

Dušan Rudić\*  
Bojan Hlača\*\*

ISSN 0469-6255  
(37-44)

BRODARSTVO

## FEEDER SERVICE TO PROMOTE REVITALIZATION OF THE CONTAINER TRANSPORT IN THE ADRIATIC PORTS

*Feeder - servis koji promiče revitalizaciju  
kontejnerskog prijevoza u jadranskim  
lukama*

UDK 886.2:656.61  
Pregledni članak  
Review

### Summary

*The aim of this study is to analyze the importance of the feeder service as a modern way of organizing not only the maritime transport but transport in general and its impact on the development and good standing of particular sea ports and with that on the entire economic potential.*

*The shipping trade has also got caught up in the worldwide globalization trend. Today, there are some ten strong shipping companies in the world (so called mega ship owners) who are working either on their own or are mutually connected to cover a specific market. In an effort to meet the requirements of the end users, the shipping companies tend to organize strong feeder service. The feeder service can also be initiated by terminal operator or port authority which is, most often, reflected in the subvention of empty feeder ship cargo space*

*(Formerly 100 to 300 TEU, now 500 to 1000 even 1500 TEU).*

*Thus, the feeder service Rijeka/Ploče - Gioa Tauro/Malta, started up at some time past by Lošinjska plovidba, organized by the Port of Rijeka Authority and subsidized by the Ministry of Maritime Affairs, Transport and Communications of the Republic of Croatia 1999, is the beginning of the container transport revitalization process in the Republic of Croatia. The service turned out to be reliable and*

*accurate and attracted many users. Having logistic support of 22 Croatian companies through competitive prices and high-quality service on the transportation route and with the shore capacity increased three times, the container terminal in the port of Rijeka has attracted two commercial weekly feeder services (CMA-CGM and UFS) and, in our circumstances, spectacular callings (twice a week) of so called mother ships (ZIM and Lloyd Triestino).*

*As their logistic support, The Croatian Railways have started off a direct container block-train Rijeka Budapest. The annual growth of the container feeder transport stands at about 60% and, with the coming of other ship owners, Rijeka container terminal has increased its turnover from 6.000 TEU in 1999 to 30.000 TEU in 2003.*

*That's way the development of the feeder service as a modern way of organizing the carriage of goods within the maritime transport in the Adriatic ports, is considered the best way of connecting the container terminals in the Adriatic ports with the strategic "hub" terminals in the Mediterranean.*

*Key words: containers, feeder, transport, organization, competitiveness*

### Sažetak

*Ovaj rad analizira važnost feeder-servisa kao suvremenog načina organizacije prijevoza unutar pomorskog prijevoza i prometa uopće, poradi što brže*

\* doc. dr. sc. Dušan Rudić, Veleučilište u Rijeci, 51000 Rijeka

\*\* mr. sc. Bojan Hlača, dipl. ing., Lučka uprava Rijeka, 51000 Rijeka

afirmacije i razvoja pojedinih morskih luka, a time i ukupnoga gospodarskog potencijala.

Trend globalizacije u svijetu nije zaobišao ni brodersku djelatnost. U svijetu danas djeluje desetak jakih broderskih tvrtki (tzv. mega-brodara) koje djeluju samostalno ili su međusobno povezane u pokrivanju određenog tržišta. Da bi se zadovoljio krajnji korisnik, broderske tvrtke organiziraju jake feeder-mreže radi pokrivanja tržišta. Moguće je da feeder-servis pokrene operater terminala ili lučka uprava, a to se najčešće ogleda u subvenciji praznoga broderskog prostora feeder-brodova (nekad 100 do 300 TEU-a, danas 500 do 1.000 pa i do 1.500 TEU-a).

