

IMPORTANCE OF THE SAFETY OF NAVIGATION AND SAFETY PROTECTION TO NAUTICAL TOURISM

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SUMMARY

The paper presents the results of research into the state of safety of navigation and safety protection in the ports of nautical tourism, as well as the condition of protection of the sea and marine environment in the Croatian part of the Adriatic.

The authors evaluate the attained level of the development of nautical tourism, the capacities of ports of nautical tourism and their technical-technological limitations, primarily in the light of expecting greater acceptance of bigger vessels and yachts. The paper defines improvement measures for the safety of navigation, safety protection, measures for the protection of the sea and coastal area, pointing to the importance of training in order to avoid maritime accidents. The authors emphasize the importance of establishing the internal structure of the safety of navigation and safety protection in accordance with expected changes.

INTRODUCTION

The term of nautical tourism has been available in the scientific and technical literature for a long time, but its complete and widely accepted definition is still lacking. The definition in the Act on Tourism Activity⁴ considers nautical tourism to be the sailing and stay of tourists-boaters on vessels, as well as their stay in ports of nautical tourism for leisure and recreation. Nautical tourism is also considered as different forms of tourist traffic taking place in the maritime domain and in the ports of nautical tourism, by means of vessels of different sizes

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⁴ Official Gazette 8/96.

and different kinds. In this process, the boater being the sailing subject must have all the navigation documents, while his vessel must have all the certificates required for safe navigation. However, the definition of nautical tourism is not complete in its qualification of tourism as a kind or form, and there are no unique views in this respect. Most of authors consider nautical tourism to be a kind of tourism, or a special form of tourism, some rate it among selective kinds of tourism, others not, and it can also be found within these groups in different classifications according to different criteria. The development of nautical tourism in Croatia is limited by the capacity and technical-technological characteristics of the existing ports of nautical tourism. Increased number of vessels and large yachts in the Adriatic requires changes in the infrastructure and organisation of nautical ports, and sets specific requirements regarding the safety of navigation, safety protection, and protection of the sea and coastal area.

CONDITION OF THE SAFETY OF NAVIGATION AND PORTS OF NAUTICAL TOURISM

The system of the safety at sea⁵ is defined by three basic determinants [6]: authorised personnel, material resources, and organised set of measures, procedures and rules. The active aim of the system is to ensure the safe navigation of ships, yachts and boats, and the protection of marine environment, that is to prevent accidents and other dangers from ships, yachts and boats. The system of the safety of navigation in Croatia is based upon a number of regulations of different legal power, and on the systematic implementation of the provisions of international conventions and agreements relating to the safety of navigation and the protection of marine environment, already adopted by the Republic of Croatia or to be adopted in the near future. Even though the basic activity of the system is chiefly oriented towards ships, the measures and procedures equally refer to nautical tourism vessels, primarily to yachts and boats. The differences in the implementation arise from inability to implement consistently certain principles, which is usually due to technical or technological limitations of vessels. Basic law which regulates the safety of navigation in the Republic of Croatia is the Maritime Code⁶. Besides normative requirements, of particular importance for boaters are also different facilities for the safety of navigation, first of all lighthouses, which have even become popular holiday destinations among boaters, as well as different pilots and other nautical handbooks. They help in defining the most convenient route in an area, in choosing the most adequate port, shelter or anchorage, and in other activities naturally connected with navigation.

The knowledge and skills necessary for the safe navigation are obtained through theoretical and practical learning, and by getting certificates of different kinds and categories. The basic knowledge and skills necessary for steering the vessel of nautical tourism are proved by the certificates of competence.⁷

Many authors deal with the safety of ports of nautical tourism, particularly marinas, investigating the planning, designing and building of marinas by using new technical-technological solutions. Through the use of modern materials and technologies, for example in the pontoon port of nautical tourism, with relatively small interventions it is possible to keep the natural appearance of the shore and ensure the protection of the sea and coastal area. In this process, all technological standards must be observed [7], in order to provide complete safety to vessels and their owners, boaters.

⁵ The term of the safety of navigation system, unless otherwise stated, besides the safety of people and ships, also implies measures for safety protection and protection of the sea and coastal area from pollution.

⁶ Official Gazette 181/04.

⁷ Ordinance on Boats and Yachts, Articles 49 – 68, Official Gazette 27/05, with amendments.

