most important of these conventions are the International Convention on Safety of Life at Sea (SOLAS 1974), the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS 1972), the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW 1978), and the International Convention on Maritime Search and Rescue (SAR 1979). Overall, regional nations have ratified almost all of these critical maritime safety agreements, with the exception of certain landlocked states and several nations not yet adhering to the SAR convention. This wide adherence provides and excellent basis of regional agreement on key maritime safety areas.

The Tokyo MOU on Port State Control of 1993 is one of several recent regional agreements (encouraged by the IMO) designed to establish regional systems of reciprocal cooperation in inspecting and surveying ships to verify their compliance with international safety standards. Since 1977 the ASEAN plan of Action in Transportation has also supported the implementation of the Tokyo MOU with a project on harmonizations of procedures for port state control, as well as other marine transport initiatives encouraging ASEAN members to accede to the SAR and other conventions.⁵

There have been several regional, bilateral, and multilateral initiatives for SAR cooperation in the Asia Pacific. The ASEAN Regional Forum (ARF) sponsored two Intercessional Meetings on SAR (Honolulu 1996 and Singapore 1997), with themes of SAR cooperation and SAR training. The meetings also drafted an ARF "Declaration on Search and Rescue Cooperation," and encouraged continued cooperation at the technical level. SAR cooperation has also been endorsed

3. For more information, see the IMO publications: Basic Facts About IMO (January 1998), "IMO—The First Fifty Years" (January 5, 1998), and "IMO: What It Is, What It Does, How It Works," IMO Pub. 384/98.

4. For further details on IMO Conventions and status, see the following IMO publications: "A Summary of IMO Conventions" (February 1998), "IMO Conventions—Status" (January 1, 1998), "Status of Conventions" (April 9, 1998), and IMO Pub. 384/38.

5. ASEAN Secretariat, *Integrated Implementation Programme for the ASEAN Plan of Action in Transport and Communications*, Jakarta, March 1997.

as part of overall maritime cooperation by the Western Pacific Naval Symposium (WPNS), where since 1988 Chiefs of Navies in the region have met biennially in an "unofficial" capacity to discuss "enhancing regional maritime cooperation and stability." Indeed, SAR exercises by regional navies (often even by former adversaries) have been a common initial step in regional naval cooperation in recent years.

Dealing with maritime disasters is another area of potential cooperation in a Pacific region prone to severe typhoons and tsunamis. Good standards of ship safety and cooperation in Search and Rescue can help address maritime disasters. The WPNS has been advocating cooperation in training and information on humanitarian assistance and disaster relief. There is also a role here, with courses as a potential focus for regional cooperation in training for disaster relief, for the new Asian Disaster Preparedness Center, in the Asian Institute of Technology, Bangkok.

Training in maritime safety is an area ripe for greater regional cooperation. Some of the key topics might be ship safety and port state control procedures, training of ships' crews, SAR training, and maritime disaster relief training. The Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP), founded in late 1996 with IMO and shipping industry support, now links forty maritime education and training institutions in countries throughout the region, and may help in coordinating these various areas of training cooperation.

Law and Order at Sea

Piracy, smuggling, drugs, terrorism, illegal migration, and illegal fishing are of particular concern in the Asia Pacific region, and may be considered under the category of "law and order at sea." Regional maritime cooperation in dealing with these issues, however necessary, is complicated by several facts. These issues are traditionally handled by a variety of domestic law enforcement agencies, there is sensitivity regarding national sovereignty, and such cooperation as exists tends to be bilateral and closely held.⁶ However, there are several areas where cooperation among Asia Pacific nations on these issues could be enhanced.

The key IMO Convention in this area is the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation 1988 (Rome Convention, SUA) and the related protocol on offshore oil/gas platforms. The Rome Convention was originally spurred by the Achille Lauro terrorism, but also clearly applies to piracy attacks where violence is used or the ship is seized. It obliges states either to extradite or prosecute persons who seize ships by force, commit acts of violence against persons onboard ships, or place destructive devices onboard ships. Parties to the Rome Convention include the U.S. and Canada, and all major European countries, but only Australia, China, and Japan in the Asia Pacific region. Clearly, regional cooperation in law and order at sea would benefit by greater adherence of regional countries to this basic international convention.

Piracy has been an increasing problem in recent years, particularly in the Asia Pacific region, where both the frequency and violence of organized acts of piracy have increased. Under International Law (Art. 101 of the 1982 UN Law of the Sea Convention), piracy is defined as illegal acts of violence or detention committed for private ends on the high seas (i.e., outside the 12 mile limit of territorial waters). But the broader definition of piracy of the International Maritime Bureau (IMB) of the International Chamber of Commerce, which includes such acts in territorial seas or even in ports, is more relevant to most Asian piracy, which generally occurs in ports, territorial seas, or archipelagic waters.⁷ Over half of the 229 global piracy incidents in 1997 and the 198 incidents in 1998 occurred in the Asia Pacific region, with Indonesia, Thailand, the Philippines, India, and Sri Lanka having the most incidents. Most regional piracy incidents are still "sea robbery" at anchor, but actual seizures of ships and cargo have been increasing (15 ships hijacked in 1998), and attacks have been increasingly violent (67 sailors killed, 35 injured in 1998).⁸

6. For further discussion, see Weeks, Stanley B., "Law and Order at Sea: Pacific Cooperation in Dealing with Piracy, Drugs, and Illegal Migration," in Bateman, Sam and Bates, Stephen, eds., *Calming the Waters: Initiatives for Asia Pacific Maritime Cooperation*, Canberra Papers on strategy and defense, no. 114, Australian National University, Strategic and Defence Studies Centre, 1996, pp. 43-56.

7. See Weeks, Stanley B., "Piracy in East Asia: Trends and Counter-Measures," and Swinnerton, Russ, "Piracy in East Asia," in Hassan, Mohamed Jawhar, ed., *A Pacific Peace: Issues and Responses*, ISIS Malaysia, 1998, pp. 389-420.

However, there have also been positive trends in cooperation to counter piracy in the Asia Pacific region. In 1992, agreements between Singapore, Malaysia, and Indonesia on coordinated patrols and anti-piracy cooperation drastically reduced piracy incidents in the Malacca Straits/Philip Channel. In October 1992, the IMB established the Piracy Reporting Center in Kuala Lumpur, Malaysia, as a free 24-hour information center to alert ships and law enforcement agencies, issue regular marine broadcast piracy status reports, and maintain records on piracy. In 1993, discussions between PRC and Japanese coast guard agencies, and unilateral naval patrols by Russia, halted a trend toward increased piracy in the East China Sea. Although national law enforcement action in ports and territorial waters continues to be the best measure to combat piracy in this region, several other actions might contribute to effective regional cooperation against piracy: wider adherence to the Rome Convention, use of the Piracy Reporting Center, increased operational cooperation by neighboring coastal states (perhaps including joint patrols), and including piracy considerations in the existing criminal information exchange database of ASEANPOL (Conference of ASEAN Police Chiefs), and in Tokyo MOU Port State Control inspections.

Beyond piracy, transnational crime at sea—including illegal drugs, smuggling and illegal migration—are of increasing concern in a globalized, modernized, and increasingly urbanized Asia Pacific region. Almost all illegal drugs intercepts/arrests of drug traffickers are in ports or territorial waters, and most regional cooperation is closely held, bilateral, and between law enforcement agencies. Smuggling continues to be a major problem in regional waters, with scope for increased cooperation by customs and law enforcement agencies. Illegal migration, intensified in times of economic downturn, poses particular problems for national maritime authorities and requires closer cooperation with neighboring states. In dealing with transnational crime at sea, there are several areas of potential initiative. The United States Coast Guard has developed a *Model Maritime Service Code* which might assist some regional nations in improving their

8. ICC International Maritime Bureau, *Piracy and Armed Robbery Against Ships: A Special Report*, Rev. Ed., March, 1998, and ICC IMB fact sheet on 1998 Annual Report on piracy.

own legislative and operational framework for maritime enforcement in law and order as well as marine safety and environmental areas. More region-wide information sharing on maritime smuggling and drug trafficking is needed, and could build on existing ASEANPOL cross-border criminal information exchange databases. Unofficial regional cooperation in CSCAP, which has International Working Groups on both Maritime Cooperation and on Transnational Crime, might jointly develop specific recommendations on cooperation in law and order at sea issues for future official consideration.

A final area of concern to maritime law and order (and to the marine environment) is illegal fishing. Fishing disputes complicate relations throughout the Asia Pacific region, but several recent initiatives have the potential to improve regional fisheries law enforcement. The South Pacific sub-region provides a model, with the Forum Fisheries Agency (1979), and the Niue Treaty on Fisheries Surveillance and Law Enforcement in the South Pacific (1993) providing regional island states a framework for cooperation in managing regional fisheries, for regional technical assistance by other nations and international organizations, and for cooperative fisheries enforcement.⁹ In the Southeast Asia sub-region, the 1997 Vietnam-Thailand Agreement on the Gulf of Thailand maritime boundary not only was the first Southeast Asian agreement delineating Exclusive Economic Zones since the 1982 UN Convention on the Law of the Sea entered into effect in November, 1994, but also included a related agreement which might be a model for bilateral fisheries enforcement cooperation. This agreement provides for joint patrols to prevent fisheries violations, establishes contact points for exchange of information of potential violations, establishes a joint program to provide information to fishermen on laws and regulations, and promotes business cooperation in fisheries industries as a confidence-building measure.¹⁰ More recently, in late 1998 Japan and the ROK, and Japan and Russia concluded bilateral fisheries agreements. The US Coast

9. Hewison, Grant, "South Pacific," in Bateman, Sam, and Bates, Stephen, eds. *Regional Maritime Management and Security*, Canberra Papers on strategy and defense, no. 124, Australian National University, Strategic and Defence Studies Centre, 1998, pp. 105-106.

10. Thao, Nguyen Hong, "Vietnam and Thailand Settle Maritime Disputes in the Gulf of Thailand," in *MIMA Bulletin*, Vol. 2, 1998.

Guard has an active program of cooperation with other regional nations, including China, to support the UN prohibition on large-scale high seas drift netting, and is also helping to develop a regional organization to implement the UN agreement on conservation and management of highly migratory species. A final indication of recent progress in regional cooperation in fisheries is the recent APEC Oceans Conference declaration, including agreement on enhanced cooperation and data sharing, and a comprehensive vessel registry.

Marine Environment

The geography of the Asia Pacific region, with a series of critical straits and semienclosed seas stretching from Southeast Asia to Northeast Asia, as well as high dependence on the seas as a source of food and energy, makes the safeguarding of the marine environment a particular necessity. Cooperation on marine environment is moreover required by the 1982 UN Law of the Sea Convention. Article 123 requires states bordering enclosed or semi-enclosed seas to cooperate in the exercise of rights and performance of duties, Article 192 obligates states to protect the marine environment, and Article 61 requires the conservation of living resources in the EEZ. Similar commitments on the protection of oceans are contained in Chapter 17 of the UN's Agenda 21. However, significant challenges to regional cooperation on the marine environment are posed by the large number of sovereign nations involved, many with undefined and/or overlapping claims to boundaries, island territories, and Exclusive Economic Zones. Additionally, there is a need for national and regional technical capacity-building and training, and for common regional marine information and databases. Cooperation is further complicated by the redundancy and overlap of many organizations (global, regional, sub-regional, and national) dealing with various aspects of the marine environment. Despite these complications, a robust (if largely uncoordinated) web of regional cooperation already exists, as will be seen in the survey below of key IMO conventions affecting the marine environment, current cooperation in the Southeast Asia, Northwest Asia, and South Pacific sub-regions, and a variety of other regional marine environment initiatives.

The IMO has several major conventions designed to protect the marine environment from pollution by shipping and dumping of waste. Of the IMO conventions summarized in Figure 4, a majority are dedicated to prevention of oil pollution, particularly Annex I and II of the MARPOL 73/78 International Convention for the Prevention of Pollution from Ships. Closely related are other conventions to deal with the consequences of any oil pollution that does occur, such as the 1990 International Convention on Oil Pollution Preparedness, Response, and Cooperation, and various conventions on liability and damages. Other Annexes of MARPOL 73/78 establish strict rules to minimize pollution by packaged substances, sewage, and garbage from ships. The 1972 London Convention restricts dumping at sea, particularly of hazardous wastes. Finally, a convention is under development to establish standards for dumping of ship's ballast water to control global transfers of harmful non-native organisms in this water.¹¹ As Figure 4 indicates, the limited overall adherence of Asia Pacific nations to these key IMO conventions on the marine environment leaves much room for improvement (which would contribute to regional maritime cooperation).

Turning to a survey of current marine environment cooperation in the principal sub-regions of the Asia Pacific, in Northeast Asia most of the cooperation has been in the area of marine scientific research and monitoring. Perhaps the major initiative has been the Northwest Pacific Regions Action Plan (NOWPAP) of the Regional Seas Program of the UN Environmental Program (UNEP). Objectives of NOWPAP include monitoring and assessing the state of the regional marine environment, creating an information base, integrating coastal area planning, and establishing a cooperative legal framework.¹² This sub-regional program is overlapped and complemented by various other regional initiatives. The 19 nation Working Group for the Western Pacific (WESTPAC), headquartered in Bangkok, was

11. Resolution A. 868 (20) "Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens," IMO Pub. 661E, 1998. Also, see "Non-Native Sea Life Ride Ships to New Habitat, Wreak Havoc," *Washington Times*, January 31, 1999.

12. UNEP Programme Document, "Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region (NOWPAP)," UNEP (Water)/NOWPAP WG.6/3/Rev.1."

established in 1977 by UNESCO to plan and coordinate multilateral ocean science programs of the International Oceanographic Commission (IOC). The UN Development Program/General Environmental Fund/IMO (UNDP/GEF/IMO) Regional Program on Prevention and Management of Marine Pollution in East Asian Seas includes Japan, the Koreas, and the PRC, as well as ASEAN nations. The North Pacific Marine Science Organization, PICES, focuses on marine pollution and impacts monitoring. There are also various bilateral cooperation projects, such as the PRC/ROK Action Plan for Monitoring and Protection of the Yellow Sea Large Marine Ecosystem, which has received World Bank assistance.

In the Southeast Asia sub-region, marine environment cooperation has focused on the UNDP/GEF/IMO Regional Program on the Prevention and Management of Pollution in the East Asian Seas. This program received \$8M in UN GEF funding in the 1994-99 period, and plans a larger program in the next five years, and until 1997 also received UNDP funding. The program is executed by the IMO, with a project office in Manila, and has the goal of helping regional nations prevent and manage marine pollution through technical assistance and monitoring and regional capacity-building and coordination. The program currently has three demonstration projects—in the PRC, the Philippines, and the Malacca Straits.¹³ The Coordinating Body on the Seas of East Asia (COBSEA) serves as the UNEP's focal point to coordinate the UNEP Regional Seas Programs with other marine scientific research projects.

In the South Pacific sub-region, the UNEP's Regional Seas Program works through the South Pacific Regional Environmental Programme (SPREP), with a regional secretariat in Apia, Samoa, and funding from the GEF/UNDP, through the IMO.¹⁴ SPREP members include 14 island states, 8 island territories, plus Australia, France, New Zealand, the United States. SPREP has prepared the Pacific Ocean Pollution Prevention Program (PACPOL), a five-year (1999-2004) program focused on ship-based pollution in the Pacific

13. For details, see IMO, "On Course for Cleaner Oceans: IMO Technical Assistance Services for the Protection of the Marine Environment," March 1997, and "Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas," 1997.

14. Hewison, *op. cit.*

islands.¹⁵ A host of other initiatives have the objective of cooperation for resource conservation in the South Pacific. These initiatives include the work of the South Pacific Forum Fisheries Agency (FFA), the Canadian-financed Western Pacific Fisheries Consultative Commission (WPFCC), the Wellington Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (which stimulated the subsequent UN global ban on high seas driftnet fishing), the 1991 Nauru Agreement concerning Cooperation in the Management of Fisheries of Common Interest, a regional register for fishing vessels, and the 1987 US Multilateral Fisheries Treaty. In many ways, the South Pacific sub-region is a model of both wide regional cooperation in marine environment issues and of the complex, varied and often overlapping network of initiatives and organizations involved.

Other significant initiatives for marine environment cooperation in the Asia Pacific region include the ASEAN 1997 Plan of Action in Transportation's project on transboundary shipping pollution, which advocates accession to and implementation of IMO conventions, and lists areas of possible cooperation. With private companies, ASEAN has also developed an Oil Spill Contingency Plan. The multinational Asia Pacific Economic Cooperation (APEC) organization has a Working Group on Marine Resource Conservation (MRC) and has developed an Action Plan for Sustainability of the Marine Environment (approved by APEC ministers in June, 1997), with the objectives of integrating approaches to coastal management, preventing and controlling marine pollution, and ensuring sustainable management of marine resources, to be accomplished through research, exchanges of information, technology, and expertise, capacity-building and training, and including private sector participation. The APEC MRC Working Group also has several ongoing projects and workshops to support this broader program. A unique organization in Southeast Asia, the Southeast Asian Programme in Ocean Law, Policy and Management (SEAPOL) headquartered in Bangkok since its origin in 1981, with Canadian support conducts workshops to help states comply with international maritime obligations, commissions studies and plans for marine environment management in the Gulf of Thailand

15. "PACPOL: An Initiative to Address Maritime Pollution in the Pacific Islands Region (Draft)," SPREP, May, 1998.

and has recently begun an initiative to establish a network of marine affairs institutions from throughout the broader Asia Pacific Region. The Maritime Institute of Malaysia (MIMA) in Kuala Lumpur, and the Centre for Maritime Policy at the University of Wollongong in Australia have become active focal points for fostering regional maritime cooperation through education, research, conferences and workshops. Finally, but by no means least, the Indonesian-sponsored Workshops on the South China Sea have included meetings on the marine environment.

CSCAP "Guidelines for Regional Maritime Cooperation"

The unofficial "Track 2" Council for Security Cooperation in the Asia Pacific (CSCAP) has, since its beginning in 1994, established a Maritime Cooperation Working Group where representatives from regional nations meet at least once a year to develop ideas for regional maritime cooperation. In late 1998, after three years of Working Group efforts, the Co-Chairs of CSCAP forwarded to the official ASEAN Regional Forum (ARF) Chairman, as CSCAP Memorandum No. 4, the Guidelines for Regional Maritime Cooperation. These Guidelines are designed to be a general "set of fundamental, non-binding principles to guide regional maritime cooperation...."¹⁶ In addition to recognizing the general "confidence-building benefits of naval cooperation," the Guidelines support regional maritime cooperation in: Maritime Safety (Articles 13-15) and Search and Rescue (Articles 22, 23), Marine Resources (Articles 24, 25), Marine Scientific Research (Articles 26, 27), Technical Cooperation and Capacity-Building (Article 28), and Training and Education (Article 29).

As our earlier review showed, maritime issues are of major importance in the Asia Pacific Region, and so is cooperation to address these issues. The Guidelines for regional maritime cooperation, constitute an important confidence-building measure for comprehensive regional security. They also may help in developing an

16. CSCAP, "CSCAP Memorandum No. 4: Guidelines for Regional Maritime Cooperation," December, 1997. Also included as Annex in Bateman & Bates, *Regional Maritime Management and Security*, 1998.

integrated and stable ocean management regime for the region. Perhaps most important, the Guidelines lay the basis for further development of regional cooperative initiatives in each of the various maritime issue areas addressed.

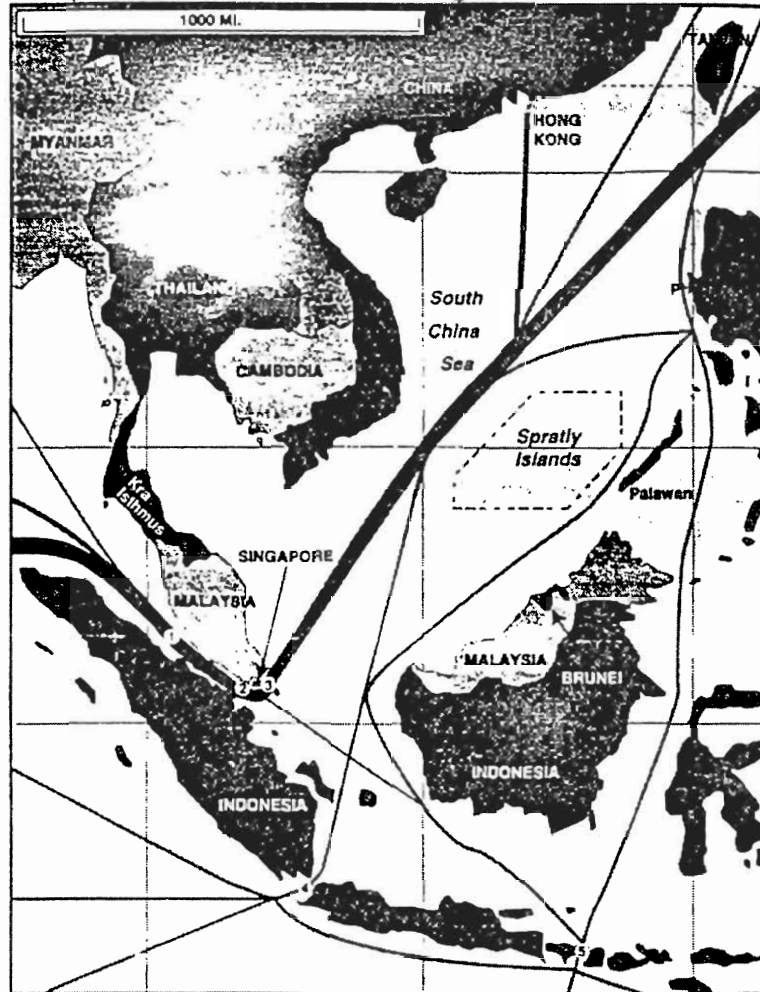
Conclusion

This overview of existing maritime cooperation arrangements and support by countries in the Asia Pacific region suggests that levels of cooperation vary depending on the issue area. In maritime safety, most regional nations adhere to the key IMO conventions. There is potential for increased regional cooperation in Port State Control, Search and Rescue, maritime disaster relief, and maritime safety training. In the area of law and order at sea, the IMO's Rome Convention needs more regional support, and there is potential for increased cooperation in countering piracy, drugs, smuggling, and illegal migration. In the area of marine environment, regional nations' adherence to key IMO anti-pollution conventions is at best mixed. With various activities and initiatives underway in each sub-region, there is a need for more focused regionwide coordination and technical cooperation. The CSCAP "Guidelines for Regional Maritime Cooperation" establish general agreed principles of regional maritime cooperation in the various maritime issue areas and lay the groundwork for further work to advance this cooperation in the region.

Figure 1

Source: CNA

Principal International Sea Lanes Through Southeast Asia



Legend: 1 Strait of Malacca, 2 Phillip Channel, 3 Strait of Singapore, 4 Sunda Strait, 5 Lombok Strait

Figure 2. Interregional Maritime Crude Oil Shipments:
Millions of Long Tonnes (MLT)

Source: NDU Chokepoints

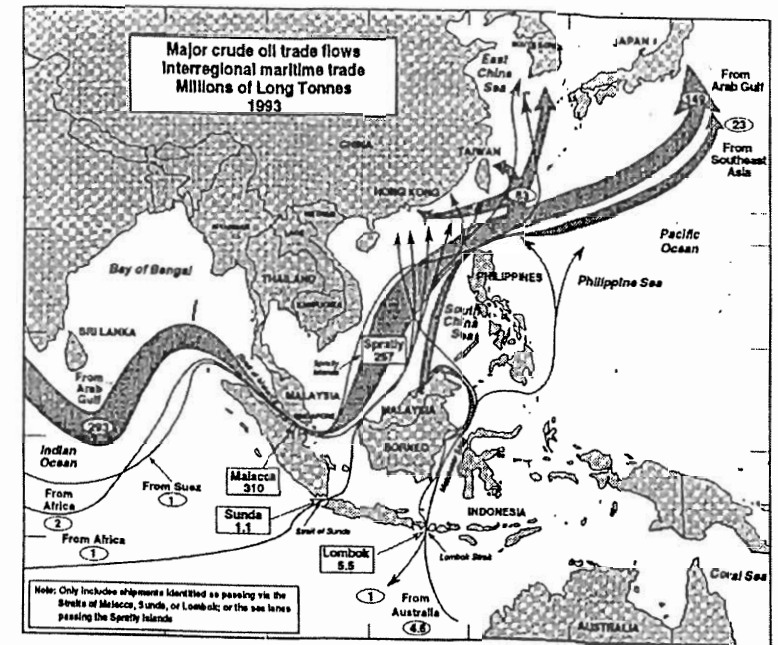


Figure 3.

Maritime Safety
Key IMO Safety Conventions

Convention	Status of ARF Nations' Ratification
•International Convention on Safety of Life at Sea (SOLAS 1974) – SOLAS Protocol 78 (Tanker Safety)	– All (Less Laos*, Mongolia) *Laos not an IMO member – All (Less Canada, Laos, Mongolia, PNG, Philippines, Thailand)
•International Convention on Load Lines (LL 1966)	– All (Less Laos, Mongolia)
•Convention on the International Regulations for Preventing Collisions at Sea (COLREGS 1972)	– All (Less Laos, Mongolia, Philippines)
•Safety of Fishing Vessels Protocol 1993 (SFV-P)	– None
•International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW 1978)	– All (Less Cambodia, Laos, Mongolia)
•International Convention on Maritime Search Rescue (SAR 1979)	– All (Less Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Mongolia, Myanmar, Philippines, Thailand, Vietnam)

Source: IMO

Figure 4.

Maritime Safety
Key IMO Safety Conventions

Convention	Status of ARF Nations' Ratification
•International Convention for the Prevention of Pollution from Ships 1973 and 1978 Protocol (MARPOL 73/78) (Annex I/II) (Oil and Noxious Liquids) – Annex III (Packaged Substances)	– All (Less Laos, Mongolia, New Zealand, Philippines, Thailand) – All (Less Brunei, Canada, India, Indonesia, Laos, Malaysia, Mongolia, Myanmar, New Zealand, Philippines, Thailand, Vietnam) – Cambodia, Japan, PNG, Russia – Australia, Cambodia, China, Japan, Malaysia, PNG, ROK, Russia, U.S.
– Annex IV (Sewage) – Annex V (Garbage)	
•Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (LONDON CONVENTION) – 1996 Protocol (Replaces 1972 Convention)	– All (Less Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Mongolia, Myanmar, Singapore, Thailand, Vietnam) – None
•International Convention Relating to Interventions on the High Seas in Cases of Oil Pollution Casualties 1969 (INTERVENTION 69) – 1973 Protocol (Substances other than oil)	– Australia, China, Japan, New Zealand, PNG, Russia, U.S.
•International Convention on Oil Pollution Preparedness, Response, and Cooperation 1990 (OPRC)	– Australia, China, Russia, U.S. – Australia, Canada, China, India, Japan, Malaysia, U.S.

Source: IMO

Figure 5.

CSCAP "Guidelines for Regional Maritime Cooperation

- CSCAP Maritime Cooperation Working Group established 1995 as unofficial "Track II" support group to develop ideas for CSCAP submission to Track I officials
- CSCAP Guidelines are "a set of fundamental, non-binding principles to guide regional maritime cooperation..." Includes:
 - Maritime Safety (Arts. 13-15) and Search and Rescue (Arts. 11, 12)
 - Law and Order at Sea (Arts 16, 17)
 - Protection and Preservation of the Marine Environment (Arts. 22, 23), Marine Resources (Arts. 24, 25), Marine Scientific Research (Arts. 26, 27), Technical Cooperation and Capacity-Building (Art. 28), and Training and Education (Art. 29)
- Current Status of Guidelines: Provided by CSCAP Co-Chairs to ARF Chair as CSCAP Memorandum No. 4 in September 1998.

Figure 6.

Marine Environment
Key IMO Safety Conventions (Cont.)

Convention	Status of ARF Nations' Ratification
• International Convention on Civil Liability for Oil Pollution Damage 1969 (CLC) – 1992 Protocol	– All (Less Australia, Japan, Laos, Mongolia, Myanmar, Philippines, ROK, Thailand, U.S., Vietnam) – Australia, Canada, Japan, New Zealand, Philippines, ROK, Singapore
• International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1971 (FUND) – 1992 Protocol	– All (Less Australia, Cambodia, China, Japan, Laos, Mongolia, Myanmar, Philippines, ROK, Singapore, Thailand, U.S., Vietnam) – Australia, Canada, Japan, New Zealand, Philippines, ROK, Singapore
• International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea 1996 (HNS)	– None
• Control and Management of Ballast Water to Prevent Introduction of Non-Indigenous Species	– New Annex VII to MARPOL to be drafted in 2000.

MARITIME SURVEILLANCE, ENFORCEMENT AND INFORMATION EXCHANGE

Anthony Bergin

East Asia has a complex maritime environment with regard to both enduring features of strategic geography and dynamic aspects of the contemporary maritime scene. Maritime security issues are becoming a particular concern of Northeast Asian countries. They are now more concerned with maritime security than with internal security or land based threats. Most countries in East Asia are heavily dependent on the sea lanes over which they trade, and in the event of crisis most logistic support would have to use the major sea lanes that traverse the region.¹ Cooperative maritime surveillance and marine information exchange is, however, under-developed. Considerations of sovereignty mainly inhibit the process of ocean management and regime building in these areas. This paper considers some steps that could be taken to make greater progress in the areas of maritime surveillance, enforcement and information exchange.

