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POSSIBILITIES FOR A SHIFT IN MODAL SPLIT IN FAVOUR OF RAIL- AND INLAND SHIPPING TRAFFIC

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SUMMARY

The discussion on the possibilities of influencing the modal split are in traffic science and traffic politics concentrated on shifts from carriage of goods by road towards railways and inland shipping. Such shifts can be stimulated by administrative and investment measures, or they can be left to the efforts of railways and inland shipping companies themselves to influence the market. The latter is of particular economic interest.

Starting points of strategies employed by entrepreneurs shape themselves to the changing requirements of the shippers and the related new logistic efficiency standards. The railways endeavour to develop their strong points to match these requirements by stepping up the organization of direct traffic routes, by introducing high-speed traffic, by improving the efficiency of their customer-information systems and by intensifying their activities in combined traffic. Nonetheless considerable shortfalls will have to be overcome when it comes to the necessary cooperation in international traffic.

In inland shipping with its traditional dependence on bulk transports, the carriage of dangerous substances and combined traffic offer a relative potential for an increase in its market share.

1. A SHIFT IN MODAL SPLIT – WHY?

Recently the discussion on the possibilities of influencing the modal split in goods traffic in favour of railways and inland shipping has considerably gained in explosiveness, not only at national levels, but also in the political views on traffic in the EC. This is caused by the generally strong growth of carriage of goods by road during the past few years and by the predicted growth rates of motor lorries in connection with the EC-integration and the economic terms of trade with the East block countries which are unfolding at present (1).

The build-up of carriage of goods by road in the coming years, as it is taking shape today, is, according to many observers, something neither the environment nor the road infrastructure itself can cope with. The increasing aggravation of the bottle-necks caused by the overloading of road networks as well as by the drastic increase in the emissions of noise and harmful substances by motor lorries (coupled with the threatening consequence of irreversible damage to the ecological system) is an urgent reason for the traffic policy makers and traffic scientists to think

seriously about alternatives in order to master the growth processes of goods traffic, which are inevitably approaching us. Railways and inland shipping play a major part in these considerations, as the handling of goods traffic by rail and water is seen as relatively harmless to the environment and sufficient reserves in capacity are assumed. At the same time it is hoped that, with correspondingly higher utilisation of capacity, internal structural problems with these types of transport will be solved. The latter seems doubtful, at least for railway systems, which today, for example in Germany, operate to the limits of their capacity on their main transport routes and could only cope with a significant growth, if they make investments in the expansion of their capacity.

2. BASIC POSSIBILITIES FOR SHIFTING THE MODAL SPLIT

With respect to the alternatives for influencing the modal split in goods traffic one can in principle differentiate between traffic-political and business-political measures. Business-political approaches mark out strategies for transport enterprises to adjust to the requirements of the customers (the shippers) and their anticipated changes with the help of market-oriented supply and so bring about changes in the modal split by their own efforts. On the other hand, traffic-political measures are introduced by the government. Here activities concerning policies on regulation and investments are important.

Strategies in respect of regulation policy comprise on the one hand transport embargos or deliberate government control of the demand for transport by way of framework legislation (regulations) or measures of a financial nature (taxation, subsidies). Such interference in the market should, however, be rejected as economically unsubstantial, if in future the principle of a free choice of means of transport is to be realized.

On the other hand it is a matter of eliminating distortions in intermodal competition, which may be at the expense of inland shipping and railways. At this junction I want to refer to the discussion on the low degree of cover of the infrastructural costs of motor lorry traffic (2) as well as to the difficulty in separating network and operation in railway systems. The administrative separation of network and operation, coupled with the payment of levies on usage, should facilitate comparability of charges for the cost of infrastructure to rail and road respectively (3). Whereas charges for the cost of roads does not pose any problems for inland shipping (4), here, too, administrative discrimination exist (e.g. in the transport by the partners in combined traffic), which must be eliminated, when it is politically desirable to grant inland shipping a greater share in traffic.

Measures based on investment policy are after all meant for the absolutely necessary support of the strategies of the carriers' businesses. The market-oriented conversion of the advantages of the railway and inland shipping systems first of all requires the promotion of an investment policy for the infrastructure. In this respect combined traffic (installation of handling plants for combined traffic, rolling stock for combined traffic), financing of new and extended facilities for railways and of the extension

of inland ports with distribution centres for goods can be mentioned.

