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MANAGEMENT AND ECONOMICS OF SHIPPING AND SHIP OPERATIONS

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Review

I shall present you seven papers in a nutshell, trying to point out the most significant items.

I shall use the authors' words and phrases as much as possible, although sometimes I should have wished to change the composition of sentences and the wording in general. I shall do so in order to avoid any possible dispute with the Authors. However, I shall be glad to help, if there is need, later on during the discussion and I shall not valorize these paper as it was the task of the referees.

H.F. Yercan

Total Cost Analysis for Port Business

The title of this paper is: "Total Cost Analysis for Port Business" by the Author H. F. Yercan, University of Plymouth, Institute of Marine Studies, Plymouth U.K.

This paper concentrates on the costs of ports and examines the total cost at ports.

P1. The amount of expenditure made for any activity is not important as far as the total cost is held at the lowest level. The benefit of exchange balance between the activity centres constitutes the basis of total cost analysis.

P.2. Total cost for ports comprises the following costs:

- (a) Transport costs to the port,
- (b) Transport costs through the port,
- (c) Port charges and prices,
- (d) Loading and unloading charges,

- (e) Storage and warehousing costs,
- (f) Insurance,
- (g) Agents' charges and managerial costs,
- (h) Communication costs,
- (i) Interest on the capital, etc.

P.3. Methodology of measuring port costs is possible with two steps:

(1) A cross section of different port sizes could be examined to see how unit cost varies with the tonnage throughput.

(2) The cost of a port could be traced through time as it differs with an increasing volume of traffic.

P.4. Total cost consists of total fixed cost and total variable cost. Fixed port cost is independent from the cargo handling process and tonnage throughput. It comprises the capital costs of the facilities, equipment, such as the quays, sheds, cranes, warehouses etc.

Variable port cost depends on the cargo handling process and tonnage throughput as: operating costs, maintenance costs, labour and administrative staff costs etc.

P.5. Fixed cost defined in terms of cost per ton decreases by the increase of cargo handling amount at the port while variable cost stays stable and increases only when the port comes under pressure to accept high tonnage throughputs. The port cost curve reaches a minimum value point (A) when the rate of reduction in the fixed cost per ton equals the rate of increase in the variable cost per ton.

P.6. Total cost in port in terms of cost per ton is the sum of port cost and costs of ship's time in port. It is shown that the minimum point (B) on the curve of total cost per ton at port, including the cost of ship's time, is achieved at lower throughput. In other words, a

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lower amount of cargo handled than at point A, which is the minimum point of port cost curve.

P.7. The minimisation of costs for ports depends on various factors. These factors are, the optimisation of port usage and waiting time needed for ships, increase of port productivity, collection of relevant data, and usage of mathematical analysis and techniques needed for port productivity.

E. Mrnjavac

Strategic Guidelines on the Development of the Croatian Shipping Industry and Ports in the Sphere of Transportation and Handling of Unitized Cargoes

The title of this paper is: "Strategic Guidelines on the Development of the Croatian Shipping Industry and Ports in the Sphere of Transportation and Handling of Unitized Cargoes", by the Author Edna Mrnjavac, Faculty of Maritime Studies, Rijeka, Croatia.

The paper deals with the carriage of unitized cargoes by sea, the accompanying port facilities and shipping industry in general, and with the position of Croatia shipping and ports in the world's containerization and other transportation technologies of unitized cargoes, in particular, highlighting the necessity of a consistent government policy on the matter.

It seems that the following points need to be emphasized:

P.1. The dynamics of development of containerization and other transport technologies of unitized cargoes in Croatia lag behind of that in the developed countries as well as of some developing countries.

P.2. The necessity for Croatia to define promptly the consistent policy for the development of its fleet, terminals and other port facilities for handling and carriage of unitized cargoes and a coordinated cargo traffic and transit system, in general.

P.3. The paper aims at establishing strategic guidelines based upon the development of containerization in the world and in Croatia, regarding the requirements of the national economy as well as of the neighbouring countries especially those in our immediate hinterland.

P.4. It is expected a greater concentration of liner services in the port of Rijeka, because of the existence of the container terminal and the significance of this route in the transit traffic. Therefore, the construction and modernization of the land traffic arteries, a uniform traffic policy and higher quality level of transport and cargo-handling services, will be indispensable.

P.5. The Croatian ports should find their future development on business operations with regional and feeder operators, first of all Croatian operators.

P.6. Minor container terminals would be desirable in other Croatian ports for the accommodation of feeder ships.

