

Model of the Search and Rescue operations in Republic of Serbia

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ABSTRACT: The IAMSAR Manual contains practical guidelines for the organisation of maritime and aeronautical SAR, mission coordination, operations of search and rescue units (SRUs) and provision of SAR-related training. RCC (rescue coordination center) - a unit responsible for promoting efficient organization of search and rescue operations within a search and rescue region. Rescue Coordination Centre (RCC) means a designated coordination centre that acts as the national Search and Rescue Region's coordination centre and the international point of contact for search and rescue (SAR) services and that takes care of the continuous maintenance of coordination and communication preparedness and coordinates SAR operations within its Search and Rescue Sub-Region (SRS).

Definition of terms Search: An operation, normally coordinated by a RCC or RSC, using available personnel and facilities to locate persons in distress. (IAMSAR, Volume 1).

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

Work should contribute to the establishment of thinking for model of SAR in Republic of Serbia due to the growing need of interventions in the prevention and elimination of consequences of natural disasters and better organization of search and rescue using the standards prescribed in the the world.

1 INTRODUCTION

Accidents happen across the Earth, in all life and work surroundings: on land, in the air, on water and in the space. Fast technical-technological development, increased number of participants in traffic and rapid pace of everyday living have led to more common accidents which entail multiple destructive impacts on human kind.

The consequences of accidents on water surfaces have prompted the proposition and passing of a number of international laws and regulations within certain areas: the safety of navigation and life protection at sea, organisation, tasks and activities of

the forces engaged in search and rescue of people and material resources at sea and the protection of sea and costal area from the pollution caused by uncontrolled leakage and spreading of liquids, gasses and other hazardous matters after an accident.

The increased number, amount and density of naval and other means of transport have brought about higher level and intensity of inland water transport, and other means of traffic within inland waters¹ which has produced a greater number of

¹ Inland waters encompass rivers, canals, and lakes on the mainland territory of a state. (author's remark)

accidents on inland waters (IW in the follow-up of this paper). Inland waters of the Republic of Serbia consist of: the Danube, the Sava and the Tisza as well as the navigable canal of the Danube-Tisza-Danube water system and reach the length of 1.680 navigable kilometres at moderate water level².

2 THE DEFINITION OF SEARCH AND RESCUE

With the purpose of understanding correctly the term of search and rescue we need to establish the time and circumstances of its formation, its history and normative-legislative interpretation accepted by the majority of countries across the world through their signing and accepting international conventions and contracts.

2.1 *Search and rescue in the international conventions, laws and regulations*

The SOLAS convention deals with the safety of the ship and navigation. It is necessary to determine an efficient system which will enable timely and successful response of the appropriate professional organisations, endangered ships and aid-providing ships after a sea accident with the aim of rescuing human lives and material resources as well as protecting the environment.

International convention on preventing sea pollution by a ship (the International Convention for the Prevention of Marine Pollution from Ships), MARPOL (Marine Pollution) in short, was passed in 1973 in London after the Torrey Canyon ship had been stranded in the English Channel in 1969 and the leakage of 120,000 tons of crude oil into the sea.

For that reason International Naval Organisation passed a special international convention in Hamburg in 1978 by the name of International Convention on Maritime Search and Rescue, SAR (Search and Rescue) in short. It came into force in 1985 and it is obligatory for the state governments, unlike some other previous conventions.

A resolution which was passed later on has produced a common regulation book called IAMSAR (International Aeronautical and Maritime Search and Rescue Manual) which has three parts. The conventions with the purpose of regulating the area of protection of human lives at sea and the safety of navigation are the following:

- International Convention on Salvage,
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 78/95 – STCW 78/95;
- International Convention on Safe Containers – CS 72.

Yugoslavia ratified all the above mentioned conventions immediately upon their passing. The Republic of Serbia has accepted and still accepts all

the above mentioned and other international conventions.

Despite the fact that international conventions primarily deal with the navigation at sea, experience has shown that after a certain lapse of time they can apply to inland waters as well.

The Danube is the most important river both in the Republic of Serbia³ and Europe. Because of its economic importance many countries propose the internationalisation of the Danube navigation⁴. As opposed to this, states through which territories the Danube runs had persistently resisted those demands, and therefore the navigation has been regulated for a long time by bilateral contracts of Danubian countries. Serbia, being one of the Danubian countries, proposes a more open and better cooperation of the Danubian countries and is an active member of the Danube Commission⁵.

