

CONTEMPORARY METHODS FOR MANAGEMENT AND ORGANISATION OF MULTIMODAL TRANSPORTATION

Eng. Nakova Kate

Faculty of Management – Technical University of Moscow, Russia

kate_nakova@abv.bg

ABSTRACT: THE MAJOR OBJECTIVE OF THE TRANSPORTATION PROCESS – SATISFACTION AND BEST INTEREST OF THE CUSTOMERS USING TRANSPORTATION SERVICES. SPECIFICALLY THIS IS MANIFESTED IN THE ORGANISATION OF MULTIMODAL TRANSPORTATION BASED ON ALL PRINCIPLES OF LOGISTIC ACTIVITIES.

Introduction

Nowadays the observation of contemporary schemes of “door to door” cargo transportation implementing the transportation processes of several modes of transport is considered of high importance. However this is not possible without the clarification of the relevant terminology accepted in the international practice.

We are going to examine the terms combined, intermodal and multimodal cargo transportation. “The terminology of combined transportation” has been developed by the European Economic Commission UN (EEC UN) and the European Committee as well as discussed during the European Conference of the ministers of transport.

1. Key definitions

Multimodal transportation – transportation of cargo (goods) using two or more modes of transport.

Intermodal transportation – involves successive transportation with two or more modes of transport in one and the same cargo (load) unit or road vehicle without any handling of the cargo itself when changing modes of transport.

Combined transportation is a form of intermodal cargo transportation where the major part of the inter-continental route is traveled by railway, inland waterways or sea transport and an arbitrary initial and/or final part of the road - by motor transport which is as short as possible and in this way the term “multimodal transportation” turns out to be common for both intermodal and combined transportation and includes them.

On its turn **intermodal transportation** includes in itself the term combined transportation which has a more narrow meaning and turns out to be a subtype of intermodal transportation. [1] [2]

Multimodal transportation tends to be more universal because it integrates different subsystems of transportation resulting in the emergence of a new legal subject - the multimodal transportation operator (MTO) who signs a “door to door” transportation contract with the owner of the goods or the shipping agent. That contract is the unified transportation tariff which leads to the issuance of an unified transport document – multimodal Bill of Lading FIATA.

2. Technical aspect

The Technical aspect of the interaction is reduced to construction and power unification of all elements and junctions, different modes of transportation participating in the realization of the combined transportation. For that purpose it is necessary:

- to coordinate the admission and processing capacity of the connected lines carrying the combined cargo as well as those of the equipment (machinery) in the individual junctions for example the capacity of the railway roads on the stations and the port docks, the capability of the

equipment to unload the cargo from the train and load it into the ship (vessel) or vehicle and visa versa, the power of the unloading and loading equipment, the capacity of the warehouses and the availability of the necessary means for maneuver.

- to coordinate the parameters of the mobile means of the interacting modes of transport. In particular there has to be a compliance between the loading capacity of the vessel and the railway composition (the mass of the train); between the loading capacity of the carriage and the motor car; the special purpose of the vessel and the carriage.
- to plan rationally the transportation junctions, the location of the separate elements and departments inside them, the provision of the parameter and geometrical compliance of the track (road), the mobile means and the loading equipment.
- to create a reliable and comfortable system – telephone, teletype or other connection first of all between the operating staff providing the combined transportation in the transportation junctions. [3]

The technical aspect is complicated enough and is subject to further not only practical but also a theoretical development.

3. Technological aspect

The technological aspect deals with the necessity all the operations for cargo handling to follow (observe) unified rules which are instrumental for the accomplishment of a fast and effective transfer of loads from one mode of transport into another. Today the coordination of the technological processes between the branches is absolutely necessary. This refers to the railway stations, motor vehicle (truck) companies, ports and other units in the junctions. In order to synchronize the work, mutually acceptable “unified technological processes” are traditionally developed in the form of an independent document which has to receive the confirmation of staff representatives of the different modes of transport. We can say that the interaction between the sea, rail, river and road transports is organized by the implementation of unified technological processes in many transport junctions. [3]

4. Organization

As far as the organization is concerned the interaction is provided on the one side by the mutual development of a number of specific documents, regulating the comparatively long-term functioning of the different modes of transport and on the other side by accepting a unified system of operative planning of the current work. The contact schedules for the movement of the transport units along the lines connected to the junctions which guarantee coordination of the frequency and regularity of the movement of the units to the junction, could be considered a specific document. The unification of

the system of operative planning in all elements of the junctions can be accomplished by the usage of unified forms of time schedules and work shifts, introduction of unified time of beginning and ending of the work shifts. In Table 1 are given the results for international transportation of goods.

