

DISTRIBUTION OF MARITIME SAFETY INFORMATION – RADIO NOTICES IN THE PERIOD 2001 – 2005

Josip Kasum, Sc.D.¹,
Senior lecturer

Kristina Vladislavić²,
Graduate Engineer

Paško Ivančić,³
Graduate Engineer

ABSTRACT

The full implementation of GMDSS requires also a detailed understanding of the concept of maritime safety information. The concept of national coordinator for maritime safety information has also been described, including the analysis of these.

The analysis comprised the original data relating to the distribution of radio notices in Croatia in the period 2001 – 2005, referring in particular to: COASTAL/NAVAREA, COASTAL/NAVTEX and LOCAL.

This paper also indicates the crucial importance of high level of reliability of maritime safety information in automated technical/technological processes and of acquiring satisfactory equipment of the services, which participate in the distribution of maritime safety information. The analysed issues indicate the need to conduct further scientific research.

INTRODUCTION

The Ministry of maritime affairs, traffic and communications has, pursuant to the main document of the world service of navigational notices IHO/IMO (WWNWS No. 53) – 1996 (1 WWNWS No 53 – 1996 is a joint IHO/IMO/WMO Manual about maritime safety information. It contains recommendations about providing such notices by dividing them to subsystems. It also includes recommendations about producing radio notices and communicational needs of coordinators.

), Clause 2.1.8., 6.5. and 6.6., and the IHO/IMO/WMO Maritime safety information manual, Clause 2.6.4., of 19th April 1996, appointed the national coordinator for navigational notices and informed about it the International Hydrographic Organisation and the International

¹ Maritime faculty Split (Zrinsko - Frankopanska 38)
Croatian Hydrographic Institute, Split (Zrinsko- Frankopanska 161)
e-mail: jkasum@pfs.hr

² Croatian Hydrographic Institute, Split (Zrinsko- Frankopanska 161)
e-mail: kristina.vladislavic@hhi.hr

³ Croatian Hydrographic Institute, Split (Zrinsko- Frankopanska 161)
e-mail: pasko.ivancic@hhi.hr

Maritime Organisation. National coordinator is a national organisation responsible for classification and publication of notices and information relating to the safety of navigation.

The concept of national coordinator assumes the use of appropriate technological tools and the work of expert personnel during the 24-hour navigational safety service, aimed at collecting, producing and distributing radio notices. National coordinator must have accurate information available.

MARITIME SAFETY INFORMATION

In general, maritime safety information is defined as navigational and meteorological reports and other messages, referring to safety, which are of vital significance for all ships in the sea.

The analysis of IHO/IMO/WMO maritime safety includes the following elements:

- navigational warnings,
- meteorological warnings,
- reports about ice,
- information related to search and rescue,
- weather forecasts,
- messages relating to pilot services (except the USA),
- updating messages relating to electronic navigational systems.

The service of maritime safety information is an internationally harmonised network of broadcasting maritime safety information collected from various sources, most significant being the following:

- National hydrographic bureaus (navigational warnings and updates of electronic charts);
- National meteorological bureaus (meteorological warnings and weather forecasts);
- Centres for coordinating search and rescue (distress signals coast – ship and other urgent information);
- International patrols for watching ice in North Atlantic (ice related hazards).

The exclusive authorised sources of maritime safety information approved by IMO or WMO are authorised to dispatch maritime safety information.

According to the IHO/IMO Manual (WWNWS No.53.), all navigational safety notices are classified as:

- NAVIGATIONAL WARNINGS,
- METEOROLOGICAL INFORMATION, and
- SEARCH AND RESCUE.

WWNWS and COMSAR/CIRC 4 determine providing radio notices in such manner that the competent organisations maintain the sections of the IMO/IHO/WMO Manual referring to each of them.

Thus the following refers to each category of radio notices:

- Navigational warnings must be published in accordance with the WWNWS No 53 standards, organisation and procedures, in accordance with IHO official guidelines through its Committee for dispatching radio navigational warnings (COMSAR/CIRC 4 Annex, Clause 2.5.1.), (Performed by Croatian Hydrographic Institute - NO).