During XXXV session of the Danube Commission held on 25 April, 1977 a decision was reached to make certain alterations and additions to the Basic Regulations on the Danube Navigation (passed during the Danube Commission session in Budapest in 1968). The Danubian countries and specialised river organisations were recommended to commence putting this decision into practice starting from 1 April, 1979 and to report to the Danube Commission about it. The article 1.16 of the new version of the Basic Regulations on the Danube Navigation with special recommendations referring to the search and aid providing on the Danube is of the utmost importance for this paper. The new infrastructural policy of the European Union is defined by the Regulation 1315/2013 of the European parliament and the Council on the Guidelines for the Development of Trans-European Traffic Network 1, which was published in December 2013. This Regulation has enabled a thorough reform of the infrastructural policy of the 1980's. The European Commission has published new maps showing the nine main corridors which will be the foundation for the internal European single market. They will, in turn, enable establishing new relations between the east and the west of Europe.

The new infrastructural policy of the EU, which viewed as a whole, will transform the existent divided network of European road communication lines, railways, rivers and canals, air, sea and river ports into a unified Trans-European Transport Network (TEN-T) with the aim of prompting the growth and competitiveness of the EU economy.

³ The Danube River runs through, or is a border river between, ten European states: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Bulgaria, Moldavia and Ukraine.

⁴ Internationalisation of the Danube navigation was only established by the Paris Agreement in 1856, which ended the Crimean war and founded the First Danube Commission. It was in force until 1938.

⁵ The Danube Commission is an international organisation of the Danubian countries, responsible for creating technical and legal framework for navigating the Danube. The aims of this organisation are: free navigation along the Danube, the protection of the interest of the Danubian countries and improving the state and cultural links between the member states with the other countries. Every member state is in charge of managing its own section of the river. (author's remark)

² The strategy of development of railway, road, water, air and intermodal transport within the Republic of Serbia from 2015 to 2020, pages 104 -107.

The new traffic network will be supported by the comprehensive network which will be a part of the basic network at a regional and national level. Therefore the accessibility of all regions and complete coverage of the EU will be ensured. The aim is to make this comprehensive network available to the great majority of citizens and businesses in no more than 30 minutes gradually by 2050.

The Rhine-Danube Corridor is one of the nine European corridors of the transport network (TEN-T) and it runs through the Republic of Serbia. It is defined as the watercourse of the Rhine, through the Main and the Danube, that includes central regions near Strasbourg and Frankfurt through south Germany to Vienna, Bratislava, Budapest, and all the way to the Black Sea with the key branches from Munich to Prague, Kosice and the Ukrainian border.

In politics the Danube is a corridor of the utmost importance by itself but it is limited to the watercourse. Now the Rhine-Danube Corridor makes the unified system of watercourses, and links the important railway and road communication lines, and south-east Europe with the industrial centres of Germany and France. This approach will enable a better connection and integration of the traffic infrastructure, including the ports, eliminate all the technical and administrative barriers and multimodal transport and ensure the unimpeded flow of information.

In this regard, with the traffic network made by the watercourse of the Danube along 588km with its tributaries, along with the road and railway corridors, the Republic of Serbia has been given much relevance within the comprehensive European policy in the period from 2014 to 2020. The new European policy enables great opportunities for improving the position and development of water transport in the Republic of Serbia by 2025. The strategy of the development of water transport in the Republic of Serbia from 2015 to 2025 takes into consideration "The White Book from 2011 – the Guidelines for a Unified European Transport Area", the Strategy of the European Union for the Danube region – the high priority area 1a, "The Improvement of Mobility and Multimodality: Inland Waterways", as well as "The Declaration on the Efficient Upkeep of the Infrastructure on the Danube and its Navigable Tributaries", the so-called Luxemburg Declaration. The strategy of developing water transport in the Republic of Serbia from 2015 to 2025 includes the application of European regulations and documents with the guidelines for the development of the infrastructure of the inland waterways in agreement with the environmental demands. In connection with this, it is especially important to emphasize the application of the EU Water Framework Directive, Strategic Environment Directive SEA, and the Environmental Impact Assessment Directive. The importance of the process of agreement of the three river commissions, the Danube Commission (DC), the International Commission for the Sava River Basin (ISRBS), and the Commission for Protecting the Danube River (ICPDR) with their "Joint Statement on the Guiding Principles for the Development of Inland Navigation and Environmental Principle in the Danube River Basin.

