ETT – Modular System for Timber Transport

A three-year test in Sweden

Claes Löfroth    Skogforsk
Lena Larsson     Volvo
Thomas Asp       Swedish Transport Administration
Vision
Reduce CO₂ by 20% to 2020
We have to do something

IFRTT: Technology

HVTT: Communication

We all have to do the implementation
This is ETT
one way to reduce CO₂

THE OBJECTIVE

- Minimize the environmental impact > 20%
- Reduce fuel consumption > 20%
- Reduce transport cost > 20%
- Less trucks > 30%
- Without worsen the traffic safety
Project participants
Fuel efficiency, ton-km/litre

ETT truck 2012

same drivers, average speed 73-75 km/hour

Fuel efficiency, ton-km/litre diesel

- Jan
- Feb
- Mars
- April
- May-Jun
- Jun
- July
- July-Aug
- Aug

90 Ton 60 Ton 80 Ton

>22%
12%
<table>
<thead>
<tr>
<th></th>
<th>ETT – 90 ton truck</th>
<th>60 ton truck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading capacity</td>
<td>65 ton</td>
<td>42 ton</td>
</tr>
<tr>
<td>Total production</td>
<td>200 000</td>
<td>200 000</td>
</tr>
<tr>
<td>Total distance</td>
<td>1 million km</td>
<td>1,52 million km</td>
</tr>
<tr>
<td>Return trips</td>
<td>3100</td>
<td>4700</td>
</tr>
</tbody>
</table>

3200 fewer passages through Piteå
The right vehicle for the transport mission

Transport mission
Vehicle utilization
Operating environment
Common Project targets 2009 ➔
Radically lower CO₂ emissions and:

- Load capacity
- Bridge- / roadwear (axle- and total load)
- Vehicle Pass ability
  - Roads and streets
  - Traction
- Traffic safety
- Vehicle Stability
- Flexibility
  - Trucks
  - Drivers
- Productivity
  - Vehicle fleet
  - Infrastructure

➔ ETT Modular system for timber transport
Trucks and drivers
Total weight, topography & vehicle speed
90 ton and 74 ton when possible with respect to infrastructure & truck performance
Number of roundwood vehicles needed

60 Mton roundwood 92 km

150%

# 2100 á 40 ton

100%

# 1400 á 60 ton

75%

# 1100 á 74 ton

60%

# 800 á 90 ton

Heavy and long vehicle combinations are needed for local and regional transports.
New traffic regulation 2017
Left to do: finalize demands & development:

– Report system for position, weight & speed
– Vehicle combination layouts & modular system to meet:
  • The common project targets
  • New regulations
Swedish Transport Administrations (STA) goals with ETT-project and High Capacity Transports (HCT)

- Reduce energy use and CO₂ emissions
- A better use of our existing infrastructure
  - without a negative effect on infrastructure
  - without a negative effect on traffic safety
Impact on infrastructure

- Axle weights are not exceeded which therefore has little impact on the road network.

- For bridges we get a number of restrictions depending on the vehicle configuration.
Conclusions from previous studies of HCT impact on traffic safety

• Studies indicate that the accidents consequences levels off when the weight ratio between the impacting vehicle exceeds 5:1
• The risk of accidents per unit of goods transported is reduced
• VTI studies:
  – overtaking accidents not more common for 24-meter than the 18-meter rig
  – accident data are problematic due to the lack of information about vehicles
Conclusions from VTI:s overtaking studies

• No significant difference between meeting margins for 30-meter vehicle and reference vehicles.
• But some more situations with margins < 3 sec was observed and needs further studies
The new project
ETTdemo

SKOGFORSK

VOLVO

TRAFLIKVERKET

HVTT12
Stockholm 2012
Thank You all

Coming soon near you  Hopefully at next HVTT conference  we will see
> 20 ETT trucks on the Swedish roads
References

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• J. Sandin, L. Renner and J. Andersson (2012), The effect on passenger cars’
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  San Francisco, July 2012.
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Calculation of ton-km/litre

- ETT truck distance from Ökalix to Piteå 160 km
- Fuel consumption 160 litre for roundtrip 320 km

- 65 ton X 160 km/160 litre = Fueleffisinsy