Transport and Telecommunication, 2008, Volume 9, No 1, 4–7
Transport and Telecommunication Institute, Lomonosov 1, Riga, LV-1019, Latvia

EVOLUTION BARRIERS FOR INTERMODAL TRANSPORT IN POLAND

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Through completely lack of complex government regulation in the field of intermodal transport (e.g. subsidy for modernization terminals, purchase modern railway rolling stock) development of combined transport in Poland has slowed down since many years.

Keywords: *combined transport, intermodal terminal, transshipment process in terminal, semi trailers, vertical transshipment*

1. Introduction

In Europe in the last decade of the XX century, a high growth of combined transport took place. Combined transport has the features of the road transport such as: elasticity, the directness of deliveries from every place the conferment, adaptation vehicles to requirements of freights and the features of the railway transport like relative cheapness of transports on average and large distances, speed of deliveries, regularity of connections as well as their considerable frequency. The railway transport in comparison with road transport characterizes smaller number of damages and disappearances of freights. The railway transport provides services on large distances and at the same time it's better for natural environment than the road transport because it's emitting less pollution. Taking into consideration the mentioned advantages of railway transport the intensive development of intermodal transport is well founded.

2. The current state and perspective of development of combined transport in Europe and Poland

Estimated share of railroad transport in different countries of Europe is 10–15% of freight transports totality. In such country as Switzerland, Norway yearly dynamics of growth of combined transport is about 5% [1]. It finds reflection in changes of irregular share of respective branches transport in market of freight transports. One of the forms of the development of harmonized transport in Europe is transfer the part of freight transport from road transport on rail. Fig. 1 shows growth of combined transports in last 15 years. The growth of combined transport encounters many problems, which don't permit fully to develop this new part of transport [2]. Still the cost of transport of Intermodal Transport Unit (ITU) in combined transport is more expensive than cost of transport in road transport [3]. This is the major problem of combined transport.

The chance to change this situation may be solution using by put into practice new transshipment technology. Fig. 3 shows comparison of costs of transport semi trailers in combined transport, road transport with vertical transshipment on pocket wagons (operator Kombiverkher) and with use of modern technology of horizontal transshipment in Germany). We can notice that other railroad operators define similar costs.

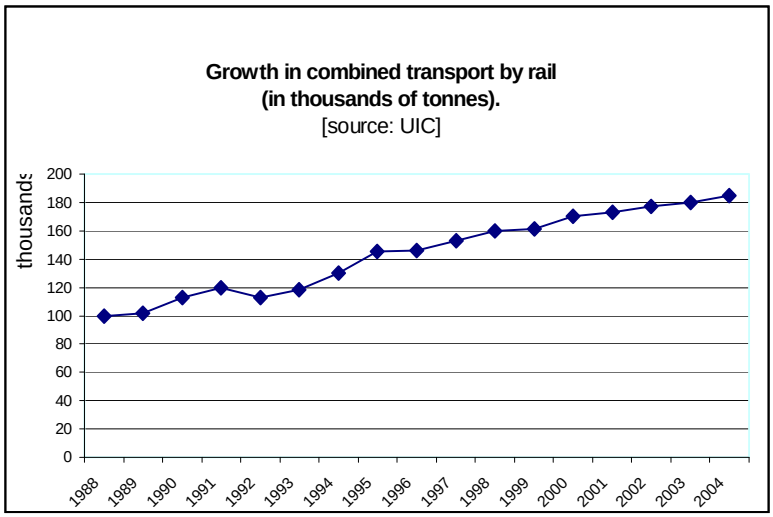

Fig. 1. *Growth in combined transport by rail (in thousands of tonnes). Total for EU + Switzerland and Norway [4]*

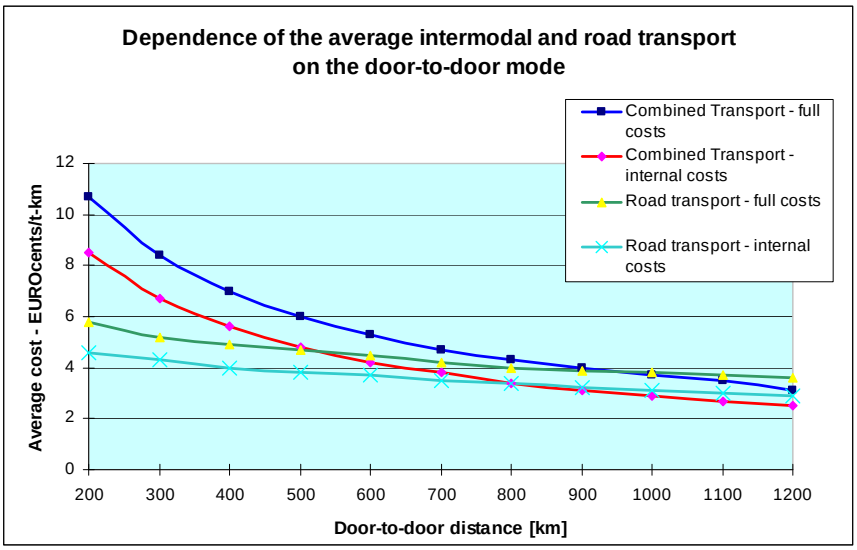

Fig. 2. *Dependence of the average costs of combined and road transport on the door-to-door distance [3]*

