

MILOJKA POČUČA, D.Sc.
Fakulteta za pomorstvo in transport
Portorož, Pot pomorščakov 4

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PROPOSITION FOR RESEARCH ACTIVITIES IN THE AREA OF MARITIME TRANSPORT IN THE REPUBLIC OF SLOVENIA

SUMMARY

The paper shows the maritime system of the Republic of Slovenia and its weakpoints, mainly as a result of the transition and gaining of independence. The second heading describes research activities in the area of the maritime system of the Republic of Slovenia during the period from 1992 to 1995. The third heading gives a brief review of the EU maritime policy and description of Research & Development projects that are intended as guidelines of the EU maritime policy. In conclusion, the author presents a proposal of the themes and procedures of scientific research projects in the area of maritime activities of the Republic of Slovenia.

1. INTRODUCTION

Over the last two years a document on maritime transport policy is being prepared in the Republic of Slovenia and its final version will most probably be accepted by the beginning of 1998. One of the targets mentioned in the contributions for a transport policy in the proposals prepared hitherto is the acceptance of basic goals and principles of the European Union transport policy, to which Slovenia is expected to belong as a member nation by the beginning of the year 2000. For the purpose of realising the goals of the transport policy, scientific and research teams of experts have been working within the framework of the Research & Development program. The results of the projects within the R&D program would serve to further enhance the EU transport policy. Within the structure of the R&D program, among other things, special research is dedicated to problems connected to the administration of maritime policy of the EU. Having the knowledge of the guidelines of development of EU's maritime policy and an understanding of the studies used to direct the course of the Union's maritime policy, this paper intends to analyse the problems of the maritime system of the Republic of Slovenia and by doing so, to propose research work whose results would be of assistance in conducting the maritime policy of Slovenia.

The contents of this paper are described under five headings. The introduction is followed by a description of the maritime transport system of the Republic of Slovenia. The third section gives an account of scientific research in the area of maritime activities in the Republic of Slovenia carried out in the Republic of Slovenia during the period since its independence to the present day. The fourth section briefly covers the maritime policy of the European Union and quotes the research projects of the R&D program for conducting the EU maritime transport policy. The conclusive heading proposes the topics of discourse and general contents of scientific research projects which ought to be of assistance in conducting the maritime policy of Slovenia.

2. MARITIME TRANSPORT SYSTEM OF THE REPUBLIC OF SLOVENIA

The Republic of Slovenia is a maritime country of the Mediterranean whose 46 kilometer long seacoast is located in the northern part of the Adriatic Sea bordering with Croatia and Italy. On gaining its independence, Slovenia established her maritime transport system which can be evaluated as an integral system with all its subsystems, i.e. transporting system, shipping activities, system of port terminal activities and system of building, maintaining and managing the maritime sea route. The maritime transport system of Slovenia is regulated by the Maritime and Inland Waterways Navigation Act Ur.1.SFRJ No.22/77, 18/82, 30, 85, 80, 89 and 29/90 taken over from the former Yugoslavia, as well as by the Law on Organisational Activities of Ministries, Ur. 1.71/94 which regulates the activities of the Ministry of Transport & Communications, Administration of the Republic of Slovenia for Maritime Affairs which include the Harbour Master's Office of the Port of Koper.

Within the group of basic maritime systemic laws, Slovenia also has a Law on Safety of Maritime and In-

land Navigation, Ur. 1. SRS No. 17/88, a Seaport Act, Ur. 1. SRS, No. 7/77, 29/86, which were previously republican laws in the former state. The new Law on Public Utility Companies, Ur. 1. RS No. 32/93, among other things, defines port terminal activities, designating it as a public utility service, whereas the port structure is defined as state-owned, in other words as the property of the municipality. The old and new laws are in some fields, especially in the spheres of maritime administration, port terminal activities and port terminal management, in mutual collision. For this reason preparations for a new Maritime Code, which would completely replace the mentioned laws, have been under way in Slovenia for several years now.

On the international plane, Slovenia is connected to the world's maritime system through her acceptance, up to the moment of gaining independence, of all the ratified international maritime conventions and other international maritime acts of ex-Yugoslavia, and has joined all the international maritime organisations of which the former state was a member.

In the maritime system of Slovenia's structure of ship transport activities, there is one cargo shipping company, Splošna Plovba. This enterprise with its fleet of 17 vessels, average ship age being 16 years, and a total carrying capacity of 522 976 dwt, participates in the world's merchant fleet with abt 0.08%. The shipper predominantly operates on the world's tramp steamer market. A few years ago this shipping company was in a difficult financial situation, overburdened with credits, most of which were a consequence of negative exchange rate differentials between the Japanese yen and the USD, and the regime's policy of reprogramming the governmental credit commitments of the former state. Under such circumstances, Slovenia chose financial rehabilitation of the shipping company which, in the process of reformulating of ownership, became a joint stock company owned by the state. It was cheaper to implement the financial rehabilitation of the shipping company (namely, to reduce the load on the government budget) by getting Splošna Plovba sister company, Genshipping with headquarters in Liberia, to register the ships of the enterprise under foreign flags, or the so-called flags of convenience (f.o.c.). This move enabled running the shipping business at reduced operating costs, thus creating a possibility for competitive operation on the world's tramp market. The economic system of Slovenia is for the time being such that due to higher customs on fuel and operating supplies, due to crew costs (although the ships of Splošna Plovba are manned by Slovenian seamen), due to higher interests on credits and higher taxes, under the Slovenian flag the shipping company would be exposed to higher operating costs and lower profit realisation, in other