2.2 Search and rescue in the national regulatory rules

In national regulations the search and rescue on inland waters area has been defined only partially by the Law on the Safety of Navigation and Ports on Inland Waters⁶. The part of this law which refers to the search and rescue is based on the International Convention on Saving Lives at sea (SOLAS) and the International Convention on Search and Rescue at Sea (CAP).

In addition to the Law on the Safety of Navigation and Ports on Inland Waters, the search and rescue area is partially defined in the Law on States of Emergency⁷.

The articles 73 and 74 of the Law on Navigation and Ports on Inland Waters define that the search and rescue of endangered people and things on inland water is conducted by the ministry in charge of the internal affairs with the cooperation of the harbour masters offices (Sector for the Water Transport and the Safety of Navigation/Ministry of Transport) upon the orders given by the Ministry of Internal Affairs in search and rescue, engaging the available staff and equipment, as well as employing other state organs businesses, legal entities and entrepreneurs which do business on inland waters.

Ministry of internal affairs has specially defined units for search and rescue on water affairs at a national level through the Sector for the States of Emergency intended for these activities and for the search and rescue requirements. In addition to these, certain elements of the units subordinate to the Ministry of the Internal Affairs (e.g. from the police – divers, river police, fire fighting service, helicopter units, etc). They are partially equipped with facilities, moveable belongings, and boats for all tasks of search and rescue on water.

The Law on the States of Emergency of the Republic of Serbia defines the terms "Search and Rescue of People after Accidents" and "Protection and Rescue from Floods and Water Disasters and Under Water Disasters", which include providing protection and conducting search and rescue of people and material belongings on water and under water. Furthermore, the tasks of the state organs are also set and article 11 appoints the Ministry of Internal Affairs with the authority to organize the surveillance system, reporting, timely warning, and alarming on the territory of the Republic of Serbia as well as taking part in search and rescue after the accidents in river transport. Ministry of Defence and the Serbian Army are given the authority by article 12 of this law to engage certain parts of the Ministry of Defence and the Serbian Army in providing support and aid in search and rescue when other forces and means of the system of defence and rescuing do not suffice, when acting upon the Ministries orders – organizational units responsible for the states of emergency. Within the Civil Protection Management of the Sector for the States of Emergency (articles 98 to 102 of the Law on the States of Emergency) a unit has been formed for search on water and under water. Based on the Law of the States of Emergency of the

⁶ The Official Journal of the Republic of Serbia, no 73/2010.

⁷ The Official Journal of the Republic of Serbia, no 111/09.

Republic of Serbia, the Minister of the Internal Affairs has made a Regulation Book on organizing and using specialised units of civil protection. This Regulation Book gives the unit for search on water and under water the authority:

- To perform tasks and affairs for the protection of life and health of people and animals as well as material and cultural belongings on rivers, lakes and flooded areas;
- To transport people, animals and material belongings across rivers and lakes;
- To rescue and search drowned people from rivers lakes wells and other water areas and
- To salvage material belongings endangered by water.

For the needs of helping and supporting the MIA of the RS in search and rescue on water, and based on the third mission of the Serbian Armed Forces “providing support to the civilian authorities in fighting safety threats”, the Minister of Defence reaches the decision to engage the necessary units of the Serbian Army on this task. The units which can be engaged in search and rescue on water within the Serbian Army are mainly those that carry out everyday tasks on water (the River Flotilla), but also some other units of the Serbian Army (aviation, specialised units, etc). Through the Operational Centre of the system of defence, and the line of duty certain units of the Serbian army are alarmed to carry out search and rescue on water task.

2.3 *River Information Services engaged in search and rescue*

Between 2009 and 2013 the most contemporary River Information Services (RIS) were implemented on the Danube and Sava rivers. Coastal network of base stations was established (15 on the Danube and 3 on the Sava, by which the complete length of these rivers was covered by the signal. Electric Navigational Charts (ENC) were provided for the whole water course of the Danube, Sava and Tisza rivers through Serbia. In order to implement these services as efficiently as possible a “RIS Equipment Programme” was conducted within which trading and state service boats were equipped with necessary items.

