

ANNUAL REPORT ON MARITIME SAFETY

1998 Edition



JAPANESE MARITIME SAFETY AGENCY

ANNUAL REPORT ON MARITIME SAFETY

1998 Edition

ANNUAL REPORT ON MARITIME SAFETY

TABLE OF CONTENTS

Major Incidents Related to Maritime Safety	1
Summary	10
 PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues	
Chapter 1 Efforts to Maintain Maritime Order	12
1. Response to Diversification and Internationalization of Maritime Crime	13
(1) Response to crimes involving illegal immigrants	13
(2) Response to crimes by foreign fishing boats operating illegally	14
(3) Response to narcotics- and firearms-related crimes	15
2. Maintenance and Policing of Sovereignty, etc., in the Territorial Sea, etc.	16
(1) State of affairs and response around the Senkaku Islands	16
(2) Response to the Takeshima and Northern Territories issue	16
(3) Response to marine research vessels in the East China Sea	17
(4) Security mission against strife at sea, guard and escort missions, and response to special cases	17
Chapter 2 Reducing Maritime Accidents to Zero	18
1. Intensification of Safety Measures for Foreign Ships	18
(1) Instances of recent maritime accidents involving foreign ships and responses to them	19

(2) Comprehensive safety measures for foreign ships	19
2. Maintenance of Safety in Congested Areas such as	
Tokyo Bay	19
(1) Establishment and operations of the Maritime	
Traffic Information System	20
(2) Maintenance of maritime traffic safety in Tokyo Bay	20
(3) Safety measures for recreation boats	20
3. Production of Electronic Navigational Charts	20

Chapter 3 Toward a Swift and Accurate Search and Rescue System

1. Enhancement of Cooperation and Coordination under a Global	
Search and Rescue System	21
(1) International cooperation under the GMDSS	21
(2) Cooperation and coordination with neighboring countries	
under the International Convention on Maritime Search	
and Rescue (SAR Convention)	22
2. Enhancement of Special Rescue System for	
Unusual Accidents	22
3. Establishment of Rescue System which Integrates	
Government and Private Sectors	23

Chapter 4 Protecting Life and Property from Natural and Accidental Disasters

1. Response to Natural Disasters	24
(1) Measures for natural disasters	24
(2) Compilation of Coastal Disaster Prevention	
Information Charts	25
(3) Surveys and observation for earthquake prediction	25
2. Response to Accident Disasters	25
(1) Response to oil spill accidents and other related accidents	25
(2) Construction of Coastal Area Environmental Protection	
Information Database	26

(3) Strengthening the drift prediction system	27
---	----

**Chapter 5 Oceanographic Information Responding
to Needs of People** 27

1. Oceanographic Surveys Responding to UNCLOS	27
(1) Marine geodesy	27
(2) Oceanographic surveys to determine the sea area under Japanese jurisdiction	27
(3) Surveys to establish limits of the continental shelf	28
2. Management and Provision of Oceanographic Information Responding to a Highly Information-based Society	29
(1) Establishment of a highly-sophisticated oceanographic data management system	29
(2) Provision of maritime safety information through the Internet	29
(3) Operations of the Japan Oceanographic Data Center (JODC)	29

Chapter 6 Expansion of Aids to Navigation System 30

1. Establishment of the New Wide-range Radio Navigation System	30
(1) Establishment of the Loran-C System	30
(2) Introduction of the Differential GPS System	31
2. Expansion of Local Weather Information Service	31
3. Promotion of Use of Natural Energy for Visual Aids	31
4. Aids to Navigation that are User-friendly for Local People	32
(1) Preservation of Meiji Period lighthouses	32
(2) Aids to Navigation that are user-friendly for local people	32

PART 2 Maritime Safety Trends

Chapter 1 Maintaining Maritime Order	33
I. Policing Territorial Seas, etc.	33
1. Policing Territorial Seas	33
(1) Present situation	33
(2) Senkaku Islands	33
2. Present Situation of Policing Foreign Marine Research Vessels	34
3. Cases of Japanese fishing boats	34
(1) Cases of seizure in the sea areas around Hokkaido	34
(2) Cases of arrest in other sea areas	34
II. Maintenance of Legal Order at Sea	34
1. Violations of Laws Related to Maritime Affairs	35
2. Violations of Laws Related to Commercial Fishing	35
3. Violations of the Penal Code	36
4. Violations of Laws Related to Immigration	36
5. Violations of Laws Related to Narcotics and Firearms	36
III. Security Missions Against Strife at Sea and Guard and Escort Operations	36
1. Security Mission Against Strife at Sea	36
2. Guard and Escort Operations	37
Chapter 2 Ensuring Maritime Traffic Safety	37
I. Safety Measures in Congested Sea Areas	37
1. Application of Maritime Traffic Safety Law and Port Regulations Law	37
(1) Maritime Traffic Safety Law	37
(2) Port Regulations Law	37
2. Maritime Traffic Information System	38
3. Safety Measures for Large-Scale Projects	38
II. Guidance to Ensure Maritime Traffic Safety	38

1. Promotion of Maritime Casualty Prevention Activities	38
2. Guidance and Development for Maritime Casualty Prevention Organizations	38

Chapter 3 Promotion of Measures for the Safety and Sound Development of Maritime Recreation

I. Current State and Future Trends of Maritime Recreation	39
II. Occurrences and Causes of Maritime Recreation Accidents and Rescue	39
1. Occurrences and Causes of Maritime Accidents and Rescue	39
2. Occurrences and Causes of Seashore Accidents and Rescue	39
III. Promotion of Measures to Prevent Accidents in and Contribute to the Sound Growth of Maritime Recreation	40
1. Safety Guidance, etc., for Those Concerned with Maritime Recreation	40
2. Management of “Paradise for Recreational Boats” and Cooperation in Marine Events	40
3. Enrichment and Strengthening of Related Organizations	40
IV. Enrichment and Strengthening of the Rescue System for Maritime Recreation	40
1. Strengthening the Rescue System with Patrol Craft and Aircraft	40
2. System for Obtaining Distress Information	41
3. Establishment of Private Sector’s Maritime Rescue Systems	41
V. Provision of Information which Contributes to Maritime Recreation Safety	41

Chapter 4 Maritime Search and Rescue

I. Occurrences of Maritime Accidents and Rescue	41
1. Occurrences of Maritime Accidents	41
2. Maritime Accident Rescue	42

3. Occurrences of Accidents Involving People and Rescue of Victims of Accidents	42
(1) Occurrences of non-distress accidents resulting in injury or death of persons on board	42
(2) Occurrences of seashore accidents	42
4. Rescue by Helicopter Winching	43
5. Transportation of Emergency Patients	43
II. Maritime Search and Rescue System	43
1. Information Gathering System	43
2. Ship Reporting System	43
3. Immediate Response System for Maritime Distress	43
4. Special Rescue System	44
5. System for Medical Emergencies at Sea	44
6. Enhancement of the Emergency Lifesaving System	44
7. Cooperation with Related Organizations	44

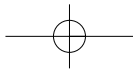
Chapter 5 Protection of the Marine Environment and Maritime Disaster Preparedness and Response

I. Current State of Marine Pollution and Preventative Measures	45
1. Marine Pollution Occurrences	45
2. Provision of Guidance and Law Enforcement for Protection of the Marine Environment	45
3. Investigation on Protection of the Marine Environment	45
II. Current State of Marine Disasters and Preparedness and Response Measures Against Them	46
1. State of Maritime Disaster Occurrences	46
2. Combative Measures for Oil Spills	46
3. Other	46

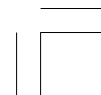
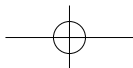
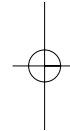
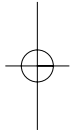
Chapter 6 Response to Natural Disasters

1. Measures for Natural Disasters	46
2. Surveys on Disaster Prevention	47

Chapter 7 Oceanographic Surveys and Provision of Oceanographic Information	47
I. Determination of Sea Area under Japanese Jurisdiction	47
1. Oceanographic Surveys to Determine Sea Area under Japanese Jurisdiction	47
2. Surveys to Establish Limits of the Continental Shelf	47
3. Promotion of Marine Geodesy	47
II. Oceanographic Surveys and Provision of Information to Ensure Navigational Safety	48
III. Management and Provision of Oceanographic Information	48
Chapter 8 Aids to Navigation Services	48
I. Current State of Aids to Navigation	48
II. Maintenance and Management of Aids to Navigation	48
III. Local Weather Information	49
IV. Utilization of Natural Energy and Preservation of Historic and Cultural Facilities	49
Chapter 9 International Activities Related to Maritime Safety	50
I. Activities with International Organizations	50
II. Promotion of Cooperation and Solidarity with Related Countries	50
1. Guard and Rescue Operations	50
2. Hydrographic Operations	50
3. Aids to Navigation Operations	50
III. Promotion of International Cooperation and Contribution	51



Chapter 10 Present Maritime Safety System	51
I. Organization and Personnel	51
II. Vessel and Aircraft	52
III. Education and Training System	52
IV. Research and Development	52



Major Incidents Related to Maritime Safety (September 1997 to August 1998)

Asia-Pacific Maritime Safety Agencies Forum (September 1997)

The Japanese Maritime Safety Agency (JMSA) sponsored the second session of the Asia-Pacific Maritime Safety Agencies Forum in Tokyo from 10–11 September 1997. Following the first session held in 1996, this session provided an occasion for the heads of the relevant authorities in the Asia-Pacific region to exchange views in order to promote the exchange of information and to enhance cooperation.

The Forum was chaired by the Commandant of JMSA and attended by representatives from the maritime safety authorities of 13 countries (Japan, United States, Canada, Russian Federation, Republic of Korea, China, Philippines, Thailand, Singapore, Indonesia, Australia, New Zealand and Fiji), one region (Hong Kong) and one international organization (International Association of Marine Aids to Navigation and Lighthouse Authorities [IALA]), who exchanged opinions on such matters as oil pollution countermeasures, maritime search and rescue operations, and navigation safety.

Nodal Mission Control Center (Nodal MCC) Operations Initiated (September 1997)

On 1 September 1997, operations of the Nodal Mission Control Center (Nodal MCC) were initiated to strengthen the structure for gathering information on maritime accidents in the northwest Pacific region.

