

LOGISTICS - TRANSPORT

The aim of this lecture is to introduce you to transport facilities and individual modes of transport



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Logistics - Transport

Structure of the
lecture

Transport facilities
Transport classification
**Characteristics of transport by
transport routes**



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TRANSPORT

- interconnects individual parts of the logistics process
- ensures the physical movement of products from the place where they are produced to the place where they are needed - the **benefits of the place**
- is a **time-benefit factor** - it determines how quickly and how reliably a product is moved from one location to another location



- logistics management in transport = integrated use of technical, organizational and management methods to ensure the transfer of the required items at the right time at the right place with the required quality of services and relevant information





- ensures the transfer of products to geographically separated markets
- when products arrive on time in the market, undamaged and in the required quantities, transport **provides added value to customers**
- planning of transport systems:
 1. customer requirements for time and hence for transport costs
 2. choice of transport facilities and other loading aids
 3. choice of means of transport



TRANSPORT FACILITIES

- types of transport facilities:
 - pallets
 - containers
 - dimensionally unstable containers





- function of transport facilities:
 - acceptance and unification of transported materials
 - protection of transported goods against damage, theft, etc.
 - manipulability
 - storability
 - information carriers



TRANSPORT CLASSIFICATION

- by supplier and customer:
 - outside the company
 - inside the company:
 - ❖ continuous means of transport
 - ❖ non-continuous means of transport





- by transported object:

- passenger
- freight

- by transport route:

- road
- rail
- water:
 - ❖ inland (river and lake)
 - ❖ sea
- air
- pipeline
- combined transport: rail-road, road-ship, road-air or rail-ship





Road transport

- positives vs. negatives
- full truck shipment
- collection service
- extra-large (oversized) transport





Road train (XXL, LCV, gigaliner, Eurocombi, Megatruck)

- road set in the Czech Republic 22 m (up to 153 pallets), with the exception of more, in the world about 50 m
- up to 4 different temperature modes





- conditions of use in the Czech Republic:
 - Subject to approval of the Ministry of Transport of the Czech Republic, which approves the transport route (for 3 months)
 - Weight max 48 t, on D1 near Prague 40 t (bridge capacity)
 - Only on separate motorways and expressways, except for max. 10 km for loading / unloading
 - It can not cross the railway
 - Special designation
 - E.g. Schenker - piece shipments Prague-Brno



Rail transport

- positives vs. negatives
- individual wagon consignments
- express parcels
- complete train
- individual consignments





Water transport

- positives vs. negatives
- rivers, lakes and artificial water channels
- sea:
 - coastal (cabotage)
 - transoceanic
- liner
- charter





Air transport

- positives vs. negatives
- regular line
- charter

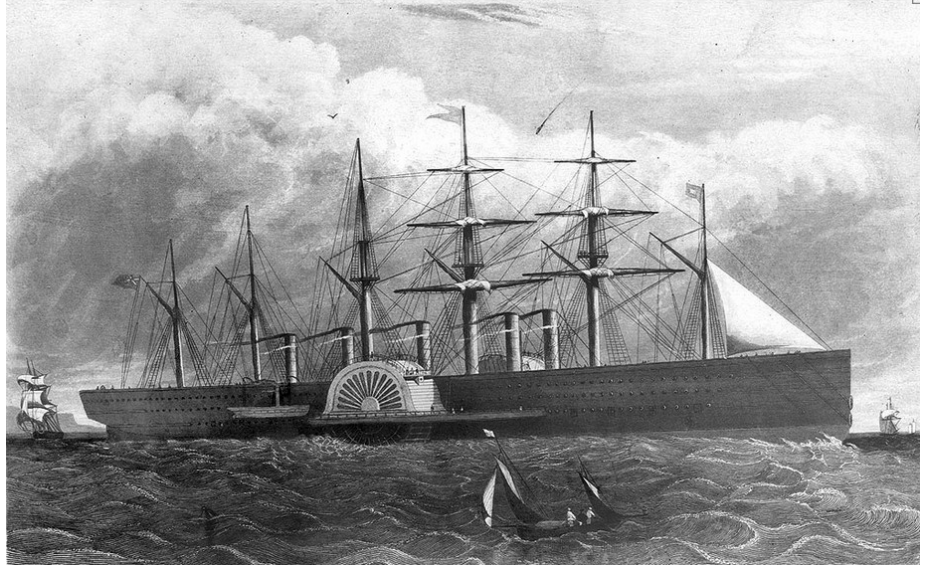




Obr. 2 Plaver



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Port of Bremenhaven



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River transport



European riverways



Třídění CEMT (v tabulce jsou uvedeny maximální rozměry plavidel)				
Třída	Délka (m)	Šířka (m)	Ponor (m)	Tonáž (t)
0	Malé lodě			
I	38,5	5,05	1,8-2,2	250-400
II	50-55	6,6	2,5	400-650
III	67-80	8,2	2,5	650-1000
IV	80-85	9,5	2,5	1000-1500
Va	95-110	11,4	2,5-2,8	1500-3000
Vb	172-185	11,4	2,5-4,5	3200-6000
Vla	95-110	22,8	2,5-4,5	3200-6000
Vlb	185-195	22,8	2,5-4,5	6400-12000
Vlc	270-280	22,8	2,5-4,5	9600-18000
VII	>285	34,2	2,5-4,5	14500-27000
Nezař.	Přístupno námořním lodím			