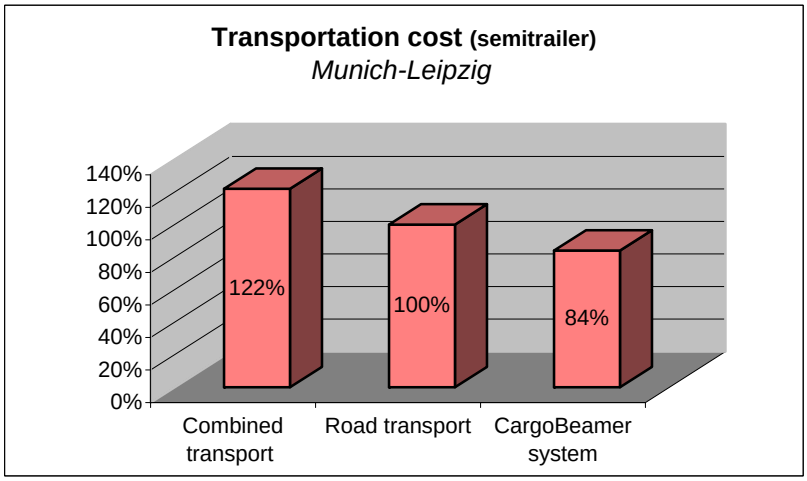

Fig. 3. *Transportation cost semi trailers in Germany [5]*

Stimulation transport operators to co-operation in frames of railroad transport also encounter many technical barriers. In countries such as France, Italy, Germany the share of road freight transport amounts suitably 76%, 84%, 70%. At the same time only about 1% of semi trailers is adapted to vertical transshipment in technology piggyback. Fig. 4 shows share of loading unit in road transport in Germany.

In Poland only 1% of ITU is transported by combined transport yearly. In Slovakia this indicator amounts 1.79% of total freight transports [6]).

There is no doubt that the most important advantages of combined transport in Europe are: reduction of road traffic (less congestion on road network), road safety and ecological aspect (air pollution (CO2 emissions)), noise, environment, development of urban space, energy consumption and raw materials.

Analysis made for Combined Transport Group (GTC), part of UIC and UIRR shows that international unaccompanied combined transport will have more than doubled by 2015, from 54.4 millions tons in 2002 to 116 millions tons in 2015 [7].

Customers are expecting from combined transport and especially from railway operators several significant changes, and especially [7]:

- about 50% shorter time of transport,
- improvement of services quality (reliability and flexibility),
- improvement transhipment process in terminals.

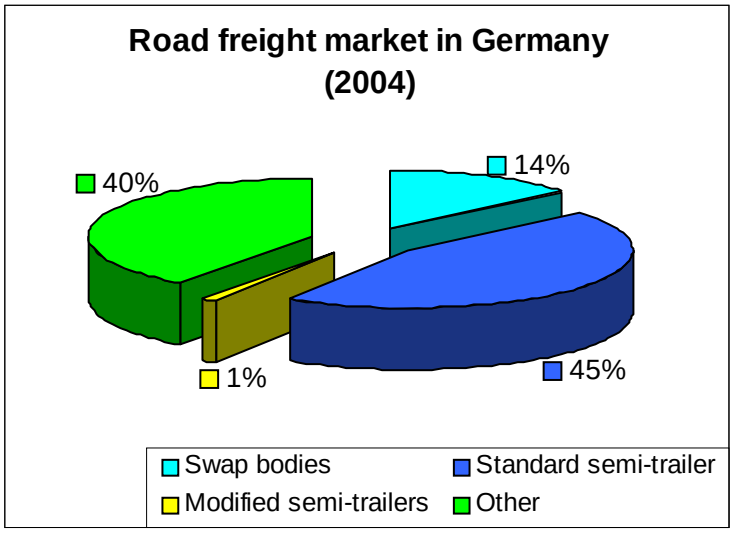

Fig. 4. *Performance and distribution of freight in Germany in 2004 [5]*

The searches of new transport technologies and the systems of organization of the transport and the systems of financial subsidy from government, should be friendly for further intensive development of this branch of transport.

3. Basic reasons for low growth of combined transport in Poland

In 2003 share of intermodal transport amounted to 1,5% of freight transports traffic biggest railway company in Poland PKP CARGO S.A. International traffic made up 84% of total intermodal transport, 37% - import, 36% - export, 12% transit. National traffic made up 19% of total volumes. Containers traffic is amount to 94% (2003), however other ITUs: swap bodies make up only 5,4%, semi-trailers – 0,4% intermodal traffic totally. In the next few years we will not expect significant increase both international and domestic combined transport traffic (table 1).

There exist opinions there are two basic reasons for low increase of CT in Poland:

- railway operators, both independent and PKP CARGO SA doesn't have insufficient platform wagons for semi-trailers transport,
- road transport company (like in Germany (fig. 4)) practically doesn't have semi-trailers for vertical loading. These semi-trailers are slightly more expensive to be bought than the so-called "normal" road vehicles.

Table 1. Intermodal transport traffic 1999 – 2003 (ITU) [8]

Years	ITU				
	20’	40’	Swap body	Semi-trailer	Total
1999	59928	76880	19312	2434	158554
2000	89224	72370	36449	1259	199302
2001	70786	60183	32105	675	163749
2002	74997	71977	17540	430	164944
2003	78780	102204	10406	781	192171

Other reasons for insufficient growths of CT are:

- accidental place of landing rail-road transshipment terminals during last 30 years,
- insufficient length of railway tracks in terminals, necessity of additional shunting and as a result, extending time for transshipment ITUs (average length of rail track is 300 – 350 m),
- low quality services railway operators displaying:
  - too long time flow ITU in rail mode,
  - often delayed trains,
  - lack schedule traffic trains due to irregular road traffic flow into terminal,
  - too long time waiting on borders due to sophisticated procedure customs control.
  - lack of information systems between actors of transport chains (especially between transport modes).

Consequence of low railway services quality is often loss of customers.

4. Conclusions

High cost of combined transport in comparison with road transport, too high cost to access to railway infrastructure and strongly payment for transhipment on terminals without government subsidy like in other European countries are determining barriers to growth CT in Poland.

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