Feeder-servis Rijeka/Ploče – Gioia Tauro/Malta koji je svojedobno pokrenula Lošinjska plovidba – brodersvo d.d., a u organizaciji Lučke uprave Rijeka, temeljem subvencije Ministarstva pomorstva, prometa i veza RH 1999. godine, početak je procesa revitalizacije kontejnerskog prometa u Republici Hrvatskoj. Taj je servis pokazao i postojanost i točnost, pa je privukao mnogo korisnika. Uz logističku podršku 22 hrvatske tvrtke i konkurentne cijene i kvalitetu usluga na prometnom pravcu, te povećanjem obalnog kapaciteta za tri puta, kontejnerski terminal u riječkoj luci omogućio je prisutnost i dva komercijalna tjedna feeder - servisa (CMA-CGM i UFS) i, za naše prilike spektakularna, dva tjedna ticanja tzv. brodova-matica (ZIM line i Lloyd Triestino).

Kao logistička podrška, Hrvatske željeznice pokrenule su izravni kontejnerski blok vlak na relaciji Rijeka-Budimpešta. Kontejnerski promet feederima bilježi rast godišnje za oko 60 %, a pojavom i ostalih brodara riječki kontejnerski terminal je povećao kontejnerski promet sa 6.000 TEU-a 1999. na 30.000 TEU-a 2003. godine.

Razvitak feeder-servisa kao suvremenog načina organizacije prijevoza unutar pomorskog prijevoza u jadranskim lukama predstavlja traženje i afirmaciju najboljeg načina da se povežu kontejnerski terminali u jadranskim lukama sa strateškim "hub"-terminalima na području Mediterana.

Ključne riječi: kontejneri, feeder, promet, organizacija, konkurentnost

## 1. Introduction

### Uvod

In any analysis of the transportation activity special attention should be paid to the container traffic as one of the most dynamic forms of the modern traffic technologies. In fact, the level of containerization, its basic features and forms, have great impact on the development and standing of the particular sea ports and transportation routes and through that on the entire economic potential.

Feeder service as a modern way of organizing container transport and linking two or more container terminals as well as supplying larger container ships, means a higher level of the marine transport containerization. Smaller container ships and the role

feeder service is playing in the upgrading of the marine transport are matters of permanent attention and research aiming at achieving a timely and effective follow-up of large container ships (hereinafter MOTHER SHIPS).

Both, the current conditions and the prospect of the containerization and feeder service development are worthy of the attention paid by the Croatian research workers and men of practice, the more so as such forms of the container transport are very important for a successful functioning and development of the leading Croatian ports, particularly the port of Rijeka.

Also, the question of the feeder service run by some Croatian ship owners in the Croatian ports and that of contribution and stimulation of the Croatian ships to the development of the national economy within a given period have been topical issues over the last few years.

## 2. Basic Features of the Feeder Service

### Osnovne značajke feeder- servisa

At the very beginning of the marine transport containerization four decades ago, its basic elements were containers, container ships, container terminals with specialized reloading devices and specific auxiliary equipments. It was the development and specialization of these basic elements that have articulated the modern containerization system in the marine trade and made it possible for the regular shipping service to operate and develop on the new foundations.

The introduction of the container feeder service helped the main advantages of the container transportation such as its speed, safety, job improvement and efficiency to achieve an added recognition. Speaking of the structure and functioning of container fleet and individual ships in particular, it is not possible to leave out the significance and growth of the contemporary feeder service. Namely, the construction and introduction of larger container ships on the main international sea routes, among major sea ports, gave rise to the need for containers to be stored up and distributed in a specific area [1].

In conceptual term, the feeder service is meant to collect containers and feed large container mother-ships as to avoid their calling at too many ports. It was the feeder service that made the entire container service economically rational, efficient and more profitable, consequently cheaper and timely for the end users.

As regards the size of the ships to fit the feeder service, there has been a considerable change in the last twenty years. From the vessels featuring 100-300 TEU at the early stage to those that have been mostly in use lately, the capacity of which ranges from 400 to 1000 TEU.

In performing their feeder service, ships are to call at several smaller ports within one cycle, spending only a few hours in each of them, most often, in the landlocked seas. The feeder service itself has to be dynamic and

flexible and based on a smaller container or RO-RO ship, with low daily fixed costs.

