

Ship & Ocean Newsletter

Selected Papers

No. 4

Institute for Ocean Policy, SOF

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 Ship & Ocean Foundation has launched an "Institute for Ocean Policy", with the mission statement "Living in Harmony with the Oceans".

The Institute for Ocean Policy 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 Institute 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.4" is an English-language version of papers from the Japanese Newsletter edition, published from No.41(2002.4.20) to No.50(2002.9.5).

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

■ The Newsletter Editorial Committee

● Chief Editors

Shin KISUGI

Professor, International Graduate School of Social Sciences, Yokohama National University

Hiroyuki NAKAHARA

Managing Director, Research Institute for Ocean Economics

● Members

Tomoya AKIMICHI

Professor, Research Institute for Humanity and Nature

Masahiko ISOBE

Professor, Institute of Environmental Studies, Graduate School of Frontier Sciences, The University of Tokyo

Heita KAWAKATSU

Professor, International Research Center for Japanese Studies

Tadao KURIBAYASHI

Professor, Toyo Eiwa University / Professor Emeritus, Keio University

Toshitsugu SAKOU

Chairman, Japanese Association for Coastal Zone Studies/ Professor Emeritus, Tokai University

Takashi HAMADA

Chairman, The Japan Science Society

Yukiko HORI

Chairman, Enoshima Aquarium

Hisaaki MAEDA

Professor, Nihon University

Toshio YAMAGATA

Professor, Department of Earth and Planetary Science, Graduate School of Science, The University of Tokyo

■ Publisher

Hiroshi TERASHIMA

Executive Director, Institute for Ocean Policy, Ship & Ocean Foundation

Institute for Ocean Policy, Ship & Ocean Foundation

Kaiyo Senpaku Building, 1-15-16 Toranomon, Minato-ku, Tokyo, JAPAN 105-0001

Tel. 81-3-3502-1828/Fax. 81-3-3502-2033

URL. <http://www.sof.or.jp/english>

Contents

Be the Country that Leads the World in the Field of the International Order of the Sea!

Tadao Kuribayashi

Professor of Toyo Eiwa Women's University/Professor Emeritus of Keio University

(Ship & Ocean Newsletter No.41 April 20, 2002)

4

The Urgent Need for Japan to Establish an Ocean Policy

Hiroshi Terashima

Executive Director, The Nippon Foundation

(Ship & Ocean Newsletter No.41 April 20, 2002)

6

Coastal Management in the 21st Century

Shin Kisugi

Professor, International Graduate School of Social Sciences, Yokohama National University

(Ship & Ocean Newsletter No.41 April 20, 2002)

8

Resumption of Whaling and the Principle of Sustainable Use

Joji Morishita

Head of Whaling Section, Far Seas Fisheries Division Fisheries Agency

(Ship & Ocean Newsletter No.42 May 5, 2002)

10

Detailed Report on the Mass Stranding of Sperm Whales

Toshio Murata

*Manager of the Economic Affairs Department
Oura Municipal Government, Kagoshima Prefecture*

(Ship & Ocean Newsletter No.42 May 5, 2002)

12

Oil Contamination Measures Must Be Established Based on the Lessons Learned from the Nakhodka Accident.

Kazuko Sao

Manager of the Publishing Division, Ocean Engineering Research, Inc.

(Ship & Ocean Newsletter No.44 June 5, 2002)

14

Next-Generation Marine Structure and the Future Vision of the Sea

Hideyuki Suzuki

Assistant Professor of the Graduate School of Engineering, The University of Tokyo

(Ship & Ocean Newsletter No.48 August 5, 2002)

17

Was the Case of Crew Murder on the Tanker Tajima Handled Appropriately?

Moritaka Hayashi

Professor of the School of Law (international law and law of the sea), Waseda University

(Ship & Ocean Newsletter No.49 August 20, 2002)

19

Be the Country that Leads the World in the Field of the International Order of the Sea!

Tadao Kuribayashi

Professor of Toyo Eiwa Women's University/Professor Emeritus of Keio University

The building of an international ocean order has been progressing globally but Japan has been failing to keep up. It is hoped that Japan will play an active role in the formation and development of the law of the sea. To that end, first it is necessary to formulate a general and comprehensive national policy in Japan. The reason that there is in Japan a broad array of extremely complex interests in the ocean compared to other states is no longer an excuse.

Introduction

The Ocean Governance Working Group (Nippon Foundation) made public the "Proposal for Japan's Ocean Policy in the 21st Century." This proposal was compiled by organizing the results of research conducted in the past and the results of the questionnaire survey of Japan's ocean policy conducted at the end of last year. Taking this opportunity, I as the chairman of the Society would like to express my sincere appreciation for the support of the members of the Society in preparing the proposal and for the cooperation of the people concerned in providing us with the answers to the questionnaire. The proposal shows a basic direction that Japan should follow in building and implementing its ocean policy. I hope that the proposal is used as a starting point for the discussion about Japan's ocean policy. I also hope that people involved in formulating and implementing Japan's ocean policy will give serious consideration to the proposal.

Trends in the international order of the sea in the international society

Japan has pursued the principle of ocean freedom since the Meiji era, following the nations that led the world in the field of ocean policy. This approach to ocean policy was based on the international political structure supported by advanced nations that advocated the principle of ocean freedom.

The general law and order in the international society stood on the international relations in which such powerful nations predominated. As developing countries appeared on the international stage of politics after the 2nd World War and international society underwent a rapid, drastic change, Japan continued to ask for more benefits from the freedom of ocean activities, particularly the freedom of fishing activities, while other nations were changing the direction of their ocean policies. In a series of changes in the international order of the sea taking place with the 1st United Nations Conference on the Law of the Sea in 1958, the 2nd in 1960, and the 3rd during the period from 1973 to 1982, Japan was insensitive in many respects to the trends in the international order of the sea in international society. It is thought that the persistence on the subject of ocean freedom would have made Japan choose an inappropriate

approach to the international order of the sea.

There can be no excuse for the contention that sea-related interests are more diverse and complicated in Japan than in other nations. All nations in the world are now being involved in sea-related interests in their own ways. Because many spheres of activity of national life are closely concerned with various sea-related problems in Japan, it is very important to formulate a comprehensive national policy and to deal with sea-related problems based on the policy. People's consciousness of the order of the sea must be confirmed in this 21st century, harmful results of bureaucratic sectionalism must be remedied, and the framework for formulating and implementing the ocean policy must be reconsidered fundamentally. Otherwise, Japan will be left behind the general trend in the international order of the sea and be unable to make an active contribution to the international cooperation concerning the use of the sea. The report made public by the Society for the Study of Ocean Management is in part based on the sense of emergency that we have about Japan's stance toward the ocean policy. I would like to elaborate on this from the standpoint of formation and development of the international order of the sea.

Japan should play an active part in establishing and developing the international order of the sea.

The control of the international order of the sea was based on international unwritten laws and the four Geneva Conventions on the Law of the Sea: the Conventions on the Territorial Waters, the Open Sea, Continental Shelf and Conservation of Fish, Wildlife and Mineral Resources in the Open Sea. (Japan is a non-contracting nation with regard to the last two conventions: the Geneva Convention on the Continental Shelf and the Conservation of Fish, Wildlife and Mineral Resources in the Open Sea.) The United Nations Convention on the Law of the Sea and other new international sea laws is a corpus juris compiled by integrating all these unwritten sea laws and the Geneva Conventions.

The United Nations Convention on the Law of the Sea covers a wide range of matters concerning the international order of the sea: territorial water, international channels,

archipelagic nations, exclusive economic zones, continental shelves, the open sea, closed sea, landlocked nations, deep sea floors, protection of the marine environment, oceanographic surveys, transfer of marine engineering techniques, resolution of marine disputes, and so forth. This United Nations Convention provides only a basic framework of the control of the sea order. There are many treaties and agreements concluded based on the convention to make the control of the sea order fully functional. All contracting nations of the United Nations Convention of the Law of the Sea are now responsible for keeping the international order of the sea by observing the principles and rules prescribed in the convention.

