

Ship & Ocean Newsletter

Selected Papers

No. **5**
July 2005

Ocean Policy Research Foundation

Director's Message

As mankind moves into the 21st century, integrated policies of ocean governance are necessary for the sustainable development and use of our oceans and their resources and the protection of the marine environment.

Towards this end, the Ocean Policy Research Foundation (formerly: Ship & Ocean Foundation) has started an "Ocean Policy Research", with the mission statement "Living in Harmony with the Oceans".

The Ocean Policy Research Foundation aims to conduct cross-sectoral research in ocean related issues in order to initiate debate on marine topics and formulate both domestic and international policy proposals.

We publish a Japanese-language newsletter called the "Ship & Ocean Newsletter" twice a month. The "Ship & Ocean Newsletter" seeks to provide people of diverse viewpoints and backgrounds with a forum for discussion and to contribute to the formulation of maritime policies to achieve coexistence between mankind and the ocean.

Our Foundation believes that the Newsletter can expand effective communication on these issues through its function as editor, publishing timely research and welcoming responses from readers, which might then be published in turn.

"Ship & Ocean Newsletter Selected Papers No.5" contains English-language versions of papers from the Japanese Newsletter edition, published from No.51(2002.9.20) to No.70(2003.7.5).

It is our sincere hope that these Selected Papers will provide useful insights on policy debate in Japan and help to foster global policy dialogue on various issues.

Hiroshi TERASHIMA
July 2005

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Knowing, Protecting and Using the Ocean

Keisuke Taira

Chairman, Subdivision on Ocean Development, Council for Science and Technology / Inspector General, Japan Society for the Promotion of Science / Former Director, Ocean Research Institute, The University of Tokyo
(Ship and Ocean Newsletter No.52 October 5, 2002)

A report subtitled as "Japan's Ocean Policy at the Outset of the 21st Century" was submitted to the Minister of Education, Culture, Sports, Science and Technology by the Chairman of the Council for Science and Technology in August 1, 2002. It is important to study the most appropriate system for ocean policymaking from a perspective of integrated ocean governance in order to shift to a balanced ocean policy of "knowing, protecting and using the ocean."

Toward the realization of the basis of Japan's ocean policy

On April 13, 2001, the Council for Science and Technology received an inquiry from the Minister of Education, Culture, Sports, Science and Technology in regard to "the basic concept of, and promotional measures for ocean development in the long-term." The reason for the Minister's inquiry was that "until now, the priority in ocean development has been ocean use, but the desire is for development of the resource through a balanced consideration of the "knowing and protecting" the oceans. The Council for Ocean Development stressed the necessity of balancing these three objectives in March 2000.

The Council for Ocean Development, which used to be under the jurisdiction of the Prime Minister's Office, became a department in the Council for Science and Technology as part of the administrative reforms in 2000. Its secretariat used to be in the Ocean Development Division of the Science and Technology Agency, thereafter known as the Ocean and Earth Division, and is now in the Ocean and Earth Division of the Ministry of Education, Culture, Sports, Science and Technology. Though the Subdivision on Ocean Development was moved into the Council for Science and Technology at the Ministry of Education, Culture, Sports, Science and Technology, it receives inquiries from the Minister of Education, Culture, Sports, Science and Technology, and other related ministers.

Knowing and protecting the oceans were the consistent subjects of discussion with regard to the role of the subdivision and its future outlook from the beginning of the consultation to the compilation of its report. There were a number of comments that the department should be renamed "Council for Oceans," or "Council for Ocean Policy" as a body that is solely dedicated to handling matters related to "oceans" in order to discuss and investigate the three principles of knowing, protecting and using the oceans."

Matters described in the fourth report (May 1990) from the Council for Ocean Development were divided into those that had been completed and those that were still being handled, and hearings were conducted with regard to the conditions for implementation. The three committees -

the Committee on Ocean Research and Infrastructure Improvement, the Committee on Ocean Preservation and the Committee on Ocean Utilization - then started conducting studies.

Viewpoints of future ocean policy

In 1950, the world's population was 2.5 billion, but it is now over 6 billion. The food supply is a big problem even as over the past 50 years, the production of grains, pulses, meat and marine resources has increased per capita to a nearly steady supply. However, it has become impossible to expect a further increase in production due to a decrease in the amount of arable land, a shortage of water resources caused by desertification and land devastation caused by excessive cultivation. It is also reported that fish catches have already reached their limit and are declining.

Oceans account for 70% of the earth's surface area. Until now the production of food has been the main activity conducted on land, the remaining 30% of the earth's surface. A great deal of phytoplankton and algae are being produced through photosynthesis even in the ocean. Photosynthesis created along coastal areas does not differ from photosynthesis created in tropical rainforests - which produce the greatest amount of photosynthesis on earth - and amounts to three times the amount of photosynthesis created in rice paddies. On the other hand, the amount of photosynthesis created in the open sea is less than 5% of the amount of photosynthesis created in coastal areas, and the open sea is called an ocean desert because nutrients, which is equivalent to manure for plants, is being consumed in areas up to approximately 100 meters below sea level where light reaches to. Deeper water with abundant nutrients, dead marine life and effluence dissolved with microbes lies in a layer below the euphotic zone, and it is expected to be used for the production of food in the future. The worsening global environment, especially global warming, has caused increased water surfaces and climatic variation, so an understanding of the roles of oceans is being urgently sought.

For the supply of energy, oceans can be utilized as production bases for untapped natural resources such as methane hydrate, and clean energy such as wind power,

solar energy, wave power, and the ocean thermal energy, which utilize temperature difference between the upper and lower layers. The ocean also provides a vast space for human activities. Because mantles where earthquakes and volcanic activities originate have oceanic crusts, which are thinner than continental crusts, the exploration of, and research on ocean floors will help predict natural disasters.

The utilization of oceans is an important issue that will decide our future, and as an advanced maritime country surrounded by the resource, Japan faces a major task. However, many council members pointed out that the nation lacks interest in oceans, and that oceans are not often taken up as a subject at school. They also pointed out that environments where citizens can enjoy the ocean should be improved, and that it is difficult to go yachting or boating or to do other marine sports in comparison to other countries. Further, they raised the importance of training personnel and educating young people about the ocean.

One of the things emphasized in this report was ocean management. In addition to the promotion of comprehensive management for the improvement of the marine environment in coastal areas, we should now also exercise ocean management for oceanic regions, such as the establishment of an observation system and measures for oceanic forecasts.

Ocean policy from the viewpoint of comprehensive ocean management

The report submitted on August 1, 2002, from the Chairman of the Council for Science and Technology, to the Minister of Education, Culture, Sports, Science and Technology was "The basic concept and promotion measures for ocean development from long-term view point," with a subtitle "Japan's ocean policy in the early 21st century." Reflecting on the difficulty in the past of proposing policy that could be tackled with a concerted national effort from a comprehensive point of view with regard to the planning and formulation of Japan's ocean policy, the report said that it is important to examine the most suitable system for planning and formulating ocean policy from such a perspective of ocean management.

To improve the current system, governmental liaison meetings related to ocean development should provide and collect information concerned with government policies, and they should be changed to venues for substantive discussions. Besides this, the Subdivision on Ocean Development should investigate and discuss development policy, a comprehensive national policy, and government-wide policy. In addition, the formation of a new professional organization related to ocean policy within the government was proposed. This proposed organization should investigate

and research what Japan's ocean development ought to be, conduct studies of the goals of and promotional methods for ocean development, methods for cooperating with foreign countries, a comprehensive national policy, and government-wide policy based on the information and knowledge obtained through its activities. Based on these results, the Subdivision on Ocean Development should investigate and discuss national ocean policy. Concerning this proposal, many agreed that it is important to continuously conduct studies from this kind of viewpoint. For the present time, the Subdivision on Ocean Development will continue to be utilized for the promotion of ocean development, but with future considerations in mind, it was decided to conduct discussions based on the proposal to establish a system that will increase the present role of governmental liaison meetings related to ocean development, as well as a new organization within the existing government.

When the report was about to be finalized, a proposal by the ocean management study group of the Nippon Foundation was announced and we think that the time has come to review Japan's ocean policy from various viewpoints. The report was compiled with a long-term outlook of around 10 years into the future, however it was decided to conduct follow-up studies and reevaluate from time to time in consideration of advances in scientific technology and changes in social conditions. ■

What did WSSD Decide about the Oceans?

Hiroshi Terashima

Executive Director, Institute for Ocean Policy, Ship & Ocean Foundation
(Ship and Ocean Newsletter No.54 November 5, 2002)

The significance of the World Summit on Sustainable Development, held in Johannesburg, was its recommitment to sustainable development as the main agenda between nations and its forging of an action plan to achieve this. The Plan of Implementation is important as it represents a new and comprehensive approach towards environmental conservation, the appropriate use of natural resources, and in the fight against poverty. This comprehensive and concrete plan will have a long-reaching impact on oceans and coastal areas around the world.

1. Holding of the Johannesburg Summit

The World Summit on Sustainable Development (WSSD) was held in Johannesburg, South Africa, from August 26 to September 4, 2002, just 10 years after the Rio Earth Summit, in order to review activities for sustainable development over the past ten years, evaluate conditions for implementation, and discuss activities for the next 10 years, including newly emerging issues.

Representatives from 191 countries, international organizations, non-governmental organizations, industry and scholars attended the summit, and various problems were discussed toward the achievement of "sustainable development." At the summit, developed countries and developing countries had spirited debate in regard to funds for development in developing countries, their common yet different responsibilities, and satisfactory governance. Developed countries opposed each other over renewable energy and the Kyoto Protocol for the prevention of global warming. Difficulties arose in the establishment of concrete goals, and participating countries were in dispute finalizing the content of the Johannesburg Declaration to the very last day.