Starting from 1 January, 2014 it is obligatory to locate and follow boats by using AIS systems, as well as to issue electric announcements to the shipping companies (NTS). The other services, like Electronic Reporting from a boat (ERI) and using information gained by electric navigational charts (ENC) have become compulsory starting from 1 January 2015. The lack of finances can jeopardize regular upkeep of this service from 2015 and onwards.

The aim is to improve the state of water courses by 2025, and to make water transport safer, more reliable, and efficient by adhering to contemporary environmental standards while making plans and projects. The upkeep and development of infrastructure on watercourses of the Republic of Serbia for the needs of sail is based on clearly defined European standards and accepted international and bilateral agreements which on our course towards European integrations completely determine our state policy and obligations.

River Information System contributes to safe and more efficient transport processes and enables the full usage of watercourse capacities, faster integration of water traffic with other means of traffic, therefore it is necessary to continue taking an active part in pan-European dialogue on implementing and further development of the RIS, as well as in the work of international commissions of RIS experts.

It is necessary to establish a Water Course Traffic Service (WTS) in the republic of Serbia which is currently applied in Europe. Due to this the existent elements and capacities of RIS should be used to enable the functioning of WTS. WTS can undertake the role of RRCC (River Rescue Coordinate Centre). If such tasks which are not covered by RIS arise on the territory of inland waters, local WTS stations should be set up with the emphasis on boat traffic. If the existence of WTS proves to be unnecessary, the present RIS should be kept. Managing boat traffic and search and rescue operations on watercourses within WTS will be performed from RIS centres.

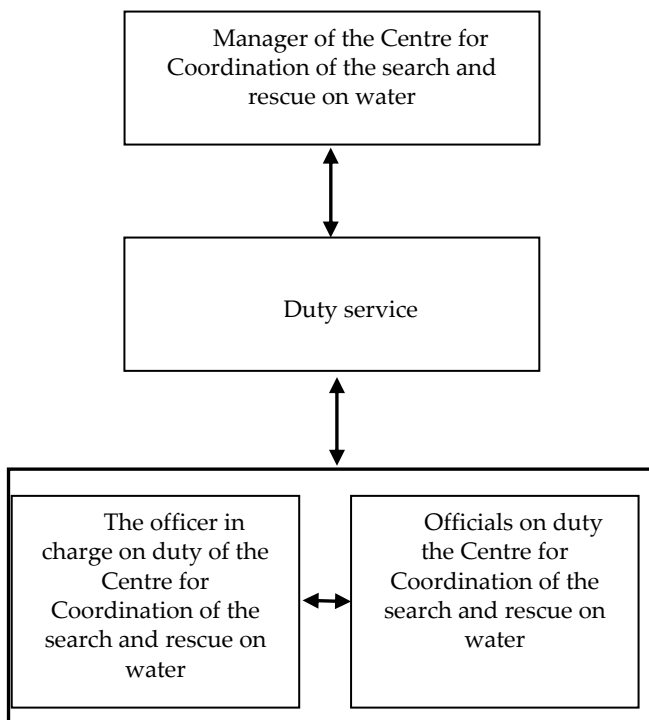
It would be the main central unit of the search and rescue on water service. The manager of the centre would be responsible for its work, and the centre needs to have:

- a detailed Plan of search and rescue on water,
- proper facilities in order to function,
- means and equipment for search and rescue, especially for communication and
- trained personnel.

The work of the centre is based on the plan and contains regulations and data on:

- procedures,
- the work of certain departments within the search and rescue on water service,
- means of communications and the way they are used,
- staff that takes part in the search and rescue tasks and
- the information gathered.

The centre must possess reliable equipment for receiving aid calls, equipment for maintaining communication via land or radio equipment with the rescue units, rescue centres within sectors (sub-centres), main stations for RIS, centres for supervising air transport, meteorological devices, centres for coordination with the surrounding areas, ships, medical institutions, hydro-meteorological institution, etc. Overall organization of the Centre for coordination of search and rescue on water would look like this:



In the Republic of Serbia RIS should improve its services according to the needs of water transport development by 2025 by using up-to-date and reliable technologies, and it should be in harmony with RIS systems at a European watercourse network, being its integral part.

Along with all activities that involve establishing and perfecting RIS and WTS, it is of utmost importance to carry out permanent training and development of the users of RIS and WTS services, as well as of those responsible for providing these services with the aim of using all their possibilities.