There are some problems, however, that remain unsolved under the convention, while there are new problems emerging under the convention: the conservation of fish species migrating across exclusive economic zones, the conflict concerning the use of an international channel between a coastal nation and a nation entering the international channel to catch fish, etc. Because the 3rd United Nations Conference on the Law of the Sea adopted the convention using a consensus building method, some rules are ambiguous, insufficient or become clear only in the implementation stage after nations concerned to reach agreement.

How will the contracting nations overcome the shortfalls and limitations of the new convention? We must keep watch over how each nation deals with specific problems. This means that whether the convention functions effectively or not depends on how each nation interprets and applies the rules specified in the convention. Concerning the 200 nautical miles exclusive economic zone (EEZ) that was newly ratified, for example, each nation still interprets and applies the rules on the EEZ differently. This also applies to seaway navigation and the protection of the marine environment.

In this situation, Japan is expected to promote the sustainable use of aquatic resources and the coexistence with the marine environment and to play the leading role in contributing to the sound development of the international sea system for keeping order under the United Nations Convention on the Law of the Sea. Japan depends greatly on the sea in all aspects of human activity. With the experience and technology acquired through many years in dealing with sea-related problems, Japan is responsible to the international society for playing the leading role in promoting cooperative relations with other nations and building the international order of the sea.

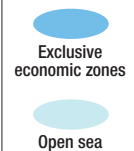
The Proposal for the Ocean Policy of Japan in the 21st Century appeals to what Japan should do to contribute to the international order of the sea.

(Ship & Ocean Newsletter No.41 April 20, 2002)

■ Japan's exclusive economic zones



This shows the exclusive economic zones that Japan established based on the concept of the United Nations Convention on the Law of the Sea. This Convention provides that the fish, wildlife and mineral resources in waters within 200 nautical miles (370.4 km) from a basal line are under the sovereign right and jurisdiction of a coastal country. The United Nations Convention on the Law of the Sea was discussed and formulated in the 3rd United Nations Conference on the Law of the Sea, which went into session in 1973, adopted in 1982, and went into effect in 1994. The official name is the United Nations Convention on the Law of the Sea.



The Urgent Need for Japan to Establish an Ocean Policy

Hiroshi Terashima

Executive Director, The Nippon Foundation

The idea that an official policy on the ocean could play a central role in its overall national policy is something little appreciated in Japan, making it difficult to clearly demonstrate a willingness to cooperate with countries around the world who are actively pursuing a new international legal regime for the oceans. Unless we work to overcome our neglect of ocean issues and formulate policies in line with the emerging conception of ocean governance, Japan will inevitably fall further behind as this worldwide ocean initiative proceeds apace.

Introduction

In response to the increasing importance of ocean issues, the Nippon Foundation two years ago established an Ocean Governance Working Group to undertake research into the various policies Japan has adopted concerning the ocean. In its evaluation of these policies, this group of experts has made comparative studies with those of other countries, undertaken discussions with ocean related institutions both domestically and abroad, hosted research seminars aimed at researchers, government administrators and the media, and carried out a national survey on ocean policy. Based on the fruits of this research, we have released the "Proposal for Japan's Ocean Policy in the 21st Century." I would like to take this opportunity to briefly explain the background leading to this Proposal, as well as to outline initiatives being taken in other countries and the necessity for an ocean policy for current conditions.

The Widening Gap between Japan and other Countries in their Approach toward Establishing a National Ocean Policy

The United Nations Convention on the Law of the Sea (UNCLOS) came into effect in 1994, the product of ten years' discussion at the 3rd U.N. Conference on the Law of the Sea, at which it was adopted in 1982. At present, there are 137 member countries to the Convention, with non-member states, such as the U.S., adhering to it as customary law, making UNCLOS a comprehensive international legal regime for the oceans.

In its establishment of a framework and rules for an international legal regime, UNCLOS was an epoch making Convention and was guided by its philosophy that "ocean problems are closely interrelated and need to be considered as a whole." UNCLOS removed many long-standing problems by standardizing the breadth of territorial waters at 12 nautical miles, and by instituting an archipelagic waters regime and Exclusive Economic Zone. It also re-defined coastal countries' rights to the Continental Shelf, recognizing large increases to those rights, while preventing further claims to increase those areas, and placed great emphasis on the marine environment by assigning responsibility to states to protect and preserve the marine environment. Finally, it designated the deep seabed and the mineral

resources therein to be the common heritage of mankind. It is a significant fact that, in advance of terrestrial law, the web of a comprehensive legal regime now spreads over all the oceans, an uninhabited 70% of the earth's surface.

In 1992 at the Earth Summit in Rio de Janeiro, Brazil, a declaration for sustainable development was made and Agenda 21—A Programme of Action was adopted. This obliged states to carry out comprehensive management as well as sustainable development of the oceans and coastal areas under their administration. Ten years after Rio, the World Summit on Sustainable Development (WSSD), to be held this year in Johannesburg, S.A., will review the accomplishments since 1992 and discuss directions that future initiatives should take.

Against this background then, since entering the 90's, attention has been focused on the oceans by countries around the world, with especial interest in comprehensive management initiatives in ocean and coastal zone areas. The U.S. can be considered as having been a leading ocean governance nation since the end of the 60's, with initiatives towards the setting of an ocean policy, enactment of legislation on coastal management, establishment of marine protected areas, and the establishment of the National Oceanic and Atmospheric Administration. Furthermore, in 1999, at the direction of the President, a comprehensive report on the oceans was drawn up, with recommendations for ocean and coastal zone policy, and, most recently, a special congressional commission was established for the purpose of creating a new national oceans policy.

In Canada, the Department of Fisheries and Oceans is responsible not only for fisheries and the environment, but maritime transport and policing of the coastal zone as well, a comprehensive and cross-sectoral approach to management reflecting enactment of its Oceans Act of 1996. Also, in 1998, Australia established its Ocean Policy, whereby a ministerial board serves as the decision-making body on all matters concerning ocean policy. This board is headed by the Minister of the Environment, and also includes the ministers for Science, Resources, Tourism, Fisheries, and Shipping, and is supported by a National Oceans Office. A particular policy aim of the board is the encouragement of sustainable use of the oceans, based on the eco-system approach.

In addition, the number of countries currently undertaking ocean and coastal zone comprehensive management is a rapidly increasing one, including New Zealand, China, Korea, Indonesia, South Africa, and others.

Against this background, the Japanese response is particularly difficult to account for. In contrast to the fervency it displayed during the Conference on the Law of the Sea, as the new international regime of UNCLOS was becoming a reality during the crucial period of the nineties Japan seems to have forgot that the oceans are the base of its future development and the significance of the new oceans regime.

In 1996, Japan became the 95th country to deposit its instrument of ratification and become a party to the Convention. Aside from fishing matters however, it took almost no actions at this time to set out an ocean policy in line with UNCLOS, neither establishing a basic oceans law, nor creating an administrative organ for promoting comprehensive ocean management. In fact, almost none of the actions called for by UNCLOS were undertaken. This neglect of the oceans unfortunately continues in Japan, resulting in an ever-widening gap with the responses of other countries.

Now is the Time for Japan to Undertake Sustainable Ocean Development and Use Initiatives

As an island nation, there can be no debate that the oceans are key to Japan's future development. Against the background of unprecedented levels of global trade, the biological and mineral resources of the ocean and the abil-

ity to transport them safely and economically by ship are prerequisites for our future development. Moreover, international consultation on ocean issues, cooperation, and technology transfers are fields in which Japan should rightly be playing leading roles, given its prominence in technology and commerce. Japan should exercise leadership in these ocean initiatives to meet growing expectations in the international community.