As regards the areas suitable for feeder service implementation, they are usually those of the landlocked seas where, besides a large internationally significant port, there also exist a number of smaller ports. It happens lately that the large terminals and main feeder destination sites have become strategic points along important sea-traffic routes, very often situated in the major sea-passages.

Conceptually and in terms of geography and space, the feeder service makes it possible for large container ships to stick to the circular or rectangular form of their basic routes, which is of utmost importance for the optimal exploitation of such big and expensive ships. In the international worldwide shipping industry, the container feeder service became particularly important when large container ships ranging between 4000 and 6000 TEU appeared on the market. The container ships of such a capacity require the feeder service implementation, since the number of large container terminals able to accommodate those ships has been constantly decreasing. In the Mediterranean, there are a number of the container transshipment ports looking for the feeder service and achieving recognition such as Algericas, having an important geostrategical position in Gibraltar, and the port of Marsaxlokk in Malta. The leading container transshipment ports in the central and eastern part of the Mediterranean which are important for the Croatian ports are G.Tauro, Taranto, Limassol, Cagliari, Larnaca, Damietta and Alexandria.

The analysis of the container services, run by various world- shipping companies, leads us to a conclusion that some of the leading shipping companies in the world either make arrangement for their own feeder service or use the service offered by other companies. The greatest number of the feeder service takes place in the zone of landlocked seas or large sea gulfs. Besides, the feeder service can also cover both, navigation and container collecting in the lower streams of big European and world rivers.

The essential positive features of the feeder service which help toward optimization of either container or total seaborne transport can be defined as follows:

- feeder service makes the entire container service rational, well balanced, symmetrical and dynamic
- feeder service helps toward achieving a better turnover of large container ships being of utmost importance for the large and expensive container ships
- container delivery time to the final destinations is much shorter and, owing to the frequency of ship calls and timely delivery of goods, the service in general is upgraded
- the number of ships, in the existing global container service of particular shipping companies along a given sea- route, has decreased

- smaller container terminals in the ports and land based cargo-distribution centres are improving their operation and becoming recognizable
- feeder service helps toward achieving better turnover of containers so that the total costs of the container system are also reduced
- the experiences gained in one feeder service may be very useful for the successful operation of the container transport on any other route.

As resulting from the above said, feeder service is of utmost importance for the overall operation and optimization of any container transport and seaborne traffic.

Owing to their specific qualities, not all of the advantages extended by the feeder service could be adequately identified right in the beginning. However, as the feeder service starts getting under way, the container service gains in dynamism and quality, thus making substantial contribution to the optimization of the maritime traffic.

### **3. Feeder Service Rijeka – Ploče – Gioia Tauro – Malta**

#### ***Feeder-servis Rijeka – Ploče – Gioia Tauro – Malta***

Large container ships of more than 6000 TEU with the speed rating above 22 knots have their origin in the globalize international trade and efficiency drive tendencies in the shipping industry. The vessels of such size have no possibility to enter many ports because of their own fixed costs which are very high, in the first place and inadequately equipped ports, in the second place. They are therefore navigating along the main international sea-routes over the Atlantic and Pacific oceans or around the world, making only a few major but efficient ports. Thus, at some time past, two such major ports, able to accommodate large container ships – MOTHER ships, developed in the Mediterranean. They are Malta and Gioia Tauro, whereas the numerous traditional ports, including those in the Adriatic, are basically feeder ship ports.

The system is suited to exporters and importers and that is its advantage. Namely, when a feeder ship enters one of the major ports, the goods-container can very quickly reach any destination in the world. In the old classical and more expensive system, it was necessary in the first place to find a ship owner whose ship was going from a particular port to required destination. There, the main problem was lack of regularity. The present-day worldwide standards require departures to meet the weekly production schedule and feeder ships are therefore to leave the ports on precisely fixed dates in order to arrive in time to the major port because, irrespective of the destination, containers cannot wait more than six days to be loaded and directed towards their destination places.