- Meteorological information must be published in accordance with technical regulations and recommendations of the World Meteorological Organisation (Performed by Maritime Meteorological Centre – PMC).
- Distress alarms must be given by various administrative bodies (COMSAR/CIRC 4, Clause 2.5.3.) responsible for the coordination of search and rescue operations, according to the standards determined by IMO (at present performed by LK, ORPs, Croatian Navy (HRM), and by Coast guard in the future).

2.1. Distribution of radio notices for the area of Croatia in the period 2001 – 2005, and the analysis of the types COASTAL/NAVAREA, COASTAL/NAVTEX and LOCAL
 NAVIGATIONAL WARNINGS

Navigational warnings are divided to:

- COASTAL/NAVAREA,
- COASTAL/NAVTEX,
- LOCAL.

NAVAREA notices contain data about the safety of navigation for open seas and along main navigational routes, and are sufficient to ships navigation in the open sea. They are broadcasted in English and Spanish language.

COASTAL notices contain data about a particular coastal area and often supplement NAVAREA notices. They are dispatched in the English language and in the language of the country which distributes them. They are broadcasted through NAVTEX programme and telephone.

LOCAL notices refer to ports and areas close to the coast and supplement coastal notices. They are broadcasted in the language of the country which distributes them. Urgent notices are also distributed, after being announced in Channel 16. The announced urgent notices are later broadcasted through the channels of coastal radio stations.

The analysis and the sources of navigational warnings are the basis of the table presentation of radio notices distribution in Croatia in the period 2001 – 2005.

TABLE 2.1.1 Navigational warnings 2001

SOURCE/KIND	PA PU.	PA RI.	PA SEN.	PA ZAD.	PA ŠIB.	PA SPL.	PA PLO.	PA DUB.	PLOV-PUT	HYDR.IN ST.	MMTP R
COASTAL/NAVAREA	4	4	-	3	2	3	-	2	-	-	-
COASTAL/NAVTEX	19	19	-	13	21	21	-	5	1	1	-
LOCAL	19	32	2	22	46	68	2	17	-	-	-
TOTAL	42	55	2	38	69	92	2	24	1	1	-
TOTAL	326										

Source: prepared by the authors according to original NO-HHI data.

TABLE 2.1.2 Navigational warnings 2002

SOURC E/KIND	PA PU.	PA RI.	PA SEN.	PA ZAD.	PA ŠIB.	PA SPL.	PA PLO.	PA DUB.	PLOV- PUT	HYDR.IN ST.	MMTPR
COASTAL/ NAVAREA	4	3	1	-	1	-	-	5	-	3	-
COASTAL / NAVTEX	10	11	2	18	9	27	1	15	-	4	1
<i>LOCAL</i>	5	22	1	28	26	55	4	11	4	-	-
TOTAL	19	36	4	46	36	82	5	31	4	7	1
TOTAL	271										

Source: prepared by the authors according to original NO-HHI data

TABLE 2.1.3 Navigational warnings 2003

SOURC E/KIND	PA PU.	PA RI.	PA SEN.	PA ZAD.	PA ŠIB.	PA SPL.	PA PLO.	PA DUB.	PLOV- PUT	HYDR.IN ST.	MMTPR
COASTAL/ NAVAREA	2	1	-	-	3	2	-	4	2	1	-
COASTAL / NAVTEX	6	4	1	4	5	20	-	5	-	-	-
<i>LOCAL</i>	8	24	2	33	19	70	9	27	-	-	-
TOTAL	16	29	3	37	27	92	9	36	2	1	-
TOTAL	252										

Source: prepared by the authors according to original NO-HHI data

TABLE 2.1.4 Navigational warnings 2004

SOURC E/KIND	PA PU.	PA RI.	PA SEN.	PA ZAD.	PA ŠIB.	PA SPL.	PA PLO.	PA DUB.	PLOV- PUT	HYDR.IN ST.	MMTPR
COASTAL/ NAVAREA	1	1	-	2	2	3	1	1	-	-	-
COASTAL / NAVTEX	2	2	2	3	3	10	-	-	-	2	-
<i>LOCAL</i>	13	31	3	56	54	72	7	14	4	2	-
TOTAL	16	34	5	61	59	85	8	15	4	4	-
TOTAL	291										