Because of these difficulties and the unilateralist impression given by the U.S., the Johannesburg Summit has not necessarily been highly rated either domestically or internationally. However, it is unwise to evaluate the Johannesburg Summit based solely on impressions of the summit itself. Given the preparatory period of one and a half years and the fact that a large number of top government officials from various countries gathered for discussions with international organizations and non-governmental organizations, what was decided at the summit does indeed carry some weight. If these decisions are not examined thoroughly, or efforts are not made to take action on what was decided, exceedingly difficult problems may arise for human society, as people are forced to change their lifestyles due to the pressures of population increase and environmental problems. From this perspective, I would like to examine how oceans and coastal area problems were treated in the Johannesburg Summit Plan of Implementation.

2. Treatment of ocean related issues at the summit

Oceans and coastal areas were taken up as one of the major agenda items at the previous Rio Earth Summit, and an action plan for environmental protection and the sustainable development and use of oceans and coastal areas was outlined in detail in Chapter 17 of Agenda 21. As far as the latest summit is concerned, the problems of oceans and coastal areas were not taken up as a major agenda item, being superseded by such imminent problems as poverty, water, energy, health and food. But it is obvious that oceans and coastal areas play an important role in the solution of the abovementioned problems. Considering the continuity between the Rio Earth Summit and the Johannesburg Summit and the importance of oceans, I would have to say that this kind of handling underestimates the roles of oceans and coastal areas.

Ultimately, however, through the efforts of concerned countries, international organizations, non-governmental organizations, scholars and other interested persons who asserted the importance of the oceans, an action plan related to the management of oceans and coastal areas and to the problems of small island states was written into the WSSD Plan of Implementation, as "4. Protecting and managing the natural resource base of economic and social development (29- 34)" and "7. Sustainable development of small island developing States."

3. Matters related to oceans and coastal areas in the WSSD Plan of Implementation

The Johannesburg Summit is significant in the respect that "sustainable development" was reconfirmed as a major global concern for discussion, and that a new implementation plan that aims at environmental conservation and the appropriate use of natural resources was comprehensively formulated. Various items relating to oceans were specifically incorporated into the implementation plan, and, for some of these, target years for achieving goals were also clearly specified. It is very significant that an action plan for more than the next 10 years was determined. These items should be fully publicized, while measures for imple-

mentation should be examined among all the people involved and announced publicly. The following are part of the implementation plan with target years for achieving the specified goals:

- 1) Oceans, seas, islands and coastal areas form an integrated and essential component of the Earth's ecosystem and are critical for global food security and for sustaining economic prosperity and the well-being of many national economies, particularly in developing countries. Ensuring the sustainable development of the oceans requires effective coordination and cooperation, including at the global and regional levels, between relevant bodies, and actions at all levels to: (a) ratify or accede to and implement the United Nations Convention on the Law of the Sea, (b) promote the implementation of chapter 17 of Agenda 21, (c) encourage the application by 2010 of the ecosystem approach, and (d) promote integrated, multidisciplinary and multisectoral coastal and ocean management at the national level. (paragraph 30)
- 2) To achieve sustainable fisheries, maintain and restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015. (paragraph 31 (a))
- 3) Urgently develop and implement national and, where appropriate, regional plans of action, to put into effect the international plans of action of the Food and Agriculture Organization of the United Nations, in particular the International Plan of Action for the Management of Fishing Capacity by 2005 and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing by 2004. (paragraph 31 (d))
- 4) Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012. (paragraph 32 (c))
- 5) Advance implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, with particular emphasis during the period from 2002 to 2006 on municipal wastewater, the physical alteration and destruction of habitats, and nutrients. Make every effort to achieve substantial progress by the next Global Programme of Action conference in 2006 to protect the marine environment from land-based activities. (paragraph 33)
- 6) Invite States to ratify or accede to and implement the conventions and protocols and other relevant instruments of the International Maritime Organization relating to the enhancement of maritime safety and



Ubuntu Village Pavilion where exhibits of government and international organizations were displayed during the summit.

protection of the marine environment from marine pollution and environmental damage caused by ships, including the use of toxic anti-fouling paints, and urge the International Maritime Organization (IMO) to consider stronger mechanisms to secure the implementation of IMO instruments by flag States. Urge the International Maritime Organization to finalize its draft International Convention on the Control and Management of Ships' Ballast Water and Sediments. (paragraph 34 (a) and (b))

- 7) Establish by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment. (paragraph 36 (b))

4. What is necessary from now?

As mentioned above, oceans were not taken up as a major agenda item at the WSSD, but one can see that matters related to oceans and coastal areas were defined quite comprehensively and specifically in the Plan of Implementation. The question is whether a tougher implementation system can be established in order to execute the plan.

The preamble of the U.N. Convention on the Law of the Sea prescribes that "the problems of oceans are closely interrelated and need to be considered as a whole." However, because there are a wide range of related matters, it is very difficult to work in a comprehensive manner and establish a cooperative relationship among all the parties involved. Because of this, a number of matters related to systematic frameworks, such as the permanent establishment of an efficient and transparent system coordinating international organizations within the United Nations, the expeditious start of national strategies for sustainable development and their implementation by 2005, are included in "Chapter 11 Institutional framework for sustainable development" in the WSSD plan of implementation.

What worries me is Japan's lack of response. In Japan, there is no permanent governmental department or agency to oversee major problems such as the "sustainable development of oceans" that cannot be handled by the sectoral oriented approach of individual ministries and agencies. Therefore, these problems are often left without being properly treated. Looking back on Japan's response to Agenda 21 and the Global Plan of Action (GPA) adopted in 1995, matters that needed to be comprehensively addressed beyond sectoral oriented approach were completely left out, and no response has been made. That is why matters related to oceans were left out completely without being responded to by the Japanese Government at the WSSD.

It is also said that because Agenda 21, the GPA, the

Johannesburg Summit Plan of Implementation do not have binding force, unlike a treaty, is part of the reason for their being neglected. If such is the case, I am embarrassed for Japan as a developed country seeking to establish a responsible position in the 21st century's international society. I therefore hope that the Japanese Government will not repeat this mistake with the WSSD plan of implementation.

However, it is also clear that the Plan of Implementation cannot be adequately handled by the current sectoral oriented approach of ministries. It is therefore necessary to establish systems and organizations so that the Cabinet can comprehensively treat ocean problems responsibly by formulating an ocean policy and basic ocean law as well as by conducting ministerial meetings relating to oceans and establishing an Ocean Policy Office (tentative name).

5. Creation of an international cooperative ocean network

Internationally, there has been an active movement among people working in ocean related fields to tackle the problems of the oceans at both the global and regional levels. In order to assert the importance of the problems of oceans at the WSSD, and in order for scholars, think tanks, non-governmental organizations and volunteers concerned with the oceans from various countries and international organizations to strengthen their resolve on oceanic problems after the WSSD closed, the Global Forum on Oceans, Coasts and Islands was established during the summit.

It is hoped that cooperative agreement on and enforcement of the WSSD plan of implementation as well as Agenda 21, and other matters relating to the WSSD Type II Initiative which is related to oceans, coasts and islands, and that has been developed in various places, will enhance the synergistic effects. In the future, efforts will be made to hold the Global Forum periodically to discuss the problems of oceans, to participate actively in various global and local forums, to share information on oceans and to engage in publicity activities. As global, regional and national measures for comprehensive ocean management are still insufficient, it is necessary to further reinforce this kind of coordination and cooperation in the future.

I also would like to add that the relationship between oceans and fresh water, which has not been much focused on previously - namely, the water cycle from evaporated seawater to rainwater falling in forests and flowing into rivers and oceans - and environmental problems is gaining attention among those concerned with oceans and coasts who will attend the 3rd World Water Forum to be held in the Kansai region next March, because water problems were taken up as a major issue at the recent WSSD. ■

The History of the Name of the Sea of Japan

Hiroo Aoyama

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(Ship and Ocean Newsletter No.55 November 20, 2002)

Discussions were held over the name of the Sea of Japan this summer, but first the historic fact of the name should be assessed rationally. In the map *Kunyu Wanguo Quantu* drawn up by an Italian missionary priest of the Jesuit Order Matteo Ricci 400 years ago, the "Sea of Japan" was written down in kanji already, subsequently that name was imported into and pervaded Japan from the West.

Recent state of affairs surrounding the term "Sea of Japan"

The pros and cons of the term "Sea of Japan" were widely reported in the media this past August and September. The debate started when the International Hydrographic Organization (IHO), which formulates international guidelines for nautical charts, accepted Korean allegations and proposed that the term "Sea of Japan," which has been used internationally, be scratched. The Japanese Government immediately protested to the IHO in pursuit of the withdrawal of the proposal. At the Eighth United Nations Conference on the Standardization of Geographical Names (UNCSGN), which was held around the same time, South Korea and North Korea objected to the term, but Japan refuted their claim.

In the end, the IHO's proposal was withdrawn because of criticism received from various member countries and procedural problems, and the UNCSGN also decided that it will not make a decision on the issue because a discussion about a specific geographical name is not suitable for the purposes of the conference. It is reported that the issue is to be referred to a conference among the countries concerned hereafter.

The Korean Government has been raising this issue since the Sixth UNCSGN in 1992. The point of its allegations is that the term "Sea of Japan" was established when Japan colonized the Korean Peninsula, therefore this kind of imperialistic term should be abolished and the term should be renamed "East Sea," which is used in Korea, or at least both terms should be used. The Japanese Government opposes this argument, and says that the term "Sea of Japan" was established before the colonization of the Korean Peninsula, so it is nothing to do with imperialism.

In short, the contentious point of this issue is how the history of the term "Sea of Japan" is to be treated. Therefore, it is necessary to calmly assess what are historical facts.

Discovery and naming of the Sea of Japan

About 400 years ago in Beijing, Matteo Ricci, who was an Italian missionary priest of the Jesuit Order, produced a world map written in Chinese characters called *Kunyu Wanguo Quantu*. The world map is the extant oldest map describing a sea area between Eurasia and the Japanese Islands using the term "Sea of Japan." The sea area was described as "the sea of Mangi," "the sea of Cin," or "the sea of China" on Western maps produced before Ricci's map.