The Nodal MCC receives distress signals transmitted from

satellite Emergency Position-Indicating Radio Beacons (EPIRB) installed on vessels via Cospas and Sarsat satellites and determines the location of the distress signal, the name of the vessel, and other information which it forwards to the Rescue Coordination Center (RCC).

JMSA established the Nodal MCC in response to international requests, stemming from the anticipated increase in the workload of the US Nodal MCC in advance of the full implementation of the Global Maritime Distress and Safety System (GMDSS) scheduled to take place on 1 February 1999.

As a result, Japan's Nodal MCC will serve as the core of the northwest Pacific region, one of the five global sectors, as it receives and transmits data from other regional MCC units and performs operational guidance and coordination. At the same time, enhanced exchanges of information with other Nodal MCC units will make an even greater contribution to global maritime search and rescue activities.

Asia-Pacific Maritime Drug Law Enforcement Seminar (October 1997)

From 27–31 October 1997, JMSA and the United Nations International Drug Control Programme (UNDCP) co-sponsored the Asia-Pacific Maritime Drug Law Enforcement Seminar in Yokohama. This event, the first of its kind in the world, was attended by 32 participants from 15 different countries.

The holding of this Seminar was one of various measures taken to follow the proposals of the UNDCP to heighten the technologies and capabilities of governments to control maritime drug trafficking, and to promote enhanced close cooperation among maritime law enforcement agencies. The Seminar introduced the Maritime Drug Law Enforcement Guide prepared by the UNDCP, featured demonstrations by JMSA and the US Coast Guard,

provided a chance to present strategies being taken by participating countries in terms of drug law enforcement, and served to stimulate discussion on regional cooperation in this sector.

Detecting Movements of Titi Sima by Satellite Laser Ranging Observation (October 1997)

From September to December 1996, laser ranging observations were carried out simultaneously on the island of Titi Sima, and at the Simosato Hydrographic Observatory (mainland point of reference). Transportable and fixed-type laser-ranging systems and the geodetic satellite "Ajisai" were used. The results, in which the observation data were analyzed along with observation data carried out from January to March 1988, showed that Titi Sima is moving at a yearly rate of 6.6cm in a west-northwest direction (291 degrees clockwise from the north) toward the Eurasian Plate on which Simosato is located. This agrees with theoretical movement projections made concerning the Philippine Sea Plate, on which Titi Sima lies, toward the Eurasian Plate. It will serve to better understand the mechanism of ocean trench earthquakes, such as those occurring at the Suruga Trough or Nankai Trough, where both plates meet.

Response to the Sinking of the CHU HAI in the Kanmon Strait (November 1997 to July 1998)

On 11 November 1997, a collision occurred in the Kanmon Strait, involving the CHU HAI, a Chinese cargo ship en route from Oita Prefecture to China (2,387 gross tonnage, crew of 24, hereinafter referred to as "C"), and the ASIAN HIBISCUS, a Panamanian cargo ship traveling from the Republic of Korea toward Kanmon port (7,170 gross tonnage, crew of 19), causing C to sink.

Major Incidents Related to Maritime Safety

Due to the fact that the sunken C would be a serious obstruction for maritime traffic, JMSA took countermeasures necessary for the safety of navigation in the Kanmon strait, an important maritime traffic area. A fixed restricted zone was set up around the location of the sunken ship, and navigational guidance was provided by the Kanmon Strait Traffic Advisory Service Center and patrol boats. In addition, mutual cooperation was carried out with the 4th Harbor and Port Construction Bureau. Considerable guidance was given to the ship owner of C regarding the removal of the ship's hull, and repeated requests were made through the Ministry of Foreign Affairs of Japan to the Government of China regarding guidance for removing the hull to be given to the ship owner. The same requests were also given to the Government of China at the Japan-China Inter-Governmental Consultative Meeting on Shipping held in February 1998.

As a result, eight months after the accident, C's hull was completely removed by a salvage company which signed a removal agreement with the ship owner on 2 July 1998.

Response to Continuing Attempts to Smuggle Groups into Japan (November 1997-)

JMSA arrested 481 persons in 1996 and 605 persons in 1997 for illegally entering the country, and as of the end of August 1998 had arrested 272 such persons, demonstrating that crimes involving illegal immigration continue to be prominent.

As for recent smuggling tendencies, the traditional use of Chinese boats is on the decrease. However, group smuggling in the Korean offshore areas which involves transferring from Chinese boats to Korean fishing boats and landing in Japan from the Japan Sea, and smuggling involving the concealment of immigrants inside legitimate trade ships is on the increase. In

addition, professional criminal acts such as the creation of hidden compartments aboard ships in which to harbor illegal immigrants, and plans to land in Japan—not only from the Japan Sea but from all coastal areas, are growing.

On 17 August 1998, an incident occurred at the Oi wharf in Tokyo Bay involving the GOLDRICH RIVER, a cargo ship from St. Vincent and the Grenadines (2,900 gross tonnage, crew of 15 Chinese). Upon unloading and inspecting a container which had been on board the ship, 16 illegal Chinese immigrants were discovered inside, eight of whom were dead.

JMSA, in order to contain smuggling at the point of departure, continues to maintain cooperation with related organizations and to intensify a system of information gathering, through such areas as requesting cooperation from private groups. Moreover, JMSA has been intensifying lookouts by patrol vessels and aircraft in the sea regions which surround Japan, and making efforts to inspect ships coming into Japan from China and the Republic of Korea as thoroughly as possible.

In addition, JMSA has been continuing to intensify cooperation through such activities as hosting meetings with China (Frontier Guard Bureau, Ministry of Public Security) in October 1997 and the Republic of Korea (Korea National Maritime Police Agency) in February 1998 concerning smuggling supervision, in which information was exchanged about smuggling prevention.

Hegurajima Lighthouse Local Weather Information Telephone Service Receives over a Million Calls

Hegurajima is a flat island lying offshore 50km to the north of Wajima City on the Noto peninsula. Because of this, the weather and sea conditions observed at the Hegurajima lighthouse, such as wind direction, wind speed, climate and waves, are almost the

exact equivalent of the weather conditions occurring locally at sea, and are thus the most accurate data for understanding maritime weather conditions in the eastern area of the Japan Sea.

Since the Hegurajima lighthouse provides an invaluable information resource for understanding maritime weather conditions in real time during periods of the year when the typhoon season and seasonal winter winds are in full effect, JMSA started the first nationwide telephone service there in 1986. Since then, in addition to general sailors and fishermen, in recent years there has been an increase in persons involved in maritime recreation. Since the telephone service began, the yearly calls have increased year on year from an initial 12,000 to over 1 million in 1997. The lighthouse registered the highest number of calls among 33 telephone service stations in Japan (the second one is 680,000 recorded at the Kannonzaki Vessel Traffic Signal Station).

Kurushima Strait Traffic Advisory Service Center Operations Initiated (January 1998)

In order to maintain the safety of vessels and efficient navigation in sea areas where vessel traffic is congested, JMSA is establishing Traffic Advisory Service Center facilities which conduct information provision services and centralized traffic control based on laws regarding maritime traffic; beginning with the Tokyo Bay Traffic Advisory Service Center, established in 1977, JMSA continues to establish new facilities.

The Kurushima Strait is located in a prominent position in the Seto Inland Sea, where it joins the Hiuchi Nada and the Iyo Nada. In this area, due to four narrow, winding channels, bad visibility and a strong tidal stream, special navigation controls are in place whereby ships navigating with the tidal stream use the central channel, and ships navigating against the tidal stream

use the west channel. Because this is one of Japan's foremost sea areas, in order to maintain the safety of navigation in the Strait, on 1 January 1998, operations of the Kurushima Strait Traffic Advisory Service Center, Japan's sixth Traffic Advisory Service Center, focusing on the Kurushima Strait region, were initiated.

JMSA Celebrates its 50th Anniversary (May 1998)

JMSA, established in May 1948, celebrated its 50th anniversary on 1 May 1998.

As of May 1998, nationwide there were 11 Regional Maritime Safety Headquarters and 66 Maritime Safety Offices, four Hydrographic Observatories and 84 Aids to Navigation Offices. JMSA has 12,174 employees, owns 515 vessels and 69 aircraft, and maintains 5,497 Aids to Navigation.

To commemorate the 50 year anniversary of the establishment of JMSA, in addition to creating a JMSA mascot "Umimaru," the Minister of Transport and the Commandant of JMSA were invited, as reviewers, to the Sea Review to Commemorate the 50th Anniversary of JMSA, held in Tokyo Bay at sea off Haneda. The Commander of the US Coast Guard Pacific Area and the cutter MUNRO were also invited.

In addition, JMSA Band, celebrating its 10th anniversary, is making plans to release a commemorative CD, and to hold a commemorative concert.

Response to a Request for Evacuation of Japanese Residents from Indonesia in Crisis (May 1998)

In May 1998, arising from unstable political conditions in Indonesia, violence and looting was carried out by students and townspeople, and clashes occurred between them and the Indonesian Armed Forces (ABRI) who had been sent in to

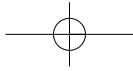
suppress the activities, creating a highly unpredictable situation. In response to this, the Japanese Government put in place measures for evacuation of Japanese residents in Indonesia. At a request for cooperation by the Minister for Foreign Affairs, JMSA, in order to make assurances for the evacuation of Japanese residents, dispatched two helicopter-carrying patrol vessels, the MIZUHO and the ECHIGO, to Indonesia.

While the two vessels were on standby at Singapore port, conditions in Indonesia returned to normal. Due to this, withdrawal was decided on 26 May and the two vessels returned safely to Naha port, Okinawa Prefecture on 1 June. Although an evacuation operation was not actually carried out, it was the first mission since its establishment that JMSA had to respond to evacuation of overseas Japanese residents.