words, to a loss. It is interesting that the world transport workers union (FTI) approved a lower cost of labour price for Slovenian seamen as labour from underdeveloped countries (80% below the lowest FTI price). In light of the Slovenian labour legislation, the cost of labour for the Slovenian seamen would still be higher than under the f.o.c. An analysis of the conditions of business operations under the Slovenian flag has shown that according to the valid Maritime & Inland Waterways Navigation Act, the mortgage institution is rather unclearly defined and regulated. [1]

The Slovenian port system consists of three public ports open for inland and international cargo and passenger traffic, (ports of Koper, Izola and Portorož), several marinas and a few local boat basins. The port of Koper is the most significant economic subject of the maritime system of Slovenia. In 1996 the Port had a turnover of 6.5 million tons, of which 63% was transit for Austria, Hungary, the Czech Republic, Slovakia, and Switzerland. A reshaping of property rights of the Port took place in conformity with the Law on Public Utility Companies. The port's infrastructure was declared the property of the state, while the superstructure and cargo handling facilities became the property of the joint stock enterprise of the Port of Koper (Luka Koper), which was given government concession to perform port terminal activities. The state is, to a large degree, likewise an owner of the enterprise Luka Koper, as a 51% shareholder, of which 49% are priority shares and 2% are ordinary shares. The Port operates successfully, in spite of the nearness of the two competitive North Adriatic ports of Rijeka and Trieste. One of the advantages of this port in relation to the neighbouring competitive ports is its potential for spatial expansion. The greatest drawback of the port is its relatively inferior connections with the hinterland. Road connections with the capital of Slovenia and with neighbouring countries that gravitate towards the port are deficient, and the Koper-Divača railway line is a single track line. According to the national road construction program, by the year of 2000 Koper will be linked to Ljubljana and further on to the border crossings with Austria and Hungary. During the period between 2000 and 2005, according to the national program for modernisation of the railway infrastructure of Slovenia, another Koper-Divača railway line is to be built, in addition to 30 kilometers of a line which will connect the railway network of Slovenia directly with Hungary. The Slovenian national program of modernisation of its railway infrastructure also foresees to capacitate the entire length of the Koper-Austria line, and later the Koper-Hungary and Koper-Croatia lines, for combined multimodal transport, an imperative of contemporary transport needs and demands of the EU.

The maritime passenger traffic in Slovenia is in the function of tourism and for the time being the capacities of passenger ports satisfy the needs of daily tourist travel. Thinking about the possibilities of attracting seafaring round trips, a section of the port of Koper should be capacitated for berthing and reception of cruising ships.

The safety of maritime traffic in the Slovenian waters has for the time being been evaluated as satisfactory. Greater dangers exist in the course of the summer when there are sometimes up to a thousand sailing craft daily sailing in the bay of Piran. One of the problems of the sea in Slovenia is the still undefined sea border with Croatia, which to some extent disturbs the defining of the areas of jurisdiction and responsibility of the maritime authorities of Slovenia for the safety of navigation. The territorial sea of Slovenia is located in the Gulf of Trieste which has a very dense maritime cargo traffic generated by the ports of Trieste and Koper. The neighbouring countries have a joint agreement to undertake interventional action in cases of sea pollution.

Being a maritime country, Slovenia also has a system for education of marine personnel. There is a secondary school for maritime studies in Portorož as well as the Faculty of Maritime Studies and Transport, whose maritime department provides training of future deck and engine officers. The educational program is in conformity with the SCWT Convention. It is figured that there are approximately one thousand seamen living in Slovenia today who navigate on ships of the Slovenian shipping company and on foreign ships. Their labour rights are in conformity with the ITF, who have a branch office in Slovenia. As already mentioned, according to ITF, Slovenian seamen are 80% below ITF's cost of labour, thus enabling the Slovenian seamen, who are highly esteemed for their capabilities, greater job finding possibilities.

3. SCIENTIFIC RESEARCH IN THE AREA OF MARITIME ACTIVITIES IN THE REPUBLIC OF SLOVENIA

Scientific research in the field of transport, therefore in maritime activities in Slovenia as well, are chiefly financed by the Ministry of Science & Technology and the Ministry of Transport & Communications. The types of projects as classified by the Ministry of Science and Technology are:

- scientific research
- targeted development programs
- research development programs co-financed by the MST

and as of 1994, the Ministry classifies projects as follows:

- basic research projects
- operative projects
- development projects
- budget subsidy for research and development activities from other ministries

Besides the mentioned ministries, research and development activities in the area of transport and maritime activities are also financed by independent operators in the transport business, international organisations, and certain countries within the framework of multilateral and bilateral support to countries in transition.