1. See e.g., S. Bateman and S. Bates (eds), *Shipping and Regional Security*, Canberra Papers on Strategy and Defence, no. 129 (Strategic and Defence Studies Centre, ANU, Canberra, 1998); John Noer, *Chokepoints: Maritime Economic Concerns in Southeast Asia* (National Defence University Press, Washington, D.C., 1996); Jin-Hyun Paik, 'Regional Cooperation for Stable Sea Lane Regime in the Asia-Pacific: Implications of the UNCLOS,' *MIMA Bulletin*, vol. 2, 1998, pp. 1-6.

Key Concepts

Surveillance consists of maintaining an infrastructure capable of detecting, observing and notifying a coastal state of activities of interest in its area of jurisdiction and in areas beyond. Surveillance really means knowing what is going on in your area of interest and is the basic building block of providing enforcement. It may range from becoming aware of the unauthorised passage of a foreign vessel somewhere in a state's jurisdiction, to exchanging information with another state on vessel movement, to tracking accidents like oil spills or vessels in distress. Technical resources available for maritime surveillance may operate either on the surface, in the air, beneath the surface and in space. They include ships, hydrofoils, hovercraft, fixed wing aircraft, helicopters, submarines, underwater fixed sensors, and satellites.

Some combination of these is usually used and thus an effective command and communications system is required to integrate the information from various sources to produce a coordinated surveillance picture.² There are a number of good reasons why surveillance should be undertaken. The control of fishing in Exclusive Economic Zones (EEZs) needs control, sovereignty needs to be asserted over national spaces to prevent unauthorised use of those spaces, there is a need to guard against illegal cross border flows of drugs, refugees and prohibited goods, sea lanes need to be monitored for illegal activities such as piracy and for hazards to navigation and areas in dispute need to be periodically sampled, both to support one's own claims and to gain information about other claimants. Surveillance is a principal component of strategic intelligence. There is a close relationship between the two. Surveillance provides intelligence but surveillance priorities are determined by intelligence.³ The close relation-

2. See e.g., Anthony Bergin and Mohd Sidik Shaik Osman (eds), *National Coordination of Maritime Surveillance and Enforcement* (Australian Defence Studies Centre, Australian Defence Force Academy, Canberra, 1996). For the Australian context see Doug Mackinnon and Dick Sherwood, *Policing Australia's Offshore Zones Problems and Prospects* (Centre for Maritime Policy, University of Wollongong, Australia, 1997).

3. See David Shakelton, 'Command Control and Communications', in Jack McCaffrie (ed.), *Managing and Protecting the Offshore Estate* (Australian Defence Studies Centre, Australian Defence Force Academy, Canberra, 1995), pp. 89-101.

ship between intelligence and surveillance is one of the factors that inhibits the process of cooperation.

Maritime enforcement includes rendering effective international and national rules and regulations. It may include sanctions designed to ensure compliance with a particular regulation. Most states may be expected to have the basic legal regulatory framework of national laws to ensure maritime security. The 1982 Law of the Sea Convention requires that only government vessels and personnel may be used. State enforcement action cannot endanger navigation, the marine environment or the vessel in question. A minimum amount of force may be used, and such force must be consistent with the seriousness of the offence.

Apart from the Law of the Sea Convention there are a number of other more limited conventions created to address specific ocean uses that can provide assistance to coastal states in meeting their ocean security needs. These include the Convention on the International Maritime Organisation, the International Convention for the Safety of Life at Sea (SOLAS), which arose initially from the sinking of the Titanic. This requires states to promulgate regulations and laws to ensure the safety of life at sea through requiring ships to meet certain safety standards. Note should also be made of International Convention for the Prevention of Pollution from Ships (MARPOL) and the 1978 Protocol to MARPOL. MARPOL's annexes presently regulate 80 per cent of all world shipping, prohibiting or controlling the marine transport of a variety of substances and sources of pollution.

The product of surveillance is *information* which is then married with information from a range of sources to provide a picture of activities at sea. The compilation of data bases of maritime information and the exchange of information between different users and collectors of data has been facilitated by advances in information technology, making the storage, exchange and manipulation of data much easier. Digital maritime databases may contain an array of hydrographic, oceanographic, geographic, shipping route and traffic, port infrastructure and marine incident (such as groundings, collisions, piratical attacks) data. This data can be analysed for trends and causal relationships with considerable benefits in terms of reduced costs and more effective management of marine industries, enhanced ocean governance, better marine safety and improved monitoring of

the marine environment. The full benefits of maintaining data bases and information systems will only be realised if there is preparedness to share information, not just between national agencies but between countries on a regional basis.

Maritime Geography

In the broadest sense the area to which a maritime surveillance and information exchange regime could apply in the Asia Pacific region comprises the extensive marine areas of the North and South Pacific and the enclosed and semi-enclosed seas adjacent to the mainland of Asia. The geography of East Asia complicates any surveillance regime and information sharing. Along the eastern coastline of Asia there is a continuous chain of enclosed and semi-enclosed seas between the mainland and the off-lying archipelagos and islands, stretching from Sakhalin and the Kamchatka Peninsula through the Japanese archipelago and the Philippines to the Indonesian archipelago and northern Australia.

From north to south, these seas are: the Sea of Okhotsk, Sea of Japan (or the East sea), Yellow Sea, East China Sea, South China Sea, Gulf of Thailand, Java Sea, Sulu Sea, Celebes Sea and the Timor and Arafura Seas. The situation is further complicated by the number of islands within these seas, such as the Kuril, Senkaku, Paracel and Spratley islands, which are the subject of sovereignty disputes.

Achieving strait line maritime boundaries and clear sovereign jurisdiction over maritime areas and marine resources in such a region is an extraordinarily difficult task.⁴ Table 1 shows a list of maritime boundaries in East Asia. Of the 70 different maritime boundaries required in the region, only eight have so far been fully agreed. Few countries have shown an interest in delimiting maritime boundaries. The complicated maritime geography of the Asia Pacific means that no one country, using its own resources, will be able to develop a data base to manage its maritime interests in an effective way without cooperation from neighbours.

4. See Sam Bateman, 'Economic Growth, Marine Resources and Naval Arms in East Asia—a deadly triangle?', *Marine Policy*, vol. 22, no. 4/5, 1998, pp. 297-306.

Table 1: Maritime Boundaries in East Asia

Country	Territorial Sea	EEZ	Continental Shelf	Remarks
Australia-Indonesia	NR	Yes	Yes	Joint zone
Indonesia-Malaysia	Yes	No	Yes	
Indonesia-Singapore	Yes	NR	NR	
Indonesia-Thailand	NR	No	Yes	
Indonesia-Philippines	No	No	No	
Indonesia-India	NR	No	Yes	
Indonesia-Vietnam	NR	No	No	
Indonesia-China	NR	No	No	
Malaysia-Singapore	No	NR	NR	
Malaysia-Thailand	No	No	No	Joint zone
Malaysia-Philippines	No	No	No	
Malaysia-Vietnam	NR	No	No	
Burma-India	No	No	No	
Burma-Thailand	No	No	No	
Cambodia-Vietnam	No	No	No	Joint zone
Thailand-India	NR	No	Yes	
Thailand-Vietnam	NR	No	No	
China-Vietnam	No	No	No	
China-Taiwan	No	No	No	
Philippines-Taiwan	NR	No	No	
Japan-Taiwan	No	No	No	
China-South Korea	NR	No	No	
China-North Korea	No	No	No	
South Korea-Japan	NR	No	Yes (part only)	Joint zone
North Korea-Japan	NR	No	No	
Japan-Russia	No	No	No	
North Korea-South Korea	No	No	No	
North Korea-Russia	No	No	No	
South Korea-Russia	NR	No	No	Only required if sovereignty upheld over Tok-do/Takeshima

Notes: NR, boundaries are not required because either the countries are too far apart to have the relevant boundary (i.e. over 24nm in the case of a territorial sea boundary), or so close together that only a territorial sea boundary is required (e.g. as is the case with Malaysia and Singapore).

Source: *Limits in the Seas—National Claims to Maritime Jurisdiction*, No. 36, 7th revision, US Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, 1995.

Developing Ideas

In 1990 the concept of a formal Regional Maritime Surveillance and Safety Regime was suggested by the Institute for Strategic and International Studies in Kuala Lumpur, but it was regarded as too far reaching for official acceptance at that stage. A review of the concept in 1991 found several difficulties with its implementation, including the lack of any clear commonality interest between possible member countries, the differences in organisational arrangements for undertaking surveillance in these and regional sensitivities to particular issues, including fishing and maritime claims.⁵

In late 1993 two Australian analysts⁶ identified maritime interest of common concern to regional countries and proposed a maritime surveillance, safety and information regime to cover low-level maritime security issues, especially in East Asian waters. This regime would:

- help safeguard merchant shipping which is so important to the region;
- assist in creating a stable maritime regime to permit exploitation of marine resources of the region;
- contribute to the preservation of the marine environment; and
- develop a framework of cooperation that could provide the basis for dealing with higher order contingencies that might arise in the future.

In July 1994 an Australian paper on practical proposals for security cooperation in the Asia Pacific, tabled at the first meeting of the ASEAN Regional Forum in Bangkok,⁷ identified:

5. See Desmond Ball and Sam Bateman, 'An Australian Perspective on Maritime CSBMs in the Asia-Pacific Region,' in Andrew Mack (ed.), *A Peaceful Ocean?*, *Maritime Security in the Pacific in the Post-Cold War Era* (Allen & Unwin, Sydney, 1993), pp. 158-185.

6. Russ Swinnerton and Desmond Ball, 'A Regional Regime for Maritime Safety and Information Exchange,' *Maritime Studies*, no. 78, September/October 1994, pp. 1-15.

7. See Gareth Evans and Paul Dibb, *Australian Paper on Practical Proposals for Security Cooperation in the Asia Pacific Region* (Department of Foreign Affairs and Trade and SDSC, Canberra, 1994).

- Maritime information databases as a Category One Trust Building measure (that is, one which warranted early consideration because it appeared achievable). The paper stated that a maritime information data base would enable regional countries to collect data about marine traffic, environmental issues, piracy and smuggling. It suggested that multinational hydrographic and oceanographic programs might be worth pursuing at a later phase of this program.
- Maritime cooperation in activities such as maritime safety, search and rescue, marine pollution control and maritime surveillance as a Category Two measure (that is, one which could be considered and which would benefit from the improved security dialogue and trust flowing from category 1 activity).

In 1995 Sam Bateman, the Co-Chairman of the Maritime Working Group of the 'second track' body, the Council for Security Cooperation in the Asia Pacific (CSCAP), proposed that steps should be initiated towards setting up a data base to coordinate and distribute through the region open sourced maritime information. The first steps could include the compilation of a list of the types of information countries would regard as useful, the possible sources of data, and agreement on the area (or areas) to which the information exchange regime would apply.⁸

A possible model was suggested by Bateman, based on the Strategic Maritime Information System (SMIS) being developed by the Information Technology Division of the Australian Defence Science and Technology Organisation. This is a data base of open source maritime information covering southeast Asian and Australian waters, including map depictions, maritime boundaries, reports of incidents at sea, port details, data on some 32,000 merchant ships over 1,000GRT which operate in the region, major routes and shipping movements. The ability to manipulate data related to trade routes and shipping densities is one useful attribute of the SMIS. Such information is of great utility for tasks related to marine safety and the environmental management of shipping, including monitoring the

8. S. Bateman, 'Maritime Surveillance and Information Exchange', in S. Bateman and S. Bates (eds), *Calming the Waters: Initiatives for Asia Pacific Maritime Cooperation* (Canberra Papers on Strategy and Defence, no. 114, ANU, 1996), pp. 67-75.

risks of marine pollution.

In 1996 Bateman again considered the issue of marine information and data exchange in the CSCAP forum.⁹ He proposed a widening of the scope of maritime information and data exchange. Bateman noted the vulnerability to marine accidents, with many focal areas and choke points where there is a high density of shipping, as making marine information sharing and data exchange very important in the region. He pointed out that it had been suggested that the importance of maritime information and data bases to the sustainable development of marine areas could even lead to new discipline of *marine informatics*, which would involve studying how to supply decision makers with the types of high quality information they require to make decisions on complex issues of sustainable development.¹⁰

After summarising examples of regional marine data bases Bateman concluded that despite the importance in the security context of marine data and information exchange there were five major problems to overcome. These were as follows:

- First, the development of geographic information systems and data bases is very dynamic. It is an area of rapid technological development with new technologies providing new means of gathering, storing, manipulating, transmitting and displaying data, and inevitably different countries would be using different levels of technology.
- Second, coordination is difficult in view of the number of government departments and research agencies, both national and international, involved.
- Third, the issue is potentially sensitive in commercial terms, and with regard to naval operations in view of the relationship with submarine operations, and anti-submarine warfare and mine countermeasures.
- Fourth, the complicated situation with regard to maritime

9. See S. Bateman, 'Maritime Information and Data Exchange', in S. Bateman and S. Bates (eds), *The Seas Unite: Maritime Cooperation in the Asia Pacific Region* (Canberra Papers on Strategy and Defence, no. 118, ANU, 1996), pp. 175-193.

10. Roger Bradbury, 'Marine Informatics: A New Discipline Emerges,' *Maritime Studies*, no. 80, January/February 1995, pp. 15-22.

boundaries may make countries less willing to cooperate, in case they are perceived to be compromising their own sovereignty.

- Fifth, there is a general lack of appreciation of the complexities of the marine environments and of the importance of scientific knowledge and comprehensive data to its management.

Areas for Cooperation

The idea of cooperative maritime surveillance has thus been canvassed for some years as a possible confidence building measure. Some, although not dramatic progress has been made. For example, in the area of search and rescue (SAR) the ASEAN Regional Forum (ARF) has drafted a declaration on search and rescue cooperation, (although there have been recent instances of banning of airspace to neighbouring nations SAR aircraft). There have been preliminary steps taken to improve training of ships crews for SAR work and maritime disaster relief training. Vietnam and Thailand have agreed on joint patrols to prevent fisheries violations in the Gulf of Thailand. The Western Pacific Naval Symposium (see below) has endorsed SAR cooperation as part of overall maritime cooperation. Australia and Indonesia have joint surveillance arrangements in the Timor Gap. There have been cooperative anti-piracy patrols by some ASEAN members. The Australian funded Pacific Patrol Boat project in the South Pacific has delivered 22 patrol boats to 12 island countries for maritime surveillance.¹¹ Trilateral discussions between the US, ROK and Japan on sea lane security have taken place.¹² By and large, however, cooperative maritime exchange and surveillance has been limited. Progress could be made in a number of areas.

11. See Anthony Bergin and Sam Bateman, 'Law and Order at Sea in the South Pacific-The Contribution of the Pacific Patrol Boat Project,' *Ocean and Coastal Management*, in press.

12. See *Trilateral Naval Cooperation: Japan-US-Korea Workshop 11* (Centre for Naval Analyses, Virginia, 1998).

Piracy Control

Piracy has had a long history in the Asia Pacific. In the 1982 Law of the Sea Convention piracy is defined in article 101. The key words in this definition are *high seas* and *for private ends*. In theory, this means that any incident elsewhere than on the high seas is not an act of piracy. This would mean that most of the incidents in recent years are not acts of 'piracy' as they have occurred in territorial waters, internal waters or archipelagic waters of the coastal state. The expression 'sea robbery' has been used to describe incidents in coastal waters under state jurisdiction, although the distinction of limiting 'piracy' to the high seas is largely a legalistic one to overcome problems of jurisdiction. To overcome the limitation of the narrow definition of 'piracy' under international law, and to facilitate the collection of data on incidents, the International Maritime Bureau (IMB) has favoured the following broad definition: 'Piracy is an act of any vessel with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act.'¹³ This wider definition includes not only acts against vessels during passage, but also acts against vessels in port or at anchor, and regardless of whether they are inside or outside territorial waters when they are attacked. It also covers acts of maritime terrorism or other activities for non-private ends.

In the Asia Pacific there are several types of piracy.¹⁴ Ships are boarded and cash and valuables stolen with minimum force. The attacks occur in confined waters when ships are most vulnerable. Violence is not normally used unless resistance is offered. The worst area for this type of piracy was formerly the Philip Channel off Singapore, but the emphasis has now shifted to Indonesian waters. Another type of piracy in East Asia is when an entire ship is stolen or high-jacked. The cargo will then be stolen before the ship is abandoned or handed back to its crew. An empty ship may even be stolen with the objective of giving the ship a false identity and turning it into a 'phantom ship.' It is then used to commit cargo fraud by, for exam-

13. See *Piracy and Armed Robbery Against Ships A Special Report* (ICC—International Maritime Bureau, revised edition, March 1998).

14. *Ibid.*

ple, picking up a cargo and disappearing. Another type of maritime attack are those with a military or political feature. Through 1991 to early 1994 there was a trend off China where ships were intercepted and sometimes fired upon by vessels manned by people dressed in military uniforms. The attacks have now ceased. China responded to the allegations of state sponsored piracy by suggesting that overzealous enforcement of Customs regulations may have been a factor, although the possibility of pirates disguised as Chinese naval forces cannot be discounted.

The Regional Piracy Centre (RPC) was established by the IMB in Kuala Lumpur in 1992 to receive reports of piracy on a global scale, to warn ships against piratical attacks, to analyse reported incidents world-wide, and to issue regular reports. The latest report from the IMB¹⁵, notes that in 1998 there were 192 actual and attempted attacks compared to 247 in 1997, 228 in 1996 and 188 in 1995. Attacks in East Asian waters (including off Indonesia, Malaysia, the Philippines) accounted for 51 per cent of all incidents in 1998 down from 63 per cent in 1995-96. In early 1998, there was a noticeable trend in high-jacking of product tankers and theft of their cargoes. In the last quarter of 1998, the pirates moved to highjacking of bulk carriers and general cargo ships.

Table 2 shows the number of piratical attacks in Asia Pacific waters since 1991. The number of attacks for 1998 have been reduced as compared to 1997. The RPC feels that one of the main reasons for this was due to the awareness by ship owners and shipmasters of the danger of their ships being attacked by pirates in Asia due to the economic crisis. Ship owners and shipmasters have taken extra precautions in piracy prone areas by vigilant anti-piracy watches, additional lookouts and extra security at anchorage.

Indonesian waters continue to be the highest risk with the total number of attacks increasing to 57, whereas in Thailand and the South China Sea, a sharp decrease in attacks was recorded. Piracy attacks in Malaysian waters have been on a gradual increase where the victims are mostly fishermen. Most of the attacks last year occurred while the ships were at anchor.

15. *Piracy and Armed Robbery Against Ships, Annual Report, 1st January-31st December 1998* (ICC International Maritime Bureau, January 1999).

Table 2: Attacks by Locations for both Actual and Attempted Attacks in the Asia Pacific

Locations	1991	1992	1993	1994	1995	1996	1997	1998
Southeast Asia								
Indonesia	55	49	10	22	33	57	47	59
Thailand					4	16	17	2
Malaysia	1	2		4	5	5	4	10
Philippines		5		5	24	39	16	15
Malacca Straits	32	7	5	3	2	3		1
Cambodia			1	1	1	1	1	
Burma						1	2	
Singapore Straits				3	2	2	5	1
Far East								
China/Hong Kong/Macau			1	4	31	9	5	2
Hong Kong/Luzon/Hainan ('HLH') Area			27	12	7	4	1	
South China Sea	14	6	31	6	3	2	6	5
Vietnam				2	4		4	
Taiwan					2			
East China Sea		1	10	6		1	1	
Gulf of Tonkin				1				
Yellow Sea				1				
Papua New Guinea						1	1	3
Solomon Islands							1	

Source: *Piracy and Armed Robbery Against Ships, Annual Report*, 1st January-31st December 1998, ICC International Maritime Bureau, January 1999.

The RPC figures show that there is a sudden rise in crew being assaulted and killed indicating that violence is on the increase. Most worrying is the recent number of crew killed on hijacked ships. For example, last Autumn, the Japanese owned TENYU sailed out of Malacca Strait bound for south Korea with 1500 tonnes of aluminium ingots. Much later she turned up under a different name in Zhangjia-gang, a port in China. Her cargo were gone and her original crew, two South Koreans and 13 Chinese were missing, presumed dead.¹⁶ Last December a Hong Kong bulk carrier, CHEUNG SON, disap-

peared in the Taiwan strait with its load of slag. The bullet ridden bodies of six of the 23 crew, mostly mainlanders were dragged up in fishermen's nets off Shantou in China's Guangdong province. The ship was found empty and abandoned.

To make matters worse, as far as shipowners and international regulators are concerned, the Chinese have been conducting their investigations in secret. Last year several ships were seized in the South China Sea by Chinese customs, or its navy, and accused of smuggling. The ships are typically taken into a Chinese port. There they and their cargoes are sold, and the crews discharged. China is not a reporting member of the IMO and according to the chairman of the Hong Kong Shipowners Association, Arthur Bowring: 'We're not given the full story by the officials we talk to ... They want to investigate in total silence.'¹⁷ Some Chinese suspect that triad gangs and corruption are involved.

The case of the PETRO RANGER is instructive here. The oil tanker last April was bound from Singapore to Ho Chi Minh city with a \$2.4 million payload. A band of 12 pirates crept up behind the ship in a speedboat, inadvertently assisted by a blind spot in the ships radar and an officer of the watch who was listening to music on the ship's radio. The 22 crew members were threatened with death and remained locked in the mess room for 10 days. The pirates forced the ship to sail to Hainan Island in China. However, on 15 October 1998, despite indisputable evidence, the pirates who had committed a serious offence of highjacking a vessel and attempting to sell the cargo, were simply sent back to Indonesia without being prosecuted.¹⁸ The IMB states in its latest report that: 'The Centre firmly believes that piracy cannot be resolved this way. This incident will encourage the pirates to carry on, knowing that in some jurisdictions they can extricate themselves out of difficult situations.'¹⁹ The IMB and the Baltic and International Maritime Council have made an offi-

16. *Ibid.* p. 14.

17. As quoted in *The Economist*, January 30, 1999, p. 30.

18. See '50 days of terror on the high seas,' *The Australian*, 30 November 1998. The Malaysian government notified Beijing that it wished to seek the extradition of those onboard PETRO RANGER. The Chinese claimed that the vessel was not engaged in piracy.

19. IMB, *Annual Report*, 1st January-31st December 1998, p. 12.

cial protest on behalf of the maritime industry to the Chinese government about these and other incidents, asking that an official investigation be conducted.²⁰

So far piracy appears to have had no impact on regional shipping patterns, commercial or military. Whilst the financial loss to the international shipping industry as a result of piracy is relatively small, estimated at about \$US 200 million,²¹ piracy is a big threat to the marine environment. Ships crews have been tied up, bridge watchkeepers have been immobilised, or essential navigation equipment stolen or vandalised with the ship steaming ahead out of control while the pirates escape. A ship in this situation, is a major threat to other shipping and could cause major damage, loss of life or pollution if it ran aground or collided with another vessel.

Apart from unilateral actions taken by individual countries, particularly in ports, neighbouring countries can cooperate in areas of high incidence of attacks. The cooperation between Singapore, Malaysia and Indonesia in the Straits of Malacca has led to a marked reduction of piracy incidents in the Straits of Malacca. Measures by shipping associations, shipowners and international bodies as such as IMO and IMB have also been effective in promulgating measures to be taken by ships.

As far as navies are concerned, in theory a naval vessel has no right to exercise police powers in the case of a ship under attack in another states coastal waters. But if human life were at risk there would be powerful incentives to intervene. Australian naval vessels for example are allowed to intervene under such circumstances under the doctrine of safety at life at sea but only to save lives and not to protect property or to arrest the pirates.²² There is probably not much scope for the involvement of regional navies in piracy control beyond that which is occurring at present. However, there is scope to develop agreed procedures covering warships meeting piracy during innocent passage in foreign territorial seas or during archipelagic

20. *Ibid.* p. 18.

21. See Russ Swinnerton, 'Piracy in East Asia: Trends and Counter-Measures', paper at 11th Asia-Pacific Roundtable, Kuala Lumpur, 5-8 June, 1997; see also Peter Chalk, 'Contemporary Maritime Piracy in Southeast Asia,' *Maritime Studies*, July/August 1998, pp. 1-14.

22. Swinnerton, *ibid.*

passage. Such protocols could outline the actions that are permitted, and the communication requirements to advise the coastal state. The reality is that very few pirates are actually caught at sea. The most effective solutions for coastal states therefore lie in traditional policing methods ashore, including the possible links between piracy and organised crime, including where the pirates live and how they dispose of their stolen goods.²³

One technical development that could contribute to reducing sea crimes is the use satellite tracking systems. At present, owners of ships highjacked or plundered by pirates are aware of the incidents only about four or five days later. The IMB is working with a European satellite firm who have produced a satellite tracking system called SHIPLOC.²⁴ This system is capable of instant location of a vessel at sea or in port. It has been designed for maritime use out of ARGOS, a well established satellite based tracking system. The tiny transmitter is relatively inexpensive and can be concealed on ships. For their own safety the crew need not be informed of the existence or the location of the transmitter. It enables the ship owners to monitor the exact location of their vessels. The only equipment needed by the ship owner is a PC with internet access. Even if the ship's power supply is cut, there is a back up for the equipment to function. The system could help contain rising insurance premiums for ships as well as fighting piracy and tracking down missing ships. It should act as a deterrent to pirates, because they will know that someone outside could know exactly where the ship is. If the vessel is highjacked its position could be known to its owners and law enforcement bodies.

As far as phantom ships are concerned, where maritime fraud involves the disguising of a ship's identity, one way to deal with this problem is by fingerprinting ships, in the way cars are identity-coded to prevent theft. An indelible fingerprint to mark the hull structure or engine or other unlikely to-be-cut-out element of the ship could then

23. See D. MacKinnon and P. Schwerdt, 'Maritime Crime,' in *Policing Australia's Offshore Zones Problems and Prospects*, op.cit., pp. 63-73; see also Arthur Bowling, 'The Views of the Shipping Industry on Piratical Attacks, including the seizing of vessels for ransom,' paper to ICC-IMB 3rd International Meeting on Piracy and Phantom Ships, Kuala Lumpur, 1-2 June 1998.

24. IMB, *Annual Report*, 1st January-31st December 1998, pp. 16-17.

be subject to port state checks to ensure that the ship's number and current registry details indeed refer to the ship at hand about to load someone else's cargo.²⁵

Maritime Safety and Regulatory Enforcement-the role of a Universal Automatic Identification System (AIS)

Earlier this decade the concept of a shipborne 'transponder' arose as part of a growing awareness of a need for enhanced information transfer between ships and shore to improve efficiency of operation and safety in the movement of shipping traffic. While initially concerned with ship to shore data exchange in support of ship traffic management applications, such as vessel traffic services, the transponder concept has subsequently expanded to encompass the additional requirement for ship to ship data transfer to assist collision avoidance. Because of concerns about maritime safety and the need for regulatory enforcement in EEZs and environmental protection, the point has been reached where it is widely recognised as an accepted requirement. The modern revolution in navigation and information technologies has provided the capability and the solution to this emerging requirement, combining Global Positioning System, electronic charting and open information systems architecture to provide working prototypes of what is known as the Universal Automatic Identification system, or AIS.²⁶

There have been four key players in this development. The IMO and its navigation safety committee and subcommittee on safety of navigation; the International Association of Lighthouse Authorities (IALA) and its vessel traffic services and radionavigation committees; the International Telecommunications Union (ITU) and its study group (radio communications) and the International Electrotechnical Commission (IEC). While some specific requirements are yet to be finalised several companies are well advanced in developing sophisticated VTS systems which utilise the new AIS technology.

The following organisations, while not developing standards

25. See Swinnerton, reference 21.

26. Material here is drawn from John Macdonald, 'The Development and Application of the Universal Automatic Identification System', unpublished paper, Australian Maritime Safety Authority, Canberra, February 1999.

themselves, have worked closely with the IMO, ITU and IEC in the development of AIS standards.

- **International Association of Lighthouse Authorities (IALA).** IALA, headquartered in Saint Germain en Laye, near Paris, in France, has been the primary organisation sponsoring and coordinating the development of the Universal AIS transponder.
- **RTCM SC101.** Radio Technical Commission for Maritime Services Special Committee 101 (RTCM SC-101) carries responsibility for studying on Digital Selective Calling and Automatic Identification Systems.
- **ITU World Radio Conference.** Following a liaison statement from IMO seeking global frequencies for AIS the 1997 ITU World Radio Conference (WRC97) designated two worldwide channels from the VHF maritime mobile band for this purpose. The channels are AIS 1 - 87B (161.975 MHz) and AIS 2 - 88B (162.025 MHz). The United States, Singapore and New Zealand have indicated some problems in releasing these channels for AIS and may need to designate separate regional frequencies for use in their areas.

Of interest in the context of information exchange and maritime surveillance in EEZs is the IMO performance standard for AIS. This requires that the equipment should function 'as a means for littoral States to obtain information about a ship or its cargo' when a vessel is operating in that State's area of maritime responsibility. An AIS long-range reporting mode is required to satisfy this function and to assist administrations in meeting their responsibilities for wide area or off-shore monitoring of shipping traffic. These responsibilities include safety of navigation, search and rescue (SAR), resource exploration and exploitation and environmental protection in offshore areas, including the continental shelf and EEZs. No details from the ITU or IEC are made to technical characteristics or test standards, although the IALA is being tasked with developing more detailed standards.