In other words, they were named after Chinese place names that typified the Eastern world. At that time, terms named after more specific place names, such as the Sea of Japan, or the Sea of Korea, were not yet used. No name was given to the sea area on Eastern maps.

In order to establish a certain term, an object that is described by the term must be identified. In the case of the Sea of Japan, it is essential to point out that the Sea of Japan, which is different



East Asian area illustrated in *Kunyu Wanguo Quantu* (in the possession of the Miyagi Prefectural Library)

from an expansive ocean to the east of the continent, was discovered as a marginal sea. In *Kunyu Wanguo Quantu*, Ezo Island was mistaken for Hokurikudo, but we notice that a closed sea area was described with the northern part of the Japanese Islands located closer to the continent. In fact, such awareness of geographical features started growing around the end of the 16th century, and *Kunyu Wanguo Quantu* was one of the earliest maps to indicate this.

Therefore, it is no coincidence that the term "Sea of Japan" appeared at this time. Because of the very fact that the Sea of Japan was "discovered" through such awareness of geographical features, conditions were ripe to give a name to the closed sea.

Popularization of the term "Sea of Japan"

The missionary spread the term "Sea of Japan" to Europe with a new awareness of geographical features. It is said that *Kunyu Wanguo Quantu*, which was sent by Matteo Ricci, is still kept now in the Vatican Library. In addition, maps and books written in European languages by those related to the Society of Jesus were circulated, and maps with the term "Sea of Japan" started to be drawn in Europe based on them.

Of these maps still in existence, the term "Sea of Japan" was first adopted by Christopherus Blancus who made a map of Japan in 1617. After that, the term "North Sea of Japan" was adopted by Sir Robert Dudley in 1646, while the term "Sea of Japan" was adopted by Vincenzo Maria Coronelli in 1690, then by Nicolaas Witsen in 1692, and gradually started to gain currency in the 17th and 18th centuries. However, around this time, the terms "Sea of China" and "Sea of Korea" were also not used less often, and a particular term was not necessarily established. But from the end of the 18th century onward, the name of this sea area began to be standardized as the Sea of Japan.

Kunyu Wanguo Quantu was also introduced to Japan early on, but the term "Sea of Japan" was not established right away. The term was first used in Japan in 1802 when Saisuke Yamamura, a scholar who specialized in Western sciences by means of the Dutch language, made a map attached to a revised *Sairan Igen*, a form of geographic documentation. After that, the term "Sea of Japan" eventually started to be used mostly in maps for the study of Western sciences in Dutch. This trend resulted from the widespread adoption of the term "Sea of Japan" in Western maps drawn from the end of the 18th century onward,

which were used as sources for the former maps. In other words, the term "Sea of Japan" was "imported."

Toward mutual understanding of historical awareness

Against this historical background, the term "Sea of Japan" began to spread in Europe, the U.S., Japan and other areas. The International Hydrographic Organization (IHO) adopted the term "Sea of Japan" as an international term in 1929 based on this historical background and the international situation. Accordingly, Japan's Imperialism is not directly related to the establishment and popularization of the term "Sea of Japan." However, it is also true that the Korean Peninsula was under Japan's colonial rule in 1929 when the international agreement was concluded.

If the countries concerned are to proceed with discussions about this problem in the future, it is essential to readily accept these historical facts and to understand each other's historical awareness. Toward that purpose, the Japanese Government should patiently explain the historical facts about the term "Sea of Japan" while giving due consideration to the circumstances of the time when the international agreement was concluded. We are still not at the stage of considering an alternative term. ■

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Cutting a Swathe Through Turbulent Waters: OneCoast - Transforming Coastal and Maritime Management Through Knowledge Sharing

Robert Kay / Andrew Crow

OneCoast Co-Founders

(Ship and Ocean Newsletter No.56 December 5, 2002)

Coastal and marine management is a knowledge-based profession. Yet the knowledge held by coastal and marine managers is not currently used efficiently or effectively. It is geographically dispersed, held in different systems, with different standards - or stored in the minds of experts around the world. OneCoast is a flexible, Type II World Summit on Sustainable Development, partnership enabling involvement from a diverse range of governments, businesses and non-governmental organizations worldwide.

Introduction

Professional coastal and maritime managers in all parts of the world face many similar challenges. They are often expected to be able to provide credible and timely advice to decision makers in diverse areas that range from strategic policy creation and management to attendance to micro-scale daily operational issues. As practical examples this could be represented by such differing activities as port expansion strategies or establishing development initiatives for marine protected areas, through to commenting on the best location for an access path for beach users. Each time this advice is provided it is expected to be up to date, using the latest scientific information, have involved a broad and representative number of stakeholders including members of the user community, and have taken into account current global best practice.

In practice what happens is that coastal professionals often cannot find the information they need, when they need it or in the form they need it to form the basis of informed decision making; such information will often include communications within organizations, previous reports and studies, current scientific monitoring data and the tacit experience of long-term staff who may have just left their organization. As such, coastal and maritime managers spend significant amounts of time collaborating and networking with their professional colleagues in government departments, academic institutions, non-governmental organizations and business organizations to overcome such limitations. Such consultation practices typically impact on decision-making capabilities and manifest themselves as time lags from identification of initial issues to decisions, action and effective resolution.

Over the last decade, the professions of coastal and maritime managers have recognized that fundamentally the practice of coastal management is an inherently interdisciplinary profession that lacks significant integration between theory and practice, information, context, process and decisions (Kay, 1999; 2001). There is increasingly a paradox between the increasing amount of information available to coastal and marine managers from a range of credible sources against their decreasing ability to make rapid, consistent and defensible decisions.

Knowledge Management and Knowledge Sharing

Of course this problem is not confined to the discipline of coastal and marine management. Many communities, private companies and governments worldwide face the same problems. For many groups and organizations the challenge is to effectively deliver value to key stakeholders, using new and integrated sources of information whilst managing human and physical resources that are increasingly flexible, may be comprised of short-term staff and contractors and where the ability to rely on the "organizational memory" provided by long-term staff has all but disappeared.

One of the solutions extensively explored in the commercial sector is the concept that knowledge - both the implicit knowledge contained in reports, procedures and data and the tacit knowledge of employees - can be captured and shared through Knowledge Management (KM). These concepts have driven the systematic creation of a whole new industry aimed at delivering technological solutions to meet the demands, explorations and concerns of corporations worldwide. Indeed, Japan has been in the forefront of both knowledge management theory and knowledge management innovation and implementation following the ground-breaking works of Nonaka and Takeuchi (1995) and Von Krogh, Ichijo and Nonaka (2000). These efforts focused on the creation and management of knowledge and the support for innovation within dynamic commercial environments. Since then, Professor Shikida has written about the Japanese context for knowledge sharing in the management of coastal zones (Shikida in press). It could be argued that as a result of these leading theorists and practitioners that the Japanese coastal and maritime community is primed for the broader implementation of knowledge-concepts both domestically through local capacity and internationally through the integration of local capability with other knowledge-driven initiatives.

However, technology alone is not enough and it has been recognized that communities of practice are a key element within effective knowledge management and delivery strategies (Wenger, McDermott and Synder, 2002). Wenger et al. observed the coming together of individuals

to create, share and apply knowledge from diverse disciplines and areas within organizations based on common interests and expertise. The practice of coastal and marine management with diverse geography, organizational separation, interdisciplinary focus, differences in local, national and regional priority and a significant requirement for interaction, consistency and efficacy of decision making and implementation is a key target for such efforts.

The Foundations of Opportunity

The provision of integrated online environments within which individuals and communities of users can interact, enrich, learn and grow is fundamental to the delivery of the new knowledge driven paradigms of the information era. Such environments also must recognize the manner in which people communicate, develop, manage and share information and make decisions. As fundamentally social beings, people communicate and manage information and decision processes typically as groups of connected individuals sharing experience and insight.

It is clear that the availability of information via the connectedness of individuals, organizations and systems is growing at a rate not previously seen in human history. Individuals now have the capacity to personally access, acquire, validate and utilize vast amounts of information. However, even with the quantum leaps in computational capacity of the last two decades that same individual's ability to quantify the impact of decisions made from such analyses remains elusive and is a paradox of the modern era. Technology is both forging the ability to access information at levels that overwhelm whilst simultaneously increasing the power to analyze and assist, but not yet to provide the "thinking" machine (Tweney, 2001).

One of the key realizations embodied in emerging efforts of the last several years has been the critical requirement for international standards in areas from accessibility, data format, management and categorization, data object construction, document format, interchange and so on. Whole new areas focused on content standards, communications standards and learning standards have arisen and cover such diverse areas as digital rights, contextually driven metadata, user interface design and navigation.

As a consequence of such standardization efforts, point forms of expertise and experience are now able to be integrated in dispersed technology support infrastructures that may well reside outside of the organizational boundaries within which such information and support is required and used. The forms of integration begin with the capture of the content that people and or systems produce. When supported by emerging descriptive metadata standards that provide both conceptual and discipline based controlled

vocabularies the ability to form managed content environments emerges. Transitional technologies in recent times have also become available that examine use and context from the perspective of the user or system accessing and interacting with stored content. These however form only the base layers of an integrated whole. Content when structured well, has become embodied within the context of a content management framework. Communities of users or service interactions from third party systems derive people and service management frameworks that both describe accessibility and identity as well as information form and function.

Some knowledge management theories have evolved to consider knowledge as complex information-human interactions that are indeed as complex as natural ecosystems with their complex interdependencies, symbiotic relationships and interactions with external influences. This concept parallels recent developments in coastal management theory (Tobey & Lowry, 2002) that builds on the learning/adaptive system work as summarized by Lee (1993).

In addition, Por (1997) describes knowledge ecologies as "interdisciplinary fields of management practice, emerging from the confluence of management strategy, communities of practice, complex adaptive systems, and knowledge management. In the sense of Por (1997), the conceptual underpinnings of OneCoast bring together leading practice in coastal management, new knowledge technologies, the sociology of online communities, and information technology infrastructure design. It is the opportunity to bring together these seemingly disparate disciplines into an initiative to serve the needs of coastal and marine managers worldwide that prompted the development of OneCoast.