Such system of the worldwide containerized transport has considerably decreased the ship owner's costs, hence a considerably lower nominal value of the freights than some ten years ago. It has resulted in minimal stocks at all levels having a positive impact on the growth of the production and distribution efficacy.

The matter of greatest importance for a national economy is to have shortest feeder connection between its domestic ports and main international ports, as is the case with the ports of Rijeka and Ploče, in order to cut down the land transport costs which importantly increase total transport costs.

The fact that the annual growth of the container traffic in the Mediterranean has been assessed at 60% to 2015 (1998 the annual traffic in the Mediterranean amounted to 19 mil. TEU while the estimation for 2004 was 27 mil. respectively 400 mil TEU for 2012 - "World Container Port Markets to 2012" – Ocean Shipping Consultants Ltd.) [2], benefited the feeder service introduction as it was predictably enough that such a growth would inevitably lead to the overcapacity of the container ports. The foreseen growth of the container traffic, realized indeed in the years that followed, provides the smaller "feeder" ports with the opportunity to become, given further development and strategic partners involvement, ports of call/ departure i.e. the "hub" ports for the European destinations.

The first step in the realization of the above said was to establish the weekly feeder service Rijeka/Ploče – Malta/Gioia which became operational on March 1, 1999, with the ship "LIPA" owned by LOŠINJSKA PLOVIDBA – BRODARSTVO RIJEKA.

We are talking here about a public feeder service not directly adapted to any major ship owner, as is often the case. Consequently, the feeder has been open to every ship owner having necessary equipment, containers on the territory of the Republic of Croatia. Such an approach has resulted in an extended number of the ship owners, feeder service users, and was therefore conducive to the development of a "sound" competition, the result of which is a steady reduction of total freights.

The real precondition for the successful operation of this service were the rail and road transport prices, which were more acceptable than those in other North-Adriatic ports (for ex. the container rail transport from Rijeka to Budapest is about 18% cheaper than the Koper-Budapest route, respectively about 35% lower than Trieste – Budapest ). The same goes for the transshipment and freight charges. In comparison with the North- Sea European ports, the voyage is 5 days shorter.

When instituted, the first weekly feeder service Rijeka – Gioia Tauro/Malta was expected not only to have influence on the total container traffic increase, as can be seen from the graph No.1, but also to yield profit to the traffic routes involved and to all prospective, direct or indirect users. The expectations proved to be justified. From the very establishment of the feeder service, there has been recorded a steady increase in the number of the containers transported; new ship owners have been

coming in and new services have been introduced, as can be seen from the graph No.2

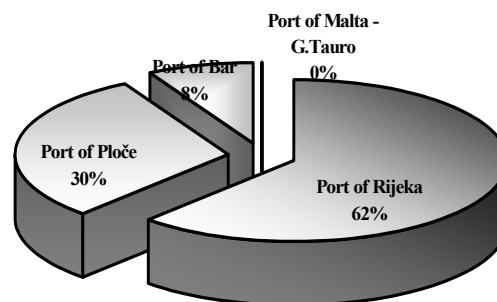


Chart No. 1 Total throughput of feeder service per ports in 1999 – participations percent

Grafikon 1. Cjelokupni promet feeder-servisa po lukama u 1999. godini – postotak sudjelovanja  
Source: Port of Rijeka Authority

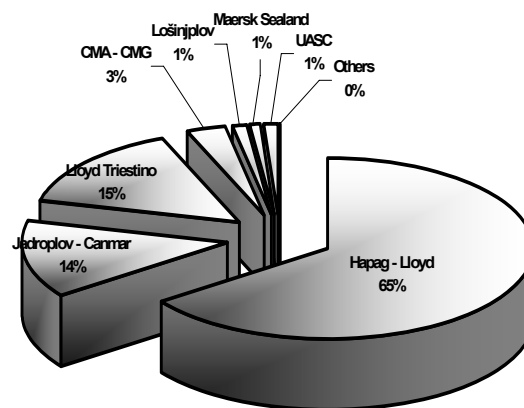


Chart No. 2 Number of ship operators/users of feeder service in 1999 – participation percent

