1999

Recommendations for the improvement of certain elements of the maritime administration of the Republic of Croatia

Rodin Nedeljko

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RECOMMENDATIONS FOR THE IMPROVEMENT OF CERTAIN ELEMENTS OF THE MARITIME ADMINISTRATION OF THE REPUBLIC OF CROATIA

By

RODIN NEDELJKO
The Republic of Croatia

A dissertation submitted to the World Maritime University in partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

in

MARITIME SAFETY AND ENVIRONMENTAL PROTECTION
(Administration)

1999.

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Title of Dissertation: Recommendations for the Improvement of Certain Elements of the Maritime Administration of the Republic of Croatia

Degree: MSc

The dissertation is principally a study of the maritime search and rescue (SAR) service in the Republic of Croatia, with a view to improving its management and operation, and ensuring the provision of efficient and effective search and rescue operations in Croatian waters.

A brief look is taken into the background of the Republic of Croatia as a State, as well as its maritime affairs, and the authorities that are responsible for it.

Additionally, International Conventions and standards related to SAR are examined, with reference to the SAR service of the Republic of Croatia, the Federal Republic of Germany and Spain.

In conclusion, recommendations are made with the aim of improving the SAR service of the Republic of Croatia. In addition, recommendations are also given in relation to the participation of Croatia at the International Maritime Organization (IMO) so as to achieve more active participation of its human resources at the world's highest body concerned with maritime affairs.

KEYWORDS: Croatia, SAR, management, IMO, maritime affairs.
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<td>ACI</td>
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<td>ARCC</td>
<td>Aeronautical Rescue Co-ordination Center</td>
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<td>BAPT</td>
<td>German Telekom (Bundesamt für Post und Telekommunikation)</td>
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<td>BMV</td>
<td>Federal Ministry of Transport</td>
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<td>COMSAR</td>
<td>Sub-Committee on Radio-Communications and Search and Rescue</td>
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<td>CWU</td>
<td>Coastal Watch Unit</td>
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<tr>
<td>dwt</td>
<td>dead weight</td>
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<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<td>FIR</td>
<td>Flight Information Region</td>
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<td>FSI</td>
<td>Flag State Implementation</td>
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<td>FuMD</td>
<td>Radio Control and Monitoring Service (Funkmessdienst)</td>
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<td>GMDSS</td>
<td>Global Maritime Distress and Safety System</td>
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<td>GSRS</td>
<td>German Sea Rescue Service</td>
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<td>IAMSAR</td>
<td>International Aeronautical and Maritime Search and Rescue</td>
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<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<td>ILO</td>
<td>International Labor Organization</td>
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<td>IMCO</td>
<td>International Maritime Consultative Organization</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<td>IMOSAR</td>
<td>IMO Search and Rescue</td>
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<td>ISM</td>
<td>International Safety Management</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>ITU</td>
<td>International Telecommunication Union</td>
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<td>LBA</td>
<td>Federal Civil Aviation Agency (Luftfahrtbundesamt)</td>
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<td>Law on Ports and Merchant Marine</td>
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<td>MARAD</td>
<td>Maritime administration</td>
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<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships</td>
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<td>MERSAR</td>
<td>Merchant Ship Search and Rescue</td>
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<td>Maritime rescue co-ordination center</td>
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<td>MSARP</td>
<td>Plan for Maritime Search and Rescue and Pollution Control</td>
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<td>MSC</td>
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<td>OSC</td>
<td>On-Scene Commander</td>
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<td>Rescue co-ordination center</td>
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<td>Roll-on Roll-off</td>
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<td>SAR Co-ordinator</td>
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<td>SRU</td>
<td>Search and Rescue Unit</td>
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<td>STCW</td>
<td>International Convention on Standards of Training, Certification and Watchkeeping for Seafarers</td>
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<td>TEU</td>
<td>Twenty Feet Equivalent Unit</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>US</td>
<td>United States</td>
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<td>VTS</td>
<td>Vessel Traffic Services</td>
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<td>WMU</td>
<td>World Maritime University</td>
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<td>WP</td>
<td>Working paper</td>
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CHAPTER ONE

Introduction

The main purpose of this study is to make proposals to enhance maritime safety and prevent marine pollution in the Republic of Croatia. Recommendations are given for the improvement of the SAR service of the Republic of Croatia. Furthermore, SAR service contributes to both, maritime safety and prevention of marine pollution.

For instance, in the event of an innocent passage, by any ship that flies a foreign flag through the Territorial Waters of the Republic of Croatia, such passage must be reported to the Croatian Authority giving the details of the intended passage. Consequently, if there is any kind of pollution, e.g. illegal discharge of the ballast water, the Authority can easily detect if that conduct was caused by the particular ship. As far as maritime safety is concerned, SAR service contributes to it by reacting to the distress situation efficiently and effectively, and in the shortest possible time. As a result, it should be organized so that it is composed of highly trained and educated personnel, and equipped with modern SAR facilities.

The second proposal is in relation to the Republic of Croatia's participation at the IMO. The lack of information about the Republic of Croatia in the WMU library, has caused the writer to present appropriate information that will aid future WMU generations to utilize as reference material. Furthermore, as the author of this dissertation is the first student from Croatia, therefore it is important to give the basic information and facts about his country.
Croats have been participating in trade and travel for the past thirteen centuries, ever since they first migrated to the present location of the Republic of Croatia in the 6th century. Before that the ancient Greeks organized colonies, and the Romans expanded their empire along the coast of the Adriatic Sea. During the Middle Ages, Byzantines, Normans, Arabs and above all, the military and trade-oriented Venetian Republic, all sought control of the area. For shorter periods of time Turkish, French, English, Russian, Austrian, Hungarian, Italian and German invaders all roamed along the Croatian coast and its islands and ports.

Croats have been respected and courageous seamen, but have mainly sailed under foreign flags. It is only in recent years that the Croatian flag has adorned the Croatian merchant and military fleets. Croats have participated in many world expeditions, discoveries of new lands and sea battles. The fact that historical discoveries have shown that Croats from Dubrovnik, the Croatian port on the South of the Adriatic Sea have long traded with the Portuguese, this shows their attachment to faraway coasts, seas and oceans.

In addition, to the above facts, it can be said that the Republic of Croatia is a traditionally maritime country, and has played in the past and plays today an important role in the world's maritime affairs. It has signed or acceded to all major Maritime Conventions created by the International Maritime Organization (IMO) and the International Labor Organization (ILO), as well as the International Civil Aviation Organization (ICAO).

This dissertation is divided into seven chapters to fulfil the study objectives.

Chapter One is an introduction, while Chapter Seven is the conclusion. These Chapters summarize the main points related to this dissertation.

The Second Chapter gives an overview of the Republic of Croatia, which is necessary for the readers to understand the current situation in Croatia regarding its history, area, population, transport, economy, organization of the State Authority, and the organization of its maritime affairs.

Chapter Three focuses on the Maritime Administration authority that is responsible for running Croatian maritime affairs. In addition, the Croatian Maritime
Legislation, implementation of International Maritime Conventions, delegation of authority, and the prevention of marine pollution in the Republic of Croatia is dealt with.

Chapter Four deals with International Conventions and standards that relate to search and rescue (SAR) and ship reporting systems. The relevant legislation must be followed by any country that accepts it, and that wants to have its SAR service organized in the way that would enable it to carry out SAR operations successfully.

In addition, an effective Ship Reporting System will enhance the SAR, prevent marine pollution, and prevent unwanted aquatic pathogens from entering Croatian Waters. In maritime distress situations the Ship Reporting System will enable the authorities to have a clear picture of the locations and movements of vessels in the Croatian Search and Rescue Region (SRR). Thus, the vessels in the vicinity whose position is known, can be directed to provide assistance to vessels in distress, and act as On-Scene Commander (OSC) for the SAR Authorities on shore, particularly, if the incident is a great distance away from the Maritime Rescue Co-ordination Center (MRCC).

Chapter Five gives an overview of the respective SAR services of the Republic of Croatia, the Federal Republic of Germany and Spain, with the aim of establishing the basis for recommendations given in Chapter Six.

To conclude, Chapter six sets out recommendations for the improvement of the maritime search and rescue service in the Republic of Croatia.
CHAPTER TWO

The Republic of Croatia

2.1 Basic facts about Croatia

The Republic of Croatia declared independence on 25th June 1991, based on the results of the first multiparty democratic elections and a referendum, during a time of great social and historical change and following the fall of the Berlin wall and the Communist systems of Eastern Europe in 1989.

Furthermore, the result was the division of the ex-republics of the Socialist Federal Republic of Yugoslavia and the effective disintegration of Yugoslavia. The Croatian Parliament subsequently decided, on 8th October 1991, to sever all federal and legal connections with Yugoslavia, and the Republic of Croatia was recognized as an independent state by the members of the European Union on 15th January 1992. The USA and China followed suit later in the year and, on 22nd May 1992, Croatia was admitted as a member of the UN.

Croatia is a mid-sized European country consisting of two regions: continental Croatia belongs to central Europe, whereas coastal Croatia lies on the Mediterranean (Adriatic Sea). The geographical layout of Croatia is shown in Figure 1. It is a state at the crossroads of several large European regions.

Moreover, Croatia has relatively mild climate, with four clearly defined seasons. There are 66 inhabited (23 main) islands and 1119 uninhabited islands. As far as the demographics are concerned there are 4,784,265 inhabitants (according to census 1991). The majority of them are of Croatian ethnicity (80%) and minorities
include Serbs, Albanians, Bosniacs, Montenegrins, Czechs, Macedonians, Hungarians, Russins, Ruthenians, Slovaks, Slovenes, Italians, Ukrainians and Jews.

In addition, Croatia is a unitary and indivisible democratic and social state. The capital is Zagreb. The country is divided into 21 Counties, which include the city of Zagreb. So far as the political structure is concerned there is a “semi-presidential” constitutional system in the Republic of Croatia which is different, for instance, from both the parliamentary system in Great Britain and the presidential system found in the United States.

However, the Croatian Constitution is based on the principle of the separation of powers between the legislative, executive and judicial branches. The Government is a part of the Executive branch, and is headed by the Prime Minister. Furthermore, the president of the Republic performs all functions bestowed upon a Head of State.

The Croatian Parliament was constituted as a contemporary European parliament in May 1990, although it had existed in one form or another since the 12th century. It is composed of two chambers: the House of Representatives and the House of Counties.
Figure 1  Geographical position of the Republic of Croatia
Source:  Microsoft Encarta 98.
2.2 Maritime activities in Croatia

2.2.1 Maritime transportation - ports

Thanks to its location on the east bank of the Adriatic Sea, Croatia has long served as a bridge between Europe and the rest of the world. Especially significant to Croatia’s geography is the long and indented Adriatic coast, which carves deep into the Kvarner Bay. It provides an ideal port for the city of Rijeka - making maritime transportation particularly important to Croatia. For instance, from 1965 to 1990 the number of passengers in maritime traffic rose from 4.9 million to 8.1 million, while the volume of cargo in Croatian ports increased from 8.2 million to 30 million tons.

Furthermore, in 1980 construction of a pipeline between an oil field at Omisalj, on the island of Krk, and refineries in the Croatian hinterland and in Hungary was completed.

In addition to about 350 small and medium size ports on the mainland and islands, Croatia has seven major ports capable of handling transatlantic liners. They are (from North to South) Pula, Rijeka, Zadar, Šibenik, Split, Ploce and Dubrovnik.

Rijeka is the largest, accounting for more than 50% of all port traffic. The Port of Rijeka serves an area including all of Croatia, as well as Middle Europe. The area served by the Port of Ploce covers the majority of Bosnia and Herzegovina and even parts of the Danube region.

The ports of Pula, Zadar, Šibenik and Split serve their respective surrounding areas, with the ports of Zadar, Split and Dubrovnik serving an especially significant role in the development of tourism.

In brief, Croatia’s ideal location makes possible two important commercial opportunities:

- Use of Croatian ports for export of goods originating in central Europe and the Danube region.
- Use of Croatian port cities and other suitable coastal areas for the
development of processing plants and warehousing facilities for goods aimed at the European market. (Croatian Chamber of Economy, 1998, 45).

2.2.1.1 Examination of the role of the Croatian Maritime Administration (MARAD) with regard to the ports

As an introduction, in Croatia, there is a Law on the Sea Ports, that is based upon the provisions of the legal regime on the maritime demesne, stated in the Croatian Maritime Code, Articles 48-80. That Law regulates all the issues concerned with the ports. In addition, on the Figure 7, Chapter three, there is Ports Department that is in charge for governing the Croatian ports.

It is necessary to say, that Croatia is a “young” country as well as Croatian MARAD. The country was in four-year war, but despite this fact The Republic of Croatia established a good basis for the future development of the maritime affairs as well as for the development of its ports.

In addition, in former Yugoslavia about 90% of the ports were run by Croatia. However, the transition from Yugoslavian communist system to the democratic system, which is now present in Croatia, affected the Croatian maritime affairs. Particularly those changes affected the ports.

As a result, decisions made at Zagreb, has imposed a two-tier structure, ranking ports with direct government interest as “state ports”—including Dubrovnik, Rijeka, Ploce, Split and Zadar, and those administered by the country’s 21 regions as “provincial ports”—including Neretva and Istra.

Furthermore, under the new law, port authorities are governmental agencies, but run by private operators with the goal of breaking even by the end of this year. It is important to point out that direct quayside operations in the ports are now carried out by private firms on concessionaire contracts.

As it was said, Rijeka is the largest Croatian port. Rijeka Port Authority is undergoing privatization. Currently the state holds 70%, while the port’s employees
and private investors have the remaining 30%. It can be said that the forth-coming change is beneficial for the port, because after this process is completed, the productivity of the port will be boosted, and this will allow Rijeka to win back some of the trade it has lost due to the presence of war.

Moreover, in the light of this discussion it has to be said that before the war, which has started in 1991, many foreign shipping companies got through the Croatian ports with significant annual amounts of cargo. The majority of that cargo were handled in Rijeka, which for instance in 1988 had a total annual traffic of 20 million tons of cargo, and in 1997 the traffic was just 5 million. Understandably, the war caused discouragement of traffic by an additional ‘war risk’ fee requested from the shipowners. The second negative impact was that all those shipping companies diverted their cargo from Rijeka to Slovenian port of Koper and Italian Port of Trieste. In addition, the 1998 marked a turning point, as the total for 1997 was reached in just nine months.

Furthermore, to restore competitiveness and to adapt on the new situation, Rijeka called in Dutch consultant “Rotterdam Maritime Group” to draw up a ten-year master plan. In the first two years Rijeka will focus its efforts on rebuilding and re-equipping the existing quays. The plan makes several changes to the layout of the city port, replacing the shiprepair activity of “VIKTOR LENAC” shipyard at Dock 3 with a new quay and a Dutch-designed passenger terminal.

Significance of this plan is that it calls for investment of about US$30 million, helping to buy six mobile cranes and two container cranes for the Rijeka’s container terminal at Brajdica.

Rijeka’s container terminal has been the hardest hit of the five cargo handling locations, due to mentioned presence of war. The two-crane facility has a potential capacity of 80,000 TEU a year and in 1988 had a throughput of 50,000 TEU, but traffic in 1997 barely scraped 20,000 TEU. The reason lies in the sudden reduction of Rijeka’s hinterland, as it was said, from 20 million to just 5 million tons of cargo. In addition, the factories in Bosnia and Herzegovina closed, which meant the cancellation of a major market.
Moreover, even before installation of additional cranes, Rijeka needs to restore the lines’ confidence, as the port is mainly gateway for transit business directed towards Central and Eastern Europe. Rijeka’s potential customers are companies located in Hungary, the Czech Republic, Poland and Slovakia. The management branch of the Port of Rijeka is confident that these, now free-market, economies will grow. But, in order to move the cargo there, Rijeka will need much better road and rail connections than it is present today. Now, it is underway the final phase of a new motorway which connects Rijeka with Zagreb, and from Zagreb, the motorways continues toward the mentioned countries in Eastern Europe.

The shortcoming of Port of Rijeka is the lack of a direct feeder link with a western Mediterranean container hub port. The Croatian container shipping company “Croatia Line” imports cargo through the Italian ports and trucks it to Croatia, often passing by the gates of Rijeka port. The way of doing its business on this manner is of economic nature, that is, it is much more cheaper to handle the cargo on described manner, than to come in the Port of Rijeka. However, another Croatian container shipping company “Lošinjska Plovidba”, will try to overcome mentioned lack of a direct feeder link, by introducing a new feeder link to Malta or Gioia Tauro in Italy later this year. This line is expected to be profitable within six months and could bring another 20,000 TEU a year. Moreover, a further boost might come from Rijeka’s Free Zone status, granted in June 1997. Meanwhile, links with neighboring ports, such as Koper in Slovenia, and Trieste and Monfalcone in Italy, are being strengthened.