Source: prepared by the authors according to original NO-HHI data

TABLE 2.1.5 Navigational warnings 2005

SOURC E/KIND	PA PU.	PA RI.	PA SEN.	PA ZAD.	PA ŠIB.	PA SPL.	PA PLO.	PA DUB.	PLOV- PUT	HYDR.IN ST.	MMTPR
COASTAL/ NAVAREA	-	1	1	4	-	2	-	2	2	-	-
COASTAL / NAVTEX	7	5	1	5	7	5	1	2	3	-	-
<i>LOCAL</i>	19	24	2	42	49	32	2	12	7	14	-
TOTAL	26	30	4	51	56	39	3	16	12	14	-
TOTAL	251										

Source: prepared by the authors according to original NO-HHI data

2.2. Port authorities

In order to identify the characteristics of distribution it is necessary to investigate the results of the statistical analysis of distributed radio notices in the period of five years, presented in graphic form and classified according to the source and to the analysis of radio notices taken separately and as a whole. Port authorities are organised in their geographical order in Croatia, from the north (N) to the south (S).

Pula Port Authority

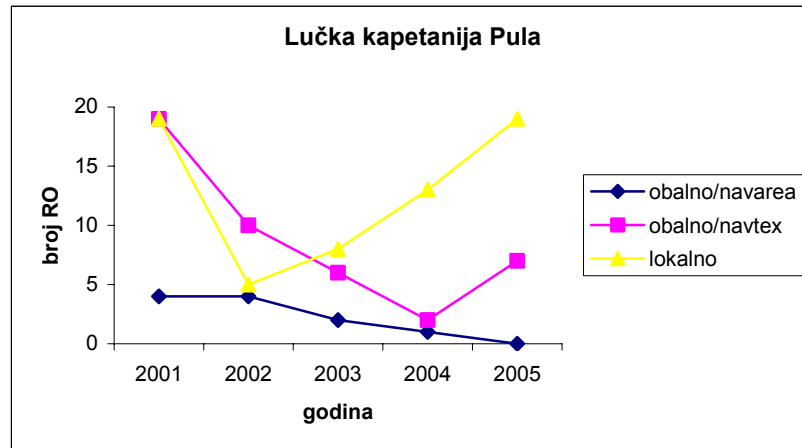


Figure 2.2.1 Distribution of radio notices in Pula

In Pula Port Authority a continuous growth of radio notices of the category LOCAL has been registered in the period from 2002 to 2005. Radio notices COASTAL / NAVTEX oscillate, with a decline from 2001 to 2004, and increase in 2005. Radio notices COASTAL / NAVAREA are in a decline.

Rijeka Port Authority

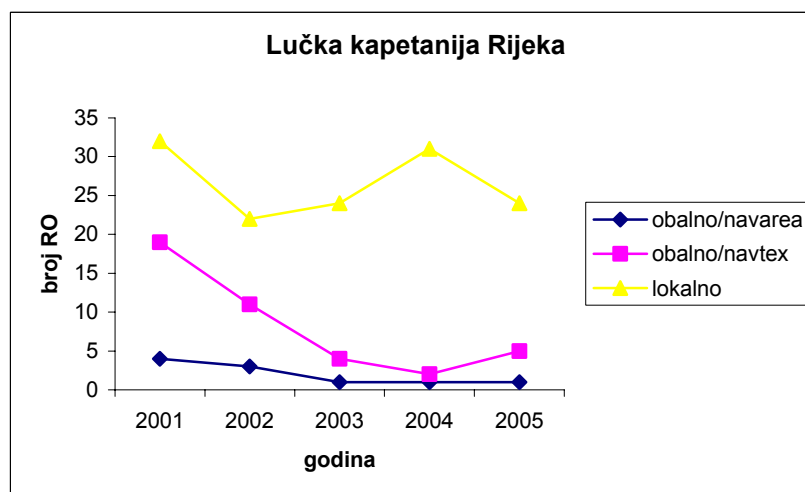


Figure 2.2.2 Distribution of radio notices in Rijeka

In Rijeka Port Authority there is an increase of radio notices of the type LOCAL in period from 2002 to 2004, after that decrease in 2005. Radio notices COASTAL/NAVTEX were decreasing until 2004, then increasing in 2005. Radio notices COASTAL/NAVAREA are in a constant and slight decrease until 2003, after that there are constant.