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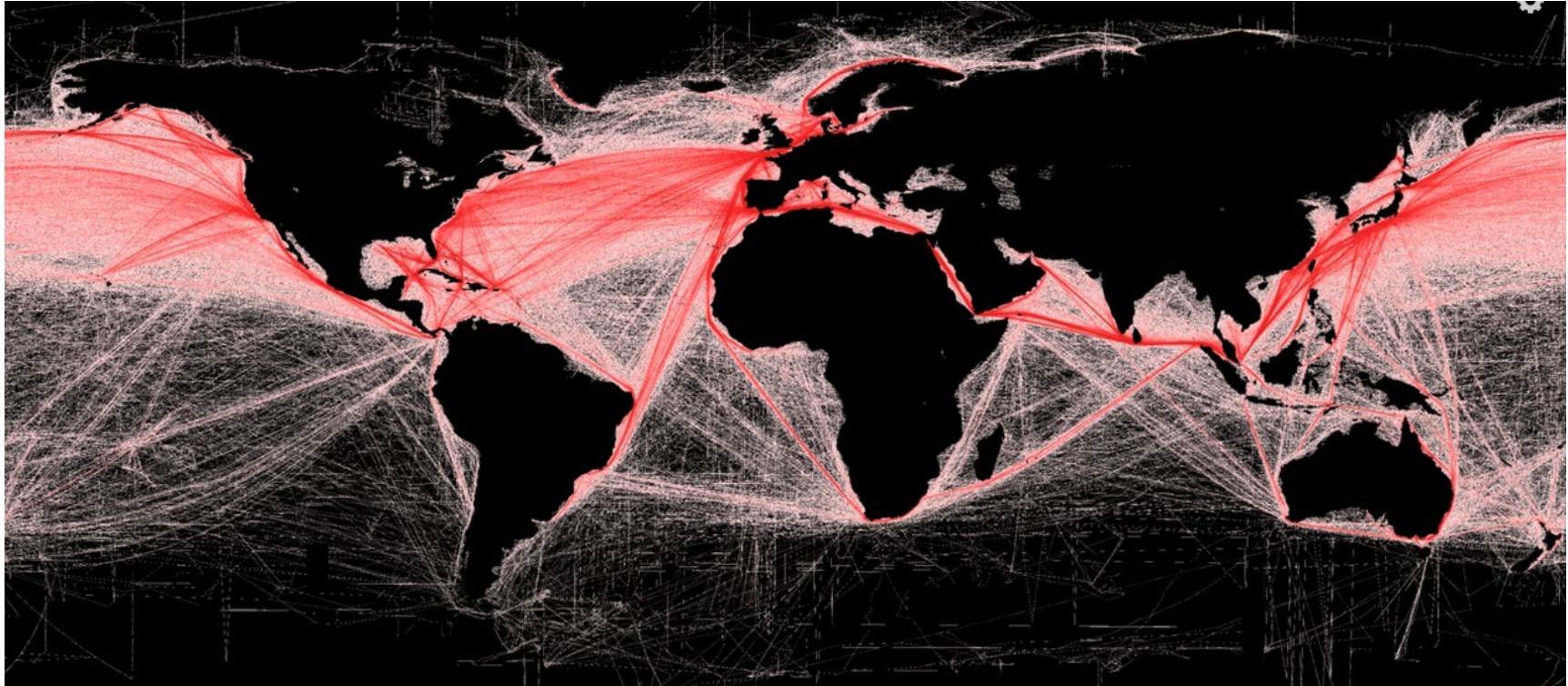


Cruise liner in Prague

Shipping density map




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World's largest container shipping ports (2017)

1. Shanghai (China; 40.23 mil. containers-TEU)
2. Singapur (Singapur; 33.66 mil. TEU)
3. Shenzhen (China; 25.20 mil. TEU)
4. Ning-po-Zhoushan (China)
5. Hongkong (Hongkong)
6. Pusan (South Korea)
7. Kanton (China)
8. Qingdao (China)
9. Dubai (SAE) 
10. Tianjin (China)
11. Rotterdam (Holland; 13.73 mil. TEU)



Note: **TEU** = **T**wenty-foot **E**quivalent **U**nit, where 1 TEU is equivalent to one 20-foot container.