3 THE ENGAGEMENT OF SEARCH AND RESCUE UNITS

“Search and Rescue on Inland Waters” mission for the engaged units involves planned and organised activities on locating and rescuing people and animals, sunken boats, aircraft, as well as eliminating the consequences of the accidents on and near the rivers and canals.

The most important factors which are taken into consideration and analysed when assessing the possibility of engaging units in carrying out search and rescue on inland waters tasks are the type, scale and characteristics of the accidents, the conditions of planning, organising and completing the search and rescue tasks, and the feasibility of fulfilling search and rescue tasks.

3.1 . Types, scales and characteristics of accidents on inland waters

Depending on the type of transport used by the people involved, accidents on inland waters can be:

- boat accidents,

- aircraft accidents,
- motor, and other vehicle accidents.

Depending on their consequences, IW accidents can be:

- accidents with human casualties (injuries, deadly outcomes),
- accidents with material damage,
- accident involving the leakage of poisonous environmentally hazardous matters,
- accidents involving consequences for people, animals, material belongings and the environment.

Depending on their causes, accidents can be:

- caused by human actions,
- caused by some forces of nature,
- caused both by human actions and some forces of nature.

Depending on the area of their occurrence, accidents can be:

- accidents on rivers,
- accidents on canals,
- accidents on natural and artificial lakes.

3.2 Conditions of planning, organising and carrying out search and rescue tasks

Successful search and rescue tasks depend on the conditions in which they are planned, organised and carried out, and they can vary depending on the case and situation on the field.

The conditions which affect planning, organising and deploying the units are the following:

- hydrological, weather and navigational conditions in the area of the accident,
- the distance of the area of the accident from the based River Flotilla region,
- the state of communications lines and the existence of inhabited places in the area of the accident,
- the available time for preparing and carrying out search and rescue tasks,
- the state and density of water transport in the area of the accident, and
- engaging the other social structures in search and rescue⁸.

These conditions all affect the preparation for putting into practice search and rescue tasks differently, and they must be analysed thoroughly.

3.2.1 Hydrological, weather and navigational conditions in the area of the accident

Hydrological conditions which can affect the task are: the depth of water at the scene of the accident, the depth and width of the river bed, the make-up of the river bed, the transparency of water, the speed of the watercourse, the conditions and the tendencies of the water level, and the temperature of water.

Weather conditions which can affect the task are: the air temperature, the state and tendencies of rainfall, the fog, the cloudiness, and the wind, and

⁸ River police, gendarmerie, waterpower companies, civil defence organs, local population, and port authorities are of vital importance (author’s remark)

they depend on the season of the year and the climate of the area of the accident.

The complete knowledge of the hydrological and weather conditions in the area of the accident, and defining their influence on the search and rescue activities is a requisite condition for planning, organising, deploying the capacities as well as engaging the search and rescue on water units efficiently.

Navigational conditions of sailing in the area of the accident are important when it comes to the safety of the engaged and other boats, determining the exact position of boats employed in searching the area of the accident, thorough search of the area of the accident, the search of people in danger, and salvaging material belongings.

3.2.2 . *The state of communication lines and the existence of inhabited places in the area of the accident*

A part of inland waters has bad access to water communication lines, which makes the conducting of search and rescue tasks more complicated. In most cases local population is the first to spot the accident and come to the aid of the distressed, and they also provide important information on weather conditions and the circumstances which led to the accident which can sometimes have a decisive effect on the search and rescue outcome.

3.2.3 . *The time available for preparing and carrying out search and rescue*

In search and rescue missions the available time, being an irreversible category, is a critical resource. The initial assessment is always made within the limited time framework and it is necessary that it be quick and accurate. A team of experts and qualified personnel, who know the possibilities, conditions of conducting search and rescue and are skilful in finding the best possible solutions quickly, is made. This guarantees that the available time will be used in the best possible way.

3.2.4 . *The state and density of water transport in the area of the accident*

On inland waters intensive river transport is conducted and it causes temporary halts and limitations. In addition to the limitations which may refer to the critical distance of the travelling boats from the defined (marked) border of the search and rescue region, limitations can refer to the speed, stopping, anchoring, etc. Stopping or limiting water transport, especially on international navigable watercourses, can only last for a limited amount of time.

The period of limiting water traffic in the area of the accident must be determined in advance, which demands accurate assessment of the available time. Prohibiting or limiting traffic in the area of the accident is put into force through the Ministry in charge of water traffic and port authorities under which jurisdiction the area of the accident is.