However, as stated above, Japan has failed to realize the national importance of adopting an ocean policy, and has therefore not developed a clear stance, amidst competition and coordination, on how to participate with other countries in the creation of a new international legal regime on the seas. As a result, it has been most difficult to communicate effectively and develop appropriate responses at the many United Nations fora and other international conferences on the oceans held in recent years.

This year is an important turning point, as the twentieth year since the adoption of UNCLOS and the tenth since the World Summit at Rio. Now is the time for Japan to remedy its long neglect, set out an ocean policy based on the new philosophy of ocean governance, and, along with creating an infrastructure to implement sustainable development and use of the oceans, to exercise an international leadership role as an ocean nation. It is my hope that our policy recommendations might be useful in bringing about these changes. Otherwise, it is inevitable that Japan will be left behind in the global initiatives now being undertaken, and risk losing the very base of its future development.

(Ship & Ocean Newsletter No.41 April 20, 2002)

International Comparison of Exclusive Economic Zones

The first calculation of EEZ areas for the world's coastal states appeared in a document released by the U.S. State Department in August of 1972, "Limits in the Seas-Theoretical Area Allocations of Seabed to Coastal States." According to this document, the EEZ area of Japan totaled 1,120,600 square nautical miles, approximately 3,860,000 sq. kilometers, to rank seventh in the world. In the accompanying table, data for all the countries except Japan were taken from the U. S. document, after conversion from sq. nm. to sq. km. (The "Times- Kodansha World Atlas 1984" lists the area for Japan as 3,861,000 sq. km., while "Jane's Exclusive Economic Zones, Third Edition, 2001-2002" lists the same as 1,120,600 sq. nm.).

The first trial calculation of Japan's EEZ carried out by the Research Institute for

Ocean Economics resulted in an area of 4,510,000 sq. km. (see "Kaiyo Sangyo Kenkyu Shiryo", Vol. 6, No. 1) for a ranking of sixth in the world. This is the figure used in the present table, which accounts for the difference in ranking from that shown in the State Department document. The same document lists the former U.S.S.R. as sixth, with an area of 1,309,500 sq. nm. or 4,490,000 sq. km., but also notes that this figure is based on control over land areas over which it exerts effective control regardless of other countries' claims, thus clearly including the four disputed islands north of Japan. If the EEZ area for these disputed islands is subtracted from the former USSR's claim and included in the 4,510,000 sq. km. figure cited above for Japan, the figure for the former USSR would be reduced to roughly 4,200,000 sq.

km. Subtraction of the EEZ areas for the now independent Baltic republics further reduces this figure, leaving Japan in clear possession of the sixth position.

(Explanation:Research Institute for Ocean Economics)

■A International Comparison of EEZ Areas

No.	Country / Region	EEZ area (10,000 sq.km)
1	U.S.A.	762
2	Australia	701
3	Indonesia	541
4	New Zealand	483
5	Canada	470
6	Japan	451*
7	the former Soviet Union.	449
8	Brazil	317
9	Mexico	285

Taken from the Ocean Development Pamphlet, June 1991, produced by the former Japanese Science and Technology Agency.

Coastal Management in the 21st Century

Shin Kisugi

Professor, International Graduate School of Social Sciences, Yokohama National University

Coastal management in Japan was in the form of individual problem solving. But, as users of the sea diversifies and competition over the use of the sea becomes complex, discussions for a hierarchy of values and a shift to a planned, systematic and comprehensive coastal management are intensifying. And, as for fishing, a drastic review of various systems such as fishing rights, fishery compensations, fishery cooperative associations is necessary for the development of fisheries based on the rational resource management system by the Convention of the Law of the Sea and maintenance of international competitive power. Upon careful consideration of the future of coastal management and fishing industry, the proposals of the Nippon Foundation's the Society for the Study of Ocean Management have important implications.

1. Coastal management, Japan's approach and new trends

Various human activities are performed in waters along the coast. Fishing activity licensed under fishing rights is entitled to the exclusive use of a certain extensive sea area, while such activities as riding personal watercraft or swimming are performed in a limited sea area, in which case the simultaneous use of a certain expanse of sea area is physically impossible. Some activities that have externality can be the cause of industrial wastewater or seawater pollution and may produce an adverse effect on the interest of other people. If one activity performed on the sea interferes with another activity, it is necessary to prioritize these activities. If activities have externality, it is necessary to prevent them from causing external economy (benefits brought to others) or external diseconomy (losses caused to others) or to make ex post adjustments.

With some activities performed in waters along the coast, the supply-demand relationship is left to the market mechanism. Fishery is a typical activity that is performed with much less concern over the supply-demand situation than other sectors of industry. Activities performed to maintain a lighthouse or a jetty do not directly produce exclusive benefits for those performing the activities, and they do not produce products to be distributed in the market. However, a large number of people in general benefit from the service provided by such activities. Objects for which such activities are performed are public properties and quasi-public properties. Who supplies and maintains public and quasi-public properties and how they are supplied and maintained must be determined. Who bears the cost to supply and maintain public and quasi-public properties must likewise be determined.

To allow sea-related human activities to be performed in good order and to have them produce benefits, rules on the supply and maintenance of public and quasi-public properties must be determined, activities must be prioritized, and systems must be established to prevent external diseconomy from occurring and to resolve disputes. The coastal

management system (policy) has a primary function to accomplish all these tasks.

In Japan the problems concerning the use of waters along the coast were individually resolved. Cases in which various activities interfered with each other in waters along the coast rarely occurred. Even if they occurred, the interfering situation concerned the same activity being performed, for example, fishing activity. Therefore, disputes were settled relatively easily by dealing with each individual case. As Japan achieved high economic growth, many activities were performed in waters along the coast, and industrial and household wastewater began to pollute the sea, exceeding the self-purification capacity of the sea. As a certain level of economic affluence was achieved, the importance of maintaining a good marine environment was recognized, while people began to spend more leisure time by performing fun activities. The use of the sea, which was once important only to interested parties, is now the concern of people in general, including the concern over the maintenance of a good environment and the use of leisure time. In this situation, coastal management must be examined by comparing the benefit gained from a better environment with economic benefits or the benefit gained from leisure activities with economic benefits, and different social values must be prioritized fairly without being influenced by economic interests.

For people concerned with the coastal management of Japan, what approach should be taken to control activities in waters along the coast is now a matter of primary concern: should problems be examined and resolved individually as practiced in the past, or is it necessary to build a system for making prior adjustments according to plan and resolving disputes systematically based on data and prioritized values? It is now important to verify the actual limitations of the functions of the existing system and to work out improvement measures without sticking too much to the discussion about the limitations of the conventional individual-control methodology. Proposals 2 and 3 made by the Society for the Study of Ocean Management are consid-

ered to the first significant step in this direction.

2. Necessity for continuing the discussion about the fishery system

Because fishery has a long history and most interests concerning fishing activities a legal system was introduced to control the activities in waters along the coast, a conflict of interest inevitably occurs between the need for performing new types of activity and the need for performing the fishing activity. If a party wants to use waters along the coast, it pays compensation to a fisherman who is the original user of waters along the coast and licensed under a fishing right in most cases. This way the party obtains the right to use waters along the coast by invalidating the fishing right through pecuniary settlement. This approach taken to transfer the existing right to the sea to a new party has aroused much criticism because the compensation specified by the fishery compensation standard has become estranged from the compensation actually paid and the process of transfer of right remains non-transparent and leaves people with the impression of unfairness. People who want to use the sea for purposes other than fishery are particularly critical of the present situation.

In 1996 the laws on the conservation and control of marine life resources were legislated based on the United Nations Convention on the Law of the Sea, and they were added to the existing fishery system being operated based on the Fisheries Law, the Law for Conservation of Aquatic Resources, and the Fishery Cooperative Union Law, which was established on the mutual aid principle for small-scale fishermen. In this new fishery system, the minister of the national government and each governor of local governments are authorized to determine the catch of each specific fish species, a new aquatic resources control method. Given this background, the Basic Fishery Law was legislated in 2001 to show a new direction of the fishery policy.