The Ministry of Science and Technology has, independently or in co-financing with other ministries and business operators, financed projects that are related to the technical, technological, organisational, legal, logistic and economic realms of various branches of transport or of the traffic system and traffic policy as a whole.

Table 1 - Structure of financing scientific research activities in the area of transport in the republic of Slovenia for the period from 1992 to 1995

(in Sit)

	1992	1993	1994	1995	total in the branch of transport
railway	3 618 663	7 301 702	6 000 231	9 951 398	26 871 994
road	3 363 191		5 364 701	38 993 151	47 721 043
maritime	1 581 583	5 438 778		2 600 000	9 620 361
air		5 465 000	10 342 809		15 807 809
postal		5 331 735	18 301 228	4 681 698	28 314 661
logistics	1 690 000	1 690 000	1 634 643	1 225 980	6 240 623
traffic system	48 168 798	23 810 609	20 952 824	52 767 747	145 699 978
TOTAL	56 840 652	49 037 824	62 596 436	110 219 974	242 196 465

Source: Ministry of Science and Technology in the Republic of Slovenia, Work Report for the years 1992, 1993, 1994, 1995

According to the Work Report of the Ministry of Science & Technology for the period since independence, i.e. from 1992 to 1995, we learned that a total amount of Sit 242 196 465 was invested in research in the area of transport, as is demonstrated in Table no. 1 (At the time of writing this paper, the 1996 Report of the Ministry of Science and Technology has not been published yet).

According to reports on the means spent on research in various branches of transport, we may conclude that research expenditures in the area of maritime traffic in Slovenia during the past 5 years have been relatively the lowest, barely 3.9% of the total expenditures.

Since there are not many projects in the area of maritime activities, this work quotes the titles and executors of these projects. The paper will give us a clear picture of the policy of scientific and research work in the area of maritime activities. [2]

Review of Scientific-Research Projects in the Area of Maritime Activities in the Republic of Slovenia financed by the Ministry of Science and Technology for the Period from 1992 to 1995

1992

Research development projects co-financed by the Ministry of Science & Technology

1. **65-6117 International North-Adriatic Transportation & Distribution System**, the European Center for Ethical and Regional Studies in Maribor, Sit 1 690 000
2. **35-0339 Master Plan of the Adriatic Sea**, Hidrogea d.o.o., Sit 1 581 583

1993

Research development projects co-financed by the Ministry of Science & Technology

1. **42-0916 Super postpanamax container port crane**, Tehnološko razvojni centar d.o.o. Faculty of Technical Studies Maribor, Department of Mechanical Engineering, Sit 5 038 778
2. **42-5632 Master Plan of the Adriatic Sea in light of available knowledge and international comparisons**, Water Management Engineering, Hidrogea d.o.o. Sit 400 000
3. **35-6117 International North-Adriatic Transportation & Distribution System**, the European Center for Ethical and Regional Studies in Maribor, Sit 1 690 000

1994.

There was no research

1995

Budget subventions from other Ministries for Research and Development

Ministry of transport and communications Targeted research program TRANSPORT, sub-project Results of Maritime Policy of the Republic of Slovenia, Faculty of Maritime Studies and Transport, Sit 2 600 000

The review of research projects in the area of maritime activities, financed by the Ministry of Science and Technology of the Republic of Slovenia shows that most of the projects were registered on the part of scientific institutes whose work schedules self-initiatively planned the mentioned projects. Only one project, or rather sub-project was registered in 1995 under the title Results of Maritime Policy of the Republic of Slovenia, and was inaugurated by the Ministry of Transport and Communications within the formation of a proposal for the transport policy of Slovenia.

Research projects in the area of maritime activities were also implemented apart from the system of funds provided by the Ministry of Science and Technology. In 1993 the Port of Koper (Luka Koper), as an independent economic subject, ordered a project study entitled Strategic Development of the Port of Koper from the Water Management Institute. The project was completed in 1994. The amount of money invested in this project is not known and it has therefore not been included in this review.

Development research projects in the area of maritime activities of Slovenia have also been carried out by foreign institutions within the framework of technical assistance to Slovenia. Thus, in 1994 a bilateral agreement was signed between Slovenia and the Netherlands on financing of development research projects within the operative area of the Port of Koper. The projects are related to ownership transportation of the Port of Koper, the enhancement of operational efficiency of terminals at the port of Koper and the port strategic marketing plan. The carriers of the projects and their original titles are as follows:

Ownership transformation as well as increase of the operational efficiency of terminals at the port of Koper

- **Sub Project A – Ownership Transformation, Final Report, 1995**, Frederic R. Harris B.V. The Hague, The Netherlands, in association with Europe Combined Terminals (ECT) Rotterdam, The Netherlands, KPMG, Ljubljana, Slovenia
- **Sub Project B – Terminal Efficiency Improvement, Final Report, 1995**, Frederic R. Harris B.V., The Hague, The Netherlands, in association with: Europe Combined Terminals (ECT), Rotterdam, The Netherlands, European Bulk Services (BS), Rotterdam, The Netherlands

- **Sub Project C – Strategic Marketing Plan, Final Report, 1996**, Frederic R. Harris B.V., The Hague, The Netherlands