Policing the Territorial Sea around the Senkaku Islands (June 1998)

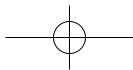
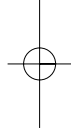
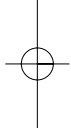
Since July 1996, activities to claim sovereignty over the Senkaku Islands, called "Activities to Defend Diao Yu Tai (Japanese name 'Uotsurijima')," have been gaining vigor in Taiwan, Hong Kong and other countries concerned. On 24 June 1998, six protest boats approached the territorial seas surrounding the islands. In spite of repeated warnings by patrol vessels not to enter Japanese territorial seas, a Hong Kong protest boat, and a dinghy launched from it, ignored demands and trespassed into the territorial sea. Due to these actions, JMSA drove the boats out of the territorial sea.

Following this, the Hong Kong protest boat transmitted a distress signal. All those aboard, apart from the ship's captain, transferred to a nearby Taiwanese protest boat. The captain who had remained was saved by a patrol vessel, and handed back over to the Taiwanese protest boat. JMSA Officials boarded the unmanned boat and conducted an investigation into why the



distress signal had been transmitted. They discovered that the rubber joints of the propulsion engine cooling water pipe in the engine room had split at two points, one of which had been deliberately cut. In addition, another point had come loose, and all three were letting in water.

JMSA Officials took emergency steps to prevent leakage, but the Hong Kong protest boat continued to drift until it sank in heavy storms on 26 June off the island of Uotsurijima.



Summary

The Japanese Maritime Safety Agency (JMSA) carries out maritime safety operations in response to changes in the economic and social conditions in Japan which occur from time to time. JMSA can cover areas such as maintenance of public order at sea, maritime search and rescue, maintenance of maritime traffic safety, provision of oceanographic data, and preservation of the marine environment.

The “Annual Report on Maritime Safety” concerns the operations undertaken by JMSA and is aimed at introducing JMSA on a wider scale to the general public to obtain their understanding and cooperation. The Report was first published in 1956 and this is the 43rd edition.

The 1998 “Annual Report on Maritime Safety” is made up of three sections, “Major Incidents Related to Maritime Safety,” “PART 1—Maritime Safety Measures Taken Over the Last Ten Years and Future Issues,” and “PART 2—Maritime Safety Trends.”

The part “Major Incidents Related to Maritime Safety” both increases the awareness of the general public regarding maritime safety operations and more particularly, gives a topical account of the various developments which took place between September 1997 and August 1998.

“Part 1—Maritime Safety Measures Taken Over the Last Ten Years and Future Issues,” in light of 1998 being the 50th anniversary of the establishment of JMSA, looks back over the last ten years of maritime safety operations and discusses issues pertaining to the 21st century.

Particular reference will be given to the following maritime safety operations carried out over the last ten years: the response toward the expansion of sea surveillance area management accompanying the conclusion of the United Nations Convention

on the Law of the Sea (UNCLOS), increasing efforts toward the prevention of maritime accidents brought on by the increase in foreign ships and the congestion of shipping traffic, the establishment of the International Search and Rescue System based on the International Convention on Maritime Search and Rescue (SAR Convention), and increasing efforts toward oil spill controls related to the NAKHODKA maritime accidents and other oil spill accidents.

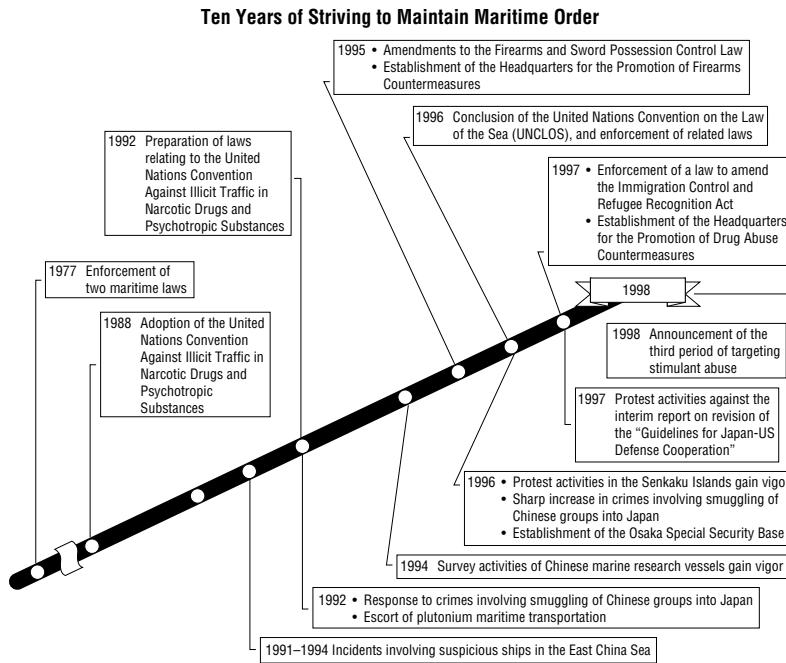
In recent years, the response to the internationalization of maritime crimes such as group smuggling, and narcotics and firearms smuggling from China and the Republic of Korea, and safety countermeasures for foreign vessels which continue to be involved in maritime accidents, have become important issues.

In addition, “PART 2—Maritime Safety Trends” gives an overview of operations carried out in 1997 and the present state of JMSA.

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

Chapter 1 Efforts to Maintain Maritime Order

JMSA, responding to the conclusion of various international conventions and enactment of related national laws, carries out surveillance control of maritime crime, and polices Japan's territorial seas. In recent years, the response to the continued internationalization of maritime crime and operations concerning the policing of the territorial sea in order to maintain the sovereignty of Japan have become particularly important issues.



1. Response to Diversification and Internationalization of Maritime Crime

On the occasion of the conclusion of UNCLOS in June 1996, related statutes were prepared and the sea areas in which surveillance control of maritime crime was being carried out were widely extended. Concerning crimes, the smuggling of people saw a rapid increase in 1996 and 1997, and the illegal operations of foreign fishing boats have been increasing since 1994. Narcotics- and firearms-related crimes are also becoming a serious social problem.

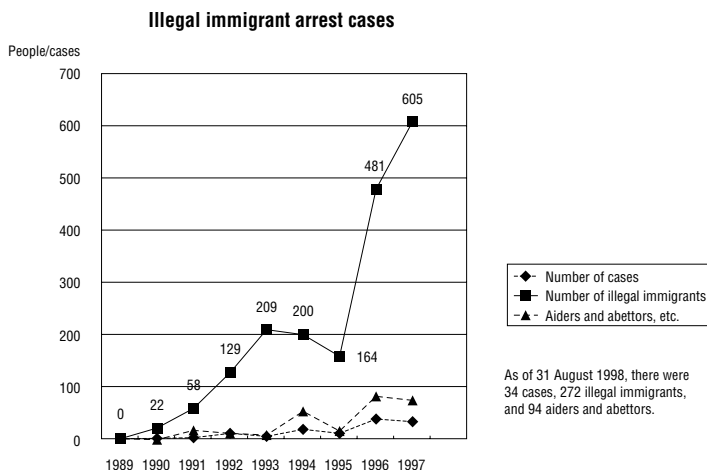
(1) Response to crimes involving illegal immigrants

- Since the late 1980s, the increase in illegal Chinese immigrants has been alarming, seeing a rapid increase since 1996. Recent trends include professional criminal acts such as the creation of hidden compartments aboard ships in which to harbor illegal immigrants and the landing in Japan from all areas of the archipelago. One incident occurred in August 1998 in which 16 illegal Chinese immigrants were discovered inside a container aboard a cargo ship from St. Vincent, eight of whom were dead.

The group smuggling of these Chinese immigrants was part of an organizational tie-up between the Snake Head organization, an international smuggling broker, and a Japanese mafia group.

- To combat illegal immigration, JMSA has been adopting countermeasures, such as detailed boarding inspections, investigations of smuggling organizations, cooperation with affiliated organizations, the intensification of a system of information gathering, and the intensification of surveillance control by patrol ships and aircraft.

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues



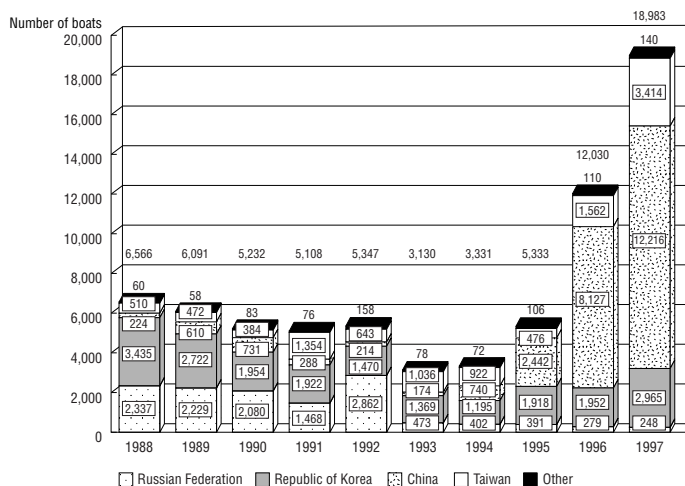
(2) Response to crimes by foreign fishing boats operating illegally

- The number of verified foreign fishing boats in the sea areas surrounding Japan decreased slightly in the late 1980s to early 1990s, saw an upturn after 1994, a sharp increase after 1996 and reached 19,000 in 1997.
- Many of the foreign fishing boats operate illegally, and JMSA carries out surveillance control using patrol vessels and aircraft. Some of the illegally operating fishing boats even go as far as aggravating their crimes by ramming patrol vessels and resisting by using long pieces of timber; JMSA however carries out thorough control procedures by having the patrol vessels force their way alongside the boats and exerting their authority over them.
- It is necessary for JMSA to be involved in meetings on new Japan-China and Japan-Republic of Korea fisheries agreements, and to further intensify surveillance controls over Chinese and Korean fishing boats operating in the sea areas surrounding Japan.

Number of verified foreign fishing boats in the sea areas surrounding Japan

Accompanied by the establishment of the exclusive economic zone, the waters over which Japan exercises jurisdiction regarding fisheries have been extended, and therefore the number of verified boats has increased.

The number of verified boats in 1997 was the highest in the ten-year period, approximately six times greater than 1993, which had the lowest figure in the ten-year period.