Grafikon 2. Broj brodskih operatera/korisnika feeder-servisa u 1999. godini – postotak sudjelovanja  
Source: Port of Rijeka Authority

#### 4. Importance of feeder service for the Croatian traffic system

##### Važnost feeder-servisa za hrvatski prometni sustav

The Croatian feeder service by ship "LIPA" of Lošinjska plovdba-brodarstvo Rijeka, turned out to have been the best and the most accurate weekly container service in this part of the Mediterranean. It helps towards:

- incorporation of the Croatian ports into the Mediterranean container system –it is estimated that the container traffic in the Mediterranean would increase from 19 mil TEU in 1998 to 40 mil. TEU in 2012. Rijeka port's step forward from so far regional port to a "hub" port ( central port of) of the North Adriatic for the cargo from/to the Far East countries to the European ports of destination. step forward of the port Ploče to a feeder port with no specialized container terminal return of the

liner services to the Croatian sea routes, revitalization of the Croatian shipping trade, engagement of the world's leading container operators

- feeder service has also led to an increased interest of the terminal operators as prospective concessionaires on the container terminal

- with respect to the competition, the Croatian businessmen, doing business on the overseas markets, are given possibility to take advantage of a cheaper transport route by avoiding additional costs of border crossing

- the granted subsidies are fully reimbursable through the Croatian subjects participating in the feeder service ( agents, forwarders, stevedores, rail, road carriers, participants in ship despatch ...). For every TEU supported by this project through the Croatian ports, Croatian economy is realizing about 700 US\$.

- since 2000. the average annual growth of the feeder service traffic has figured out at 68%

- since 2000. the average annual growth of the feeder service traffic in the port of Rijeka has amounted to 66%. However, in 2003, compared to 2002, the traffic has been increased by 100% ( graph No. 3)

- with the inclusion of the port of Bar in Montenegro, which on Novembre 27, 1999 became one of the call ports, the project is extended to one more state.

The project has entirely met all expectations and, as such, it represents a good base for the further development of the port and traffic system in Croatia according to the Ten-Year Plan for the port system development in the Republic of Croatia, which is the component part of the Traffic Development Strategy of the Republic of Croatia.