4. MARITIME POLICY OF THE EUROPEAN UNION AND RESEARCH ACTIVITIES IN THE FUNCTION OF CONDUCTING MARITIME POLICY

European maritime policy developed on the basic principles of the Treaty of Rome, which was the foundation for the formation of a joint transport policy of the European Union. The main aims of the transport policy are expressed in the memorandum by the Commission of the European Union in 1961. The three basic principles of transport policy of the European Union are:

- freedom to offer services
- freedom to choose the carrier
- free and fair competition
- harmonised technological, economic and social conditions of operation by the carrier

The maritime policy of the European Union took shape very slowly and was in a timelag in relation to transport policy in the areas of road, railway and inland waterway transportation. Maritime transport, same as air transport, is for the most part an international, worldwide transport operation, which means that maritime policy should be established within the frameworks of maritime policy of the IMO and the international maritime conventions and the ILO conventions.

The first rules-regulations in the area of shipping that are linked to maritime policy of the EU were brought by the EU not before 1987. These rules laid the foundation for liberal and fair dealing on the maritime market, and were constituted in accordance with the principles of the UN convention called Codex on Conducting Liner Conferences. These rules are the following:

- Rule 4055/86, refers to the principle of free exchange of maritime-transport services between EU members, and between members of EU and third countries. The regulation does not permit bilateral divisions of cargo in tramper transports
- Rule 4056/86, regulates liner transport in greater detail. This rule prohibits monopolistic organising of liner shipping companies and recommends agreements with the beneficiaries of the transport
- Rule 4057/86, forbids the sub-quoting of freight tariffs in liner shipping, and sets up a system of protection in confrontation with unfair competition by the liner shipping companies of third countries

- Rule 4058/86, confirms and coordinates activities on the EU level towards third countries which do not allow free access to the international exchange of maritime-transport services.

These rules were enforced gradually and the period of their introduction lasted until 1992.

A separate problem in worldwide maritime shipping is the transfer of ships of developed maritime states to the so-called flags of convenience (f.o.c.). Sailing under flags of convenience enables shipping companies to do business at lower cost, in the first place the lower cost of labour, lower maintenance costs which are in the main part a consequence of low-level ship quality demands, the anonymity of the ship's owner, and certainly the significantly lower tax rates. A particularly pressing problem of ship transfers to flags of convenience is encountered in the EU. It is estimated that in 1995 about 47% of the fleet of EU members were registered under other, cheaper flags. Under flags of convenience expressed in dwt, 68% are ships for dry bulk cargo, 54% are general cargo ships, 44% are liquid cargo ships, 57% are container ships, and abt 29% are ro-ro ships. The direct consequence of this is that, in the period from 1985 to 1995, the number of seamen in the EU has dropped from 230 000 to 150 000. [3] Under such circumstances one of the primary goals of maritime policy is to increase the competitiveness of EU shippers, but in the first place from the aspect of quality servicing, high quality of safe maritime traffic, safety in the protection of human life and of the environment. With the achievement of that aim the EU will only through IMO assistance, precisely through supporting it and accelerating its bringing forth of conventions and recommendations whose goal are to increase standards of safety onboard ships, standards of education of maritime personnel, and enhancement of standards for protection of the environment. Under such new conditions the EU fleet will without doubt be competitive, since its fundamental feature is a low age group with sophisticated equipment and an educated crew.

Enhancement of navigational safety is the aim of the EU maritime policy. The European Commission has proposed a campaign program related to five major areas:

1. Bring forth joint obligatory rules for ships under flags of EU member countries, which would be in conformity with the existing conventions;
2. Member countries with maritime and port authorities have to ensure a united and efficient use of international regulations on ships of all flags that navigate in the waters of the EU;
3. Promotion and development of a maritime infrastructure which will have:
 - facilities for gathering waste

- supervision of traffic including an all-European consultancy system for the maintaining communication with ships carrying dangerous cargo
 - ensure the equipment and organisation required for implementing a system of control and guidance of ships (VTS – vessel traffic systems);
4. Support for initiation of campaigns in the International Maritime Organization IMO wherein the EU continues to adhere to the opinion that the IMO is the main international body for shaping maritime standards;
 5. Human resources in the maritime sector should be permanently studied, and a quality-minded and up-to-date education would reduce the number of maritime casualties.

In the process of increasing the safety level, as well as the competitiveness of the EU shipping companies, the EU has come out with several directives:

- Directive 94/57 in reference to establishing a common criteria of classification societies, government administrations and administrative bodies acting in their names, which have to assess and verify anew the high standards and criteria of safety and protection of the environment on ships that have received certificates from classification societies and administrative bodies and organisations outside the EU. The directive came into force as of January 1, 1996.
- Directive 94/58 in reference to the minimal level of education for master, deck officers and other seamen employed on seagoing vessels under the flags of EU countries. The directive was worked out on basis of the STCW Convention, and it also demands efficient methods of on-deck communication, communication between ship and shore and port authorities in the ports of EU member countries, regardless of the ship's flag, whenever vessels carry passengers and dangerous cargo.
- Directive 95/21 in reference to port terminal control. According to this regulation, in EU ports it is necessary to execute controlling of safety on ships regardless of affiliation to a flag. The directive calls for the making out of a black list of so-called substandard vessels, and in certain situations dangerous vessels should be detained until they remove or eliminate the undeniable shortcomings.
- Directive 93/75 in reference to obligatory reporting of vessels carrying dangerous cargo and cargo that is ecological threat to the environment. Vessels are liable to report upon arrival to EU ports as well as when they transit through seas of EU members. The aim of this directive is to collect data for authorised bodies to duly undertake action in case of accidents.