Furthermore, in order to successfully adapt on the mentioned changes, the Port of Rijeka has a specialized group of people with a high level of knowledge and skills who are able to perform their abilities on the most effective manner. However, there is a need for motivation. The Port of Rijeka does it by introducing training courses for the staff, not only for experienced employees, but also for the new employees. The Port of Rijeka helps to its employees to contribute effectively in their jobs by giving them scholarships in order to improve their abilities. In this way the performance of the staff will be increased, and it will be possible to achieve a
good quality standards system, which is nowadays an essential element of any successful company as well as the port.

All mentioned facts that are now happening in the Port of Rijeka, are co-ordinated by the Croatian MARAD.

In brief, as a traditional maritime country, the Republic of Croatia, and its MARAD, is well placed to continue its role in maritime affairs, which has been created and developed over the centuries.

2.2.2 The shipbuilding industry

The Croatian shipbuilding industry has been well known on the world market since the 1960’s. In the period from 1956 until 1990 Croatian shipyards delivered 745 ships with an overall carrying capacity of 17.5 million dwt, and more than 90% of production was intended for foreign clients. For instance, in the second half of the 1980’s the Croatian shipbuilding industry was the third strongest shipbuilding industry in the world, right after Japan and South Korea.

Furthermore, this position on the market is based on centuries old tradition, which was the basis for the development of numerous Croatian shipyards. With 3 slipways in 5 large shipyards, which account for 3.5% of shipbuilding capacity in the world, “BRODOSPLIT”, “BRODOTROGIR”, the shipyard “KRALJEVICA”, “3. MAJ” and “ULJANIK” launch and deliver about 30 ships of different kinds per year, which meet the highest standards.

In addition to passenger ships, tankers for the transportation of petroleum, petroleum products and chemicals, bulk carriers and general cargo carriers, container ships and multipurpose ships, ferries and RO-RO ships, the production programme also includes floating docks, floating cranes, platforms for under-sea exploration and other floating off-shore facilities.

Moreover, the shipyards also offer a wide assortment of equipment for ships: engines, deck cranes, compressors, diesel generators, control panels and navigation
systems and incinerators.

Finally, the scope of the Croatian shipbuilding industry is also broadened by a whole range of smaller shipyards which offer a wide assortment of smaller vessels for various purposes. A significant segment of the Croatian shipbuilding industry is its repair capacity existing at a number of shipyards.

2.2.2.1 The Croatian shipyard "VIKTOR LENAC"

While the Croatian shipping companies and ports have found the transition from the communist system to democratic system hard to achieve, the "VIKTOR LENAC" shipyard responded quickly and actively to the new market. It carved out a reputation for quality repair work with an attractive labor cost.

Furthermore, three specialized training colleges in Zagreb, Rijeka and Split continued to provide well-educated engineers and technicians throughout the war. The shipyard suffered no significant drop in business during that period, although some colleges had to fight in the army. Such continuity confirmed the position of the yard as the third ranking repair facility in the Mediterranean in 1997. The facility has been relocated from Rijeka city center to the shelter of Martinšćica Bay, a short distance away.

In addition, the secret of its success lies in early privatization. "VIKTOR LENAC" remains the only fully privatized yard, a joint stock company since 1993 with shares traded on the Zagreb stock exchange since July 1997. Most shares are held by foreign interests, principally in the Netherlands, Liberia and the United States. That separation from the State enabled managers to keep the number of workers low - 650, compared with 1,650 in 1990, to make good use of subcontracted labor, and diversify into lengthening, upgrading and modernization and, crucially, to focus on high-value sectors.

Moreover, three floating docks allow the dry-docking of ships up to 65,000 dwt, while 12 shore cranes permit floating repairs along 1,200 meters of quayside for ships up to 125,000 dwt. Capacity is flexible, enough to attract new-building
tonnage from the other Croatian yards. For instance, last year, shipyards "TROGIR", "ULJANIK" and "3. MAJ", were all "VIKTOR LENAC" customers.

It is important to point out the yard's flexibility to the use of well-equipped steel, mechanical and electrical work-shops. The management of the yard are upgrading the existing facilities to cater for the requirements of the demanding conversation market and production of the offshore units. Diversification beyond repair work has produced remarkable results. For example, in 1994, soon after privatization, "VIKTOR LENAC" posted a turnover of US$ 27 million. The company is expecting to announce a rise to US$ 45 million in 1998, and has targeted turnover of US$ 60 million for 1999.

Furthermore, last year, US$ 12 million was invested, much from its own reserves, in the purchase of the most advanced equipment for ship's hull external and internal anti-corrosion treatment. Gantry cranes were added, along with a plasma cutting machine for carbon steel and non-ferrous material, two tungsten inert gas welding machines and 100 electric welding machines. In 1997, funding was provided for a closed blasting/painting work-shop for treatment of hatch covers and similar steel constructions, slops treatment facilities and a fresh-water supply pump station. This was in addition to multipurpose cherry pickers and vehicles for the collection of used grit from dock platform and cargo holds. Plans include improvements to the managerial structure and raising equity on the international capital market.

In addition, although most the Croatian owners are customers, they make up just 10% of "VIKTOR LENAC's" business. Work on about 70 ships was carried out during 1998, with notable activity including the conversions of a 112,000 dwt bulker into a stationary coal storage barge, then, a 28,000 dwt bulker into a kaolin and slurry carrier, and an offshore supply ship into a pipe layer. Last June, "VIKTOR LENAC" won the contract to repair the container-ship "Sea-Land Mariner", the stern of which had been torn apart by an explosion. The yard renewed 200 tonnes of steel and the fabrication of new aft hatch coamings and covers; the complete rewiring of the aft of the ship and the repair of all hydraulic systems and the steering gear.
To conclude, the presented facts about this successful shipyard should be served as an example for other similar companies in the Republic of Croatia, to organize its work and activities on that manner. Again, it is proved that in majority of cases, where the companies are run by the private sector, the flexibility and the efficiency of those companies are on much more higher level, than it is found in the companies that are run by the authority of the State.

2.2.3 Fishing and processing of fish

Fishing and processing of fish is traditionally the most important activity in the littoral and insular parts of Croatia. According to data of the State Bureau of Statistics, 16,035 tons of fish and other seafood were caught in 1997.

As far as the industrial processing of fish is concerned, there are about fifteen companies engaged. In 1997 the production of various fish products reached 14,800 tons, 12,500 tons of which were canned pilchards.

In addition, fish is a significant export product for Croatia. Exports of fish products in 1997 grew 22% in comparison with the 1996, and the achieved value of 60.6 million US$ was twice the figure of the realized importation of these products into Croatia. Fresh and frozen fish account for 56%, and canned fish for 44% of total exports.

2.2.3.1 Aquaculture - fresh-water fish farming

Fresh-water fish farming in Croatia has a tradition of more than 110 years. Today, fishponds cover an area of more than 12,000 hectares. Research activities related to salt-water fish farming began 22 years ago, and the beginning of industrial salt-water fish farming dates back to year 1983.

The increase in salt-water fish farming in the forthcoming period is expected
to reach 2,200 tons of fish, 6,350 tons of mussels and 1,000,000 oysters per year. In addition, 80-90% of farm-bred sea-fish and 50-60% of farm-bred fresh-water fish are exported. Italy is the main export market for farmed seafood.

2.2.4 The Croatian tourism

Tourism represents an important part of the Croatian services. For example, in 1990, Croatia were visited by some 5 million foreign visitors, who spent a total of 34 million overnight stays. The number of tourists in 1997 amounted to 5.2 million, 3.8 of whom were foreigners, who spent a total of 30,314,147 overnight stays. Under normal circumstances, the tourist industry employs between 180,000 and 200,000 people, and accounts for almost one third of Croatia's total foreign exchange earnings. Owing to the proximity of major European capitals, and a good communication infrastructure, Croatia is an attractive region for conference tourism and related activities.

Furthermore, in Croatia, the tourism has been developed in the following aspects:

- Marinas.
- Diving.
- Nudism.
- Sport fishing on the Adriatic.
- Sport fishing in rivers and lakes.
- Health tourism.
- Religious tourism.
- Hunting.
- Congress offer.
- Mountaineering.
- Rural tourism.
- Caves.
• Winter tourism.

As far as the marinas are concerned, in Croatia there are 40 of them, which offer modern conveniences, and are either independent or part of the Adriatic Croatia International Club (ACI). The ACI includes 21 marinas, 17 of which are open throughout the entire year, whereas the remaining 4 are open only during the summer season. The interest union of all Croatian marinas is situated in Rijeka.

In addition, nudism has a long tradition in Croatia. Its followers were already spending their holidays in Istria and Dalmatia back in 1930's. "The Nudist Vacation Camp" was opened on Paradise Beach (island of Rab) in 1934. Nowadays, there are about 30 nudist points in Croatia. A nudist point is usually a combination of accommodation and a nudist beach, or a nudist beach only.

Moreover, the tradition of health tourism in Croatia goes back to the Roman times, when the building of thermae began. Croatia has 14 springs of thermal water, 7 springs of thermal-mineral water, 15 medicinal mud centers and one medicinal oil center.

Furthermore, Croatia is most renown for its summer tourism on the Adriatic. However, tourist resorts are appearing in the continental parts of the country. Rural family households can offer home-made food, wines from their own cellars, and they can organize trips to the surrounding area.

When it comes to winter tourism in Croatia, two forms of tourist offers can be emphasized: sports and recreation resorts for skiing, sleighing, cross-country skiing and running. In addition, coastal winter tourist resorts, like Opatija and Crikvenica, whose centuries-old tradition in the elite tourist and health offer used to attract the European nobility, both in summer and in winter. The Croatian winter sports centers are mostly located in the Gorski Kotar region and Medvednica. (Croatian Chamber of Economy, 1998, page 32).

To conclude, despite the war in former Yugoslavia, the Republic of Croatia continued to develop its tourism by its own financial resources, as well as with the help of the people who came from foreign countries, but who have the Croatian origin.
2.3 The organization of State Authority

The intention of this section of the current Chapter, is to present how is the State Authority organized. In the Figure 2 it is important to pay attention on its middle part, the Government of the Republic of Croatia. One of the Ministries in the Government, is the Ministry of Maritime Affairs, Transport and Communications that is in charge for the issues concerned with the Croatian maritime affairs.

In addition, the content under the titles 2.3.1, 2.3.2, 2.3.3 and 2.4, is necessary to be presented in order to gain the basic knowledge of the Republic of Croatia as State, as well as information concerned with the Ministry that is in charge for the Croatian Maritime Administration.

2.3.1 Organization of the National Government

The National Government is based on the concept of total sovereignty:

- civil or popular sovereignty - the government derives from the people and belongs to the people, with those in power being representatives of the people;
- state sovereignty - the state is the highest authority in the country and is independent with respect to foreign countries;
- national sovereignty - the right to self-determination, including the right to secession.
Figure 2 The organization of State Authority of the Republic of Croatia

Source: The Croatian Maritime Administration.
2.3.2 Government bodies

The organizational structure of Government bodies can be seen on the Figure 3.

Figure 3  The organizational structure of Government bodies of the Republic of Croatia
Source: The Croatian Maritime Administration.
2.3.3 State Ministries and Ministries

State Ministries and Ministries are structured as it is shown on the Figure 4 and Figure 5. In addition, the State Ministries represent the Ministries that are vital for the functioning of the Republic of Croatia.

State Ministries

- Ministry of Defence
- Ministry of Interior Affairs
- Ministry of Foreign Affairs
- Ministry of Finance
- Ministry of Reconstruction, Immigration and Development

Figure 4 Structure of the State Ministries of the Government of the Republic of Croatia
Source: The Croatian Maritime Administration.

Ministries

- Ministry of Croatian Homeland War veterans
- Ministry of Agriculture and Forestry
- Ministry of Culture
- Ministry of Economy
- Ministry of Education and Sports
- Ministry of Health
- Ministry of Justice
- Ministry of Labor and Social Welfare
- Ministry of Maritime Affairs, Transport and Communications
- Ministry of Tourism
- Ministry of Science and Technology
- Ministry of Zoning, Construction and Housing

Figure 5 Structure of the Ministries of the Government of the Republic of Croatia
Source: The Croatian Maritime Administration.
2.4 Ministry of Maritime Affairs, Transport and Communications

The following Ministry is in charge for all the issues concerned with the Croatian maritime affairs. The organizational structure of the Croatian Ministry of Maritime Affairs, Transport and Communications can be seen on the Figure 6.

Figure 6  The organizational structure of the Croatian Ministry of
Maritime Affairs, Transport and Communications
Source:  The Croatian Maritime Administration.

Finally, the next Chapter will discuss the details of the Croatian Maritime Administration.
CHAPTER THREE

The Maritime Administration of the Republic of Croatia

3.1 Organizational structure of the Croatian Maritime Administration (Croatian MARAD)

The Croatian Maritime Administration is a part of the Ministry of Maritime Affairs, Transport and Communications and is located in Zagreb. Figure 7 shows its organizational structure.

There are five main departments, of which the Safety of Navigation Department is the most important. This department is further split into four divisions which are connected to the Harbor Masters' Offices. The Harbor Masters' Offices in the main ports are themselves linked to the Branch Offices throughout the Croatian coast, thus making an important contribution to the overall effectiveness of the Croatian MARAD.
Figure 7  The organizational structure of the Croatian Maritime Administration
Source:  The Croatian Maritime Administration.
The organizational functions of the Croatian MARAD

The main functions of the Croatian Maritime Administration are to implement and enforce the regulations and provisions of the Croatian Maritime Code, and to ensure the safety of life at sea, the safety of navigation and the protection of the marine environment, through its administration.

The core functions of the Croatian MARAD can be said to be as follows:
1. General superintendence and filling the ‘lead agency’ role in co-ordinating discussion of maritime issues within the Public Administration, including development of a ‘shipping policy’.
2. Advising the Executive/Government on maritime issues, including responses to Parliamentary and public questions.
3. Providing, or supporting, national representation at international negotiations on international maritime instruments or arrangements.
4. Registration of ships and related functions.
5. Preparation of instructions to legal draftsmen of primary maritime legislation and drafting of secondary maritime legislation for adoption (usually by the Legislature and Executive respectively).
6. Implementing the administrative, technical and social duties of the flag State, as described in Article 94 of the United Nations Convention on the Law of the Sea (UNCLOS), and reflected in national law. This involves both setting up standards and procedures to be followed and responding to allegations or evidence of non-compliance.
7. Conducting marine inquiries into serious incidents involving flag ships (or, usually, occurring in national territorial waters).
8. Ensuring removal of wrecks and other obstructions to navigation.
9. Ensuring provision of aids to navigation, coastal watch and Search and Rescue (SAR) services and services for safety/environmental protection/traffic efficiency purposes, e.g. weather warning, ship reporting, VTS, pilotage and like services.
10. Inspection of ships in port and requiring repairs to substandard or detaining unseaworthy ships; port State control is an inherent sovereign right; its role has been expanded by a number of IMO and ILO treaties.

To conclude, it is important to point out that the Republic of Croatia submitted to the IMO, as a fulfillment of its obligations as a flag State, documents in accordance with Article IV and Regulation I/7 of the STCW Convention and Section A-I/7 of the STCW Code.

3.3 The responsibilities of the Croatian MARAD

The Croatian MARAD represents the Croatian flag State. In the light of this discussion it is necessary to define what is the flag State. Therefore, it can be said that the flag State is that state whose nationality is held by a ship. It is the primary basis for the regulation of ships.

Furthermore, the responsibilities of Croatian flag State, e.g. Croatian MARAD are as follows:

1. It must ensure that its ships comply with international maritime standards and is obliged to enforce them.
2. It must ensure that its ships are built and maintained to relevant rules and ensure enforcement of these rules.
4. Jurisdiction over ship’s personnel:
   a) Administrative.
   b) Technical.
   c) Social.
5. Ship safety including:
   a) Construction, equipment and seaworthiness of ships.
   b) Manning, labor conditions, training.
   c) Communications and navigational safety.
   d) Surveying of ships.
e) Carriage of charts and nautical publications.
f) Carriage of navigational aids.
g) Sufficiency and efficiency of crew. (Sufficiency means that there is enough crew members onboard a ship. Efficiency means properly trained and qualified crew members).

7. Investigation of casualties.
8. Interim guidelines to assist flag State; IMO Resolution A.740(18).
9. Testing systems and equipment:
   a) Fire; IMO Resolutions A.652, 653, 754.
   b) Life Saving Appliances; IMO Resolution A.689(17).
10. Reports to IMO; IMO Resolution A.648(16).
11. Fatigue factor:
   a) IMO’s MSC/Circ.622.
   b) IMO Resolution A.772(18).
12. Management control (ISM Code):
   a) IMO Resolution A.647(16).
   b) IMO Resolution A.680(17).
   c) IMO Resolution A.788(19).
13. Guidelines for delegation of authority:
   a) IMO Resolution A.739(18).
   b) IMO Resolution A.789(19).
14. Operational requirements:
   a) IMO Resolution A.681(17).
   b) IMO Resolution A.742(18).
16. RO-RO safety; IMO Resolutions A.792, 793, 794, 795, 796(19).