In regard to carriage requirements, a major amendment to SOLAS Chapter V regulation 20, currently being finalised in IMO, mandates that:

'Passenger ships irrespective of size, and cargo ships of 300 gross tonnage and upwards ...' and 'Ships of 500 gross tonnage and upwards ... shall have: ...'

'4 An automatic identification system (AIS) to provide automatically to appropriately equipped shore stations, other ships and aircraft, information including ship's identity, type, position, course, speed, navigational status and other safety related information and to automatically receive such information from similarly fitted ships and to monitor and track ships and to exchange data with shore authorities. This requirement shall not be applied to cases where international agreements, rules or standards provide for the protection of navigational information; ...'

The amendment proposes that the application of this requirement shall be as follows:

'1.1.1 Ships constructed on or after [1 July 2002] shall be fitted with navigational systems and equipment which will fulfil the requirements as prescribed.' (which includes the AIS equipment at sub-paragraph .4 quoted above) and,

'1.1.2 Ships constructed before [1 July 2002] shall ... continue to be fitted with equipment which fulfils the requirements ... in force prior to [1 July 2002]....'

The SOLAS regulations also indicates that, in the case of ships constructed before 1 July 2002 only when *'navigational systems are replaced ... or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing navigational systems and equipment requirement ...'* are they mandated to comply with the requirements.

In the context of the date of application, given final agreement on the SOLAS V amendment package at NAV45 in September 1999, the AIS amendments could still enter into force on the proposed date of 1 July 2002. Failure to finalise the package could see the implementation move to 1 July 2004. A coastal state could, however, in its area of jurisdiction, implement the new IMO recommendation or SOLAS regulation in advance of this date and also include a wider range of

vessels, such as fishing craft, ferries and port service vessels.

The universal AIS as specified by the IMO and the ITU is a ship-board broadcast transponder system, operating in the VHF maritime band, that is capable of sending ship information such as identification, position course, speed, ship length, draught, ship type and cargo information, to other ships and to shore. It is to be capable of handling over 2000 reports per minute and updates as often as every two seconds. The AIS transponder will normally operate in autonomous and continuous mode, regardless of whether the fitted vessel is operating in the open seas, coastal waters or inland areas. Two VHF frequencies in the maritime mobile band are utilised.

For the vessel traffic system operator there are several advantages. The vessel ID and other information are automatically displayed on VTS Controller Display; problems related to radar systems, such as radar target swapping and degradation due to weather are non-existent; higher update rate of tracks compared to tracks provided by radar; more information such as rate of turn, heading, speed over ground and ship dimensions is available and transponder targets can generally be received from positions where radar signals cannot reach.

The AIS transponder, with its ability to link ship to ship and ship to shore and exchange quite large blocks of information at high data rates, offers an exciting tool to enhance safety of navigation and efficiency of shipping traffic management. There are, however, some areas that will need further consideration. Pirates and others may fit receivers and make use of the information such as type of cargo, destination and ETA for criminal purposes.

There are also some complex issues relating to sovereign immunity of warships that also need to be considered. If AIS systems become widespread will warships be 'out on a limb' as far as ships safety and environmental protection is concerned? Will AIS systems on commercial ships mean that it will become more easy to identify military ships, in the event that only naval ships do not carry AIS transponders. To date, naval personnel have not participated in the meetings of organisations considering the use of AIS.

Naval Dialogue and Information Exchange—Role of WPNS

Whilst the topic of naval cooperation is dealt with elsewhere in this book, in the context of naval dialogue and information exchange mention should be made of the role of the Western Pacific Naval Symposium (WPNS).²⁷ This was an initiative of the then Australian Naval Chief of Staff, Vice-Admiral M. Hudson in 1988, who invited his counterparts from around the Western Pacific to Sydney to discuss maritime security issues. Meetings have been held since in Thailand in 1990, US in 1992, Malaysia in 1994, Japan in 1996 and the Republic of Korea in 1998. Workshops have also been held in those countries and elsewhere.

The 1988 meeting identified a requirement for structured exchange between regional naval chiefs and the need for candid discussion of maritime issues to enhance mutual understanding. WPNS is not a 'track one' process as it does not commit navies or governments to a security agenda. Neither is it a 'track two' process. It is comprised exclusively of naval professionals, who are able to achieve consensus on issues prior to more formal proposals being advanced through national defence agencies. It provides operative approaches to cooperation in the maritime environment. The current membership is Australia, Brunei, China, Indonesia, Japan, Malaysia, New Zealand, Papua New Guinea, Philippines, Russia, Singapore, South Korea, Thailand, Tonga, United States, Vietnam, with observers from Canada, France and India. Participation in WPNS is voluntary.

There is no permanent secretariat for WPNS and no programmed appropriation except for individual naval funding to attend or host responsibilities for workshops and symposia. The work program depends on the interests of individual navies, which are free to propose agenda items. The symposia are held every two years interspersed with two workshops, supported by out of session consideration of work in progress. Chiefs direct what work is to be taken up by the workshops. At the last WPNS in Seoul in October 1998 the agenda included a review of the maritime security situation and sessions

27. On WPNS, see Kenji Kinoshita, 'Improving Security in the Western Pacific,' *US Naval Institute Proceedings*, March 1997, pp. 85-86; Dick Sherwood, *The Navy and National Security: The Peacetime Dimension* (Canberra Papers on Strategy and Defence, no. 109, ANU, Canberra, 1994, pp. 61-64.

on illegal activities and piracy at sea, maritime pollution and sovereignty disputes, among other issues. Representatives from 18 countries, including 35 flag officers attended.

To date WPNS has seen enhanced dialogue and exchange, such as fostering high level contacts, exchanges between staff colleges, notification of major exercises and fleet programs, exchange of important documents and information on procurement. It has also resulted in enhanced port visits, exercise participation, tours and inspections of bases and encouraged cooperation in SAR and humanitarian activities. By way of publications, WPNS has led to the development of a Maritime Information Exchange Directory, a WPNS Tactical Signals Handbook, a WPNS Replenishment at Sea Handbook and planning for the conduct of a command post exercise to help the development of common doctrine and publications. Agreement on broad based concepts in WPNS can be refined for bilateral or regional cooperation. For example, the notification of major activities can lead to exercise observation and then participation in which an enhanced port visit program may involve activities that can be customised to develop an exchange of skills.

The WPNS has shown that adoption of operative methods and information exchange is often a more practical path to cooperation between navies than is the attempt to give effect to the more abstract aspects of confidence building measures (CBMs). Professionals can focus on measures that they believe are necessary. In that sense WPNS has not had the political baggage of the CBM process. In the future WPNS could perhaps examine issues related to closer training arrangements in less sensitive areas such as navigation and hydrography, closer collaboration in tactical training to enhance interoperability, linking national tactical training simulators, and closer relations in logistics, especially in through-life support issues. WPNS will need to guard against any tendencies to see issues from a narrow national perspective. It will need to stay focused on the regional view. That process may well be assisted in the future by establishing more open lines of dialogue between WPNS and other forums where naval and maritime cooperation are discussed, such as CSCAP and the ARF.

Maritime Information Exchange

Maritime information, like information generally, can no longer be easily controlled. The amount of marine information data bases available in the public domain continues to rise and already in some senses there may be too much information. For some important data sets, however, access may be limited because of costs, intellectual property issues and technology constraints. But marine data exchange is an important confidence building measure and no one country, given the region's maritime geography will be able to develop an adequate data base of marine information on its own. This will require cooperation with neighbours. The potential for information sharing and exchange is tremendous. Information sharing is the basis for capacity building and a requirement for cooperation at every level. The WPNS, as noted above, is a successful example of information exchange.

In developing regional data bases there will be a need to examine the size and shape of the problems and examine if current data sets fit these problems. The problems in East Asia are diverse and occur over large areas. So multidisciplinary data sets, including geology, demography, oceanography, economic and meteorology will be important. By and large the data will come from regional marine surveys. By the nature of the shape of the problems regional marine data bases will be big and complex. Big databases will therefore need high performance computing environments, to manage, store and disseminate marine data.

Marine information technology is a rapidly growing field where new advances are made on a daily bases.²⁸ Among the key challenges in marine data exchange in East Asia are first determining the *why*. Which information is needed and what is the time that is available for the process of information gathering. The second issue is technology delivery—the *what*. Clearly the process of marine information exchange requires some compatibility of systems between sender

28. See, for example, Roger Bradbury, 'Marine Information Technology and Management,' in Sam Bateman and Dick Sherwood (eds), *Australia's Maritime Bridge into Asia* (Allen & Unwin, Sydney, 1995), pp. 161-170; see also 'Marine Information Management in the 21st Century,' *Maritime Studies*, March/April 1998, pp. 28-29.

and receiver. Data needs to be in standard formats for best use and so it is understood through the region. The third issue is the *how*—information delivery. The delivery of information and the potential benefits of information sharing also involves issues to do with education and training of those people working in the various maritime agencies who require that information.²⁹ Finally there is the *who* question. Information must of course be useable and available at the right level in the organisation. The key people need to be identified if information sharing is to be effective. In some cases there may be cultural biases against accepting the information that is provided by neighbours.

Thus in terms of opportunities for greater sharing of marine data a number of steps could be taken. First, identifying the central point of contact in each country for collecting marine data is critical so clear lines of communication are established. Second, marine data collection agencies should regularly meet in training sessions, workshops, and virtual dialogues to discuss particular problem areas. The use of the internet to foster communication should be encouraged, perhaps including a specific internet based work site to discuss information sharing across a broad range of marine issues in East Asia. The web site would enable all interested parties to participate in a dialogue, contribute to and gain information from a variety of documents, issues and events, and possibly engage in real time discussions over the internet chat. The web site would allow interaction among groups of many sizes. Developing and improving internet linkages among existing marine databases to ensure rapid and comprehensive connectivity among sources and consumers of maritime information will be a key challenge. Only when the tool becomes as easy to use as a phone will people be able to use them like phones. And only when the systems of marine exchange demonstrate a substantive return that is higher than the investment required to use them will they be able to be used routinely. Finally, every effort should be made to encourage national marine data programmes in East Asia to dovetail with international data collection programmes such as the Global Ocean Observing System and Global Climate Observing System.³⁰

29. See Barrie Lewarn, 'Education and Vocational Training for the Maritime Industry,' in Bateman and Sherwood, *op.cit.*, pp. 131-136.

Concluding Remarks

Neighbouring countries in East Asia have a real interest in cooperative maritime surveillance and information sharing. It produces better maritime knowledge that leads to improved law and order at sea, increased maritime safety and an improved marine environment. It strengthens regional resilience by showing that countries can work together to look after themselves. It builds trust between neighbours. Problems relating to drugs, smuggling, illegal immigration, illegal fishing and so on look likely to increase. That makes it more important for increased cooperation on ocean surveillance and information exchange. There will be sensitivities to overcome. But the key message from this paper is that countries must work together to meet the challenges. We have to decide if our approach is going to continue to be driven by regional sensitivities to particular issues, concerns over sovereignty and independence,³¹ or by information sharing opportunities that will produce the best responses to the newly emerging needs of law and order at sea in East Asia.

30. See Bateman, reference 9, pp. 183-186.

31. See generally, B.A. Hamzah, 'Barriers to Maritime Cooperation,' in Jack McCaffrie and Alan Hinge (eds), *Seapower in the New Century* (Australian Defence Studies Centre, Australian Defence Force Academy, Canberra, 1998), pp. 219-225.

LAW OF THE SEA AND STABLE MARITIME REGIME

Jin-Hyun Paik

Introduction

Regime can be defined as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations.¹ Thus ocean or maritime regime can be defined as a set of norms and patterns of behaviour that help to regulate maritime relations within a system of states. As such, a stable maritime regime, to begin with, presupposes a clear understanding on what should be norms applicable to ocean affairs.

The global ocean regime, as sets of authoritative norms for the jurisdictions and uses of the ocean, received its most complete expression in the United Nations Convention on the Law of the Sea (hereinafter referred to as the LOS Convention). As strong support for, and commitment to, the LOS Convention is evident in the Asia-Pacific region,² the Convention can be a good basis for building a stable regional maritime regime. It should be noted, however, that

1. S. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables," S. Krasner (ed), *International Regime*, 1983, p. 2

2. The following regional states are now parties to the Convention: Australia, China, Indonesia, India, Japan, Malaysia, Mongolia, Myanmar, New Zealand, Marshall Islands, FSM, Philippines, Palau, Russia, Nauru, South Korea, Singapore, Samoa, Solomon Islands, Sri Lanka, Vietnam.

despite the seemingly overwhelming support for the LOS Convention, there are considerable doubts concerning the precise rules for governing the use of ocean, including navigation at sea, since many provisions of the Convention lack clarity, and thus are subject to different interpretations. When rules embodied in an international agreement are not clear, their meaning and specific contents will be determined by the subsequent practice of states, that is how the nations of the world will interpret and accept the rules.

The Asia-Pacific region is characterized by a number of features which give prominence to certain law of the sea issues. One of these is that Asia-Pacific comprises two of the largest archipelagic states in the world. The region also possesses a number of major straits which have increased in strategic and maritime significance since the end of the World War II. There are also a number of maritime boundary disputes as well as sovereignty disputes over both islands and maritime areas. The LOS Convention can be instrumental in maintaining peace and stability in the Asia-Pacific ocean by clarifying and refining what are applicable rules to ocean affairs and providing mechanism for peacefully settling disputes in case of conflict.

A stable maritime regime for Asia-Pacific like elsewhere requires agreement on how to apply the terms of the LOS Convention. However, the necessity to develop a uniform, coherent maritime regime is more acute in this part of the world than any other regions, mainly because practice on the important aspects of ocean uses substantially diverges among the coastal states in the region. This paper first examines briefly the contributions the LOS Convention has made to building a stable regional maritime regime. Then it will discuss the limitation of the Convention in general, and point out the most vital unresolved issues which have direct bearing upon the security of the sea lanes, in particular. The paper will then close with some suggestions to strengthen maritime regime in the Asia-Pacific region.

Contribution of the LOS Convention

The first significant contribution of the LOS Convention is that it helps to clarify the types and extent of the coastal state jurisdictions over adjacent maritime areas. This is not a small contribution, given

the fact that there have been a wide range of excessive jurisdictional claims in the Asia-Pacific such as North Korea's claim over the "East Korea Bay" and the presence of maritime security or exclusion zones.³ The provisions on innocent regime have also clarified the content of the innocent passage regime and also the rights of the coastal state to enact relevant laws and regulations dealing with the area. Even more significant for the Asia-Pacific is the development of the transit passage regime for international straits. While the passage regime provided in the LOS Convention is not flawless, it does provide the basis for accommodation of interests between strait states and user states. The introduction of these objective standards and criteria have also substantially contributed by providing certainty to an area of the law of the sea that has the potential for considerable sensitivity because of the need to balance coastal state rights with those of maritime states. The development in Part IV of a new regime for archipelagic states also has had a substantial confidence building impact in the region. The relevant provisions have not only legitimized the claims of archipelagic states such as Indonesia and the Philippines but provided states from both within and beyond the region with an assurance of freedom of navigation through archipelagic sea lanes. The determination in Part V of the EEZ concept is also expected to further enhance confidence and stability in the region. Given that there was a wide variety of state practice concerning fishing and other resource use, the LOS Convention's EEZ provisions would result in more harmonious and uniform practice in this regard by giving definite content to states' claims. A further aspect of the LOS Convention which contributes to the building of a stable maritime regime is an emphasis throughout the Convention on maritime cooperation. States are to cooperate with respect to the utilization of EEZ resources; high seas living resources are to be subject to cooperative arrangements for their conservation and management; and global and regional cooperation is emphasized with respect to the protection and preservation of the marine environment. Of all the provisions which emphasize cooperation, perhaps the most important for the Asia-Pacific is those found in Part XI dealing with

3. Ivan Shearer, "Navigation Issues in the Asia Pacific Region," J. Crawford and D. Rothwell (eds), *Law of the Sea in the Asian Pacific Region*, 1995, p. 199.

enclosed or semi-enclosed seas. Given the existence of a number of enclosed or semi-enclosed seas in the region, those provisions can be a basis for close cooperation among states bordering such seas concerning management and conservation of living resources, protection and preservation of marine environment, and marine scientific research. Finally, the provisions for compulsory third-party binding dispute settlement are also an important contribution of the LOS Convention. Although the obligations in Part XV of the Convention are qualified by exceptions and opting-out provisions on such matters as boundary disputes,⁴ EEZ fishery disputes,⁵ and disputes over scientific research⁶ and military activities,⁷ they do, nonetheless, offer a pacific settlement system which is a considerable improvement as compared with the current position in general international law.

Limits of the LOS Convention

On the other hand, it should be noted that the LOS Convention does not resolve all maritime issues and problems confronting the international community at the present time, in general, and the Asia-Pacific region, in particular. For example, it is now notorious that some states in the region have claimed territorial sea straight baselines which are impossible to justify by reference to the rules laid down in the LOS Convention. Protests have been commonly made against such practice. While it may be an advantage to refer to the relevant provision of the LOS Convention, it is difficult realistically to expect that it makes a great deal of difference to this problem. The same may be said to the specific EEZ rights and obligations. Despite the undoubted establishment of the EEZ regime in international law through the Convention, such controversial issues as sharing of the surplus fishery resources and conduct of the military exercise in foreign EEZs remain unresolved. Moreover, the exception of such disputes from the compulsory settlement mechanisms of the LOS Convention means that it will be difficult to redress for any alleged

4. Art. 298 (1)(A), LOS Convention.

5. Art. 298 (3), LOS Convention.

6. Art. 297 (2), LOS Convention.

7. Art. 298 (1) (b), LOS Convention.

default.

Some provisions of the LOS Convention provide little more than general principles or framework for the further development of the law. Thus the rules on delimitation of maritime zones in the LOS Convention, which simply enunciates a goal to be achieved but not a means to arrive at that goal, are expected to be of little help to many pending boundary disputes in the region. Again, the implementation of much of the umbrella provisions of Part XII on the protection and preservation of the marine environment depends on actions being taken in other institutions such as International Maritime Organization (IMO) and United Nations Environmental Program (UNEP) and, particularly under UNEP's regional seas programs

The followings are the most vital unresolved issues which have direct bearing upon the maritime security, in general, and the security of the sea lanes, in particular. The stable maritime regime would not be possible without the common understanding and interpretation of at least these issues.

Navigational Regime

Navigation regime deserves particular attention since it most seriously affects the SLOC security. Three specific categories of navigational controls - innocent passage, transit passage and archipelagic sea lanes passage - are designed in the LOS Convention to balance the rights of user or maritime states to a reasonable degree of freedom of the seas, with the interests of coastal states to protect and safeguard their sovereignty, marine resources and environment. Most important unresolved issues over passage regime as defined in the LOS Convention are as follows.

First, it is beyond any dispute that a foreign vessel enjoys a right of innocent passage through the territorial sea of the coastal state. However, it has long been controversial whether the right of innocent passage applies to all ships, including warships or ships carrying nuclear or other inherently dangerous or noxious substances. In particular, the right of innocent passage for warships has been a much debated issue in international community, and coastal states have been reluctant to permit passage without prior authorization or at least notification. General State practice remains conflicting, too. The

history of foreign invasion and traditionally sensitive security concern in the Asia-Pacific caused many littoral states in the region to have strong reservations on the right of foreign warships to innocent passage through their coastal waters.⁸ Despite the entry into force of the LOS Convention, this issue remains unresolved, and thus to be a potential source of conflicts.

Secondly, under the LOS Convention straits used for international navigation are subject to the new regime of transit passage. The transit passage is defined as the exercise of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit in the normal modes of operation utilized by ships and aircrafts for such passage. It is generally understood that submarines are free to transit international straits submerged since that is their normal modes of operation. As far as passage in the international straits are concerned, controversy appears to lie not in its military aspect rather in commercial aspect. Recently, for example, a question arose frequently as to rights of a strait state to interfere with transit passage because of suspected pollution incidents, and the scope of corresponding enforcement measures that can be taken by a strait state.⁹ The strait states' regulatory response to accidents and pollution that heavy use of the straits has caused could be a serious source of conflicts in the region where there exist approximately 20 important straits.

Thirdly, under the LOS Convention an archipelagic state may designate sea lanes and air routes suitable for the continuous and expeditious passage of foreign ships and aircrafts through or above its archipelagic waters. Such archipelagic sea lanes must include all normal passage routes and all normal navigational channels. On the other hand, innocent passage applies in other archipelagic waters seaward of the internal waters of the islands of the archipelago. There are two important archipelagic states in the region, Indonesia and

8. The following states in the East Asian region require either authorization or notification for the innocent passage of foreign warships: Bangladesh, Myanmar, China, India, Indonesia, Republic of Korea, Democratic People's Republic of Korea, Pakistan.

9. Casey Jarman, "Disposal of Waste and Right of Passage," Kuribayashi and Miles (eds), *The Law of the Sea in the 1990s: A Framework for Further International Cooperation*, p. 92

Philippines, which, because of the perceived potential of the interposing waters to disrupt their territorial unity, have in fact led in developing and articulating concepts and policies related to archipelagic regime. The LOS Convention assigns these states for designating sea lanes in coordination with the competent international organization, that is International Maritime Organization. However, much uncertainty remains on the balance between maritime powers and archipelagic states. Specifically, the respective roles and power of the IMO and of archipelagic states in designation of archipelagic sea lanes is a potentially potent device for regulating navigation, a source of conflict is not difficult to see unless the common interpretation of archipelagic regime is agreed.

Naval Activities in the Exclusive Economic Zone

The other area of maritime regime which needs particular attention in relation to the security of the sea lanes is naval activities in the exclusive economic zone. The EEZ regime, like other institutions of the law of the sea, attempts to accommodate two competing interests, that is the desire of coastal states for greater control over offshore resources, on the one hand, and the perceived need of maritime powers to maintain traditional freedom of action in waters beyond the territorial sea, on the other. However, a delicately balanced construct of the LOS Convention remains subject to ongoing controversy and interpretation. One of them is the freedom of action of foreign navies within the EEZ; that is, whether foreign navy is free to conduct military manoeuvres within the EEZ without requiring notice to, or authorization from, the coastal state; and whether a state place military devices, such as submarine detection devices, in the EEZ of foreign state.¹⁰ The provisions of the Convention are silent on these issues although various interpretation has been put forward to one

10. Article 60 of the LOS Convention grants a coastal state exclusive control over all installations and structures that have either an economic function or which may interfere with the rights of coastal states in the EEZ. But the Convention is silent on the non-economic installations that do not interfere with coastal enjoyment of its EEZ rights. For more details, see B. Boczek, "Peacetime Military Activities in the EEZ of Third Countries," *Ocean Development and International Law*, Vol. 19: 6 (1988). p. 445.

effect or the other.¹¹ While for the time being, there are no serious problems of this kind in the region, one may not rule out the possibility that ambiguity on such sensitive matter would be a potential source of future conflict since the restrictive regime of the EEZ would pose a threat to the mobility of navies in the peace time.¹²

To have a common understanding of these issues is critical to building a stable maritime regime, which would in turn enhance maritime security. It is not desirable to leave discrepancies or disagreement with power politics whereby naval powers try to beat back what they perceive to be encroachments on their rights. Better approach is making efforts to resolve differing interpretations of some vital law of the sea issues related to the SLOC security. With changed regional maritime security environment where the importance of the common rules applicable to all coastal states has increased, an international regime built on commonly understood rules of state behavior is now a concept worthy of serious discussion.

Conclusion

In the post-Cold War Asia-Pacific, the urgent task of all regional States is to build a stable and cooperative maritime regime. The stable maritime regime is a fundamental requisite not only for enhancing the security at sea but also for further maritime cooperation among regional States. On the other hand, the stable maritime regime would not be built without the common and uniform acceptance of essential rules of the regime. Therefore, perhaps the first thing for the regional States to do in building the regional maritime regime is to ratify the LOS Convention. Obviously ratifying the Convention would not solve all the problems confronting the region. Nevertheless, the Convention will surely play a long-term stabilizing role to cure and prevent the growth of state practice at variance with the

11. For this, see S. Rose, "Naval Activity in the Exclusive Economic Zone: Troubled Waters Ahead?," *Ocean Development and International Law*, Vol. 21:2 (1990), pp. 123 ff.

12. No states in East Asia have so far required prior consent or notice for naval activities in their EEZs. On the other hand, Brazil, Cape Verde, Uruguay and some other states have announced that they would require prior consent.

universal norms so established. In this respect, the following points are particularly important.

First, it is important to enhance the openness and transparency about maritime regime and practice of regional States. In fact, the Convention requires coastal States to give due publicity to the charts or lists of geographical co-ordinates related to their baselines or jurisdiction and to deposit a copy of each charts or lists with the Secretary-General of the United Nations. Considering that several unfortunate incidents that had happened before was mainly due to the uncertainty on such matters, this is essential to building a stable regional maritime regime.

Second, the LOS Convention offers a pacific settlement system which would substantially contribute to the development of uniform practice and interpretation of the Convention. The Convention also provides the basis for further development of law by providing general principles and framework for such issues as marine environment and marine scientific research. The regional States should make the best of the mechanism and framework provided in the Convention to settle their future disputes and to promote cooperation among them.

Third, the regional States should make efforts to develop a more harmonious and solid maritime regime. In particular, regional States could negotiate agreed understandings regarding those controversial rules of the law of the sea which are inconsistent with the policies of certain States. For instance, the United States and the former Soviet Union in 1989 signed a joint statement on innocent passage of warships in each other's territorial seas. Attached to the joint statement, the two governments issued the uniform interpretation of the rules of international law governing innocent passage which sets forth in more detail the common interpretation of the Convention governing innocent passage in the territorial sea. Similar measures could be taken among regional states with respect to various controversial issues. In addition, regional maritime councils or other coordinating bodies could be established for the purpose of coordination and strengthening cooperation among regional States.

PART V

**STRENGTHENING REGIONAL MARITIME
COOPERATION FOR THE NEW CENTURY**

CONFIDENCE-BUILDING MEASURES IN THE SPRATLYS: THE NEED TO MANAGE CHINA

B. A. Hamzah

The Setting

The security policy architects in South East Asia have experimented with various aspects of multilateral cooperative security mechanisms for the Spratlys in the South China Sea. Many of these concepts including the much talked Confidence Building Measures (CBMs) originate from Europe and thus considered by many as inappropriate for the region which is culturally, ethnically and politically too divisive. Despite this, the regional security policy architects went ahead with their architectural design. Until to day, some of us are not really sure whether the CBM concept itself which appeals to them or just the term itself. I am inclined to believe many in the region are attracted first by the term CBM. By applying the term they hope to engender confidence. Understanding the concept seems secondary. It seems to matter less to some analysts that to be really effective the concept of CBM requires substance, more than platitudes or statements. In Europe where the concept of CBM was first applied, the situation is less intractable than what we know of in the region. Nonetheless as security analysts we all know what CBM is all about. Many of us assume that we know what it means. In principle, many security analysts in the region believe that the primary concerns of CBMs are toward creating the mechanisms to defuse conflicts or to contain existing conflicts from spreading or getting worse. CBMs are

also measures to create an environment for peace believing that while the situation in South East Asia may be different from Europe, some of the elements contained in the well tested CBM mechanisms can be usefully applied in the Spratlys.

This paper will examine not so much its applicability rather to focus on its achievements since the idea or the term was introduced to the region. At the same time this paper will also introduce another instrument for confidence building in the South China Sea: i.e., the concept of INCSEA which MIMA wishes to promote for the region to complement other CBM options.

It has been suggested that the Spratlys is one sub-regional issue area where multilateral cooperative approach that can be used to reduce tension. This is an important area for experimenting with CBM concept because of its potential as a flash point. The argument is simple. Since it is very difficult to get the claimant states to sit down to negotiate their different positions, the alternative is develop informal mechanisms that would allow policy planners to discuss the issues among themselves in their own personal capacity. In other words the policy planners don't attend the meetings as official representatives of their respective countries and that they do not have the mandate to negotiate with each other. But they can sit down with the other interested parties to exchange notes, listen to each others views and where possible work out parameters for possible cooperation at the formal level. Usually, in such discussions the issue of sovereignty is not debated, as they have no mandate to negotiate. This approach becomes very apparent in the Workshop on Managing Potential Conflicts in the South China Sea series initiated by Indonesia with funding and intellectual support from Canada. This programme was initiated in 1990 by a group of Asian scholars interested in maritime security. Contrary to some opinions the conference process itself is a form of CBM. The fact the claimants could sit down and discuss the issues openly but without compromising their respective official positions is a process in creating confidence and already a positive sign.

The Spratlys

The islands in the Spratlys are claimed in whole or in part by six

Asian states: four ASEAN states, Taiwan and China. The strategic importance of the Spratly islands is a major cause of potential conflict. It lies in between the Indian Ocean and the Pacific Ocean and links up mainland Asia and insular South East Asia. Forming an important part of the South China Sea, the Spratlys forms an indispensable bridge between the two oceans and mainland Asia. The South China Sea contains major sea-lanes of communication including some of the busiest in the world. During the cold war period the islands were not contested as the claims by the various countries were muted and did not assume the present level of intensity. It is only after the end of the cold war that the entire Spratly became a contested arena. This is partly due to different strategic objectives. During the cold war period the superpowers were more interested in the broader strategic aspects of maintaining power and they were less concerned with the conflicting claims from the smaller nations.