- Directive 2978/94 in reference to separated ballast tanks, for which EU ports charge lower port tariffs if ships are with double bottoms and with separated ballast tanks, because these features make them much safer in comparison to other vessels. This is a reward to shipping companies for purchasing safer vessels.
- Directive 305/95 in reference to the ISM code according to which shipping organisations performing passenger transport on ro-ro ships in and from EU ports, must have their vessels subjected to revision and verification of the efficiency of their systems of safety.

In the maritime policy of the EU, the attitude towards ports is the same as towards all the other economic subjects of transport and marine activities. Ports freely offer their services, and the general conclusion is that ports are obliged to manage their business on a commercial basis. The cost of port infrastructure together with the price of capital has to be included in the port tariff and charges. Budgetary assistance to ports is still allowed, but under the direct control of authorised bodies of the EU. According to EU transport policy ports are in other respects considered a part of the trans-European infrastructure and must optimally connect maritime routes with overland routes. Commissions of the EU have established committees of experts which assess the state of quality of the infrastructure, its organisational and informational linkage to maritime and overland transport. The committees of experts assess the ports on the Atlantic, the Baltic, the North Sea and the Mediterranean.

Research on the quality of infrastructure and its organisational and informational linkage to maritime and overland transport is also being carried out for other European ports which will in a foreseeable time become a member, or which perform port terminal services for the needs of the EU.

The EU increasingly perceives the problem of road traffic congestion, and one of the possible solutions for the problem might be found in redirecting a part of cargo transport, as well as a part of public passenger transport to short coastal navigation. Through the application of such a solution to the problem, small and medium sized ports would play a special role. Such plans, schemes or methods, however, will by all means have to be subjected to scientific research.

Most of the aims of transport and maritime policies demand careful scientific research. The Directorate-General for Transport of the Commission of the European Communities has for this purpose inaugurated research project Development of Transport Policy – Research & Development (R&D) for the entire transport system, in other words, for its branches [4] This program covers the sphere of four

years of research work. The outcome of this program for the maritime system will probably be very satisfactory, in light of the fact that the need for such a research was demanded by the economic subjects and users of maritime services. The gathering of entries was concluded in 1994 and the first projects began being carried out in the second half of 1995. The R&D program is dedicated to various areas, as follows; competitiveness of shipping, short sea shipping, port terminal efficiency, management of maritime traffic and the impact of human element on maritime safety. This paper lists all the projects of the R&D program. Research in the area of transport and maritime activities had certainly been done in the EU before, however, this most recent program is a reflection of present-day needs and of the state of the art in maritime transport in the EU.

LIST OF RESEARCH TASKS IN THE AREA OF MARITIME TRANSPORT IN THE EUROPEAN UNION

Within the research & development program

1. Maritime transport

1.1. Competitiveness of EU-shipping

Relevant studies or projects in this area:

- Assessment of the economic importance of the EU shipping sector (DG VII-D1, 1994)

1.2. Supply and demand of shipping services

Relevant studies or projects in this area:

- Structure, organisation and management of the maritime sector (APAS DG VII-A4, 1994)

1.3. Short sea shipping – SSS

Relevant studies or projects in this area:

- Short Sea Shipping Study (APAS-DG VII-A4, 1994)
- Impact of changing logistics on maritime transport (APAS-DG VII-A4, 1994)
- Intra/extra European trade flows (DG VII-D1, 1994)

1.3.1. Pilot program connected to SSS

2. Ports

2.1. Bottlenecks in ports, concepts, systems and technology requirements

Relevant studies or projects in this area:

- Impact of changing logistics on maritime transport (APAS-DG VII-A4, 1994)

2.2. Analysis, harmonization and simplification of procedures in ports

Relevant studies or projects in this area:

- All preparatory work and projects carried out in the framework of the MARTRANS implementation project.

2.3. Role of ports in the intermodal transport chain and in the trans-European transport networks

Relevant studies

- For the time being there are none.

2.4. Integrated management of multimodal traffic

Relevant studies or projects.

- There are none.

3. Logistics

3.1. Optimisation, organisation and new concepts for logistics

Relevant studies

- Impact of changing logistics on marine transport (APAS-DG VII-A4, 1994)

3.2. Timely monitoring of the flows of goods

Relevant studies

- For the time being there are none.

3.3. Impact of EDI on functionality requirements

Relevant studies

- None as yet

4. Efficiency, safety and environment protection in maritime operations

4.1. Vessels operation and dangerous goods

4.1.1. Decision support to handle ships' accidents

Relevant studies:

- None as yet.