OneCoast: A Coastal Knowledge Ecosystem

OneCoast was launched as a Type II partnership initiative at the World Summit on Sustainable Development (WSSD) in Johannesburg in partnership and at the invitation of the Intergovernmental Oceanographic Commission (IOC)/UNESCO and Sun Microsystems. Type II initiatives complemented the formally negotiated Type I text of the WSSD in that the flexible nature of Type II initiatives allow a broad range of groups to become involved. OneCoast currently has support from United Nations agencies, national governments, the private sector, academic institutions and non-governmental organizations. OneCoast is currently seeking to extend and strengthen this diversity.

OneCoast is an initiative that embraces the inter-disciplinary practice of coastal management at all levels - from global through national, sub-national levels to the local community. OneCoast plans to build the ability for coastal and marine managers to share and store data, information

and experiences, recount stories or reach out for support when they need it, wherever they are. The benefits to emerge will be knowledge-sharing from the interactions not previously visible and the nature of the way the interdisciplinary community interacts with each other, and the information and decisions they produce.

OneCoast as an online support infrastructure will act as an independent broker for knowledge environments utilizing open standards frameworks, combinations of commercial software, OpenSource and independently developed software proprietary components. A fully open web services architecture will enable modern, open applications for service functions interaction through dynamically driven interface components that facilitate "no coding" approaches. Component-based dynamic user interfaces branding environments will facilitate users to interact with core information environments through internet-enabled devices without the need for complex infrastructure. Metadata, directory and metadirectory repositories based on ratified standards based technologies will facilitate highly targeted information access to meet user requirements.

Conclusion

OneCoast aims to support a more holistic and integrated coastal and marine management approach by allowing the data, perspectives, interests and knowledge of multiple stakeholders to be acknowledged. The realization that the environmental concerns and perspectives of communities of users are an increasingly important part of the overall decision-making process is a global trend requiring new tools, new approaches and new practices to the collection, management, dissemination and use of knowledge. OneCoast is tackling this problem through the Type II partnership mechanism established through the World Summit on Sustainable Development that enables an open and flexible approach to working with key stakeholders worldwide.

■

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Repair and Preservation of Itsukushima Shrine, a World Heritage Site

Michinori Fukuda

Itsukushima Shrine

(Ship and Ocean Newsletter No.57 December 20, 2002)

All the splendor and gravitas of the Heian period are captured for people to admire today in Itsukushima Shrine, which was registered in 1996 as a World Heritage site. The structures have been destroyed many times in the past by natural disasters, and each time they were repaired and restored. Today, however, the deterioration of the earth's environment is raising the incidence of abnormally high tides, causing the main shrine building to be submerged with increasing frequency. Itsukushima Shrine is in graver danger than ever before.

Origin of the shrine

Itsukushima(Miyajima), located in the southwestern area of Hiroshima Bay, is about 30 kilometers in circumference. Away from the mainland across the Ono Strait. Itsukushima Shrine is located deep in a small bay facing northwest at the northern base of Mt. Misen on the north-eastern part of the island. Residents along nearby seacoasts and on islands who have sensed the aura of Mt. Misen (its primeval forests were designated as a natural monument on December 17, 1929), which is the main peak covered with primeval forests, have embraced the island itself as a god. The shrine pavilions were constructed at the present site by Kuramoto Saeki in 593 when Empress Suiko ascended the throne. The shrine pavilions were built in the sea because the island itself was considered a god and people were hesitant to build a shrine on it.

In the 12th century, a group of magnificent shrine pavilions, which can be seen to this day was constructed by Taira no Kiyomori, a power lord at that time. These magnificent shrine pavilions constitute a superb architectural design with *shinden-zukuri*, the architectural style of the Heian period, having been adopted. The natural landscape with the shrine built in the sea and the mountains incorporated into the background is unparalleled. The architectural concept was brilliantly conceived by Taira no Kiyomori, and it is one of the representative assets that demonstrate his accomplishments in the Heian period.

Spiritual and cultural significance of the Japanese

The shrine pavilions were built in one of the typical styles of shrine pavilions developed in Japan with a mountain worshiped as a god in accordance with the worship of nature, and a remote place to worship the god at the foot of the mountain. The spectacular sight of the shrine buildings in harmony with the surrounding environment set the standard for the Japanese aesthetic sense for generations thereafter. The shrine buildings are unique among extant shrine buildings in Japan. The style of the shrine pavilions adopted at the time of their construction has been well maintained, and the shrine is one of the few buildings con-

structed in the Heian period. Though the shrine has been rebuilt many times, it is a rare example that conveys remnants of pavilions originally constructed in the Heian period. The shrine is also unique in the sense that it built *shinden-zukuri*, the architectural style of the Heian period, with the use of a border between the mountain and the sea. The shrine additionally provides an important example of a group of shrine buildings constructed in the old style.

Itsukushima Shrine is a facility for Shinto, an indigenous religion rooted in Japan's natural features. The shrine is important for us to understand the characteristics of Japanese religious spaces as cultural assets that demonstrate a history of interminglement with, and separation from Buddhism. It is also an important asset for Japanese to understand their spiritual culture.

Disasters and restoration

In the Meiji period, Itsukushima Shrine was instructed to burn down its shrine pavilions as part of the government is policy to separate Shintoism from Buddhism because the

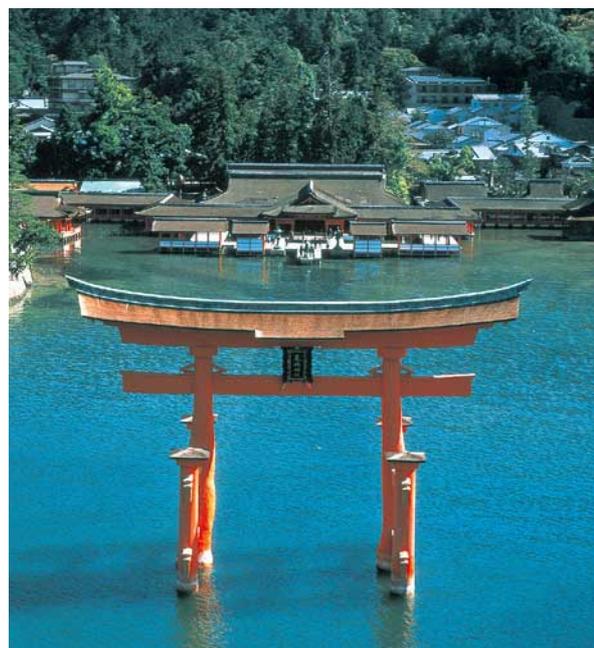


Photo: Itsukushima Shrine (Studio Chizuru)

shrine pavilions contained prominent Buddhist features. However, Mr. Motonobu Nosaka, the last *Tanamori* (current *Guji*, the chief priest of a Shinto shrine), petitioned the government and obtained approval to keep the shrine pavilions as they were, and are seen now. The large torii gate collapsed in 1840 and was rebuilt 24 years later in 1875. The shrine was damaged by heavy storms in the Meiji period in 1877 and 1892. Major repair work that started in the Meiji period was completed in the Taisho period in 1919. In 1898, the shrine pavilions were designated as specially preserved pavilions. On September 17, 1946, the western part of the shrine pavilions below the floor was buried by 15,000 cubic meters of earth and sand by a avalanche caused by the Makurazaki Typhoon. It was completely removed in 1948, and major repair work in the Showa period continued until 1957.

After World War II, the Law for Protection of Cultural Properties was amended, and the shrine pavilions were designated as a national treasure, and partially as important cultural properties. After which, annual plans were formulated by engineers specializing in buildings designated as cultural property, and consultations were held with the Agency Cultural Affairs on repair work for preservation, such as roofing replacements, paint work for the shrine pavilions, and column underpinning. While the repair work was under way, the shrine was severely damaged by Typhoon 19 on September 27, 1991. The repair work is still under way. In 2003 and 2004, the roof of the Haraedono was replaced, and the repair work will soon be completed.

Architectural ingenuity

Itsukushima Shrine is considerably superior structurally. Though the shrine has been damaged by numerous natural disasters in its long history, the original forms of the shrine pavilions are still intact. For instance, roofed corridors are flooded above the floor when the shrine is struck by typhoons, or the tide rises abnormally. But the roofed corridors' Flooring has slight gaps between each floorboard, so they can resist the tide. Architectural elements such as removable floorboards are removed in order to lessen water pressure and to resist external forces from the sea such as high tides. Wooden columns below the floor can be underpinned so that parts of the wooden columns supporting the raised floor can be easily replaced. In this way, through cooperation and efforts of people at different times parts that are not damaged easily and parts that are replaceable are skillfully combined allowing the Shrine to remaining a structure of unchanged beauty floating on the sea for the past 800 years.

Future of Itsukushima Shrine

Itsukushima Shrine conveys the magnificent and splendid architectural beauty of the Heian period to us today. Its design of wooden buildings on the sea with the use of tidal ebbs and flows is unique in the world, and has been highly rated as a "wonderful cultural property". In December 1996, the shrine was registered as World Heritage. The reasons for the recommendation were that Itsukushima Shrine, lacquered in vivid vermilion, resting serenely on the sea, is set against the mystic back-drop of the divine Mt. Misen. In perfect harmony with the surrounding nature, Itsukushima Shrine and its' surrounding buildings are of great historical significance, and were constructed using superior architectural styles which have had a tremendous influence on following generations. Due to these beautiful and unique characteristics, Itsukushima Shrine was registered as a "World Heritage" in 1996.

In recent years, the number of abnormal high tides has increased probably due to unusual weather patterns caused by the worsening global environment. Consequently the shrine pavilions have been more frequently flooded. Therefore, in order to further protect the valuable World Heritage, I think we should investigate the causes of the deteriorating global environment on an international scale, and take measures to prevent the degradation of the global environment. ■

Asserting Sovereignty in Takeshima

Masanori Ohara

*Village Mayor, Village of Chibu, Oki County, Shimane Prefecture
(Ship and Ocean Newsletter No.59 January 20, 2003)*

A jewel of the Sea of Japan, Takeshima has a long history as integral Japanese territory and has been held continuously and lawfully by Japan since the end of the Second World War. The Japanese people are unanimous in recognizing the nation's sovereignty and urgently demand a national movement to affirm Japanese sovereignty over Takeshima.