The vitalized, internationally competitive fishing industry of Japan is very important from the viewpoint of health promotion and food self-sufficiency for the Japanese peo-

ple, who have excellent seafood culture. Although the Fisheries Law and the Fishery Cooperative Union Law established as part of the postwar democratization policy of GHQ have contributed greatly to the modernization of fishery, they become disincentives to increasing the efficiency of fishery because they give too high a priority to individuals in granting fishing rights and as a result make it difficult for corporations to operate a large-scale fishery business. It is a matter of national concern to reform the overall fishery system, to achieve the required transparency for fishery compensation, which people outside the fishing industry find non-transparent, and to correct unfair practices from the standpoint of general coastal management and sound development of the fishing industry in the age of resources management.

It is important to take action based on Proposal 4 made by the Society for the Study of Ocean Management. Specific points that I consider important in putting the proposal to practice are as follows:

Entry of corporations to fishery should be facilitated actively by highlighting the requirements for their entry to fishery in relation to the Fisheries Law. With some revisions made in the Fisheries Law in 2001, some improvements were made. Continued efforts must be made to allow corporations to operate fishery and to study various business management approaches for streamlining fishery operations. This will lead to the clarification of fishing rights established as nontransferable rights (see my article in News Letter No. 8), the reconsideration of the fishing right license fee, and the reevaluation of the Fishery Cooperative Union Law which involves some unfair provisions. There are many other points that must be considered. For the fishing industry to prosper in the age of resources management, the existing fishery system must be smoothly shifted to a new fishery system in which economic entities with motivation and capability are allowed into the fishing industry and make the fishing industry internationally competitive.

(Ship & Ocean Newsletter No.41 April 20, 2002)

Resumption of Whaling and the Principle of Sustainable Use

Joji Morishita

Head of Whaling Section, Far Seas Fisheries Division Fisheries Agency

Japan aims for sustainable utilization under proper management of an abundant whale resource in future years. This has already been possible scientifically and legally. Anti-whaling protests don't provide reasonable grounds that contradict sustainable whaling.

Grounds for sustainable whaling

One thing must first be made clear about the discussion on whaling: the Government of Japan aims at the sustainable use of only abundant species of whales, such as minke whale, while protecting depleted whale species consistent with international law including the United Nations Convention of the Law of the Sea (UNCLOS) and the International Convention for the Regulation of Whaling (ICRW). People who are against whaling claim that whaling in the past depleted whale resources and therefore sustainable whaling is impossible in the future. The fact is that whale resources were overexploited in the past by whaling for whale oil which was used for industrial purposes. In that sense, whaling for food has become a victim of the past overexploitation. It must be recognized that whaling for whale oil exploited far greater number of whales than whaling for food. Because the current demand for whales as food is far smaller than the past demand for whale oil, it can be easily imagined that the overexploitation experienced in the past will not happen again.

It must also be pointed out that with greatly advanced scientific knowledge about whales and wildlife manage-

ment and new technologies available today, sustainable whaling is possible. Whaling was conducted in the past with insufficient knowledge and without using the technologies that we have today: a scientific and risk-averse method for calculating catch quotas that specifically accounts for uncertainty to ensure that utilization of abundant whale resources can occur without depletion, a device for monitoring positions and movements of whaling vessels with satellite technology, and a technique for identifying each individual whale based on DNA analysis to ensure that management rules are followed.

Scientific calculations of the number of whales show that the populations of minke whale and many other species of whales are abundant enough to allow managed and limited harvests based on safe catch quotas. This is not just the view of Japanese scientists but the agreed results of the cetacean scientists of the world at the Scientific Committee of the International Whaling Commission (IWC). Many species of whales breed at annual rates of 3% to 7%. Most scientists in the world accept as common sense that if a conservative number of whales, e.g. 1% of the whale population, is to be caught, there will be no detrimental effects on the whale resource.

Furthermore, in 1994 the IWC completed and adopted a system called the Revised Management Procedure (RMP) which is a method of calculating catch quotas while ensuring whale resources are not depleted. The principle and logic of this method is simple. Compare whale resources to a bank account. Whale resources are the amount of deposited money. Like the deposited money in a bank which produces interest, whales breed and increase at a certain rate. When a catch quota is established within this "rate of interest", whale resources (the principal sum of the bank account) will never decrease. In practice, various additional safety factors are incorporated into the method to ensure the conservation of whale resources with a sufficient margin of safety. In addition to this, various measures will ensure catch quotas and other management decisions are strictly adhered to, i.e., introduction of a control and surveillance system that includes the placement of national inspectors and international observers to prevent over-harvesting and poaching. Compared to the surveillance systems of other fishery management and wildlife conservation organizations, the system agreed by the IWC to date is very effective. In other words, a scientific and regulatory



A Bryde's whale caught in Japan's research program. The length, weight and other physical dimensions are measured for morphological studies. The contents in the stomach are analyzed and other scientific studies conducted. (photographs: the Institute of Cetacean Research)



mechanism for achieving sustainable whaling is already in place under the framework of the IWC.

Then what prevents the resumption of sustainable whaling?

As explained above, science and international laws and regulations are no longer a hindrance to the resumption of sustainable whaling. The major obstacles are now politics, cultures and values or ethics. For example, Australia, which is the strongest anti-whaling nation in the IWC, maintains a basic policy to object to resumption of commercial whaling under any conditions whatsoever even if whales are abundant and refuses to participate in any discussions which might lead to the resumption of whaling. This stubborn anti-whaling policy is based on their belief that whales are very special animals and harvesting them is against their ethics. On the other hand, millions of kangaroos are killed every year in Australia (the kangaroo catch quota in 2002 was 6.9 million), and the business for processing and selling their skin and meat is a major industry in Australia. The logic that catching whales is unethical, but catching kangaroos is ethical is unconvincing as long as the harvest is sustainable.

People have a very different set of values concerning various animals and human food depending on their cultures. For instance, cows are considered sacred animals in India. Would we accept it if India launched a world-wide anti-beef-eating campaign by claiming that cattle must not be eaten under any conditions? Undoubtedly not, yet that is exactly the approach to the whaling issue taken by the U.S., Britain, Australia, New Zealand and others, sometimes even with a threat of economic sanctions.

For anti-whaling governments, whaling is an issue that they can use to gain political advantage in environmental problems at no cost: politicians from anti-whaling nations can enhance their image as being environmentally-conscious by simply standing on the anti-whaling side because they do not have people concerned with whaling in their constituency. For politicians or governments that are criticized for lack of action in the area of global warming and other environmental problems, the whaling issue presents a good chance to improve their political standing.

Opinions have been expressed that because food is in oversupply in Japan, we do not need whale meat or, because we rarely eat whale meat, eating whale is no longer

part of our culture and therefore we do not need to insist on the resumption of whaling to the point of making an enemy of the U.S. I will have something to say on other occasions about the present situation in which Japan is seemingly in a satiated state due to huge quantities of imported foodstuffs while the truth is that its food self-sufficiency rate is less than 40%. However, focusing back on the whaling issue, I simply object to those who would impose their opinion that whale meat is unnecessary on others. Although there are people who consider whale meat unnecessary, there are other people who consider whaling and whale meat definitely necessary. As stated above, the resumption of sustainable whaling to satisfy the wishes of those people who need whaling and whale meat is justified scientifically and legally. Is it appropriate to deprive such wishes by conceding to the objection of a powerful nation such as the U.S. made on the grounds of their ethics or values? If Japanese diplomacy is incapable of maintaining a policy that is supported by sound science and international laws, what is the point of that diplomacy? Even though most Japanese people do not wear Japanese kimono or go to watch Noh plays every day, they are undoubtedly part of Japanese culture. The contention that whale meat eating is not a part of Japanese culture since not all Japanese people eat the meat in everyday life, therefore, does not stand.