Aftermath the cold war, especially after the US withdrawal from Subic Bay, some claimants especially China became very assertive. China began flexing its muscle through its brown water navy in the area after the US and Soviet Union left the region. From the geo-strategic perspectives, it is easy to understand Beijing's rationale for a strong presence in the Spratlys and by extension the South China Sea. Firstly, China still believes the entire South China Sea belongs to them since time immemorial. This historical fixation has drawn reservations from many quarters. China has accused various colonial powers of grabbing their territories by means of unequal treaties. In other words the Chinese never forgive nor forget those powers which have over the years grabbed those territories from them when they were weak and undergoing political transition to a great power. The Chinese did not recognise the claims by France, UK, Japan, Vietnam in the South China Sea but did not effectively register their protests. They did not, for example, take the US or France to task when the colonial powers were in occupation of the islands in the South China Sea. It is only lately that Beijing has been critical, for example, of Vietnam and claims from other countries. It would appear from their actions that China does not recognise the claims of those who succeeded to the rights of the colonial powers either. Secondly, with the withdrawal of the US from the region there was no other strong power which could challenge China's sovereignty in the South China

Sea. This absence of a power stabilizer has encouraged China to become more assertive. When Vietnam, one time its communist ally, tried to block China's maritime ambition over the Paracels, for example, it took Hanoi to task. Since the later part of 1970s, after consolidating its power, Vietnam distanced itself from China.

In the winter of 1973 China went to war against Vietnam as it seized the Paracels from an embattled and weak South Vietnam. Although the US was still in Vietnam it did nothing to stop the invasion. As a result Vietnam lost an important maritime outpost. Since then China has taken various legal steps, including drawing straight baselines around the Paracels in 1996, to make the islands its inalienable territory. While the legal status of the islands remain contested, unless some drastic changes happen to the geo-strategic regional environment, it would be difficult for Vietnam to reoccupy the Paracels. In 1979 China mounted a land offensive against Vietnam. Although the outcome of the battle was not conclusive as some analysts have implied, it became quite clear to many security policy analysts that China would not have second thoughts with regard to using force when it comes the issue of territorial integrity. As if the 1979 land offensive was not enough for China to flex its imperial muscle, in March 1988 it attacked Vietnamese forces at sea in the Spratlys. Since then China has made it quite clear to Hanoi that it would not tolerate Vietnam or any power from nibbling at any Chinese territory in the South China Sea or the Spratlys.

Thirdly, China's interest in the South China Sea has strategic undertones. The maritime area has always been China's weakest flank...partly because its navy has until very recently been weak. In the early part of the Cold War China depended on the Soviet Union to protect its maritime sector. With the Soviets temporarily out of the strategic global picture, it has to take measures to strengthen the Navy and defend its own maritime flank. Until very recently, the South China Sea has always been China's weakest defence.

The Spratlys are important in terms of economic potential. They are believed to be rich in minerals such as manganese, oil as well as fishing grounds. The islands are also strategically located to provide staging areas for surveillance, sealane interdiction and other naval operations that could disrupt traffic from the Malacca straits to southern China and Taiwan. During the Second World War the Japanese

built a submarine base in the islands and used it as a staging post for attacks on Malaya, Vietnam, the Philippines and the Dutch East Indies. Of course it is well known the potential for conflict over the islands could be quite great as it was shown in 1988 when the Chinese PLA Navy clashed with the Vietnamese counterpart. More recently of course is the concern over Chinese deployment of permanent naval elements to the Mischief Reef, a subject which has evoked vociferous protests from the Philippines and ASEAN.

It becomes apparent to many strategic thinkers in the region that some forms of CBMs be introduced in the area. The primary concern in the Spratlys is how to manage China, an emerging maritime power bent on claiming a rightful place in history vis-a-vis the South China Sea. The theory behind the CBM process is to allow for a policy of constructive engagement of China by peaceful means. This theory is based on various assumptions. Firstly, it is possible to prevent military conflicts between the contesting powers. The attitude of the claimants provide a strong basis for confidence. The other claimants are quite friendly with each other and have not asserted their territorial claims by military means. While it is true they have deployed military forces on the disputed islands in their control, they have not battled each other for control. China is the only exception. Secondly, there is some evidence that the contesting ASEAN countries are prepared to sit down and discuss the sovereignty issue among themselves. In one case, the contesting powers are even prepared to subject their common problem to third party adjudication. Malaysia and Indonesia have agreed to go the International Court of Justice (ICJ) to determine the ownership of two islands in the South China Sea. Because of the general but unproven conviction that China can be managed and constructively engaged, the primary concern of the CBMs in the South China Sea is directed at China. Hopefully such policy would encourage China to play by the accepted rules of the game in international relations.

The CBM process in the South China Sea is geared at engaging China and to provide a safety valve that would allow Beijing some flexibility in dealing with the countries in the region. Whether it is the ARF, CSCAP, INCSEA, or ASEAN sponsored CBM initiatives, they are primarily intended to restrain China and to assist in the maintenance of peace and stability in the region. The absence of such coop-

erative security mechanisms to strongly hook China to the international system is the real concern of many in the region. The alternative to engaging China is return to power politics. No one in their right mind wants to return to the days of the Cold War where power politics reigned. It is understood by some in the region that the pursuit for multilateral dispute settlement mechanisms could serve as building blocks towards the development of a more permanent and broader region-wide cooperative security architecture.

At the outset there are three obstacles to effective multilateral security cooperation in the region. Firstly, China's resistance to multilateral approaches in the South China Sea. Secondly, the reluctance on the part of those countries which have deployed forces on the islands to withdraw them. The third obstacle for effective multilateralism is the reluctance on the part of China to recognise rights of other countries to undertake joint development projects in areas claimed by China, e.g., off the Paracels. Thus far China has vaguely indicated its willingness to jointly develop areas where China's presence is weakest as in the Spratlys. This has led to this analyst to complain that China only give lip service to the concept of joint development.

The effectiveness of multilateral security cooperative mechanisms can be assessed in the Spratlys by looking at the level of reciprocity and the assurance generated by the contesting states. Reciprocity implies the willingness to show compliance with policy prescriptions proposed. In the case of the Spratlys, the intention of the CBMs is to contain the dispute and to lower the threshold for potential military conflicts. Essentially, the underwritten expectation from introducing the CBM is the acceptance the status quo. In other words by July 1992 when ASEAN first introduced the ASEAN Declaration policy in the South China Sea...it expected the following:

- No further creeping annexation i.e., no further occupation of islets or features at sea;
- No illegal fishing;
- No additional troop deployment in the area;
- No espionage or other intelligence gathering activities in the area; and
- No other efforts to consolidate legal position in the area.

For a while, there seems to be some peace in the area. Many security policy analysts felt that China was restrained as it behaved itself for a while. No one expected that a storm was to break out following the calm. In May 1992 China passed a law defining its territorial sea and contiguous zone reiterating its claim to the entire area in the South China Sea. The new law provides the right of innocent passage for foreign non-naval vessels but requires Beijing's approval before military vessels could enter China's territorial sea, reaffirming an earlier declaration in 1958. Many countries contested China's decision on prior notification for military vessels as it is considered inconsistent with international law. However, such practice is not confined to China. In March, Chinese fishermen were sighted in the area. The Philippines Navy arrested them and after some negotiations released them. Many thought that was the end of illegal fishing by Chinese in the area. On the contrary, it did not just end there. More Chinese fishermen were arrested not only in the Philippines area but also in the Malaysian sea. The practice has always been to charge them for illegal fishing and released them with warning not to encroach again. However evidently the Chinese never paid much attention to the warnings. Neither, have the arrests deterred them from further encroachment.

In May 1992 China gave a concession to an oil exploration company from Denver, Crestone Energy Cooperation in a disputed area around Vanguard reef. The Chinese call the area Wan-an Bei 21(WAB 21). Only to be expected Vietnam protested as it is smack on its continental shelf. The other countries in the region also protested. Many security analysts in the region were made to believe or under the impression that China was willing to cooperate in the South China Sea. China chose to announce the concession award at the same time as the representatives of the claimant countries including participants from China and others were meeting in Yogyakarta under the auspices of the Indonesian Foreign Ministry to look for a solution to the South China Sea problem. Whether the act was intended to embarrass ASEAN or not could be debated, the action left behind a chilling effect on ASEAN relations with China. In July 1992, the 28th ASEAN Ministerial Meeting in Manila issued a declaration on the South China Sea, urging all parties to exercise restraint, not to use force and to resolve their jurisdictional problem by peace-

ful means.

In May 1995 Chinese troops landed on Mischief Reef complete with concrete platforms. An above-water concrete structure emerged suddenly. The place became very busy with engineers and naval personnel. The Filipinos were not the only ones to protest. The Chinese authorities claimed that they had put structures as shelters for their fishermen in the area. And for many the matter would have ended there had it not been for their action to further strengthen the location with more concrete and the deployment of a few frigates in the area in 1998. China was not only being mischievous when it landed troops on the Mischief reef, but "concretising" the reef with reinforced concrete structures in 1998 went beyond expectation. It is an irresponsible act. According to one analyst China is doing everything possible to gain ground, physically and politically, in the South China Sea scramble.

The story just did not end in 1995. A year later on May 15, 1996 China claimed an EEZ, ratified the 1982 Law of the Sea Convention and delimited straight baselines along most of its coast. The US and many other countries protested the Chinese baseline, complaining that some segments are too long and in some parts the baseline does not follow the general direction of the coast. The protests also focussed on the decision by China to apply archipelagic principles around the Paracels when a strict interpretation of the 1982 Convention would not have allowed it. However to the credit of China it did not draw any boundary around the contested Spratlys. The move was welcomed by some claimant states, but most analysts believed that China has some strategic designs for the Spratlys. Only time will tell when China will move in to take effective control of the Spratlys.

The question often posed deals with the effectiveness of CBM measures in the Spratlys. Many in the region want to know whether the ARF, CSCAP, the various ASEAN statements as well as bilateral agreements with China on the South China Sea have been effective in managing China or restraining it from escalating the conflict level in the Spratlys. While it is difficult to determine precisely the impact of such multilateral cooperative mechanisms on China's foreign policy in the South China Sea (read Spratly), China continues to behave in ways that could only be interpreted as ignoring all those CBM mechanisms. In our view China has only given lip service to the CBM

process at sea.

A few examples would be sufficient to support our assessment of China's behaviour in the Spratlys. In July 1992, for example, the ASEAN Ministerial Meeting in Manila produced a strong statement calling on the claimant parties in the Spratlys to restrain from making any unnecessary move that could raise tension in the area. This blanket statement was aimed at China. But shortly after the meeting in Manila the Chinese PLA Navy erected four clusters of buildings on steel pylons over the Mischief Reef. Chinese fishermen were also sighted in the region. President Ramos angrily protested to the Chinese occupation of the Mischief. He said the Chinese occupation at the Mischief Reef was inconsistent with international law and with the 1992 ASEAN Manila Declaration on the Spratlys. The second ARF meeting was held in Brunei August 1995 shortly after the Mischief Reef incident. At the ARF meeting the Chinese delegation played down its assertive policy in the Spratlys and pledged that it would rely on international law and in particular the 1982 law of the sea to settle their problems. And yet, between 1992 and 1998, there were a series of activities involving Chinese fishermen caught fishing illegally in the Spratly region, mainly in the Philippines-claimed territory. In 1996, China declared a baseline purportedly based on the 1982 Law of the Sea Convention. However, on closer examination, the baseline has some discrepancies. For example, China drew straight baselines around the Paracels treating the group of islands as though China is an archipelagic state. Some segments of the baselines are also quite long and enclose certain islands which are far from the coast. Some analysts have argued that the Chinese baselines do not meet the requirements under Article 7 of the 1982 Law of the Sea Convention. Some analysts maintain that the Chinese baseline may have infringed the spirit of Article 7, but they are not entirely imperfect. By taking steps to pass a law on the territorial sea and the contiguous zone in 1995 and the declaration of the baselines China has actually consolidated its legal position in the Spratlys and this seems to run contrary to the five points expected from the ASEAN Declaration.

INCSEA

In the broader context of CBMs, the Incidents-at-Sea (INCSEA) agreements have proven to be useful tools to minimise potentially dangerous naval overtures. INCSEA Agreements were proven effective by the US Navy in dealing with the Soviets (1972), United Kingdom (1986), Canada (1989), Germany (1989), France, Italy, the Netherlands, Norway, Spain, Greece, Japan, ROK, to name a few. Other INCSEA or similar Maritime safety Arrangements that have been found useful include those between Germany and Poland, US and China¹ Agreement on Establishing a Consultative Mechanism to strengthen Military Maritime Safety. Similar arrangements have also been introduced in the Middle East.

Incidents-at-sea can take different forms and levels. They vary from a minor disrespect of traditional naval practice or etiquette to a serious breach of the rules of engagement. There are numerous dangerous or potentially dangerous interactions between ships that may be categorised as "Incidents-At-Sea". Perhaps the most common are manoeuvres by ships which create dangers of collision. These manoeuvres may be international violations of the recognised "International Regulations for Preventing Collisions-At-Sea". Equally dangerous maneuvers, such as, when a ship having the right of way proceeds to the point of causing a danger or imminent collision. Other common incidents include shining of fire control radar, training search lights on bridges, firing flares or dropping them from aircraft close to ship and buzzing of ship by low flying aircraft. The implications of these acts are serious in times of high tension or crisis. They could evolve into action reaction cycles of escalation leading to hostilities at sea or even invite a pre-emptive attack for some trigger-happy commanders.

INCSEA or Incidents-At-Sea arrangement is meant to provide the means by which regional navies or other enforcement agencies could promote their interests at sea in a more predictable manner and to ensure the minimum use of force at all times especially during crisis. On a higher plane, this arrangement is meant to develop mutually

1. A copy of the Agreement between the Department of Defense of the USA and the Ministry of National Defense, PRC is enclosed as Annex A.

beneficial international cooperation and transparency in naval operations. INCSEA involves establishing special rules to minimise the chances of accidents that could result from normal activities which could include ships' manoeuvres. Essentially, an INCSEA arrangement would include negotiated procedures to lessen dangers of collisions as well as to prevent making unnecessary first strike as a result of unintended actions by the other party. The arrangement would usually include special communication procedures. All these are not only in line with today's aspirations of promoting peace and stability but also in conformity with customary international law. In other words, other than to avoid collisions at sea and the airspace that could affect relations between Navies, one of the goals of INCSEA is to develop a more predictable standard operating procedures at sea. With this general concept in mind the Maritime Institute of Malaysia (MIMA) with the co-operation of the Royal Malaysian Navy has initiated a series of discussions with some navies in the region that hopefully could lead to an INCSEA-type regime.

In our view the INCSEA-type arrangement could be applicable to the South China Sea or the Spratlys for the following reasons:

- Too many navies with different operating procedures in an enclosed sea,
- Poor communication network between the navies,
- Overlapping areas of operations which result from conflicting maritime claims,
- Naval protection for certain activities in disputed areas. For example, some navies have been instructed to firmly act against "illegal" fishing, dumping of waste, pollution, etc
- To prevent an accident from being construed as a deliberate act of attack,
- To provide a flexible framework for self defence,
- To prevent escalation of military conflicts.

The applicability of INCSEA in the South China Sea ought to be seen within the context of the overall regional setting. The strategic situation in the South China Sea as explained in the preceding pages is complex. It could perhaps be more complicated than the multilateral INCSEA debut in the Middle East under the so-called "Madrid

Formula" in 1991. Unlike in other areas e.g., in the Middle East where the concept of INCSEA still remains in its infancy stage, in the South China Sea the problems are too multifaceted. Firstly, establishing the rightful owner of a particular feature or area at sea is a tricky subject. The legal ownership is a sixty four thousand dollar question. The second aspect derives from the problem of ownership, i.e., how to regulate the behaviour of naval vessels deployed in the contested area. We know that all navies have been tasked with the primary mission to assert and defend the sovereignty of their features or areas which they have staked claims to. There have been occasions in the recent past where the Navy of one country has to politely invite another Navy from operating in a contested area, or effect arrest of illegal fishing vessels. Although thus far, we have no incident of navies engaging each other in the contested area, we have plenty of examples of fishing vessels defying naval instructions and in certain cases tried to ram naval vessels. This would place naval vessels with the awkward tasks of responding with force to effect arrests or use force in self-defence. In a likely situation where fishing vessels seek naval protection, the situation could break loose and develop into a free for all.

One of the challenges to naval commanders operating in a contested area is to be able to assert national rights without the need to use force. In such a situation, without some agreed procedures two navies could be on a collision course if neither side concede ground. An INCSEA type of arrangement could provide some parameters for co-operation between the competing navies. It must be appreciated that when a naval boat opens fire on a non-naval combatant, besides the usual diplomatic protest, the state is not likely to respond by using force. But, the moment a naval vessel opens fire at another vessel whether by accident or not, it is likely to be challenged by force. This we need to avoid at all costs.

A related challenge to the introduction of INCSEA in the South China Sea is how to deal with non-parties which exercise the right of innocent passage in the area and the traditional right of freedom of navigation through the South China Sea. While international law prohibits interference with the freedom of navigation, their mere presence or passage could be misinterpreted and this could cause misunderstanding. Should third parties be part of the regional INC-

SEA arrangement as well? If we go by the South East Asian Nuclear Zone treaty, outsiders, particularly nuclear powers found it difficult to endorse the treaty. Another problem how to deal with offensive platforms e.g., submarines. To some claimant nations, if submarines are not included in an INCSEA agreement, the platform could be used by rival claimants to assert presence thereby reinforcing their national claims. Some claimants to the Spratlys e.g., China possess a formidable submarine fleet. On the other hand, any proposal to regulate passage or presence of submarines passing through the INCSEA area is bound to be challenged by naval powers, as inconsistent with customary international law.

An equally serious challenge to the applicability of INCSEA is the power asymmetry in the region, given that CBM works best in an environment of power equilibrium. The decision by China to construct a complex concrete module on the Mischief Reef has elicited angry response from the Filipinos. As explained earlier, the action had not only breached some understanding to maintain the status quo amongst the claimants, but it has also undermined the confidence of many that China would be willing to play by the rules of the game. There is now increasing anxiety as to what would be the next step Beijing would take after the Mischief Reef. In response to the assertive action by the PLA Navy, the Philippines has taken steps to strengthen its naval presence there and has also sought outside help, apart from talking to China. In such tense situations, it is not uncommon for naval vessels assigned to patrol the area to engage in a "chicken game" to test the will of the other party. Should this happen, the possibility of one of these dangerous games turning into an accident is very great. This game is after all not uncommon in other parts of the region.

Despite the challenges, the prospects for the application of INCSEA as a CBM tool to prevent the escalation of military conflicts should be pursued in the South China Sea for the various reasons cited earlier. There are certainly conditions that merit the pursuance of cooperative security mechanisms particularly among the claimant nations.

To give it the best chance of succeeding, any discussion on any proposed regional INCSEA should obtain official political endorsement. Any arrangement not officially endorsed at the highest politi-

cal level is unlikely to get the desired commitment from the various levels (chain of command). Service-to-service arrangements could even be misconstrued by some as an attempt to undermine others' security.

In this regard the existence of regional politico-economic fora such as ASEAN, ARF, CSCAP, etc. could be fully exploited. As we are fully aware, within ASEAN with diverse ethnic, religious as well as historical background, the ASEAN's Treaty of Amity and Cooperation could be a framework to build INCSEA on. This cooperative platform would give a sound foundation for INCSEA to work on. For a CBM tool to function, some elements of trust and transparency are needed. Most importantly, there must be a common desire to resolve conflicts through peaceful means amongst the parties involved.

In the desire to promote regional peace and stability, the ASEAN Regional Forum (ARF) has been assigned to seriously discuss and initiate regional CBMs. At the moment however, discussions are mostly confined to policy makers and diplomats. Not many, if any, actual practitioners have been involved. Perhaps because issues related to territorial disputes are highly sensitive, the idea of INCSEA has not been pursued at the politico-diplomatic level though the subject had been extensively discussed at naval fora such as the WPNS. This means that, given the political greenlight, most regional navies are quite prepared to seriously explore the operational practicalities of INCSEA.

It must be impressed upon regional political leaders and bureaucrats that the value of an INCSEA agreement lies in the obligation to consult on safety on a regular basis at the navy-to-navy level. That obligation is the foundation of face-to-face contact between naval professionals, which an INCSEA agreement seeks to promote. In a multilateral agreement, these reviews would have to include both regular multilateral meetings, where all parties could discuss the operation of the agreement. Individual parties could also sit down to discuss their bilateral matters of common concern.

Another condition conducive for INCSEA to be put into practice is the existence of communication channels both in terms of interpersonal as well as equipment amongst most regional navies. The representation of most regional navies in WPNS provides an excellent avenue for them to acquire a common understanding of the meaning

and objective of INCSEA besides providing the much-needed networkings. After all, some regional navies are already putting into practice tacit self restraint procedures to avoid escalating sensitive situations.

Good communication and understanding of crisis prevention mechanisms on the ground are very important for commanders to act rationally and to prevent simple accidents from escalating into military conflicts. It is always crucial for parties in dispute to be able to communicate promptly and clearly with one another. Reliable, trustworthy, confidential and quick means of communication are crucial in preventing the aggravation of disputes.

The existing stable political relationship between the countries in the region could provide an ideal channel for the idea of INCSEA to be pursued. Amongst some ASEAN members, for example, there are General Border Committees (GBCs) and other forms of security arrangements to resolve common problems. The Malaysia-Indonesia and Malaysia-Thailand GBCs are examples of such bilateral cooperation. Apart from these there is a web of cooperative security arrangements in place between Malaysia, Singapore, Brunei and the Philippines. Though most of these arrangements have a definitive area of application such as joint piracy and crime prevention patrols, nevertheless, they could be expanded to include new subjects such as understanding the conduct of each other's vessels. Among the claimants that have yet to have any similar kind of cooperative arrangements are Vietnam, China and Taiwan. Nonetheless, as most of these countries have in principle declared their willingness to settle their disputes through peaceful means, the climate for the pursuance of INCSEA is thus favourable.

All these cooperative engagements denote the mutual recognition of non-zero sum outcome amongst the South China Sea disputing parties. The acceptance by most parties that non-zero sum outcomes are possible even though the benefit to the individual claimants may be of a lesser degree, can be one of the most helpful elements for crisis prevention. When translated to practical terms, this means that the parties involved are willing to self regulate their behaviour on the ground.

The cooperative arrangements like the INCSEA process also imply that the parties involved believe in the rationality of one another.

If contenders to the dispute are assumed to be rational, then communications designed to influence their cost benefit calculation, to convey message, or to propose alternatives become more plausible. This rationality approach would also ensure that the contenders are not pushed into a corner which could provoke them into taking an irrational course of action.

The parties to the disputes also recognise their interdependence in other areas within the region. This realisation for regionalism has prevented many from acting unilaterally. In other words, the more mutually valued interdependencies exist among parties, the more likely they are to participate in dispute management efforts. This has perhaps been the main mitigating factor in containing the disputed territorial problem in the Spratlys.

Conclusion

The prospects for regional security cooperative mechanisms like the CBM process in the Spratlys are generally good if states are prepared to give them a chance. The mechanisms can only work if there is strong political commitment to the process which trickles down to the policy planners or the commanders on the ground. Without clear instructions to the commanders on the ground on what rules of engagement to apply in time of crisis, they will do what they have been trained to do, to assert to the best of their ability their mission. To prevent trigger-happy commanders from taking actions on their own that could prejudice the larger national concern for regionalism this paper has argued a case for INCSEA to be introduced among some countries, on a step-by-step basis. Currently the Maritime Institute of Malaysia and the Royal Malaysian Navy are engaged in informal dialogues as a preliminary process to widen the scope of INCSEA in the region. While this is not a new idea as the matter has received wide support at the WPNS forums, it is very much a second track initiative. The success of this initiative will depend very much on political support, as navies are not free agents.

At the geo-strategic level, the primary motivation for introducing the CBM process in the Spratlys like ARF and CSCAP is to prevent some large maritime powers like China from pursuing own security

agenda in the disputed region unilaterally. The paper has examined the extent to which China has complied with the various multilateral cooperative mechanisms. We came to the conclusion that China has only paid lip service to them. Despite this dismal outlook, we need to continue with the multilateral security fora as the alternative to dialogues could be adverse to regionalism. Nonetheless like many other security analysts we are convinced that the secondary consideration for promoting the CBM process in the Spratlys has produced positive results among the other non-claimant parties especially between the competing ASEAN states. If not for any reason, it is important to support this "building block" approach as it could lead to the evolution of a more comprehensive regional security measures. This, in turn, could lead to stronger commitment to regionalism.

COOPERATION IN MARITIME SAFETY AND EMERGENCY IN THE ASIA-PACIFIC

Kyung-Rae Min

Introduction

The International Maritime Organization (IMO) is a specialized agency of the United Nations, dealing with international maritime affairs. The Convention establishing IMO was adopted in March 1948 by the United Nations Maritime Conference which was convened in Geneva in February in that year. The Convention entered into force in March 1958 and IMO was inaugurated on 6 January 1959 when the Assembly held its first session.

The main objective of IMO is to facilitate co-operation among governments in the consideration of technical matters of shipping and, eventually, the adoption of the highest practicable standards relating to maritime safety, efficiency of navigation and prevention and control of marine pollution from ships; and the consideration of legal matters related thereto. In addition, the Organization's activities in providing technical assistance to developing countries in the above matters as well as dealing with maritime traffic facilitation issues have, over the years, grown steadily to become the tasks of significance and importance.

IMO has 157 Member States and two Associated Members, as at 1 March 1999. The governing body of IMO is the Assembly, which consists of Member States and meets every two years. Between sessions of the Assembly a Council, consisting of 32 Member Governments

elected by the Assembly, acts as IMO's governing body. There are also 53 non-governmental organizations which have observer status in IMO.

Most of the Organization's work is carried out by the five committees: the Maritime Safety Committee (MSC); the Marine Environment Protection Committee (MEPC); the Legal Committee (LEG); the Technical Co-operation Committee (TC); and the Facilitation Committee (FAL) and by a number of Sub-Committees under the main technical Committees (MSC and MEPC). There are some 40 conventions and over 800 codes and recommendations, concerning maritime safety, the prevention of marine pollution and related matters, adopted by the Organization.

Since its inception, IMO has successfully performed its main functions - maritime safety and protection of marine environment, and as a result, significant contributions have been made to the world maritime communities.

This paper refers to IMO's activities over the past years to promote maritime safety in the Asia-Pacific region, in particular in the fields of:

- Search and rescue;
- Safety of navigation;
- Prevention and suppression of piracy and armed robbery against ships; and
- Prevention and combating against Stowaways, Illegal drug trafficking and Illegal migrants by sea.

Maritime Search and Rescue (SAR)

In 1979, a conference convened by IMO in Hamburg adopted the International Convention on Maritime Search and Rescue (it entered into force in 1985). The aim was to provide the framework for search and rescue operations and to develop a global SAR plan, so that no matter where an accident occurs, the rescue of persons in distress at sea will be co-ordinated by a SAR organization and, when necessary, by co-operation between neighbouring SAR organizations.

Development of the Global SAR plan

Resolution 6 of the 1979 SAR Conference invites IMO "...to develop a Global Maritime Distress and Safety System (GMDSS) that includes telecommunications provisions for the effective operation of the search and rescue plan prescribed by the Annex to the SAR Convention". The establishment of such a global plan for maritime SAR constitutes the ultimate objective of the SAR Convention.

The plan, when finalized, will be based on a framework of multi-lateral or bilateral agreements between neighbouring States on the provision of SAR services in superjacent ocean and coastal waters to achieve co-operation and mutual support in responding to distress incidents.

For the purpose of expediting work on the preparation of the global SAR plan, IMO's Maritime Safety Committee (MSC) has established 13 maritime areas for search and rescue purposes and approved the preparation of provisional search and rescue plans in each of them as follows:

- | | |
|------------|-------------------------|
| Area 1 - | North Atlantic |
| Area 2 - | North Sea |
| Area 3 - | Baltic Sea |
| Area 4 - | Eastern South Atlantic |
| Area 5 - | Western South Atlantic |
| Area 6 - | Eastern North Pacific |
| Area 7 - | Western North Pacific |
| Area 8 - | Eastern South Pacific |
| Area 9 - | Western South Pacific |
| Area 10A - | North West Indian Ocean |
| Area 10B - | South West Indian Ocean |
| Area 10C - | East Indian Ocean |
| Area 11 - | Caribbean Sea |
| Area 12A - | Mediterranean Sea |
| Area 12B - | Black Sea |
| Area 13 - | Arctic Ocean |

During the past few years a major effort has been made to fill the gaps in the 13 SAR areas.

*Pacific Ocean Conference on SAR and the GMDSS
(Seoul, 7 to 11 April 1997)*

In pursuance of its responsibility as the depositary of the 1979 SAR Convention, IMO convened a Pacific Ocean Conference on Maritime Search and Rescue (SAR) and the Global Maritime Distress and Safety System (GMDSS) in Seoul, from 7 to 11 April 1997, in co-operation with the Government of the Republic of Korea.

The Seoul Conference was attended by representatives from thirty-three countries and two Associated Members of IMO bordering the Pacific Ocean.

The Conference aimed at enabling the representatives from the countries to consider: developing provisional integrated SAR plans for the oceans concerned; providing coverage for areas identified as lacking the necessary arrangements for SAR purposes; the adequacy of GMDSS facilities; and training needs with respect to maritime SAR and radiocommunications.

During the Conference, a provisional maritime search and rescue plan for the Pacific Ocean was completed and resolutions were unanimously adopted on, *inter alia*:

- Provisional SAR plan for the Pacific Ocean;
- Arrangements for the provision and co-ordination of maritime SAR services and co-operation between States;
- Technical co-operation for maritime SAR and radiocommunication facilities; and
- The Global Maritime Distress and Safety System (GMDSS).

