worksheet

The railways - carriers with a future?

Instructions:

Read the article "Rail - a mode of transport with a future? “. Then answer the following questions:

1. Which factors helped establish trucks as a means of transport from the end of the 19th century?
2. How can rail become more attractive for freight transport in the future?
3. Which measures promote sustainable freight transport?

Duration: max. 15 minutes

Rail – a Mode of Transport with a Future?
https://www.addendum.org/bahntunnel/verkehrstraeger-mit-zukunft/ [1]

Notes:

[1]Groschopf, W.: Die Bahn – Verkehrsträger mit Zukunft?, in: https://www.addendum.org/bahntunnel/verkehrstraeger-mit-zukunft/ accessed 16.07.2019

Rail – a mode of transport with a future?

by Wolfram Groschopf, 02.07.2019

How freight transport by rail and road has developed, what form of transport is currently ahead and what challenges the transport industry will face in the future: a history of freight transport.

Looking at transport globally, shipping is the most important mode of transport. In Europe it is road and rail. In the transport volume race of the two transport modes, both took the lead alternately. Today it's road. And probably tomorrow, too.

From horse-drawn railways to steam locomotive

With the invention of the steam locomotive in the 19th century, a network of railway lines developed rapidly in Europe. On the one hand, rail enabled industrial production based on the division of labour and, on the other hand, it generated great demand for industrially manufactured goods, such as metal products and machinery. The first railway line in Austria was the Nordbahn (northern line), which opened in 1838 as a private enterprise. It was mainly used for coal, iron and salt transport.

The military and economic importance of the railways turned out quickly and favoured the development of further connections. Industrial companies began to consider availability of railway connections in their location decisions and thus had a strong influence on regional development. Depending on the state budgetary situation, phases of railway development dominated by the sovereign and the private sector alternated in the following decades in Austria. Up to the turn of the century, Alpine connections had already been created via tunnels.

20th century: The truck in the fast lane

By the end of the 19th century, the rail had been established in freight transport, and regional and local transport was a horse-drawn affair. While steam had been the driving force until then, in the 20th century combustion engines as a new drive technology led to far-reaching changes in the transport industry. The truck was developed in 1896 by Gottlieb Daimler using a petrol engine. Competing developments used different drive technologies, such as steam, gas or electric motors. Initially, the truck was only hesitantly accepted by the market.

The truck as a prevalent means of transport was finally driven by technical developments and improvements to roads, but also by high demand from the military sector in the course of the First World War. In this way, trucks almost completely replaced horse-drawn carriages by 1930, not least because of their longer range and almost 50 percent lower transport costs, which already played an important role at that time. Entrepreneurs quickly recognized the potential of trucks and used them, for example, to distribute beer or supply material to construction sites. Finally, diesel engines became the dominant drive technology for trucks and trains on non-electrified lines.

The electrification of large parts of the rail network in Austria took place before 1950, today ÖBB relies on green electricity. Although the further development of the diesel engine has enabled major advances in terms of energy efficiency and pollutant emissions, there is a lack of marketable alternative drive concepts for trucks. Therefore, natural gas drive is currently being promoted as a bridge technology in order to improve the comparatively poor environmental balance of trucks.

Current developments in the rail - truck relationship

Compared to rail infrastructure, the road network is much denser and thus ensures nationwide accessibility. In the rail sector, regional and secondary railways as well as freight loading

stations are increasingly being closed. It is therefore not surprising that the share of rail transport has decreased in recent decades, even though the Austrian rail transport share is above average compared to other EU countries.

Despite its limited loading capacity, trucks have long since overtaken the railways in many applications. There are many reasons for this. In addition to improved infrastructure, key aspects include the system-related advantages of trucks for changing demand patterns and the low costs of road transport. Compared to trucks, rail freight transport also faces much greater logistical challenges. Frequently required truck transports to and from freight terminals, transhipment services between rail and truck, wagons and track capacities must be coordinated, booked, used on time and paid for.

Slow digitalization of the railways

In addition, modern trucks allow a wide range of applications and guarantee high adaptability to the needs of many companies and consumers. Increased customer orientation and shorter planning periods for companies are leading to more frequent transports of smaller quantities. Road transport meets these requirements through the high availability of vehicles and the ability to cover long distances quickly and with little coordination effort.

Increasing digitalization, for example in the form of transport platforms, is increasing road freight transport efficiency and supporting end-to-end electronic business processes that are only just being set up in the rail sector. Both ÖBB and the freight transport subsidiary Rail Cargo Austria, which handles over 70 per cent of rail freight transport in Austria, are pursuing a clear digitisation strategy, the comprehensive implementation of which will, however, still take some time.

Liberalised road, regulated rail

An increase in customer service and efficiency in the railway sector is urgently needed in order to keep pace with new railway companies in the area of tension between road and rail, but also in internal competition within the sector. Private providers mean increased competition for the former state railways as a result of the increasing liberalisation of the rail market.

In contrast to the rail sector, the market for road freight transport is already highly liberalised and internationalised. However, this does not only result in advantages. Major problem areas generally concern the tough price war and low margins, but in some cases also compliance with social and labour law requirements in the context of driving and rest periods as well as wage dumping. The challenging working conditions and the low social prestige lead to a shortage of truck drivers. However, the railway sector, which is more heavily regulated, also faces personnel problems. At ÖBB alone, more than 20 percent of positions will have to be filled in the coming years, mainly due to age.

A look into the future

The transformation to a sustainable transport system is an essential building block for adhering to the generation contract. In any case, the much-vaunted traffic turnaround is far from being a reality in the area of freight transport, but also in passenger transport. Achieving the climate targets is an important interim goal in order to curb climate change and air pollution and, not least, to avoid fines running into billions. The national climate and energy strategy developed under turquoise-blue, but also European initiatives for freight transport do not appear to be sufficient. Long-term objectives require long-term strategies and, in some cases, unpopular measures.

To increase sustainability in freight transport, technical and conceptual innovations are necessary, as are the willingness of customers to pay and a long-term political framework that sends out strong signals. Despite tight budgets, research and teaching also make an important

contribution to the further development of transport and traffic and to bringing sustainability more into people's minds and the calculation of transport companies and the state. The environmental and social impacts of transport are complex; currently discussed CO2 levies cover only part of them but would already be advantageous for the railways.

Increasing demand requires combined transport

The logistics location Austria is attractive, the creation of the umbrella brand Austrian Logistics strengthens the perception of the industry. In any case, increased cooperation between rail and road as partners in combined transport and also with inland waterway transport is necessary for future development. The improvement of the information situation between transport companies and their customers is an important approach to using existing capacities more efficiently on the basis of real-time data. The already high demand for transport will continue to rise in the future. In the medium term, this can only be achieved jointly by rail and road. Whether additional transports are increasingly handled by rail also depends on Austria's positioning in relation to the new Silk Road.

Source:

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