I have a strong objection to references to the whaling issue as an environmental issue and the anti-whaling campaign as an environmental protection movement. Whaling is a resource management issue and the scientific and legal issues concerning the management and sustainable use of whale resources have been solved and are no longer the obstacles for the resumption of sustainable whaling. The true focus of the whaling issue is now on the politics and the emotional conflicts arising from differences in ethics.

(Ship & Ocean Newsletter No.42 May 5, 2002)

● Websites that provide more information:

The Whaling Section of the Fisheries Agency - <http://www.jfa.maff.go.jp/whale/indexjp.htm>

The Institute of Cetacean Research - <http://www.icrwhale.org>

The Whale portal site - <http://www.e-kujira.or.jp/>

● References:

Joji Morishita 2002, "Why do whales strand? Tragedy of anti-whaling movements" Kawade Shobo Shinsha

Detailed Report on the Mass Stranding of Sperm Whales

Toshio Murata

*Manager of the Economic Affairs Department
Oura Municipal Government, Kagoshima Prefecture*

Fourteen whales, thirteen of which died, were stranded on the shores of Oura, Kagoshima last January. Along with the difficulty, which was beyond imagination, of just moving each whale whose bulk was more than 20 tons, the town went through an awful lot of trouble, as if it were struck by a natural calamity.

1. Beginning of the incidence

My home town, Oura Town, is located in the southwestern part of the Satsuma Peninsula. It is about 50 km and an hour's drive from Kagoshima City, the capital of Kagoshima Prefecture. It borders Kaseda City to the east, Botsu town to the south, and Kasasa Town to the west, and is bounded on the north by the East China Sea. In winter, the strong northwesterly season wind blows and the weather is always stormy in the East China Sea.

Around 8 o'clock in the morning on Jan. 22, 2002, I received a call from a person who was walking on the dike in the Kominato reclaimed land in Oura Town. He said that he saw some objects stranded on the shore and they looked like whales. I immediately sent the staff at Economic Affairs Dept. to the site. They reported to me that 14 whales were on the shore and they were bigger than any whales they had seen before. I myself went to the site. 13 of 14 whales seemed to be alive. The sea was stormy and a strong northwesterly wind was blowing. I thought that it would be impossible to rescue them if we worked from the dike side and that we should rescue them by approaching from the offshore sea area. I immediately contacted a major construction company that does port construction work and has large working boats. We judged, however, that rescue work would be dangerous in that stormy weather condition and gave up the idea of starting rescue work on Jan. 22.

Although high tide was 13:45 on the day, the whales

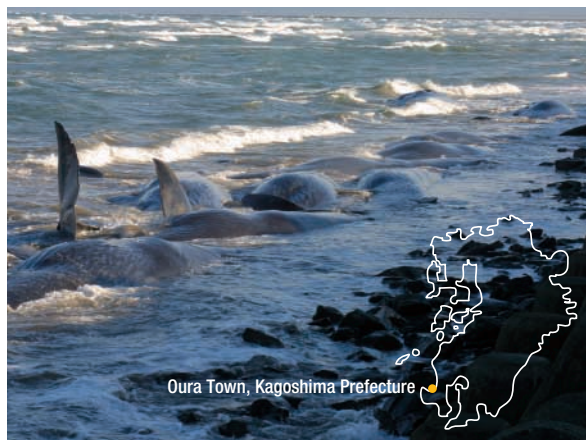
could not leave the shore on their own strength due to the low level of that day's tide. After a while, specialists from the Faculty of Fisheries of Kagoshima University, the Kagoshima Aquarium and other organizations arrived at the site. They confirmed that the whales were sperm whales. We found that all whales were male, the smallest one was 12 meters long and estimated to weigh 20 tons, and the largest one was 16 meters long and estimated to weigh 40 tons.

2. Rescue operation

The next morning the sea was as stormy as the day before. The whales were dying one after another. Because every minute counted in the situation, we began the rescue operation in stormy weather.

The level difference of high and low tides was becoming larger, and high tide was 14:09. We began the rescue operation when the sea level was the highest. A large working boat was pulled by tugboats and anchored offshore, and ropes were extended from winches. However, the operation did not proceed smoothly due to the stormy weather. The whales still had their strength left, and they shook off the cloth bands that the divers tried to tie to the caudal fins. They tried twice but failed. As the tide began to ebb, they tried the third time, knowing that it would be the last chance they could take on the day. They were at last able to tie the bands to the caudal fins and wind up them by winches. One whale was able to leave the shore. In this rescue operation, only one whale was brought alive into water, but 13 other whales were confirmed dead.

The ministerial ordinance concerning the permission and control of specified fishing operations, which was announced by the Fisheries Agency, provides that if mustached whales and others stranded on the shore are alive, they must be quickly returned to the sea; and if they are dead, they must be buried or incinerated, or other appropriate disposal measures must be taken in order to prevent the sea life from transmitting diseases. How the remaining 13 whales should be disposed of was discussed for long hours at the Committee for Countermeasures. The whales were too big and proper sites or facilities that were large enough to dispose of them could not be found. We were finally able to obtain the approval of Kaseda City to bury them in



the public beach. Many museums throughout Japan called us; they wanted to have the whales to use them as skeletal samples of whale bodies. We decided to process and make them into skeletal samples, and began the processing work. There was still the possibility that they would be dumped into the sea. With this in mind, we talked with the Maritime Safety Agency but could not reach a conclusion.

On Jan. 26, we worked overnight for about 12 hours, and were able to process one whale and make it into a skeletal sample. As it was very heavy, a large 25-ton trailer, a large dump truck, a large 170-ton crawler crane, and other vehicles were damaged or broken, making the work speed slower. As a result, we had to give up the idea of burying the remaining 12 whales.

3. Dumping them into the sea

We could not dump them into the sea, nor could we bury or incinerate them. As days passed, an offensive odor rose, and oil was contaminating the site. All personnel of the municipal government worked on the site. When we were contacting various organizations concerned to find solutions, we received a notice from the Maritime Safety Agency that the corpses were natural objects, not discarded objects, and therefore they may be dumped into the sea. It was a great relief to us. We immediately started to make preparations for dumping.

Another big problem occurred. It was a matter of specific gravity. Experts estimated that the specific gravity of a sperm whale is estimated to be 0.98 when it is alive, and that of the dead whales may be about 0.6, since days had passed after they had died. To have the dead whales sink in the sea on their own weight, therefore, a weight twice as heavy as that of a whale needed to be attached to the body of each whale! This matter was further discussed at the Joint Committee for Countermeasures with the attendance of experts from the National Science Museum, the Cetacean Organism Research Laboratory of the Fisheries Agency, and other organizations. It was concluded that if the gas inside the whales were drained by opening their bellies, the specific gravity should become about 0.7, and a weight matching this specific gravity should be used to

have them sink in the sea. We immediately began the work of arranging for clumps of concrete as weights.

On Feb. 1, when the sea waves became relatively gentle, we started the work of dumping the whales into the sea. 11 days after the whales got stranded on the shore, they gave off more offensive odor, and the work did not progress as smoothly as expected. The work started at 7 o'clock in the morning, but the large tower crane broke down, the pulleys of cranes on the second working boat were damaged, wires were broken many times, and we worked in a state of unbroken tension. The 12th and last whale was dumped at 20:19. The most extraordinary work, the first of its kind in Japan or in the world, was finished. One whale of the longest body length required 13 concrete lumps weighing 36.11 tons. To have all 12 whales sink into the sea, 254.04 tons of weights were used. When the last whale sank into the sea, 50 workers shouted loudly and took each other's hands in joy.