Senj Port Authority

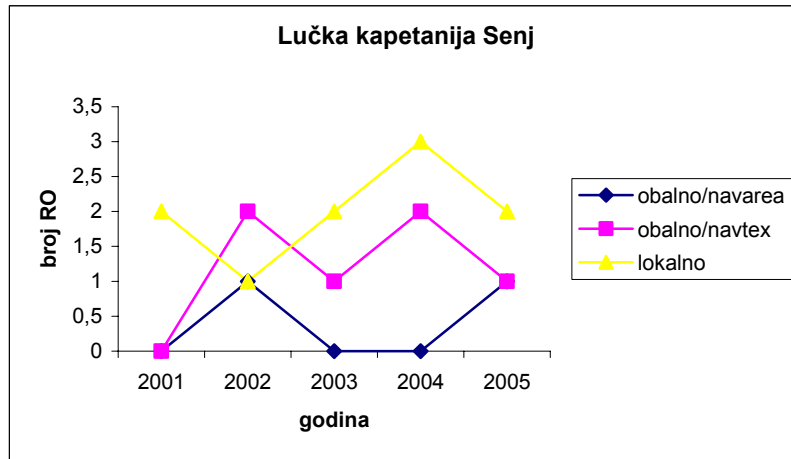


Figure 2.2.3 Distribution of radio notices in Senj

In Senj Port Authority there was an increase of radio notices COASTAL/NAVTEX in 2001/2002, decrease in 2003, a growth again in 2004, and a fall in 2005, but still higher than in 2001. Radio notices LOCAL are decreasing in 2002, after that increasing till 2004, and fall in 2005. Radio notices COASTAL/NAVAREA increased in the period 2001-2002, decreased in 2003, decreased again in 2004 and retained the same level in 2004, after grow in 2005.

Zadar Port Authority

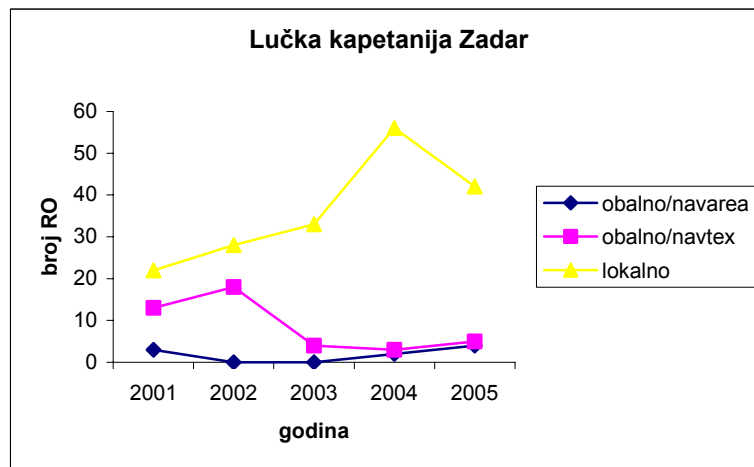


Figure 2.2.4 Distribution of radio notices in Zadar

In Zadar Port Authority there was first an increase of radio notices of the category LOCAL until 2004, to be followed by a decrease. Radio notices COASTAL/NAVTEX are increasing in 2004, to decrease after. Radio notices COASTAL/NAVAREA were decreasing until 2003, to increase in 2004/2005.