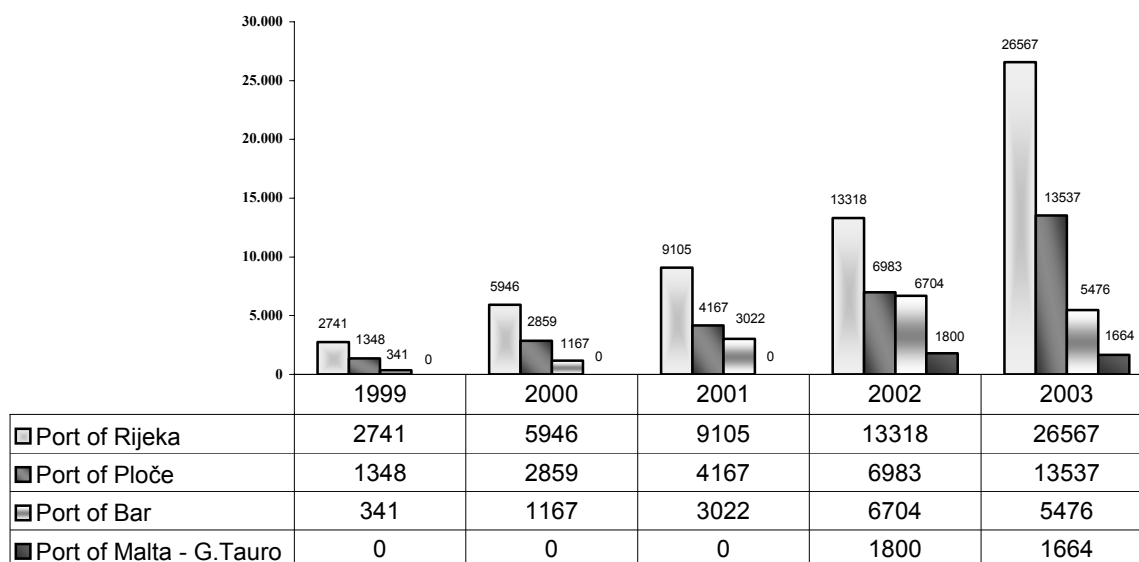


Chart No. 3. Total throughput of feeder service per ports in TEU for the period 1999 – 2003  
Grafikon 3. Cjelokupni promet feeder-servisa po lukama u TEU za razdoblje od 1999. do 2003.

Source: Port of Rijeka Authority

## 5. New forms of the logistic support to Port of Rijeka

### Novi oblici logističke podrške riječkoj luci

In the course of 2003. there arised new important circumstances in the revitalization of the container traffic in the Republic of Croatia. It was the reliability of the existing weekly feeder service in the port of Rijeka that, together with a good performance and competitive ability of the entire transportation route, led to the interest of the foreign shipping companies in the commercial calls. The

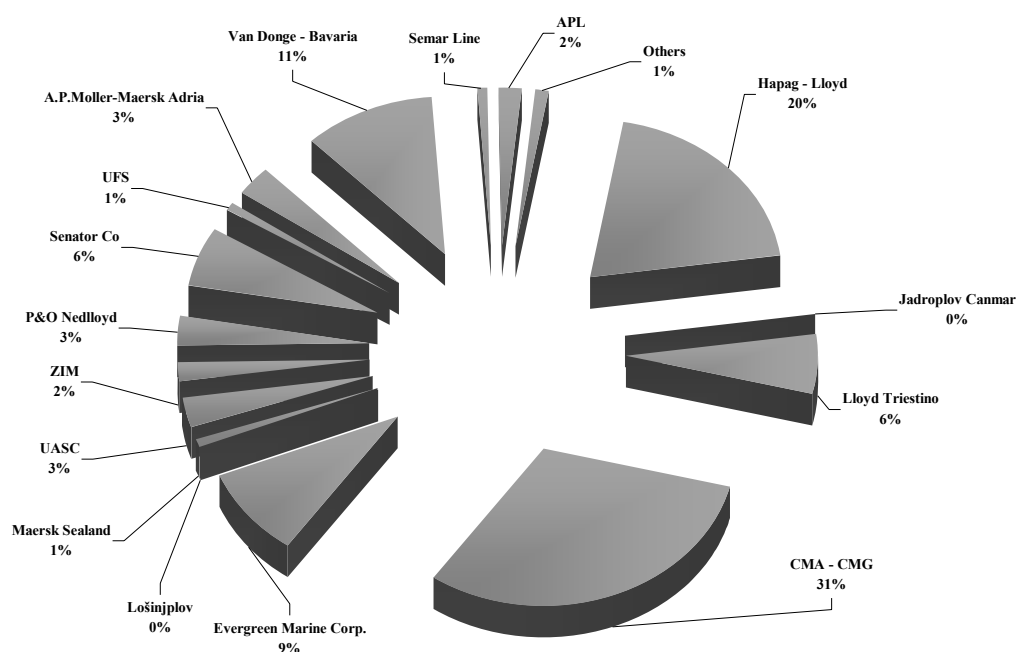
result was additional weekly feeder connections of companies CMA-CGM from Marseille France and UFS from Limmasol Cyprus to the container terminal Brajdica in the port of Rijeka.

Such a significant shift in favour of Rijeka traffic route has resulted in the spectacular contract for weekly

service of mother-ship concluded with the Israeli company ZIM Navigation from Haifa. It was the first call of this mother-ship that put Rijeka port on the world navigation chart as a port having direct service line with the Far East.