In the end, flag State responsibilities are also set out in the paper of Sub-committee on Flag State Implementation, (subsidiary sub-committee of the IMO’s
In today’s maritime world the issue of port State is very important. Why? By checking foreign ships which have to comply with agreed international maritime instruments it contributes to the prevention of loss of life and protection of the marine environment.

Furthermore, port State is that state in whose port or off-shore terminal a foreign ship resides for the time being. Its role is often described as “corrective”, and aimed at correcting non-compliance or non-effective flag State enforcement. Also, in this context, the Croatian MARAD plays an important role.

Therefore, the responsibilities of port State can be summarized as follows:

1. Arranging for control observing:
   a) Articles 4 - 7 of MARPOL 73/78 Convention.
   b) Chapter I, Regulation 19 of SOLAS 1974 Convention.

2. Implementing procedures set out in IMO Resolutions:
   a) A.466(XII),
   b) A.542(13),
   c) A.597(15),
   d) A.681(17),
   e) A.682(17),
   f) A.787(19),
   including management control.

3. Surveyor training for port State control:
   a) IMO Resolution A.787(19).
   b) IMO’s MSC 62/65, para 10.11 - 10.14.

4. Control of operational requirements:
a) IMO’s FSI 1/WP.5.

b) IMO Resolution A.742(18).

3.5 The responsibility and obligations of the port State (Croatian MARAD) in terms of port State control

As far as the flag State and port State are concerned it is necessary to mention the following issue, which is often confusing.

For example, if the ship, which is entitled to fly the Croatian flag, enters a port of country "B", country "B" on that ship exercises port State control. On the other hand, if the same ship enters a Croatian port, Croatia on that ship exercises flag State control.

The responsibility and obligations of the port State (Croatian MARAD) in terms of port State control can be seen in the following five paragraphs.

IMO Resolution A.787(19); para 5.1; PORT STATE REPORTING.

In addition, it is important to point out that Article 5 of MARPOL 73/78 Convention, Article 12 of Tonnage 69 Convention and Article X of STCW 78 Convention, as amended in 1995 cover the role of port State control, too.

Furthermore, there is an obligation of port State according to ILO 147 Convention, which says, that whenever there is a complaint or evidence that an inspected ship does not conform with the ILO 147 Convention, a report should be sent to the flag State and the International Labor Organization (ILO). Moreover, the port State may detain the ship until the conditions onboard a ship have been rectified.

When exercising port State control related to the ISM Code in accordance with Regulation 6.2 of Chapter IX of SOLAS 1974 Convention, as amended, port States are urged to apply the Interim Guidelines for Port State Control, developed by the IMO’s FSI Sub-committee at its sixth session. In addition, port State should recognize that the port State control related to the ISM Code should be an inspection and not an audit.

In the end, Articles 218 and 226 of UNCLOS deal with port State control.
3.6 The responsibility and obligations of the flag State (Croatian MARAD) in terms of port State control

According to IMO Resolution A.787(19)

1. On receiving a report of detention, the flag State and, where appropriate, the recognized organization through the flag State Administration, should, as soon as possible, inform the IMO of its remedial action taken in respect of the detention.

2. Relevant telephone numbers and addresses of port State control officers, headquarters and those who provide inspection services, should be provided to the IMO.

Furthermore, flag State obligations are the following:

- Issue of certificates.
- Follow up of deficiency and pollution reports.
- Notification to IMO.
- Making offences punishable.
- Accident investigation.
- Ship reporting systems.

In addition, some important obligations of the flag State which is party to the MARPOL 73/78 Convention are as follows:

- To investigate cases of violations and to initiate proceedings when necessary.
- To not unduly delay ships.
- To ensure availability of reception facilities.

Moreover, in the ILO 147 Convention there are stated the obligations of the flag State, as follows:
1. It must have laws and regulations “substantially equivalent” to the Articles of the Convention. “Substantially equivalent” implies that the State is committed to the goals of the Convention in question and has taken steps to ensure that they are respected in its national legislation,

2. It must have effective jurisdiction or control of its own ships regarding: Safety standards, Standards of competency, hours of work and manning, Social security measures, Shipboard conditions of employment and living arrangements,

3. It must verify (by inspection or other means) that its ships comply with national laws and regulations, which apply the standards prescribed by the Convention.

Furthermore, Article 217, Enforcement by flag States, of UNCLOS, deals with the role of flag State regarding port State control.

To conclude, in the Croatian Maritime Code, Chapter IX, Inspectoral Supervision, Article 180 to Article 192, there are provisions as to how to carry out port State control in the Republic of Croatia.

3.7 “No more favorable treatment” Clause

When exercising port State control, Croatian port State control officers apply the “No more favorable treatment” Clause. Article II(3) of the Protocol of 1978 to SOLAS 1974 Convention, Article 5(4) of MARPOL 73/78 Convention, and Article X(5) of STCW 1978 Convention, provide that no more favorable treatment is to be given to the ships of countries which are not Party to the Convention.

Furthermore, the meaning of “No more favorable treatment” is the following: If the country “A” did not ratify, e.g. MARPOL 73/78 Convention, and if the ship, which is entitled to fly the flag of the country “A”, is in the port of country “B”, port State control of country “B”, which ratified MARPOL 73/78
Convention, can enforce provisions of MARPOL 73/78 Convention on that ship, despite the country “A” is not Party to MARPOL 73/78 Convention.

In brief, the aim of “No more favorable treatment” Clause is to ensure that equivalent surveys and inspections are conducted, and an equivalent level of safety protection of the marine environment is ensured.

### 3.8 Implementation of the international conventions

Before explaining the manner on which the Republic of Croatia ratifies and implements the international conventions, it is necessary to explain the methods which are used world-wide for implementation of the international conventions.

They are Monistic method and Dualistic method.

According to Professor P. K. Mukherjee

> ‘When a State becomes a party to an international convention by the process of ratification or accession, the legal affect of it is that the State then becomes bound by the convention and is therefore obliged to implement it by incorporation into its body of national law. If the State so fails to implement the convention, it is nevertheless subject to it vis a vis other State Parties, but it cannot enforce the Convention against them, unless that convention becomes part of the law of the land by whatever legal process is applicable in that State’s jurisdiction. The implementation of an international convention to which a State has become a party is therefore an essential step without which the State Party cannot benefit insofar as the application of that law within its jurisdiction is concerned. It is a fundamental premise that the application and effect of international conventions within the domestic legal order is governed by the domestic constitutional law, or other superior law of general application such as a Civil Code or a Judicature Act.’ (Handout, 1998, 7).
3.8.1 Monistic Method

Professor P. K. Mukherjee gave the following explanation of the Monistic method.

‘In the monistic method of implementation, where it is so provided by the domestic constitutional law, an international convention can become part of domestic law simply as a consequence of its ratification or accession by the State. Virtually, no legislative action is required for implementation in such a case. Examples of jurisdictions which subscribe to the monistic method of treaty implementation are France, Belgium, Netherlands and The United States.’ (Handout, 1998, 7).

3.8.2 Dualistic Method

The Professor gave the following explanation about the Dualistic method for the implementation of international conventions.

‘The dualistic system is said to prevail in jurisdictions where some form of legislative action is required for the implementation of an international convention, following its ratification or accession. While the dualistic system prevails predominantly in the United Kingdom and other common law jurisdictions, there are several civil law jurisdictions, such as Italy, Germany and the Scandinavian countries which have adopted the dualistic approach.’ (Handout, 1998, 8).
3.9 Ratification and implementation of the international conventions in the Republic of Croatia

Provisions concerned with the international agreements in the Republic of Croatia are stated in the Constitution of the Republic of Croatia (Official Gazette/"Službeni list" No. 56/1990), and in the Croatian Law on the Conclusion and Execution of the International Agreements (Official Gazette/"Službeni list’ No. 28/1996).

According to the above mentioned Croatian Law the international convention is interpreted as the international agreement, i.e. the treaty. According to the Article 132 of the Constitution of the Republic of Croatia

‘International agreements shall be concluded, on behalf of the Republic of Croatia, by the President of the Republic, but may also be concluded, in conformity with law, by the Government of the Republic of Croatia.’

Furthermore, according to the Article 2, para 13, of the Croatian Law on the Conclusion and Execution of the International Agreements, “signature”, “ratification”, “acceptance”, “approval”, “accession” and “notification of succession” are the acts by which the Republic of Croatia, at the international level, gives its consent to be bound by the international agreement.

As far as the ratification of international agreements in Croatia is concerned, detailed provisions are stated in the Part Five (Articles 15, 16, 17, 18, 19 and 20) of the above mentioned Croatian Law. Article 18 states that the State Parliament of the Republic of Croatia (Croatian Sabor) ratifies those international agreements which entail the passage or amendment of laws, international agreements of a military and political nature, and international agreements which financially commit the Republic of Croatia.
Moreover, after ratification then follows the process of implementation. In today’s world most countries ratify international maritime conventions, but as far as the issue of implementation is concerned, it is not clearly stated how a particular country will implement them. In the Republic of Croatia implementation of international maritime conventions is carried out on the following way.

Croatia follows the monistic method of implementation of international conventions. As it was explained in part 3.8.1 of this chapter, the monistic method means that the particular country does not need to establish national legislation in order to allow the convention to become part of its national law. International law is superior to national law. After ratification or accession of the convention, it automatically becomes part of the Croatian Law. It is, however, important to point out one particular part of the Croatian constitutional law. Article 134 of the Constitution of the Republic of Croatia states the following:

‘International agreements concluded and ratified in accordance with the Constitution and made public shall be part of the Republic’s internal legal order and shall be above the law in terms of legal effects. Their provisions may be changed or repealed only under conditions, and in the way specified in them or in accordance with the general rules of international law.’

Therefore, the Republic of Croatia can be added as an example of a State which follows the monistic method of implementation of the international conventions. In addition, the act of ratification of the international agreement is made public in the Official Gazette/“Službeni list” of the Republic of Croatia.

Implementation of the conventions in the Republic of Croatia is the responsibility of the Ministry of Maritime Affairs, Transport and Communications,
Maritime Administration. It is achieved through application of the Croatian Maritime Code, which table of contents can be seen in the part 3.10.1 of this chapter.

The Republic of Croatia has ratified the following international conventions:

2. International Maritime Organization Convention (IMO), 1948.
   a) INTERVENTION Protocol 73.
   a) FUND Protocol 92.
   a) MARPOL 73/78 (Annex I/II).
   b) MARPOL 73/78 (Annex III).
   c) MARPOL 73/78 (Annex IV).
   d) MARPOL 73/78 (Annex V).
   a) SOLAS Protocol 78.
14. Athens Convention Relating to the Carriage of Passengers and their
    Luggage by Sea (PAL), 1974.
   a) PAL Protocol 76.
   b) PAL Protocol 90.
    (INMARSAT), 1976.
   a) INMARSAT Operating Agreement (OA), 76.
16. Convention on Limitation of Liability for Maritime Claims (LLMC),
    1976.
17. International Convention on Standards of Training, Certification and
    Watchkeeping for Seafarers (STCW), 1978.
18. International Convention on Maritime Search and Rescue (SAR),
    1979.
20. International Convention on Oil Pollution Preparedness, Response and
    Co-operation (OPRC), 1990.
22. Medical Examination of Young Persons Convention, 1921, (ILO).
32. Wages, Hours of Work and Manning Convention (Revised), 1958, (ILO).


To conclude, this list shows that the Republic of Croatia represents an important maritime country, which contributes to the overall improvement to safety of navigation as well as to the protection of marine environment.

3.9.1 The Croatian Maritime Code

The Croatian Maritime Code represents the foundation for the implementation of the international conventions in the Republic of Croatia. The intention of this part of this chapter is to present a table of contents of the Croatian Maritime Code. It covers all major maritime affairs issues, and it was created in accordance with the international maritime conventions.

Furthermore, the Code was adopted on 27th January 1994 by the House of Representatives of the Republic of Croatia (it is a part of the State Parliament), and it was made public in the Official Gazette/"Službeni list” No.17/1994 from the 7th March 1994. In addition, it came into force on 22nd March 1994. The table of contents of the Croatian Maritime Code can be seen in the Appendix 1.

In the end, by the Maritime Code the Republic of Croatia joins with other countries to set up legislation for the successful implementation of the international maritime conventions. It is an important document, which enables Croatia to properly fulfil its obligations, by becoming a Party to those conventions, and it represents the instrument by which Croatia follows the highest international standards in the field of maritime affairs.
3.10 Delegation of authority

As a general rule, the Croatian Maritime Administration does not delegate authority to recognized organizations, (i.e. to the members of the International Association of the Classification Societies), nor to any other Institution or Agency that does not come under the Croatian MARAD.

However, in Croatia, there is the Croatian Register of Shipping which is a public institution performing its services in the interests of the Republic of Croatia. It issues all the statutory certificates for ships which are registered with the Croatian Register of Ships. It means that all the ships which are entitled to fly the Croatian flag will be provided with statutory certificates issued by the Croatian Register of Shipping.

Furthermore, the Croatian Register of Shipping is a non-profitable institution. The authorities of the Croatian Register of Shipping, are granted to it by the Government of the Republic of Croatia. The headquarters of the Croatian Register of Shipping is at Split.

To conclude, jobs and duties which are performed by the Croatian Register of Shipping are evaluated by the inspectors of the Croatian MARAD.

3.11 Pollution of the marine environment

In the Republic of Croatia issues concerned with the marine environment are under authority of the Ministry of Maritime Affairs, Transport and Communications if it results from a pollution of sea from ships. In such circumstances the MARPOL 73/78 Convention applies. On the other hand, if there is a pollution of sea from land, the authority is under the State Administration for the Protection of Nature and Environment, Local Unit for the Protection of Sea, situated at Rijeka. In such circumstances the London Dumping Convention, 1972 and Barcelona Convention on the Protection of the Mediterranean apply with associated Protocols.

To conclude, the said authorities of the Republic of Croatia are responsible for prevention of the pollution of the marine environment.
CHAPTER FOUR

International Conventions and standards related to search and rescue (SAR) and ship reporting systems

4.1 Introduction

The main objective of this chapter is to present the International Conventions and standards that deal with SAR and ship reporting systems. Search and Rescue service is an important entity of any maritime country, and special attention should be given to that service, in order to achieve success in this kind of operations.

Furthermore, Chapter six of this dissertation discusses recommendations for the improvement of the Croatian SAR service, and therefore it is necessary to give the basic requirements related to that service.


The provisions for search and rescue in the SOLAS Convention are entrenched by Article 98 of the Law of the Sea Convention “Duty to render assistance”. According to that article

1. Every State shall require the master of a ship flying its flag, in so far as he can do so without serious danger to the ship, the crew or the passengers:
   (a) to render assistance to any person found at sea in danger of being lost;
(b) to proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far as such action may be reasonably expected of him;
(c) after a collision, to render assistance to the other ship, its crew and its passengers and, where possible, to inform the other ship of the name of his own ship, its port of registry and the nearest port at which it will call.

2. Every coastal State shall promote the establishment, operation and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and, where circumstances so require, by way of mutual regional arrangements, co-operate with neighboring States for this purpose.

4.3 The International Convention on Maritime Search and Rescue, 1979

The Assembly of the International Maritime Consultative Organization (IMCO) by resolution A.406(X) of 17th November 1977, resolved to convene an international conference to consider the adoption of a convention on Maritime Search and Rescue (SAR). Consequently, the Convention was adopted on 27th April 1979 in Hamburg, and subsequently entered into force on 22nd June 1985. The Republic of Croatia has ratified the Convention.

The main purpose of the convention is to facilitate co-operation between Governments and between those participating in search and rescue at sea. Consequently, the world's oceans have been divided into 13 SAR areas to facilitate, establish and develop international SAR plans and provided a framework for search and rescue operations. The two associated manuals, resolutions and recommendations ensure that the SAR operations are conducted with maximum speed, efficiency and effectiveness.
The technical provisions of the Convention are contained in an annex consisting of six chapters:

Chapter 1 - Terms and Definitions
Chapter 2 - Organization
   This chapter deals with how National SAR services should be organized.
Chapter 3 - Co-operation
   This chapter deals with co-operation between States in carrying out SAR operations and co-ordination with aeronautical services.
Chapter 4 - Preparatory measures
   This chapter deals with the preparatory measures to be taken by Rescue Co-ordination Centers (RCCs) and Rescue Sub-Centers (RSCs) and the state of preparedness of search and rescue units. The operational procedures and guidelines for the three emergency phases, (uncertainty phase, alert phase, and distress phase) are also detailed in this chapter.
Chapter 5 - Operating procedures
   Parties are required to maintain continuous watch on international distress frequencies, and detailed requirements are given concerning the action to be taken by coastal radio stations which receive distress messages. Detailed procedures for RCCs and RSCs are given.
Chapter 6 - Ship reporting systems
   Parties are also required to establish a Ship Reporting System within the search and rescue regions for which they are responsible, and where such a system is
considered necessary and practical for search and rescue purposes.