The safety condition in the ports of nautical tourism, according to categories as defined by the Croatian regulations [1], is as follows:

Anchorages provide satisfying level of safety in the summer period. Throughout the rest of the year when the probability of occurrence of bad weather is increased, the safety of ships at anchorage is questionable. For that reason, anchorages should be considered as adequate destinations only in the summer period, while in other parts of the year the traffic there is very low or missing.

Berths are characterized by different levels of safety provided to vessels lying at berth. The berths which are situated in protected bays or within the protected parts of public or other ports ensure a high level of safety, particularly if used by vessels of proper size, and if adequate mooring equipment is used. Such berths provide safe accommodation for vessels throughout the year including wintering.

Marinas offer the highest level of safety to vessels at berth both in the summer when vessels frequently enter and leave port, and in the winter when most of vessels do not have a permanent crew. For the protection of environment, every marina (except 3rd category marinas) must have adequate boats or equipment for efficient elimination of smaller pollution incidents. The marinas built in an area which is not naturally protected from the action of the sea may include parts where berthing is not safe under certain circumstances. In such marinas the impact of waves can be reduced by constructing breakwaters, but when a marina is fully occupied the vessels moored near its entrance may be exposed to damaging effects of the sea.

Leisure ports are mostly used by local inhabitants who are well acquainted with navigational conditions in the port area, so that in terms of safety they are considered to be free from danger.

EXPECTED LINES OF DEVELOPMENT

In the years to come, essential characteristics of nautical tourism are bound to change. The reasons for change are based on the development of technology, the development of economy, and on the change in social circumstances. The influence of new technologies or of the improvement of existing ones should be expected in several areas, particularly in terms of:

- advancement of the technology of construction and maintenance of vessels,
- advancement of the technological support for acceptance of vessels and for providing services in ports or during navigation,
- advancement in the technological areas which are not directly connected with navigation but have a great influence on it (e.g. changes in the construction technology).

In the following years, economic development in Croatia and in the neighbouring Adriatic countries will have a direct influence on the changes in nautical tourism, in the safety of navigation and in the protection of marine environment. Overall economic development will bring about an increased number of domestic and foreign users of the services of nautical tourism, which will result in a higher demand for these services and an expansion of the number and kind of secondary services. On the basis of trends in the last two decades, significant changes in social circumstances can be expected. In this respect, it should be pointed out that an increasing awareness of the need for preservation of natural environment is evident, and consequently the changes in the system of values. Regarding its influence on the nautical tourism, this means that the highly protected areas (such as the eastern coast of the Adriatic) will become much more attractive, and at the same time users of particular areas will change their attitudes towards measures for preservation of natural environment. Market

trends for the vessels of nautical tourism show a gradual but evident rise in size and the level of equipment. Increase in the number of vessels will basically influence the required capacities of ports of nautical tourism, and will result in the further growth of the number of ports of nautical tourism or expansion of the existing ones. In this respect, two kinds of vessels are distinguished:

- vessels using the services of nautical tourism,
- vessels used near the place of residence.

Increase in the number of smaller vessels regularly using the services of the ports of nautical tourism is certain, being nearly equal for motor vessels and sailboats. Even though there are no clear indicators, it is likely that there is a little greater increase in the part of motor vessels. On the other hand, even a small increase in the number of large yachts (for which very modest reception capacities are currently available in the existing ports of nautical tourism) will bring about significant changes in the arrangement and characteristics of berthing places. From a technological point of view, such vessels require the conditions that are usually met by the ports accepting smaller vessels. Two very different manners of use should be distinguished:

- permanent berth of large yachts for accommodation or custody, and
- chiefly navigation along the coast.

Increase in the number of large yachts on permanent berth in the Adriatic marinas and ports will require adequate environment having the characteristics of a fashionable place (luxury hotels and restaurants, casinos, efficient traffic connections, satisfying level of safety protection, etc.), followed by the infrastructure capable of receiving and providing services to such vessels. From the point of the safety of navigation and environmental protection, it should be emphasized that big yachts are operated by skilled and qualified crew sufficient in number, so that their safety level is very high. That is the reason why they contaminate the environment comparatively less than smaller vessels. However, the greater the size of the vessel the lower is their safety level in the existing ports of nautical tourism. The attempts to accommodate the same number of vessels as in earlier times may lead to inappropriate berthing of vessels at places which are not adequate for the particular size of the vessel. This can also apply to the ports under construction or those planned in which it will be necessary to harmonize the former standards with the new ones, particularly regarding the widths of vessels and their classifications. In addition to the above mentioned, other changes are also expected, requiring modifications of the technological organisation of ports of nautical tourism, as follows:

- gradual enlargement of the port resources as expected by its users, particularly regarding maintenance,
- change in the distribution of ownership of the vessels using the port, and
- change in the structure, education and needs of the vessel users.