4. Closing remarks

The mass stranding of the whales is an incident that will remain in our memory forever. We experienced a mass stranding of large whales for the first time in Japan. It put our town through tremendous toil and financial trouble. The personnel worked 24 hours a day, keeping watch, regulating traffic, cleaning the shore, and so forth for two whole weeks, using our time solely for dealing with the incident, which should otherwise have been used to do our jobs at the municipal office.

This type of incident involving the stranding of whales may again occur somewhere in coastal areas, because Japan is surrounded by the sea on all sides, and it is said that the population of whales is increasing after whaling was banned. If the rescue, burial or incineration of stranded whales is the responsibility of a municipality faced with whale stranding, whale stranding is simply a disaster, like a typhoon, for municipalities in coastal areas. Therefore, we strongly request the national government to extend the scope of application of the Disaster Relief Law and to formulate appropriate laws as soon as possible.

(Ship & Ocean Newsletter No.42 May 5, 2002)

● Website of Oura Town <http://www4.synapse.ne.jp/oura/>

(1) The rescue operation began but faced hard going due to the stormy weather. The divers made frantic efforts. One whale was returned safely to the sea, while 13 other whales died.

(2) Whale burial. They were 12 to 16 m long and weighed 20 to 40 tons; only one whale was lifted and buried after they worked overnight.

(3) They attached concrete lumps weighing 20 to 36 tons to each whale and had all whales sink in the sea off the coast of Nomaikie. These clumps of concrete will make good fish-breeding ground.



(1)



(2)



(3)

Oil Contamination Measures Must Be Established Based on the Lessons Learned from the Nakhodka Accident.

Kazuko Sao

Manager of the Publishing Division, Ocean Engineering Research, Inc.

Some shorelines are still struggling to escape from the oil pollution caused by the Russian tanker "Nakhodka" even though more than five years have passed. In this article, Japan's insufficient countermeasures are examined and a better system for dealing with an accident is proposed. Preventing the accident is essential. But accidents will happen. We have to accept this fact and be prepared with the countermeasures.

Introduction

Before dawn on Jan. 2, 1997, the Russian tanker "Nakhodka," loaded with heavy fuel oil, sank in the Sea of Japan. The body of the tanker broke in two, the stern sank in deep water at a point 2,500 m off the coast of Oki Island, Shimane Prefecture, and the bow drifted to the sea off Anto Point, Mikuni Town, in Fukui Prefecture. Although oil recovery and removal operations were performed, masses of oil clots drifted ashore on the coasts of nine prefectures, most heavily on the beaches in Fukui and Ishikawa Prefectures. It was Japan's most serious oil spill accident, in which an estimated amount of 8,660 kl of heavy oil spilled to the sea. Many volunteers cooperated to remove the oil, rescue seabirds and do other types of cleanup work. From February toward the end of May, coastal municipalities successively issued statements that the situation was under control and the beach cleanup was almost complete. This situation made the volunteers desiring to continue the

cleanup work hesitate to do so. The early cessation of the cleanup activity was associated with the fatigue of the local communities and the concern that rumors of continued oil contamination might do harm to the image and economy of the local communities. Given this situation, the beaches were cleaned only incompletely. Most of the recovered oil was disposed of by incineration as industrial waste, and it took two and a half years to dispose of all the recovered oil. Claims for compensation greatly exceeded the funds available which amounted to 23.3 billion yen. To this day, the compensation process has yet to be completed.

About five years have passed since the accident. What has become of the beaches that were tainted by chocolate-color heavy oil? I remember people were working in piercing cold, and a squall of sleet and roaring waves were breaking like sets of huge folding screens.

The seashore now

I surveyed the conditions of oil residues on ten beaches in Ishikawa Prefecture: Shioya and Katano beaches in Kaga City, Shakuzaki Point on the Noto Peninsula, and the beaches at Nagahashi, Senmaida, Moura, and others. The aftermath of the accident and the conditions of these beaches were never reported by the media, and the accident is fading with time in people's memory. Of the people who worked to recover and remove oil, very few have visited the site to check the conditions of oil residues. I stood on the rocky stretch, the cobble beach and the sands, and found that the beaches are dotted with oil residues and that the color and smell remain as strong as when I stood there after the accident occurred. Although the surfaces of the beaches looked clean, I found oil residues remaining under sand and gravel when I dug the sand.

The Shioya and Katano beaches were once beautiful sandy beaches covered with seaside plants. In performing the beach cleanup operations, drifted oil was mixed with the beach sand using heavy machinery. A huge amount of oil-immersed sand was produced this way. Because it was impracticable to remove such a huge amount of contaminated sand, holes were dug in the beach, and most of this sand was buried in the holes. This method of disposing of oil had a significant negative impact on seaside plants: the roots of kobomugi, hamagou and other seaside plants with-



If you dig the cobble beach, oil residues are exposed. This condition persists today.

ered. On the Shioya beach, a beach scarp about 100 m long and 3 m high (at the highest point) formed, and the beach was heavily eroded. The seaside plants once functioned to hold the sandy beach or to counteract the force of erosion. Since they withered and disappeared, the beach is now at the full mercy of the ocean's erosive force. On the beach surface, very soft oil-immersed sand that was buried becomes exposed among scattered debris. When the sea becomes rough, it drifts to the sea.

According to Mr. Nobuhiro Sawano, assistant professor of the Seiryō Women's Junior College, who continues to make surveys of oil residue, the erosion of the Shioya beach is progressing and as of March 2002, the hamagou zone was completely destroyed, and the 3-meter high beach scarp receded about 30 meters. He points out that the shoreline has receded markedly even if we account for beach drifting that occurs during winter months. He also notes that oil which sank into the sand and gravel in the beach on the Noto Peninsula remains entrained beneath the surface layer.

Why did all this happen? In Mikuni Town, where the bow of the Nakhodka drifted ashore, the conditions of the beach were widely reported by the media and many volunteers gathered to assist with cleanup efforts at this site. The beach is now almost clean. In the case of the Noto Peninsula, although the beach was badly contaminated, government officials did not issue a loud call for support in removing oil, primarily due to concerns with creating a negative public image of the community and associated impacts resulting from the spill. Work was conducted primarily with older people who were members of the local community. The work was physically demanding, due to the challenging local topography, and therefore many oil clots were left unrecovered. The confusion at the work site would not have happened and significant progress in removing oil clots would have been possible if local officials had instituted an oil cleanup method better suited to the shoreline profile, an oil cleanup plan that could be adapted to different types of beaches (e.g. a beach to be cleaned mainly with manpower where severe topography requires that remaining oil be cleaned over a long period of time with enduring effort), and a chain of command for effectively implementing the cleanup.

Oil contamination measures must be established based on the lessons learned from the Nakhodka accident.

If a serious accident occurs, it is impossible to stop an oil spill from drifting ashore unless the weather is perfect and the seas are calm. The success or failure of oil cleanup operations is determined by whether the local community

or municipality has an oil cleanup plan and makes preparations based on the plan. The following points should be noted as measures Japan has established to deal with oil spill accidents:

(1) Emphasis is on removing oil in the ocean, and an effective, efficient system for dealing with the oil clots drifting ashore has not yet been established.

(2) Emphasis is on the development and improvement of equipment and machinery, not on the development of human resources.

(3) Although effort is made to recover oil, oil cleanup procedures and systems are not well examined in relation to their effects on the environment.

(4) The jurisdiction over the ocean and beaches are separate; there is no integrated oil cleanup plan or a chain of command for on-site operations, and the number of individuals who can take command on-site is very small.

(5) Because a polluter is responsible for the cleanup of oil and bears the cost of recovery and removal operations, Japan does not have command authority. Surveyors of the International Oil Pollution Contamination Fund and those of insurance companies take the leadership in performing on-site operations, and therefore emphasis is on economic efficiency, rather than on protection of the environment.