Another contract for mother-ship weekly service was concluded shortly afterward with Lloyd Triestina and CMA (see graphs No. 4 and 5 ). As a logical logistic support to the mother-ships, a weekly container rail service Rijeka-Budapest was introduced for the first time in cooperation with the Croatian Railways.

As visible from the graph No.6 – the growth trend of the container traffic over the period from 1999, the year when the feeder service was instituted, to 2003 when two foreign weekly services of two mother ships were introduced – major breakthroughs have been effected in the revitalization of the container traffic in the Republic of Croatia as a result of the feeder service organized by the Port of Rijeka Authority.



**Chart No. 4 Number of ship operators/users of feeder service in 2003 – participation percent**  
**Grafikon 4. Broj brodarevih operatora/korisnika feeder-servisa u 2003. godini – postotak sudjelovanja**  
 Source: Port of Rijeka Authority

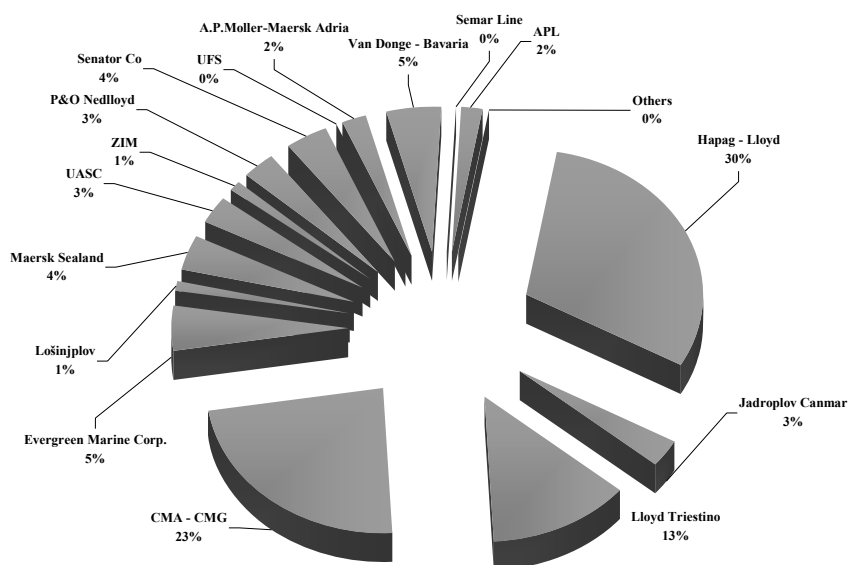


Chart No. 5 Number of ship operators/users of feeder service for period 1999 – 2003 – participation percent  
 Grafikon 5. Broj brodskih operatora/korisnika feeder servisa za razdoblje od 1999. do 2003.  
 Source: Port of Rijeka Authority