Takeshima Island belongs to Japan

The Oki Islands in the Sea of Japan are located about 45 to 80 kilometers away from the mainland proper, and they consist of four inhabited islands and more than 180 smaller islands. Takeshima Island is located further away from these islands.

Takeshima Island belongs to Goka Village in Togo Island, the biggest island of the Oki Islands. Located 157 kilometers to the northwest of the village (Lat. 37° 9' N., Long. 131° 55' E.), Takeshima Island consists of two small islands and dozens of rocks. The island has a total area of 0.23 square kilometers and is uninhabited.

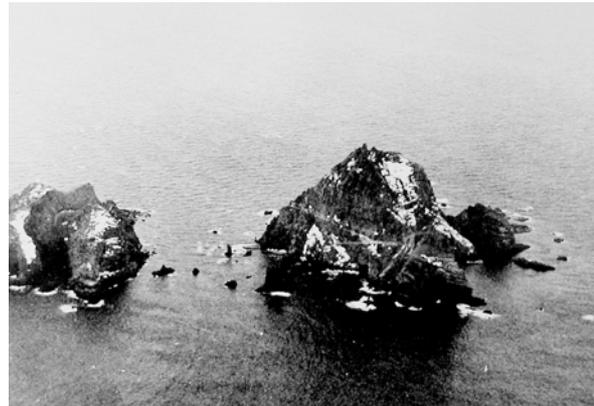
Though the very Island of Takeshima belongs to Japan like the four northern islands, Japan has not been able to exercise its sovereignty over the island which is situated at the border. As of 2003, a dispute over the sovereignty has not been resolved with South Korea.

Why did we get into this situation?

As mentioned previously, Takeshima Island belongs to Goka Village, Oki County, Shimane Prefecture. According to the Goka Village Magazine published by the village, Takeshima Island has long been closely related to people in Shimane and Tottori Prefectures, and it is recorded that people in Shimane and Tottori Prefectures had already visited Takeshima Island and Dagelet Island in the Muromachi and Edo periods.

In 1618, the Otanis and the Murakamis living in Yonago who received approval from the government of Edo gathered abalone, captured sea lions and the like, and cut down trees on Dagelet Island. They stopped at Takeshima Island and used the island as a port of call on the way to Dagelet Island via Oki Island. They also gathered abalone, captured sea lions and the like on the island.

From the late 1890s, islanders on Oki Island started engaging in fishing on Takeshima Island. In 1904, Yosaburo Nakai of Saigo Town who was capturing sea lions on Takeshima Island requested the government of Meiji to incorporate Takeshima Island as a territory, and to



Nishijima Island on the right slightly larger than Higashijima Island on the left

grant use of the island. Then on January 28, 1905, the Cabinet officially named the island "Takeshima Island" and decided to place the island under the jurisdiction of the administrator of Oki, Shimane Prefecture, and incorporated the island into Shimane Prefecture. The government acquired the island by occupancy in the absence of a landowner (the government incorporated the island without a landowner as its territory) according to modern international law, and its territorial right was therein established.

In 1939, the council of Goka Village decided to incorpo-



Material provided by the Research Institute for Ocean Economics
Original source prepared by the U.S. State Department (Because the material was prepared in the 1980s, the names of the countries and others reflect those used at the time.)

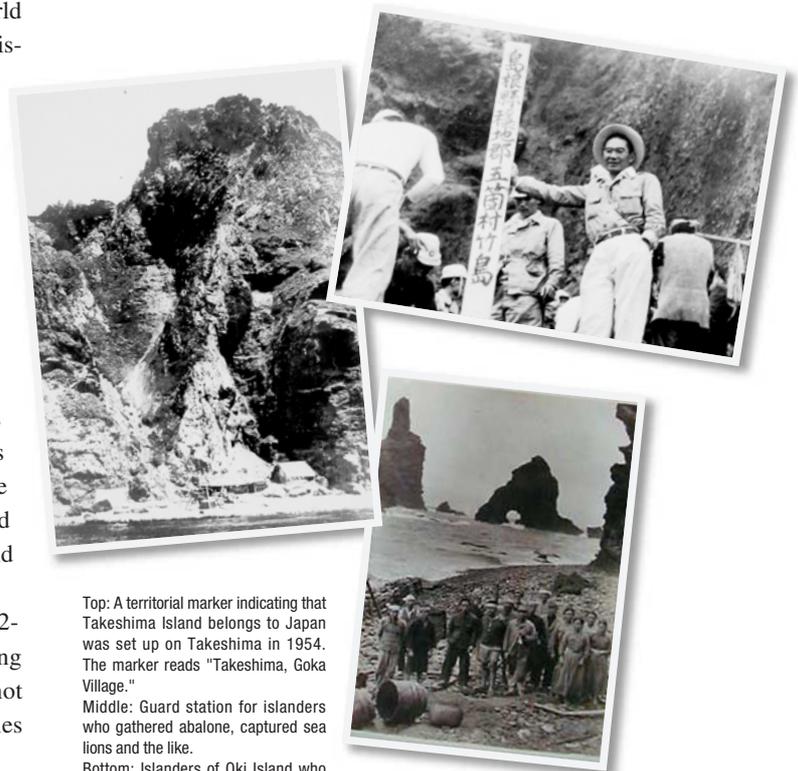
rate Takeshima Island into its area. However, after World War II, Japan was under occupation, and Japan's administrative authority was limited to the mainland proper. Because the Peace Treaty with Japan did not enact any provisions concerning its territory, South Korea declared that Takeshima was included within the Lee Seung-man Line, and belonged to South Korea, and they unilaterally occupied the island. The Japanese government also claimed its sovereignty over the island and proposed that South Korea submit the issue to the International Court of Justice, to which the South Korean side refused. Even after the Japan-South Korea Basic Treaty was signed in 1965, Takeshima Island has been occupied by South Korea until the present day. This is what was described about the background of the Takeshima issue in the Goka Village Magazine published by Goka Village, Oki County, to which Takeshima Island belongs.

In addition, in 1978, South Korea implemented a 12-mile territorial water zone and banned Japanese fishing boats from entering. Japanese fishing boats still cannot operate in the zone and because of that, Japan's fisheries have been greatly affected.

In the hope of establishing the territorial right over Takeshima Island, those concerned with the fishing industry in both Shimane and Tottori Prefectures including Goka Village, Oki County, have been continuously submitting petitions to the government. However, it seems that there is a big difference in the government's response and in the national interest levels between the issue of the return of the four northern islands and the issue of Takeshima. Why so? Because Japan is an island nation surrounded by seas, people living in Japan are not really aware of borders between countries. In actual fact, therefore, there is no sense of tension. Countries like Japan that are close to the ocean and isolated from other countries are rather exceptional, while many other nations adjoin neighboring countries at the edge of their territories along border lines and some even have borders with several countries. It is well known that there are still numerous disputes between nations that adjoin each other. In those places, borders raise an issue of critical importance.

Toward a nationwide movement for the establishment of territoriality

In 1983, Japan ratified the U.N. Convention on the Law of the Sea, and claimed 12-mile Territorial Waters and a



Top: A territorial marker indicating that Takeshima Island belongs to Japan was set up on Takeshima in 1954. The marker reads "Takeshima, Goka Village."

Middle: Guard station for islanders who gathered abalone, captured sea lions and the like.

Bottom: Islanders of Oki Island who engaged in fishery. The photo was taken in June 1934 at the beach of Higashijima Island where temporary houses were located. (Photo: Courtesy of Oki Kyodokan Museum)

200-mile Exclusive Economic Zone. In the near future, the country is preparing to embark on a new era of self-management of a 350-mile continental shelf.

Because of this coming new era, surely it is necessary to review what borders mean to Japanese. Isolated islands stand at the forefront. The isolated islands around Japan define its borders. It is no exaggeration to say that Japan is protected by the isolated islands.

Though Takeshima is a small island 157 kilometers to the northwest of Oki, its impact is immeasurable for the securement of Japan's national defense, fisheries, economic zones, and marine resources, so the establishment of territoriality over Takeshima means a lot indeed.

Like the territorial dispute over the four northern islands, I hope that a movement to establish the territoriality of Takeshima, which is another territorial dispute, will be further developed as the earnest wish of residents of Shimane Prefecture and the whole nation alike. ■

For further information on matters related to Takeshima, please access the website of the Shimane Prefectural Government (<http://www.pref.shimane.jp>).

USCG in the Far East: Its Stakes and Vision

James M. Garrett

Commander, U.S. Coast Guard Activities Far East

(Ship and Ocean Newsletter No.60 February 5, 2003)

The U.S. Coast Guard (USCG) serves the public in diverse missions including law enforcement, search and rescue, the national defense, mobility shipping marine safety and security and has maintained a continuous presence in the Far East. In order to enhance awareness and prevent threats to homeland security, the USCG put forth a concept called Maritime Domain Awareness (MDA). In the case of Activities Far East, the USCG has been actively working with the Japan Coast Guard and sharing information will lead to strengthen this robust partnership. The USCG has also been working with industry and other entities including local shipping and ship owners associations to enhance their reliable relations.

The USCG is prominent in its unique character among other U.S. Government services: America's Lifesavers and Guardian of the Seas. We serve the public in diverse missions including law enforcement, search and rescue, the national defense, mobility shipping marine safety and security. September 11th posed significant challenges and demanded USCG's efforts to rewrite its strategic plan in prioritizing and allocating more resources to marine security while maintaining the same quality service to other field of its missions.

Taking this opportunity, I would like to briefly discuss our stakes and vision in this transitional and unforeseeable time, particularly what we focus on in this dynamic Far East region.