Oil contains polycyclic series and many other substances that do not dissolve. If an accident occurs, ocean life is the first to suffer negative impacts, and then damage spreads via aquatic and terrestrial organisms through the food chain. As the objective of oil recovery and removal is to keep the effects of oil to a minimum, an oil recovery and removal plan must be formulated based on the precautionary principle, with consideration given to the toxicity of oil and oil dispersants. Formulation of such a plan requires that background data (natural environment, logistics, pits, final disposal, results of follow-up of contamination conditions, etc.) be collected and organized to provide the basis of the plan, which must be developed in cooperation with local residents who know the natural conditions of the coastal area. More specifically, the ESI (Environmental Sensitivity Index) map showing the beach characteristics and wildlife habitat conditions in each coastal area must be compiled based on a uniform standard, oil recovery and removal methods appropriate for each coastal area must be determined based on the ESI, and the ESI along with oil recovery and removal methods must be integrated into the "oil spill recovery and removal plan" of the national government and the "regional disaster plan" of each local government.

For the "oil spill recovery and removal plan" and the "regional disaster plan" to function effectively and efficiently, the following requirements must be met:

(1) An on-site commander who can take command of recovery and removal operations while considering local input must be designated.

(2) The national government must take responsibility for recovery and removal operations if a serious oil spill accident occurs. The national government temporarily bears the cost for the operations and later charges the polluter for the cost.

(3) An oil recovery and removal plan in which all processes from oil recovery to final oil disposal are described must be established.

(4) To provide the administrative basis required to meet the three requirements listed above, revisions must be made in the Law for the Prevention of Marine Pollution and Sea Disasters and other laws as appropriate. In addition, although the Maritime Disaster Prevention Center is designated as the key organization for oil recovery and removal operations in the Law for the Prevention of Marine Pollution and Sea Disasters, organizational reforms have not yet been carried out based on the results of the Nakhodka accident. The national government must bear the responsibility for this.

In the Sea of Japan, the most significant concern is the future prospect of an oil spill accident that could happen at the petroleum and natural gas development site off the coast of Sakhalin. The Sakhalin II Project that began production in July 1999 has several problems related to an oil recovery and removal plan and environment protection measures. In the Sea of Okhotsk, there are areas with sea ice, habitats utilized by a diverse assemblage of wildlife, fertile fishing grounds with salmon and trout, wetlands that would never recover from a spill event, and brackish-water lakes such as Lake Saroma. If an accident occurs in the Sea of Okhotsk, extensive damage results throughout this environmentally important marine environment.

Although countermeasures including the ESI were reviewed after the Nakhodka accident, a comprehensive viewpoint has not been presented, and the results of follow-up surveys conducted to verify the effects on the environment are unsatisfactory. This is because the surveys were not conducted on the actual sites. We request that appropriate oil recovery and removal measures be established based on the lessons that we learned from the Nakhodka accident.

(Ship & Ocean Newsletter No.44 June 5, 2002)



On the Shioya beach in Kaga City, the roots of seaside plants withered from the effects of oil and the shoreline are being eroded. (The photograph was taken in June 2000.)

Reference:

"Heavy oil contamination - Can the Nakhodka accident change Japan?" compiled and issued by the Publishing Dept. of the Ocean Engineering Research, Inc. 1998.

Next-Generation Marine Structure and the Future Vision of the Sea

Hideyuki Suzuki

Assistant Professor of the Graduate School of Engineering, The University of Tokyo

Even in Japan, the development of an "ocean vision", which sees beyond the 21st century, has become a pressing need. In terms of technology, innovative ideas could contribute to the new development of this vision. From the point of view of future generation marine structures, this article deals with massive floating structures such as the integrated EEZ management station and disaster prevention wide area mobile station and their functions.

1. What do we need?

To control the order and use of the sea in the 21st century, a concrete vision of the sea is required, and Japan should establish it. In this paper, I would like to make one proposal, specifically a "next-generation marine structure" and to describe its functions in the hope that I will contribute to establishing Japan's vision of the sea.

2. New trends in the order and use of the sea

As is widely known, the United Nations Convention on the Law of the Sea was adopted by contracting members, including Japan. The significance, however, is not well understood by people in general. In the course of the discussions held over a long period of time until the Convention was adopted, the global environment problem appeared more imminent than before, and the conditions surrounding mankind changed greatly. Our views of the world and the earth also changed greatly. As a result, we saw the emergence of the entirely new concept that the sea is a common property of mankind, and this concept was introduced to the Convention. Three mainstays of this concept were defined in the preamble of the Convention: (1) the peace of the sea, (2) the economic aspects of the sea, and (3) environmental problems. The Convention states that the sea is a common property of mankind and it must be conserved and protected for mankind.

In Japan, various problems will also appear more imminent in the 21st century: the global environment problem,

problems related to resources and energies, food problems, low birth rates, aging society, and so forth. With these problems in mind, I organized the sea-related activities being conducted in Japan into a table, as shown in Table 1, based on the three principles of the "21st Century Ocean Grand Design" proposed by the Japan Federation of Industrial Organization: (1) to know the sea well, (2) to use the sea wisely, and (3) to protect the sea.

We must manage our society efficiently to maintain the high living standard and vitality of Japan, while at the same time dealing with the problems and fulfilling our responsibilities. The proposed marine structure to be installed in the sea must be optimized and achieve low cost even though they are installed for uses of security, international contributions and technological strategies. In proposing and designing the next-generation marine structure, high performance and efficiency must be realized.

3. Next-generation marine structure

I would like to make the following proposals about marine structures that Japan should introduce to conduct activities on the sea:

(1) "Offshore center for global environmental research" to be established offshore and in waters along coastal areas: this is based on the principle "to know the sea."

(2) "EEZ comprehensive ocean management base" to be established offshore: this is based on the principle "to protect the sea."

■Table 1 Uses of the sea and the marine structure

Principle	Use of the sea	Use of the marine structure
To know the sea	Oceanographic survey	Study of the global environment
To protect the sea	Global environment	Deep-sea CO ₂ disposal
	EEZ management	Comprehensive EEZ management
To use the sea	Disaster prevention	Disaster prevention bases
	Biological production	Sea fertilization, artificial upwelling current, use of deep water, marine farms, aquaculture
	Development of resources and energies	Methane hydrate development, sea bottom mineral resources, natural energies, stock bases, power generating stations
	Transportation and distribution	Offshore airports, floating bridges, heliports, airship bases, ocean relay stations, container terminals
	Life	Refuse incineration, leisure facilities, amusement facilities, hotels, ocean cities
	Port	Moving piers

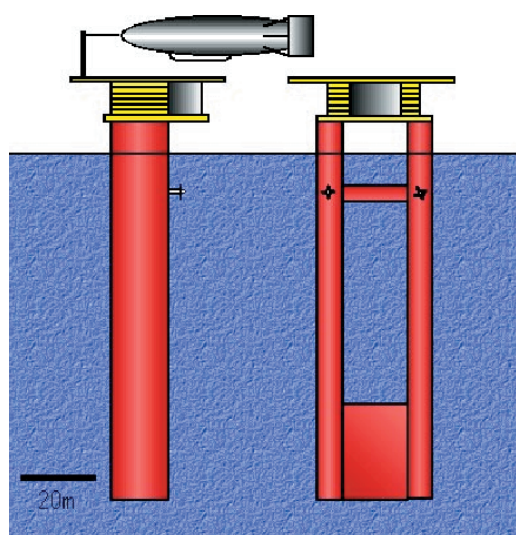
(3) "Base for the development of methane hydrate and other deep-sea resources," "wide-area mobile disaster prevention base," "marine structure for coastal development," and "structure for expanding the living space of mankind to the ocean" to be established offshore: this is based on the principle "to use the sea."

Of these proposals, the "EEZ comprehensive ocean management base" and the "wide-area mobile disaster prevention base" are described here.