Notes: 1. Foreign fishing boats are those boats which hold a nationality from a country or region other than Japan.
 2. The number of boats up until 1995 corresponds to boats in the territorial sea and the former fishing zone.
 3. The number of boats in 1996 corresponds to boats in the exclusive economic zone established from 20 July 1996, added to boats in the territorial sea and the former fishing zone.
 4. The number of boats in 1997 corresponds to boats in the territorial sea and the exclusive economic zone.

(3) Response to narcotics- and firearms-related crimes

- Persons accused of stimulant-related crimes have continued to increase over the last three years. Criminal cases involving the use of firearms continue to occur, demonstrating that narcotics and firearms are becoming a serious social problem.
- JMSA is intensifying shore control of narcotics- and firearms-related crimes by positively cooperating in international narcotics countermeasures taken in the United Nations and its affiliated bodies, participating in the government's Headquarters for the Promotion of Drug Abuse

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

Countermeasures and the Headquarters for the Promotion of Firearms Countermeasures, and coordinating with the police and customs.

2. Maintenance and Policing of Sovereignty, etc., in the Territorial Sea, etc.

JMSA polices the territorial sea in order to maintain sovereignty and jurisdiction over them. In recent years, however, serious cases have been arising around the Senkaku Islands.

(1) State of affairs and response around the Senkaku Islands

- Since 1996, activities claiming dominion of the Senkaku Islands have been gaining vigor in Taiwan and Hong Kong. Activities involving protest boats have grown in both intensity and complexity. In response to this, JMSA, while taking the utmost care not to provoke unforeseeable circumstances, conducts policing and rescue activities to prevent intrusion into the territorial sea of Japan.

Overview of the main protests surrounding the Senkaku Islands (since September 1996)

Year/Month/Day	Overview of main protests
26 September 1996	Hong Kong protest boat approaches Senkaku Islands, trespassing into the territorial sea. A number of activists jump into the sea, and one of them dies.
7 October 1996	Forty-nine small Taiwanese protest boats carrying activists from Hong Kong and Taiwan approach Senkaku Islands of which 41 boats trespass into the territorial sea. Four persons make forced landing on reef of Uotsurijima.
26 May 1997	Approximately 30 Taiwanese protest boats and a Hong Kong protest boat approach Senkaku Islands. Three boats trespass into the territorial sea. Two activists jump onto a patrol vessel, and are transferred back to a Taiwanese protest boat, which is then forcibly removed.
1 July 1997	One Taiwanese protest boat approaches Senkaku Islands, trespassing into the territorial sea.
24 June 1998	Group of six Hong Kong and Taiwanese protest boats approach Senkaku Islands. The Hong Kong protest boat trespasses into the territorial sea. Two days later the boat is abandoned and it sinks.

(2) Response to the Takeshima and Northern Territories issue

- In order to prevent the seizure of Japanese fishing boats, JMSA has patrol vessels stationed at all times.

(3) Response to marine research vessels in the East China Sea

- Activities of foreign marine research vessels have been identified in the East China Sea. In particular, since 1994, Chinese marine research vessels have been frequently identified. In response to non-approved research in the Japanese continental shelf and in the exclusive economic zone, JMSA, in addition to making demands for cessation of activities, also keeps the Ministry of Foreign Affairs of Japan informed.

(4) Security mission against strife at sea, guard and escort missions, and response to special cases

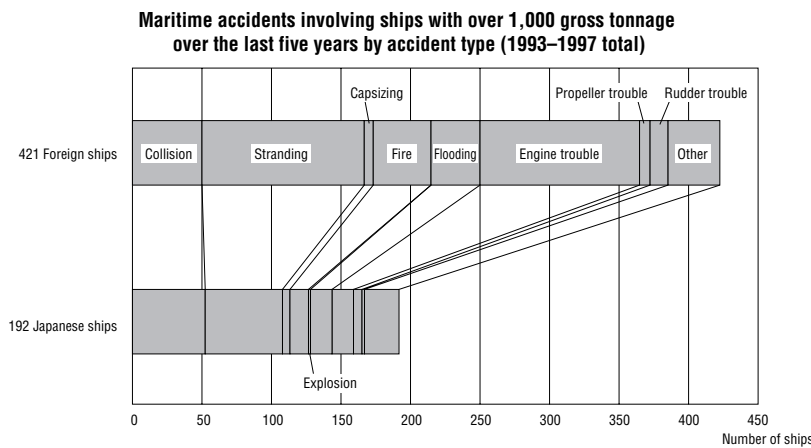
- JMSA responds to situations which affect social conditions, such as the security mission on the occasion of Enthronement, the escort of plutonium maritime transportation and the policing control of ferries at the time of the Tokyo Underground sarin attack incident.
- In addition, the Osaka Special Security Station was established in May 1996 in order for JMSA to swiftly and accurately deal with cases of special security such as seajacking and incidents involving the use of poisonous gases, such as sarin.

Chapter 2 Reducing Maritime Accidents to Zero

Although the number of ships involved in maritime accidents is on a downward trend, the proportion of accidents involving foreign ships is on an upward trend. In addition, in 1997, the highest number of accidents in any ship category were those involving recreation boats instead of fishing boats. Safety measures to combat such areas are thus becoming increasingly important.

1. Intensification of Safety Measures for Foreign Ships

The proportion of maritime accidents involving foreign ships is on an upward trend. In particular, cargo ship and tanker accidents alone, 20% of foreign ship accidents in the mid to late eighties, accounted for 40% in 1997, and have been rising further in 1998.



(1) Instances of recent maritime accidents involving foreign ships and responses to them

- Maritime accidents which constitute a serious obstacle to ship traffic involving foreign ships continue to occur. For example, in 1992 a collision between a Korean ship and a Japanese ship in the Kanmon Strait caused traffic restriction for 28 hours in the strait; also, in 1997 a Chinese ship and a Panamanian ship collided in the Kanmon Strait causing the Chinese ship to sink. The hull was removed after approximately eight months.

(2) Comprehensive safety measures for foreign ships

- JMSA carries out comprehensive safety measures for foreign ships by encouraging carriage of nautical charts and confirmation of ships' positions. In addition to placing emphasis on visiting foreign ships and to provide guidance, JMSA is enhancing information provision service in Traffic Advisory Service Centers, is installing the Differential Global Positioning System (DGPS) stations, and is strengthening the system for the combating of oil spill accidents.

2. Maintenance of Safety in Congested Sea Areas such as Tokyo Bay

In order to maintain safer navigation in sea areas congested by ships, such as Tokyo Bay, in addition to the provision of information and conducting navigation control at Traffic Advisory Service Centers, JMSA has developed individual maritime traffic safety measures such as safety measures for large scale projects.

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

(1) Establishment and operations of the Maritime Traffic Information System

- Since operations were initiated at the Tokyo Bay Traffic Advisory Service Center in 1977, JMSA has continued to establish the Maritime Traffic Information Systems in the Seto Inland Sea and other congested sea areas, the most recent being the initiation of operations in 1998 at the sixth center, the Kurushima Strait Traffic Advisory Service Center.

(2) Maintenance of maritime traffic safety in Tokyo Bay

- With the turning point being the DIAMOND GRACE oil spill accident in 1997, JMSA has been providing thorough guidance on navigation routes.
- JMSA is working to improve Aids to Navigation apparatus by increasing the size of lighted buoys, flash synchronization, etc.

(3) Safety measures for recreation boats

- The number of recreation boats which required rescue in 1997 was 677, a figure higher than accidents involving fishing boats and the highest number of accidents in any ship category.
- In order to work for the dissemination of ideas and education encouraging maritime recreation safety, JMSA conducts "Paradise for Recreational Boats," in which at a fixed time, fixed sea areas are opened up to recreation boats, and has established the "Maritime Recreation Events Consultation Office."

3. Production of Electronic Navigational Charts

- In order to improve convenience for navigators and safety of navigation, since March 1995, JMSA has been producing

CD-ROMs of the Electronic Navigational Charts, the first one being “From Tokyo Bay to Asizuri Promontory.”

Chapter 3 Toward a Swift and Accurate Search and Rescue System

With the introduction of a global framework for maritime search and rescue, JMSA not only enhances cooperation and coordination with neighboring countries, but also works to perfect and intensify special rescue systems which require advanced rescue technologies, and to maintain private rescue systems.

1. Enhancement of Cooperation and Coordination under a Global Search and Rescue System

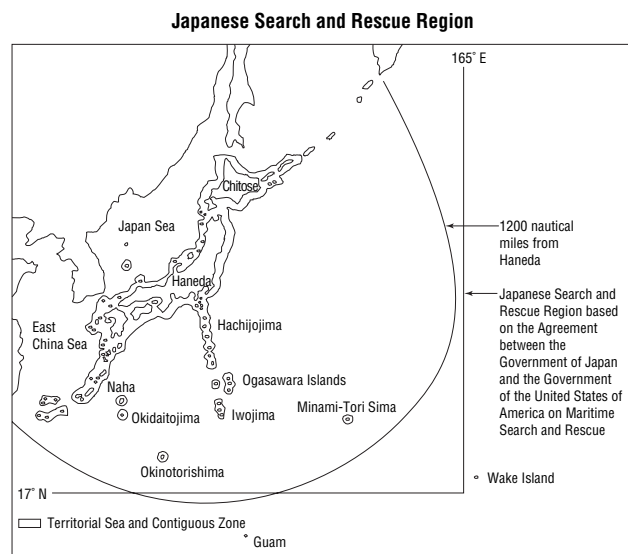
The Global Maritime Distress and Safety System (GMDSS) was introduced in 1992. Using this system, it is possible for boats to make swift and accurate rescue requests in whatever sea area in the world they may be in distress, and to automatically receive messages regarding maritime safety information.

(1) International cooperation under the GMDSS

- Installation of facilities for GMDSS began in 1989. Shore-based facilities were completed in FY1994, and operations have already been initiated. On-board GMDSS equipment will be installed on patrol vessels by January 1999.
- In addition, Japan has been operating the Nodal Mission Control Centers of the Cospas-Sarsat system which forms a component of GMDSS since 1997.

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues**(2) Cooperation and coordination with neighboring countries under the International Convention on Maritime Search and Rescue (SAR Convention)**

- JMSA has been enhancing cooperation and coordination in accordance with the SAR Convention with neighboring countries such as the United States and the Republic of Korea in order to establish a regional search and rescue system in the Asia-Pacific region.

