

Maritime Safety System in China

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ABSTRACT China has integrated maritime safety system which positively and effectively ensures safe navigation and environmental protection. This paper gives brief account on maritime safety rules and regulations, administrations and management mechanism, navigation aids and facilities, maritime communication and GMDSS etc..

China is a developing country with fast economical growth. With a long coastline of 18,000 kilometers, and 5,000 more islands, China has a fairly developed shipping industry. China also sits in IMO Council as A member. In China, there are over 200 ports with an annual handling capacity of over 10,000 tons of cargo; there are over 4,000 coasters and ocean-going ships with more than 3 million seafarers of which 1/3 being officers; there are an aggregate gross tonnage 17 million gt for merchant ships. China ranks No.5 shipping country in the world as shown by Lloyd's Maritime Information Services Ltd. 1995. The Chinese shipping industry plays an important role in both domestic transportation and foreign trade. The Chinese government always attaches great importance to maritime safety. Since 1949, and from the adoption of reform-opening policy, China has gradually formed an integrated maritime safety system.

1 Legal instruments

1.1 Law

1.1.1 Maritime Traffic Safety Law, 1984

The Law is the fundamental instrument for maritime safety management in coastal waters. It regulates the actions and relations of matters relating to maritime safety. The law stipulates the rules and regulations on survey and registration of vessels, manning, navigation,

berthing and in-port operations, assurance of safety, carriage of dangerous goods, salvage and wreck removal, and investigation of marine accidents etc..

1.1.2 The Marine Environmental Protection Law, 1983

This law guides the protection of marine environment and marine resources. Chapter V of the Law specifically deals with the prevention of pollution by ships.

1.1.3 The Maritime Code, 1993

The Code is enacted with a view to regulating the relations between carriage and ship. The Code has 15 Chapters and 278 Articles. The Code deals with ship, crew, contract of carriage of goods, and passengers, charter parties, contracts of towage, collision, salvage, general average, limitation of liability of maritime claims and contract of marine insurance etc..

1.1.4 Rules and regulations

China has promulgated a series of rules and regulations for the enforcement of laws, codes and international conventions that China is a party to. These instruments deals with ship and seafarer management, navigation safety, ship's pollution control and the carriage of dangerous goods.

1.2 International conventions

China acceded to almost all 30 more international conventions relating to maritime safety, including SOLAS 1974 and its amendments, International Convention for Preventing Collisions at Sea 1972, MARPOL 73/78 and its amendments, International Convention on Maritime Search and Rescue 1979, STCW Convention 1978 and its 1991 amendment. Again, the government has issued a number of domestic rules and regulations just for the implementation of these conventions.

1.3 International organizations

Up to now, China has become party of almost every international

organization in relation of maritime safety, prevention of pollution at sea and maritime distress and communication, including International Maritime organization (IMO), International Hydrographic Organization (IHO), International Mobile Satellite Organization (INMARSAT), International Association of Lighthouse Authorities (IALA) and COSPAS-SARSAT etc..

In these organizations, China tries every effort with fellow members in making new rules, amending existing instruments with a view to safe guarding the shipping industry and providing more convenient and effective services to them.

2 Administrations and management

2.1 Safety Committee of Ministry of Communications

The Committee is in leading and organizational position for the administration of maritime safety including convening periodical meetings attended by administrations at different level and major shipping companies for the sake of strengthening safety management in all aspects.

2.2 Maritime Search and Rescue Center

China Maritime Search and Rescue Center and other centers in every coastal province is responsible for saving lives in danger at sea. When the centers are informed of distress at sea within their rescue responsible area, they direct and coordinate professional salvage resources, Navy, Air force and other government resources, civilian aviation, merchant or fishing ships nearby for immediate search and rescue operation.

2.3 Maritime safety administrations

Maritime Safety Administrations (MSA), often called as the Harbor Superintendency Administrations (HSA) under the Ministry of Communications is the competent authority of the Government for maritime administration and supervision of water-borne traffic safety. MSA has more than 30,000 staffs and 1,000 vessels of various types deployed in the whole country. MSA exercises ships control, seafarer management, navigation safety control, aids to navigation and hydrographic survey, including the execution of the implementation of

STCW convention and ISM code etc.. They have played an increasingly important role in ensuring safety at sea, preventing pollution from ships and providing various services for safe navigation.

2.4 Register of Shipping

Register of Shipping of the People's Republic of China is responsible for ship's surveys including statutory survey. Ships of Chinese flag and equipment onboard these ships must be surveyed and only then, they are certified and allowed to sail. The organization has 49 branches in China and abroad with 2,000 staff.

China Classification Society (CCS) is one of the important member of the world's Classification Societies and acts as the chairman during 1996-1997.

