Potential of High-Productivity Vehicles

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SCANIA

The challenge

MOBILITY
Of goods
Of people

COST
Willingness to pay

IMPACT
Emissions
Fatalities
Congestion
Noise
Fuel consumption
Carbon dioxide

The productivity increase

Malmö - Stockholm in 1909

Average speed 20 km/h = 3 days!

Payload less than 2 tonnes

Dirt road 700 km

More than 400 litres of fuel

Total of 2 axles

The European work-horse

Malmö - Stockholm in 1990

Average speed 80 km/h = 1 day

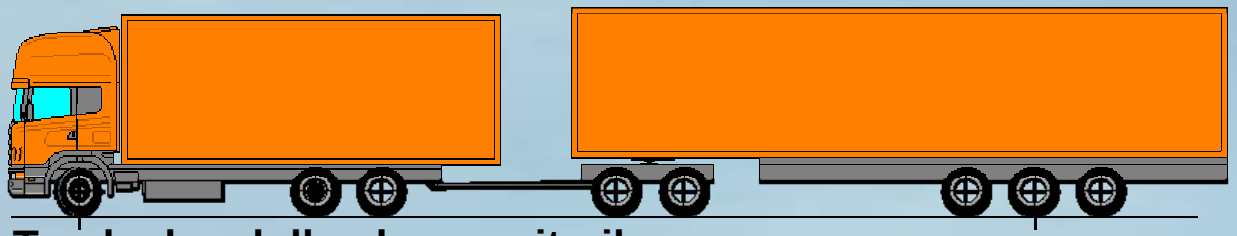
Payload 25 tonnes

600 km mostly four-lane road

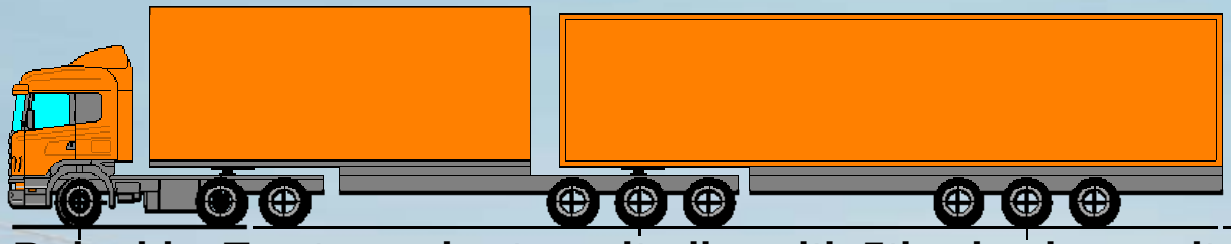
200 litres of fuel

Total of 5 axles

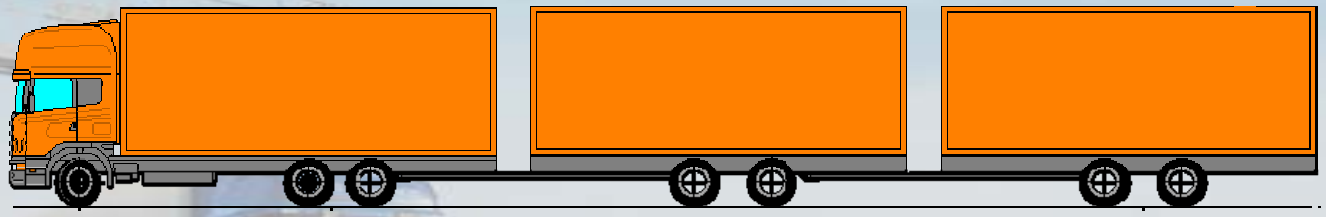
Future European work-horses



Truck plus dolly plus semitrailer



B-double: Tractor + short semitrailer with 5th wheel + semitrailer



Truck plus two centre-axle trailers

Tractor plus semitrailer plus centre-axle trailer

Malmö - Stockholm in 2010

Average speed 80 km/h = 1 day

Payload more than 40 tonnes

600 km four-lane road

160 litres of fuel

Total of 7 or 8 axles

A key performance indicator

		1909	1990	2010	
A	speed	20	80	80	(km/h)
B	payload	2	25	40	(tonnes)
C	fuel	400	200	160	(litres)
AxB/C		0.1	10	20	

A doubling of the road freight efficiency is technically feasible

Less fuel, less carbon dioxide

1 kg of fuel = 3 kg of CO2

Harmonise road classes

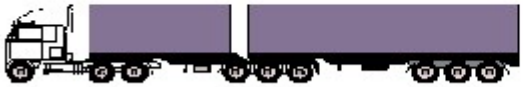
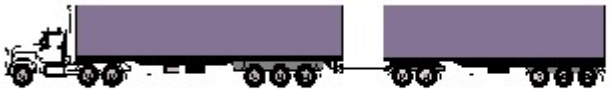
Transport is global, c.f. ISO maritime containers