**2. Enhancement of Special Rescue System for Unusual Accidents**

- In 1975 the Special Rescue Team, a team of five individuals with advanced rescue skill, was established in the 3rd Regional Maritime Safety Headquarters. In 1986 this was reinforced to become the 3rd Regional Maritime Safety Headquarters

Haneda Special Rescue Station, which at present consists of 5 teams with a total of 30 individuals.

- JMSA, with the Special Rescue Team as the nucleus, strives to enrich and strengthen the special rescue system at sea through the utilization of patrol vessels with enhanced rescue capabilities and patrol vessels with scuba diving teams, and to nurture emergency lifesavers.

3. Establishment of Rescue System which Integrates Government and Private Sectors

- In order to build a rescue system along the coast that leaves no gaps due to the increase in recent years of recreational boat accidents, JMSA is positively providing support and guidance for the establishment of a rescue system by private sectors.
- JMSA provides support and guidance to the Japan Lifeboat Institution, which since 1985 has been performing maritime medical aid services, including the dispatch of doctors to those injured at sea, and to the Japan Marine Recreation Association (JMRA), which since 1992 has been performing rescue services for recreational boats and first aid services for scuba diving-related accidents.

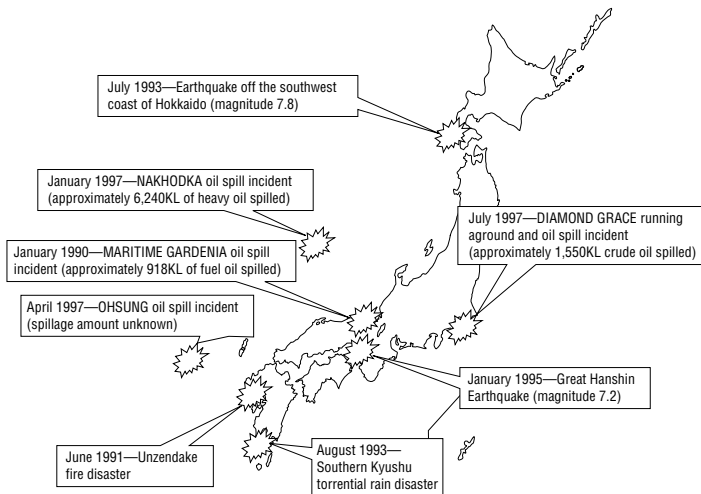
Chapter 4 Protecting Life and Property from Natural and Accidental Disasters

For disasters such as the Great Hanshin Earthquake, the NAKHODKA incident and other oil spill-related disasters, JMSA has been making efforts to strengthen disaster prevention measures in cooperation with other governmental organizations in areas which range from disaster prevention to emergency measures.

1. Response to Natural Disasters

JMSA prepared an internal plan for natural disasters, etc., and makes efforts to establish a system for swift and accurate rescue activities.

Major natural disasters and oil spill incidents in recent years



(1) Measures for natural disasters

- Operations have been initiated at the Tachikawa Regional Disaster Prevention Base since 1994, a point from which emergency measures have been taken in the case of disaster occurrences over a large area in the southern Kanto region, and also at the Yokohama Maritime Disaster Prevention Base since 1996, a point from which maritime prevention can be carried out in case of large-scale maritime disasters in Tokyo Bay and throughout the Kanto region.
- In 1996, JMSA introduced the Helicopter Video Link System to transmit damage information. JMSA also built six large-class patrol craft equipped with fire fighting and relief material

transportation equipment in 1996 and one large-class patrol vessel with enhanced disaster response capability in 1997.

(2) Compilation of Coastal Disaster Prevention Information Charts

- Since 1991 JMSA has been providing Coastal Disaster Prevention Information Charts which contain information necessary for the rescue activities in case of disaster. JMSA distributes these to disaster-related organizations.

(3) Surveys and observation for earthquake prediction

- In order to contribute to earthquake disaster prevention, since FY1995, JMSA has been surveying the distribution of active faults in coastal areas. Particular attention is paid for the areas with high population densities, and faults with a high level of activity are assumed.
- In addition, since FY1994, JMSA has started the monitoring of crustal movement using the Global Positioning System (GPS).

2. Response to Accident Disasters

(1) Response to oil spill accidents and other related accidents

- In recent years, large-scale oil spill accidents have continued to occur in the sea areas surrounding Japan. JMSA mobilizes patrol craft and aircraft and carries out emergency disaster measures such as the provision of guidance in combating activities, dispatch in the National Strike Team, and maritime traffic restrictions, etc.
- In order to more fully plan these measures, JMSA consolidates its system through the reassessment of oil spill combating equipment and materials and oil spill contingency plans,

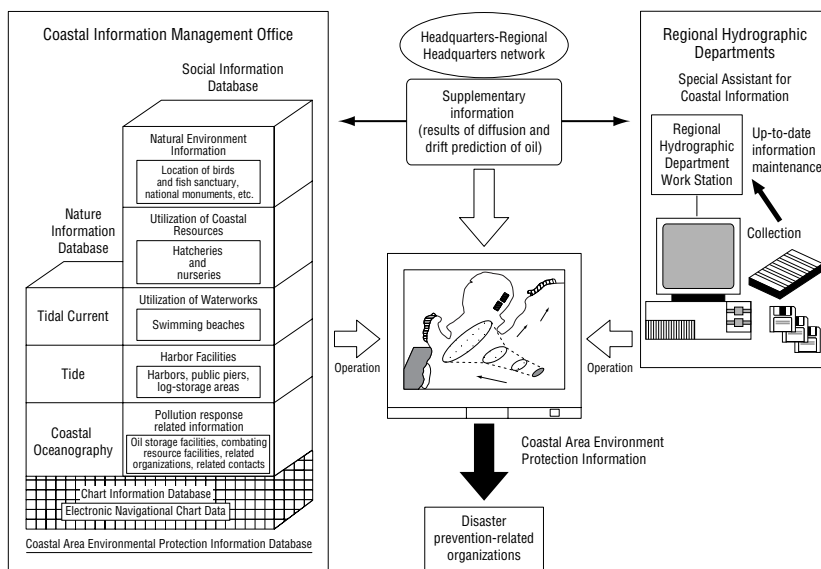
PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

revisions to the National Contingency Plan for Oil Pollution Preparedness and Response, the establishment of the Yokohama National Strike Team Station and revisions to the “Law Relating to the Prevention of Maritime Pollution and Maritime Disaster.”

(2) Construction of Coastal Area Environmental Protection Information Database

- In response to the National Contingency Plan for Oil Pollution following the conclusion of the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC Convention), JMSA has been storing natural and social information of coastal areas on a database, to be displayed on electronic screens.

Information Processing System in Coastal Areas



(3) Strengthening the drift prediction system

- Based on experiences from the 1997 NAKHODKA oil spill disaster, etc., JMSA has been conducting research on improvement of drift prediction for oil spillages at sea.

Chapter 5 Oceanographic Information Responding to Needs of People

Along with the coming into effect of UNCLOS, concern for global warming, maritime recreation and maritime development, oceanographic surveys have shown that people's needs are increasing.

1. Oceanographic Surveys Responding to UNCLOS

Surveys are proceeding to determine the accurate positions of the baselines of the territorial sea and the limits of the continental shelf over 200 nautical miles (NM) from the baselines of the territorial sea.

(1) Marine geodesy

- Since 1987, in order to determine the sea area under Japanese jurisdiction, such as the territorial sea and exclusive economic zone, JMSA has set the accurate positions of islands and other land, which are used as reference points of the territorial sea baselines, using space geodetic techniques, such as satellite laser ranging and GPS, in accordance with the world geodetic system, and has built a marine geodesy network.

PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

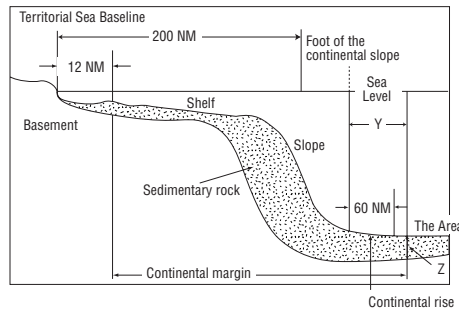
(2) Oceanographic surveys to determine the sea area under Japanese jurisdiction

- JMSA draws the straight baselines and the outer limits of the territorial sea on charts in accordance with UNCLOS, and has been taking steps to give publicity to these charts.

(3) Surveys to establish limits of the continental shelf

- JMSA has been conducting continental shelf surveys in order to obtain essential basic information on the limit of the continental shelf which shall be submitted to the Commission on the Limits of the Continental Shelf, established by UNCLOS.

Limits of the Continental Shelf based on UNCLOS



Note: Limits of the Continental Shelf based on UNCLOS
 In the past, the limit of the continental shelf was in an area up to 200 meters in depth but if development is possible over 200 meters in depth, then that becomes the limit. However, under UNCLOS, the limit of the continental shelf, in cases where the limit lines outside the outer edge of the continental margin (comprised of the shelf, slope and continental rise) are within 200 NM from the territorial sea baseline, is up to 200 NM, and in cases where the limit lines are over 200 NM, it is up to the line described in (a) or (b) below. However, it is not possible to exceed 350 NM from the territorial sea baselines or 100 NM from the 2,500-meter isobath.
 (a) Generally the thickness of sedimentary rock "Z" becomes less as you pass from the continent to the Area. A line delineated by reference to the outermost fixed points at each of which the thickness of sedimentary rocks "Z" is at least 1 percent of the shortest distance "Y" from such a point to the foot of the continental slope; or
 (b) A line delineated by reference to fixed points not more than 60 NM from the foot of the continental slope.

2. Management and Provision of Oceanographic Information Responding to a Highly Information-based Society

In order to provide oceanographic information promptly to users, JMSA is making efforts to establish a highly-sophisticated oceanographic data management system and an information service system through the Internet.

(1) Establishment of a highly-sophisticated oceanographic data management system

- Since 1989, JMSA has been making efforts to establish a highly-sophisticated oceanographic data management system to which users can gain easy access.