4.1.2. Transport safety of dangerous cargoes

Relevant studies

- None as yet.

4.1.3. Assessment of new shipbuilding concepts

Relevant studies:

- None as yet.

4.1.4. Standardised codes and rules for the technical assessment of ships

Relevant studies:

- None as yet.

4.2. Methodology of safety in maritime operations

4.2.1. Assessment of accident investigation methodology

Relevant studies:

- None as yet.

4.2.2. Introduction of a voyage data recorder ("black box")

Relevant studies:

- Study launched by DGVII-A4 in 1993.

4.2.3. Information exchange and other communications procedures

Relevant studies:

- None as yet.

5. Integrated ship control systems

5.1. Optimum bridge instrumentation arrangement for safety and efficiency enhancement

Relevant studies:

- EURET ATOMOS/MASIS, KBS-SHIP

5.2. Harmonised architecture of integrated Ship Control with new functionalities for simplified operation, training, and maintenance

Relevant studies:

- EURET ATOMOS/MASIS, KBS-SHIP

5.3. Integrated Ship Control demonstrators

Relevant studies:

- EURET ATOMOS/MASIS, DEBS-SHIP

6. Traffic management and the vessel traffic system - VTS

6.1. Traffic situation display. Improved tools to assess traffic situation and ship maneuvering.

Relevant studies:

- EURET RITS/TAIE, APAS 1994 Waterborne/I (VTMIS)

6.2. New vessel localisation and identification procedures

Relevant studies:

- EURET RITS/TAIE, APAS 1994 Waterborne/I (VTMIS)

6.3. Reciprocal audio data communication and re-search of value added services.

Relevant study:

- APAS 1994 Waterborne/I (VTMIS)

6.4. VTS/VTMIS networking. Introduction of marine pollution and space observation techniques

Relevant study:

- APAS 1994 Waterborne/I (VTMIS)

6.5. Mobile VTMIS demonstrator for on-site evaluation and for testing.

Relevant study:

- EURET RTIS/TAIE, APAS 1994 (VTMIS)

7. Ports, environment and safety

7.1. Industrial activities in ports

Relevant studies:

- None as yet.

7.2. Operational pollution and accidental pollution from ships

Relevant studies:

- None as yet.

7.3. Hydrographic surveying and dredging techniques

Relevant studies:

- None as yet.

8. Human resources

8.1. The impact of human element on global maritime safety

Relevant studies:

- MASIS/ATOMOS/THAMES

8.2. The impact of emergency situations on human behaviour. Specific operational requirements for multiethnic crews.

Relevant studies:

- MASIS/ATOMOS/THAMES

8.3. Employment of handicapped persons in the maritime industry, problems of handicapped passengers, especially in emergency situations.

Relevant studies:

- None as yet.

8.4. Enhancement of the effectiveness of human resources in maritime transport.

Relevant studies:

- MASIS/TOMOS/THAMES, IMO's resolution A. 772(18) on Fatigue factors on Manning and Safety

8.5. New shipboard management concepts and new employment and organisational models

Relevant studies:

- MASIS/ATOMOS/THAMES

8.6. Socio-economic impacts of new technological concepts in maritime transport

Relevant studies:

- None as yet.

8.7. New demands on maritime education, certification and training

Relevant studies:

- None as yet.

8.8. Harmonisation of European Maritime Education and Training

Relevant studies:

- MASIS/ATOMOS/THAMES.

8.9. "Long distance learning" technologies

Relevant studies:

- None as yet.

8.10. The contribution of simulation on advanced simulators

Relevant studies:

- None.

8.11. Specification of ships' maneuvers and operations exercised in simulators for harmonisation of maritime education.

Relevant studies:

- None as yet.

8.12. Research to minimise the effects of adverse works environment conditions.

Relevant studies:

- None as yet.

8.13. Human element in ports

8.13.1. Assessment of the impact of new technologies on the human being.

Relevant studies:

- None.

8.13.2. Organisational structures and arrangements, qualification demands, safety impact, pollution control.

Relevant studies:

- None as yet.

6. PROPOSAL OF RESEARCH ACTIVITIES IN THE AREA OF MARITIME TRANSPORT IN THE REPUBLIC OF SLOVENIA

Research activities in the area of maritime transport in the Republic of Slovenia have, since the independence of Slovenia to the present day, been of inconsiderable volume. The contents of these researches lack the features of permanent systematic research of the country's maritime system and maritime policy. The Ministry of Transport and Communications of Slovenia began activities on defining the transport policy of Slovenia as late as 1995. Within the framework of the Transport Project which was co-financed by the Ministry of Science & Technology, a sub-project named Result of Maritime Policy of the Republic of Slovenia was worked out. A research team of the Faculty of Maritime Studies and Transport of Portorož had to work out the project within a very short term (only four months), and this hampered the possibility of a more detailed research. Within the framework of available disposition, the project renders an analysis of the situation of the maritime system of Slovenia, an analysis of the market and a cost analysis of the subsystems of shipping and port activities. Particular consideration was given to issues of safety, environment protection, the situation of maritime education and social problems. The project called attention to the weakpoints in the mentioned segments of the maritime system of Slovenia, proposing possible solutions which would also be satisfactory on occasion of Slovenia's entry as a member country of the EU. The project provided the Ministry of Transport with a basis for defining the transport policy of Slovenia. The first version of the draft of the transport policy of the Republic of Slovenia did not come into view until June 1997 and, in the opinion of the research team of the Faculty of Maritime Studies and Transport in Portorož, only few of the judgments expressed in the mentioned project were accepted. [5] Remarks have been forwarded to the authorised body and, for the time being (in the course of writing this paper) the final outcome is still not known since the revised version of the transport policy of Slovenia has not yet been released.