The Merchant Ship Search and Rescue Manual was introduced and adopted in the seventh IMO Assembly in 1971 before the adoption of the SAR Convention 1979. The Manual has been updated several times since then with the latest amendments entering into force in 1993. The purpose of this Manual is to provide guidance to the master of a vessel who might be called upon to conduct search and rescue operations for persons in distress. The Manual is divided into eight chapters which deal with SAR co-ordination, action by the ship in distress, action by the assisting ship, assistance by SAR aircraft, planning and conducting the search, conclusion of the search, communications, and aircraft casualties at sea.

4.5 IMO Search and Rescue (IMOSAR) Manual, 1993

The primary purpose of the IMO Search and Rescue Manual is to assist governments in implementing the objectives of the International Convention on Maritime Search and Rescue, 1979, and of Article 12(2) of the Convention on the High Seas, 1958. It requires that every coastal state shall promote the establishment and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and where circumstances so require - by way of mutual regional arrangements.

Adopted by the Maritime Safety Committee in 1978, the IMOSAR manual provides guidelines for a common maritime search and rescue policy, encouraging all coastal states to develop their organisations along similar lines and enabling
adjacent States to co-operate and provide mutual assistance. The IMOSAR manual has been aligned as closely as possible with the International Civil Aviation Organisation (ICAO). Search and Rescue Manual so as to ensure a common policy and to facilitate consultation on the two manuals. This need for alignment is due to frequent common objectives. The IMOSAR Manual is divided into two parts, and the latest amendments to it entered into force in 1993.

a) Part 1 deals with the search and rescue organisation and includes matters relating to the organisation of existing services and facilities and the establishment of additional services and facilities which are necessary to provide practical and economical search and rescue coverage of a given area.

b) Part 2 deals with the search and rescue procedures and contains materials designed to assist all personnel who are to participate in search and rescue operations and exercises.

### 4.6 International Convention for the Safety of Life at Sea (SOLAS), 1974

Regulation 10 of Chapter V of the SOLAS 1974 Convention sets out the obligations placed upon the master of a vessel who receives a distress message. The master of the vessel is bound to proceed with all speed to the assistance of the persons in distress. If the master is unable to do so, he must note the reasons in the ship’s logbook.

Regulation 2 of Chapter V requires the master to broadcast warning messages to other vessels in the vicinity.

Regulation 15 of Chapter V sets out the obligations of Governments regarding search and rescue:

‘Each contracting government undertakes to ensure that any necessary arrangements are made for coast watching and for the rescue of persons in
distress at sea around its coasts. This requirements should include establishment, operation and maintenance of such maritime safety facilities as are deemed practicable and necessary having regard to the density of seagoing traffic and the navigational dangers and should, so far as possible, afford adequate means of locating and rescuing such persons’. In addition, ‘Each Contracting Government undertakes to make available information concerning its existing rescue facilities and the plans for changes therein, if any’.

On 1 July 1997 the SOLAS regulation V/15 (c) entered into force, which requires that

‘Passenger ships to which chapter I applies, trading on fixed routes, shall have on board a plan for co-operation with appropriate search and rescue services in event of an emergency. The plan shall be developed in co-operation between the ship and the search and rescue services and be approved by the Administration. The plan shall include provisions for the periodic exercises to be undertaken as agreed by the passenger ship and the search and rescue services concerned to test its effectiveness’.

The guidelines for preparing plans for co-operation between passenger ships and SAR services in accordance with SOLAS regulation V/15 (c), and plans for co-operation between search and rescue services and passenger ships on fixed routes, are shown in Appendix 2.

4.7 Revision of the 1979 SAR Convention and development of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual

The Sub-Committee on Radio-Communications and Search and Rescue (COMSAR) was requested to develop amendments to the SAR Convention, 1979. A
draft text was prepared and approved by the 68th session of the MSC in May 1997. It was submitted to the 69th MSC session in May 1998 for consideration and adoption together with some additional amendments. The final amendments, prepared by a drafting group, were adopted by Resolution MSC 70(69). They will enter into force on 1st January 2000 under the tacit amendment procedure.

Furthermore, the revised Convention emphasises the co-ordination of maritime and aeronautical search and rescue operations. The International Maritime Organisation (IMO) and the International Civil Aviation Organisation (ICAO) established a joint working group on the harmonisation of Aeronautical and Maritime Search and Rescue operations. Consequently, at its fifth meeting in October 1997 in the USA, the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual was developed. The primary purpose of the Manual is to assist States in meeting their own SAR needs and obligations which they have accepted under the Convention on International Civil Aviation, the International Convention on Maritime Search and Rescue, and the International Convention for the Safety of Life at Sea. The IAMSAR Manual will replace both the MERSAR and IMOSAR Manuals, and the ICAO Search and Rescue Manual.

In addition, the revised SAR Convention, which will enter into force on 1st January 2000, clarifies the responsibilities of Governments and puts greater emphasis on the regional approach and co-ordination between maritime and aeronautical SAR operations. It is hoped that the revised Convention will be more acceptable to those states which have not yet ratified the 1979 SAR Convention - as of 1st February 1999, the SAR Convention had been ratified by only 60 countries, whose combined merchant fleets represents less than 50% of the world tonnage.

The revision applies to the main body of the convention, contained in an Annex, which is divided into Chapters. The terms and definitions contained in Chapter 1 have been updated, and Chapter 2, which deals with Organisation and Co-ordination, has been re-drafted to make the responsibilities of Governments clear. The new text requires Parties, either individually or in co-operation with other states, to establish the basic elements of a search and rescue service, and describes how
SAR services should be arranged and national capabilities be developed. Parties are required to establish rescue co-ordination centers and to operate them on a 24-hour basis, with trained staff having a working knowledge of English.

Under the revised Chapter 2, Parties are required to “ensure the closest practicable co-ordination between maritime and aeronautical services”. Other Chapters in the revised SAR Convention deal with co-operation between States (Chapter 3) and Operating Procedures (Chapter 4), which incorporates the previous Chapter 4 (Preparatory Measures) and Chapter 5 (Operating Procedures).

Moreover, Chapter 4 gives procedures to be followed, such as during initial action, emergency phases, initiation of search and rescue operations when the position of the search object is unknown, and co-ordination of SAR activities. The revised Chapter 4 says that “Search and Rescue operations shall continue, when practicable, until all reasonable hope of rescuing survivors has passed”.

The original Chapter 6 (Ship Reporting Systems) has been updated and renumbered as Chapter 5. It says that ship reporting systems should provide up-to-date information on the movements of vessels in the event of a distress incident to help the SAR activities.

Ultimately, the amendments to the International Convention on Maritime Search and Rescue, 1979 can be found in Appendix 3.

4.8 Chicago Convention on International Civil Aviation, 1944

As a part of the International Standards that deal with SAR service it is necessary to mention the Chicago Convention on International Civil Aviation, 1944. The said Convention requires the 185 contracting States of the International Civil Aviation Organization (ICAO), to:

'provide such measures of assistance to aircraft in distress, in the SAR areas under their jurisdiction, as is practicable'.

(Annex 12).

Article 11 of the convention states that ‘Every master is bound, so far as he can do so without serious danger to his vessel, her crew and passengers, to render assistance to everybody, even though an enemy, found at sea in danger of being lost’.

Article 14 of the convention states that ‘The provision of this convention shall also apply to assistance or salvage services rendered by or to a ship of war or any other ship owned, operated or chartered by a state or Public Authority…’ That means the duty to rescue even extends to rescuing enemies during wartime. The obligation to provide assistance to persons in distress at sea has been embodied in SOLAS and other international treaties as mentioned earlier.

4.10 The International Convention on Salvage, 1989

Article 10 states that ‘Every master is bound, so far as he can do so without serious danger to his vessel and persons thereon, to render assistance to any person in danger of being lost at sea’. The ancient maritime law of salvage provided compensation for saving property at sea but not lives. However, it has been modified by international conventions and case law, so that saving lives may expect a reward in most cases.
4.11 The IMO Requirements and Guidelines for Ship Reporting Systems, Resolution A.648(16)


In accordance with Resolution 3 of the International Conference on Maritime Search and Rescue 1979, IMO facilitated the need for an internationally agreed format and procedure for ship reporting systems and requirements to be used to provide, gather or exchange information through radio reports. This information is to be used to provide data for search and rescue, vessel traffic service, weather forecasting, and the prevention of marine pollution.

4.12 Developing the global SAR plan

During the last few years a major effort has been made to improve the implementation of the SAR Convention. One by one gaps in the 13 SAR areas have been filled. A decisive moment came in September 1997, when coastal States agreed on provisional SAR plans for the Mediterranean and the Black Sea.

Furthermore, the development of SAR plans in all the world’s sea areas is important not only for the success of the SAR Convention, but also for the implementation of another IMO innovation which has already made a major contribution to shipping safety and has already saved many lives at sea.

This innovation is the introduction of The Global Maritime Distress and Safety System (GMDSS) that became effective from 1st February 1999. The GMDSS is essentially a worldwide network of automated emergency communications for ships at sea. The basic concept is, that search and rescue authorities ashore, as well as shipping in the immediate vicinity of the ship in
distress, will be rapidly alerted through satellite and terrestrial communication techniques to a distress incident. Therefore, they can assist in a coordinated SAR operation with the minimum of delay.

In addition, the Global Maritime Search and Rescue Areas can be seen in Appendix 4. It is necessary to present the division of the maritime search and rescue areas of the Mediterranean, as the recommendations for the improvement of the Croatian SAR services will be given. Appendix 5 shows the said division of the Mediterranean search and rescue areas. An important note is to be given - the provisional Search and Rescue Region (SRR) boundaries between Cyprus, Greece and Turkey have yet to be established.
CHAPTER FIVE

Search and rescue (SAR) services of the Republic of Croatia, the Federal Republic of Germany and Spain

5.1 Introduction

This chapter discusses the Search and Rescue (SAR) Service of the Republic of Croatia, Germany and Spain.

The overall organization of the Croatian SAR service will be presented, as well as SAR services of Germany and Spain. This discussion will enable to make recommendations to be developed and presented in the Chapter six.

In addition, the next title discusses the Croatian Harbor Masters' Offices that play a key role in the overall organization of the SAR service of the Republic of Croatia.

5.2 The Croatian Harbor Masters' Offices

The Croatian Harbor Masters' Offices are under the authority of the Ministry of Maritime Affairs, Transport and Communications, and they are integral part of the Maritime Administration. Organizational chart of the Harbor Masters' Offices can be seen on the Figure 7, Chapter three.

Next title will discuss the main issues of the Croatian Law on the Harbor Masters' Offices.
5.2.1 Law on the Harbor Masters' Offices

In Croatia, there is a Law addressing the Harbor Masters' Offices that entered into force on 28\textsuperscript{th} October 1997, and published in "Official Gazette"/"Službeni list", No.124/1997. It regulates the responsibilities and tasks of the Harbor Masters' Offices and presents the division of the Harbor Masters' Offices that are situated throughout the Croatian coast.

Below are listed some of the most important tasks of the Harbor Masters' Offices:

1. Supervision of the internal waters and the territorial sea of the Republic of Croatia
2. Search and rescue of human lives and property at sea.
3. Inspection of the safety of navigation.
4. Inspectoral supervision of the maritime demesne.
5. Registration and deregistration of ships.
6. Establishing a ship's seaworthiness.
7. Tonnage measurement of ships.

According to the said Law, in Croatia there are eight Harbor Masters' Offices located as follows:

a) Harbor Masters' Office Pula.
b) Harbor Masters' Office Rijeka.
c) Harbor Masters' Office Senj.
d) Harbor Masters' Office Zadar.
e) Harbor Masters' Office Šibenik.
f) Harbor Masters' Office Split.
g) Harbor Masters' Office Ploce.
h) Harbor Masters' Office Dubrovnik.
Every Harbor Masters' Office is headed by the Harbor Master, and he is directly responsible to the Ministry of the Maritime Affairs, Transport and Communications and its deputy who heads the Maritime Administration.

In addition, for carrying out its tasks, the Harbor Masters' Offices use high speed boats, motor vehicles and aircraft.

The Law on Harbor Masters' Offices also mentions the National Plan of Search and Rescue of Human Lives at Sea. This plan will be discussed under the title 5.3.2 of this chapter.

In the end, every Harbor Masters' Office has:

1. Inspectorate department.
2. Department for managing and supervision of the maritime traffic and search and rescue service.
3. Legal department.
4. Administrative department.

5.3 Search and rescue (SAR) service of the Republic of Croatia

The Republic of Croatia recognizes the great importance attached to saving lives and the need to be directly involved in rendering aeronautical and maritime SAR services to persons in distress.

As a result, Croatia established its SAR system according to the required International Standards, i.e. according to the SAR Convention, 1979, then, according to the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual and according to amendments to the SAR Convention, 1979, which will enter into force on 1st January 2000.

Ultimately, the Croatian SAR system is structured, so that it can perform the following functions effectively:

1. Receive, acknowledge, and relay notifications of distress.
2. Co-ordinate SAR response.
3. Conduct SAR operations expeditiously with efficiency.

5.3.1 The Croatian Official Manual of the Search and Rescue Service

For the successful implementation of the SAR Convention, 1979 and related amendments, the Republic of Croatia established its own Manual of Search and Rescue Service.

The Manual contains the list of procedures that should be followed in relation to search and rescue, as well as the list of forms and reports used for successful execution of search and rescue operations.

Furthermore, Figure 10 shows the Search and Rescue Region (SRR) of the Republic of Croatia.

It can be said that the SRR, is a region at which the Republic of Croatia carries out its operations, and it includes the sea and that part of the land which is next to the coast.

Moreover, the sea areas of the Croatian SRR includes the following:

1. The internal waters of the Republic of Croatia.
2. The territorial sea of the Republic of Croatia.
3. International waters, as established in an agreement with neighboring States, and reported to the International Maritime Organization (IMO).

In addition, the territorial sea and internal waters of the Republic of Croatia are divided into the sub-regions. Search and rescue in each sub-region is under the authority of the Maritime rescue co-ordination center (MRCC), and is overseen by the respective Maritime rescue sub-centers (MRSCs), as it is shown on the Figure 10. Search and rescue in international waters is under the authority of the MRCC.

In brief, it can be said that the Republic of Croatia contributes substantially to search and rescue operations in the Adriatic Sea.
Figure 10  Search and rescue region (SRR) of the Republic of Croatia
5.3.2 National Plan of Search and Rescue of Human Lives at Sea

As already mentioned, Croatia established the National Plan of Search and Rescue of Human Lives at Sea on the basis of the Article 13, paragraph 2, of the Law on the Harbor Masters' Offices.

In brief, by this plan the Republic of Croatia fulfils its obligation with regard to the establishment of a national search and rescue service at sea, established by the Law, as Ratification of the International Convention on Maritime Search and Rescue, 1979, published in the "Official Gazette"/"Službeni list", No.1/14/1996.

5.3.2.1 Organization of the Croatian search and rescue service

The Croatian search and rescue service is composed of the following bodies:

1. General staff of the search and rescue service.
2. Maritime rescue co-ordination center (MRCC).
3. Maritime rescue sub-centers (MRSCs).
4. Coastal watch units (CWUs).
5. Search and rescue units (SRUs).

The organizational chart of the Croatian search and rescue service can be seen on the Figure 11.
Figure 11  The organization of the Search and Rescue Service of the Republic of Croatia
5.3.2.2 General Staff of the Search and Rescue Service

General Staff of the search and rescue service is composed of the general staff commander, deputy commander and 5 members. In addition, the commander head of the Maritime Administration.

Tasks of the General Staff are as follows:

1. Supervision of implementation, improvements and proposing of amendments to the National Plan of Search and Rescue of the Republic of Croatia.
2. Supervision and improvements of services.
3. Establishment of the financial plan needed to support the search and rescue service.
4. Submission of reports to the IMO with regard to search and rescue.
5. Proposing and supervision of the implementation of the agreements of co-operation with other States related to search and rescue matters.
6. Making of agreements of co-operation with the entities that participate periodically or regularly in search and rescue operations.
7. Reporting to the general public in the case of accidents involving disastrous consequences.
8. Establishing a program of additional education for the search and rescue service personnel.

It is important to point out that the General Staff meets at least once a year.
5.3.2.3 Maritime rescue co-ordination center (MRCC)

The national maritime rescue co-ordination center is established at the Harbor Masters’ Office in Rijeka. It is headed by the Harbor Master who is responsible for its proper functioning. Figure 12 shows the organization of the Croatian Maritime rescue co-ordination center (MRCC).

Figure 12 The organization of the Croatian Maritime rescue co-ordination center (MRCC)

Furthermore, one of the tasks of the Harbor Master is continuous improvement of the Croatian Official Manual of the Search and Rescue Services.

In addition, the MRCC operates on a 24-hour basis.