(2) Provision of maritime safety information through the Internet

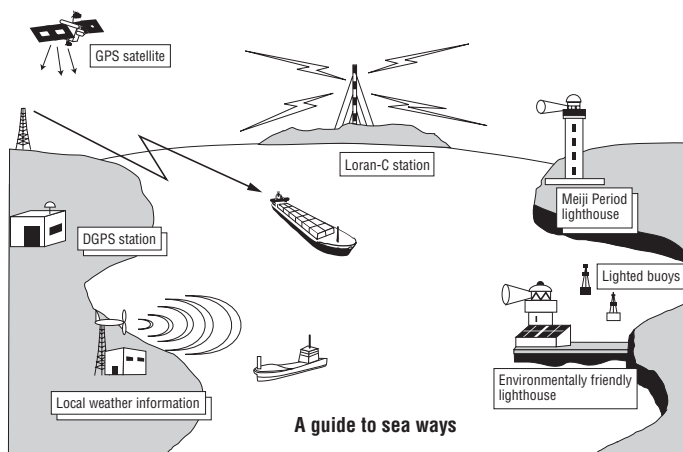
- Since 1997, JMSA has been providing through the Internet, information essential and indispensable for ship navigation, such as information essential for efficient navigation (e.g., ocean currents), up-to-date information of hydrographic charts and publication and changes in Aids to Navigation.

(3) Operations of the Japan Oceanographic Data Center (JODC)

- Since 1995, JODC has been operating the JODC Data Online Service System (J-DOSS), a system which, through the Internet, provides oceanographic data accumulated and stored at the Center, such as water temperature, ocean current, sea level data and depth.

Chapter 6 Expansion of Aids to Navigation System

Aids to Navigation, which are essential and indispensable for the safe navigation of ships, have been developed corresponding to technological innovations and socio-economic conditions.



1. Establishment of the New Wide-range Radio Navigation System

In 1994, the Loran-C System operations were initiated and from 1997, the Differential GPS System operations were initiated. The Loran-A and Omega Systems, whose utilization became less necessary, have both been phased out.

(1) Establishment of the Loran-C System

- In addition to three stations transferred from the United States, JMSA established the Chiba Loran Center in 1993 and the Niijima Station in 1994. With these stations, the new chain or network was formed and the operations were initiated.

In addition, an international cooperation chain of Loran-C Stations in Japan, the Republic of Korea, China, and the Chayka Stations in the Russian Federation was established, and, excluding some stations, operations were initiated in January 1996.

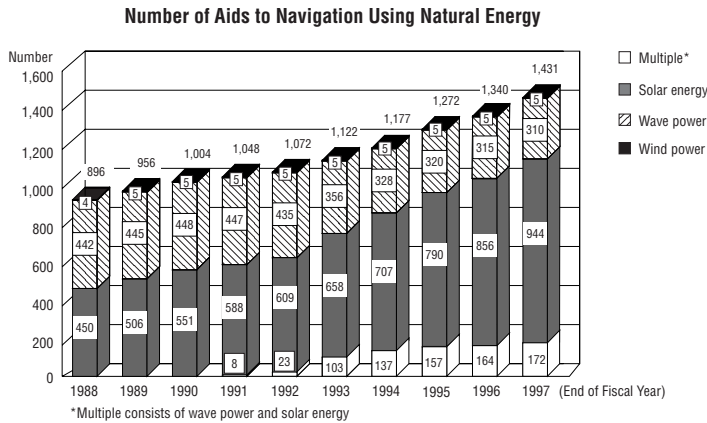
(2) Introduction of the Differential GPS System

- In March 1997, operations with Differential GPS, more accurate than GPS, were initiated with the area stretching from Tokyo Bay to the Pacific coast at Ise Bay. Plans were being made to establish the remaining sea areas during 1998.

2. Expansion of Local Weather Information Service

- In 1949 the “Local Weather Information” service began.
- In addition to the radio broadcast service, in 1986 a telephone service was initiated, and in 1997 a fax service was initiated for use by those concerned with maritime recreation.

3. Promotion of Use of Natural Energy for Visual Aids



PART 1 Maritime Safety Measures Taken Over the Last Ten Years and Future Issues

- In order to solve the problem of maintaining power sources for Aids to Navigation while considering the reduction of environmental loads and the conservation of energy, JMSA promotes the use of natural energies such as wave power, etc., in its Visual Aids.
- By the end of 1997, of approximately 5,300 Visual Aids, 1,431, or approximately 27%, were using natural energies.

4. Aids to Navigation that are User-friendly for Local People**(1) Preservation of Meiji Period lighthouses**

- By 1997, JMSA was maintaining lighthouses and lighted buoys which were constructed during the Meiji Period (1868–1912) and have high historical and cultural value.

(2) Aids to Navigation that are user-friendly for local people

- In cooperation with local governments and giving careful consideration to reducing the cost of public works, JMSA constructs lighthouses, coordinating their exterior with the surrounding environment and the scenery so that the lighthouses are better associated with regions.
- Eleven nationwide lighthouses are open to the general public for introduction.

PART 2 Maritime Safety Trends

Chapter 1 Maintaining Maritime Order

I. Policing Territorial Seas, etc.

1. Policing Territorial Seas

(1) Present situation

- In 1997, JMSA confirmed that 816 foreign ships (of which 797 were fishing boats) had committed illegal acts, such as operating in the Japanese territorial sea, or suspicious activities such as loitering.
- Four hundred and seventy-one of the 503 vessels conducting illegal acts were removed with warnings, and 28 vessels were taken into custody. The 313 boats conducting suspicious activities were requested to stop such activities, or JMSA had to take necessary measures, such as forcing them to withdraw from the area after warnings.

(2) Senkaku Islands

- In June 1998, a group of six protest boats from Hong Kong and Taiwan approached the sea area surrounding the Senkaku Islands. Ignoring the warnings of patrol craft, the Hong Kong protest boat trespassed twice into the Japanese territorial sea. Activists tried to land on Uotsurijima in dinghies which had been released from the protest boat, but they were forced to withdraw from the waters by patrol craft. The boat then sent a distress signal, and the crew was transferred to another protest boat. The unmanned boat

PART 2 Maritime Safety Trends

remained adrift, and when the engine room was inspected, it was discovered that the rubber joints of the propulsion engine cooling water pipe and other areas had been deliberately cut, and had come loose, letting in water. The boat drifted for a further two days before sinking.

2. Present Situation of Policing Foreign Marine Research Vessels

- In 1997, there were ten confirmations of foreign marine research vessels in the territorial sea or the exclusive economic zone, four of which were of Chinese nationality.

3. Cases of Japanese fishing boats**(1) Cases of seizure in the sea areas around Hokkaido**

- In 1997, one Japanese fishing boat (six crew members) was seized by the Russian Federation, and additionally two fishermen were injured by shots fired from a Russian guard craft in the Nemuro Strait.

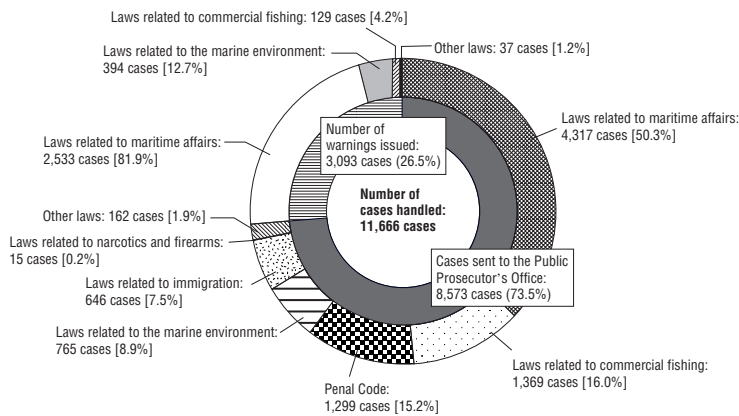
(2) Cases of arrest in other sea areas

- In 1997, five vessels (46 persons) were arrested by foreign authorities for operating in the fishery zones and territorial seas of areas such as Micronesia, etc.

II. Maintenance of Legal Order at Sea

In 1997, the Public Prosecutor's Office received 8,573 cases of maritime crime. Of these, warnings were issued in 3,093 cases of violations of laws related to administrative affairs in those cases where the extent of the violation was minor and easily corrected.

Number of Cases Sent to the Public Prosecutor's Office and Warnings Issued by Type of Law



Note: 1. The number of cases handled is the total for cases sent to the Public Prosecutor's Office and warnings issued.
 2. The figures within the () parentheses represent the percentages of the total accounted for by cases sent to the Public Prosecutor's Office and warnings issued, respectively.
 3. The figures within the [] square brackets represent the percentages each type of law accounts for against the total number of cases sent to the Public Prosecutor's Office and warnings issued.

1. Violations of Laws Related to Maritime Affairs

- In 1997, the Public Prosecutor's Office received 4,317 cases of violations of laws related to maritime affairs, of which a record high figure of 2,977 cases were related to small boats such as recreation boats.

2. Violations of Laws Related to Commercial Fishing

- In 1997, the Public Prosecutor's Office received 1,369 cases of violations of laws related to commercial fishing, most of which involved unlicensed operation or operation outside of approved areas and outside approved time periods.
- In 1997, the Public Prosecutor's Office received 30 cases of violations of laws related to commercial fishing by foreigners. Six fishing vessels of the Republic of Korea were arrested in

PART 2 Maritime Safety Trends

sea areas which had become new Japanese territorial seas according to straight baselines adopted from January 1997.

3. Violations of the Penal Code

- In 1997, the Public Prosecutor's Office received 1,299 cases of violations of the Penal Code, of which 1,152 were for obstructing traffic through negligence in the conduct of occupation.
- In 1997, there were 49 hit-and-run incidents, of which 73% ended in arrest.
- In 1997, crimes at sea involving victims consisted of 1 murder, 4 attempted murders, 19 cases of bodily harm and 3 cases of assault.

4. Violations of Laws Related to Immigration

- In 1997, there were 605 illegal immigrants arrested, of which 577 were Chinese.

5. Violations of Laws Related to Narcotics and Firearms

- In 1997, the Public Prosecutor's Office received eight cases of violations of laws related to narcotics and seven cases related to firearms.