Following these fundamental remarks with regard to transport policy measures, business policy strategies to shift the modal split should first of all be discussed, since here the essential possibilities of shifting traffic, that are economically meaningful, can be demonstrated. The requirements for investment policies will be dealt with as and when appropriate.

3. POINTS OF DEPARTURE FOR BUSINESS POLICY STRATEGIES AIMED AT SHIFTING THE MODAL SPLIT.

Strategies for business policies to increase the share in the rise in the volume of goods and in the traffic services rendered are based on solid analyses of the target markets and their demand. Proceeding on that premise strong and weak points in the company itself and in that of the competitor must be worked out. A market strategy promising results, only has to bring unexplored potential, or its own potential still to be developed, into line with the demand of the markets.

Requirements by the markets imply expectations on the part of the shipper regarding the performance of the transport sector.
Today the spectrum of these expectations is in a stage of transformation. The increasing integration of the various transport functions in logistics planning in which all parts of business are involved, stepped up regional division of labour, reduction in the level of value added and the trend to manufacture with the smallest possible stocks drastically change the performance criteria for transport companies.

While the relative importance of more attractive transport prices and the net time of transportation remains stagnant, the emphasis is shifted to other requirements. The miniaturization of the size of shipments, which is tied to logistical concepts, and the growing share of perishable and at the same time valuable goods make strict punctuality and reliability, prompt availability, informational support for the flow of goods as well as a corresponding flexibility in the transport capacities (growth of the sector part-shipments) essential. What is required is adaptability of the transport company to individual logistics concepts of trade and industry as well as professional knowledge in providing additional logistic services. The individualisation of transport services which has to be observed, eventually culminates in the complete integration of transport companies in the logistic concept of one shipper (5).

In addition there are the effects of the realization of the internal European market in 1993 and the intensification of the economic relations between East and West, which will start after the borders are opened. Especially transborder transports harbour significant growth potential against this background, but they need the ability to deal with traffic in an all-European network.

Carriage of goods by road has, because of the characteristics of its system and its flexibility, apparently been quite successful in adapting to these developments. The railways in particular were unable to keep their share in the modal split against it. In future there will be a further erosion of market shares, if

matching the spectrum of services with the market requirements is not successful. However, such a market orientation poses grave problems to the railways in particular and requires serious changes in their thinking processes. Therefore the content, the opportunities and the risks of market oriented strategies aimed at shifting the modal split in the railways and inland shipping must be subjected to a critical examination in the following chapter.

4. THE STRATEGIES OF THE RAILWAYS

For the successful strategic reorientation of the railways the link between market requirements and the strength of the railway system needs to be made. The strong points of the railway system are (6):
- the relatively fast and safe transportation of large quantities of goods over long distances
- sound informational support of the type of transport (status reports, information flow anticipating transport)
- great reliability and sufficient disposal time of transport services.

Problems arise, however, from:
- fast transportation of small shipments
- the servicing of an extensive network.

A strategy of concentration on the strong points of railways presents the following starting points:
(1) National and international direct traffic between growing trading centres enable direct services to operate with competitive travelling times compared with those of motor lorries, by consolidating shipments and reducing time-consuming changes and shuntingwork (7).
(2) This is also connected with the realization of high-speed goods traffic at 140-160 km/h within the framework of setting up a European fast network. With distances by rail of over 500 km travelling time advantages against motor lorries can clearly be expected. Moreover the guarantee of punctual and reliable handling of this traffic is important, as carriage of goods by road becomes increasingly problematic due to the ever growing overloading symptoms in the infrastructure.
(3) Also necessary is the expansion of promising information support for the goods transport processes. Within the framework of HERMES, documentation and information systems to support the actual transport should be developed and implemented on an European level.
(4) The further development of combined traffic is crucial for the sales success of the railways. Cooperation between rail and road carriers, or cooperation with forwarders who will play a part respectively, will have the best chances of success in the future. The railways will be the freight carrier for the long distance, whereas motor lorries will deal with collection and distribution in the regions of origin and destination.

In their efforts the railways should concentrate on business relations which are showing strong growth and where, in cooperation with road carriers, they can offer forwarders much better services than they could with single carriage and rail connection

traffic. The concept of international connections becomes increasingly important to combined traffic (8).

In the area of national railway companies a great deal of planning is in process for entrepreneurial implementation of these strategic guidelines. As far as the Deutsche Bundesbahn (the German Railway System) is concerned I refer to the deliberations in respect of further development of Inter-Cargo, promoting fast goods traffic (9), of the KLV-system concept (10) or of the project Cargo 2000 for small shipments traffic (11).