IMPROVEMENT MEASURES

On the basis of the conducted analysis, it can be concluded that the existing system of the safety of navigation fully meets current as well as expected needs in the forthcoming short-term period. The conditions of the safety of navigation laid down in the valid regulations provide a satisfying level of safety in the ports of nautical tourism, so that no substantial amendments are expected in this respect.

Therefore, further improvement measures for the safety of navigation and protection of the sea and marine environment should be based on the development of new services, first of all through improved maintenance of vessels, providing additional information to boaters, as well as providing complementary services (e.g. towing, repairs, etc.). These measures may be implemented either on a commercial or non-commercial basis. Special attention should be given to the measures which reduce the influence of human error, since such influence is the main cause of maritime accidents of vessels in nautical tourism. In this respect, special attention should be paid to (informal) training measures.

Improvement measures for the safety of navigation

As the condition of the safety of navigation depends in the first place on the number of vessels, and on the sailing area, the period of stay, places to be visited, etc., with the increase of arrivals one should expect a greater number of events in which vessels at sea will ask assistance. The places in which such events are expected to occur are naturally related with the areas of stay, in the first place with famous destinations, and those offering additional services or providing shelter in bad weather. Unfavourable impacts of an increased traffic may be reduced by a number of measures, as follows:

- improvement, monitoring, informing and reporting on weather prospects, and additional informing on local conditions,
- improvements in reporting on local navigational conditions, procedures in case of emergencies, ports of refuge, etc.
- building of the network of service providers,
- modernizing of the communication and information support to vessels at open seas,
- better coverage of waterways and destinations with the vessels of the competent ministry,
- improvement of the search and rescue at sea,
- better medical assistance, especially to divers, and
- greater promptness in the implementation of regulations, according to the level as established in the European Union.

Even though some of these activities are in part the common services provided by the ports of nautical tourism, most of them come within the competence of ministries, and the establishing of the Vessel Traffic Management and Information System (VTMIS)⁸ is certainly significant support for improvement of the safety of navigation of smaller vessels. The monitoring system for boaters during navigation, and during departures or arrivals, including the communication in navigation, is part of the established maritime communication system.

⁸ Implying the system in accordance with the requirements of EU Directive 2002/59.

Improvement measures for the safety protection

The importance of the safety protection is particularly emphasized by the fact that the satisfying level is critical to the economic efficiency. Leisure and recreation are possible only under the conditions of high safety protection, and therefore the above mentioned issues may have adverse effects on overall efficiency of the nautical tourism in the Adriatic. Assuming that in all ports of entry the safety protection system is in accordance with the international requirements [2], the measures for the safety protection improvement in the ports of nautical tourism should be organised on the same bases, taking into account that conspicuous control or excessive surveillance may cause opposite effect. Because of that, it is very important to establish internal structure of the safety protection (safety levels or methods of communication with appropriate services) in a way comparable to the system established in public ports, as provided in the international conventions and related national regulations.

It is therefore proposed to establish and improve:

- the internal structure of the safety protection in a way comparable to the system established in public ports, in accordance with regulations [5],
- technological support for the safety control of people and vessels,
- knowledge of protection measures and education of users of nautical tourism ports in terms of safety protection,
- cooperation with appropriate services in order to practice operations in predictable circumstances.

Most of these activities, like in the case of improvement measures for the safety of navigation, cannot be conducted as commercial activities. Some of them can be conducted in that way with the support of the state and the local government, so that such approach should be taken into account wherever possible. With an increase in the number of vessels, particularly of large high-speed vessels and large yachts, increased volume of jobs should be expected in order to preserve the desired level of safety protection. As most of the users use several ports of nautical tourism during their stay in the Republic of Croatia, considerable improvement can be made by means of uniform implementation of measures and procedures on national level or even on regional level.

Improvement measures for the protection of the sea and marine environment

Measures for the pollution prevention should be based upon increasing the awareness of the need for preservation of environment and systematic implementation of measures by persons providing services to the vessels of nautical tourism. In this respect, we can distinguish the measures for the newly constructed ports or facilities, and the measures appropriate for the existing ports.