Some of the tasks of the Croatian MRCC are as follows:

1. Co-ordination of search and rescue operations in its own sub-region of authority.
2. Co-ordination of search and rescue operations in the region of authority of the search and rescue service of the Republic of Croatia outside the internal waters and the territorial sea of the Republic of Croatia.
3. Direct co-ordination of search and rescue operations with MRCCs of other States.
4. Arrange calls for help of rescue units of other States as required.
5. Authorize the entrance of rescue units of other States into territorial sea and internal waters of the Republic of Croatia for rescuing purposes, after having obtained approval for such conduct from the responsible person at the Ministry of Internal Affairs.
6. Liaise with other Ministries and State services, and requesting help of rescue units and other services that are under the authority of these Ministries and State services.
7. Co-operate with and help the Aeronautical Rescue Co-ordination Center (ARCC), and other State services.
8. Call for the help of units that are under private authority with whom related agreements have been concluded.
9. Prepare and conduct education and training in search and rescue, independently, in co-operation with sub-centers, and in co-operation with MRCCs of other States.
10. Manage the Ship Reporting System.
11. Send reports and warnings to ships engaged in navigation, according to the Internationally accepted principles and instructions.
12. Report to the public regarding details connected with some operations.

To conclude, by establishing the MRCC, and much more importantly, by implementing the objectives and tasks of MRCC, Croatia can perform its search and rescue service effectively, thus contributing to the global search and rescue system.

5.3.2.4 **Maritime rescue sub-center (MRSC)**

Croatian MRSCs are established at all Harbor Masters' Offices, except at the Harbor Masters' Office in Rijeka. Organization of the Croatian MRSC can be seen on the Figure 13.

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**Figure 13** The organization of the Croatian MRSC

The Croatian MRSC is headed by the harbor Master of the Particular Masters' Office. The Harbor Master of the Masters' Office in which the MRSC is situated, is responsible for following the provisions of the National Plan of Search and Rescue of Human Lives at Sea, and the instructions given by the Croatian Official Manual of the Search and Rescue Service.

In the end, the proper functioning of the MRSCs supports the effective functioning of the MRCC and they are mutually supportive.

5.3.2.5 Coastal Watch Units (CWUs)

Coastal watch units are all branch offices of Harbor Masters' Offices. Also, in relation for collecting the data about the people endangered at sea, the Coastal Watch Units include light houses and coastal watch stations of the Croatian Navy.

5.3.2.6 Search and Rescue Units (SRUs)

Search and Rescue Units can be maritime, aeronautical and land.

5.3.2.6.1 Maritime Search and Rescue Units

Maritime Search and Rescue Units are units under the authority of the Ministry of Maritime Affairs, Transport and Communications that have:

1. Qualified crew headed by the commander.
2. Suitable permanent or movable communication link with the MRCC or the responsible MRSC.
3. Other equipment needed for search and rescue.
In addition, the navigable units are also considered as maritime search and rescue units.

5.3.2.6.2 Aeronautical Search and Rescue Units

Aeronautical Search and Rescue Units may be aircraft owned by the Ministry of Maritime Affairs, Transport and Communications, other Ministries, State service, citizen's associations or private owners. Such aircraft must be equipped with qualified crew, and have a permanent or movable communication link with the MRCC or the responsible MRSC.

In addition, the commander of the aeronautical unit is responsible for its proper functioning during the search and rescue operation.

5.3.2.6.3 Land Search and Rescue Units

Land Search and Rescue Units are any vehicles with suitable communication links with the MRCC or responsible MRSC. Also, any group of people, who carry out search and rescue, may be considered a Land SRU, so long as they are headed by, or operate in accordance with the instructions of a person from the Ministry of Maritime Affairs, Transport and Communications, and so long as they are under the authority of the MRCC or responsible MRSC.

5.3.2.7 System of communications

During the search and rescue operations, public communications and maritime communications are both used.
5.3.2.7.1 System of public communications

This system is used for communication among:

1. General Staff of the Search and Rescue Service, the MRCC and responsible MRSCs.
2. The MRCC and respective MRSCs, and official representatives of other Ministries and other State services.
3. The MRCC and respective MRSCs, and other persons who are involved in any way in the search and rescue operations.

In addition, in the framework of the public communications, written messages (fax) are used. In a case of transmitting the message orally (telephone), in principle, that message must be confirmed in a written manner.

5.3.2.7.2 System of maritime communications

This system is used for communication among:

1. The MRCC and respective MRSCs, and rescue units.
2. Particular rescue units.

Furthermore, the system of maritime communications uses its own communication equipment, or it uses services of coastal radio stations. In the case of the latter, personnel of the search and rescue service, and personnel of coastal radio stations, are obliged to act strictly according to the provisions of the international Telecommunication Union (ITU).
5.3.2.8 Education and training

All personnel of the Ministry of Maritime Affairs, Transport and Communications who are involved in search and rescue operations must have an appropriate professional education.

In addition, at least once a year, the MRCC, in co-operation with the particular MRSCs, is responsible for conducting an exercise that includes checking readiness, establishing of communications, and checking co-ordination with associate services related to search and rescue.

Finally, during the exercises of readiness, participation is compulsory for personnel and equipment of other Ministries and State services, and in particular for personnel who are involved in search and rescue service under the agreement with the Ministry of Maritime Affairs, Transport and Communications.

5.3.2.9 Financing

The financial resources, needed to effect the implementation of the National Plan of Search and Rescue of Human Lives at Sea, are secured from the budget of the Republic of Croatia.

In addition, the financial resources needed for regular activity of search and rescue service, and for the establishment and maintenance of agreements with private persons or citizen's associations, are secured from the Ministry of Maritime Affairs, Transport and Communications.

To conclude, the financial resources used by the other Ministries and State services that participate in search and rescue operations, are secured by the relevant Ministries.
5.4 Search and rescue service of the Federal Republic of Germany

As it was mentioned in chapter four, in 1979 the Hamburg International Conference on Maritime Search and Rescue of the International Maritime Consultative Organization (IMCO), today's IMO, had drafted the final version of the International Convention on Maritime Search and Rescue which was adopted by the Assembly of the Organization the same year. The Federal Republic of Germany ratified the Convention in 1982. The Convention came into force in 1985.

In Germany, at the time of ratification, in 1982, the "Deutsche Gesellschaft zur Rettung Schiffbrüchiger" (DGzRS, German Sea Rescue Service) had historically developed to be the only body to deal with maritime search and rescue.

The text under the following title discusses the German Sea Rescue Service history.

5.4.1 History of the German Sea Rescue Service (GSRS)

In 1865 the GSRS was founded by 120 delegates from small local rescue societies who met at Kiel, Germany. A uniform and comprehensive rescue service for the Baltic and North sea coastline was created.

Furthermore, the scope of the GSRS, as laid down by the founders of it and still valid today is:

To implement, to promote and to maintain an efficient maritime SAR service in the coastal waters and on the high seas; to further the ideal of selfless commitment to saving human lives at sea and thereby promoting international solidarity by human action.

At the beginning of the 20th century there were approximately 100 rescue stations along the German coast, operated by more than 1000 voluntary men. They were equipped with rowboats, sailing boats, rocket line-throwing devices and breeches buoys.
These days the same service is provided much more efficiently by 56 modern search and rescue units of a high technical standard, operated by half the number of people.

In addition, the duties of the GSRS today are:

1. To rescue persons from distress at sea.
2. To search for missing persons and vessels.
3. To transport sick and injured persons, rendering first aid.
4. To assist ships and aircraft in case of distress at sea.
5. To prevent impending accidents and emergencies at sea.
6. To co-ordinate search and rescue missions.

Moreover, In October 1990, after the reunification of Germany, the GSRS was recharged with its pre-1939 responsibilities for reunification of maritime search and rescue in the SAR region of the former German Democratic Republic. Through tremendous efforts and considerable investments the Institution (GSRS), after only an elapse of three years, has achieved again, the same extraordinary high technical standard in that portion of the German SAR region as had been common in the western portion of the region for decades.

To conclude, the GSRS is a private institution which is supported and operated only by private donations without any financial aid from the Government. ("Deutsche Gesellschaft zur Rettung Schiffbrüchiger").

5.4.2 The organization of the German SAR service

The organizational chart of the German SAR service can be seen in Figure 14. In addition, Figure 15 shows the organization of the German Sea Rescue Service.
Figure 14 The organization of the German SAR Service
Source: "Deutsche Gesellschaft zur Rettung Schiffbrüchiger".
Figure 15  The organization of the German Sea Rescue Service
Source:  "Deutsche Gesellschaft zur Rettung Schiffbrüchiger".
5.4.3 Search and Rescue Region (SRR) of Germany

In March 1982 an agreement between the Ministry of Transport and the German Sea Rescue Service (GSRS) was signed. According to this agreement the execution and co-ordination of maritime SAR (within the SRR of the Federal Republic of Germany) was handed over to the GSRS. It was also stated that the status of the GSRS would remain unchanged, i.e. a private, independent institution of public utility.

In accordance with IMOSAR, the SRR of the Federal Republic of Germany is the continental shelf for the North Sea and the Flight Information Regions (FIRs) at Bremen and Berlin for the Baltic Sea. The German SRR can be seen in Appendix 6.

5.4.4 Maritime Rescue Co-ordination Center (MRCC) of Germany

The German MRCC is situated in Bremen. It is a part of the SAR Department at the head office.

In cases of maritime distress within the German SRR, the MRCC Bremen is responsible for planning, co-ordination, control and documentation until the operation is completed. All SAR units are in constant VHF contact with MRCC Bremen, using the GSRS's own SAR Communication System (SARCOM). The MRCC is also connected to 17 SAR Posts along the German coast.

In cases of aeronautical distress, the Aeronautical Rescue Co-ordination Center (ARCC) in Glücksbürg, which is a part of the German Navy, is the responsible co-ordinating agency. The rescue centers are connected by a direct and independent telephone line, and both SAR services provide mutual support.

Furthermore, all maritime SAR activities are carried out in accordance with the SAR operation plan issued by the GSRS. This plan contains all information about maritime SAR services in the German SRR.
Moreover, there is a good and close co-operation between the MRCC Bremen and the MRCCs of other countries. A regular staff exchange with the MRCCs in neighboring countries, is common practice.

To conclude, all the controllers of MRCC Bremen are in possession of a German Merchant Marine Masters’ Licence (the highest grade). They all participate frequently in SAR courses held by the U.K. Coastguard Agency (HMCG), U.S. Coastguard, and in special training aboard the rescue cruisers.

5.4.5 Search and rescue units of the German Sea Rescue Service (GSRS)

The fleet of the GSRS consists of 56 SAR units:

21 rescue cruisers with daughter boats and
35 rescue boats.

Four of the rescue boats are kept on trailers to be prepared for mobile operation, either at the seaside or in the shallow inshore waters of the eastern parts of Germany.

In addition, 23 rescue units are stationed in the North Sea, and 33 in the Baltic Sea. There is a total of 51 rescue stations of which three, located on the Western Baltic Sea, are provided with two units in order to handle the high number of boats and yachts in those areas, especially during the summer season.

Each rescue cruiser is manned with a full-time paid crew and is ready for immediate action 24 hours a day. The rescue boats, which are seaworthy, self-righting and self-bailing, are operated by volunteers.

Moreover, all rescue units are fitted with equipment of a high technical standard, e.g. all rescue cruisers are equipped with a powerful fire-fighting gear. The versatile possibilities of communication and direction-finding make these units especially suitable for assistance in cases of ship and aircraft disasters at sea.

Finally, all crew members of the rescue cruisers are regularly trained in medical aid, ship safety, On-Scene Commander (OSC) tasks, etc. They regularly
attend training courses offered by different hospitals to become familiar with the
treatment of injured and sick persons, and the handling of the medical equipment
aboard. This equipment includes a telemetric device which is able to transmit a
patient's ECG to the Cuxhaven, Germany, hospital serving as reliable information for
the doctor.

5.5 Search and rescue service of Spain

This section of the chapter gives a short insight into the Spanish Maritime
Administration, and discusses the main points about the Spanish SAR service.

5.5.1 The Spanish Maritime Administration

For a long time, the Spanish Maritime Administration (MARAD) has been
based on old legislation and frequently has changed its dependency from one
ministry to another, mainly between Commerce and Transport. Spain has never
established a Ministry of Merchant Marine. However, very recently, in 1992, the
Spanish Government approved a 'Law on Ports and Merchant Marine' (LPMM),
which is now the basis for the organization of Maritime and Port Administrations.

This new legislation was the result of long discussions and analysis in the
framework of an inter-ministerial Commission. The most important points of the
new legislation are as follows:

- Reorganization and modernization of the MARAD.
- Creation of a 'State Agency on Maritime Safety and Rescue'
  (SASEMAR), (Sociedad Estatal de Salvamento y Seguridad
  Maritima), which includes pollution preparedness and response.
- Creation of a special Register of ships and shipping companies in the
  Canary Islands (second register).
• Establishment of regulations to impose administrative sanctions for the infractions concerning maritime safety and pollution.

Furthermore, the LPMM is the basic legislation concerning the organization, aims and activities of the Spanish MARAD. A Coast Guard, in charge of all maritime matters, does not presently exist in Spain. The competencies in maritime activities are distributed among several institutions. The Merchant Marine Directorate, i.e. Spanish MARAD, a section of the Ministry of Development, is the principal organization responsible in this respect. Other institutions dealing with maritime activities are the following:

2. Port Authority.
4. Secretariat of State for Fisheries (Ministry of Agriculture, Fisheries and Food).
5. Guardia Civil del Mar (Ministry of Internal Affairs).
6. Customs Surveillance Service (Ministry of economy).
7. Regional Governments.
8. Maritime Red Cross.

The following figure shows the structure of the Spanish Maritime Administration. From the point of view of SAR service, special attention will be given to the previously mentioned, SASEMAR. (Pardo, page 11).
Figure 17  The organization of the Spanish Maritime Administration
Source: The Spanish Maritime Administration, Pardo, page 12.
5.5.2 Spanish Plan for Maritime Search and Rescue and Pollution Control (MSARP)

The MSARP is the basic document for planning the development of the whole maritime infrastructure for the control of maritime traffic and the co-ordination of sea rescue and pollution control operations. Its immediate objective is to establish and maintain the Spanish organization for maritime SAR and pollution preparedness and response. It is arranged so as to reach the greatest probabilities of success in response to emergencies, occurring in any of the maritime responsibility zones assigned to Spain.

The MSARP is executed from the Ministry of Development and the specific responsibility for its development is entrusted to the General Directorate of Merchant Marine (see Figure 17). The actual carrying out of the specific services of maritime SAR, maritime traffic aid and control, maritime pollution prevention and response, as well as those complementary services needed by the forgoing, is carried out by the previously mentioned, State Agency SASEMAR.

Furthermore, the MSARP addresses the carrying out the following basic aims:

1. Comply with the precepts of the LPMM, especially in that referring to the model of maritime SAR and pollution response, and the promotion of co-operation and co-ordination between the Central Administration, Coastal Autonomous Communities, Local Authorities and any other Organizations and Institutions involved.

2. Co-ordinate the use of different resources, capable of carrying out SAR of human life and pollution response operations, belonging to different authorities, as well as private or public institutions.

3. Implant the maritime control system that covers the whole of Spanish coasts, by means of the establishment of Zonal, Regional and Local Control Centers, all under the co-ordination of a National Control Center.
4. To promote the material resources for rescue and marine pollution response, assigned to the State Agency SASEMAR, and to train the specialized personnel that will be responsible for the management and co-ordination of the SAR and pollution control operations.

5.5.2.1 State Agency on Maritime Safety and Rescue (SASEMAR)

SASEMAR is the institution created by the LPMM to support the MARAD, in order to comply with the commitment of safeguarding of human life at sea, and of promoting any actions that are directed toward the increasing of safety at sea and marine pollution prevention and response.

Moreover, SASEMAR is a public entity with legal capacity and its own patrimony, assigned to the Ministry of Development that decides on its action guidelines, approves its annual objectives planning, carries out the follow-up of its activities and controls its efficiency. This Agency is managed by a General Director nominated by the Minister of Development and its Administrative Council is chaired by the General Director of Merchant Marine. (Pardo, page 17).

5.5.2.2 Maritime rescue co-ordination centers (MRCCs)

In order to establish homogeneity in the functions and equipment, different types of MRCCs have been defined. They are as follows:

CNCS: MRCC at National level. It co-ordinates all the Peripheral Centers, and acts as a link and co-ordination with the equivalent centers at international level.

CZCS: MRCC at Zonal level. It gives radar and radio-goniometric coverage to Traffic Separation Schemes, and communications coverage, 100 miles minimum.
CRCS: MRCC at Regional level. It gives radar and radio-goniometric coverage to approach areas to different ports and coastal areas, as well as communications in the area of minimum 100 miles.

CLCS: MRCC at Local level. It gives radar and radio-goniometric coverage, and VHF communications to high-risk ports approach, and maneuvers. The CLCS has communications coverage in the area of 20-30 miles.