Completion of the Provisional Global SAR Plan

With the Indian Ocean Conference on SAR and the GMDSS (Fremantle, Australia, 21 to 25 September 1998), which adopted resolutions on, *inter alia*: provisional SAR plan for the Indian Ocean; and establishment of an international SAR fund, the provisional global maritime SAR Plan was completed.

The completion of the provisional global SAR plan is one of the most significant achievement in IMO's efforts to enhance safety at sea, which has included the convening of a number of regional Confer-

ences on maritime SAR and the GMDSS all over the world since 1984.

The MSC, at its seventieth session (7 to 11 December 1998), having noted the outcome of the Fremantle Conference and recognized that there was more work to be done to ensure the efficient and effective conduct of SAR operations in any part of the world, invited Member Governments to:

- notify the Secretary-General of IMO when agreements have been concluded among themselves so that the provisional Global SAR Plan becomes final; and
- put in place an efficient and adequate SAR infrastructure and implement the provisions of the Plan, when called to conduct SAR operations, in the most efficient and effective manner.

Safety of Navigation

The vast majority of maritime casualties have been caused, or contributed to, by navigational error or deficiency and many of the worst disasters in shipping history have resulted from collisions and other accidents which can be attributed to navigational errors. IMO, therefore, has always paid great attention to the improvement of navigational safety and introduced a number of measures in the form of conventions, codes, recommendations and other instruments.

The conventions which are particularly relevant to navigation are the International Convention for the Safety of Life at Sea, 1974 (SOLAS) and the convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG). Besides conventions, IMO has issued a series of resolutions and codes, including guidelines, covering areas such as:

- Ships' routing/vessel traffic/ship reporting/pilotage;
- Navigational charts, including electronic charts/shipborne navigational equipment;
- World Wide Radio Navigation System/World Wide Navigational Warning Service; and
- Future Global Navigation Satellite System.

Safety of Navigation in the Straits of Malacca and Singapore

The Malacca and Singapore Straits together form the main sea route for shipping between Europe/Middle East/India and Malaysia/Singapore/East Asia. The Straits area is of vital importance, not only to the countries of the region, but to the majority of the world's trading nations and it is essential that world shipping is able to navigate through this area with safety and security.

In view of the traffic density passing through the straits, particularly the high proportion of VLCC (Very Large Crude Carrier) and other tankers, and the restricted navigational channels, the potential for accidents resulting in major ecological damage, loss of life and disruption to navigation is high.

In November 1977 the tenth IMO Assembly adopted resolution A.375(X) on "Navigation through the Straits of Malacca and Singapore" which described on a routeing system for the Straits, including traffic separation schemes (TSSs), deep-water routes and special rules for deep-draft vessels and VLCCs. In November 1981, the twelfth Assembly of IMO adopted resolution A.476(XII) which amended effectively the rules adopted by resolution A.375(X).

The rules, thereafter, have been continuously amended to meet the need for changes. The recent developments in IMO for the safety of navigation in the Straits of Malacca and Singapore are as follows:

- Mandatory Ship Reporting System "In Malacca and Singapore Straits"

To further improve the communication capability and streamline the monitoring system for the purpose of enhancing the safety of navigation in the Straits, the MSC at its sixty-ninth session in May 1998 adopted, by resolution MSC.73(69), the mandatory ship reporting system in the Straits of Malacca and Singapore, which was subsequently disseminated by SN/Circ.201.

The reporting system entered into force at 0000 hours UTC on 1 December 1998. Masters of ships are required to comply with the requirements of the adopted ship reporting systems, in accordance with regulation V/8-1(h) of the International Convention for the Safety of Life at Sea, 1974,

as amended in 1994 (resolution MSC.31(63)).

- Amendments to Rules for Vessels Navigating through the Straits of Malacca and Singapore Straits

Amendments to the Rules for vessels navigating through the Straits of Malacca and Singapore were also adopted by the MSC in May 1998, which were subsequently disseminated by SN/Circ.198. The amendments came into force at 0000 hours UTC on 1 December 1998.

- Marine Electronic Highway

As part of efforts to further enhance safety of navigation and prevent pollution of the marine environment in the Straits of Malacca and Singapore, a proposal for obtaining funding from the Global Environment Facility (GEF) in order for a study to be conducted aiming at proposing a project for a "Marine Electronic Highway" for the Straits is being developed by the IMO Secretariat and the littoral States concerned (Indonesia, Malaysia and Singapore). A regional Workshop on this subject was held in Singapore on 29 and 30 October 1998.

The Marine Electronic Highway, as contemplated, would, inter alia, consist of elements such as:

- the production, distribution and updating of electronic navigational charts (ENCs) for use with electronic chart display and information systems (ECDIS);
- the provision of additional information on environmental matters for display on an ECDIS; and
- the possible provision of more detailed traffic information to ships transiting the Straits, for example by use of automatic identification system (AIS) transponders.

Adoption of Archipelagic Sea Lanes in Indonesia

Indonesia submitted a proposal to IMO in 1996 on the designation of certain axis lines of the archipelagic sea lanes through certain parts of Indonesian archipelagic waters and requested the Organization to consider the matter from the point of view of safety navigation, rec-

ognizing IMO as the "competent international organization" under article 53 of UNLOS.

In May 1998, the MSC, at its sixty-ninth session, adopted, by resolution MSC.72(69), the partial system of archipelagic sea lanes in Indonesian archipelagic waters. Indonesia has undertaken to inform the Organization of the date on which the partial system will be implemented (which date will not be earlier than six months after the date of designation of the sea lanes by the Government of Indonesia). This information is still awaited.

Piracy and Armed Robberies Against Ships

Piracy and armed robbery at sea against commercial shipping surged in the early 1980s. By 1983 it had become a particular problem off West Africa.

In 1984 in response to the grave concern expressed by several IMO Member Governments and international organizations regarding the increasing incidents of piracy and armed robbery against ships, IMO's Maritime Safety Committee established Piracy and Armed Robbery Against Ships as a separate and fixed item in its work programme. Under this item, the MSC receives a summary of all reports on piracy and armed robbery against ships submitted by Member Governments and international organizations in consultative status and these are circulated on a monthly, quarterly and annual basis to IMO Member Governments and international organizations.

In addition, IMO has adopted a number of resolutions and issued circulars on measures to prevent and suppress acts of piracy and armed robbery against ships, such as:

- Resolution A.683(17): prevention and suppression of acts of piracy and armed robbery against ships;
- Resolution A.738(18): measures to prevent and suppress piracy and armed robbery against ships;
- MSC/Circ.622: Recommendations to Governments for combating piracy and armed robbery against ships; and
- MSC/Circ.623: Guidance to shipowners and ship operators,

shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships

Since 1984, the total number of reported incidents of piracy has risen steadily and, by the end of December 1998, amounted to 1,338. The areas most affected by pirates and armed robbers are the Far East, in particular the South China Sea and the Malacca Strait, South America and the Caribbean, the Indian Ocean and West and East Africa. The total number of incidents occurring in 1998, as reported to IMO, was 210 and in many cases, the crews were violently attacked by groups of people carrying guns.

The MSC, at its sixty-eighth session in May/June 1997, noting that attacks on ships by pirates and armed robbers continued unabated in spite of all measures taken, putting the lives of seafarers and passengers and the marine environment at immense risk, requested the Secretary-General of IMO to enter into consultations, at Ambassadorial level, with the Governments of countries in whose waters acts of piracy and armed robbery against ships had most frequently been reported and if, as a result of such consultations, the Governments concerned indicated a willingness to co-operate with IMO experts, authorized him to organize missions of experts to those countries in a further effort to sensitize them to the need to prevent and suppress such acts.

In addition, the MSC instructed the IMO Secretariat to seek the necessary funds to organize, in co-operation with Governments in the regions most affected, technical seminars and workshops to explain the problem of piracy and armed robbery and the Organization's recommendations on how to deal with them.

IMO Mission of Experts on Piracy and Armed Robbery Against Ships to South China Sea/Malacca Strait Area

The mission to the South China Sea/Malacca Strait area was organized in co-operation with the Governments of Indonesia, Malaysia and the Philippines and the IMO experts visited Manila, Kuala Lumpur and Jakarta from 5-11 October 1998.

The principal purpose of the missions of experts was to increase awareness of the problem; impress upon the Governmental represen-

tatives concerned the need for action; and, more importantly, motivate political will to act at national and regional levels. The mission also aimed to review, with the agencies responsible for law enforcement, the current situation and jointly explore which and how improvements could be made.

As a result, the general and specific problem areas were identified; existing national and regional infrastructures (administrative and equipment) for dealing with the problem were studied; ways of linking anti-piracy measures to existing law-enforcement measures thus pooling resources were explored; and regional co-operation issue was also discussed.

The main problem areas (not necessarily applicable to all three countries) identified were:

- the economic situation currently prevailing in the region;
- certain resource constraints on law enforcement agencies;
- lack of communication and co-operation between the various agencies involved;
- the response time after an incident has been reported to the coastal State concerned by affected ships;
- general problems of incidents reporting, e.g. alerting the nearest coastal State as well as other ships in the area of a ship under attack or threat of attack;
- timely and proper investigation into reported incidents;
- prosecution of pirates and armed robbers when apprehended; and
- lack of regional co-operation.

The representatives from the three countries expressed their Governments' concern over, and political will to act on, the issue of piracy and armed robbery against ships at national and regional levels. During the mission, recommendations, which should be addressed at the regional seminar (Singapore, February 1999), were made, *inter alia*, on:

- communication and co-operation between various agencies and the response time after an incident has been reported to the coastal State;

- investigation into reported incidents and prosecution of pirates and armed robbers when caught;
- alerting by ships under attack or threat of attack and alerting of other ships in the area to the incident; and
- further development of regional co-operation.

IMO Regional Seminar and Workshop on Piracy and Armed Robbery Against Ships, Singapore

The regional seminar and workshop for countries in the South China Sea and the Straits of Malacca and Singapore was convened in Singapore from 3 to 5 February 1999 in co-operation with the Government of Singapore. Nine countries and two associate members in the region participated.

The main objective of the seminar and workshop was to assist Governments and officials in the countries concerned to enhance their capability for preventing and suppressing piracy and armed robbery against ships, mainly through the implementation of the pertinent guidelines developed by IMO. It also aimed at discussing, where appropriate, the development of co-operation agreements between neighbouring countries with respect to combatting this threat, through co-ordinated patrols and other means.

During the seminar and workshop, a resolution (resolution No.1) on "Prevention and suppression of piracy and armed robbery against ships" which, *inter alia* :

- urges that all coastal States in the region put in place an adequate infrastructure and appropriate measures to prevent and suppress piracy and armed robbery against ships in their national waters and ports including the use of all existing facilities and law enforcement agencies;
- recommends that all coastal States in the region take appropriate measures, mainly through well co-ordinated efforts, to reduce bureaucracy among competent national authorities involved in the fighting against piracy and armed robbery against ships;
- recommends that harmonized procedures and guidelines on communication means for alerting other ships in the area

should be developed by IMO

- recommends that standard message format for piracy attacks and alerts contained in MSC/Circ.623 should be reviewed and, as appropriate, further developed.

The seminar and workshop also adopted a resolution (resolution No.2) on "Appropriate punishment for the crime of piracy and armed robbery against ships".

A draft regional agreement on "Co-operation in combating acts of piracy and armed robbery against ships" was also prepared during the seminar and workshop.

The full report of the Singapore Seminar (MSC 71/15/4), together with the report of the IMO mission of Experts on Piracy and armed robbery against ships to South China Sea/Malacca Strait area (MSC 71/15/2), will be considered by the MSC at its seventy-first session in May 1999, for appropriate action.

Other Related Activities

Resolution of Stowaway Cases

A stowaway is defined as a person who is secreted on a ship or in cargo which is subsequently loaded on the ship, without the consent of the shipowner or the master or any other responsible person, and who is detected on board after the ship has departed from a port and reported as a stowaway by the master to the appropriate authorities.

In recent years, the problem of stowaways has increased dramatically, which is of great concern to the shipping industry with regard to the consequent potential for disruption of maritime traffic, the impact such incidents may have on the safe operation of ships and the considerable risks faced by stowaways, including loss of life. The International Convention Relating to Stowaways, adopted in Brussels in 1957, which attempted to establish an internationally acceptable regime for dealing with stowaways has not, however, entered into force and is unlikely to ever do so.

Resolution A.871(20) on Guidelines on the Allocation of Responsibilities to Seek the Successful Resolution of Stowaway Cases

The twentieth session of IMO Assembly in November 1997, being aware that, in the absence of an internationally agreed procedure for dealing with stowaways, considerable difficulties are being encountered by shipmasters and shipping companies, shipowners and ship operators in disembarking stowaways from ships into the care of the appropriate authorities, and recognizing the need to establish practical and comprehensive guidance on procedures to be followed by all the authorities and persons concerned in order to achieve the return or repatriation of a stowaway in an acceptable and humane manner, adopted resolution A.871(20) on Guidelines on the allocation of responsibilities to seek the successful resolution of stowaway cases.

The Guidelines, annexed to the resolution, establish in detail the responsibilities of the master, the shipowner or operator, the country of the first scheduled port of call after the discovery of the stowaway, (the port of disembarkation), the country where the stowaway first boarded the ship, the stowaway's apparent or claimed country of nationality, the flag State of the vessel, and of any countries of transit during repatriation.

In adopting the resolution, the Assembly, emphasizing the need for co-operation among all authorities and persons concerned, urged Governments to implement in their national policies and practices the procedures recommended in the Guidelines and to deal with stowaway cases in a spirit of co-operation with other parties concerned, on the basis of the allocation of responsibilities set out in the Guidelines.

Furthermore, shipping companies, shipowners and ship operators were invited to take on their relevant responsibilities as set out in the Guidelines and to guide their masters and crews as to their respective responsibilities in stowaway cases. Also, Governments were invited to develop, in co-operation with the industry, comprehensive strategies to prevent intending stowaways from gaining access to ships.

The Assembly further requested the Facilitation Committee to continue to monitor the effectiveness of the Guidelines on the basis of information provided by Governments and the industry, to keep

them under review and to take such further action, including the development of a relevant binding instrument, as may be considered necessary in the light of developments.

Reports on Stowaway Incidents

The standard form for a statement containing all information relevant to the stowaway, to be prepared by the master for presentation to the appropriate authorities, is given in the annex to the Guidelines.

The Facilitation Committee, at its 26th session in September 1998, pursuant to the Assembly's request, also adopted FAL.2/Circ.50 on Reports on stowaway incidents. Member Governments and international organizations concerned are hereby invited to provide IMO with statistical data on stowaway incidents in the reporting format, given in the annex to FAL.2/Circ.50, and information on their experience gained with the Guidelines and the measures taken for and obstacles encountered with their implementation.

Member Governments are further invited to encourage shipping companies, shipowners, ship operators, ship masters and industry organizations concerned to report the information needed for the collation in the reporting form, which is to assist the Facilitation Committee in its further work on the Guidelines.

Combating Illicit Drug Trafficking

The production, collection and movement of illicit drugs and precursors, and their supply to international markets, require sophisticated, complex and varied networks of couriers and smugglers. As the professional trafficker rarely carries the drug himself and usually finds an accomplice to do so, the carrier is often the merchant seaman, who represents a readily available means of smuggling narcotics. Often the seaman himself is not fully aware of the risks involved, which include the likelihood of a possible long sentence of imprisonment if he is caught smuggling drugs. The lure of large monetary rewards also often persuades such people to co-operate with the traffickers.

Shipowners, seafarers and others closely involved in the opera-

tion of ships share a collective responsibility to combat illicit trafficking of drugs at sea, including being constantly on the look-out for drugs being concealed either on-board the ship itself or in the cargo, especially in containers. A growing problem in this respect is the rapidly expanding business of cruise ships some of which can take more than 2000 passengers.

To help curb the smuggling and use of drugs at sea, IMO is working to overcome this growing problem that extends beyond national borders.

Resolution A.872(20) on Guidelines for the Prevention and Suppression of the Smuggling of Drugs, Psychotropic Substances and Precursor Chemicals on Ships Engaged in International Maritime Traffic

The twentieth session of IMO Assembly in November 1997, recognizing the urgent need for international co-operation to suppress illicit traffic by sea as envisaged by the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic substances, adopted resolution A.872(20) on Guidelines for the prevention and suppression of the smuggling of drugs, psychotropic substances and precursor chemicals on ships engaged in international maritime traffic.

The Guidelines, annexed to the resolution, are aimed at covering the following areas:

- the need to deal, in a practical way, with the ever-increasing problem of combating illicit traffic in narcotic drugs, psychotropic substances and precursor chemicals to reduce the problem for shipping and to prevent illicit drug trafficking;
- ensuring the movement of innocent cargo;
- identifying and controlling the movement of precursor chemicals; and
- identifying and controlling illicit narcotic drugs and psychotropic substances and inhibiting their movement by sea during loading, transit and unloading.

The Assembly, in adopting the resolution, urged Member Governments to implement the Guidelines without delay, in accordance

with the international law of the sea, and to bring them to the attention of harbour masters, shipping companies, shipowners, ship operators, shipmasters and all other parties concerned.

Development of a Model Course on Combatting Illicit Drug Trafficking

IMO, since then, has developed a technical co-operation programme on the development and testing of a model course on the basis of the Guidelines. A pilot workshop on the promotion of the implementation of the Guidelines is planned to be held in the Caribbean region in summer this year and if successful the Organization is hoping to go global with this kind of training course.

Combating Illegal Migrants by Sea

The IMO Assembly, at its eighteenth session in November 1993, noting with great concern incidents involving the smuggling of aliens on board ships and the serious problems associated with such activities for the safety of life at sea and also that numerous such incidents had resulted in sickness, disease and deaths of the individuals concerned, adopted resolution A.773(18) on the Enhancement of safety of life at sea by the prevention and suppression of unsafe practices associated with alien smuggling by ships. However, incidents of illegally transported immigrants have been continuously occurred, which have reportedly resulted in considerable loss of life at sea.

Resolution A.867(20) on Combating Unsafe Practices Associated with the Trafficking or Transport of Migrants by Sea

Noting with concern incidents involving substandard ships used for the trafficking or transport of migrants and being aware of the work carried out in this field by the United Nations Commission on Crime Prevention and Criminal Justice, the IMO Assembly, at its twentieth session in November 1997, adopted resolution A.867(20) on Combatting unsafe practices associated with the trafficking or transport of migrants by sea.

The resolution invites Governments to co-operate and increase

their efforts to suppress unsafe practices, including those associated with the trafficking and transport of migrants by sea and to collect and disseminate information about the practice to IMO and to Governments which might be affected. It also requests Governments to apply the provisions of international instruments dealing with the safety of life at sea and to detain all unsafe ships and report pertinent information to IMO. It further directs IMO to consider the practice from the safety point of view and to ensure that IMO participation in the preparation of any draft convention or other instrument intended to combat the trafficking or transport of migrants by sea.

MSC/Circ.896 on Interim Measures for Combating Unsafe Practices Associated with the Trafficking or Transport of Migrants by Sea

The Maritime Safety Committee (MSC), at its seventieth session in December 1998, as directed by the above Assembly resolution, prepared Interim measures for combating unsafe practices associated with the trafficking or transport of migrants by sea, which is intended to supplement work done by the United Nations Commission on Crime Prevention and Criminal Justice on the development of a United Nations instrument against transitional organized crime, which should also include provisions against illegal trafficking of migrants by sea. The Interim measures were subsequently conveyed to the above UN Commission and circulated to all IMO Member Governments by MSC/Circ.896.

The advisory circular notes that experience has shown that migrants often are transported on ships that are not properly manned, equipped or licensed for carrying passengers on international voyages and specify the detailed recommended actions to be taken by States, including:

- ensuring compliance with the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS);
- collecting and disseminating information on ships believed to be engaged in unsafe practices associated with trafficking or transporting migrants;
- taking appropriate action against masters, officers and crew members engaged in such unsafe practices; and

- preventing any such ship: from again engaging in unsafe practices; and if in port, from sailing.
- The circular contains a proposed format for reporting any incidents to IMO, so that it can be updated and revised on the basis of experience.

Concluding Remarks

Over the past few years IMO has initiated a number of measures to improve maritime safety and has also made a great effort to ensure that such measures are widely and effectively implemented.

I have attempted, in this paper, to look at recent activities/developments in IMO, focusing on the maritime safety in the Asia-Pacific which is of vital importance to the shipping industry and to the world's economy. For our efforts to produce the desired results, all those involved, in a country, must play their part properly, nevertheless, it rely heavily on close co-operation among neighbouring countries.

REGIONAL EFFORTS FOR MARITIME COOPERATION: STATE AND PROSPECT

Sam Bateman

Introduction

The importance of maritime issues in Asia Pacific and the complexity of the regional maritime environment dictate the need for maritime cooperation in the region. Common maritime interests (such as shipping, fishing, marine safety, marine environmental protection and offshore hydrocarbons) figure prominently in the dialogue between regional countries and in global forums involving these countries and the rest of the world. There is possibly no other region of the world where maritime cooperation is so important or more necessary. It is essential for the effective management of the marine environment of the region ("oceans governance") and is recognised as an important contributor to regional security as a confidence and security-building measure (CSBM).¹

The complexity of the maritime environment in Asia Pacific results both from enduring features of strategic geography and from dynamic aspects of the contemporary regional scene. Enduring geo-strategic features of the region include numerous enclosed and semi-enclosed seas,² archipelagos and islands, the number of international

1. This is evident in the attention being paid to maritime cooperation and maritime CSBMs by the ASEAN Regional Forum (ARF) discussed later in this paper.

2. An "enclosed or semi-enclosed sea" is defined by Article 122 of the 1982

straits and confined shipping channels, and a relative abundance of marine resources, although these are under considerable pressure of unsustainable development. Dynamic aspects include continued growth of regional naval forces and seaborne trade (despite the economic downturn of recent years); the greater exploitation of marine resources; the development of regional maritime regimes (such as joint development zones, cooperative marine environmental protection measures, and procedures for archipelagic sealanes passage); and increasing stresses on the marine environment through higher levels of land-based marine pollution, degradation of marine habitats and over-fishing. An almost insoluble situation exists with the resolution of maritime boundaries in East Asian waters,³ where cooperative management of oceans issues is still under-developed and we are far from what Michael Leifer has termed "a stable maritime regime."⁴

Of great concern is the possibility that a stable maritime regime may be becoming even more difficult to achieve. There are strong possibilities of both maritime competition and tensions over maritime issues intensifying in the Western Pacific.⁵ Fuelled by the drive for sovereign rights over offshore resources, conflicting claims to offshore territory and maritime space constitute a serious threat to regional stability and inhibit the processes of ocean management, cooperation and regime building. These problems will only be overcome by the greater preparedness of regional countries to cooperate even though they may be reluctant to do so because some apparent loss of independence may be involved. Any failure to cooperate on

UN Convention on the Law of the Sea as 'a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States.' Examples include the Gulf of Thailand, the South China Sea, the Timor Sea, and the Yellow Sea.

3. For a discussion of the problems with maritime boundaries in East Asia, see my paper "Economic growth, marine resources and naval arms in East Asia," *Marine Policy*, Vol.22, No.4/5, July/September 1998, pp.297-306.

4. Michael Leifer, "The Maritime Regime and Regional Security in East Asia," *The Pacific Review*, Vol.4, No.2, 1991.

5. Sam Bateman, "Source of Conflicts at Sea in the Context of the Western Pacific," Paper to an International Conference on Oceans Affairs, "Conflict and Order at Sea," held as part of the International Political Science Association (IPSA) in Seoul, 20 August 1997, p.13.

the solution of maritime problems, particularly those related to protection of the marine environment, sustainable development and the conservation of marine biodiversity, amounts to the adoption of "beggar thy neighbour" policies and leads to a "tragedy of the commons" where all countries ultimately lose as a result of each country pursuing its own self-interests.⁶

Current Situation

Scope of Cooperation

In considering the current situation with regional maritime cooperation and the prospects for the development of cooperative efforts, this paper takes a broad view of *maritime cooperation* as encompassing any cooperative activity associated with an interest in the sea or a use of the sea or its resources. Maritime cooperation is fundamental to the management of the oceans and regional seas, including the exploitation of marine resources. The preamble to the 1982 United Nations Convention on the Law of the Sea (UNCLOS) establishes the importance of coordination by recognising "that the problems of ocean space are closely interrelated and need to be considered as a whole."⁷ UNCLOS Article 123 requires that countries bordering enclosed or semi-enclosed seas should cooperate on the exercise of their rights and the performance of their duties under the Convention. Several other articles of UNCLOS go on to point out a requirement for regional cooperation (Article 276, for example, calls for the establishment of regional marine scientific and technological research centres and Article 277 describes the functions of such centres).

6. Andrew Mack, 'Security Regimes for the Oceans: The Tragedy of the Commons, the Security Dilemma, and Common Security' in Jon M. Van Dyke, Durwood Zaelke, and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony*, Washington DC, Island Press, 1993, p.409.

7. United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, U.N.Doc.A/CONF.62/122(1982), reprinted in Official Text of the United Nations Conference on the Law of the Sea, U.N. Sales No.E.83.V.5 (1983) (hereinafter UNCLOS), p.1.

Naval cooperation encompasses all military activities associated with the sea (recognising that in some regional countries, maritime aircraft are operated by the air force). Its scope ranges from low-key, confidence-building activities (e.g. ship visits, fleet reviews, personnel exchanges, navy-to-navy talks, and multilateral naval conferences); through more ambitious activities (such as information/intelligence exchanges, joint doctrine development, standard operating procedures (SOPs) for exercises and peacetime operations, bilateral and multi-lateral exercises, avoidance of incident at sea (INCSEA) agreements, naval peacekeeping, and cooperation on tasks such as marine scientific research and anti-piracy); to the top end of combined operations (e.g. cooperative maritime surveillance, standing regional naval forces, cooperative sea lines of communication (SLOC) protection, and mine-countermeasures). Table 1 shows the full dimensions of maritime cooperation and naval cooperation, including the areas of overlap, such as surveillance, marine scientific research, search and rescue (SAR) and constabulary activities.

The contribution of maritime cooperation to regional security was recognised by an article in the *Asian Defence Journal* several years ago that noted:

If discord is to be avoided in order that collaboration can enhance peace and security, there will be a great need for cooperation and coordination in terms of ocean use, maritime exploration and exploitation (in marine resources, mineral extraction, fisheries), merchant marine activities (including freight conferences), maritime industries (shipbuilding and related services) and even marine leisure activity coordination.⁸

Shipping/Marine Safety

Shipping, seaborne trade and marine safety are key areas of maritime cooperation. Shipping is essential in Asia Pacific for both inter-regional and intra-regional trade. The "archipelagic" nature of Asia Pacific and the lack of any significant land transport infrastructure in

8. Zara Dian, "Maritime Issues in Asia," *Asian Defence Journal*, 6/95, June 1995, p.6.

Table 1. The Dimensions of Maritime Cooperation

Naval Cooperation	Either or Both	Maritime Cooperation
• Ship Visits • Personnel Exchanges • Navy to Navy talks • Exercises • Joint doctrine development • INCSEA Agreements • Transparency/prior notification of exercises & operations ("hot lines") • Standing Forces • Mine counter-measures • Peacekeeping operations • SLOC Protection	• Law of the Sea • Marine safety • Marine technology development • Marine scientific research • Search and rescue • Disaster relief • Data bases • Information exchange • Education & training • Maritime Surveillance • Law and order • Sovereignty/resources protection	• Regional seas programs • Resource management (living & non-living) • Shipping & ports • Port state control • Coastal zone management • Environment protection • Joint development zones • Control of ship and land-sourced pollution • Ecologically sustainable development • Management of large marine eco-systems • Marine tourism

East Asia, other than in China, mean that all intra-regional trade is carried by sea, except for very high value cargoes carried by air. The negative features of this shipping traffic and ancillary maritime transportation services are related to the risks of damage to the coastal and marine environments of the region. Oil and chemical spills, collisions and groundings, the discharge of ballast water, anti-fouling paints, waste disposal, port construction, port dredging and port operations can all have a major impact on water quality, marine habitats and ecosystems.⁹

At a global level, growing concerns over increased shipping traffic, the number of sub-standard ships at sea and the impact of shipping operations on the marine environment have led to the increased

9. Sam Bateman, "Impacts on the Marine Environment from Shipping Operations" in Sam Bateman and Stephen Bates (eds), *Shipping and Regional Security*, Canberra Papers on Strategy and Defence No. 129, Strategic and Defence Studies Centre, Australian National University, Canberra, 1998, pp.103-116.

regulation of maritime transport. The last twenty or thirty years have seen the introduction of major new international conventions dealing with ships and shipping. Notable ones include the International Convention for the Prevention of Pollution from Ships (MARPOL 1973), the London Dumping Convention 1972 (now the London Convention), the International Convention for the Safety of Life at Sea (SOLAS) 1974, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978, and the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS) 1996. Unlike in Europe,¹⁰ there have been few attempts so far to establish regional regimes for shipping and marine safety.