World's largest airports (number of passengers in millions in 2017)

Atlanta (USA)	104
Bei jing (China)	96
Dubai (SAE)	88
Tokyo Haneda (Japan)	85
Los Angeles (USA)	84.6
Chicago (USA)	80
London Heathrow (GB)	78
Hongkong (China)	73
Shanghai (China)	70
Paris (France)	69
Amsterdam (Holland)	68.5



Source: airflight.blog.cz



Pipeline transport

- positives vs. negatives
- product pipelines



Combined transport

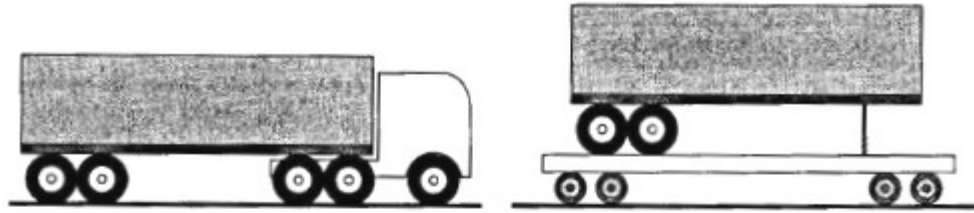
- part of the route passes by rail, inland waterway or sea and the other carriage is covered by road transport
- road transport is used to pick up the shipment from the sender and to deliver the shipment to the recipient



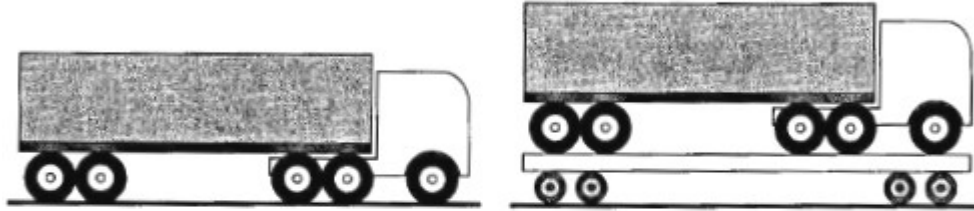


- selected characteristics of combined transport:
 - Reduction of material handling costs
 - High security of transported goods
 - Minimizing the amount of heavy handwork
 - Unified technique of mechanization, automation, loading and unloading
 - Insufficient legislative support of the state
 - Insufficient harmonization of conditions for the operation of individual modes of freight transport

1. TOFC = trailer-on-flatcar



2. tractor with trailer on the flatcar



3. roadrailer



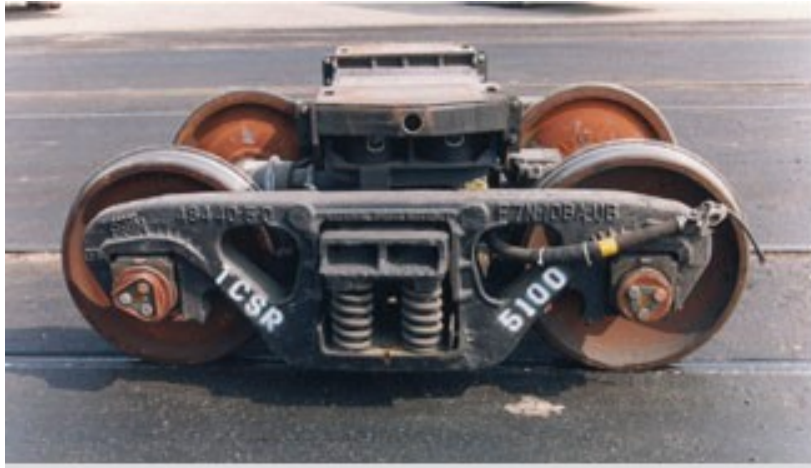
4. COFC = container-on-flatcar





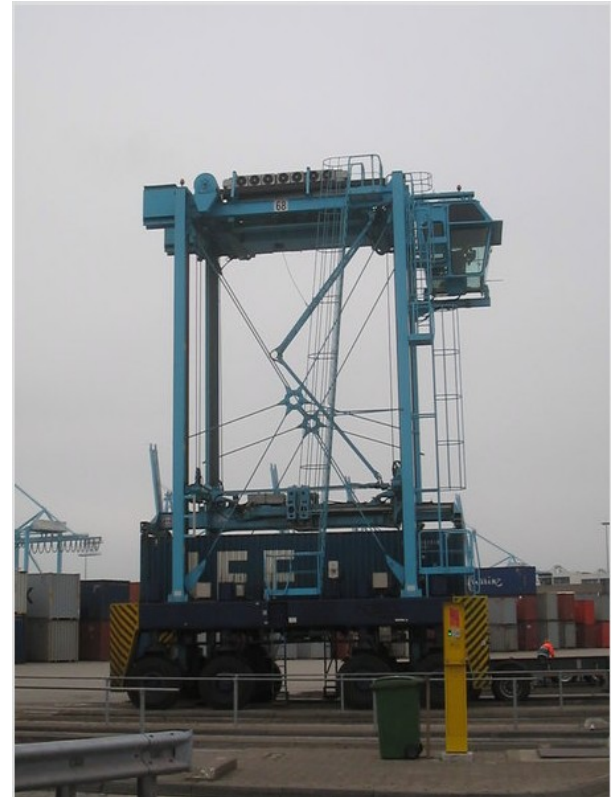
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Summary of the lecture



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You can:

- Explain benefits of transport
- Define transport facilities
- Classify transport from different points of view
- Characterize modes of transport according to transport routes