Table 1. Import-Export for Bulgarian ports for 2012 and 2013

Months	Export - FOB			Import - CIF		
		EC ²			EC ²	
I.2012	2810,3	1733,9	1076,4	3501,3	2130,3	1371,0
II.2012	2862,9	1659,7	1203,2	3603,3	2125,2	1478,1
III.2012	3363,6	2053,3	1310,3	4207,2	2540,7	1666,5
I - III.2012	9036,8	5446,9	3589,9	11311,8	6796,2	4515,6
IV.2012	3171,8	1950,5	1221,3	4277,3	2348,4	1928,9
V.2012	3647,7	2149,9	1497,8	4646,8	2679,1	1967,7
VI.2012	3462,2	2017,5	1444,7	4372,3	2643,4	1728,9
IV - VI.2012	10281,7	6117,9	4163,8	13296,4	7670,9	5625,5
I - VI.2012	19318,5	11564,8	7753,7	24608,2	14467,1	10141,1
VII.2012	3645,9	2251,4	1394,5	4341,6	2657,5	1684,1
VIII.2012	3658,4	1979,5	1678,9	4115,4	2232,0	1883,4
IX.2012	3549,9	2120,9	1429,0	4033,4	2351,8	1681,6
VII - IX.2012	10854,2	6351,8	4502,4	12490,4	7241,3	5249,1
I - IX.2012	30172,7	17916,6	12256,1	37098,6	21708,4	15390,2
X.2012	3637,5	2106,5	1531,0	4537,8	2630,0	1907,8
XI.2012	3802,9	2230,6	1572,3	4340,5	2718,9	1621,6
XII.2012	3009,8	1680,1	1329,7	3816,8	2202,1	1614,7
X - XII.2012	10450,2	6017,2	4433,0	12695,1	7551,0	5144,1
I - XII.2012	40622,9	23933,8	16689,1	49793,7	29259,4	20534,3
I.2013	3482,5	2018,0	1464,5	3724,5	2067,5	1657,0
II.2013	3243,0	1952,2	1290,8	4033,2	2458,5	1574,7
III.2013	3476,6	2172,7	1303,9	3852,9	2333,5	1519,4
I - III.2013	10202,1	6142,9	4059,2	11610,6	6859,5	4751,1
IV.2013	3866,5	2191,7	1674,8	4359,9	2624,7	1735,2
V.2013	3308,9	1879,3	1429,6	4131,5	2374,3	1757,2
VI.2013	3437,8	2041,0	1396,8	4240,2	2549,1	1691,1
IV - VI.2013	10613,2	6112,0	4501,2	12731,6	7548,1	5183,5
I - VI.2013	20815,3	12254,9	8560,4	24342,2	14407,6	9934,6
VII.2013	3992,4	2438,0	1554,4	4670,0	2850,9	1819,1
VIII.2013	3917,0	2384,8	1532,2	3878,3	2191,6	1686,7
IX.2013	3779,0	2448,4	1330,6	4570,1	2794,8	1775,3
VII - IX.2013	11688,4	7271,2	4417,2	13118,4	7837,3	5281,1
I - IX.2013	32503,7	19526,1	12977,6	37460,6	22244,9	15215,7
X.2013	3962,7	2392,2	1570,5	4535,5	2764,9	1770,6
XI.2013	3970,9	2452,6	1518,3	4526,4	2669,2	1857,2
XII.2013	3121,9	1740,2	1381,7	3992,9	2485,7	1507,2
X - XII.2013	11055,5	6585,0	4470,5	13054,8	7919,8	5135,0
I - XII.2013	43559,2	26111,1	17448,1	50515,4	30164,7	20350,7

5. Economical aspect

In the economical aspect the first and most important prerequisite for the provision of the interaction is the creation of identical plans for combined cargo transportation and their submission for execution to all the subdivisions of the corresponding modes of transport. The long-term and especially the annual and operational plans for transportation (quarterly, monthly) should coincide in their capacity, nomenclature, terms, starting points, unloading and destination, names of the companies sending and receiving the cargo. The presence of identical transportation plans for each of the interacting modes of transport makes it possible to foresee on a timely manner the handing over of the load, to prepare the permanent equipment, the means for maneuver and unloading, to provide the process of transferring the load from one mode of transport to the other using the required labour force. For the mutual coordination of the planning of cargo transportation in direct railway-waterway transport a specific system was created which is presented in the

corresponding documents and in particular in tariff handbooks where the list of sea and river ports providing such mode of transport is published. However, sometimes the order of planning might be broken resulting in the lack of compliance between the separate positions in the transportation plans. In that case even if the necessary technical equipment is present in the transport junctions, the cargo and the mobile means of transportation might be delayed with all the negative consequences. [1] The complications in the junctions occur if the recommendations and regulations for each mode of transport are not followed. The unification of planning for the different modes of transport including cargo nomenclature, terms of development and confirmation of projects requires to be accomplished as fast as possible. The tariffs are an important economical leverage for the development of effective multimodal transportation. The railway transport as a part of a direct railway-river transportation lowers the transportation price with 30%. In that connection it is necessary to create a system of unified tariffs which would stimulate the clients to use the effective combined transportation. A number of economic questions also arise. In particular it is the way of payment and financial incentive of the workers in different modes of transport for the sake of better interaction as well as the improvement of judicial and legal regulations. The system of management and more precisely the operative management exercises a significant influence on the results of the work in the junctions and in the larger subdivisions of the different modes of transport. The effectiveness depends not only on the observance of the abovementioned terms but also on the personnel selection, their qualification and personal qualities. Practice has proven effective to assign specific experienced people to specific work shifts. The most important field of interaction is the cargo and commercial work and the legal side including development, coordination and control of observance of the mutual obligations of the parties in the transportation contracts, provision of the storage, observance of the insurance obligations, state laws, rules, codes and instructions.

Multimodal transportation is the future of international business.

6. References

- [1] Belyaev V.M., Cargo Transportations:Textbook for universities, Academia, 2011
- [2] Plujnikov K. I., Transport Shipment, Rosconsult, 1999
- [3] Velmojin A. V., Gudkov L. B., Mirotin A. V., Kulikov A. V., Road Cargo Transportations: Textbook for universities, Hot line – Telekom, 2006