Šibenik Port Authority

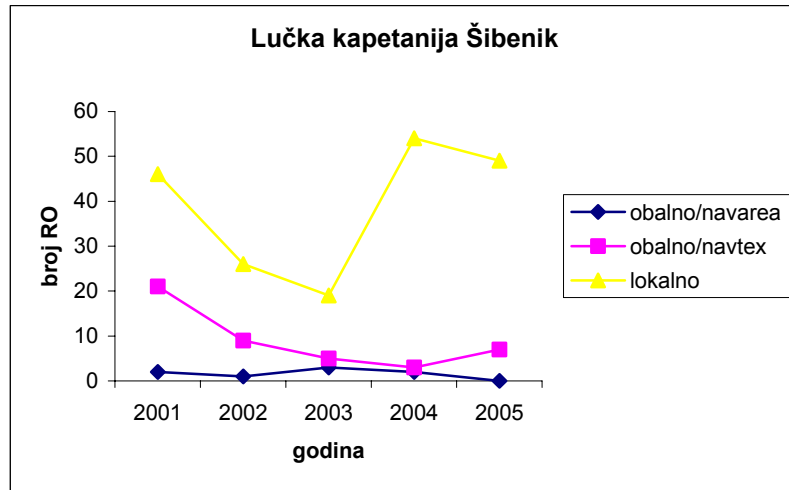


Figure 2.2.5 Distribution of radio notices in Šibenik

In Šibenik Port Authority radio notices of LOCAL category was decrease to 2003, and then an increase in 2004. Radio notices COASTAL/NAVAREA were slightly increasing until 2003, followed by an decrease in 2004 and a decrease in 2005. Radio notices COASTAL/NAVTEX were followed by a decrease from 2001 to 2004, to increase in 2005.

Split Port Authority

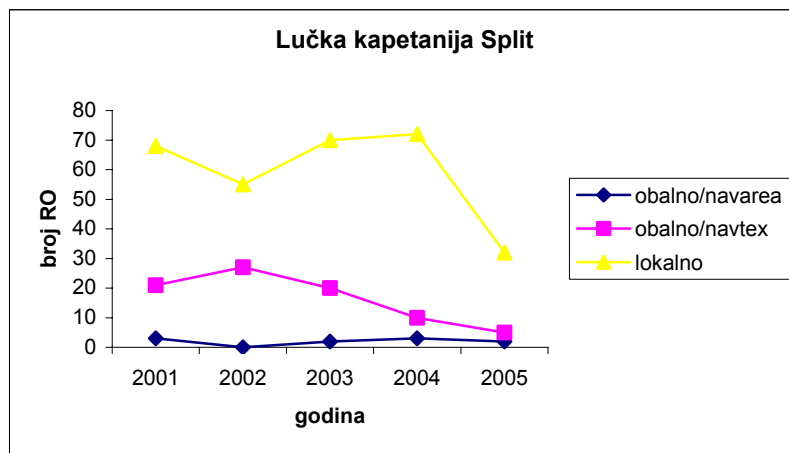


Figure 2.2.6 Distribution of radio notices in Split

In Split Port Authority there is a decrease of radio notices COASTAL/NAVTEX in 2002-2005. Radio notices of the category LOCAL a decrease in the period 2001/2002, to be followed by an increase in 2002 – 2004 and decrease in 2005. COASTAL/NAVAREA radio notices mainly remained at the same level, slightly increasing in 2004 and decreasing back to the same level in 2005.

Ploče Port Authority

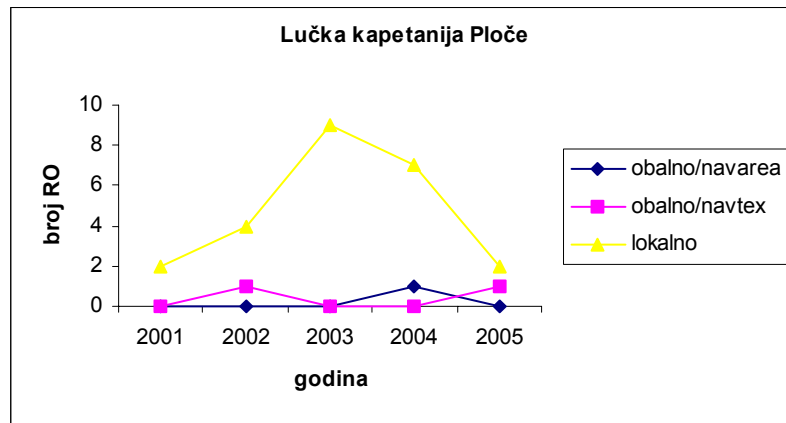


Figure 2.2.7 Distribution of radio notices in Ploče

In Ploče Port Authority there was an increase in the number of radio notices LOCAL till 2003 followed by a decrease in 2003-2005. Radio notices COASTAL/NAVAREA and COASTAL/NAVTEX slightly oscillated in observed period.