Vehicle manufacture is global, c.f. emission regulations

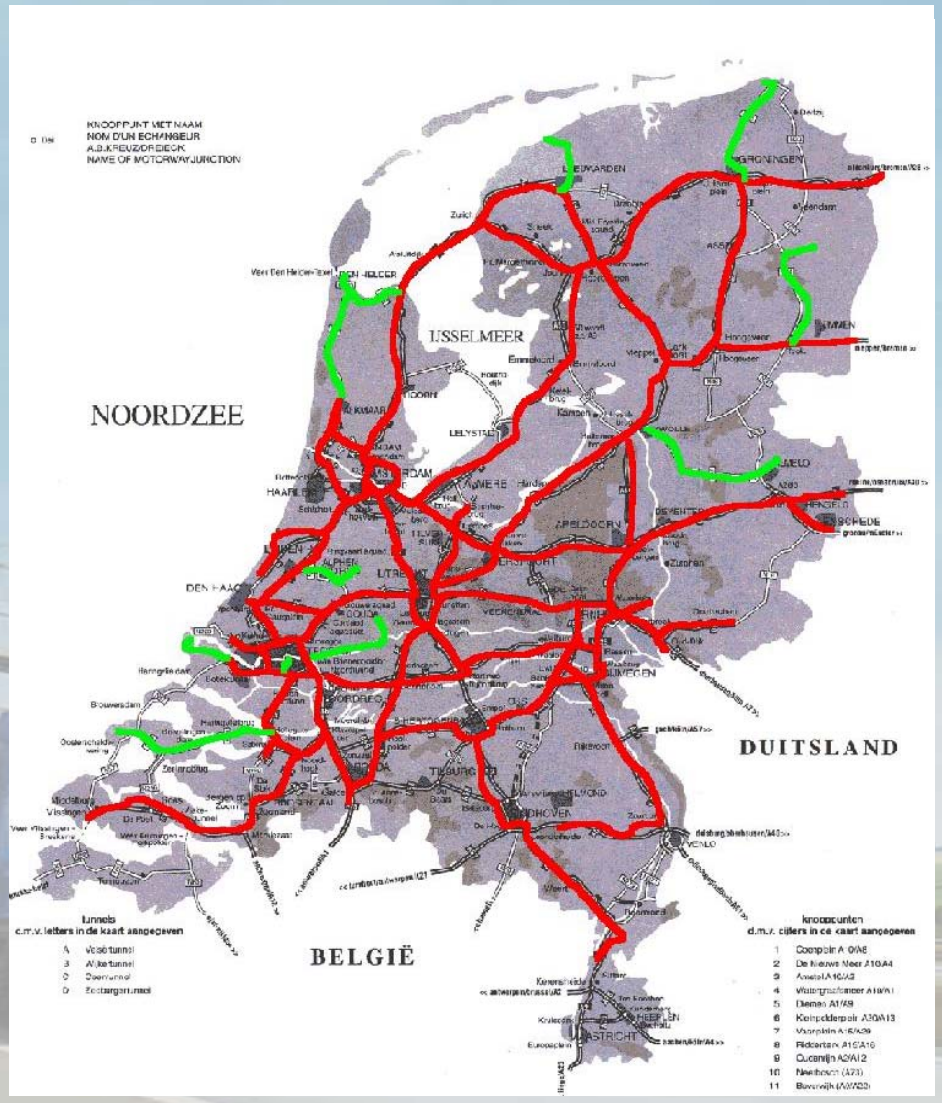
Infrastructure load carrying capacity, i.e. road strength, is not harmonised

Harmonise road class definitions and “bridge formulae”

Australia

Road Class	Vehicle combination
1 General access	
2 B-double access	
3 B-triple/Type 1 road train	
4 Type 2 road train	

Europe ?



Logistics: basic load dimensions

<u>Loading length 13.6 metres:</u>

33 bottom pallets

approx. 90 cubic metres

or 2 ISO 20-foot containers

or 1 ISO 40-foot container

<u>Loading length 7.82 metres:</u>

19 bottom pallets

approx. 50 cubic metres

or 1 ISO 20-foot containers

or a CEN swap-body of 7.15 or 7.45 metres

Harmonise road design

The European weights and dimensions directive 96/53/EC has been a success, now 27 countries and 500 million people

But the old German turning radius requirement of the directive needs to be replaced for modern combinations

A new approach to manoeuvrability is needed not to hamper development

Improve freight statistics

All statistics are in tonnes lifted or tonne-kilometres

This does not reflect the relative growth of high value, low density goods in road freight

Different methods in different countries

A new harmonised approach to freight statistics is needed

Vehicle – road communications

Road transport is a distributed system with autonomous units

Internet has become mobile

Very high potential for transport efficiency as well as for road safety and security

Harmonise standards for vehicle – road communications

Summary

Road freight grows as the economy grows.

Higher productivity, less environmental impact and increased safety and security can and will be developed hand in hand.

Infrastructure owners, legislators, vehicle manufacturers and operators must interact.

Welcome to the Heavy Vehicle conference, Paris May 19 – 22 2008!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