Other research in the area of maritime activities in Slovenia for the most part refer to problems of development of the port of Koper. Such research was financed by the port itself as well as by the Netherlands

within the framework of bilateral technical assistance. The mentioned research fully fits into the research plans which were proposed in the project named Results of Maritime Policy of the Republic of Slovenia.

Other research mentioned was performed by the research institutes of Slovenia and are a result of their independent work plans. These are hydrological and biological studies of the Adriatic Sea, research of logistics characteristics of the North Adriatic ports, and studies on technical solutions of special port terminal cranes. All the mentioned researches are by all means a contribution to the development of maritime activities in Slovenia and will certainly be useful in further research in the area of Slovenia's maritime system.

Bearing in mind the problems and shortcomings of the maritime system of Slovenia, as well as researches so far, and finally the research activities within the program of development of the EU maritime policy, I would suggest undertaking the following research projects in the area of maritime transport policy of Slovenia.

1. Harmonisation of maritime education programs in the EU and the possibilities of their application in Slovenia.

The aim of the project is to effect an all-inclusive preparation for adapting the system of Slovenian maritime education to the European MET (Maritime Education and Training) system. The research approach within the broadest framework should operate as follows:

- Investigate the harmonisation scheme of the European MET system.
- Study the proposal of new methods of education and systems of adaptation and enablement to the demands of modern technologies.
- Work out a comparative analysis of the system of maritime education in the Republic of Slovenia and the MET system.
- Establish the possibilities and requirements for implementation of the MET system in Slovenia.

The proposal for harmonisation of Slovenian maritime education with MET should contain education programs coordinated with MET's proposal referring to necessary organisational changes, required financial means for adaptation to the European education system, as well as the proposal of dynamics for this adjustment.

2. Competitiveness of Slovenian cargo shipping

The aim of the project is a complete description of competitiveness of the Slovenian cargo shipping and the setting up of necessary measures for its enhancement.

Research approach:

- Investigate the systemic and organisational structure of Slovenian cargo shipping.

- Establish the significance of Slovenian cargo shipping in the overseas trade of Slovenia and its impact on the country's balance of payment.
- Investigate the causes of operation of Slovenian shipping under flags of convenience.
- Through comparative analysis establish the similarities and specifics of the reasons for succumbing of ships to flags of convenience among European (EU) shippers and Slovenian shippers.
- Establish the national interests that would justify the return of Slovenian shippers to sailing under their national flag.

Propose the systemic measures for the increase of competitiveness of Slovenian cargo shipping and a return to sailing under the national flag.

3. Regulations on navigation safety in the EU and the possibility of their implementation into Slovenian legislation

The aim of the project is a systemic preparation of legislative documents and by-laws of Slovenian maritime legislation which will on occasion of their enforcement be fully adjusted to the harmonised EU regulations on navigational safety.

The research procedures should take place in the following way:

- Analysis of systemic laws on European management of maritime transport
- Analysis of systemic laws by which classification societies, maritime administrative bodies and other authorised organisations are ruled on the basis of the newly verified EU measures and criteria on safety of navigation and protection of the environment.
- Analysis of systemic EU laws defining the minimal conditions for schooling of ship crew members.
- Analysis of systemic laws defining the system of monitoring of ships in EU ports and stimulating the use of safe and ecological ships.

Proposal of legislative documents of the Republic of Slovenia in the area of maritime transport in which Slovenian maritime legislation is brought into full coordination with the maritime legislation of the EU in the domain of safe navigation and protection of the environment.

4. VTS in the Gulf of Trieste and requirements for its application in Slovenia, with a separate review of the Bay of Piran

The aim of the research would be to establish the technical, technological, organisational, legal and economical prerequisites for introduction of the Vessel Traffic System in the area of the Slovenian sea.

Research approach:

- Review of the results of international research of the VTS

- Review of development of organisational and administrative networks, tools and methods of linking local VTS systems and VTMIS into a system of regional or European management of vessel traffic respectively
 - VTS organisation in Italy and the Gulf of Trieste
 - Proposal for VTS organisation in the Slovenian sea
 - Simulation model of connecting the Slovenian VTS system with the VTS of Italy and Croatia
 - Proposal of technical, technological, organisational, legal and economical VTS sub-systems to the maritime system of the Republic of Slovenia.
- 5. Application of the EDI system in the Port of Koper**

The aim of the research project is the preparation for introduction of EDI information and communication technologies.