(1) EEZ comprehensive ocean management base

To effectively control the vast 200-nautical-mile economic zone of Japan, it is important to establish bases at appropriate points and to handle various events that occur inside the exclusive economic zone. Sea patrolling and policing can be done with no problem if land bases can be used, but to deal with international affairs quickly, it is necessary to access each important sea zone in the shortest possible time. Therefore, offshore bases are necessary, specifically floating sea bases. I propose an offshore facility in which personnel can stay for a long period inside the exclusive economic zone, particularly along the demarcation line of the economic zone, to maintain the order of the sea or to conduct surveys. Because the maintenance of the order of the sea involves a variety of different activities, it is assumed that the personnel of government authorities and agencies, researchers, engineers, trainees, etc., can stay and conduct activities. To enable people in the facility to maintain close communication with their counterparts on land, use of helicopters and airships, which are recently

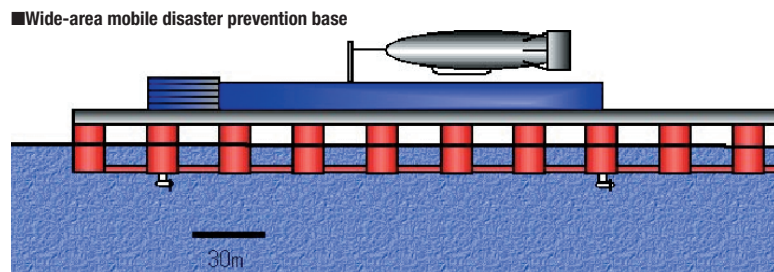
■Fig.1 EEZ comprehensive ocean management base



attracting a great deal of attention for their transportation capacity and cruising distance, is proposed. To enable people performing a great diversity of different activities to live together for a long period of time, the facility must have high wave-resistance and low motion performance, and provide plenty of space and the same working environment as that on land. The facility must also be designed to be used for different purposes: scientific investigations, learning, information gathering, and so forth. As a facility that can meet all these needs, I propose a spar-type floating body (vertical tower-type floating body). This floating body can be used as a storage warehouse, a lodging facility, a research building, a recreational facility, an airship berthing facility, and so forth.

(2) Wide-area mobile disaster prevention base

In the Great Hanshin-Awaji Earthquake that occurred in 1995, ships and floating bodies in the Kobe Port remained almost undamaged. Based on this experience, a pontoon-



type floating disaster prevention base (flat box-type floating structure) was established in Tokyo Bay, Ise Bay and Osaka Bay, though its range of activity is limited to a relatively calm coastal area. In the disasters that have occurred recently, the eruption of Mt. Usu and that on Miyake Island, it was strongly desired that a disaster prevention base as the headquarters for countermeasures be established offshore near the area affected by the eruption to direct the shipment of goods and to perform rescue operations. Given this background, I propose that a floating wide-area mobile disaster prevention base. If a serious disaster occurs, it can cruise on the open sea and reach the disaster area quickly, stay on the sea close to the disaster area, and function as a command center for directing the operations, transporting goods, and rescuing people. The possibility that it may conduct activities in the East Asian region should be taken into consideration. It must be designed to allow a large helicopter to land and take off and with medical and lodging facilities, as well as a warehouse function.

(Ship & Ocean Newsletter No.48 August 5, 2002)

Was the Case of Crew Murder on the Tanker Tajima Handled Appropriately?

Moritaka Hayashi

Professor of the School of Law (international law and law of the sea), Waseda University

The murder case on the Tajima is often referred to as pinpointing a weak point in the law of the sea. Was there really no way to avoid inflicting great and prolonged damage and pain on the persons concerned? The authorities concerned took the position that they were not allowed to intervene without a request from the flag state. In my view, however, the law of the sea does not preclude Japanese intervention while the vessel was in its internal waters.

Recounting of events

On April 7, 2002, a Japanese officer went missing on a tanker of Panamanian nationality Tajima, which was owned and operated by Japanese companies, on the high seas off the coast of Taiwan. A Filipino seaman later reported that he saw two other Filipino seamen beat the officer and throw him into the sea. At the request of the master, Japanese Coast Guard officers got aboard the tanker and detained each of the suspects in different rooms. The tanker entered Himeji port on April 12, when a team of Coast Guard officers went aboard as the Panamanian side requested, performed on-site investigations, and found the marks of blood in the vessel. Both suspects were reported to have confessed that they committed the murder.

Although the investigation report was delivered to the Panamanian embassy on April 19, the reply to this report was delayed for reasons allegedly of translation work and discussions made in the home country. The tanker was compelled to remain anchored offshore in the Himeji port for more than a month with the suspects put under house arrest by the authority of the master, which was a very unusual situation. On May 14, the Panamanian government asked for the provisional detainment of the suspects, and the following day the Coast Guard sent the suspects to the Tokyo High Public Prosecutor's Office under guard. It was still another month later that the Japanese government began the proceeding based on the Law on the Extradition of Fugitive Criminals upon receiving the request for the extradition of criminals by the Panamanian government.

The Law of the Sea does not exclude the jurisdiction of Japan

This incident caused spiritual and economic losses to, inter alia, the master, the crewmen, the owner of the tanker, and the people concerned with the tanker operations and management. It also gave rise to legal problems and other problems that concern the sea transport industry of Japan, which is heavily dependent on ships flying flags of convenience. Here, however, I wish to focus only on the question of whether the Law of the Sea was really an impediment to Japan in taking quicker action to deal with the case.

Reports are that the authorities concerned judged that the

Japanese Penal Code does not apply, because the murder occurred on a foreign vessel on the high seas and the perpetrators were not Japanese, and that they would have taken action quickly had Panama asked Japan to arrest and extradite them. In other words, they took the position that a coastal nation cannot intervene in such a case in any manner whatever unless the flag state of the vessel requests the coastal nation to take specific actions. In my view, this is not the correct interpretation of the Law of the Sea.

Jurisdiction over an incident that occurs on a foreign vessel in internal waters

The problem was that the fact that the incident had occurred on the high seas was emphasized too much, and little attention was paid legally to the facts that the tanker was anchored in a Japanese port in the internal waters of Japan and the murder case had a serious impact on Japan.



Tanker Tajima (photo: The Yomiuri Shimbun)

Although Panama reportedly mentioned the provisions concerning the territorial waters specified in the United Nations Convention on the Law of the Sea, internal waters must be distinguished from territorial waters. The Convention does not clearly specify a coastal State's criminal jurisdiction over a foreign vessel in its internal waters. Therefore, customary law based on the practice of States should be applied. According to the general practice of major States, the intervention of a coastal State is recognized if an incident on board a foreign vessel is considered to have an impact so serious as to disturb the peace and public order of that State. A murder case is a typical example; legal precedents show that even if people of coastal States were not involved, the coastal States exercised the jurisdiction in a number of cases.

How Japan should handle such a murder case?

The present Japanese Penal Code does not apply to a foreign suspect of a criminal act committed against Japanese outside Japan. If we interpret the Penal Code strictly, it may have been difficult to bring the suspects to criminal prosecution in this murder case. However, the fact remains that the state of affairs surrounding the murder continued without change until it was brought to internal waters of Japan, and the case had a serious impact on Japan. Under such circumstances, it is submitted, the Law of the Sea does not preclude the intervention of the authorities concerned. Had the authorities taken some practical steps for humanitarian purposes and human rights protection, such as allowing the suspects to go on shore and be kept under temporary detainment while negotiating with Panama, Japan would not have been accused internationally. The Japanese government is reportedly considering an amendment to the Penal Code. I hope that the above-mentioned point will be duly taken into account.*

(Ship & Ocean Newsletter No.49 August 20, 2002)

* Subsequently, on July 11, 2003, the Diet adopted an amendment to the Penal Code, which makes the Code applicable to persons (irrespective of nationality) who commit certain serious criminal offences against Japanese nationals outside Japan.