III. Security Missions Against Strife at Sea and Guard and Escort Operations**1. Security Mission Against Strife at Sea**

- In 1997, JMSA carried out a total of 674 security missions against strife at sea. In particular, JMSA conducted necessary security missions against campaigns to oppose a survey of the marine area off Camp Schwab from May 1997 to October

1997 which accompanied the transfer of the Futenma Air Station in Okinawa.

2. Guard and Escort Operations

- In 1997, JMSA provided escort for His Majesty the Emperor of Japan and other members of the Imperial Family on 67 occasions, and provided escort for Japanese and foreign VIPs on 57 occasions.

Chapter 2 Ensuring Maritime Traffic Safety

I. Safety Measures in Congested Sea Areas

1. Application of Maritime Traffic Safety Law and Port Regulations Law

(1) Maritime Traffic Safety Law

- JMSA promotes maritime traffic safety in Tokyo Bay, Ise Bay and the Seto Inland Sea based on the Maritime Traffic Safety Law as well as the Law for Preventing Collisions at Sea.

(2) Port Regulations Law

- JMSA promotes safety inside ports by establishing special traffic rules based on the Port Regulations Law for the 501 ports (as of July 1998) in which there are many departures and arrivals.

2. Maritime Traffic Information System

- In order to maintain safety and effective navigation in areas congested with maritime traffic such as Tokyo Bay and the Seto Inland Sea, JMSA maintains and operates maritime traffic information systems to provide information on maritime traffic and navigation control.

3. Safety Measures for Large-Scale Projects

- Due to the risk of such large-scale projects as the construction of Kurushima Bridge, one of the connecting bridges for Honshu-Shikoku, and the second phase operations at the Kansai International Airport, having a great effect on maritime traffic, JMSA carries out measures necessary for navigational safety.

II. Guidance to Ensure Maritime Traffic Safety

1. Promotion of Maritime Casualty Prevention Activities

- Human error accounts for 74% of the causes of maritime accidents. Consequently, JMSA promotes the dissemination of maritime accident prevention ideology through maritime accident prevention seminars.

2. Guidance and Development for Maritime Casualty Prevention Organizations

- JMSA strives to promote safety measures corresponding to the characteristics of each type of vessel and to develop and strengthen private organizations for maritime casualty prevention.

Chapter 3 Promotion of Measures for the Safety and Sound Development of Maritime Recreation

I. Current State and Future Trends of Maritime Recreation

- The number of accidents related to maritime recreation, which have accompanied the growth of maritime recreation and the increase of recreation boats, sees no sign of decrease; indeed, it is feared that the number of accidents will increase further in the future.

II. Occurrences and Causes of Maritime Recreation Accidents and Rescue

1. Occurrences and Causes of Maritime Accidents and Rescue

- The number of recreation boat and other leisure craft accidents is gradually increasing. The majority of the causes of these accidents involve human error, such as poor quality engine treatment and a lack of notice taken regarding sea and weather conditions.
- In 1997, of the 603 pleasure boats and other leisure craft requiring rescue (excluding those who returned to port on their own means), 535 were rescued, a rescue rate of 89%.

2. Occurrences and Causes of Seashore Accidents and Rescue

- In 1997, of the 719 persons involved in seashore accidents, 380 were rescued (excluding those who rescued themselves), a rescue rate of 53%.

III. Promotion of Measures to Prevent Accidents in and Contribute to the Sound Growth of Maritime Recreation

1. Safety Guidance, etc., for Those Concerned with Maritime Recreation

- JMSA visits marinas and other maritime recreation areas and carries out safety guidance and conducts campaigns to emphasize maritime accident prevention; JMSA also strives to promote and enhance maritime accident prevention guidance for all boating enthusiasts.

2. Management of “Paradise for Recreational Boats” and Cooperation in Marine Events

- In 1997, “Paradise for Recreational Boats” was held over 43 days in 25 locations nationwide, with the participation of approximately 280,000 people and 1,600 boats.

3. Enrichment and Strengthening of Related Organizations

- JMSA positively supports the activities of organizations such as the Small Boat Safety Organization and the Japan Marine Recreation Association.

IV. Enrichment and Strengthening of the Rescue System for Maritime Recreation

1. Strengthening the Rescue System with Patrol Craft and Aircraft

- In order to conduct swift rescue operations in maritime recreation-related accidents, JMSA works to strengthen its

rescue system by effectively stationing patrol craft and utilizing helicopter search capabilities.

2. System for Obtaining Distress Information

- JMSA has established an emergency telephone number for maritime cellular phones (Dial 110), and has standardized the telephone numbers of all Maritime Safety Offices (Area Code + 4999).

3. Establishment of the Private Sector's Maritime Rescue Systems

- JMSA strives to establish the private sector's maritime rescue systems by providing essential guidance to private organizations such as the Japan Lifeboat Institution.

V. Provision of Information which Contributes to Maritime Recreation Safety

- In addition to local weather information, JMSA, through the Marine Information Service Office, provides information on currents, tides, etc., which contributes to the safety of maritime recreation.

Chapter 4 Maritime Search and Rescue

I. Occurrences of Maritime Accidents and Rescue

1. Occurrences of Maritime Accidents

- In 1997, rescue was required for 1,678 vessels (including those

PART 2 Maritime Safety Trends

who returned to port by their own means), a gross tonnage of 1,611,348 tons. This involved 7,771 victims in distress, of whom 170 either died or went missing.

2. Maritime Accident Rescue

- In 1997, rescue was required for 1,428 vessels (excluding those who returned to port by their own means), of which JMSA rescued 1,185, a rescue rate of 83%.
- In 1997, rescue was required for 5,682 persons on board aboard vessels, (excluding those who rescued themselves), of whom JMSA rescued 5,512, a rescue rate of 97%.

3. Occurrences of Accidents Involving People and Rescue of Victims of Accidents**(1) Occurrences of non-distress accidents resulting in injury or death of persons on board**

- In 1997, there were 885 non-distress accidents resulting in injury or death of persons on board, of which 313 persons died or went missing. Excluding those who rescued themselves, there were 601 persons, of whom JMSA rescued 288, a rescue rate of 48%.

(2) Occurrences of seashore accidents

- In 1997, there were 1,680 persons involved in seashore accidents, of whom 1,053 either died or went missing. Excluding those who rescued themselves, there were 1,559 persons, of whom JMSA rescued 506, a rescue rate of 32%.

4. Rescue by Helicopter Winching

- In 1997, JMSA conducted rescue operations by helicopter-winching for 197 persons.

5. Transportation of Emergency Patients

- In 1997, JMSA conducted emergency transportation operations for 244 emergency patients, and was involved in transportation of 91 doctors and other medical staff as well.

II. Maritime Search and Rescue System

1. Information Gathering System

- In 1997, a total of 3,394 distress signals transmitted by vessels were received by JMSA coast radio stations and patrol craft.

2. Ship Reporting System

- In 1997, a total of 27,011 vessels participated in the Japanese Ship Reporting System (JASREP), and 118,101 reports were made.

3. Immediate Response System for Maritime Distress

- JMSA ensures an immediate response system to maritime distress by maintaining a 24-hour watch at its branch offices, and by stationing patrol vessels in advance in sea areas where there is a strong possibility that distress may occur.
- JMSA makes requests for cooperation through JASREP, when necessary, and utilizes helicopter rescue capabilities, etc.

4. Special Rescue System

- JMSA strives to maintain a rescue system for particular maritime distress, through the Haneda Special Rescue Station, with patrol vessels with scuba diver teams and patrol vessels with enhanced rescue capabilities.

5. System for Medical Emergencies at Sea

- The Japan Lifeboat Institution, the main body of this system, maintains a system for medical emergencies at sea integrating the government and the public, under the cooperation of related ministries, agencies and other organizations.

6. Enhancement of the Emergency Lifesaving System

- JMSA continues to nurture emergency lifesavers, and by FY1995 completed stationing them at the Haneda Special Rescue Station. JMSA began stationing them on helicopter-carrying patrol vessels from FY1996.

7. Cooperation with Related Organizations

- In 1997, JMSA exchanged information with foreign organizations on maritime distress: 36 cases with the Russian Federation, 17 with the Republic of Korea, and 4 with the United States.

Chapter 5 Protection of the Marine Environment and Maritime Disaster Preparedness and Response

I. Current State of Marine Pollution and Preventative Measures

1. Marine Pollution Occurrences

- In 1997, there were 713 cases of marine pollution. Of these cases, 405 were oil pollution, accounting for 57% of the total.
- In 1997, approximately 31.06 million tons of waste were discharged into the sea around Japan.

2. Provision of Guidance and Law Enforcement for Protection of the Marine Environment

- In 1997, the Public Prosecutor's Office received 765 cases of violations of laws related to the marine environment, the greater part of which—504 cases—were violations of the Law Relating to the Prevention of Marine Pollution and Maritime Disaster.
- In 1997, there were 50 cases of arrests of foreign vessels for violating laws related to the marine environment. JMSA applied a prompt release system for these.

3. Investigation on Protection of the Marine Environment

- JMSA conducts investigations on sea water, sea bottom sediments, the state of drifting and washing ashore of tar balls, and marine flotsam, as well as accumulating background data relating to marine pollution.

II. Current State of Marine Disasters and Preparedness and Response Measures Against Them

1. State of Maritime Disaster Occurrences

- In 1997, JMSA took combative measures in 254 cases of oil spill accidents.
- In 1997, there were 98 cases of fire on vessels.

2. Combative Measures for Oil Spills

- JMSA is promoting establishment of an oil spill combating system, maintenance of oil spill combating equipment and materials, and reciprocal cooperation with related organizations.

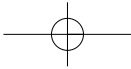
3. Other

- JMSA gives guidance on and supervises combative measures for cargoes of harmful fluids, measures for maritime fire fighting, and disaster prevention measures at berths for large tankers and the National Oil Stockpiling Base; JMSA also guides and supervises the Maritime Disaster Prevention Center.

Chapter 6 Response to Natural Disasters

1. Measures for Natural Disasters

- JMSA operates disaster prevention bases, such as the Yokohama Maritime Disaster Prevention Base, provides training for disaster prevention, and compiles Coastal Disaster Prevention Information Charts.