Regional cooperation on shipping and seaborne trade occurs through regional shipowners' associations, the Transportation Working Group of the Asia Pacific Economic Cooperation forum (APEC), the Economic and Social Commission for Asia and the Pacific (ESCAP) and regional arrangements for Port State Control (PSC). Developments in the PSC regime have been an important element both of increased regulation and of international efforts to manage the problem of sub-standard ships.¹¹ This regime involves the inspection by the officers of a national maritime authority of foreign vessels visiting the country's ports to ensure compliance with the international maritime safety and marine pollution conventions. It is based on the rule of international law, according to which a state exercises full jurisdictional powers within its internal waters and has the right to deny access to such waters.¹² It supplements the primary responsibility of the flag State for ensuring the compliance of ships flying its

10. A number of regional regimes for ship safety and pollution prevention have been developed in Europe posing considerations of consistency with international norms and application to third parties. Henrik Ringbom (ed), *Competing Norms in the Law of Marine Environmental Protection*, London, Kluwer Law International, 1997.

11. For a description of developments with Port State Control, refer Fernando Plaza, "Port State control: towards global standardisation," *IMO News*, No.1, 1994, pp. 13-20.

12. For a comprehensive description of the port state regime, see Kasoulides, G.C., *Port State Control and Jurisdiction: Evolution of the Port State Regime*, Dordrecht, Martinus Nijhoff Publishers, 1993.

flag with the relevant international conventions.

An Asia-Pacific Memorandum of Understanding (MOU) on PSC ("the Tokyo MOU") has now been signed by seventeen countries (Australia, Canada, China, Fiji, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Papua New Guinea, Philippines, Russian Federation, Singapore, Thailand, Vanuatu and Vietnam with Hong Kong as an Associate Member). This MOU provides for regional cooperation on ship inspections with a regional database and agreement on target inspection rates for foreign ships visiting the ports of participating countries. With an effective system of PSC now covering Asia Pacific, unsafe or sub-standard ships will find it very difficult to trade in the region.

APEC has been active in recent years in furthering regional cooperation in shipping and maritime safety. The Transportation Working Group (TWG) provides a Port Data Base with statistics on commercial ports in Asia Pacific and has taken a number of initiatives with seafarer training, the facilitation of maritime commerce and oil pollution preparedness. Specialist groups established by the TWG include a Port Experts Group and the Experts Group on Maritime Safety. The objectives of the latter group are to identify problems in the region with maritime safety and the protection of the marine environment from ship-sourced pollution and propose recommendations for improvement.¹³ Recent initiatives of the group include a survey questionnaire to member countries to identify regional safety issues and problems. Responses to the questionnaire revealed a general need for greater liaison between member countries on issues of mutual concern, and a particular need for an exchange of technical marine safety experts between member economies in order to harmonize enforcement and provide assistance to countries with the implementation of new conventions.

Other maritime cooperation forums in the region include the Asia Pacific Heads of Maritime Safety Agencies Forum and the Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP).¹⁴ The former convenes every 12-18 months and pro-

13. <http://www.apectptwg.org.au/>

14. Swapan Das Sarma, "Asia Pacific Maritime Education & Training," paper presented to CSCAP Maritime Cooperation Working Group meeting, Kuala Lumpur. 17-18 November 1998.

vides the opportunity for the chief executives of national maritime safety agencies to meet and discuss issues of common concern, including the development of a regional approach to maritime safety and marine environmental protection issues. Its next meeting will be in Singapore in January 2000. AMETIAP was established in 1996 and now has 42 member institutions in 16 regional countries. The rapid increase in membership of AMETIAP is a result of the fast growth of maritime activity generally in the region and the increased demand for trained seafarers. AMETIAP seems to have been very successful reflecting the urgent need for collective efforts in the region in maritime education and training to promote greater safety and protection of the marine environment.

Other areas of marine safety that necessitate cooperation include search and rescue (SAR) and the mitigation of maritime natural hazards, such as floods, tropical storms, severe oceanic conditions and tsunamis. SAR is an important and practical area for cooperation and there have been several regional, bilateral and multilateral initiatives for regional SAR cooperation in recent years. APEC maintains an Emergency Preparedness web-site¹⁵ that notes that "The Asia Pacific area includes 52% of the earth's surface area, 59% of the world's population, and over 70% of the world's natural disasters" and that APEC recognises that "natural disasters which affect one economy can affect others and that member economies can benefit from sharing expertise and collaborating on emergency preparedness and response". Also, an Asia Pacific Disaster Preparedness Centre has been established at the Asian Institute of Technology in Bangkok.

Fishing

Most Asia Pacific countries have a high dependence on fish and related marine products as a source of protein. More than half of the world's fish are caught and bred in Asian waters and slightly more than half are consumed in the region.¹⁶ Apart from the importance of subsistence fishing and domestic market supply, many East Asian and South Pacific countries look to the living resources of their Exclu-

15. <http://www.dfat.gov.au/apec/emprep/>

16. "Fishing for Trouble," *Far Eastern Economic Review*, 13 March 1997, p.50.

sive Economic Zones (EEZs) as an important source of export income. Some Asian countries are also leading distant water fishing nations (DWFNs) fishing both for the domestic market and for export. Fish and fishing are important political issues in the region and fisheries management and access arrangements are major factors in regional relations. The principal DWFNs of Japan, South Korea, Taiwan, Thailand and, increasingly, China¹⁷ are particularly affected by tighter access controls by coastal and island states, and international arrangements to control straddling stocks and highly migratory species, including on the high seas.

The sustainable development of regional fisheries is facilitated by cooperation between regional countries if the "tragedy of the commons" is to be avoided. The problem has many dimensions with, for example, some tuna stocks migrating between the South China Sea and the South Pacific¹⁸ and the Southern Bluefin Tuna spawning South of Java before migrating to Southern Australian and New Zealand waters, and to the South Atlantic. These types of concern have led APEC to assume a leading role in fisheries cooperation with the establishment of both a Fisheries Working Group (FWG) and a Marine Resource Conservation Working Group (MRC).

The APEC FWG aims to promote the conservation and sustainable use of fisheries resources; promote sustainable development of aquaculture and habitat preservation; seek solutions to common fisheries resource management problems and aquaculture disease control; enhance food safety and quality of fish and fisheries products; and promote sector-specific work relating to trade and investment liberalization and facilitation.¹⁹ Some of the projects undertaken by the group include a long-term fisheries trade study project that analyzes sectoral trade issues covering tariffs, non-tariff measures,

17. China is now an emerging DWFN with the level of Chinese longline fishing activity in the Western and Central Pacific increasing from 34 vessels and a catch of 888 metric tonnes in 1991 to 461 vessels and a catch of 14,149 metric tonnes in 1994. Oceanic Fisheries Programme, South Pacific Commission, *Tuna Fishery Yearbook 1994*, Noumea, New Caledonia, Table 6, p.9.

18. This common interest of ASEAN and the Pacific Island nations is managed through the Western Pacific Fisheries Consultative Committee (WPFCC) established in 1989 under the auspices of the Pacific Economic Cooperation Council (PECC).

19. <http://www.apsec.org.sg/workgroup/fish.html>

investment measures, and subsidies; an economic analysis of the impact of tariffs on free trade and investment in the fisheries sector in the Asia-Pacific region; a collaborative aquaculture education program and a study of the role of women in aquaculture. The FWG will also oversee the development of an internet-based marketing information service for the fishing, aquaculture and fish processing industries in APEC.

The APEC MRC was launched in 1990.²⁰ The objective of the working group is to promote initiatives in the APEC region which will protect the marine environment and its resources and ensure continuing socioeconomic benefits through maintenance of marine environmental quality. The establishment of the group is recognition of the fact that the health of the marine environment is crucial to the economic and social well being of the people in the region. The MRC working group is committed to protecting this collective resource, and to making progress toward a sustainable marine environment. The last Working Group meeting (MRC11) was held in June 1998 in Chile and the 12th Working Group meeting (MRC12) will be held in 17-20 May 1999 in Cairns, Australia.

Offshore Hydrocarbons

East Asian countries, in particular, are increasingly looking towards possible oil and gas reserves beneath the sea for future economic prosperity, and to ease the problem of a growing energy shortage. The offshore areas of most East Asian countries have some hydrocarbon potential. Sedimentary basins that are either already producing oil or gas, or possibly contain major new hydrocarbon deposits underlie Southeast Asian waters. In Northeast Asia, the Yellow Sea and East China Sea, there are basins that have been identified as particular areas of hydrocarbon potential and good prospectivity.²¹ With concern growing for the increased demand for and security of energy supplies, virtually all coastal States in the region are pre-occupied to some extent with staking offshore claims and exploring for oil

20. <http://www.apecsec.org.sg/workgroup/marine.html>

21. Mark J. Valencia, "Oil and Gas" in Joseph Morgan and Mark J. Valencia (eds), *Atlas for Marine Policy in East Asian Seas*, Berkeley, University of California Press, 1992, p.84.

and gas. Another result of the increased demand for fossil fuel energy, particularly in Northeast Asia, has been the rapid growth in regional seaborne trade with increased numbers of tankers and LNG/LPG carriers plying regional shipping routes, particularly the maritime corridor between Singapore and ports in Northeast Asia.

The exploitation of non-living marine resources in the East Asia region is severely hampered by unresolved offshore boundaries, which are "an important inhibiting factor" on the availability of multinational capital, technical expertise and equipment.²² Overlapping concessions are relatively common throughout the marginal seas of East Asia, including in the South China Sea between China and Taiwan, in the East China Sea between Taiwan, South Korea and China and in the Sea of Japan (or East Sea) between Japan and South Korea. Also in April 1996, Vietnam leased two exploration blocks in the South China Sea to the American oil company Conoco covering more than half of the zone which had been leased by China to the smaller US firm, Crestone, in 1992.²³ The tactic by both countries may be to elicit the support of foreign oil companies in demonstrating sovereign rights in disputed areas of claimed EEZs. The possible existence of rich reserves of hydrocarbons is often quoted as justification for the disputed claims to the Spratly Islands and has provided the catalyst for the several joint development agreements in the region covering marine areas where maritime boundaries have not been agreed.²⁴ The establishment of joint development arrangements is a demonstration of maritime cooperation with scope for wider application.

Multilateral activities associated with the development of offshore hydrocarbons could be facilitated through the APEC Energy Working Group. The objective of this group is to maximise the energy sector's contribution to the region's economic and social well being by networking, sharing basic resource demand and supply outlook data,

22. Mark J. Valencia, "Oil and Gas Potential, Overlapping Claims, and Political Relations" in George Kent and Mark Valencia (eds), *Marine Policy in Southeast Asia*, Berkeley, University of California Press, 1985, p.155.

23. Adam Schwarz and Matt Forney, "Oil on Troubled Waters," *Far Eastern Economic Review*, April 25, 1996, p.65.

24. These include the Timor Gap Treaty between Australia and Indonesia, the joint development area agreed between Malaysia and Thailand in the Gulf of Thailand and a Japan-Korea Joint Development Zone in the East China Sea.

and considering the regional policy implications and responses to wide-ranging energy related issues.²⁵ There is also the South East Asian Petroleum Exploration Association (SEAPEX) comprised mainly of geologists, geophysicists and other related professionals from the oil and gas industry based in Singapore.

Marine Environmental Protection

Article 192 of UNCLOS states the fundamental obligation of all states to protect and preserve the marine environment. Clearly the very nature of the marine environment with its high level of "inter-connectedness" suggests that it is best managed through an ecosystem approach²⁶ rather than on the basis of national boundaries and jurisdiction. Quite simply, fish and marine pollution know nothing about the boundaries that have been established in the sea by humankind. As Lawrence Juda has observed:

Despite the fact that new artificial boundaries, such as those for an EEZ, have been provided for in the 1982 Law of the Sea Convention, the convention itself recognized that such demarcation had limited utility and that ultimately we will have to come to terms with the operation of natural systems which follow laws of their own, disregarding those made by human beings.²⁷

The process of maritime cooperation for protection of the marine environment is institutionalised in the Regional Seas Programme of the United Nations Environment Programme (UNEP). In theory this programme provides a framework for cooperation on marine environmental management, including sustainable resource development, but in practice it has only had marginal success. The full benefits in terms of meaningful cooperation have not been realised as they

25. http://www.dpie.gov.au/resources.energy/energy/apec/ewg_background/objectives.html

26. Kenneth Sherman, "The Large Marine Ecosystem Concept: Research and Management Strategy for Living Marine Resources," *Ecological Applications*, 1, 1991, pp.349-360.

27. Lawrence Juda, *International Law and Ocean Use Management: The Evolution of Ocean Governance*, London, Routledge, 1996, pp 319-320.

depend heavily on the political commitment of participating countries. An East Asian Seas Action Plan has been adopted for the waters of Southeast Asia through the Coordinating Body for the Seas of East Asia (COBSEA) but there has been rather less progress with cooperation in Northeast Asia. In the latter region, there is "little or no international cooperation in the field of marine conservation and management,"²⁸ and "few or no networks of scientists and managers."²⁹ However, progress is now being made with the Northwest Pacific Region Action Plan (NOWPAP) of the UNEP Regional Seas Program. Objectives of NOWPAP include monitoring and assessing the state of the regional marine environment, creating an information base, integrating coastal area planning, and establishing a cooperative legal framework.³⁰

A cooperative programme that appears to be successful is the Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Sea administered from Manila. It is focused on land-based marine pollution issues with integrated coastal management demonstration projects in Batangas Bay, Philippines, and Xiamen, China, as well as environmental issues arising in the Strait of Malacca. The initiative involves some eleven countries and is supported by the Global Environmental Facility, the United Nations Development Programme and the International Maritime Organisation.

Marine Scientific Research

States have a strong incentive to cooperate in undertaking marine scientific research in regional oceans and seas. Marine systems are inter-connected and it is quite beyond the capacity of anyone country to acquire all the data necessary for the effective management of its

28. Graeme Kelleher, Chris Bleakley and Sue Wells (eds), *A Global Representative System of Marine Protected Areas*, Vol.III, Washington D.C., The World Bank, pp.120-121.

29. *ibid.*, p.107.

30. Stanley B. Weeks, "Existing Maritime Cooperation Arrangements in the Asia-Pacific Region: Maritime Safety, Law and Order at Sea, and Marine Environment," Paper prepared for CSCAP Maritime Cooperation Working Group meeting, Kuala Lumpur, 17-18 November, 1998, p.6.

offshore areas and the sustainable development of their resources. Chapter 17 of Agenda 21 agreed at the 1992 UN Conference on Environment and Development (UNCED) deals with regional and subregional cooperation for the protection of coastal and marine environments.³¹ It is a major piece of international "soft law" that stresses the importance of consultation and coordination and calls for support for "centres of excellence" in integrated coastal and marine management.³² It notes with regard to marine scientific research that:

States should use existing subregional and regional mechanisms, where applicable, "to develop knowledge of the marine environment, exchange information, organise systematic observations and assessments, and make the most effective use of scientists, facilities and equipment."³³

Chapter 17 of *Agenda 21* also notes the vulnerability of the marine environment to climate and atmospheric changes and that the rational use and development of coastal and marine areas require better information on the present state of these systems and the ability to predict future conditions.³⁴ Furthermore, some regional countries are particularly vulnerable to weather- and climate-induced natural disasters, such as tropical storms, floods and tsunamis, as well as potential for climates to change and sea levels to rise in the longer term. The capability for the region to deal with these phenomena would be markedly enhanced by capacity building and cooperative research and data exchange. With regard to Southeast Asia, a senior regional marine scientist has noted that:

The main obstacles to the formulation and implementation of programmes for marine research in Southeast Asia are still the

31. UN Conference on Environment and Development (UNCED), Chapter 17: Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of their Living Resources. In *Agenda 21*, UNCED, Rio de Janeiro, 3-14 June 1992.

32. *Agenda 21*, Paragraph 17.17.

33. *Agenda 21*, Paragraph 17.115

34. *Agenda 21*, Paragraph 17.97

shortage of funds for research, low salaries for staff, the lack of access to needed technologies, weak technical support infrastructure, poor public appreciation of coastal resources and environment, and the relatively small number of researchers trained in promoting an integrated management approach.³⁵

Major programs for the research and monitoring of the world's oceans and seas are carried out under the auspices of the Intergovernmental Oceanographic Commission (IOC) and the World Meteorological Organisation (WMO). The Global Ocean Observing System (GOOS) is now the major global entity for monitoring, modeling and forecasting the state of the world's oceans and seas. GOOS is supported by the United Nations Environment Programme (UNEP) and the International Council of Scientific Unions (ICSU), as well as by the IOC and the WMO. GOOS emphasizes the close link between oceanography and meteorology. All coastal states are encouraged to participate in its programmes with partnerships, where possible, between developed and developing countries. The IOC Sub-Commission for the Western Pacific (WESTPAC) is responsible for the implementation of GOOS in the Asia Pacific region. A regional component, the North-East Asian Regional-GOOS (NEAR-GOOS) was established in 1994 and one of its aims is to share the data observed in the marginal seas surrounded by Russia, China, Korea and Japan.³⁶ Some other regional marine science programs exist, including the ASEAN bilateral programmes with Australia and Canada.

Maritime Security Cooperation

The 1990s have seen the emergence in the Asia-Pacific region of new processes of economic and security cooperation.³⁷ These include

35. Miguel D. Fortes, "Marine Scientific Research in the Philippines: Status, Problems and Prospects" in Sam Bateman and Stephen Bates (eds), *The Seas Unite: Maritime Cooperation the Asia Pacific Region*, Canberra Paper on Strategy and Defence No.118, Canberra, Strategic and Defence Studies Centre, Australian National University, 1996, p.145.

36. Keisuke Taira, "Message from Chairman," *WESTPAC Information*, No.4, May 1996, p.1.

37. A collection of essays on the prospects for promoting regional cooperation

"first track" regional initiatives, notably the APEC and the ASEAN Regional Forum (ARF), as well as "second track" forums, such as the Pacific Economic Cooperation Council (PECC) and the Council for Security Cooperation in Asia-Pacific (CSCAP). Maritime cooperation features on the agenda of these forums either due to its potential contribution as a CSBM (in the ARF and CSCAP), or for reasons associated with the facilitation of seaborne trade (PECC and APEC), or the management of marine resources and marine environmental protection (APEC).

The ARF was established by a decision of the ASEAN Post-Ministerial Conference in 1993 as a forum for the discussion of Asia Pacific regional security issues. The inaugural meeting of the ARF was held in Bangkok in 1994 with annual meetings thereafter. Confidence and security building has been high on the forum's agenda, but the emphasis has been "on generalised, non-confrontational "trust-building," not concrete problem solving or a specific program of action."³⁸ While a "support group" on CBMs has been established within ARF, "measures that might serve to actually constrain military forces and operations are not under serious consideration."³⁹ The following CBMs, with a maritime flavour, were specifically identified at the meeting of the ARF in Brunei in 1995:

- maritime information data bases;
- cooperative approaches to sea lines of communication, beginning with exchanges of information and training in such areas as search and rescue,⁴⁰ piracy and drug control; and
- establishment of zones of cooperation in areas such as the South China Sea.⁴¹

on economic and security issues in the Asia-Pacific region is available in Andrew Mack and John Ravenhill (eds), *Pacific Cooperation: Building Economic and Security Regimes in the Asia-Pacific Region*, St. Leonards, Allen & Unwin, 1994.

38. James L. Lacy, 'Stonework or Sandcastle? Asia's Regional Security Forum', *IDA Paper P-3110*, Institute for Defence Analyses, Alexandria VA, July 1995, p.S-1.

39. *ibid.*, p.26.

40. As an initiative from ARF, regional meetings on Search and Rescue have been held in Honolulu and Singapore.

41. *Chairman's Statement of the Second ASEAN Regional Forum (ARF)*, 1 August 1995, Bandar Seri Begawan, Annex B.

The ARF has many supporters and a few critics. The United States and Japan have been particularly frustrated by the slow pace and lack of focus but to some extent this must be appreciated as a manifestation of the "Asian way" which embodies a slow and tangential approach.⁴² One critic of the ARF has suggested ways in which the forum may move beyond just being a "talking shop". These are firstly, multilateral cooperation in external law enforcement and order maintenance, especially in the maritime environment, and secondly, dispute management through the sponsorship of technical/legal research, arbitration, mediation, and negotiation.⁴³ The examples where the latter approach is applicable are primarily in maritime areas, particularly the South China Sea, and the Indonesian-led workshops on Managing Potential Conflicts in the South China Sea are making good progress in this regard.

The ARF is starting to move specifically into the area of maritime cooperation. The fifth meeting of the ARF in Manila in July 1998 invited the United States and Thailand to co-chair an ARF Maritime Specialist Officials Meeting (MSOM) in Honolulu in November 1998 in conjunction with a meeting of the Intersessional Support Group on Confidence Building Measures (ISG on CBMs). The purpose of the MSOM was to consider and discuss ways and means for the ARF to add value to existing activities in the areas of maritime safety, law and order at sea, and protection and preservation of the marine environment. The scope of the recommendations arising from the meeting was very broad. They included domestic Y2K efforts to prevent marine casualties, information sharing about sub-standard vessels, oil spill response arrangements, measures to minimize the generation of shipboard waste, maritime law enforcement (particularly the control of piracy), marine information data exchange and the ratification of maritime conventions. These recommendations were subsequently considered at a further meeting of the ISG on CBMs in Bangkok in March 1999 that agreed it would continue considering maritime cooperation, especially in the CBM context, and the Tokyo, anti-piracy efforts and the ratification of various maritime conventions warranted specific monitoring by the ARF.

42. Lacy, *op.cit.*, p.29.

43. *ibid.*, pp.41-42.

The major forum specifically for naval dialogue and cooperation is provided by the Western Pacific Naval Symposium (WPNS).⁴⁴ The first WPNS meeting was held in Sydney in 1988 and this has been followed by meetings at two yearly intervals - in Bangkok in 1990, in Honolulu in 1992, in Penang in 1994, in Tokyo in 1996 and in Seoul in 1998. The WPNS brings together leaders from the navies of the Western Pacific to discuss issues of common concern, including law of the sea and SLOC security. Its membership comprises the navies of the ASEAN countries, Japan, Papua New Guinea, China, Republic of Korea, Australia, New Zealand, and the United States. The Penang meeting agreed to extend full membership status to France (on receipt of an appropriate application) in view of French Territory in the South Pacific but observer status only to Canada and Chile - two countries which had expressed interest in joining the WPNS.⁴⁵

The main thrust of the WPNS has been not multilateral naval operations, which would be too sensitive,⁴⁶ but the harmonisation of existing procedures. A tangible outcome from the WPNS meetings has been a series of subordinate workshops which have led to the development of a Maritime Information Exchange Directory, a WPNS Tactical Signals Handbook, a WPNS Replenishment at Sea Handbook and planning for the conduct of a Command Post Exercise (CPX) to help the development of common doctrine and publications.⁴⁷ Recent meetings of the WPNS are understood to have concentrated largely on civil responsibilities (marine safety, search and rescue, disaster relief, protection of the marine environment, etc) because these were "safer" issues for the forum to consider. This is despite the fact that in most Asia-Pacific countries, agencies other

44. Dick Sherwood, "The Navy and National Security: The Peacetime Dimension," *Canberra Paper on Strategy and Defence No.109*, Strategic and Defence Studies Centre, Australian National University, Canberra, 1994, pp.61-64.

45. *4th Western Pacific Naval Symposium, Summary of Proceedings*, compiled and edited by CDR Mat Taib Bin Yassin, LCDR Azhari Bin Abd Razak, LCDR Zulkifli Bin Abu Bakar, and LT Syed Hilmi Bin Syed Abdullah, all of the Royal Malaysian Navy.

46. For a discussion of the issues which inhibit multinational naval cooperation in the Western Pacific see Sam Bateman, 'Build a WestPac Naval Alliance', *U.S. Naval Institute Proceedings*, January 1993, pp.77-82.

47. For a fuller discussion of the activities of the WPNS see Sherwood, *op.cit.*, pp. 61-64.

than navies generally have responsibility for these matters. It is also apparent that navies generally have a preference for bilateral cooperation and many ARF countries were not comfortable about having military and naval activities considered in a multilateral forum.

Turning to "second track" activities, CSCAP has established a working group to look specifically at maritime security cooperation in the Asia Pacific region. This group has adopted a broad view of security and is taking onboard a range of small "s" security issues, such as marine safety, resources conservation, coastal zone management and unlawful activities at sea (e.g. drug smuggling, illegal population movements, piracy), as well as more conventional maritime security issues. These maritime activities are regarded as excellent vehicles for developing the habit of cooperation and the concept of common security in the region.

A major achievement of the CSCAP Maritime Cooperation Working Group has been the development and promulgation of proposed Guidelines for Regional Maritime Cooperation.⁴⁸ These are a set of fundamental, non-binding principles to guide regional maritime cooperation and to ensure a common understanding and approach to maritime issues in the region. Developing the Guidelines was not without difficulty, particularly as several countries were concerned that some of the guidelines could imply a significant abrogation of their claimed sovereignty at sea. But it was significant that, after several meetings on the Guidelines, agreed forms of words were devised to allow a proposal to go forward for possible consideration by the ARF. The Guidelines were considered by the MSOM in Honolulu in November 1998 and again at the ISG on CBMs in Bangkok in March 1999 but apparently will not be taken any further.

Future Prospects

This survey of maritime cooperation in Asia Pacific has revealed that there is a lot going on with maritime cooperation in the region

48. The Guidelines for Regional Maritime Cooperation are available on the AUSCSCAP website at: <http://coombs.anu.edu.au/Depts/RSPAS/AUSCSCAP/Guidelin.mcw.html>

but what is less certain is the extent to which the cooperation has real economic or political benefit for the future of the region. Some of the cooperative activities have the appearance of "talking shops" that lead to little action or implementation of the ideas that are discussed. There is a particular problem also with translating issues down to an operational or practical level. Issues are often discussed at the "head office" level by senior officials with no migration of ideas to a working level. "Second track" forums have a particular role to play in spreading awareness of the problems and potentially identifying solutions that may be too sensitive or embryonic for consideration at a "first track" level.

The current system of marine management and resource exploitation in Asia Pacific is based mainly on national rights and obligations with some tentative first steps towards regional cooperation. It is ineffective because of the number of overlapping claims to maritime jurisdiction, the lack of agreed maritime boundaries, and countries acting largely in their own self interest. In East Asian waters in particular, a system of unilateral EEZs and sovereign resource rights is unlikely to provide an effective system of marine environmental management.

The problems with maritime sovereignty disputes and marine management will continue, with consequent risks to national security, unless a new emphasis is given to maritime cooperation to replace the current management mindset based on sovereignty, unilateral rights, and agreed maritime boundaries. This may include some or all of the following:

- a functional approach to resource management whereby sovereignty is set aside and resources are managed and exploited according to their own special demands, conservation needs, and optimal utilisation;
- joint development of particular resources (such as the Timor Gap Treaty between Australia and Indonesia for developing the hydrocarbon resources of a disputed area in the Timor Sea);
- extension of the joint resource zone to possible joint EEZs which would allow each country to participate in the economic benefits while spreading the costs of environmental management; and

- joint maritime surveillance, patrols and resource protection operations by neighbouring countries in areas of overlapping or adjacent jurisdiction (the Treaty of Niue in the South Pacific is an example of such an arrangement).

Seaborne trade, the protection of shipping and the security of SLOCs stand out as common interests of most Asia-Pacific countries that may lead to naval cooperation becoming more of a reality. In many ways, international maritime commerce is the classical multi-lateral maritime security interest. Its protection always involves at least two countries (i.e. the exporter and the importer), and perhaps a third (i.e. the Flag State of the ship carrying the cargo). Historically, as we have seen with convoy operations in two world wars, the development of NATO maritime doctrine, and arrangements for the naval control and protection of shipping (NCAPS), it has provided the fundamental rationale for multinational naval cooperation. It also provides the most basic demonstration of how a nation's maritime security interests extend beyond its own waters (e.g. the interest of Japan in the security of SLOCs in Southeast Asian waters).

Barriers to Cooperation

A number of major barriers to maritime cooperation exist in the Asia Pacific region. The first is strong adherence to independence and sovereignty in the region with regional countries generally reluctant to agree to cooperative activities if they appear to be compromising or qualifying national sovereignty or sovereign rights. This restraint is particularly significant in the maritime domain with the extended jurisdiction allowed by UNCLOS and numerous overlapping or conflicting claims to offshore areas, islands and reefs. Secondly, there is the lack of capacity of many regional countries to participate on an equal footing in cooperative processes. Such countries may be reluctant to participate if they are going to be dominated by "senior partners". A corollary of this is the reluctance of major powers to participate in multilateral cooperative activities if there is a risk of the smaller countries "ganging up" against them. Thirdly, there is the lack of funding and resources to implement cooperative strategies, and lastly, there are the lingering differences between some

pairs of regional countries (e.g. Korea and Japan, Malaysia and Singapore) that inhibit cooperation.