What will be decisive is the railways' success, or otherwise, to increase their share in the sharp rise in border crossing traffic through cooperation on a European level. Here very promising opportunities present themselves in the market, but also considerable areas of conflict. As to the challenges the starts made so far for cooperation [KLV, Eurail-Cargo (12)] may be gratifying, but there is certainly no cause for euphoria yet.

In addition to the intensification of international cooperation the conversion of railway companies to market-oriented businesses on a national level should make further progress. This strategy of reorientation will inevitably make corresponding changes in the organisational structure necessary.

In any case, the railways will only succeed in shifting the modal split, if the serviceablity of the infrastructure they use stays abreast of their efforts. Against this background the expansion of a Europe-wide fast railway network is something the goods traffic cannot do without either.

Particularly when we think of combined traffic the construction of new terminals and the extension of old ones should be considered. The strategy to eliminate, in cooperation with the road hauliers, the disadvantages of the system and to take advantage of its stronger aspects will not hold, unless the railways learn to master the nerve centres of the system which the junctions are. This implies the improvement of the techniques for the transfer of goods and the organisation of road construction to and from the terminals, corresponding location concepts and, of course, the availability of adequate capacity.

Important potential for a shift of transports from road to rail are to be found in:
- seaport traffic, in particular to/from Rotterdam;
- North-South transit traffic (e.g. across the Alps);
- East-West traffic.

A precondition for the realization of this potential is, within the framework of the strategic reorientation, the basic willingness to cooperate, as more than anything combined traffic will be able to draw more shipments towards the railways.

5. STRATEGIES FOR INLAND SHIPPING

The strong points in inland shipping can be found in cost-effective and safe transportation of large quantities of goods over great distances. Inland shipping shows its efficiency for example when it handles the immense need of transportation between one point of loading and one point of unloading (push and tow sy-

stem). Thanks to its very low fuel consumption the ships on the inland waterways can be classed as very acceptable from an environmental point of view.

The range of inland shipping is by its nature limited to natural and artificial waterways. It also has problems with small shipments and shipments demanding short transit times. Moreover its particular market structure (independent barge owners) has a tendency to have a negative influence on its powers of innovation and efficiency.

Nevertheless inland shipping has always been able to maintain virtually constant market shares, in yield and in ton/kilometers, in goods traffic because of the specific advantages of its system. It has always been particularly strong in the carriage of raw materials, such as coal, ore, building materials, and chemicals such as petroleum derivatives and basic chemical materials. It will certainly be able to maintain its position in the market in future, if it succeeds in increasing its competitive edge by taking measures to improve its efficiency in turn-around schedules (travelling times) and in the harbours (handling).

As it is, the yields of the markets concerned will continue to fall as a consequence of the long-term development of the economic structure. The prospects of realizing a rise in its market share in the total goods traffic are therefore far less promising for inland shipping than for the railways. Strategic starting points are on the one hand combined traffic, on the other hand the growing market of dangerous goods.

Today inland shipping already carries a large share of the dangerous substances offered by the shippers. Of special significance are the dangerous substances in class 3 (petroleum products and chemical products). The corresponding know-how can be further utilized by inland shipping, if it speeds up the individual adaptation to the chemical-technical properties of the products offered for carriage and ensures that appropriate precautionary measures are taken (13).
On the quaysides the installation of appropriate storage for dangerous substances will be necessary to complete the circle.
Specialized stores for dangerous goods can serve as a complement for the planning of interior harbours as junctions for the distribution of shipments. By employing such a strategy (in cooperation with the forwarding trade) inland shipping will fundamentally improve its prospects.

The up-dating of the functions of interior harbours to distribution centres for goods will in particular have a positive effect on combined traffic involving inland shipping (container traffic and Ro-Ro traffic). Since at present only about 35% of the container traffic to the Benelux harbours travels by water and the containerisation of general cargo steadily grows, there are still opportunities to mobilize growth reserves; however, the size of this traffic, compared with the total tonnage carried, is only modest (15). Since for the transport to and from the harbours mainly motor lorries are employed, it is not only necessary to provide adequate transshipment facilities, but also to put their official, administrative status on a par with that of the rail terminals. This concerns especially the Federal Republic of Germany where the radius for to-and-from carriage without a license is restricted to a distance of 50 km. Here we refer to

the remaining administrative measures to promote combined traffic by rail and road.

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