USCG Activities Far East was established in December 1994, mainly in response to growing and continuing demands for U.S. commercial and military vessel safety inspections in overseas locations. At the same time, the USCG detachment in Singapore was assigned as subunit of this command and this created our current organization. Marine safety was core of this command's missions and seven inspectors were assigned in both Japan and Yokota at one time.

This command was also tasked to maintain liaison with the Government of Japan, and those with U.S. Embassy in Tokyo and Singapore and U.S. Forces Japan to meet changes and significant trends in the global maritime community that requires coordination and cooperation with one another.

Those remained at the center of our duties, however, the impact of 9.11 tragedy required us to review our business priorities and resource allocations in response to the unprecedented circumstances.

After the tragedy, USCG was one of immediate-action-taking services in response to potential threats and we increased resources for maritime security actions inside the U.S.

Current proposals for the USCG's moving to the Department of Homeland Security include a significant budget increase from \$5.7 billion in fiscal year 2002 to \$7.3 billion

in 2003 which underlines the President's priority for the USCG and reflects the expectation of the public toward USCG.

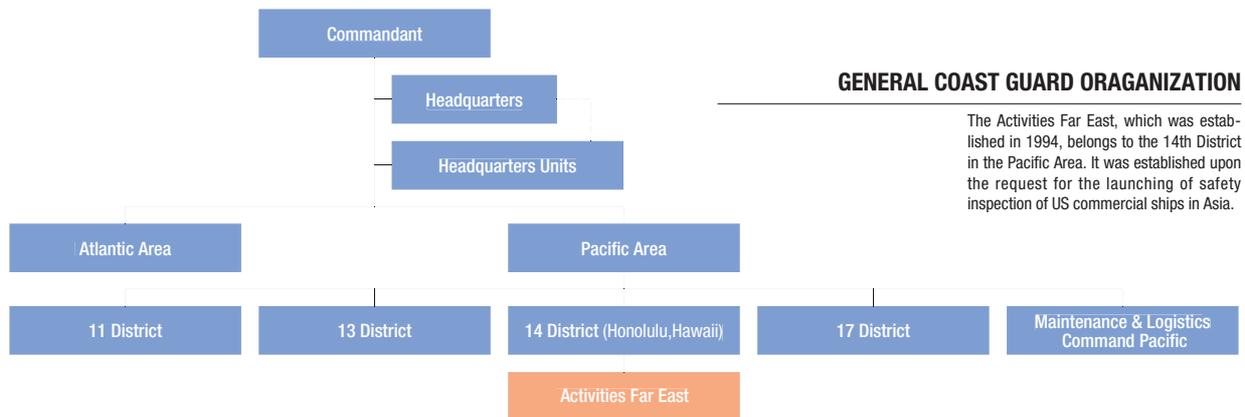
Today, USCG operations comprise five main mission areas: (1) Maritime Safety, (2) Maritime Mobility, (3) Maritime Security, (4) National Defense and (5) Protection of Natural Resources. Each has its own goals as follows:

- (1) Maritime Safety: Search & Rescue, Marine Safety, Recreational Boating Safety, International Ice patrol
- (2) Maritime Mobility: Aids to Navigation, Icebreaking Service, Bridge Administration, Vessel Traffic/ Waterways management
- (3) Maritime Security: Drug Interdiction, Alien Migrant Interdiction, EEZ & Living Marine Resource, Law/Treaty Enforcement, General Maritime Law Enforcement
- (4) National Defense: General Defense Duties, Homeland Security, Port and Waterways Security, Polar Icebreaking
- (5) Protection of Natural Resources: Marine Pollution Education, Prevention, Response & Enforcement, Foreign Vessel Inspections, Living marine Resources Protection, Marine and Environmental Science

Of those goals, Homeland Security is the most challenging issue not only for the U.S. but the rest of the world in the wake of 9.11.

The goals of USCG's Maritime Homeland Security Strategy drive from:

- Instill public confidence in the security of the ports, waterways, and maritime boarders
- Build Maritime Domain Awareness
- Ensure capability to interdict threats
- Ensure positive/ controlled movement of high interest vessels
- Protection of critical infrastructure
- Increase presence for both deterrence and response capability



Effective homeland security should be built upon the principles of awareness, prevention, response, and consequence management. In this regard, USCG focuses on awareness and prevention as the primary objectives. Above all, awareness helps focus resources and provides efficiency to prevention which places a premium on awareness, detecting, identifying and tracking threats to our homeland security.

In order to enhance awareness, we put forth a concept called Maritime Domain Awareness (MDA). MDA requires adequate information, intelligence, surveillance and reconnaissance of vessels, cargo and people of law enforcement interests and helps us possess total awareness of vulnerabilities, threats and targets of interests of the water. This will enable detection and interception of those which potentially pose threats to U.S. maritime system before they reach U.S. waters.

While MDA concepts functions as the core of homeland security scheme, the overall U.S. security scheme tends to focus on expanded outward security zone. This also lies at the center of this overall picture in the sense of early detection and prevention. This involves further strengthened partnership with international and domestic counterparts.

Having said this, in considering the significance of this command's edge in marine safety expertise and geographical location, we must play a critical role in this dynamic region in the light of MDA scheme essence. Asia dominates maritime industry, in both shipping and shipbuilding, is the biggest trading partners and of one of the biggest interests the U.S. has.

We have tried gearing up resources at hand to harmonize MDA, in particular, further enhancing awareness without reducing the effectiveness of our performance in other primary missions.

Since the objective of MDA is to obtain actionable information which we draw on from all available resources and to share that information with our partners at early stage, Activities Far East has strived for further enhanced partnership with not only U.S. and host nations government agencies but also industry and nongovernmental organizations. We have met and coordinated with representatives of governments and industry and asked them for their understandings and collaborations while our inspectors have carried out intensively onboard inspections and others.

This command's primary mission remains in marine safety as I mentioned earlier, but by harmonizing the necessity of tightened and reliable security arrangements with that of marine safety, we will further engage in security matters.

In particular, we will support the Container Security Initiatives (CSI), which involves joint efforts among federal government agencies lead by the U.S. Customs Service. Key Asian economies such as Singapore, Hong Kong and Japan so far have joined this encouraging arrangements and are sharing our concerns. On the part of USCG, our headquarters started assessing and scrutinizing the feasibility to expand its presence in this region as a part of supporting efforts pertaining to CSI. In fact, our subunit in Singapore has actively participated in meetings with parties concerned. We will continue active participation with this regard.

Activities Far East has been seeking an opportunity to conduct joint vessel examination with host nation governments in Japan and Singapore. USCG and the Maritime Bureau of Japan Ministry of Land, Infrastructure and Transport signed a joint declaration of intent on dangerous goods in October 2000. Based on this arrangement, we would like to expand further arrangements with our coun-

terparts because they will provide mutual benefits for participants.

As for information sharing, our partnerships with host nation governments have been fostered more than those before September 11th. In the case of Activities Far East, we have been actively working with Japan Coast Guard. Sharing information involves concerns and understanding over issues we are faced with and this will lead to strengthen our robust partnership which will facilitate collaboration between these strong coast guards in the world.

We have also been working with industry and other entities including local shipping and ship owners associations to enhance our reliable relations. I recently addressed the Hong Kong Ship Owners Association and Singapore Shipping Association on USCG's perspectives on shared responsibilities in maritime security, ship safety and environmental protection. We are eager to have more opportunities to advocate this critical concept as well as USCG Qualship 21 and to call for further understanding which will reflect interests of marine industry.

In conclusion, the necessity of maritime security arrangements require the USCG to work on a global scale. Timely awareness in this scenario sheds new light on the edge of USCG in Far East and it will require USCG as a whole to become global oriented. I believe our enhanced partnerships with governmental and nongovernmental organizations will help our efficient performance in security aspect and this will serve public interests.

I am deeply appreciative of the support of the Government of Japan and its people in all of our mission areas. All of our USCG personnel "volunteer" for their assignments in Japan and consider it a deeply enriching and rewarding opportunity. Again thank you for this opportunity. ■



USCG Cutter Jarvis 2 joined the review of the fleet of the Japan Coast Guard.

A Historic Lighthouse in the Straits of Malacca

Yoshihiko Yamada

Maritime Affairs Department, The Nippon Foundation

(Ship and Ocean Newsletter No.61 February 20, 2003)

The cost of maintaining the safety of ships passing through the Straits of Malacca and Singapore is rising implacably. Coastal states and users of this vital waterway must agree on a collaborative framework before a major accident occurs. Drawing on the history of the Horsburgh Lighthouse as an example, those who benefit from the Straits must gain a voice by committing funds to improving their safety, while cooperating with coastal states to build a framework for safety there.

Who should protect the safety of the Malacca Straits?

Discussions as to who should bear the costs concerning the safety of navigation through the Malacca-Singapore Straits have become enlivened recently. Article 43 of the UN Convention on the Law of the Sea states that countries in the region and countries using the straits should cooperate toward their safety and environmental conservation. Costs concerning the securing of navigational safety through the straits have been steadily increasing because of the adoption of an automatic identification system (AIS), so countries in the region have asked nations using the straits to bear the costs for the protection of safety in the waterway.

Moreover, the Malacca-Singapore Straits are overrun with pirates, and the danger of maritime terrorism is also on the rise. Current safety measures must be promptly reviewed. With regard to outside cooperation offered to countries in the region, it is no exaggeration to say that it has been only Japan, and mostly the Nippon Foundation, that has offered such support.