Prospective Areas of Cooperation

The following are some ideas about maritime cooperation that could be initiated or progressed further:

- **Naval Cooperation.** The good progress already made by the WPNS should be recognised and encouraged politically. This may help overcome some of the conservatism that is apparent in the forum at present and introduce a more innovative approach to naval cooperation based on a region-wide view of security rather than separate national views. Non-contentious multilateral naval exercises could be considered (with themes such as search and rescue, naval control of shipping, mine counter-measures, etc.)
- **Maritime Information Exchange and Data Base.** A data base should be set up to coordinate and distribute open-sourced maritime information, including marine scientific data. First steps could include the compilation of a list of the types of information that would be useful, the possible sources of data, and agreement on the area (or areas) to which the information exchange regime would apply. It is understood that China proposed the creation of a Maritime Information Data Center to the recent ARF ISG on CBMs. This would be located within its National Marine Data and Information Service but nothing is happening with this proposal until China provides more information.
- **Cooperative Marine Scientific Research.** This would be useful to facilitate the management of regional seas, to enhance the safety of navigation, to reduce the risks of maritime natural hazards, and to support the ecologically sustainable development of marine resources. The capacity of many regional countries is lacking in this area and there is further scope for the involvement of developed countries in capacity building activities. On the experience of the South China Sea Workshops led by Indonesia, this may even be possible in sensitive areas where

- there are overlapping claims to maritime jurisdiction.
- **Maritime Safety.** Maritime safety standards are very uneven across the region at present and many countries lack the capacity to implement appropriate standards, particularly in their local coastal fleets. Accidents to inter-island vessels in Indonesia and the Philippines continue to claim a large loss of life. Liaison and technical cooperation on maritime safety warrants greater attention both in specialist and political forums.
 - **Shipping and Seaborne Trade.** While AMETIAP, the several APEC working groups and PSC are all effective demonstrations of regional cooperation, maritime transportation still offers considerable potential for further maritime cooperation and confidence building. Cooperative activities for the protection of sea lines of communication (SLOCs) are a potential maritime confidence-building measure. Cooperation is also essential for the mitigation and prevention of ship-sourced pollution, including arrangements for responding to the major oil spills that may result from maritime accidents and monitoring oil spills in open waters from routine tank cleaning and ballasting operations.
 - **Maritime Education and Training.** Multi-disciplinary programs in maritime education and training could bridge the gap in oceans management between different countries and different sectors of activity. Inputs would be appropriate from oceanography, geography, environmental science, defence, economics, social studies, law and public policy. Intensive workshops and short courses may be more convenient and appropriate than long-term programs.
 - **Law and Order at Sea.** The incidence of piracy in parts of the region, particularly the hi-jacking of ships and their cargoes, as well as other illegal activities at sea, suggest the importance of cooperation to preserve law and order at sea. Agreed procedures between adjacent or neighbouring countries and the exchange of information are all possibilities. The Regional Piracy Centre (RPC) maintained by the International Maritime Bureau in Kuala Lumpur collates information but is not an enforcement agency.
 - **Maritime Conventions.** Numerous major conventions now exist covering the regulation of shipping and seafarers, marine

safety, and the protection of the marine environment. Some of these are not widely ratified or adhered to in the region and there is scope for cooperation between regional countries to further regional implementation of these agreements, including assistance to the countries that lack the capacity to implement such agreements. In some instances, regional treaties and agreements may be appropriate to supplement the international ones.

- **Joint Development Arrangements.** While several examples of joint development arrangements already exist in the region, these are all bilateral and for hydrocarbon exploration and exploitation. There is scope for extension of the concept to a multilateral basis and to other functional areas, including possible joint areas of EEZ. Some of the projects being undertaken by the South China Sea workshop process appear to be heading in this direction.
- **Oceans Policy.** The concept of integrated coastal and marine zone management arises from the jurisdictional changes in the law of the sea, the expansion of economic activities at sea, concern over conflicts of interest between different uses of coastal and sea areas (i.e. navigation, fishing, mining, dumping, tourism, recreational, etc), and the notion of ecologically sustainable development (ESD). At the national level, the idea of integrated marine management has led in some countries, including recently in Australia, to the development of national Oceans Policy.⁴⁹ The wider adoption of a coordinated national approach to oceans management would likely facilitate greater preparedness to cooperate with other countries in multilateral oceans management programs.

Conclusion

The importance of maritime cooperation in Asia Pacific flows from the complexity of the regional maritime environment, the importance of maritime issues and the propensity for illegal activities

⁴⁹ *Australia's Oceans Policy*, Canberra, Environment Australia, December 1998.

and disputes at sea. The objectives of maritime cooperation are twofold:

- firstly, to contribute to regional stability by easing tensions and reducing the risks of conflict; and
- secondly, to help promote a stable maritime regime in the region with the free and uninterrupted flow of seaborne trade and nations able to pursue their maritime interests and manage their marine resources in an ecologically sustainable manner in accordance with agreed principles of international law.

A stable maritime regime requires comprehensive dialogue and cooperation between regional nations on the specific matters of common concern in the maritime environment. This is far from this situation at present with many examples of disputed claims to sovereignty in the region, unresolved maritime boundaries, potentially restrictive interpretations of freedoms of navigation, widespread illegal fishing, illegal population movements, drug smuggling, and frequent occurrences of piracy in several areas.

Maritime cooperation is a significant regional confidence and security-building measure. It covers many different fields (e.g. navies, the management of fisheries, marine safety, environmental protection, marine scientific research, the mitigation of maritime natural hazards, and so on) and between many different disciplines. While there are many different forms in which maritime cooperation is being developed at present, good communications are important to ensure that maximum political and strategic benefits are obtained. Multi-disciplinary programs in education and training could be very useful in helping to bridge the gap in ocean and marine management between different countries and different sectors of activity.

Concerns over the risks to the marine environment posed by shipping and the increased shipping traffic in the region, including the carriage of hazardous cargoes, will likely lead to more extensive international, regional and national regulation of shipping. One probable result is that the freedom of navigation through international straits and archipelagic waters is likely to become more restricted as coastal states seek to extend their control over adjacent waters on environmental grounds. Resources are becoming scarcer and there is

increased urgency in the search for new resources offshore. The resource self-sufficiency of most countries is declining with increased dependence on imports and greater vulnerability to the disruption of seaborne trade. These are worrying trends that all highlight the importance of maritime cooperation and confidence-building in Asia Pacific.

PART VI

CONCLUSION

SUMMARY OF DISCUSSION

William M. Carpenter

Professor Dalchoong Kim made the opening remarks at the Opening Ceremony on 6 April. He reminded the assembly that the sea continues to be highly important, as a source of food and minerals. The sea lines of communication (SLOCs) are the sea lanes used in peace and war, for world commerce and international security. Economic progress in use of the sea continues, but there are problems, such as disputes over claims to islands, contested international boundaries in the sea and maritime pollution. Conferences on the sea lanes have been held since the early 1980s, and this conference continues examination of the threats to the sea lanes, seeking a peaceful SLOC regime for the 21st century.

Admiral (Ret.) Maengkee Lee, the honorary conference co-chairman, welcomed all participants to the conference. He spoke of the uses of the SLOCs for transportation and communication, for the benefit of all. The South China Sea is believed to contain sources of oil and natural gas, and there are conflicting claims to ownership of the islands and the sea areas in this important body of water. The sea lanes that pass through the South China Sea are important to all trading nations. He said that this conference is timely on the eve of the 21st century, and that we should all embrace the concept in use of the sea that the ASEA Regional Forum has been using, in promoting operation among nations.

Admiral Soo-Yong Lee, Chief of Naval Operations of the ROK Navy, congratulated the participants in the conference for making a

significant contribution to preparations for entering the 21st century. He noted that there is a high possibility for disputes, as the world's land area is full, and thus there is a quest for the resources of the sea. There is now a naval arms race in East Asia, along with competition for resources from the sea. The navies being acquired need economic support, and the sea can help provide this. He urged cooperation among the nations, for overall prosperity for the future.

The keynote speech was delivered by Ambassador Sang-Seek Park, Chancellor, IFANS. He said that there is now a new Asia-Pacific maritime order for the 21st century, important because the Pacific Ocean amounts to fifty percent of the world's oceans. He proposed three basic objectives: First, to preserve the sea's resources in food and minerals. The take of fish stocks is now at the maximum yield, given the goal of preserving future sources. The Extended Economic Zones (EEZs) were created in the hope that the nations would conserve resources, but the concept has not worked as well as hoped. A new regime for seabed mining is critical for the future.

Second, Amb. Park stressed the objective of protecting the marine environment. Pollution is a continuing problem. We should use technology to solve this and other problems, and legislation is needed to enforce this conservation measure. Third, is the objective of protecting the SLOCs. Problems remain regarding right of passage along the sea lanes. In the sea areas of Southeast Asia, especially, there is the ongoing threat of piracy. Some 60 percent of piracy worldwide occurs in this area, and the costs in economic loss and danger to the lives of seafaring people are high. All life in the world is dependent on the oceans, and thus the quest should be to fashion an era of peace.

At the First Session of the conference, Professor Stephen P. Gibert of Georgetown University, USA, gave the first paper. He gave an overall assessment of East Asian-Pacific security, stating at the outset that there have been problems, but presently the area is more stable than in the past. The collapse of the Soviet Union ended U.S.-Soviet and Soviet-Chinese tension, but with the coming rise of China as a major power in the region, there may be future times of tension. Prof. Gibert discussed five subjects: the relationships among the great powers in the Pacific; the immediate threat to peace (North-South Korea tension, with an added nuclear threat); the China-Taiwan situ-

ation; the present and future U.S. policy for the region; and recommendations for a more durable security regime.

As to relations among the great powers, the decline in Sino-Soviet relations led to closer U.S.-China relations. President Jimmy Carter played "the China card" in giving diplomatic recognition to the PRC. But today there is no motive for strong U.S. ties with China; rather, there will be U.S. problems with China. In U.S.-Japan relations, there are a few stresses, but the alliance remains strong. Former Prime Minister Hosokawa wrote an article suggesting that U.S. military forces should go home. There was little change in Japan-China relations after the Soviet collapse, but Beijing is wary of a new level of Japanese security relations with the U.S. Russia is no longer a regional threat, and Moscow now has better relations with China and Japan. On the Korean peninsula, tension continues, and the problem of preventing North Korea from developing a nuclear weapon continues, along with the threat of missiles from North Korea. The U.S. and South Korea have some disagreement about the "sunshine policy" of President Kim Dae Jung with respect to North Korea.

The situation across the Taiwan Strait is dangerous. The U.S. sent carriers to the vicinity of Taiwan when the PRC was firing missiles into the vicinity of Taiwan in 1995 and 1996. A 1999 report from the Pentagon to the Congress said that by 2005 the PRC threat will be greater.

As to American security policy and strategy for the region, there is presently no policy supported by the American people. The requirement to be able to deal with two-major regional contingencies is not a strategy-only a force-level statement. The Clinton policy is not innovative, but just a continuation of past policies. The U.S.-Japan security agreement is not like NATO, because Japan is not obligated to defend U.S. interests. The overall U.S.-Japan relations are not as good as some maintain.

In Korea, in 1977, President Carter tried to remove the U.S. forces, but was persuaded not to. Today, there is some question as to why South Korea cannot defend itself.

When President Clinton went to China in 1998, he stated the "three noes" of U.S. policy regarding Taiwan (no independence, no "two Chinas," no membership for Taiwan in international bodies for which statehood is required). This gave comfort to Beijing and

angered the U.S. Congress.

As NATO gets ready to meet in Washington for its 50th anniversary, Russia is angry. Ballistic missile defense is now a contentious issue, raising the question of whether the U.S. will repudiate the ABM Treaty. In Asia, the U.S. has problems with China over human rights, about possible nuclear espionage, and over illegal gifts of campaign funds. When it comes to U.S. foreign policy, there is strong partisanship in the U.S. Congress. In 1967, Richard Nixon said, "Asian hands must shape Asian futures," which would reduce the American role. What is needed is a new multilateral security regime. The present dependence in Asia on the U.S. is not appropriate for the 21st century.

Professor Geoffrey Till of the U.K. Joint Services Command and Staff College, spoke on the navies in the Asia-Pacific area in a revolutionary age. He stated that the changes since the end of the Cold War have affected the navies of the age. It is no longer true that war is the mother of invention; today, and in the future, civilian/industrial change affects all branches of the military. The new DD-21 is an example of this impact. Information technology links ships, aircraft and submarines in a new networking that increases the efficiency of the group of forces.

As to the impact of technology on the maritime environment, it is not all good. For example, pollution is a serious problem. The cost of technology raised the costs of ships and weapons. The result has to be smaller numbers, but with more capability of each unit. Today's navies are better able to project power ashore, but in this littoral environment, the threat to the ships is greater.

Change is new, but also old; since the 16th century, there have been ten dramatic changes. But change is now sometimes dependent on political or social judgments of decision-makers. As to operational change, and advanced technology, change may be more the result of the changed structure of international politics than of advances in military technology. Globalization will influence navies in the region, affected by trends that also affect other navies—maybe this will encourage cooperation between navies.

Naval doctrine is a force multiplier, and it demands looking at doctrines of the other services, for conducting joint operations. Navies around the world have drawn some five conclusions from

this era of change: (1) keeping the edge; (2) assuming control, projecting power ashore; (3) likely expeditionary future; (4) growing maritime responsibilities; and (5) into maritime operations other than war. And as to the implications for navies of the Pacific Rim, there are three: (1) gaining and exploiting sea control; (2) projecting maritime power; and (3) good order at sea.

We are now in a new era. In the old era, the emphasis was on the struggle between great maritime powers, but in the new era, it is more likely that there will be conflict between large and small navies, probably in littoral waters. There are great varieties of operations and thus it is not easy for the navies in the Asia-Pacific region to set their future priorities.

The first paper in Session Two was by Professor Joon Soo Jon, Sogang University, ROK, who spoke on the problems of port development competition among the ports of the Far Eastern region and the criteria for selecting the hub port of the region. In the past, ports traditionally did "port business," handling goods. Now we have an integrated logistics concept and globalization of business, with a concept of "goods distribution." There is strong competition among Singapore, Hong Kong, Kobe, Shanghai and Pusan. The concept of a "hub port" helps globalization, with better handling of large ships and cutting the costs of handling goods. Governments are developing policies to intensify logistics competition. This paper contends that Pusan and Kwangyang are the most suitable for a hub in North-east Asia. Either would be a starting point to the Trans-China Railway and the Trans-Siberian Railway.

Vice Admiral Hirotaro Hayashi, JMSDF (Ret.), Japan, presented the second paper in Session Two, on "The Present and Future of Shipbuilding." Ships are ancient; they began in Egypt about 4000 B.C. Ships have been used for peace and war: transporting good and as platforms for arms for fighting other ships. In the first half of this century, the United States and Europe dominated shipbuilding, but after World War II, Japan learned shipbuilding quickly, and from 1965 to 1998, secured 40 percent to 50 percent of the world's shipbuilding market. In the 1990s, Korea moved up rapidly to compete with Japan. China has been trying to get at least 10 percent of the world market. Competition will continue, with a focus on productivity of design, construction and finishing, aiming for fast production to cut costs.

Globalization of information will accelerate globalization of technology. A major problem lying ahead is the fluctuation in national currencies; a stable world economy is needed for progression and growth in world shipbuilding.

There are new conditions to confront: besides the focus on size and speed of ships is the problem of pollution—of both rivers and oceans. Shipbuilding is not an industry of influence, making it more reactive than proactive. Nevertheless, shipbuilders will try for faster, more efficient ships, while looking to the next generation of power systems, for more efficient ships manned by smaller crews. As shipbuilders look for better ways to build ships, technology will increasingly come from other fields of development.

The final paper in Session Two was by Mr. Yi-Ching Chern, SLOC Study Group, Taiwan, on "Taiwan ENC Production and Applications." There are two versions of ENC (Electronic Navigation Chart) developed by CHNOO (Chinese Naval Hydrographic & Oceanographic Office), for different requirements. The International ENC follows the IHO (International Hydrographic Organization) and IMO (International Maritime Organization) specifications, developed by the Ministry of Transportation and Communications, in coordination with the development of ECDIS (Electronic Chart Display and Information Systems). The objective is to strengthen regional navigation safety. In 1998, CNHOO developed the first proto-type Taichung Harbor IENC data. This year, CNHOO will concentrate on IENC data verification and application for country code and agency code of ENC products for the IHO. For military and smaller craft, another version of ENC, a Chinese vector electronic navigation chart system (CVENCS), which is cheaper and user-friendly, will be used.

In Session Three, the first paper was by Rear Admiral Sumihiko Kawamura, JMSDF (Ret.), on "International Cooperation for SLOC Security." Before the recent economic troubles in East Asia there was economic growth in the region and the nations were linked by a steady flow of shipping. The trend in the future should be to expand on the maritime shipping linkage. But the sea lanes are vulnerable. Vice Admiral Makoto Yamamoto has written that there are six factors which may obstruct the SLOCs:

- (1) Disruption due to maritime accidents or disasters at sea

- (2) Danger due to piracy
- (3) Disruption to the maritime system
- (4) Unilateral declaration restricting specific waters
- (5) Disruption due to regional conflict
- (6) International obstruction which denies use

The first three factors are the result of disasters or crimes which do not mandate a military response. CSCAP (Council for Security Cooperation in the Asia-Pacific) has promoted maritime cooperation, and all parties must play. For SLOC protection, there are the U.S. bilateral alliances (with Japan, Korea, Australia, Thailand, Philippines) and the Five Power Defense Agreement (U.K., Australia, Malaysia, Singapore, New Zealand). The WPNS (Western Pacific Naval Symposium) is also a mechanism for dialogue among regional navies. But it is not quite like the Standing Naval Forces in the Mediterranean.

In reality, conflict deterrence and preservation of peace come from the military presence of the U.S.—the only nation with major strength.

There are useful naval exercises, bilateral and multilateral, in such areas as Hawaii, Japan, Korea, Australia and The Philippines. But there are some constraints: Japan has legal restrictions, could not send forces into the Gulf War (but did do minesweeping after the conflict phase). Another constraint is the lack of adequate exchange of military publications.

In Northeast Asia there has been recent progress in naval cooperation between Japan and Korea. In 1997, the U.S. and Japan reached an agreement increasing Japan's naval cooperation, for example, to help enforce a blockade. More regional cooperation is possible, in a "triangular" mode: Japan and Korea, with the U.S. at the "top" of the triangle. Naval roles can be executed according to naval capabilities, with the U.S. providing sea control from the Pacific to the Indian Oceans, while regional navies do protection of shipping, surveillance, search and rescue, and law enforcement. In all these roles, the U.S. enforces credibility by maintaining a forward presence—visible deterrence. This overall role cannot be taken over by Russia, China, Japan or India. According to a statement by the U.S. CNO, there are four basic tenets to the U.S. role: (1) Prevention, (2) Deterrence, (3)

Crisis resolution, (4) War termination. Australia and Japan have cooperative roles in surveillance and search and rescue, including surveillance beyond the EEZs. These two nations have schools that provide useful training in naval operations.

Vice Admiral (Ret.) Tun Hwa Ko, Society for Strategic Studies, Republic of China on Taiwan, presented a paper on "The Revolution in Military Affairs (RMA) and the SLOCs." There is a long history of change over the centuries of war, but logistics remains important. Therefore, fighting to protect SLOCs is a relevant military role. The RMA is characterized by four types of change:

- (1) Precise, stand-off strikes
- (2) Dramatically improved C4I
- (3) Information warfare
- (4) Non-lethality

Levels of technology in war are relative, from the days of cave-men to the present. In the Gulf War, people at home saw precision weapons in action. In maritime warfare, there have been changes in doctrine, tactics, training, organization, equipment and communications. As to what remains unchanged, there are two schools of thought: one, the material school, seeing revolutionary technological change; and the other, the historical school, seeing strategy essentially unchanged. An illustration of the key role of logistics, there was the defeat of the Persian fleet in 480 B.C., cutting off support of the Persian ground forces. The Greek ships were able to defeat the Persian ships because of technological innovation in the Greek ships. There continues to be hope for technology to give advantage to the side adopting it first.

In conclusion, as to the RMC and SLOCs, some factors of RMA are understood, some not. It is clear that sea routes are not like land routes, in that they cannot be "cut." Ships need no energy to float, but do need energy to move. The carrying capacity of ships makes it impossible to replace sealift with airlift. Logistics still dominates warfare, and undergirding logistics is the necessary economic strength of a nation.

Session Three concluded with a paper by Phiphat Tangsubkul, read by Ms France Lai, SEAPOL, Thailand. The paper was on "Poten-

tial of Conflicts over Resources—Fisheries and Oil/Gas." It can be said that UNCLOS III was a large scale exercise in allocation of resources. The vast ocean spaces became EEZs, and there are problems: people were formerly free to use these areas, but now often not, resulting in a loss of livelihood (for example, the Thai fishermen who lost some of their traditional sea areas). In the 1960s, Germany helped Thailand in developing a trawler fleet, which worked fine for awhile, but as the fish resources decreased, there began to be fights among the fishermen, even to the burning of boats. The EEZs are not always managed well; the fees are not consistent; some fishermen are able to avoid the fees; some boats are confiscated. Overall, the government has a hard time convincing the fishermen that the rules have changed.

As to the oil and gas resources under the seas, there need not necessarily be conflict over extracting them, but in the Spratly Islands, for example, there are ongoing disputes over territorial claims. There can be peaceful agreement on oil and gas, as in the Malaysian-Thai agreement on joint development. In contrast, in the Thai-Cambodia case, there is so far no agreement. Naval patrols are needed to reduce the incidence of the conflicts, but providing such patrols is difficult, given the current naval strengths.

Session Four began with a paper by Dr. Stanley B. Weeks, SAIC, USA, on "Existing Maritime Cooperation Arrangements in the Asia-Pacific Region." SLOCs are of increasing importance in this region; major routes cross the area, passing through critical choke-points. More than 200 ships per day transit the Strait of Malacca. International cooperation is essential. CSCAP has developed "Guidelines for Regional Maritime Cooperation," and has sent the guidelines to the ASEAN Regional Forum. There are five necessary factors requiring attention for SLOC safety:

- (1) Regional national adherence to IMO conventions.
- (2) The Tokyo Memorandum of Understanding on Port State Control
- (3) Regional cooperation in SAR
- (4) Cooperation in marine disaster situations
- (5) Regional cooperation in training

Areas of concern for law and order at sea include: piracy, smuggling, drugs, terrorism, illegal migration, and illegal fishing. For the protection of the marine environment, attention and adherence to the following are needed: cooperation as required by UNCLOS, IMO's major conventions on protection, a major initiative in the Northwest Pacific region (an action plan of the UN), the 1997 UNESCO Plan, the North Pacific Marine Science Organization, the UN/IMO Regional Program for Southeast Asia, APEC, and others. In the CSCAP "Guide-lines," there is a proposal for an unofficial "Track Two" through a Maritime Cooperation Working Group. The paper concluded that:

- (1) Levels of cooperation vary;
- (2) There is potential for more cooperation;
- (3) For law and order, IMO's Rome Convention needs support; and
- (4) the CSCAP Guidelines have laid the groundwork for further progress.

Dr. Anthony Bergin, Australia Defense Studies Center at the Australia Defense Academy in Canberra, presented a paper on "Maritime Surveillance, Enforcement and Information Exchange." The Northeast Asia countries are now more concerned with maritime security than with internal security or land based threats, yet cooperative maritime surveillance and exchange of information are underdeveloped. Surveillance involves a national ability to detect, observe, and notify a coastal state of a critical action or situation. This may be on the surface, in-the air, under the sea or in space. Many sensor platforms may be used. For maritime enforcement, there must be action to apply international or national regulations, but the action must be legal—UNCLOS says that only government ships or aircraft may be used in enforcement. And there are other conventions, e.g., the IMO Convention for SOLAS (from the TITANIC sinking), and the International Convention to Prevent Pollution. In information transmission, technology is now of great assistance, but geography complicates the problem: there are enclosed seas, islands and disputed ocean boundaries. Several studies of this overall problem have been made:

- (1) 1990 - Institute for Strategic International Studies in Kuala Lumpur
- (2) 1993 - Australian analysts
- (3) 1994 - Australian paper at the first ARF In Bangkok
- (4) Commodore Sam Bateman's proposal to CSCAP: -a model for using maritime information
- (5) Another Bateman proposal

Among the areas for cooperation: SAR and anti-piracy. The IMB declared a wider definition piracy, going beyond the usual definition that applied only to attacks on the high seas; IMB included any act of violence against ships, at sea or in port. To aid in the suppression of piracy, a reporting center was established in Kuala Lumpur—a logical place, as about half the world-wide piracy incidents occur in or near the South China Sea. In 1998 the number of attacks was down slightly from 1997, probably from increased awareness and reporting, but showing a disturbing new trend: the incidence of violence increased.

The behavior of China is bad: negligent official responses to piracy incidents in China waters and ports, and failure to report the incidents. By contrast, Malaysia, Singapore, and Indonesia have cooperated in patrolling the local area, and as a consequence, pirates have been prevented from attacking ships in the Strait of Malacca. Overall, however, the intervention by naval ships has been limited to the saving of lives in piracy incidents.

Soon there may be satellite surveillance promoted by the IMB. A new development is a universal automatic identification system (AIS) transponder which could come into use by the year 2000. However, the pirates might be able to tap into the system to find ships to attack. One problem arises concerning naval ships: if they do not carry AIS, could they be easily identified for what they are?

The WPNS (Western Pacific Naval Symposium) has a role in naval dialogue and information exchange. In 1988 Vice Admiral M. Hudson, Australian Naval Chief of Staff, invited his counterparts in the Western Pacific to meet in Sydney, and meetings have since been held in Thailand, Malaysia, Japan, and Korea. The WPNS identified a requirement for structural exchange between naval chiefs. This is not a "track one" process, nor a "track two;" these naval professionals are

able to achieve a consensus prior to the advancement of more formal proposals through national defense agencies.

The last paper of Session Four was by Professor Jin-Hyun Paik, of Seoul National University, Korea, on the subject of "Law of the Sea and Stable Maritime Regime." The LOS can be a good basis for building a stable regional maritime regime, but some doubts exist, such as how to interpret the LOS, and whether all will obey. A LOS problem exists in the presence of two large archipelagic states, and the vital straits and choke-points in the region. The paper took up the following:

- (1) Contribution of LOS to a stable maritime regime
- (2) LOS limitations
- (3) Suggestions to strengthen the maritime regime

The LOS does clarify jurisdictions and rights of passage. As to limits, it does not resolve all issues. Naval activities need attention regarding the maritime regime. The paper concludes that for true stability in the maritime regime, all nations should ratify the LOS, as this would: (1) improve transparency; (2) offer a settlement system; and (3) help bring harmony among nations.

An interesting addition to the agenda for Session Four was an excellent briefing by Dr. Tae-Ho Kim of Korea on the current situation in China.

Session Five began with a paper by Dr. B.A. Hamzah, Director-General of the Maritime Institute of Malaysia, on "Confidence Building Measures in the Spratlys: Need to Manage China." The paper was delivered by Captain Mohd Taib Yassin, Royal Malaysian Navy. Confidence building measures (CBMs) are being tried, but to be effective they must have substance, not be just platitudes. The paper examined the achievement of CBMs, and introduced the concept of Incidents-at-Sea Agreements as CBMs. INCSEAs can be valuable in the South China Sea, especially in the controversies involved in claims to the Spratly Islands. These islands are claimed by six nations, but China preempts all these claims by stating that the entire South China Sea belongs to China. In 1973, China took the Paracel Islands and later came to regard the Spratlys as strategically and economically important—oil and gas deposits are believed to exist under the islands. To prevent further incidents at sea, INCSEAs are

needed, with the general objective of managing the actions and claims of China. A major problem is that China resists multilateral talks among the several claimants; it is more to China's advantage to talk to one nation at a time. China is both reluctant to recognize the claims of others and to leave the places its forces have occupied.

In 1992, there seemed to be some hope for the status quo in the South China Sea, when ASEAN introduced a declaratory policy which included the concept of "no further creeping annexation." But in that same year China declared sovereignty over the entire South China Sea, took Mischief Reef (a Philippine claim), and gave an oil concession to a U.S. Company, Crestone, to explore an area around Vanguard Reef (a Vietnamese claim).

Since CBMs in the South China Sea and the Spratlys have received only lip service, there is a need for trying to extend past successes of INCSEAs to cope with the problems raised by China's actions. INCSEAs are needed for the following reasons:

- (1) There are too many navies with different operating procedures in an enclosed sea.
- (2) Poor communications between navies.
- (3) Overlapping areas of operations which result from conflicting claims.
- (4) Naval protection of certain activities in disputed areas, e.g., "illegal fishing."
- (5) To prevent an accident from being considered a deliberate attack.
- (6) To provide a flexible framework for self-defense.
- (7) To prevent escalation of military conflicts.

A challenge involved is how to deal with asymmetry of power, and with non partners to the agreement. However, it is worth trying for INCSEAs in the ARF CSCAP and other regional forums—seek good communications and go ahead!

Captain Kyung-Rae Min, ROK Navy, IMO, London, presented a paper on "Cooperation in Maritime Safety and Emergency in the Asia-Pacific." IMO facilitates cooperation among nations in shipping, including safety measures. The paper covered SAR, safety of navigation, prevention and suppression of piracy, combating the practice of

illegal stowaways, illegal drug trafficking and illegal migrants by sea. In 1979, the IMO was asked to develop a global maritime distress and safety system (GMDSS). At an April 1979 Pacific Ocean Conference in Seoul, on SAR and GMDSS, and a September 1998 Indian Ocean Conference in Freemantle on SAR and GMDSS, the global SAR plan was completed. For safety of navigation in the Strait of Malacca and Singapore, a mandatory ship reporting system began in 1998. And in the same year, Indonesia's proposal for designation of certain archipelagic sea lanes was adopted by the Maritime Safety Committees (MSC) of the IMO,

To combat piracy, the IMO adopted several resolutions. In 1997 the MSC asked the Secretariat of the IMO to negotiate with nations where piracy was occurring, and in 1998 an IMO mission of experts on piracy in the South China Sea and the Malacca Strait was organized, and visited Manila, Kuala Lumpur and Jakarta. The IMO attacked the stowaway problem by issuing a resolution in 1997, requiring ships to turn over stowaways to proper authorities. A 1998 IMO resolution addressed illegal drug trafficking with a resolution establishing guideline's on: 1) the need to deal in a practical way with the increasing problem of drug traffic; (2) ensuring the movement of innocent cargo; (3) controlling illicit drugs and inhibiting their movement by sea. And on combating illegal migrants by sea, a 1997 IMO resolution invited governments to cooperate and increase efforts to suppress the transport of migrants by sea.