In case of the construction of new ports of nautical tourism, the measures for the protection of environment are manifested through the protection of area and the protection of environment from the consequences of the conduct of planned activities. The protection of area requires the compliance with two basic principles: the principle of the least possible encroachment in the area, and the principle of an acceptable impact on the environment.

The principle of the least possible encroachment in the area means that just the area necessary for the conduct of a certain activity is taken. *The principle of an acceptable impact on the environment* implies that no activity at sea shall, in any way, significantly affect the living world in its close vicinity or change essential properties of the marine environment.

The prevention of pollution of the sea and coastal area in the first place refers to the pollution resulting from the release of black and grey water from vessels and waste. In principle, the

pollution prevention in ports comes within the competence of who manages the port. The measures which are equally suitable to the new ports of nautical tourism as well as to the existing ones are as follows:

- promotional actions for the growth of awareness of the need for environmental preservation,
- placing of sufficient number of containers for oily water and waste, especially near attractive destinations,
- more frequent control of anchorages by the boats of harbour master's offices,
- imposing a ban on the release of oily water and faecal discharges in certain areas and marking it with relevant notices,
- issuing concessions for the collection of waste in unmonitored bays and anchorages.

Improvement measures for the training of boaters

The information on maritime accidents in the last years leads to a conclusion that the main cause of maritime accidents of boaters in the Adriatic is mostly inadequate training or insufficient experience. For that reason and because of the fact that training is the main factor which helps to reduce the consequences of human error, it is proposed that training of all participants, particularly boaters, is improved through:

- systematic informing,
- encouraging of professional upgrading,
- encouraging of the activities of boaters' associations and promoting the principles of the safety of navigation and environmental protection through helping such associations,
- promoting of competitions,
- promoting the knowledge of structure and work of services which participate in rendering assistance and performing the tasks of pollution prevention.

Some of the above mentioned activities may be managed independently and successfully on a commercial basis, while some of them may be closely connected with promotional activities at the state level.

CONCLUSION

The safety of navigation and the safety in ports of nautical tourism in the Adriatic are regulated by numerous regulations which are largely based on international laws and systems, and can be considerably harmonised at regional level as well. Implementation of these regulations requires a well organised system of maritime administration or of all other subjects responsible for the safety of boaters in navigation and during their stay in ports of nautical tourism, either on a commercial or voluntary basis. Particular attention should be paid to the safety protection, which in large part indirectly influences the management efficiency of the ports of nautical tourism.

In this respect, technological support to the control of the safety of people and vessels must be constantly improved, in the first place through informing the users of nautical tourism ports about the protection measures, and through a better cooperation with the appropriate services, particularly regarding the practise of actions to be taken in case of safety threats.

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BIOGRAPHY

Damir Zec, born in 1959, obtained his Master Mariner certificate in 1985, MSc degree in 1992, and a PhD in 1994. He joined the Faculty of Maritime Studies, University of Rijeka, in 1986. Now he is a full professor, teaching subjects mainly related to safety of navigation, security and pollution prevention. He has been actively involved as external advisor to the Croatian Ministry responsible for safety of navigation, maritime security and pollution prevention as well as an expert on behalf of IMO and EC in the same fields. He has actively participated as lecturer at numerous international venues as well as a guest lecturer at several academic institutions, mainly in Europe.

Mirjana Kovačić, born in 1960, graduated from Faculty of Economics Rijeka in 1983 and obtained her MSc degree at Faculty of Maritime studies Rijeka in 2004. She has been working as a correspondent, as a commercialist, as a commercial director and as a representative director representation of foreign companies and now she is working in Primorsko-goranska county as expert assistant for maritime affairs and concessions. She has obtained her computer certificate (basic and advanced course) at Faculty of Engineering and Certificate of English and Italian Language (conversation course) at school of foreign languages. She has participated on 3 national and 3 international assemblies. She is also an assistant for the production of The Study of Nautical Tourism and two other projects. So far 26 her publications have been advertised and published.

Srećko Favro, born in Split, graduated as an engineer of the naval traffic – maritime management. He completed postgraduate study „Geographic basis for lateralization of Croatia“. He is an adviser for nautical tourism at Hydrographic institute of Republic of Croatia. Also is Sworn court marine expert and assessor and member of International institute of marine surveying. Consultant – Lead auditor QMS ISO 9001:2000. He is author of many scientific and technical papers in nautical tourism. Executive director of the project „Study of Nautical Tourism Development in Croatia“ by Government of the Republic of Croatia. He is passionate sailor with oceanic experience.