In addition, the National MRCC is situated in Madrid. Ships, aircraft, and as previously mentioned, zonal, regional and local Maritime Authorities, as well as the Navy, and Port Authorities are all connected to this network by normal telephone lines, fax or electronic mail systems.

To conclude, in this context it is necessary to mention the SRR of Spain that can be seen in Appendix 4 and Appendix 5. As it can be seen from the maps, Spain is also responsible for taking care about the area surrounding the Canary Islands.

5.5.2.3 SAR units assigned to the MSARP

The SASEMAR presently operates 11 salvage vessels, 14 rescue boats, and 5 helicopters, and co-ordinates other important air and sea craft and equipment belonging to the Regional Governments, Customs Surveillance Services, Oil Companies and other institutions.

In addition, there exists a Rescue Aerial Service of the Air Force (Ministry of Defense), which operates 10 planes and 15 helicopters. The service covers land and sea areas, and in the event of a sea catastrophe is co-ordinated by the SASEMAR.
5.5.2.4 Financing

The financial resources for activities carried out by the SASEMAR, in the framework of the implementing of the MSARP, are secured from the General budgets of the State.

5.6 Conclusion

The descriptions of the SAR services of the Republic of Croatia, the Federal Republic of Germany and Spain, shows that each country has established it in respect to its own national needs and according to its financial capabilities. However, according to the author of this dissertation, the Federal Republic of Germany has the best organized SAR service. As mentioned earlier, the German SAR service is private entity, and in principle, that kind of organization is much more flexible to be governed and maintained. On the other hand, the SAR services of the Republic of Croatia and Spain are under the State authority.

The following chapter will discuss the recommendations for the improvements of the Croatian MARAD, with special attention on the improvements of the Croatian SAR service.
CHAPTER SIX

Recommendations

6.1 SAR service

6.1.1 Introduction

Recommendations in this chapter are directed at two areas: search and rescue (SAR), and the International Maritime Organization (IMO).

Although the individual responsibilities of the Croatian SAR service are outlined in the current SAR Manual, there are shortfalls that need to be addressed before the overall management and efficiency of SAR in the Republic of Croatia can be improved. Hence, there is a need for the full co-ordination and co-operation of departments, private organizations and individuals involved.

In addition, the implementation of a ship reporting system, in compliance with IMO Resolution A.648(16), is required to facilitate SAR, and enable the search element of SAR to be minimized as soon as possible. Consequently, ships in the vicinity can be easily requested to help. Furthermore, a procedure needs to be introduced where all coastal vessels give an outbound report once they have left a port anywhere in Croatia. This will enable the SAR authorities to have a clear picture of the location, movement and availability of vessels throughout its Territorial Waters and Exclusive Economic Zone (EEZ).
6.1.2 Objective of the General Staff of the Search and Rescue Service of the Republic of Croatia

It is recommended that priority be given to the development and promotion of a regional integrated SAR plan, and the co-ordination and co-operation of SAR operations in the Mediterranean Sea.

Guidance on implementing the plan can be found in the following SAR manuals that have been replaced by the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual. (See Figure 18).

![Figure 18 SAR manuals](Source: Rodin Nedeljko, WMU.)
6.1.3 Emergency Phases

There are three emergency phases into which most SAR incidents and subsequent SAR operations are classified. These emergency phases are, in order of precedence as shown below. It is recommended that the MRCC at Rijeka evaluates the distress information as soon as it is received and determine the phase of emergency and type of action required.

It is recommended that for operational purposes the phases of emergency be as follows:

1. “UNCERTAINTY PHASE”:
   The uncertainty phase is assigned anytime doubt exists as to the safety of the craft(s) or person(s) because of the lack of information concerning the progress and position or the vessel is reported overdue.

2. “ALERT PHASE”:
   The alert phase is assigned anytime apprehension exists for the safety of craft(s) or person(s) because of continued lack of information, concerning progress and position and/or information has been received indicating that the operational efficiency of a ship is impaired but not to the extent that may lead to a distress situation.

3. “DISTRESS PHASE”:
   The distress phase is assigned whenever immediate assistance is required by craft(s) or person(s) threatened by grave or imminent danger or when following the alert phase unsuccessful injuries and attempts to contact the vessel points to the probability that the vessel is in distress, or information received indicates that the operational efficiency is impaired and that a distress situation is likely.
6.1.4 Recommended action by MRCC Rijeka during the phases of emergency

It is recommended that:

• Soon after a uncertainty phase has been declared, the MRCC Rijeka commences inquiries regarding the safety of the vessel or declare an alert phase.

• After declaring an alert phase, Rijeka MRCC broadens the scope of its inquiries regarding the safety of the vessel and/or declare a distress phase.

• After declaring a distress phase, the rescue co-ordination center proceeds as prescribed in its operation plans.

It is recommended that the following actions be taken once a distress phase is declared:

• Where appropriate, the degree of uncertainty of the vessels position should be estimated, and the extent of the area to be searched, should be determined.

• The owner or agent should be notified and kept informed.

• Air search and MRSCs should be informed.

• Requests should be made for assistance from aircraft and/or other ships.

• A general plan for the conduct of the search and rescue operations should be made for the available information.

It is apparent that in most cases where search and rescue operations were activated, there was delay in the actual activation time. All efforts should be coordinated in order to expeditiously activate and execute search and rescue operations.
6.1.5 Multi-tasked SAR vessels

It is recommended that Multi-tasked SAR vessels be tasked to deliver the SAR program, and at least one other operational program as designated by the Croatian SAR service. They have to remain within a specific SAR area while they are multi-tasked to the SAR program and maintain all SAR operational standards. These Multi-tasked vessels would increase efficiency, reduce cost to the government and stand in for primary SAR vessels when necessary.

6.1.6 Mediterranean Sea SAR plan

It is recommended that the National SAR Service complements and enhances the role of the current National SAR Organization.

Furthermore, at the IMO's Mediterranean Sea Seminar concerned with "Preparation of Provisional SAR Plan", held in Toulon, France in 1995, and IMO's Mediterranean Sea Conference related to the "General Agreement on a Provisional SAR Plan", held in Valencia, Spain in 1997, efforts were made to facilitate the IMO's plan for an integrated SAR plan for the Mediterranean Sea. In Appendix 5 the SAR plan for the Mediterranean can be seen.

The objectives of the conference were to:

- Develop one provisional integrated SAR plan for the entire Mediterranean Sea, thus, maximizing co-ordination and cost efficiency for SAR operations.
- Provide coverage for areas in the Mediterranean Sea identified as lacking the necessary arrangements for SAR purposes.
- Ensure the adequacy of GMDSS shore-based facilities.
- Develop training needs for SAR and the GMDSS and any other relevant issues.
It is recommended that these objectives be implemented by the Republic of Croatia without delay.

6.1.7 Training, Qualification, Certification, and Exercises

6.1.7.1 Training

An essential element of an efficient and effective SAR organization is the training of its personnel to meet SAR system objectives by training and developing SAR specialists. Therefore, it is recommended that the head of the SAR service be responsible for ensuring that SAR personnel reach and maintain a high level of competency by establishing adequate training programs, to save those in distress when it can and reduce risks to its own personnel and equipment. It is also recommended that the head of each section of the SAR organization be responsible for the training of personnel in the specialized techniques and procedures assigned to them.

6.1.7.2 Qualification

The purpose of qualification is to validate an individual’s ability to perform certain duties. Thus, the qualification procedures demonstrate the capability to perform specific tasks. Therefore, it is recommended that the qualification program covers fundamental knowledge necessary for the duties of that position and testing of individuals on the systems they will be required to operate or maintain.
6.1.7.3 Certification

The purpose of certification is to authorize an individual to serve in a stated capacity. As training provides basic knowledge and skills, qualification and certification processes are used to ensure that sufficient experience, maturity and judgment are gained. It is recommended that Croatia follows mentioned elements.

6.1.7.4 Exercises

It is recommended that exercises are conducted on a realistic basis to help to achieve the following:

- Test and improve operational plans.
- Provided learning experience.
- Improve liaison and co-ordinating skills.
- Demonstrate and assess the true effectiveness of training, operational efficiency and competence.
- Reveals deficiencies that may exist in the organization and enable them to be improved.

Successful exercises require planning, execution and evaluation. Exercises are carried out for training, and therefore, it is recommended that the SAR service of the Republic of Croatia evaluates established plans and procedures, and tests new concepts.

Success of an exercise can be measured by:

- How many problems are discovered.
- How much is learned.
- How much are the operating plans improved.
- How few mistakes are repeated during the next exercise.
6.1.8 Safety Management System and Safety Audit

The aim of safety management system is to control the level of risk within the organization and therefore should be an integral part of the overall operations. Safety overlaps with quality management systems, environmental issues and problem solving, and effects the overall efficiency of the SAR organization. Safety management system involves the structured assessment of risks and the setting up of a system of control that identifies the causes of unwanted events and their consequences. It is recommended that safety management system in the Croatian SAR service be based on the following principles:

- Know what the minimum requirements are.
- Know what needs to be done.
- Know how to achieve it.
- Achieve it and continue to achieve it.

6.1.8.1 Monitoring

Monitoring is an important aspect of managing safety and should be aimed at all levels of the Croatian search and rescue organization, from the boardroom to basic operations. Without effective monitoring, it is difficult to compare ‘how it should be done’ to ‘how it is actually done’. In Croatia there is legislation related to occupational health and safety, which is aimed at ensuring the health, safety and welfare of people at work. Therefore, to constructively audit safety, it is recommended that the employees, and people involved in decision-making understand and know:

- What the current situation is, i.e. where they are.
- What they want to achieve within a specified time, i.e. where they want to go.
How they intend to achieve their documented objectives, i.e. how they intend to get there.

6.1.8.2 Auditing

It is recommended that auditing be carried out by the SAR Co-ordinator (SC) with the full support of top management and involve employees at all levels, and anyone involved in assisting the SAR operations. This is to identify the root of the problem and thus, take corrective action to prevent reoccurrence. The auditing process should be organized as it is shown on the Figure 19.

![The Auditing Process](source: Rodin Nedeljko, WMU.)
As the purpose of the audit is to expose any deficiency in the safety policy and operations of the Croatian SAR organization, it is recommended that the results of the audit be reported in a clear and concise form to the Croatian SAR management, who are to review the safety and operational efficiency of the organization and inform people at all levels.

6.1.8.3 Audit plan

It is recommended that the audit plan includes all the processes to be reviewed, and commences with a checklist relating to activities and documented procedures relating to those activities. The checklist should be used as a guide to the questions that need to be asked during the audit. The audit should direct itself exclusively to the process and procedures being examined.

Useful information can be collected through observation and discussion, which can make the effectiveness of the safety policy clear. It is recommended that procedures are to be monitored and improved upon, during and after the exercise. Debriefing after an exercise is an opportune time to review and evaluate plans, policies, procedures, and standards and training requirements for search and rescue efficiency, co-operation and co-ordination.

6.1.8.4 Maximizing system effectiveness

It is recommended that the Croatian Search and Rescue Managers ensure compliance with the provisions of the IMO and ICAO Conventions related to SAR, and develop SAR policies and procedures. They should also have the overall responsibility for establishing, organizing, staffing, equipping, and controlling the SAR organization. They should also provide for legal and funding support for the
Croatian SAR service. To acquire maximum effectiveness and efficiency, it is recommended that SAR managers ensure that the following activities take place:

1) The organization must always be ready to receive and respond to distress alerts. All SAR equipment and communication links are to be inspected and tested frequently to ensure proper working order when an emergency arises.

2) To allow early detection and correction of procedural and equipment problems, periodic training and exercise must be conducted with the various SAR system components. This is to maintain proficiency and safety.

3) Preventive SAR activities such as public awareness campaigns and open shows are some of the ways to help prevent SAR incidents. Volunteer organizations can assist in these activities.

4) SAR managers must foster, promote and focus on the continuous improvement of the SAR system.

5) Use legislation to designate specific agencies with organizing and coordinating SAR services.

5) Ensure that those assigned to SAR operations have maturity and competency appropriate to their particular duties.

6) Implement and use international recognized procedures, facilities and equipment.

7) Avoid policies that hinder SAR operations to be carried out expeditiously.

8) Ensure that MRCC and MRSC personnel are properly prepared to receive, collect, assess, use, preserve, and provide information related to a distress situation or to SAR co-ordination activities.

9) Ensure that persons involved in SAR operations are trained to continuously work as a team and avoid risks that may cause injury or death to those in distress.

10) Ensure that directives, policies, regulations, plans and manuals are documented for SAR guidance and requirements.

11) Adopt measures which promote the safe design, construction, maintenance, and operation of vessels and aircraft.
6.2 Participation of the Republic of Croatia at the International Maritime Organization (IMO)

6.2.1 Introduction

The Republic of Croatia does not have a permanent mission at the International Maritime Organization in London, United Kingdom.

However, Croatia sends its delegates to the IMO to participate either at the International Conferences or at the IMO's Committees. Delegates are usually the Deputy Minister of the Minister of Maritime Affairs, Transport and Communications, Head of the Safety of Navigation Department, or persons who work for the Ministry as advisors for different issues related to the maritime affairs.

6.2.2 Permanent mission of the Republic of Croatia at the IMO

It is strongly recommended that the Government of the Republic of Croatia establishes a permanent mission at the International Maritime Organization. The reasons can be summarized as follows.

Generally, when a country has a permanent representative at the IMO it is very beneficial and useful for it. For example, when a creation of the particular Convention starts, the proposal comes first, then the draft of the convention goes to the responsible Sub-committee and working group(s), and then, all the necessary steps for its completion take between 1.5 and 2 years. During that period, if there is a country's permanent representative, that country can influence development. It would know what was going on at the IMO in relation to the specific Convention concerned, and would be informed about all the steps taken by the competent persons or bodies of the IMO in relation to the convention.
Furthermore, a permanent representative would be aware of the procedures being undertaken on an everyday basis, and would be able to relate this information to his superiors. As a result, the country could send recommendations that could be submitted directly, and in the shortest possible time.

In addition, usually the majority of the members of the IMO's Sub-committees and working group(s) are representatives from developed countries. As a result, the decisions taken are often in favor of the majority. The reason for this situation is due to the lack of financial resources of the developing countries, and those countries, especially from Africa, are not able to finance the cost that are incurred from such participation.

However, establishing of a permanent mission implies substantial funding that must be covered by the Republic of Croatia. But, with its permanent mission at the IMO, in long run, the Republic of Croatia would take benefits for its maritime affairs, and it would participate fully and actively in the work of the IMO, and in this way maintain a continuous connection to the world's highest body related to maritime affairs. Therefore, according to the author of this dissertation, establishing of a permanent mission has advantages over the implied cost.

To conclude, in the light of this discussion it is necessary to point out that the world's shipping industry cannot be successful in its entirety, due to today's inequality among countries and nations. Hopefully, one day, the world will be organized in such a way, that everyone can have equal rights, liberty and prosperity of life.
CHAPTER SEVEN

Conclusion

First of all, the Maritime Administration of the Republic of Croatia can improve the management of search and rescue, and achieve efficient and effective search and rescue operations by giving full and proper effect to the National Legislation, as well as to the International Conventions and Standards related to SAR. It should be its obligation to invest in professionally trained and educated personnel, who will be able to carry out their tasks efficiently and effectively.

In addition, the Croatian MARAD must further develop its SAR service by investing in infrastructure such as Vessel Traffic Services (VTS) radar, and by increasing the number of the specialized boats, vessels and aircraft.

Moreover, an important element that the responsible people in the Croatian MARAD should take into account, is the development of safety culture system. This system should be based on the risk areas on board the vessels, boats and aircraft, and ashore, as well as on basic human relations. It should go beyond the compliance with regulations, and become proactive, leading to improvements in procedures within the SAR Organization. It has to create an atmosphere where safety becomes the 'way of life' for all employees at every level in the SAR Organization.

Recognizing that SAR operations need team work, the task of the Croatian MARAD is to put more emphasis on encouragement of a team spirit and related human relations training, directed at the motivation of personnel on board vessels, boats and aircraft, as well as shore personnel, so that they can achieve higher standards in the performance of their duties.
Furthermore, it is extremely important to have total unity inside the SAR Organization in order to have a successful Safety Management System (SMS), and a safety culture that strives for continuous improvement. The system should be kept simple and clear with open lines of communication, and clear lines of authority between and among onshore and onboard personnel. Innovation should be continuous and not just left to times of review.

As mentioned earlier throughout this dissertation, the Republic of Croatia is a country with a long tradition in the maritime affairs, and therefore, should put all its efforts toward the improvement of the SAR service, as well as its maritime affairs in whole. The Croatian region of the Adriatic Sea is among the world's most beautiful and best preserved aquatic habitats, teeming with animal and plant life. Due to this fact, in future, that area should be designated a Particular Sensitive Area.