A ray of light from the history of the Horsburgh Lighthouse

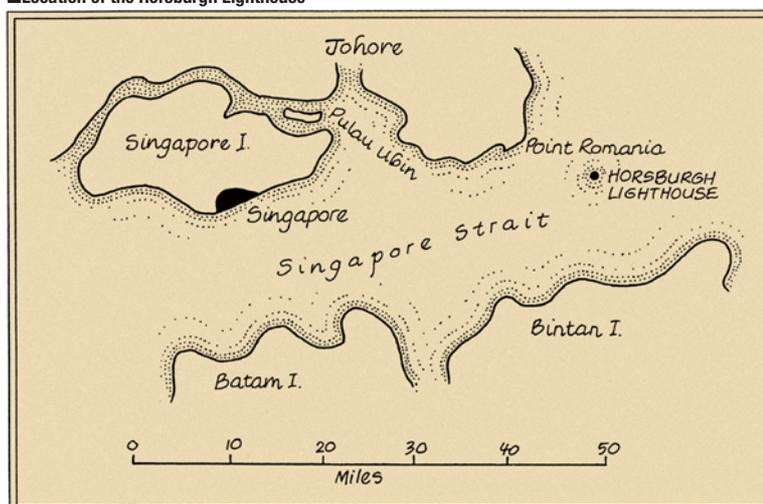
Looking back on the history of navigation safety measures for the Malacca-Singapore Straits, a strategy for bearing costs comes into view.

The Horsburgh Lighthouse is situated on the sea to the southeast of the Singapore Islands at the east entrance of the Malacca-Singapore Straits. A construction plan for the lighthouse - which is now administered by the Singaporean Government - was proposed in 1836 and began operation in 1851. The Horsburgh Lighthouse was named after James Horsburgh (1762 - 1836), who was a leading hydrographer working with the British East India Company. In regard to the situation of the areas along the Malacca-Singapore Straits at the time, present-day Singapore and Malaysia were British colonies, whereas Indonesia was a Dutch colony. Singapore, the central

city of the straits, was founded in 1819 by Sir Thomas Stamford Raffles who was a British East India Company administrator (in 1811, Singapore was a small fishing village with a population of several hundred). Strongly influenced by Adam Smith, Sir Raffles implemented policies that aimed to prevent the straits from being invaded by other countries, to protect British people's interests and to promote the advancement and interests of Malayan people. Sir Raffles was going to introduce a new free economy system to Malayan countries incorporating legal, administrative and customary commercial practices similar to those in Britain.

The construction of the Horsburgh Lighthouse was proposed by William Jardine, who was a British merchant and who headed the Jardine Matheson Trading Company. It is documented that the Jardine Matheson Trading Company accumulated wealth through the opium trade to China, and even supplied arms to Japan during the Meiji Restoration. Jardine Matheson Trading Company was forced to secure navigational safety in the Malacca-Singapore Straits in order to trade with China and the unknown countries of Japan and other Asian nations. Therefore, the company consulted with James Horsburgh, the hydrographer of the British East India Company, and proposed the construction of a lighthouse on a reef off Singapore that had been hindering navigational safety.

■ Location of the Horsburgh Lighthouse



William Jardine established a fund for the construction of the Horsburgh Lighthouse in the year James Horsburgh died in remembrance of him, and started collecting money in Guangdong in China, Bombay (currently Mumbai) in India, Penang in Malaysia and other places. It was mostly European seamen and merchants working in Asian colonies who were prepared to donate financially. William Jardine himself donated 500 Spanish dollars, and the amount of contributions from Jardine Matheson Trading Company reached a total of 7,411 dollars in 1847 when the collection of contributions ended. Apart from these, major contributions were made by the British East India Company, the Calcutta Chamber of Commerce and the Bombay Chamber of Commerce, with contributions ultimately amounting to a total of 23,665 dollars.

The Spanish dollar was the unit of currency used by the East India Company. The Horsburgh Lighthouse was erected in the Malacca Strait, a difficult place to navigate, with funds provided by beneficiaries who recognized its necessity. Though the construction of the lighthouse faced difficulties, resolutions such as the location and the installation method made in meetings by the beneficiaries - who were the users of the strait - took precedence over the opinions of the governments of the colonies. Like the British lighthouse system, administrative and maintenance expenses for the lighthouse were covered by light dues that

were collected from ships entering Singapore. In one year between 1856 and 1857, about 4,000 trading vessels stopped in Singapore.

Lighthouses in the U.K. are provided, maintained and managed by Trinity House. Trinity House operates lighthouses using light dues collected from ships entering ports in the U.K. (it is role of customs to collect light dues in each port). In the 17th century, there were a number of lighthouses owned privately. Shipowners and investors erected lighthouses in their own right that were necessary for safe navigation with the approval of the king, and submitted a claim for compensation for the costs to Trinity House, the administrator of the lighthouses. In the U.K., lighthouses erected at beneficiaries' expense emitted beams (in 1842, Trinity House purchased all the major lighthouses). Expenses for the operation of lighthouses in the U.K. are deliberated over by the Lighthouse Board, which consists of representatives from the government, Trinity House and the Lighthouse Advisory Committee. The Lighthouse Advisory Committee consists of shipowners, insurers and cargo owners. In other words, the Lighthouse Advisory Committee represents the beneficiaries of lighthouses and those who bear the associated costs. In the British lighthouse system, cost bearers have a voice in their operation.

Toward the creation of an organization for navigational safety through the straits

Returning to the case of the Horsburgh Lighthouse, a fund was established at beneficiaries' expense according to the principle of the ability to pay, and a lighthouse that reflected the ideas of beneficiaries was erected. What is necessary in the Malacca-Singapore Straits now is the concept of the Horsburgh Lighthouse. It is necessary for beneficiaries to provide funds for the safety of the straits, and to create an organization where they can implement and have a voice in safety measures for the waterway in cooperation with countries in the region. The Nippon Foundation has been preparing for the creation of such an organization based on the concept of cooperative management of the Malacca Straits. Before a major accident occurs, a cooperative system with countries in the region and beneficiaries must be established.

First, it is necessary to institute a forum where users and countries in the region are seated around the one table. ■



The Raffles Lighthouse, which was erected in 1854, just a few years after the start of the operation of the Horsburgh Lighthouse, still stands in Singapore. (Photo taken in August 2002)

Mineral Resources at Sea

—Seawater as amniotic fluid for people—

Mieko Kimura

Director, Takeda Research Institute of Life Science & Preventive Medicine
(Ship and Ocean Newsletter No.66 May 5, 2003)

The earth's surface holds an estimated 1.4 trillion liters of water, but only 0.01% of that amount is suitable for human use. Yet every year that usable water becomes more and more polluted and water shortages are mounting. We will soon have to look at ways of harnessing ocean water. Unsurprisingly, since all life originated in the sea, the balance of minerals in the fluids of the human body correlates strongly with the concentration in the oceans. The sea, as the mother of all life, holds enormous significance for human health.

The sea as the mother of life

Water accounts for 85% of a living organism. A cell, which is the basic unit of a living organism, is full of water. The amount of water contained in cells indicates their youthfulness, vigor and life. Babies' skin is fresh and youthful, and as one becomes older, the amount of water in cells diminishes and the cells age. Life exists with water, and the plentiful existence of water proves that one is alive. Well then, do we need only water? Water exists as a solvent for body fluids, which control life, and body fluids constantly preserve a balance between numerous nutritional components including minerals, and serve as the fountain of life support.

It is said that in the universe, is it only the earth that has an abundance of water? The amount of water on earth is estimated at 1.4 billion kiloliters, of which fresh water accounts for 2.5%, and even that takes the shape of ice in polar regions so that the amount of usable water does not exceed 0.01%. Water accounts for 71% of the earth's surface, and 97.5% of that amount is seawater. Scarce surface water is steadily being contaminated by us, and is becoming insufficient. The population of the earth is continuing to increase in developing countries and demand for drinking water and agricultural/industrial water is also steadily

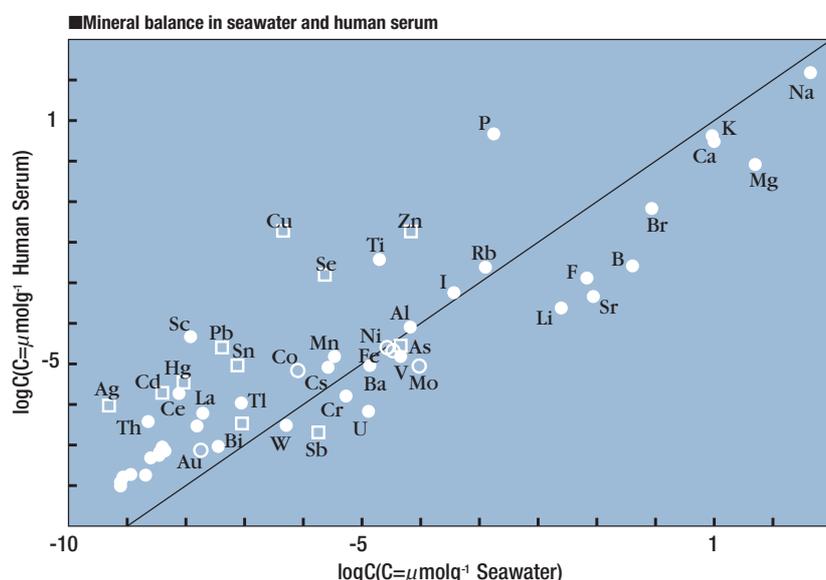
growing. The amount of water available to one person was 16,800 m³ in 1950 and dropped to 6,800 m³ in 2000 so that we have entered the 21st century as an era of water shortages. Water shortages also mean a crisis for life support.

Furthermore, and because resources available to people on earth are being exhausted, we should now consider using seawater, which exists abundantly on earth and that has been largely unaffected by pollution, as a new resource. With attention on seawater as the mother of life, I would like to take a look at our health from the standpoint of preventive medicine.

What is health?

In order to find the meaning of health, I looked the word up in a dictionary. It is defined as: a body without anything wrong; a healthy body and; the condition of being sound in mind and body allowing the full exercise of one's physical, mental and social abilities.

You cannot think of health without thinking of medicine, and in Japan, medicine mostly means curative medicine and clinical medicine. Japanese people used to take an interest in their health after their symptoms became visible. Once one falls ill, it is impossible to restore the original state of health. In order to restore the health of a person whose health has been ruined, the interest of medical researchers' has been directed not to people's familiar health problems, but to artificial internal organs and human cloning. With the advent of the ageing society, and as we stand on the verge of the failure of medical insurance, health is now finally attracting attention from the standpoint of preventive medicine. Even from within the field, nutrition as a form of preventive medicine has been attracting a lot of interest from many people. To maintain and promote health, the Ministry of Health, Labour and Welfare is advocating paying attention to "nutrition, exercise and rest" in our daily lives under its slogan "Health Japan 21."