H. F. Yercan

Analysis of the passenger ferry market in the Eastern Mediterranean

The title of this paper is: "Analysis of the passenger ferry market in the Eastern Mediterranean", by the author H. F. Yercan, University of Plymouth, Institute of Marine Studies, Plymouth U.K.

In this paper passenger ferry sector of shipping industry in the Eastern Mediterranean has been examined, as this is one of the world's key ferry and cruising area. The paper analyses and compares passenger ferry markets of European Union and non-European Union Countries represented by Italy and Greece, and Croatia, Albania, Turkey, Cyprus and Israel, respectively.

It seems that the following points need to be emphasized:

P.1. The economic integration dissolves the boundaries of the segmented economies to form a gibber and more coherent economy. The key pillars of a single market are free movement of people and goods.

P.2. The analysis comprises two stages, and the paper concentrates on the first stage only vis. Defining the problem, drawing the frames of the problem, and analysing the problem regarding the "7P"s of marketing mix in service marketing. The "7P"s in marketing mix services are Product, Price, Place, Promotion, People, Physical evidence, and Process.

P.3. Frame of the Problem:

- Passenger ferry market is analysed
- Liner passenger ferry operators are analysed
- Passenger ferries smaller than 150 GRTs are omitted
- Year 1994 is taken for the analysis
- Only international routes are examined
- A certain passenger ferry corridor from Adriatic Coast to West coast of Turkey is analysed because of the considerable recent ferry traffic growth due to the need to by-pass the former Yugoslavia because of the ongoing war in the area.

Since Italy and Greece are representing European Union, the routes between these countries are not examined separately.

P.4. General international routes in the area have been grouped as follows: Italy-Croatia, Italy-Albania, Italy-Greece, Italy-Turkey, Greece-Croatia, Greece-Cyprus, Greece-Israel, Greece-Turkey, Turkey-Cyprus, Turkey-Israel, and Italy-Greece-Turkey corridor.

P.5. The analysis is based on the questionnaires that were handed out to each ferry operator in the area.

W. H. Adamkiewicz

Some General Basis For Designing The Operation System For Technical Devices

The title of this paper is: "Some General Basis For Designing The Operation System For Technical Devices" by the Author Wiktor H. Adamkiewicz, Marchent Marine Academy, Faculty of Marine Engineering, Gdynia, Poland.

In this paper technical systems have been discussed. Industrial objects as factories, power plants, ports, ships etc. are very often expensive capital investments. Minimization of building costs and optimization of future operations of these objects could be achieved if they were treated as technical systems.

System is a set of material and/or immaterial and/or abstract elements joined together by different relations: informational, energetical and material.

The following points need to be emphasized:

P.1. Industrial objects as machines, technical devices, engineering structures and buildings of today are very expensive. Yet, their operation from the economical point of view is not satisfactory. Each of these objects have been designed separately. However, if an industrial object is to be treated as a system, then its parts will consist the elements of that system, and must be in their internal harmony and interdependency, because a system is by definition unity of interdependent parts.

P.2. When designing, an industrial object will be treated as a real system. The process will be formalized by introducing a simulation model to substitute a real system. Simulation is the imitative representation of the functioning of one system or process by means of the functioning of another.

P.3. The model will be either mathematical or, as the author call it, drawing model. When building machines it is hardly ever possible to substitute the real system by a mathematical model, therefore a drawing model is generally used.

P.4. Real systems generally contain large number of elements and relations. The simulation model will represent the real system satisfactory if it contains sufficient number of these elements and relations between them.

W. H. Adamkiewicz
P. Jandrzejewicz

The Investigation Concerning The Steering System of Operation of the Merchant Marine

Yet another paper by the same author (W. H. Adamkiewicz and the coauthor Piotr Jandrzejewicz which title is "The Investigation Concerning The

Steering System of Operation of the Merchant Marine". In this paper as well as in the previous one the theory of systems, hierarchical systems, theory of steering, modelling and simulation have been applied when discussing the organizational and technical problems when Merchant Marine is treated as a big system divided in subsystems.

It is asserted that there are difficulties from the very beginning as far as the languages formalisation and modelling techniques are concerned, as they do not ensure is some subsystems the desired compatibility of models with the reality.

Designing the steering system of Merchant Marine undergo through the following stages:

Stage 1. The identification and the modelling of structures and interdependencies.

Stage 2. The identification of inductive models (the establishment of models on the basis of experimental investigations).

Stage 3. The construction of evaluation models.

Stage 4. The construction of decision models.

Stage 5. The integration of decision models and the adjustment of structures.