3.2.5 . *Engaging the society in search and rescue on IW*

Engaging other social structures in search and rescue imposes the need of clearly differentiating the areas of jurisdiction, tasks and responsibilities of certain participants.

Their engagement depends primarily on the available resources and the possibilities of civilian structures, especially of the state administration and local management in the area of the accident. In addition to this, it should clearly be defined in which situations the SA and MIA units can be engaged.

3.3 *Tasks and capabilities of the units engaged in search and rescue task*

By analysing the types, scales, and characteristics of possible accidents, the organisational structure, the equipment and level of competence of both the command and the units, and the acquired experience, the units engaged in search and rescue perform the following tasks:

- searching for, locating and salvaging boats and other objects,
- rescuing the crew of the sunken and damaged boats and other objects,
- searching for, locating and rescuing the distressed ones in the accidents,
- hauling the stranded and less damaged boats, providing aid, mending minor damages on a boat, making the boats fit for sail to the maintenance companies and aid providing stations,
- keeping the sinking boat fit for sail, especially if its crew cannot do that relying on their own resources,
- providing assistance to the boats caught on fire,
- eliminating environmentally hazardous consequences of an accident, and
- diving and other underwater tasks with the aim of ensuring the boat's ability to sail and navigate safely.

The above mentioned tasks primarily refer to search and rescue tasks for the needs of the Army and MD. However, bearing in mind some specific features, all the tasks are carried out in order to provide help to the civilian structures. In that case, a different approach is required, a special organisation of work and a specific way of employing boats and pontoon facilities.

4 SEARCH AND RESCUE COORDINATION

Involving different parties in search and rescue necessarily entails the need of timely planning and organised coordination between them with the aim of quicker, more efficient and more economical search and rescue of people, animals and material belongings in case an accident occurs and in order to avoid their consequences. Within search and rescue, coordination is done between Ministry of the Internal Affairs, Ministry of Agriculture, Ministry of Defence, Forestry and Waterpower Engineering, Ministry of Infrastructure, Traffic and Civil Engineering, "PLOVPUT" Inland Navigable Waterways Management, and the Republic of Serbia Weather

Bureau. All these institutions have clearly defined jurisdictions and responsibilities in certain segments of a task. They determine their place and role in the search and rescue system.

The search and rescue system in the Republic of Serbia is not clearly defined, which makes it hard to foresee all the possible scenarios and participants in the system and to state precisely which tasks should each of them carry out. The Law on the States of Emergencies of the Republic of Serbia defines the organisation and management of the search and rescue units. To a certain extent it is also brought into accord with related laws of the European Union⁹, it sets the main direction and way of coordinating different parties within the organisation and functioning of the search and rescue system. The law regulates: the jurisdictions of state organs, autonomous provinces, the units of local authorities, and the participation of the police and the Army in search and rescue tasks. The term 'protection and saving' is broader than the term 'search and rescue', which is just one part of the search and rescue system on the territory of the Republic of Serbia¹⁰.

Organisational parts of Ministry of Defence and the Serbian Army are engaged in providing aid in protection and saving only upon the demand of the Sector for the States of Emergency within the Ministry of Internal Affairs which is the key factor in coordinating all the activities within the search and rescue mission. In case of the state of emergency, the appropriate headquarters in charge of the states emergencies are formed at the levels of the republic, province, region, town and municipality. The request for possible engagement of the Army's units is made to the Ministry of Defence, but also to garrison command in special cases.

According to the Law on the Ministries of the Republic of Serbia (OJ no 16/2011), the Ministry of Internal Affairs of the Republic of Serbia, performs, among other tasks, the tasks related protecting lives, personal safety and the safety of citizens' belongings and providing aid in case of danger. Within the organisational system of the Ministry of Internal Affairs there is a Sector for the States of Emergencies (picture 1), with the main goal of integrating the resources available to the MIA, the Army, businesses and other rescue services into a unique system for providing aid to people in the states of emergencies. National and operational centres are currently being formed with a unique dialling code 112 in case of an accident. According to the prescribed procedure, the centres will gather and analyse information, follow the situation and inform the authorities and the institutions on any events in the state of emergency domain.