Mineral Resources at Sea

Each cell that forms our body is sustained and activated by the replenishment of nutrients, and it is the vitality of these individual cells to which our physical health, sprightly actions and brain function are related. It goes without saying that these nutrients contain the three major nutrients of protein, fat and carbohydrate, and an extremely small amount of vitamins and minerals. These nutrients continually maintain a close interrelationship in a solvent called body fluids, and highlight the functions of cells and living organisms. Body fluids always keep certain mineral balances through homeostatic mechanisms. The constituent parts of water as body fluids, mineral nourishment as the basis of balanced body fluids, and minerals and vitamins as metabolic control factors for the three major nutrients exist in extremely small quantities, but they play a more significant role in comparison with the three major nutrients.

Incidentally, the following 22 nutrients have been proven to be essential for mammals: Sodium (Na), Potassium (K), Magnesium (Mg), Calcium (Ca), Phosphorus (P), Silicon (Si), Vanadium (V), Chromium (Cr), Manganese (Mn), Iron (Fe), Cobalt (Co), Nickel (Ni), Copper (Cu), Zinc (Zn), Arsenic (As), Selenium (Se), Molybdenum (Mo), Tin (Sn), Iodine (I), Lead (Pb), Fluorine (F) and Rubidium (Rb). The following nutrients are considered probably essential, but have not been proven to be essential: Lithium (Li), Beryllium (Be), Boron (B), Aluminum (Al), Germanium (Ge), Bromine (Br), Strontium (Sr), Silver (Ag), Cadmium (Cd), Antimony (Sb), Cesium (Cs), Barium (Ba), Tungsten (W), Gold (Au) and Mercury (Hg).

In food, there are also a number of constituents that have not been proven to be essential as nutrients through modern scientific approaches. Fresh food provides comprehensive nutrient environments, including unknown nutrients, for our bodies and living organisms. As we all know, organic matter, which is the origin of nutrition for living beings, is produced from water and minerals which plants absorb from soil and sunlight. Organic matter gives life to us and other animals. We realize again that water is the root of all life, and that the source of the fountain of life is the nutrients and minerals that are abundant in water. The composition of minerals in surface water varies greatly from region to region, but the composition of minerals in seawater is uniform, and about 85 kinds of minerals have been found. As shown in the chart, it can be seen that the concentration distribution of minerals in seawater is positively correlated with the mineral balance in human body fluids (serums). As it is said that the origin of species is seawater, amniotic fluids in people must be seawater. Before we are born, we

live floating in the amniotic fluids of our mothers' wombs. When we leave our mothers' wombs, we leave water for the first time. It is thought that the origin of species (cells) is seawater, and that living things acquired gills and lungs and came ashore because seawater gradually became concentrated, in other words, the density of seawater became greater than that of body fluids (about four times the density of human serums), and thus it became difficult to live in seawater.

Still, seawater is the origin of our life. We need a great amount of manure when we produce something on land, but both plants and animals grow rapidly in the sea without manure or feed because the sea contains nitrogen, carbon and an abundance of trace elements. A host of problems were left in the 20th century, the era of petroleum resources. Now that we do not have any new resources in the 21st century, it is surely very important to reexamine "seawater" as a resource for the water for life. ■

The Hard Struggle of Asian exchange Students at MSA

Kazuhiro Hatano

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(Ship and Ocean Newsletter No.69 June 20, 2003)

At the Maritime Safety Academy (MSA), we promote collaboration and strengthened liaison among the various countries and regions of Asia on efforts to grapple with problems of ocean security, such as piracy and arms theft at sea. As part of this effort, JCGA accepts exchange students from many countries and collaborates with various marine security agencies on personnel training. At present Southeast Asian nations are moving to establish their own Coast Guard services. JCGA expects exchange students trained at this institution will serve a crucial role in this important undertaking.

Acceptance of foreign students initiated as a measure against pirates

Today, somebody said a cheerful, delightful hello to me on the way home from the academy. I looked around, thinking that the speaker's intonation was somewhat strange, and I saw two foreign students riding bicycles, Mr. Meniado and Mr. Shu. They seemed to be going downtown to buy shirts. They did not look nervous or tense any more, the way they used to when they first arrived here.

In the wake of the Alondra Rainbow incident of 1999, there is growing concern in this country over the safety of marine transport in Southeast Asian sea areas.

As a result, the Japan Coast Guard started to advance mutual cooperation and the reinforcement of solidarity with respective countries in order to take action against pirates and the armed robbery of ships. As part of the efforts, the Japan Coast Guard Academy has been actively cooperating to train the personnel of coastguard authorities in various Asian countries, and to improve naval police forces in the entire region by receiving foreign students and providing training for marine crime control.

The academy started receiving foreign students in April 2001. Mr. Kiatopas (Thailand), one of the first, is still at school as a student in a regular course. Mr. Meniado (the Philippines), Mr. Shu (China) and Mr. Shannon (Malaysia), are students accepted by the academy for the second term.



Visit to the patrol boat "Hakata"

Their future hope is to study navigation or engineering. However, before they acquire such professional knowledge and skills related to marine safety, they must first overcome the hardships of Japanese language training for one year. They take Japanese classes (including "Japanese affairs") for a total of 597 hours for the year, and in addition, they take mathematics and physics in the first semester and an introduction to marine safety in the second semester for a total of 144 hours. They are also assigned mountains of homework and supplemental studies. This is no easy matter. Even if they study Japanese very hard for one year, it will be difficult for them to understand all the advanced special lectures given by the faculty in Japanese. It will be necessary to strengthen a backup system for special classes on the faculty side by providing materials in English.

Encounter with foreign cultures

No, it is not just Japanese that will be difficult for them. Just living in a foreign culture is very difficult. At the academy, foreign students must become familiar with group behaviors, and more importantly living at the dormitory. There were even some foreign students who were about to take a bath with their spats on. They do not only feel ashamed of being naked, rather that they are not allowed to be naked for religious reasons. Speaking of religions, there are problems with prayers and food. The dormitory cafeteria gave careful consideration to soups and went to the trouble of changing meat dishes to fish dishes for Muslims. We should also consider a special space for them to offer prayers, and make special efforts to accommodate the designated times of their prayers. They cannot live without a large number of people who support their lives. Even in the International Exchange Planning Department, which consists of nine instructors and one full-time secretary, one instructor is assigned to each foreign student in order to support them academically and personally. Students in the regular course and trainees also lend foreign students a helping hand of their own free will.

In addition, their national characteristics and customs are different. Although the foreign students were sent from organizations related to marine safety in their respective

countries, their sense of time is different from the Japanese sense of time. When foreign students mingle with disciplined Japanese students at the academy, their easy-going attitude stands out. Our students are always required to move briskly in rising at 6:30 am in the morning, doing gymnastics, seating themselves before the chime sounds to signal the commencement of class, standing up, saluting and seating themselves again. For practical navigation training, it is natural that students are sometimes severely cautioned because they are students and trainees at the Japan Coast Guard Academy, regardless of whether they are foreign students or not.

Pleasure of studying abroad

Our foreign students have a strict school life, but of course they also have places where they can relax. For the first foreign students, our instructors, students and trainees invited them to a party for social exchanges once a month and they had very lively discussions. When the students visited marine security facilities in Maizuru, Kyoto, they witnessed the strict training of personnel working at the forefront of the field. On the other hand, they saw old streetscapes and visited shrines and temples in Kyoto, experiencing Japanese culture firsthand. They also took part unannounced in an athletic meeting held by the Host Families' Association of the Kure National College of Technology. In particular, host families from the Kure Premier Club invited the students for home-cooked Japanese meals and listened to their complaints which the students could not make at the academy. Foreign students who invited their wives and children from their home countries might have had difficulty in paying their rents, but they were able to develop neighborly ties like those among Japanese, and blend into their local communities through residences set up for their families and schools their children attended. On the way back to their home countries, some of them called Japan "their second home country" and were reluctant to leave Japan, while other students reflected on their bittersweet memories. Mr. Kiatopas, who remains in the regular course, now speaks Japanese fluently blended with our local dialect, and he has become accustomed to academy life, so much so that he calls his peers *doki* meaning classmates.

Present and future exchanges with foreign and Japanese students

The exchange program at the Japan Coast Guard Academy has as its main purpose the training of counterparts, but just as important is its influence on Japanese students



Scene of a Japanese class for foreign students

and trainees. Looking at the program from the viewpoint of Japanese students and trainees who shared quality time with foreign students, I do not think that their mutual relationship as a whole was entirely satisfactory because some foreign students had slightly bitter memories when they left Japan. When foreign students feel irritated, Japanese students must also feel irritated in the same way. However, I think that Japanese students and trainees benefit greatly from exchanges with foreign students in spite of such conflicts, or I should say, owing to such conflicts. As one Japanese trainee said: "While eating the same meals, sleeping in the same place and living a similar life, my impression that they were foreigners started disappearing. Though our cultures are different, I reconfirmed that we are the same human beings." I think that he is right. It is often said that we should acquire an international way of thinking, though this does not mean that we should be able to speak foreign languages fluently. Of course, foreign language skills, especially English language skills are extremely important, however what is more important is the experience of going through the same pleasures and hardships in the same environment. The experience as human beings, not as foreigners and Japanese, is what is valuable. These kinds of human-to-human relations will surely develop into nation-to-nation relations. I would like Mr. Meniado, other foreign students, and Japanese students and trainees who live together with the foreign students to work as bridges between their countries and Japan, and I firmly believe that they will.

In order to strengthen law enforcement on the sea, such as crackdowns on pirates, there is a movement now to station coast guards in Southeast Asian countries. Foreign students who studied at the Japan Coast Guard Academy are expected to play an important role in this activity. ■