Research approach:

- Identification of requests by the user of services in the Port of Koper
- Identification of concepts that are in use for creating transport, information, and planned links which connect the shippers' activities to the original management of other participants in maritime transport
- Identification of organisational, administrative and technological barriers in implementing the concepts of the EDI system in the Port of Koper
- Setting up a simulation model of the EDI system and an assessment of its functioning
- An estimation of the enhancement of the quality of port services and an evaluation of improvement of working conditions of all operators in the overseas and overland logistics chain in the Port of Koper under the conditions of introduction of the EDI system.

The model of the EDI system of Koper should also enable the information and communication linkage of Koper with the small and medium sized ports of the EU as well as with other Mediterranean ports.

6. Intermodal transport in the Port of Koper, research to be worked out on the methodology of assessment of situation, assessment of requirements and a conceptual model used in the R&D program

The aim of the research is to incorporate the Port of Koper into the intermodal transport chain and trans-European network. The research should be performed by implementing the methodology of assessment of the situation, needs and conceptual models used in the R&D program.

The research approach should be conducted as follows:

- Identification of the bottlenecks of the port which is the intersection in the intermodal transport chain

- Identification of the informational, organisational and administrative requirements, concepts, and functions
- The study ought to provide proof of the need for a pursuant system of integrated intermodal traffic management of the Port of Koper
- Proposal of a simulator model of management which would evaluate the economic effects and estimate the impact on traffic safety.

7. The role of Luka Koper in short sea shipping of the EU.

The research aim of the project is to establish what kind of role the Port of Koper could play in short sea shipping of the EU.

Research approach:

- Research should encompass the intra-European flows of goods, particularly the structural changes in these flows.
- Creating a matrix (starting point-destination) of European commodity flows. This kind of research should by all means fall back on using the results of the already finalised studies of the SSS (APAS-DG-VII-A4 1994), the research & development requirements for the FWTS regarding commodities and passengers (DG-VII-A4, 1994) and the study of Intra-European and International Trade Flows (DG VII-D1, 1994).
- The study should ascertain the technical, technological, organisational and economic preconditions for inclusion of the Port of Koper into the system of short sea shipping of the EU.

8. Fast waterborne transport and its possible application in Slovenian passenger transport

The research target is to establish the requirements and possibilities for introducing fast maritime passenger transportation along the Slovenian coast. The research should include the requirements and possibilities for setting up a fast international passenger traffic with the neighbouring states of Croatia and Italy.

Research approach:

- Evaluate the requirements and possibilities for FWTS development
- Estimate the daily migrations of the coastal inhabitants and the seasonal tourist migrations. Research should be conducted in accordance with the methods employed in the EURET, APAS and 4-ti FP-Transport programs.
- Ascertain the technical, technological, organisational and economic preconditions for a possible implementation of FWTS in Slovenia.
- Make a simulation model of the impact of FWTS on the Slovenian coast and establish its operability.

- Make a cost-benefit analysis for incorporation of FWTS into the public maritime traffic, also taking into account the external costs of road passenger traffic.
- Research should be conducted in accordance with the methods employed in the EURET, APAS, and 4-ti FR-Transport programs.

9. The Slovenian Register of Shipping and possibility for opening of another shipping register in conformity with the EU maritime policy.

The aim of this program should demonstrate the possibilities and corroborate the opening of another Slovenian shipping registry. Although due to the non-existence of a new Slovenian maritime code and non-existence of a consistent Slovenian maritime policy the maritime cargo shipping of Slovenia itself operates under various other flags, it would be reasonable to investigate the possibility of opening another Slovenian shipping register as a possible course of action towards an interest-oriented maritime economy, at the same time accepting the principles of maritime policy of the EU.

Research approach:

- Investigate and analyse the impact of other shipping registers in Germany, Denmark and Norway
- Consider the possibilities of opening another shipping register in Slovenia, taking into account the maritime infrastructure of Slovenia and maritime tradition and the suitability of manning ships with relatively cheap and highly qualified Slovenian crews.
- This study should undoubtedly start from an analysis and criticism of the shortcomings of the ZNPP in use till now, which should be eliminated from the new maritime code.

This research proposal, complemented with work theses and a proposal of research priorities, will have to be submitted to the maritime economy of Slovenia and the Maritime Administration of Slovenia for discussion. Financing of this type of project should be jointly put into effect by the Ministry of Transport and the Ministry of Science & Technology.

SAŽETAK

PRIJEDLOG ISTRAŽIVAČKIH DJELATNOSTI NA PODRUČJU POMORSKOG TRANSPORTA U REPUBLICI SLOVENIJI

Rad sadrži prikaz i analizu pomorskog sustava Republike Slovenije s posebnim naglaskom na nedostatke koji su posljedica prvenstveno tranzicije i osamostaljenja države. Drugo poglavlje prikazuje znanstveno-istraživačke aktivnosti na području pomorstva u Republici Sloveniji u vremenu od 1992. do 1995. godine. Treće poglavlje sadrži kratak prikaz pomorske politike EU i popis znanstveno-istraživačkih projekata programa Research & Development koji je namijenjen vođenju pomorske politike EU. U zaključnom razmatranju autorica predlaže teme i postupke znanstveno-istraživačkih projekata na području pomorstva Republike Slovenije.

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