Dubrovnik Port Authority

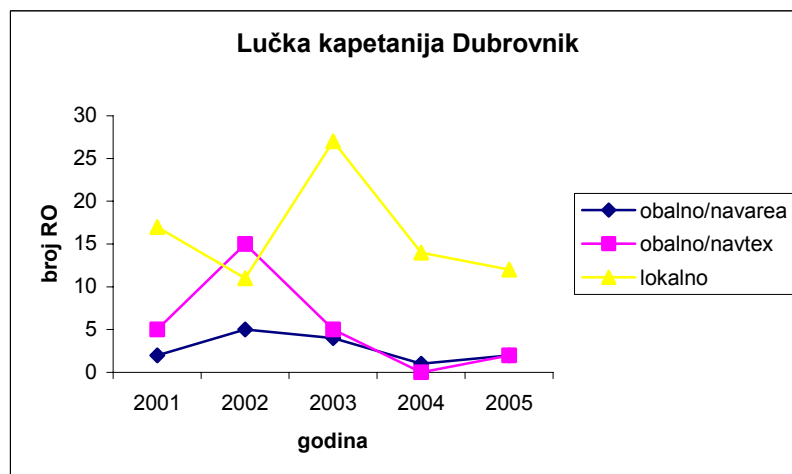


Figure 2.2.8 Distribution of radio notices in Dubrovnik

In Dubrovnik Port Authority there is a increase of radio notices COASTAL/NAVTEX in 2003, following a decreasing till 2004, and after increase in 2005. COASTAL/NAVAREA slightly oscillated and LOCAL were decreasing in 2001/2002, increased in 2003 and decreasing again in 2004, 2005.

Other sources

Other sources of radio notices are:

- Institution for maintaining navigational routes PLOVPUT, Split,
- Croatian Hydrographic Institute, Split
- Ministry of the sea, tourism, traffic and development, Zagreb, and
- Others.

Institution for maintaining navigational routes PLOVPUT

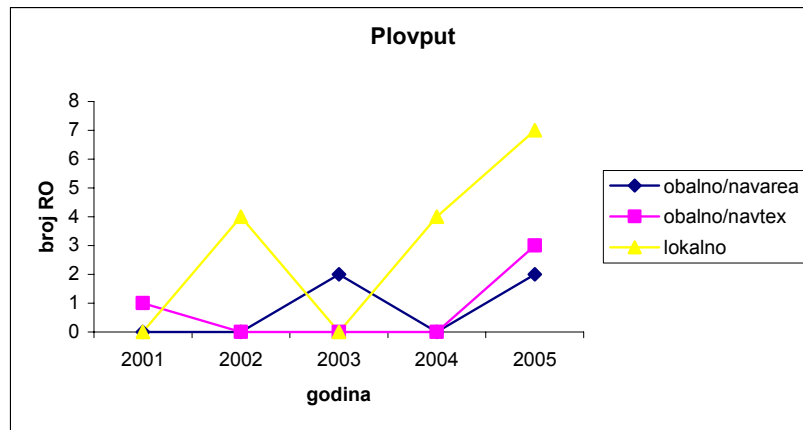


Figure 2.3.1 Distribution of radio notices by Plovput

The total number of radio notices broadcasted by Plovput is oscillated, and at the end of observed period are increasing.