Dr. Sam Bateman, Woloongong University, Australia, presented the concluding paper in Session Five, on "Regional Efforts for Maritime Cooperation—State and Prospect. There is probably no other region where maritime cooperation is so important or more necessary. Currently there is some cooperation. This paper takes a broad view—any cooperative activity associated with interest in the sea or its resources. UNCLOS establishes the importance of cooperation, i.e., to consider the ocean space as a whole. Naval cooperation includes all military activities associated with the sea. Key areas are shipping, seaborne trade and marine safety. There is concern over increased traffic, sub-standard ships at sea and the impact of shipping on the environment. In recent years there have been new international conventions on:

- (1) Pollution (MARPOL) - 1973
- (2) Dumping at sea - 1972
- (3) Safety of Life at Sea (SOLAS) - 1974
- (4) Standards of training and watchkeeping - 1978
- (5) Liability for compensation for damage in connection with carriage of hazardous materials - 1996

In the Asia-Pacific region, there have been few attempts to establish regimes for maritime safety, but there is now some action in progress. In APEC, Economic and Social Commission for Asia and the Pacific (ESCAP) and in arrangements for Port State Control (PSC), with the latter giving attention to sub standard ships, Other Asian forums are engaged in addressing these problems, More cooperation is needed for SAR—APEC does have a web-site.

More than half the world's catch and breeding of fish occurs in the Asia Pacific area. The countries look to their EEZs for fishing. Concern over conservation resulted in APEC's creation of a Fishing Working Group (FWG) and a Marine Resource Conservation Working Group (MRC). Nations looking for oil and gas sometimes seek help from foreign oil companies, e.g., the oil concessions granted by Vietnam and China. An APEC working group could help solve the problems of seeking oil in disputed places.

The UNCLOS requires preservation of the marine environment. The nature of the problem requires an ecosystem approach rather than the basis of national boundaries. The cooperative process is stated in the Regional Seas Program of the United Nations Environment Program (UNEP), and by other coordinating organizations. Cooperation in marine scientific research will help in the overall protection of the environment and for safety at sea. The World Meteorological Organization can help meet the needs for prediction of floods, tidal waves and rising sea levels. And for maritime security, new cooperative efforts are emerging: the ARF, CSCAP, APEC, and more recruiting in the WPNS. For the future, there is much going on, but a key question is whether there is real economic benefit. This paper concludes that a new mindset is needed, to replace the current management mindset based on sovereignty, unilateral rights and agreed maritime boundaries. This could include:

- (1) A functions rather than a sovereignty approach to resource management,
- (2) Joint resource management
- (3) Extension of joint resource zones to possible joint EEZs
- (4) Joint maritime surveillance.

Prospective future areas of cooperation are: naval cooperation, maritime exchange, cooperative maritime research, maritime safety, shipping trade, maritime education and training, law and order at sea, maritime conventions, joint development arrangements and ocean policy.

Closing remarks at the Concluding Session were made by Professor Dalchoong Kim and Dr. Sam Bateman. At each of the five sessions of the conference, there was a lively discussion period of comments on each paper, made by the assigned discussants, with further comments and questions from the attendees at the sessions. Further opportunity for useful and interesting exchanges of views among all participants took place at the opening welcoming reception and at the two dinners at the end of the two days of the conference. It was the consensus of all that the conference had been well-planned and professionally conducted. The conferees look forward to the next SLOC symposium.

INDEX

- 157 Member States 197
- 1972 London Convention 131
- 1990 International Convention on Oil Pollution Preparedness, Response, and Cooperation 131
- 1992 ASEAN Manila Declaration 187
- 200 mile Exclusive Economic Zone 20
- 28th ASEAN Ministerial Meeting 185
- A.375(X) 202
- A.476(XII) 202
- A.872(20) on Guidelines 211
- Achille Lauro terrorism 127
- Aegean dispute between Greece and Turkey 36
- Aegean sea 117
- Aegis 30
- Age of Vasco da Gama 29
- Agenda 21 xiv, xv, 228
- AGM-65 Lasser-guided Maverick 116
- air-hub 43
- AIS 159, 160, 161, 203, 253
- Akbar Torkar 22
- Albright 5
- American-Russian relations 12
- AMETIAP 126, 222, 237
- Amsterdam 64
- An-Ping port 57
- Andaman Sea 110
- Anthony Bergin 252
- Apache (AH-64 A) 116
- APEC Energy Working Group 225
- APEC MRC 224
- APEC MRC Working Group 133
- Archipelagic Sea Lanes 203
- archipelagic sea-lanes passage xvi
- archipelagic waters xvi
- area of search and rescue (SAR) 151
- area-specific regional regimes xvii
- ARF CSCAP 255
- ARF ISG 236
- ARGOS 157
- Article 7 of the 1982 Law of the Sea Convention 187
- ASEAN xvii, 123, 133, 181, 183, 184, 185, 186, 195, 255
- ASEAN 1997 Plan of Action 133
- ASEAN countries 232
- ASEAN Ministerial Meeting 187
- ASEAN plan of Action in Transportation 125
- ASEAN Regional 148
- ASEAN Regional Forum (ARF) 33, 107, 125, 134, 151, 163, 183, 186, 192, 194, 215, 230, 231, 233
- ASEANPOL 128, 129
- ASIA 41

- Asia Minor 117
- Asia-Pacific Basin xvi
- Asia Pacific Economic Cooperation forum (APEC) 130, 133, 220, 222, 224, 230, 237
- Asia-Pacific Naval College Seminar 105
- Asia-Pacific Operation Center 60
- Asia-Pacific region 17, 30, 33, 93, 94, 97, 98, 99, 101, 106, 107, 123, 168
- Asian-Pacific area 9
- Asian-Pacific security 11
- Assembly of IMO 202
- Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP) 221
- Atlantic, Mediterranean and Norwegian Sea 32
- Australia 11, 97, 105, 151, 221, 234
- Australian Defence Science and Technology Organisation 149
- Automatic Identification System (AIS) 158
- B1, Lancer 116
- B2 Spirit 116
- Baltic states 12
- Bangkok 231, 233
- Battle Damage Assessment 21
- Battle of Salamis 117
- beggar thy neighbour" policies 217
- Beijing 4, 5, 8, 12, 30, 245
- Belgium 64
- Berlin Wall 7, 9
- BLOB 87
- boat people xvii
- Bob Dole 14
- Bosnia 26
- boundary disputes 170
- British Navy 117
- Burmese/Thai Border 110
- Bush 8
- C4ISR 20, 21
- Cambodia 110
- Canada 188, 221
- Carat 30
- Caribbean 37, 205
- CARIS GIS 84
- Carter 12
- Carter Government 4
- case of Musashi 25
- case of Sun Tsu 25
- case of the PETRO RANGER 155
- case of the Rotterdam 65
- Celebes Sea 146
- Chakri Naruebet 30
- Chapter 17 xiv
- Charleston port 48
- CHEUNG SON 154
- Chi Yu 115
- China 3, 13, 42, 70, 74, 153, 181, 182, 184, 187, 191, 195, 219, 221, 225, 245
- China card 245
- China's Admiral Chen 31
- Chinese Naval Hydrographic & Oceanographic Office 83
- Chinese Navy Headquarters 83
- Chinese PLA Navy 183
- Chinese ports 67
- Chinese Yellow Emperor 115
- Chinese-American diplomacy 5
- Chinese-Russian alliance 12
- CHNOO (Chinese Naval Hydrographic & Oceanographic Office) 248
- Chonjin agreement 57
- Clinton 12

- Clinton Administration 10, 12
- Clinton Government 13
- Clinton policy 245
- Clinton's policy 13
- CMGR 68
- CNHOO 83, 84, 87, 90
- CNN 116
- COBSEA 132
- Cold War 3, 10, 17, 20, 24, 27, 32, 98, 106, 246
- COLREGS 1972 125
- Command Post Exercise (CPX) 232
- Common Heritage of Mankind xiii
- confidence building measures (CBMs) 96, 100, 163, 179, 180, 183, 184, 186, 191, 194, 195, 236, 254, 255
- Congress 12
- Convention for the Safety of Life at Sea (SOLAS) 220
- Convention on the International Maritime Organisation 145
- convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG) 201
- cooperative marine environmental protection measures 216
- Coordinating Body for the Seas of East Asia (COBSEA) 227
- Corbett 25, 28
- Corbettian "maritime strategy 26
- Council for Security Cooperation in the Asia Pacific (CSCAP) 96, 100, 124, 129, 134, 149, 163, 183, 186, 192, 194, 230, 233, 249, 251, 253
- CSBM 215, 230
- CSCAP forum 150
- CSCAP "Guidelines for Regional Maritime Cooperation" 135
- CVENCS 84, 87, 90, 248
- Czech Republic 12
- Daikok 59
- Dalchoong Kim 243, 258
- Dayun 28
- DCP 105
- disputes over scientific research⁶ and military activities 170
- DMZ 6, 11
- Douglas K. Fleming and Yeuela 47
- drug control 230
- Drug Trafficking xvii, 210
- drugs 126, 135
- DST (double-stack train) 48, 39
- dumping 238
- Dutch East Indies 183
- DWFNs 223
- East Asia 9, 11, 15, 166
- East Asian-Pacific region 7, 14, 15
- East Asian-Pacific security 15, 244
- East Asian region 123
- East Asian security 12
- East Asian Strategic Report 103
- East China Sea 34, 102, 128, 146, 224
- East Germany 7
- East Korea Bay 169
- East sea 146
- ECDIS 87, 90, 203, 248
- ecologically sustainable development (ESD) 238
- Economic and Social Commission for Asia and the Pacific (ESCAP) 220, 257
- EDI 52
- EEZ fishery disputes 170
- Egypt 73
- Eisenhower 116

- Eisenhower Administration 10
- ENC (Electronic Navigation Chart) 84, 90, 203, 248
- ETA 161
- Europe 3, 10
- European markets 51
- Exclusive Economic Zones (EEZs) xiii, 33, 37, 105, 109, 110, 130, 144, 158, 159, 169, 174, 186, 222, 225, 234, 238, 244, 250
- Existential Deterrence 36
- expeditionary capacity 30
- Expeditionary Force 10
- export-related logistics 70
- F-117 116
- F-14 Eagle 116
- F-16 Falcon 116
- F-18 Hornet 116
- F-22 116
- Facilitation Committee 209, 210
- Facilitation Committee (FAL) 198
- Falklands and Gulf conflicts 30
- Far East 49, 71
- Far Eastern Economic Zone 42
- Far Eastern region 43
- Far Eastern Russia 42
- FFA 133
- Fiji 221
- Finland 29
- First World War 23, 25
- Fisheries Working Group (FWG) 223, 257
- Fishing 222, 238
- Florida Keys 19
- Flying Fish-97 32
- Forum Fisheries Agency (1979) 129
- forward-deployed U.S. naval forces 101
- FPBs 37
- FPDA 32, 96
- France 181, 188
- France Lai 250
- Fuqing 28
- Gantry Crane 55
- GDP 12
- General Border Committees (GBCs) 193
- General State 171
- Geoffrey Till 246
- Germany 3, 11, 64, 188
- Global Climate Observing System 165
- Global Environment Facility (GEF) 132, 203
- Global Maritime Distress and Safety System (GMDSS) 199, 200, 256
- Global Ocean Observing System (GOOS) 165, 229
- GPS 87
- Great Power 3
- Greece 188
- Greek City of State 117
- ground- and sea-launched tactical nuclear weapons 6
- Guidelines 233
- Gulf 20
- Gulf area 49
- Gulf of Thailand 35, 109, 111, 146, 151, 216
- Gulf War 21, 98, 105, 116, 249, 250
- Hamzah 254
- Hanoi 182
- Hansin earthquake 55
- Hashimoto 106
- Hawaii 97
- Hayuth 47, 50, 51

- Hayuth & Fleming 45
- Hazardous and Noxious Substances by Sea (HNS) 103, 220
- Heidi Toffler 114
- Hellespont 117
- hi-jacking 237
- Hirota Hayashi 247
- Hokko-Minami terminal 59
- Hong Kong 41, 44, 221
- Honmoku 59
- Honolulu 233
- Huangpu 60
- Hub Port 41, 42, 43, 44, 47, 63
- Hudson 253
- Hungary 12
- hydrocarbons 215
- IAEA 6
- IENC 84, 90
- IFANS 244
- IHO (International Hydrographic Organization) 90, 248
- IHO S-57 84
- illegal fishing 126, 185
- illegal migration 126, 135
- IMO (International Maritime Organization) 124, 125, 126, 127, 130, 131, 132, 133, 155, 156, 159, 160, 161, 171, 201, 204, 205, 207, 208, 209, 214, 248, 251, 252, 255, 256
- IMO anti-pollution conventions 135
- IMO conventions 135
- IMO's Maritime Safety Committee (MSC) 199
- IMO's Rome Convention 135
- incident at sea (INCSEA) 188, 218
- INCSEA 180, 183, 189, 190, 191, 192, 193, 194, 254, 255
- INCSEA agreements 32
- Indian Ocean 100, 106, 118, 205
- Indonesia 34, 151, 153, 203, 221, 234
- information 145
- information-oriented modernists 21
- inland-hub 43
- innocent passage xvi
- intentional harm 34
- inter- and intra-regional trade 70
- Intergovernmental Oceanographic Commission (IOC) 132, 229
- International Association of Lighthouse Authorities (IALA) 158, 159
- International Chamber of Commerce 127
- International Convention for the Prevention of Pollution from Ships (MARPOL) 145, 220
- International Convention for the Safety of Life at Sea (SOLAS) 145, 201, 213
- International Council of Scientific Unions (ICSU) 229
- International Court of Justice (ICJ) 183
- International Electrotechnical Commission (IEC) 158, 159
- International Maritime Bureau (IMB) 127, 128, 152, 155, 156, 253
- international navigation xvi
- International Seabed Authority xiii
- International Telecommunications Union (ITU) 158, 159, 161
- Intersessional Support Group on Confidence Building Measures (ISG on CBMs) 231
- intra-state conflicts and wars 24

- intrinsic value xv
 Iran-Iraq War 94
 Iraqi Scuds 21
 ISG 233
 issue-specific regimes xvii
 Italy 188
 ITU World Radio Conference 159

 Jakarta 205
 Jakie Fisher 117
 James Kievit 114
 Jangwei 28
 Japan 5, 7, 13, 30, 42, 97, 105, 151, 181, 188, 221, 225
 Japan-based U.S. forces 106
 Japanese LST Osumi 30
 Japanese ports 67
 Japanese-American alliance 11
 Japanese-American Treaty 11
 Java Sea 146
 Jay L. Johnson 101
 Jeune Ecole 28
 Jimmy Carter 245
 Jin-Hyun Paik 254
 Joint development Area 111
 joint development zones 216
 Joon Soo Jon 247

 Kamchatka Peninsula 146
 Kaosiung 44
 Kausheung port 59
 Kilo submarines 27
 Kim Dae Jung 7, 245
 King Darius 117
 KMT 8
 Kobe 41
 Korea 42, 97
 Korea-Japan naval cooperation 98
 Korean peninsula 7, 10, 71, 245
 Korean Port 68

 Korean War 10
 Korea's Pusan and Kwangyang port zone 68
 Kosovo 9, 14, 26
 Krepenovich 22
 Kuala Lumpur 134, 148, 205
 Kuril 146
 Kwangyang port 60
 Kyung-Rae Min 255

 Law of the Sea Convention 145, 152, 186
 Lawrence Freedman 23
 Lee Teng-hui 8
 Legal Committee (LEG) 198
 Liddell Hart 33
 LNG/LPG 225
 lobal Positioning System 158
 Lombok Strait 123
 London Dumping Convention xv
 LOS 254
 LOS Convention 167, 168, 169, 171, 172, 173, 174, 175
 Luhu 28

 Macedonia 9
 Madrid Formula 189
 Maengkee Lee 243
 Mahan 25, 28
 Makato Yamamoto 94
 Makoto Yamamoto 248
 Malacca Strait 205, 208
 Malacca Straits 34
 Malaya 183
 Malaysia 34, 153, 203, 205, 221
 Malaysia/Thai JDA. 111
 Managing Potential Conflicts 231
 Manchuria 70
 Manila 185, 205
 MARPOL 73/78 xv

- Marine Electronic Highway 203
 Marine Environment Protection Committee (MEPC) 198
 marine informatics 150
 Marine Resource Conservation Working Group (MRC) 223
 Marine Resources 134
 Marine Scientific Research 134, 227
 marine territory 36
 maritime arms control 32
 maritime coalition-building 32
 Maritime cooperation 149
 Maritime enforcement 145
 maritime hijacking xvii
 Maritime information 149, 164
 Maritime Institute of Malaysia (MIMA) 134, 180, 189, 194
 Maritime Operations Other Than War 27
 Maritime Safety 134
 Maritime safety Arrangements 188
 Maritime Safety Committee (MSC) 10, 133, 198, 203, 204, 208, 213, 256, 257
 Maritime Search and Rescue (SAR) 198
 Maritime Security Cooperation 229
 maritime security or exclusion zones 169
 maritime sovereignty 36
 Maritime Specialist Officials Meeting (MSOM) 231, 233
 Maritime Studies Program 105
 MARPOL 73/78 131
 material' school 117
 Mediterranean ports 52
 Mega-hub 48
 Memorandum of Understanding (MOU) 221
 Michael Leifer 216

 Middle East xvi
 Mid-West 49
 Mig 29 28
 Military Maritime Safety 188
 military-technical revolution 21
 mining 238
 Mischief Reef 36, 183, 187, 191
 Model Maritime Service Code 128
 Mohd Taib Yassin 254
 Morihiro Hosokawa 5
 Moscow 5, 12, 245
 MOU 124
 MSC/Circ.622 204
 MSC/Circ.623 204
 Musashi 23

 NATO 6, 10, 11, 32, 235, 245, 246
 NATO alliance 10, 12, 13
 NATO Treaty 11
 NAV45 160
 naval control and protection of shipping (NCAPS) 235
 Naval Forces Mediterranean 97
 navigation 238
 Navigational Regime 171
 Netherlands 188
 new Asian Disaster Preparedness Center 126
 new United Nations convention of the Law of the Sea 110
 New Zealand 221
 Niue Treaty 129
 Nixon 15
 North America xvi, 48, 49
 North American area 64
 North East Asia 53, 63
 North East Asia economic group 53
 North East Asian hub port 65, 66
 North Korea 4, 6, 7, 8, 12, 30, 245

- North Korean-South Korean situation 4
- North Pacific Marine Science Organization 132
- North Vietnamese Army 22
- North-East Asia 53
- North-East Asian Regional-GOOS (NEAR-GOOS) 229
- North-South Korea tension 244
- Northeast Asia 6, 98, 224
- Northeast Asia bloc 70
- Northern Territories issue 6
- Northwest Pacific Region Action Plan (NOWPAP) 131, 227
- Norway 188
- oceans governance 215
- Oil/Gas 251
- Oil Spill Contingency Plan 133
- Osaka bay 55
- Osaka port 55
- Owens 18
- Pacific Economic Cooperation Council (PECC) 230
- Pacific Ocean 100, 118
- Pacific Patrol Boat project 151
- Pacific Rim xii, 20, 29
- Pacific Southwest (PSW) 49
- PACPOL 132
- Palace Museum 115
- Pan East Sea 65
- Pan Yellow Sea territories 65
- Papua New Guinea 221
- Part XV of the Convention 170
- Patriot missiles 21
- Pentagon 9
- Persian Gulf 10, 14, 100
- Persian King, 5 Exerts 117
- Persian Navy 117
- Philip Channel 152
- Philippines 11, 36, 97, 153, 183, 191, 221
- Philippines Navy 185
- PICES 132
- Piracy xvii, 126, 135, 152, 230
- PKO 105
- PLA Navy 27, 28, 29, 30, 191
- platform-dominated traditionalists 21
- playing the American card 4
- playing the China card 4
- PNW area 50
- Poland 12
- Port Experts Group 221
- Port of Kausheung 57
- Port of Kobe 55
- port of Kyushoo 55
- Port of New York 48, 49, 50
- port of Oakland 50
- Port of Osaka 55
- port of Seattle 50
- port of Shanghai 53, 58
- Port of Tacoma 50
- port of Taiwan 57
- Port of Tokyo 56
- Port of Yokohama 56
- Port State Control (PSC) 135, 220, 237, 257
- ports business 41
- post-Cold War 3
- post-Cold War Asia-Pacific 174
- post-cold war era xvii
- PRC 4, 5, 8, 12, 128, 132
- PRC/ROK Action Plan for Monitoring and Protection of the Yellow Sea Large Marine Ecosystem 132
- procedures for archipelagic sealanes passage 216

- Pusan 41
- Pusan & Kwangyang ports zone 70
- Pusan and Kwangyang ports zone 69
- Pusan port 60
- Pyongyang 7
- Qingtao 57
- Rainbow Bridge 59
- RAN 105
- recreational 238
- Regime 167
- Reginald Custance 117
- regional blocs 70
- Regional Maritime Surveillance and Safety Regime 148
- Regional Piracy Centre (RPC) 153, 154, 237
- RENC 90
- Republic of Korea 221
- Resolution A.683(17) 204
- Resolution A.738(18) 204
- resolution A.773(18) 212
- resolution A.867(20) 212
- Resolution of Stowaway Cases 208
- Revolution in Military Affairs (RMA) 113, 114, 115, 116, 119, 250
- Richmond 25
- Rimpac 32
- Rio xiv
- ROC 8
- ROK 28, 29, 151, 188
- Rokko Island Minami 58
- Rokko Island sea 58
- Romania 12
- Rome Convention 127, 128
- Roosevelt 116
- Rotterdam 44
- Rotterdam port 64
- Royal Malaysian Navy 194
- Royal Navy 18, 22
- Royal Thai Navy 111
- RTCM SC101 159
- Russia 102
- Russian Federation 221
- Sakhalin 146
- Sam Bateman 256, 258
- Sang-Seek Park 244
- SAR 1979 125
- Scope of Cooperation 217
- Sea Garuda 111
- sea lines of communication (SLOC) xviii, 94, 95, 97, 99, 100, 104, 105, 107, 113, 117, 118, 119, 218, 232, 235, 237, 243, 244, 248, 250, 251
- Sea of Okhotsk 35, 146
- sea robbery 127, 152
- seaborne trade 75
- SEAPOL 133, 250
- search and rescue (SAR) 96, 100, 101, 103, 105, 124, 126, 134, 135, 159, 218, 222, 230, 251, 253
- Senkaku 146
- Seoul 8
- Shanghai 41, 60, 83
- Shinto terminal 59
- shipbuilding industry 73
- SHIPLOC 157
- Shipping/Marine Safety 218
- Siberia 70
- Sing Siam 111
- Singapore 34, 41, 44, 152, 203, 207, 221
- Sino-American relations 3, 4, 13
- Sino-Japanese relations 5
- Sino-Soviet alliance 4
- SLOC security 171, 174

- SLOC symposium 258
- smuggling 126, 135
- SOLAS 159, 160, 213, 252
- SOLAS 1974 125
- SOLAS Convention 84
- SOLAS V 160
- Somalia 26
- Soo-Yong Lee 243
- South America 205
- South China Sea 13, 20, 31, 35, 94, 123, 146, 153, 181, 185, 186, 189, 193, 205, 207, 208, 216, 225, 230, 231, 236, 238, 243, 253, 255
- South China Seas Disputes 111
- South East Asian Petroleum Exploration Association (SEAPEX) 226
- South Korea 6, 7, 12, 225
- South-North Korea relationship 71
- South Pacific 151, 235
- Southeast Asia 94
- Southeast Asian countries 103
- Soviet-Chinese tension 244
- Soviet Far Eastern Fleet 5
- Soviet Navy 19
- Soviet Pacific Fleet 27
- Soviet SS-20 intermediate range missiles 5
- Soviet Union 3, 8, 9, 26, 29, 181
- Soviets 188
- Spain 188
- Spratlys 180, 187, 195
- Spratlys Island 94, 111, 146
- SPREP 132
- SSBNs 30
- standard operating procedures (SOPs) 218
- Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 220
- Stanley B. Weeks 251
- Starfish 32
- START negotiations 30
- STCW 1978 125
- Stephen P. Gibert 244
- Steven Metz 114
- Stowaway Incidents 210
- Strait of Malacca 123, 256
- strait state 172
- Straits of Malacca 156, 203, 207
- Strategic Maritime Information System (SMIS) 149
- strategic nuclear deterrent 30
- Su 27 fighters 27, 28
- Subic Bay 181
- sui generis xiii
- Sulu Sea 146
- Sumihiko Kawamura 248
- sunshine approach 7
- Surveillance 144, 149
- SWATH 18
- Ta-Jen 60
- Tae Lin 60
- Taepo-Dong one missile 7, 30
- Taepo-Dong Two 7
- Taipei 4, 8, 115
- Taiwan 9, 181, 182, 225
- Taiwan issue 4
- Taiwan Relations Act 8
- Taiwan Straits crisis 31, 34
- Tanker War 34
- TCR 68
- Technical Co-operation Committee (TC) 198
- Technical Cooperation and Capacity-Building 134
- TENYU 154
- territorial waters xvi
- terrorism 126

- Thai-Cambodia border 111
- Thai EEZ 109
- Thailand 11, 97, 151, 221
- Thalay Laut 111
- Third Wave 114
- theatre ballistic missiles 21
- three obstacles 5
- Timor and Arafura Seas 146
- Timor Gap 151
- Timor Gap Treaty 234
- Timor Sea 216, 234
- TMR 68
- Tokyo 11, 231
- Tokyo MOU 125, 221
- Tokyo MOU Port State Control 128
- Tokyo port 59
- Tornado 116
- tourism 238
- tragedy of the commons 217
- Training and Education 134
- Trans China Railway 69
- Trans Siberian Railway 69
- Transportation Working Group (TWG) 221
- Transit passage xvi
- Treaty of Niue 235
- Truman Doctrine 9
- Trust Building measure 149
- Tsoying Naval Base 83
- Tuman River Economic Development Area (TREDA) 71
- two Associated Members 197
- two Chinas 245
- U-boat with ASDIC 22
- U.N. resolution 104
- U.S. alliances 106
- U.S.-China relations 245
- U.S. Department of Defense 101
- U.S. forward-deployed naval forces 102
- U.S.-Japan alliance 98
- U.S.-Japan joint security declaration 98
- U.S.-Japan relations 245
- U.S.-Japan security agreement 245
- U.S. Navy 97, 100, 101, 102, 103, 104
- UN 34
- UN Conference on Environment and Development (UNCED) xv, 228
- UN Convention on Law of the Sea 33
- UN Convention on the Law of the Sea 20, 26, 129
- UN Law of the Sea Convention 130
- UN Security Council 9
- UN "Year of the Ocean" 36
- UNCLOS xii, xiii, xv, xvi, xvii, 35, 96, 109, 226, 235, 251, 252, 256, 257
- UNDP 132
- UNEP Regional Seas Programme xv, 132, 227
- UNEP Regional Seas Programs
- UNESCO 132
- unintentional harm 34
- United Kingdom 181, 188
- United Nations Commission on Crime Prevention and Criminal Justice 213
- United Nations Conference on Environment and Development xiv
- United Nations Conference on the Human Environment xiv
- United Nations Convention on the Law of the Sea 167
- United Nations Convention on the

- Law of the Sea (UNCLOS) 217
 United Nations Environment
 Programme (UNEP) 131, 171,
 226, 257
 United Nations Maritime
 Conference 197
 United Nations peacekeeping 9
 United States 3
 United States Coast Guard 128
 UNLOS 204
 UN's Agenda 21 130
 US 7, 12, 151
 US 7th Fleet 27, 30
 US and Japan Security Treaty 11
 US Coast Guard 129
 US Congress 11
 US Eighth Army and Seventh 10
 US F-16 fighter aircraft 8
 US-Japan Treaty of Mutual
 Cooperation and Security 11
 US Multilateral Fisheries Treaty
 133
 US Navy's Hydrographic Service
 19
 US-New Zealand alliance 11
 US Seventh Fleet 10
 USS Kitty Hawk 31

 Vanuatu 221
 VHF 161
 Viet Cong 22
 Vietnam 21, 110, 151, 181, 182, 183,
 221, 225
 Vietnam war 22
 VLCC (Very Large Crude Carrier)
 202
 VTS Controller Display 161

 Waigaoqiao 60
 Warsaw Pact 6
 Washington 8, 11
 Washington meeting 12
 Washington Post 12
 West and East Africa 205
 Western Pacific 106
 Western Pacific Maritime
 Symposium 33
 Western Pacific Naval Symposium
 (WPNS) 96, 97, 126, 151, 162,
 163, 164, 232, 236, 253, 257
 WESTPAC 131
 Workshop on Managing Potential
 Conflicts in the South China Sea
 series 180
 World Meteorological Organisation
 (WMO) 229
 world policeman 14
 World War I 74
 World Wide Navigational Warning
 Service 201
 World Wide Radio Navigation
 System 201
 WPFCC 133
 WPNS forums 194
 WTO 71
 WWII 116

 Y2K 231
 Yangtze River 60
 Yellow Sea 146, 216, 224
 Yellow Sea incident 31
 Yi-Ching Chern 248

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