2. Surveys on Disaster Prevention

- JMSA, in addition to surveys and research on earthquakes, also participates in volcanic eruption prediction planning.

Chapter 7 Oceanographic Surveys and Provision of Oceanographic Information

1. Determination of Sea Area under Japanese Jurisdiction

1. Oceanographic Surveys to Determine Sea Area under Japanese Jurisdiction

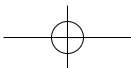
- JMSA has been taking steps to give publicity to nautical charts on which straight baselines are shown; in FY1997, JMSA published 15 nautical charts, mainly by reduced scale.

2. Surveys to Establish Limits of the Continental Shelf

- JMSA conducted surveys on the sea area surrounding Minami-Tori Sima in FY1997, and planned to conduct surveys on the northern sea area surrounding the island in FY1998.

3. Promotion of Marine Geodesy

- JMSA carries out observations, etc., in order to adjust nautical charts to the world geodetic system.



II. Oceanographic Surveys and Provision of Information to Ensure Navigational Safety

- In order to ensure navigational safety, JMSA conducts port and harbor measurements, port and harbor surveys, tidal observations, tidal stream observations, observation of occultation of stars by the moon, sea water observation and others; in addition to publishing charts and publications, JMSA also provides maritime safety information, such as notices to mariners, and information on ocean conditions.

III. Management and Provision of Oceanographic Information

- JMSA accumulates, administers and provides oceanographic data and information on currents, tides, water depths, etc., at the Japan Oceanographic Data Center (JODC). JMSA has also established the Marine Information Service Office, an over-the-counter office which provides marine information.

Chapter 8 Aids to Navigation Services

I. Current State of Aids to Navigation

- As of the end of FY1997, JMSA had installed and was managing a total of 5,497 Aids to Navigation; 5,328 Visual Aids to Navigation, 116 Radio Aids to Navigation, 23 Audible Aids to Navigation and 30 other Aids to Navigation.

II. Maintenance and Management of Aids to Navigation

- In order to maintain Aids to Navigation equipment, JMSA carries out maintenance patrols at regular intervals using its

vessels, vehicles and helicopters. If an accident has occurred, such as if a lighthouse lamp has been extinguished, JMSA dispatches an emergency team and quickly restores the equipment to action.

III. Local Weather Information

- JMSA provides information on local weather and sea conditions in each of its nationwide main promontory lighthouses, through a radiotelephone system, a telephone service or by fax.
- In 1997, the number of calls to the telephone service in the 24 nationwide locations was approximately 4.27 million.

IV. Utilization of Natural Energy and Preservation of Historic and Cultural Facilities

- JMSA works to expand the utilization of natural energies, such as wind, solar and wave power, as power sources for Aids to Navigation.
- JMSA keeps in service lighthouses which retain a high historical and cultural value, and other facilities constructed during the Meiji Period (1868–1912), while at the same time preserving their value; in FY1997, JMSA restored two lighthouses and conducted surveys on preservation methods for one lighthouse.

Chapter 9 International Activities Related to Maritime Safety

I. Activities with International Organizations

- JMSA participates in the activities of international organizations, such as the International Maritime Organization (IMO), the International Hydrographic Organization (IHO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

II. Promotion of Cooperation and Solidarity with Related Countries

1. Guard and Rescue Operations

- JMSA promotes regional cooperation related to the preservation of the marine environment, the maintenance of maritime traffic safety in the Asian region, regional cooperation toward maritime crime, and the establishment of a search and rescue system in the Asia-Pacific region.

2. Hydrographic Operations

- JMSA promotes international cooperation for understanding the state of the marine environment, and reciprocal cooperation in East Asia Hydrographic Commission.

3. Aids to Navigation Operations

- JMSA initiated operations of the Loran-C international cooperation chain on 1 January 1996 along with China, the Republic of Korea and the Russian Federation and cooperates

for reciprocal improvements in precision.

III. Promotion of International Cooperation and Contribution

- JMSA carries out technical cooperation aimed at nurturing personnel involved in the economic and social development of developing countries, through Japan International Cooperation Agency (JICA).

Chapter 10 Present Maritime Safety System

I. Organization and Personnel

- As of 30 June 1998, JMSA offices of Regional Headquarters were composed of 66 Maritime Safety Offices, 1 Maritime Guard and Rescue Office, 51 Maritime Safety Stations, 6 Traffic Advisory Service Centers, 14 Air Stations, 1 Special Security Station, 1 Special Rescue Station, 1 National Strike Team Station, 11 District Communications Centres, 4 Hydrographic Observatories, 1 Loran Navigation System Center and 84 Aids to Navigation Offices.
- The main organizational restructuring in FY1998 is: the establishment of the Assistant Director for Earthquake Research of the Planning Division of the Hydrographic Department at JMSA Headquarters, the Coastal Information Management Office in the Oceanographic Data and Information Division of the Hydrographic Department at JMSA Headquarters, the Fukushima Aids to Navigation Office at the 2nd Regional Maritime Safety Headquarters, and the Yokohama National Strike Team Station at the 3rd Regional Maritime Safety Headquarters.
- As of the end of FY1997, JMSA had 12,222 employees.

PART 2 Maritime Safety Trends

II. Vessel and Aircraft

- As of the end of FY1997, JMSA possessed 512 vessels and craft for guard and rescue, Hydrographic and Aids to Navigation related operations, 3 training vessels, 26 airplanes and 43 helicopters.
- JMSA carries out communication with commercial vessels and internal communication, and constructs and maintains communications facilities, etc.
- In March 1998, JMSA set up an Internet homepage.
- JMSA works to maximize the effectiveness of Maritime Safety Agency Information System operations, to improve detention facilities and to maintain JMSA order.

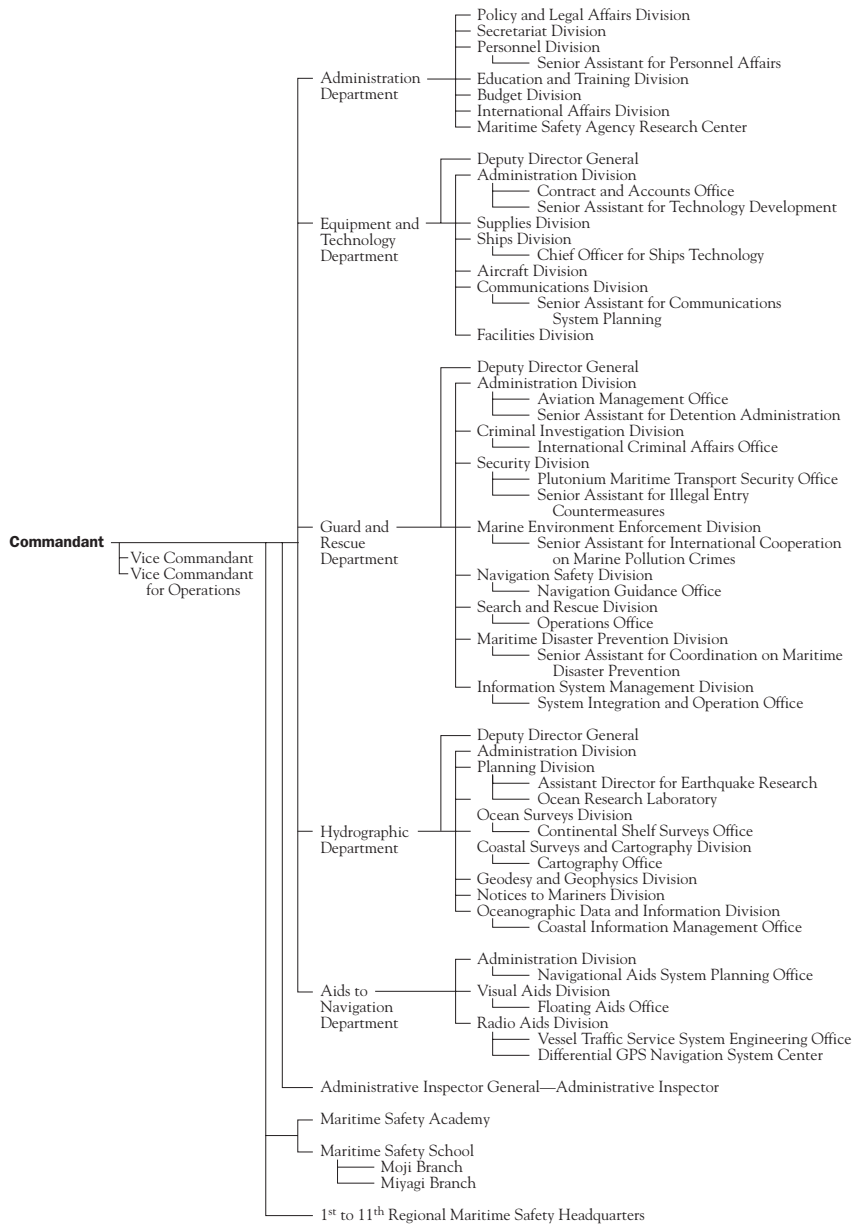
III. Education and Training System

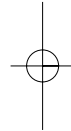
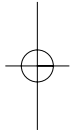
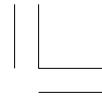
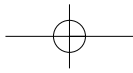
- JMSA provides education and training essential for all new recruits at the Maritime Safety Academy and the Maritime Safety School.

IV. Research and Development

- In order to maximize the effectiveness of maritime safety operations and to improve precision, JMSA conducts research and development at locations such as the Maritime Safety Agency Research Center.
- R&D in FY1997 included:
 - Survey and research related to patrol vessels with icebreaker capabilities;
 - Sea experiments involving surface observation drifting buoys through the Meteor Burst communications system; and
 - Research related to the effect that unexpected load fluctuations of earthquakes in southern Hyogo Prefecture have on Osaka Bay.

JMSA Organization
(as of 1998)





All inquiries should be forwarded to:

International Affairs Division,
Japanese Maritime Safety Agency
2-1-3 Kasumigaseki, Chiyoda-ku
Tokyo, 100-8989 Japan

Tel: +81-3-3591-9802

Fax: +81-3-3580-8778

E-Mail: kokusai@kaiho.motnet.go.jp