Croatian Hydrographic Institute

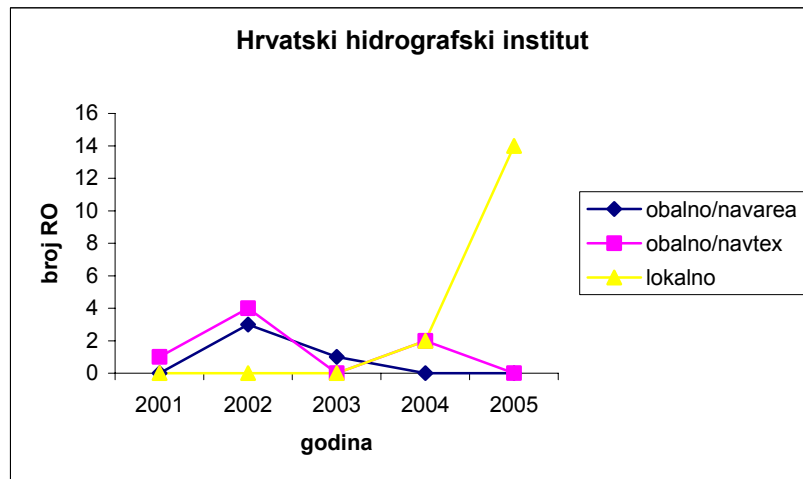


Figure 2.3.2 Distribution of radio notices by the Croatian Hydrographic Institute

The increase of radio notices LOCAL especially in 2004 to 2005. Other category oscillate.

Ministry of the sea, tourism, traffic and development (MMTPR)

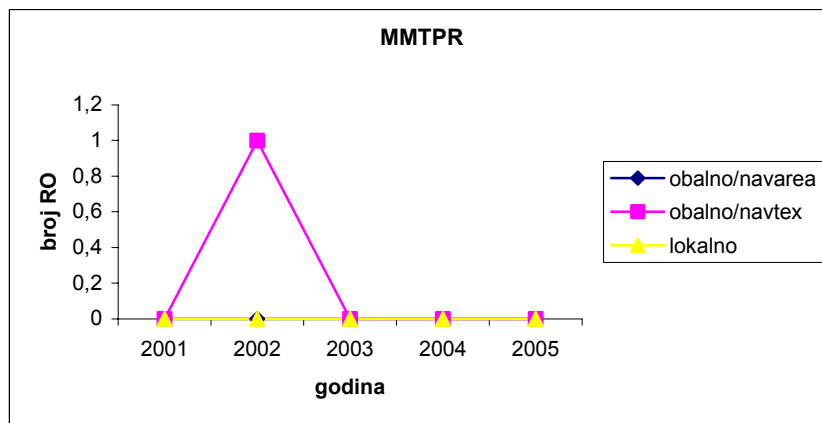


Figure 2.3.3 Distribution of radio notices by the MMTPR

Ministry of the sea, tourism, traffic and development has the right to broadcast radio notices in special circumstances (e.g. when the occurrence refers to the whole territorial sea of Croatia), which explains the low number of radio notices by the Ministry of the sea, tourism, traffic and development in the observed period.

2.4. Distribution of radio notices in Croatia, for all factors, according to the analysis, for the period 2001 – 2005

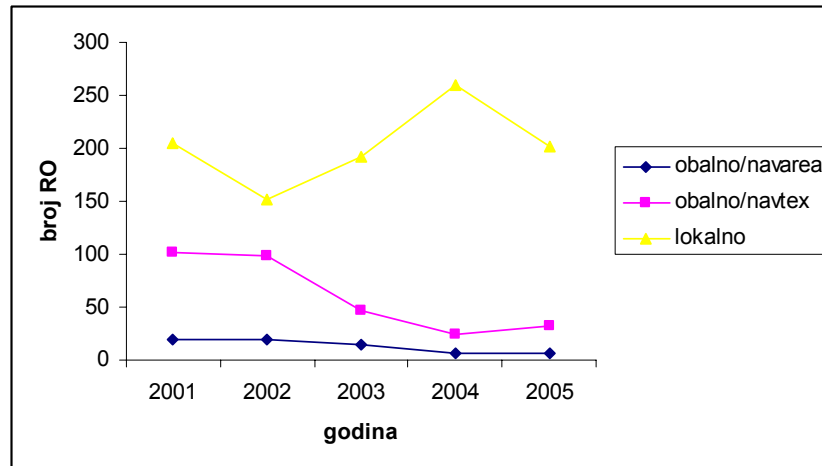
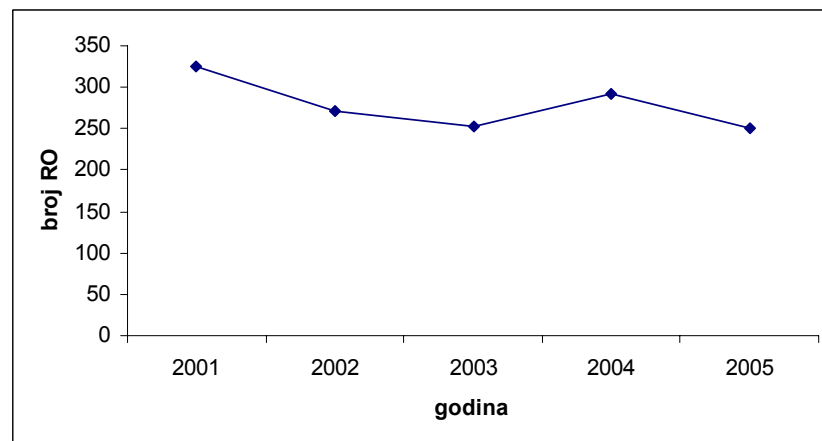