To conclude, the Republic of Croatia, and every other country in the world should strive to achieve the mission statement of the International Maritime Organization that reads: 'Safer Shipping and Cleaner Oceans'. All the countries in the world, whether landlocked or with the access to the seas, oceans, lakes or rivers, must take care of the environment, in order to secure the Earth with fresh air and clean seas, oceans, lakes and rivers, for our children and for future generations.
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Co-operation between passenger ships and SAR services

Note by Denmark, Finland, France, Germany, Iceland, the Netherlands, Norway, the Russian Federation, Sweden and the United Kingdom

SUMMARY

Executive summary: Draft guidelines for preparing plans for co-operation between passenger ships and SAR services in accordance with SOLAS regulation V/15(c)

Action to be taken: Paragraph 7

Related documents: COMSAR 2/13, MSC.68/23

1 On 1 July 1997 the new SOLAS regulation V/15(c) entered into force which requires that

"Passenger ships to which chapter I applies, trading on fixed routes, shall have on board a plan for co-operation with appropriate search and rescue services in event of an emergency. The plan shall be developed in co-operation between the ship and the search and rescue services and be approved by the Administration. The plan shall include provisions for periodic exercises to be undertaken as agreed by the passenger ship and the search and rescue services concerned to test its effectiveness."

2 The Sub-Committee, at its second session (COMSAR 2/13, paragraph 12.9) agreed that there is a need to develop guidelines for preparing plans for co-operation between passenger ships and SAR services. At the same time it invited the Maritime Safety Committee to authorise it accordingly, members were requested to consider the matter and to submit comments and proposals on it.

3 The Maritime Safety Committee, at its sixty-eighth session (MSC.68/33, paragraph 20.38) authorised the Sub-Committee to develop, on a low priority basis, guidelines for co-operation between passenger ships and SAR services.

4 Representatives of Administrations, SAR services and passenger ship operators of almost all north and north-west/northwest European port States (Belgium, Channel Islands, Denmark, Finland, France, Germany, Isle of Man, Iceland, Lithuania, Netherlands, Norway, Poland, Portugal, Spain, the United Kingdom and Sweden) met at Bremen on 10 January and 21 March 1997 and at Plymouth on 15 April 1997 to achieve a necessary general understanding on the harmonised introduction of the plans for co-operation between passenger ships trading on fixed routes between any of their ports and relevant SAR services in the sea areas concerned.

For reasons of economy, this document is printed in a limited number. Delegates are kindly asked to bring their copies to meetings and not to request additional copies.
5 The chief consideration throughout the negotiations was that of practicality. If the SAR plans drawn up in response to the new regulation are to be of any use in an emergency, they must be user-friendly. Central to the SAR plan format agreed is a modular framework document containing basic information on/for the key players in an emergency involving a passenger ship: the ship’s command, the company emergency response team ashore, and the SAR service/Mission Co-ordinator.

6 The results of the meetings, which are set out at annex and which represent the general understanding reached between the States bordering one of the most densely trafficked sea areas in the world, are presented to the Sub-Committee as a basis for an MSC circular giving the necessary guidance to Member States for the introduction of SOLAS regulation V/15(c) on plans for the co-operation between passenger ships trading on fixed routes and SAR services along their routes.

Action requested of the Sub-Committee

7 The Sub-Committee is invited to note the proposal at annex and to decide as it deems appropriate.

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ANNEX

DRAFT GUIDELINES FOR PREPARING PLANS FOR CO-OPERATION BETWEEN PASSENGER SHIPS AND SAR SERVICES IN ACCORDANCE WITH SOLAS REGULATION V/15(C)

1 Introduction

1.1 The purpose of these Guidelines is to provide a uniform basis for the establishment and introduction of plans for co-operation between passenger ships and SAR services in accordance with SOLAS regulation V/15(c).

1.2 These Guidelines are recommended to be applied on all passenger ships to which SOLAS chapter I applies and which are trading on fixed routes. Their relevance in the frame of the safety management system (SMS) to be maintained in accordance with the International Safety Management (ISM) Code could also be taken into consideration for passenger ships on fixed routes in the domestic trade.

1.3 The Guidelines serve the overall aim to have the triangular emergency response network of ship, company and SAR service in place and work instantaneously in an emergency.

2 Legal basis

2.1 After the adoption, on 28 November 1995 of a new paragraph (c) SOLAS chapter V Regulation 15 reads:

"Search and Rescue

(a) Each Contracting Government undertakes to ensure that any necessary arrangements are made for coast watching and for the rescue of persons in distress at sea around its coasts. These arrangements should include the establishment, operation and maintenance of such maritime facilities as are deemed practicable and necessary having regard to the density of seagoing traffic and the navigational dangers and should, so far as possible, afford adequate means of locating and rescuing such persons.

(b) Each Contracting Government undertakes to make available information concerning its existing rescue facilities and the plans for changes therein, if any.

(c) Passenger ships to which chapter I applies, trading on fixed routes, shall have on board a plan for co-operation with appropriate search and rescue services in event of an emergency. The plan shall be developed in co-operation between the ship and the search and rescue services and be approved by the Administration. The plan shall include provisions for periodic exercises to be undertaken as agreed by the passenger ship and the search and rescue services concerned to test its effectiveness."

2.2 Article 12(2) of the Convention of the High Seas, 1958 reads:

"Every coastal State shall promote the establishment and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and - where circumstances so require - by way of mutual regional arrangements cooperate with neighbouring States for this purpose."

INCOMSAR/09.14.
2.3 The International Safety Management (ISM) Code reads:

Preamble; paragraphs 3 and 4:

"The Assembly ... recognized the need for appropriate organisation of management to enable it to respond to the need of those on board ships to achieve and maintain high standards of safety and environmental protection.

Recognising that no two shipping companies or shipowners are the same, and that ships operate under a wide range of different conditions, the Code is based on general principles and objectives."

Chapter 1; paragraph 1.4.5:

"Every Company should develop, implement and maintain a safety-management-system (SMS) which includes ... procedures to prepare for and respond to emergency situations ..."

Chapter 8 (emergency preparedness); paragraphs 8.1 to 8.3:

1. The Company should establish procedures to identify, describe and respond to potential emergency shipboard situations.

2. The Company should establish programmes for drills and exercises to prepare for emergency actions.

3. The SMS should provide for measures ensuring that the Company's organisation can respond at any time to hazards, accidents and emergency situations involving its ships.

Chapter 12; paragraph 12.2:

"The Company should periodically evaluate the efficiency of and, when needed, review the SMS in accordance with the procedures established by the Company."

2.4 The High Speed Craft (HSC) Code reads:

Chapter 1 (General requirements); paragraph 1.2.7:

"... in the intended area of operation there will be suitable rescue facilities readily available ..."

Chapter 18 (Operational requirements); paragraphs 18.1.3.15, 18.1.3.18.3 and 18.1.3.19:

- "The Administration should issue a Permit to Operate High Speed Craft when it is satisfied that the operator has made adequate provisions from the point of view of safety generally, including ...

- communication arrangements between craft, coast radio stations, base ports radio stations, emergency services and other ships, including radio frequencies to be used and watch to be kept...

- the existence and use of adequate instructions regarding ... action in the event of reasonable foreseeable emergencies; and
provision of contingency plans by operators for foreseeable incidents including all
land-based activities for each scenario. The plans shall provide operating crews with
information regarding SAR authorities and local administrations and organisations
which may complement the tasks undertaken by crews with the equipment available to them.”

3 General requirements

The plans aim at providing in advance to all involved in a probable emergency situation identical detailed
information on the ship, the company’s emergency response team and the SAR services along the route.
This will enhance mutual understanding, reduce the risk of confusion and save valuable time in any
emergency situation.

4 Operational requirements

To safeguard an optimum of passenger safety in the way of emergency preparedness and to keep the
logistic burden on ships’ commands, ship operators and SAR services as low as possible the following
guidelines may assist in arriving at a plan as set out in the appendix.

4.1 The plan should be as concise, brief and user-friendly as possible, otherwise its application in
emergency situations will result in undue loss of time and might give reason for confusion among those
involved in solving an emergency situation.

4.2 Therefore the plan should be of a harmonised format and layout. It should be of modular build-up.
Any module, once established will fit into any plan; readers will immediately know where to trace the
information required and what information the counterpart already knows of which will obviously result
in an enhanced efficiency of any missions carried out around an emergency situation.

5 Administrative requirements

5.1 Plans, as far as they have been approved by a competent Administration, should be reciprocally
recognised. Thus the approving Administration for a passenger ship’s plan should be the flag state only.
SAR service modules should be approved by the Administration of the relevant port state. In the case of
flag states outside the search and rescue regions transited by the route the SAR services concerned would
jointly approach their Administrations for approval of relevant plans.

5.2 The originator of a module (the company or the SAR service as appropriate) should be responsible
for its updating. Whereas major procedural changes should always require re-approval of a plan by the
relevant Administration, minor changes should be viewed as acceptable routine updates not requiring
formal re-approval.

5.3 The plan should be made up in

- the on-board working language(s) of the vessel, and
- the English language, or a language commonly agreed by the vessel (or the company), the
SAR services and the Administration.

6 Periodical exercises

SOLAS regulation V/15(c) also requires periodic exercises to test the effectiveness of the plan.
6.1 Various forms of ‘live’, ‘paper’ and ‘tablstop’ exercises should be acceptable. Exercises should be co-ordinated between all parties involved in a route to ensure efficient use of all available resources; this includes the role of an assisting passenger ship, whose participation in any exercise should be deemed to be an exercise as required by SOLAS regulation V/15(c).

6.2 The frequency and type of exercises to be held by individual ships and SAR services should be decided locally on the basis of co-operative agreements between the SAR services and passenger ships involved and as approved by the relevant Administration(s).

6.3 Search and rescue seminars and refresher seminars for key personnel on board and in companies ashore are highly recommended to further the awareness around shipboard emergencies and to create the desirable minimum educational level in search and rescue matters. Liaison visits of SAR personnel on passenger ships and vice versa are a valuable tool and should be promoted.
APPENDIX

PLANS FOR CO-OPERATION BETWEEN SEARCH AND RESCUE SERVICES AND PASSENGER SHIP ON FIXED ROUTES

according to the SOLAS REGULATION V/15(c)

GUIDELINES FOR DEVELOPING BASIC ELEMENTS FOR CO-OPERATION BETWEEN SAR SERVICES AND SHIPS IN AN EMERGENCY

List of Contents

Introduction

Description of a Plan for Co-operation

1. The Company
   1. name and address
   2. contact list
      1. 24 hour emergency initial and alternative contact arrangements.
      2. further communications arrangement (including the direct telephone/fax links to relevant personnel).
   3. chartlet according to the Admiralty List of Radio Signals with details of route and service.
   4. Linen arrangements between the Company and the relevant RCCs
      4.1 provision of relevant incident information (checklist detailing persons, cargo and bunkers on board, SAR facilities and, specialist support available at the time, etc.)
      4.2 provision of liaison officer(s) with access to supporting documentation concerning the Company and the ship(s); e.g. fire control and safety plan as required by the flag State

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1. It is recommended that plans should be as user-friendly as possible. Colour-coding, tables, checklists and annexes (either to hold bulky detail or as quick-reference summaries) should be employed to this end.

2. To be prepared by the SAR Service

3. To be prepared by the SAR Service

4. As defined in the ISM Code

COMSAR 3/9-14
ANNEX
Page 5
2 The ship(s)\(^5\)

.1 [ship 1]\(^6\)

.1.1 basic details of the ship
   - MMSI number
   - call sign
   - country of registry
   - type of ship
   - gross tonnage
   - length over all (in metres)
   - maximum permitted draught (in metres)
   - service speed
   - maximum number of persons allowed on board
   - number of crew normally carried

.1.2 communications equipment carried

.1.3 general plan of decks and profile of vessel transmittable by electronic means
   including basic information on
   - life-saving equipment
   - fire fighting equipment
   - arrangement plan of helicopter deck/winching area with approach sector
   - helicopter types for which helicopter deck is designed
   - means on board intended to be used to rescue and recover people from the sea
   or from other vessels
   - medical arrangements
   and a colour picture of the ship

.2 [ship 2 - as for ship 1, etc.]

3 The RCCs\(^7\)

.1 search and rescue regions along the route
   - chartlet showing SRRs in relevant area for ships operation

.2 SAR Mission co-ordination (SMC)
   - definition
   - summary of functions

.3 on-scene co-ordination (OSC)
   - definition
   - selection criteria
   - summary of functions

\(^5\)To be prepared by the Company

\(^6\)Enter here the ship's name

\(^7\)To be prepared by the SAR service

\[\text{COMSAR}3/9/14\]
\[\text{ANNEX}\]
\[\text{Page 6}\]
4 SAR facilities

1 [SRR]  
   1 RCCs/SCs along the route  
      - addresses  
   2 communications  
      - equipment  
      - frequencies available  
      - watch maintained  
      - contact list (MMSI, callsigns, telephone, fax and telex numbers)
   3 general description of available types of declared SAR units (surface/air) and additional SAR facilities available along the route e.g.:  
      - fast rescue vessels  
      - other vessels  
      - heavy/light helicopters  
      - long range aircraft  
      - fire fighting facilities  
   4 communications plan  
   5 search planning  
   6 medical advice/assistance  
   7 firefighting, chemical hazards, etc.  
   8 shore reception arrangements  
   9 informing next-of-kin  
   10 suspension/termination of SAR action

2 [SRR 2 - as for SRR 1, etc.]

5 Media relations

6 Periodic exercises

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*To be prepared by the SAR service.

9 Enter here the name of the relevant state

10 To be prepared jointly

11 Frequency and contents of training to be considered jointly
CONSIDERATION AND ADOPTION OF AMENDMENTS TO
MANDATORY INSTRUMENTS

Amendments to the 1979 SAR Convention

Note by the Secretariat

SUMMARY

Executive Summary: The Committee is invited to adopt proposed amendments to the 1979 SAR Convention. The amendments were approved by MSC 68 and circulated by circular letter No. 1993 of 1 September 1997.

Action to be Taken: Paragraph 3


1. The Committee will recall that, at its sixty-eighth session, it approved, with a view to adoption at its sixty-ninth session, proposed amendments to the annex of the 1979 SAR Convention.

2. The proposed amendments have been circulated to all IMO Member Governments and Parties to the 1979 SAR Convention under cover of circular letter No. 1993 of 1 September 1997.

Action requested of the Committee

3. The Committee is invited to consider the proposed amendments, annexed hereto, for adoption in accordance with article II(2)(c) of the 1979 SAR Convention.

***
ANNEX

PROPOSED AMENDMENT TO THE INTERNATIONAL CONVENTION ON MARITIME SEARCH AND RESCUE, 1979

The existing text of the Annex to the Convention, except for paragraphs 2.1.4, 2.1.5, 2.1.7, 2.1.10, 3.1.2 and 3.1.3 is replaced by the following:

"CHAPTER 1

TERMS AND DEFINITIONS

1.1 "Shall" is used in the Annex to indicate a provision, the uniform application of which by all Parties is required in the interest of safety of life at sea.

1.2 "Should" is used in the Annex to indicate a provision, the uniform application of which by all Parties is recommended in the interest of safety of life at sea.

1.3 The terms listed below are used in the Annex with the following meanings:

1. "Search". An operation, normally co-ordinated by a rescue co-ordination centre or rescue sub-centre, using available personnel and facilities to locate persons in distress.

2. "Rescue". An operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety.

3. "Search and rescue service". The performance of distress monitoring, communication, co-ordination and search and rescue functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources including co-operating aircraft, vessels and other craft and installations.

4. "Search and rescue region". An area of defined dimensions associated with a rescue co-ordination centre within which search and rescue services are provided.

5. "Rescue co-ordination centre". A unit responsible for promoting efficient organization of search and rescue services and for co-ordinating the conduct of search and rescue operations within a search and rescue region.

6. "Rescue sub-centre". A unit subordinate to a rescue co-ordination centre established to complement the latter according to particular provisions of the responsible authorities.

7. "Search and Rescue facility". Any mobile resource, including designated search and rescue units, used to conduct search and rescue operations.

8. "Search and rescue unit". A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations.

* According to article III(2)(e) of the 1979 SAR Convention amendments to the above paragraphs can only be made by means of the explicit amendment procedure.
"Alerting post". Any facility intended to serve as an intermediary between a person reporting an emergency and a rescue co-ordination centre or rescue sub-centre.

"Emergency phase". A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

"Uncertainty phase". A situation wherein uncertainty exists as to the safety of a vessel and the persons on board.

"Alert phase". A situation wherein apprehension exists as to the safety of a vessel and of the persons on board.

"Distress phase". A situation wherein there is a reasonable certainty that a vessel or a person is threatened by grave and imminent danger and requires immediate assistance.

"On-scene co-ordinator". A person designated to co-ordinate search and rescue operations within a specified area.

"Secretary-General". The Secretary-General of the International Maritime Organization.