2.5 Bureau of rescue and salvage

The Bureau of Rescue and Salvage is a professional salvage organization of the nation, which has 3 salvage bases in Yantai, Shanghai and Guangzhou and 18 salvage stations along the nation's coast. Generally, the station maintains salvage tugs on watch for 24 hours every day, ready for carry out life-saving mission all the time. They have more than 8,700 staff, crews, divers and technicians, 22 ocean-going tugs ranging from 6,000 to 20,800bhp, 26 ocean-going tugs of 2,640bhp, and others such as floating cranes and high-speed rescue vessel etc. totalling 160 and more.

2.6 Others

The maritime training and education system in China involves 100 universities, colleges, training schools and training centers. One of them is the famous Dalian Maritime University which is also the branch of the International Maritime University. This is the fundamental factor in safeguarding maritime safety.

The national fishery and fishing port superintendency under the Ministry of Agriculture takes care of the safety matters for fishing vessels and their crew.

The public security forces under the Ministry of Public Security takes care of the security matters on the sea and also joint rescue action in case of need.

3 Aids to navigation and marine publications

More than 2,600 aids under the jurisdiction of MSA including visual, audio and radio aids provide a comprehensive net in rendering the assistance to ship's safe navigation.

3.1 Lights and sound signals

There are more than 1,280 lighthouses, light beacons and more than 1,000 light buoy in China.

3.2 Radio aids

3.2.1 Radio beacon

22 MF radio beacons are established along the Chinese coast, working at short and medium range covering the entire coastal area. They provide emission of radio signal from which the ships can obtain bearings to acquire their position.

3.2.2 Loran-A system

The Loran-A chain made up with 16 stations can provide position fixing signals. Loran-A System will be closed in near future and replaced by more advanced systems.

3.2.3 Loran-C system

The Loran-C system is made up of 6 terrestrial transmitting stations and 2 monitor stations. It is of short and medium range position-fixing system.

3.2.4 DGPS

To satisfy the need of accurate position-fixing at sea, China began to build up Differential Global Position System(DGPS) stations. 6 stations in the first batch already open for users in Bohai Sea, Yellow Sea and East China Sea on July 21, 1997. The users within 300 kilometers off the coasts can obtain accurate position with less than 5 meters in error.

China uses the radio beacon stations, which we also call then the RBN/DGPS system to broadcast GPS differential data. China plans to build 20 more DGPS Broadcasting station in few years time so as to fulfill accurate position-fixing needs in the whole Chinese coastal water.

3.3 Vessel traffic service

For strengthening traffic control, ensuring safety navigation and promoting the transport efficiency, China invested in the past years large sum of money to build up VTS centers in main harbors. China has now 8 VTS center in the ports of Dalian, Qinhuangdao, Tianjin, Lianyungang, Shanghai, Ningbo and 2 VTS in heavy traffic area in Chengshantou of Shandong province and the low stream of the Yangzi river from Nanjing to Shanghai. The VTS center in Guangzhou will open for service near soon. Furthermore, China plans to build more VTS in ports and heavy traffic areas. The VTS facility contributes greatly in reducing marine incidents.

3.4 Nautical charts, tide tables and other maritime publications

China has a publishing system for integrated Charts, Tide Tables, Light Lists and other marine publications that provide essential information for safe navigation.

4 Radio communication and GMDSS

4.1 Coastal radio station

There are 21 coastal radio stations in China including those in Dalian, Tianjin and Shanghai etc.. They provide MF, HF, VHF radio communication and broadcasting Navigational Warning and weather reports.

The coastal radio station is facilitated with digital select calling (DSC) equipment now. They will begin to provide DSC service in next year.

4.2 INMARSAT earth station

China has built up an INMARSAT earth station in Beijing. The Station can provide communication services to A, B, C and M mobile users. Upon receiving the distress message sent by the station, the users can be able to connect SAR Center in China directly and immediately.

4.3 MCC and LUT

China has built up a Mission Control Center and the Local User

Terminal of International Search and Rescue Satellite System in Beijing. The MCC and LUT are now in the experimental stage and will provide the service of receiving and transmitting distress alert rapidly for ships, aviation and personal users.

4.4 NAVTEX

The NAVTEX Navigational Warning and Weather reporting message are now available in Dalian, Shanghai and Guangzhou. China plans to build NAVTEX stations in Sanya of Hainan island and Fuzhou.

The maritime safety system in China ensures safe navigation and environmental protection. China is a developing country, but gives large investment in field of maritime safety both in human resource and the facilities. Although there are still some distances as regards the equipment and facilities when compared with some developed countries, yet the Chinese government makes effective management and seeks continuous improvement. We believe that China will contribute more for maritime safety and environmental protection in her area and in the world as a whole.