With the aim of finding, following and gathering information on all kinds of danger to people, animals, the environment, material and cultural belongings at the level of the Republic according to article 103 of the Law, there is an intention to set up an observation system, they system of timely warning, informing and alerting which will be made up of the following units: 112 Service, state management organs, the police, the Army, economic societies, services of public interest, and other legal entities that within their regular activities perform observation, registering, analysing and predicting certain events and states in weather forecasting, seismology, fire protection, waterpower engineering, chemical and radiological protection, health care, agriculture, power plant industry, traffic, and other areas.

Ministry of Agriculture, Forestry and Waterpower Engineering has the Republic Management of Water Resources as its integral part, which is in charge of the water resources protection. It also contains 'Serbia Waters' PWC which is in charge of performing waterpower engineering activities at the territory of Serbia outside AP of Vojvodina; "Vojvodina Waters' PWC is in charge of performing waterpower engineering activities at the territory of the province of Vojvodina and 'Belgrade Waters' PWC in charge of water resources and coordinates the needs of users for water at the territory of Belgrade.

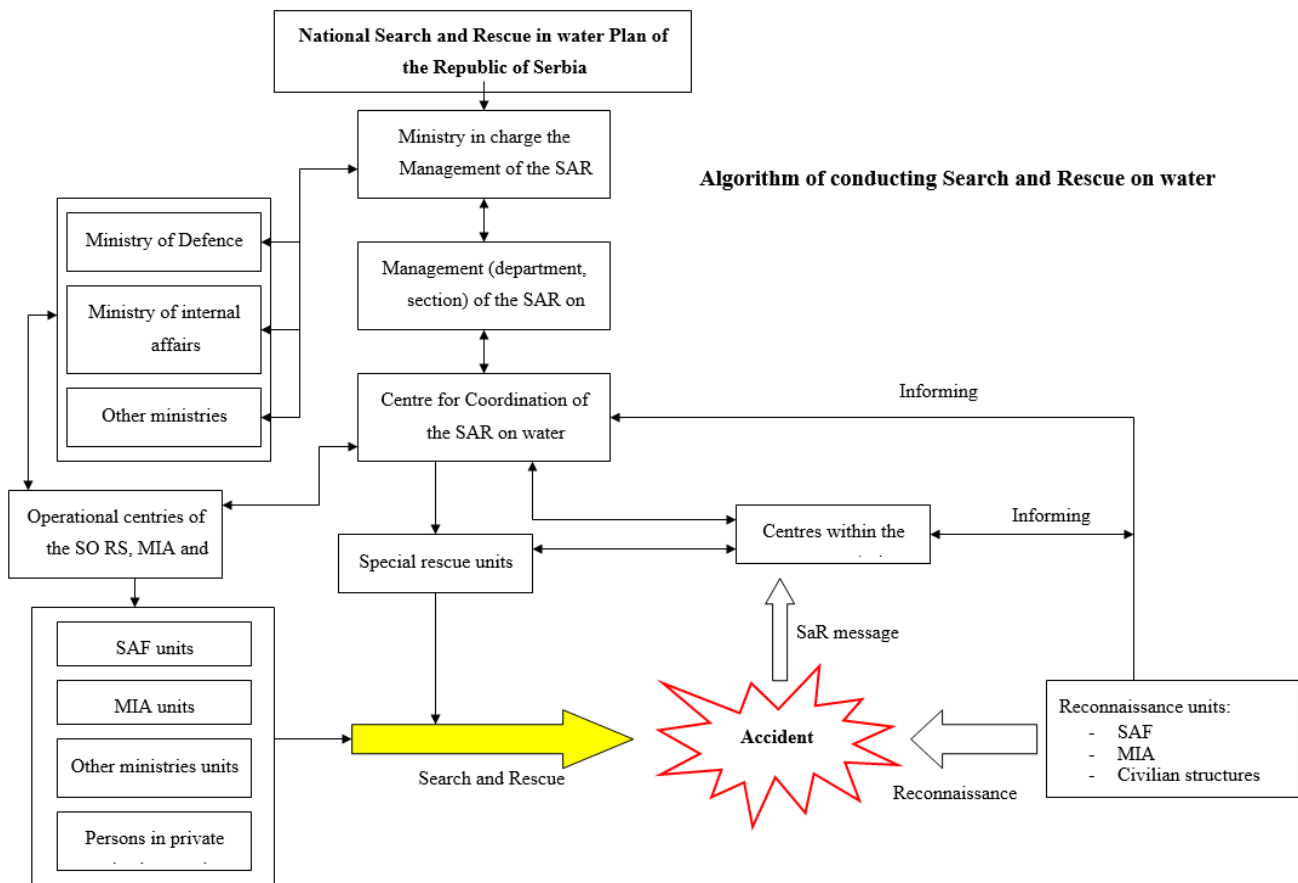
The Management performs permanent observation of the waters assigned to them, and manages the same, which makes it the most reliable source of information on the past, current, and future state of watercourses. Numerous waterpower engineering objects are deployed on inland waters enable them to be used by staff employed in public waterpower companies, which in its turn enables gathering information on hydrological and all other water features. These data are requisite while planning, organising, and conducting search and rescue tasks. The River Flotilla coordinates its actions with the Management, which can have a decisive influence on the speed and efficiency of performing search and rescue on IW through its activities in certain situations.

