Potential of High-Productivity Vehicles

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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

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<th>1990</th>
<th>2010</th>
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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

<table>
<thead>
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<th>Road Class</th>
<th>Vehicle combination</th>
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<td>4</td>
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Europe?
Logistics: basic load dimensions

Loading length 13.6 metres:
33 bottom pallets
approx. 90 cubic metres
or 2 ISO 20-foot containers
or 1 ISO 40-foot container

Loading length 7.82 metres:
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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