CHAPTER 2

ORGANIZATION AND CO-ORDINATION

2.1 Arrangement for provision and co-ordination of search and rescue services

2.1.1 Parties shall, as they are able to do so individually or in co-operation with other States and, as appropriate, with the Organization, participate in the development of search and rescue services to ensure that assistance is rendered to any person in distress at sea. On receiving information that any person is, or appears to be, in distress at sea, the responsible authorities of a Party shall take urgent steps to ensure that the necessary assistance is provided.

2.1.2 Parties shall, either individually or, if appropriate, in co-operation with other States, establish the following basic elements of a search and rescue service:

1. legal framework;
2. assignment of a responsible authority;
3. organisation of available resources;
4. communication facilities;
5. co-ordination and operational functions; and
6 processes to improve the service including planning, domestic and international co-operative relationships and training.

Parties shall, as far as practicable, follow relevant minimum standards and guidelines developed by the Organization.

2.1.3 To help ensure the provision of adequate shore-based communication infrastructure, efficient distress alert routing, and proper operational co-ordination to effectively support search and rescue services, Parties shall, individually or in co-operation with other States, ensure that sufficient search and rescue regions are established within each sea area. Such regions should be contiguous and, as far as practicable, not overlap.

2.1.4 Each search and rescue region shall be established by agreement among Parties concerned. The Secretary-General shall be notified of such agreements.

2.1.5 In case agreement on the exact dimensions of a search and rescue region is not reached by the Parties concerned, those Parties shall use their best efforts to reach agreement upon appropriate arrangements under which the equivalent overall co-ordination of search and rescue services is provided in the area. The Secretary-General shall be notified of such arrangements.

2.1.6 Agreement on the regions or arrangements referred to in paragraphs 2.1.4 and 2.1.5 shall be recorded by the Parties concerned, or in written plans accepted by the Parties.

2.1.7 The delimitation of search and rescue regions is not related to and shall not prejudice the delimitation of any boundary between States.

2.1.8 Parties should seek to promote consistency, where applicable, between their maritime and aeronautical search and rescue services while considering the establishment of maritime search and rescue regions which shall be established by agreement in accordance with paragraph 2.1.4 or the reaching of agreement upon appropriate arrangements in accordance with paragraph 2.1.5.

2.1.9 Parties having accepted responsibility to provide search and rescue services for a specified area shall use search and rescue units and other available facilities for providing assistance to persons who are, or appear to be, in distress at sea.

2.1.10 Parties shall ensure that assistance be provided to any person in distress at sea. They shall do so regardless of the nationality or status of such a person or the circumstances in which that person is found.

2.1.11 Parties shall forward to the Secretary-General information on their search and rescue service, including the:

1 national authority responsible for the maritime search and rescue services;

2 location of the established rescue co-ordination centres or centres providing SAR co-ordination, for the search and rescue region or regions and communications therewith;
3. limits of their search and rescue region or regions and the coverage provided by their
shore-based distress and safety communication facilities; and

4. principal types of available search and rescue units.

Parties shall, with priority, update the information provided with respect to any alterations of importance.
The Secretary-General shall transmit to all Parties the information received.

2.1.12 The Secretary-General shall notify all Parties of the agreements or arrangements referred to in
paragraphs 2.1.4, and 2.1.5.

2.2 Development of national search and rescue services

2.2.1 Parties shall establish appropriate national procedures for overall development, co-ordination, and
improvement of search and rescue services.

2.2.2 To support efficient search and rescue operations, Parties shall:

.1 ensure the co-ordinated use of available facilities; and

.2 establish close co-operation between services and organizations which may contribute to
improve the search and rescue service in areas such as operations, planning, training,
exercises and research and development.

2.3 Establishment of rescue co-ordination centres and rescue sub-centres

2.3.1 To meet the requirements of paragraph 2.2, Parties shall individually or in co-operation with other
States establish rescue co-ordination centres for their search and rescue services and such rescue
sub-centres as they consider appropriate.

2.3.2 Each rescue co-ordination centre and rescue sub-centre, established in accordance with
paragraph 2.3.1, shall arrange for the receipt of distress alerts originating from within its search and rescue
region. Every such centre shall also arrange for communications with persons in distress, with search and
rescue facilities, and with other rescue co-ordination centres or rescue sub-centres.

2.3.3 Each rescue co-ordination centre shall be operational on a 24-hour basis and be constantly staffed
by trained personnel having a working knowledge of the English language**.

2.4 Co-ordination with aeronautical services

2.4.1 Parties shall ensure the closest practicable co-ordination between maritime and aeronautical
services so as to provide for the most effective and efficient search and rescue services in and over their
search and rescue regions.

**Refer to the Search and Rescue section of the Standard Marine Communication Phrases
(MSC/Circ.794).

HMSC\693.1  MSD/NAV/EOA/10
2.4.2 Whenever practicable, each Party shall establish joint rescue co-ordination centres and rescue sub-centres to serve both maritime and aeronautical purposes.

2.4.3 Whenever separate maritime and aeronautical rescue co-ordination centres or rescue sub-centres are established to serve the same area, the Party concerned shall ensure the closest practicable co-ordination between the centres or sub-centres.

2.4.4 Parties shall ensure as far as is possible the use of common procedures by rescue units established for maritime purposes and those established for aeronautical purposes.

2.5 Designation of search and rescue facilities

Parties shall identify all facilities able to participate in search and rescue operations, and may designate suitable facilities as search and rescue units.

2.6 Equipment of search and rescue units

2.6.1 Each search and rescue unit shall be provided with equipment appropriate to its task.

2.6.2 Containers and packages containing survival equipment for dropping to survivors should have the general nature of their contents indicated by markings in accordance with standards adopted by the Organization.

CHAPTER 3

CO-OPERATION BETWEEN STATES

3.1 Co-operation between States

3.1.1 Parties shall co-ordinate their search and rescue organizations and should, whenever necessary, co-ordinate search and rescue operations with those of neighbouring States.

3.1.2 Unless otherwise agreed between the States concerned, a Party should authorize, subject to applicable national laws, rules and regulations, immediate entry into or over its territorial sea or territory of rescue units of other Parties solely for the purpose of searching for the position of maritime casualties and rescuing the survivors of such casualties. In such cases, search and rescue operations shall, as far as practicable, be co-ordinated by the appropriate rescue co-ordination centre of the Party which has authorized entry, or such other authority as has been designated by that Party.

3.1.3 Unless otherwise agreed between the States concerned, the authorities of a Party which wishes its rescue units to enter into or over the territorial sea or territory of another Party solely for the purpose of searching for the position of maritime casualties and rescuing the survivors of such casualties, shall transmit a request, giving full details of the projected mission and the need for it, to the rescue co-ordination centre of that other Party, or to such other authority as has been designated by that Party.
3.1.4 The responsible authorities of Parties shall:
   1. immediately acknowledge the receipt of such a request; and
   2. as soon as possible indicate the conditions, if any, under which the projected mission may be undertaken.

3.1.5 Parties should enter into agreements with neighbouring States setting forth the conditions for entry of each other's rescue units into or over their respective territorial seas or territory. These agreements should also provide for expediting entry of such units with the least possible formalities.

3.1.6 Each Party shall authorize its rescue co-ordination centres:
   1. to request from other rescue co-ordination centres such assistance, including vessels, aircraft, personnel or equipment, as may be needed;
   2. to grant any necessary permission for the entry of such vessels, aircraft, personnel or equipment into or over its territorial sea or territory, and
   3. to make the necessary arrangements with the appropriate customs, immigration, health or other authorities with a view to expediting such entry.

3.1.7 Each Party shall authorize its rescue co-ordination centres to provide, when requested, assistance to other rescue co-ordination centres, including assistance in the form of vessels, aircraft, personnel or equipment.

3.1.8 Parties shall authorize their responsible authority to make plans and arrangements for search and rescue co-operation and co-ordination with the search and rescue services of other States, where appropriate, and should enter into agreement with them to strengthen such co-operation and co-ordination.

CHAPTER 4
OPERATING PROCEDURES

4.1 Preparatory measures

4.1.1 Each rescue co-ordination centre and rescue sub-centre shall have available up-to-date information, especially concerning search and rescue facilities and available communications relevant to search and rescue operations in its area.

4.1.2 Each rescue co-ordination centre and rescue sub-centres should have ready access to information regarding the position, course, and speed of vessels within its area which may be able to provide assistance to vessels or persons in distress at sea, and regarding how to contact them. This information should either be kept in the rescue co-ordination centre, or be readily obtainable when necessary.
4.1.3 Each rescue co-ordination centre and rescue sub-centre shall have detailed plans of operation for the conduct of search and rescue operations. Where appropriate, these plans shall be developed jointly with the representatives of those who may assist in providing, or who may benefit from, the search and rescue services.

4.1.4 Rescue co-ordination centres or sub-centres shall be kept informed of the state of preparedness of search and rescue units.

4.2 Information concerning emergencies

4.2.1 Parties, either individually or in co-operation with other States, shall ensure that they are capable on a 24-hour basis of promptly and reliably receiving distress alerts from equipment used for this purpose within their search and rescue regions. Any alerting post receiving a distress alert shall:

1. immediately relay the alert to the appropriate rescue co-ordination centre or sub-centre, and then assist with search and rescue communications as appropriate; and

2. if practicable acknowledge the alert.

4.2.2 Parties shall, where appropriate, ensure that effective arrangements are in place for the registration of communication equipment and for responding to emergencies, to enable any rescue co-ordination centre or sub-centre to access pertinent registration information quickly.

4.2.3 Any authority or element of the search and rescue service having reason to believe that a person, vessel or other craft is in a state of emergency shall forward as soon as possible all available information to the rescue co-ordination centre or rescue sub-centre concerned.

4.2.4 Rescue co-ordination centres and rescue sub-centres shall, immediately upon receipt of information concerning a person, vessel or other craft in a state of emergency, evaluate such information and determine the phase of emergency in accordance with paragraph 4.4, and the extent of operations required.

4.3 Initial action

Any search and rescue unit receiving information of a distress incident shall initially take immediate action if in the position to assist and shall, in any case without delay, notify the rescue co-ordination centre or rescue sub-centre in whose area the incident has occurred.

4.4 Emergency phases

To assist in determining the appropriate operating procedures, the following emergency phases shall be distinguished by the rescue co-ordination centre or sub-centre concerned:

1. Uncertainty phase:

   1.1 when a person has been reported as missing, or a vessel or other craft is overdue;

   1.2 when a person, a vessel or other craft has failed to make an expected position or safety report.
2. Alert phase:

2.1 when, following the uncertainty phase, attempts to establish contact with persons, a vessel or other craft have failed and inquiries addressed to other appropriate sources have been unsuccessful; or

2.2 when information has been received indicating that the operating efficiency of a vessel or other craft is impaired, but not to the extent that a distress situation is likely.

3. Distress phase:

3.1 when positive information is received that a person, vessel, or other craft is in danger and in need of immediate assistance; or

3.2 when, following the alert phase, further unsuccessful attempts to establish contact with the person, vessel or craft and more widespread unsuccessful inquiries point to the probability that a distress situation exists; or

3.3 when information is received which indicates that the operating efficiency of a vessel or other craft has been impaired to the extent that a distress situation is likely.

4.5 Procedures to be followed by rescue co-ordination centres and rescue sub-centres during emergency phases

4.5.1 Upon the declaration of the uncertainty phase, the rescue co-ordination centre or rescue sub-centre, as appropriate, shall initiate inquiries to determine the safety of the persons, vessel or other craft, or shall declare the alert phase.

4.5.2 Upon the declaration of the alert phase, the rescue co-ordination centre or rescue sub-centre, as appropriate, shall extend the inquiries for the missing persons, vessel or other craft, alert appropriate search and rescue services and initiate such action, as is necessary in the light of the circumstances of the particular case.

4.5.3 Upon the declaration of the distress phase, the rescue co-ordination centre or rescue sub-centre, as appropriate, shall proceed as prescribed in its plans of operation, as required by paragraph 4.1.

4.5.4 Initiation of search and rescue operations when the position of the search object is unknown.

In the event of an emergency phase being declared for a search object whose position is unknown, the following shall apply:

1. when an emergency phase exists, a rescue co-ordination centre or rescue sub-centre shall, unless it is aware that other centres are taking action, assume responsibility for initiating suitable action and confer with other centres with the objective of designating one centre to assume responsibility;

2. unless otherwise decided by agreement between the centres concerned, the centre to be designated shall be the centre responsible for the area in which the search object was according to its last reported position; and
...after the declaration of the distress phase, the centre co-ordinating the search and rescue operations shall, as appropriate, inform other centres of all the circumstances of the emergency and of all subsequent developments.

4.5.5 **Passing information to persons, vessels, or other craft for which an emergency phase has been declared**

Whenever possible, the rescue co-ordination centre or rescue sub-centre responsible for search and rescue operations shall forward to the persons, vessel or other craft for which an emergency phase has been declared, information on the search and rescue operations it has initiated.

4.6 **Co-ordination when two or more Parties are involved**

For search and rescue operations involving more than one Party, each Party shall take appropriate action in accordance with the plans of operation referred to in paragraph 4.1 when so requested by the rescue co-ordination centre of the region.

4.7 **On-scene co-ordination of search and rescue activities**

4.7.1 The activities of search and rescue units and other facilities engaged in search and rescue operations shall be co-ordinated on-scene to ensure the most effective results.

4.7.2 When multiple facilities are about to engage in search and rescue operations, and the rescue co-ordination centre or rescue sub-centre considers it necessary, the most capable person should be designated as on-scene co-ordinator as early as practicable and preferably before the facilities arrive within the specified area of operation. Specific responsibilities shall be assigned to the on scene co-ordinator taking into account the apparent capabilities of the on scene co-ordinator and operational requirements.

4.7.3 If there is no responsible rescue co-ordination centre or, for any reason, the responsible rescue co-ordination centre is unable to co-ordinate the search and rescue mission, the facilities involved should designate an on-scene co-ordinator by mutual agreement.

4.8 **Termination and suspension of search and rescue operations**

4.8.1 Search and rescue operations shall continue, when practicable, until all reasonable hope of rescuing survivors has passed.

4.8.2 The responsible rescue co-ordination center or rescue sub-center concerned shall normally decide when to discontinue search and rescue operations. If no such centre is involved in co-ordinating the operations, the on scene co-ordinator may take this decision.

4.8.3 When a rescue co-ordination center or rescue sub-center considers, on the basis of reliable information that a search and rescue operation has been successful, or that the emergency no longer exists, it shall terminate the search and rescue operation and promptly so inform any authority, facility or service which has been activated or notified.
4.8.4 If a search and rescue operation on-scene becomes impracticable and the rescue co-ordination centre or rescue sub-centre concludes that survivors might still be alive, the centre may temporarily suspend the on-scene activities pending further developments, and shall promptly so inform any authority, facility or service which has been activated or notified. Information subsequently received shall be evaluated and search and rescue operations resumed when justified on the basis of such information.

CHAPTER 5
SHIP REPORTING SYSTEMS

5.1 General

5.1.1 Ship reporting systems may be established either individually by Parties or in co-operation with other States, where this is considered necessary, to facilitate search and rescue operations.

5.1.2 Parties contemplating the institution of a ship reporting system should take account of the relevant recommendations of the Organization. Parties should also consider whether existing reporting systems or other sources of ship position data can provide adequate information for the region, and seek to minimize unnecessary additional reports by ships, or the need for rescue co-ordination centres to check with multiple reporting systems to determine availability of ships to assist with search and rescue operations.

5.1.3 The ship reporting system should provide up-to-date information on the movements of vessels in order, in the event of a distress incident, to:

.1 reduce the interval between the loss of contact with a vessel and the initiation of search and rescue operations in cases where no distress signal has been received;

.2 permit rapid identification of vessels which may be called upon to provide assistance;

.3 permit delineation of a search area of limited size in case the position of the persons, a vessel, or other craft in distress is unknown or uncertain; and

.4 facilitate the provision of urgent medical assistance or advice.

5.2 Operational requirements

5.2.1 Ship reporting systems should satisfy the following requirements:

.1 provision of information, including sailing plans and position reports, which would make it possible to determine the current and future positions of participating vessels;

.2 maintenance of a shipping plot;

.3 receipt of reports at appropriate intervals from participating vessels;

.4 simplicity in system design and operation; and
use of internationally agreed standard ship reporting format and procedures.

5.3 Types of reports

5.3.1 A ship reporting system should incorporate the following types of ship reports in accordance with the recommendations of the Organization:

.1 Sailing plan;

.2 Position report; and

.3 Final report.

5.4 Use of systems

5.4.1 Parties should encourage all vessels to report their position when travelling in areas where arrangements have been made to collect information on positions for search and rescue purposes.

5.4.2 Parties recording information on the position of vessels should disseminate, so far as practicable, such information to other States when so requested for search and rescue purposes.”
Figure 8  Global Maritime Search and Rescue Areas
Figure 9  Mediterranean Search and Rescue Areas
Figure 16   Search and Rescue Region (SRR) of the Federal Republic of Germany
Source: "Deutsche Gesellschaft zur Rettung Schiffbruchiger"