Ministry of Infrastructure, Traffic and Civil Engineering has the Sector for Water Transport and Safe Navigation as its integral part, which is in charge of the safe sail on navigable watercourses. Port authorities are also its integral part, and they perform some managerial, inspection and other activities within the inland navigation area.

Coordination with port authorities is important because, in search and rescue situations, it provides the necessary working conditions in the following areas: enforcing a ban or limiting navigation in the area of the accident, informing the participants of water transport on the accident, the ban or the limitation, supervising the enforcement of the ban, etc.

⁹ European Union Strategy on Internal Security and European Union Strategy on Supporting the Reduction of the Risk from Natural Disasters in Developing Countries, (author's remark).

¹⁰ Search and Rescue System is a part of National Security System and is an integral part of managing and organizing different parties within the search and rescue system engaged in conducting Safety and Operational Measures and carrying out the tasks of search and rescue of people and belongings from natural disaster consequences and other misfortunes, including recovery measures after those disasters, (author's remark).



‘Plovput’ Watercourses Management deals with producing and updating navigation charts for the Danube, Sava and Tisza rivers, as well as developing River Information System (RIS) which ensures precise locating and surveillance of the boats, giving electric announcements to the shipping companies, electric registration of a journey, etc. The Management has important information on current location and navigation of ships at its disposal, which can have a decisive impact on a search and rescue mission.

The Weather Bureau of the Republic of Serbia is a source of information on weather conditions and tendencies of change of weather conditions within a wider area of the accident, which makes it a significant segment of cooperation because it takes into consideration a wide range of weather conditions and parameters which have an impact on search and rescue.

The complexity of search and rescue tasks and the number of participants necessarily demand precise coordination, mutual respect and full adherence to the normative legislative procedure which is in force. States of emergencies headquarters have a vital role and they will, in order to complete the task successfully, have to use all the available forces in the best possible way and to make their common task possible and eliminate all possible contradictions.

The main principle of search and rescue is based on cooperation, solidarity, timely response, and well-coordinated activities of all participants in search and rescue system. Only in this way it is possible to unite all the resources and activities directed towards the protection of people’s lives and health, taking care of

animals, preservation of material resources, and protection of the environment. Therefore, the adequate response to contemporary challenges, risks, and safety threats caused by accidents on IW is provided.

5 CONCLUSION

Rescuing people on rivers, lakes, and canals is every act or activity undertaken in order to preserve a ship (boat) or some other property which is in danger on navigable waterways or any other water surface. Bearing in mind the importance of human lives, rescuing people is always obligatory.

However, we see that in the Republic of Serbia search and rescue on water service is currently not at a satisfactory level. There are good examples of organising these services in some of the neighbouring countries. In order for the search and the rescue on water service to be fully developed at a national level some system-normative documents must be formulated, centre and sub-centres must be formed, equipment and personnel must be provided, special units must be established, etc. This is all conditioned by material – financial issues, but the state itself must find a way to fund this important safety aspect on all water surfaces at the territory of the Republic of Serbia, because as it has already been emphasised, the inland navigable waterways of the Republic of Serbia stretch to 1,680 km and a very important international navigable waterway runs through the Republic of Serbia (the Danube River – Corridor 7).

The safety on all water surfaces for human lives is a very important factor, as well as organising search and rescue on water service. River Flotilla, as a unit of the Serbian Armed Forces should have a significant role in forming search and rescue units at a national level. Units of the River Flotilla, with some minor investments and modification of the equipment and devices, could contribute in raising the search and rescue on water in the Republic of Serbia to a higher level.

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