Figure 2.4.1 Distribution of all radio notices, according to the analysis

The number of LOCAL radio notices are decreasing in 2001/2002. followed by increase till 2004., after they decrease again. COASTAL/NAVTEX decreased in 2002-2004, slightly increased in 2005. The number of COASTAL/NAVAREA radio notices slightly decrease till 2005.



Total number of distributed radio notices for the period 2001 – 2005 in Croatia shows the oscillation in 2002 and an increase in 2004/2005. The growth can be explained by extended works at navigational safety objects: lights, jetties, coast etc., hydrographic and other researches, and by increased traffic in the Adriatic.

TABLE 2.4. Radio notices - average

YEAR	AVERAGE
2001	0.89315
2002	0.74247
2003	0.69041
2004	0.79726
2005	0.68767

The presentation of the average distribution of radio notices in Croatia in the observed five-year period indicates the fact that on average a minimum of one radio notice is broadcasted in two days, while in some of the years the average shows almost one radio notice a day. The number of consultations of the national coordinator personnel provided by means of telephone or telefax cannot be precisely defined, but it can be asserted that they are provided on daily basis. Consultations may become the basis for a radio notice to be broadcasted or not. The purpose of the study of the radio notices distribution average is to point to commercialisation trends, which may refer to ORPs as well (existence or not). On the basis of an insight into the radio notices distribution average, previous analysis of radio notices distribution and an insight into hazards for human lives at sea, it becomes obvious that the services for supplying maritime safety information to mariners is indispensable. These segments need to be separated from general trends, respecting the principle that everything that serves to the safety of human life at sea should not be commercialised².

Further researches

The previous analysis of the original data allowed understanding of the issue of distribution of maritime safety information. It opened space to further scientific researches which relate to the analysis of the data, the analysis of the content of radio notices, understanding of the number of the of particular categories of radio notices, the speed needed for eliminating failures within the navigational area of port authorities, the frequency of certain hazards, the estimation of safety of navigation in navigational areas based on the distribution according to the time of occurrence and/or season.

² The premise that someone might charge all telecommunication services (distress and general communication) prompted IMO to pass the Resolution A.707. (17) which defines which communication forms must be provided free of charge.

CONCLUSION

Human life is jeopardised to the greatest extent in maritime traffic means. In automated technological processes (increasingly in use for conducting ships) the reliability of information has crucial importance for the lives of people included in the process. Maritime safety information needs to be sufficiently reliable in order to obtain the satisfactory level of the ship from information aspect. The analysis of distribution of radio notices based on original data in Croatia, and the analysis of the categories of LOCAL, COASTAL/NAVAREA and COASTAL/NAVTEX for the observed period of five years undoubtedly proves the extreme importance of services which provide such information. It is necessary that the services included in the distribution of safety information, in accordance with the technology and GMDSS requirements, are brought to the level of reliability required by automatic processes. It is also necessary to conduct further researches indicated in this paper. The researches will provide understanding about the estimation of safety of navigation along the navigational areas based on the distribution of radio notices analysed in terms of port authorities, seasons and months, with the presentation of frequency of broadcasting about particular kinds of hazards and the speed of eliminating them or of their termination.

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