Stage 6. Bringing into practice the decision subsystems.

These investigations also included:

- the optimisation of the choice of additional harbours in liner shipping,
- programming the optimal loading of general cargo carriers,
- programming of timetable of liners,
- the optimisation of the shipowner's strategies in case of the disturbances concerning the regularity of the departures on the route,
- programming the decisions concerning the carriage in irregular (tramp) shipping,
- the optimisation of the shipowner's strategies while starting new shipping lines.

I. Mencer

Republic of Croatia Passenger Liner Coastal Traffic

The title of this paper is: "Republic of Croatia Passenger Liner Coastal Traffic" by the author I. Mencer, University of Rijeka, School of Economics, Rijeka, Croatia.

The paper deals with the dynamics of passenger coastal traffic, organized by the largest Croatian owned passenger shipping company "Jadrolinija" between Croatian and foreign ports. The experience gained in positioning of passenger coastal traffic in the strategic orientation of the national economy, partly as

a public service and partly as an independent economic activity primarily in the international tourist market.

It seems that the following points need to be emphasized:

Point 1. Passenger coastal traffic in Croatian parts of Adriatic started in 1838. That year Austrian Lloyd, Trieste, established a line along the coast from Trieste to Kotor calling at Croatian ports: Mali Lošinj, Zadar, Šibenik, Split, Korčula and Dubrovnik.

Point 2. Passenger fleet continued to increase during Austro-Hungarian Monarch till 1918 when it was dissolved. Part of the fleet belonged to the new Kingdom of Serbs, Croats and Slovenians and smaller part to the Kingdom of Italy.

Point 3. Between two World Wars passenger fleet of eastern Adriatic continued to develop but in the World War Two sustained great losses.

Point 4. After the World War Two as a result of strategic decision to link the islands with the mainland, the renewal of passenger fleet began. The period 1950-1958 was characterized by intensive building of new passenger ships under strong state intervention and subsidy.

Point 5. In sixties new processes took place bringing considerable changes in the markets as completion of Adriatic Highway and intensive growth of tourism.

Point 6. Opening for traffic of the Adriatic Highway had negative impact on the developing of "Jadrolinija". Longitudinal shipping lines lost their monopolistic position in passenger traffic along the coast, as well as the state subsidy.

Point 7. The consequences of the decrease and later even sharp fall in passenger ship lines along the coast and between the coast and numerous inhabited islands, was economic and demographic stagnation of the region as a whole and the islands in particular.

Point 8. The transformation of passenger fleet from classic ships to ferries took place without state intervention. The necessity of state intervention in coastal passenger shipping is yet considered to be indispensable because of:

- daily and seasonal oscillations which make this business unprofitable as the capacities are, on average, insufficiently used;

- the need to maintain that type of traffic communication to stimulate island and coastal population to go on living there;

- the need to maintain low fares.

Point 9. The attractiveness of Croatian coast and islands could have been much better valorized had the

development of coastal passenger shipping been approached in the way similar to almost all littoral European countries. That approach implies a parallel intensive development of coastal roads and ports infrastructure and various measures of supporting the building of modern maritime transport capacities. Therefore it is necessary to renew the passenger fleet with the ships of modern technical and technological characteristics and it is possible only by various measures of state intervention.

H. G. Adamkiewicz

The Influence of the Technical Elements of the Sea Transport Development over the Competitiveness in the Sea Transport Services

The title of this paper is "The Influence of the Technical Elements of the Sea Transport Development over the Competitiveness in the Sea Transport Services" by the Author Hana G. Adamkiewicz, Marchent Marine Academy, Faculty of Business Sciences Gdynia, Poland.

The competitiveness between Sea Transport and other transport branches based on technical development has been discussed and analysed in this paper.

The following points need to be emphasized:

P.1. In the paper it is asserted that the basic measures of the competitiveness level are the quantity and the quality of the services.

P.2. The qualitative properties catalogues have been used to measure the quality of the transport services. The catalogue proposed by I. Tarski is selected, and set apart, from others, and recommended as the most useful one.

P.3. In Tarski's catalogue the Author introduced some changes connected with the reliability of the transport. The reliability as a property has been divided in four properties: Frequency, rhythmicity, regularity and punctuality.

P.4. The competitiveness of the sea transport has been compared with the air transport and the piping transport.

P.5. From the analysis it appears that the advantage of sea transport, when compared with other transport branches, is the lowest price per unit cargo.

P.6. The harbours with its infrastructure and ship's construction, underwent the most dynamic technical progress in the last few decades.