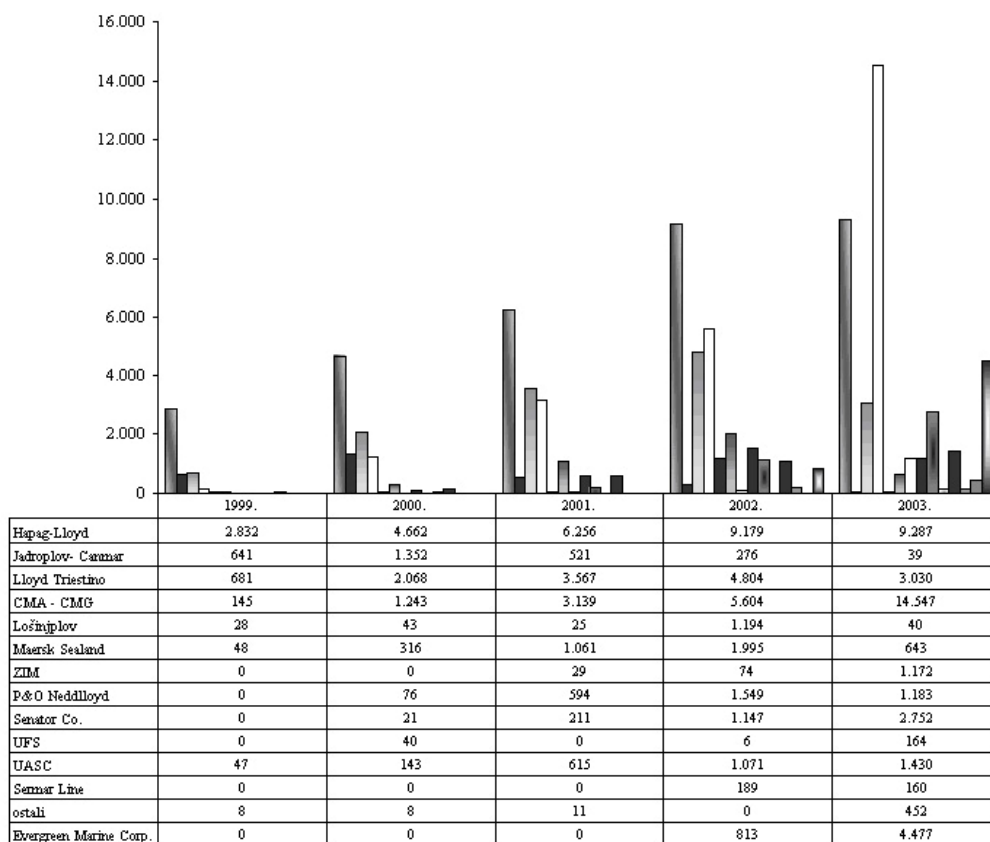


Chart No. 6 Total throughput in TEU per ship operators for period 1999-2003  
 Cjelokupni promet u TEU po brodskim operaterima za razdoblje od 1999. do 2003.  
 Source: Port of Rijeka Authority

## 6. Conclusion

### Zaključak

It was in the late nineties that the container traffic in the Republic of Croatia reached its lowest level ever since it had been introduced in the Adriatic.

There are many reasons for such a decline. Yet, one of the fundamental was the collapse of Croatia Line, the regular service shipping company, whose fleet of liner ships had been maintaining for years the line traffic with the Croatian ports. It was its collapse that made one of the links in the transport chain break. There is no revitalization of any traffic routes without the seaborne transport. The introduction of the feeder service was therefore a logical prerequisite for setting up of the new line service. However, there was also need for the other links of the chain to be made able to compete with other Adriatic ports.

In terms of logistics, the feeder service setting up was supported by 22 Croatian companies which take part in the traffic route and create total transport price which has to be on a level with the competition for an adequate quality of service.

Evidently, the feeder service supported by the complete logistics of 22 Croatian companies, organized by the Port of Rijeka Authority, has given rise to the container traffic revitalization in the Republic of Croatia.

The graph No.6 shows the container traffic growth trend from 1999; when the feeder service was set up, down to 2003- the year of arrival of two foreign weekly feeder connections and two mother-ships weekly call.

The process initiated so far suggests that the port of Rijeka has entered a new stage of becoming a HUB port for Bar and Ploče and a number of other North

Adriatic ports. That's a logical implication of the feeder service introduction which is to collect containers from Brajdica terminal for the further distribution to the said ports.

The analysis of the above said leads to the conclusion that various forms of and approaches to the feeder service in the Adriatic ports over the last ten years, have aimed at finding and identifying the best way to link container terminals in the Adriatic ports with the strategically hub terminals in the Mediterranean.

The development of the container feeder service between the container terminal in Rijeka and those in the Mediterranean, over the last five years, is in fact the period of a true revival of the container traffic in the Rijeka gateway and particularly in the container terminal of Rijeka.

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Rukopis primljen: 1.6.2004.