Intermodality Europe-Asia: Relevance and Potential

Presentation to the ECMT/UE/UN Conference

by the UIC Combined Transport Group

Kiev, 27/28 September 2004
Study on Infrastructure Capacity Reserves for Combined Transport by 2015
1.- the study

- This investigation comprehensively examines if the capacity of rail network and intermodal terminals in Europe will be sufficient to absorb the growth of international combined transport by the year 2015.
- The full report can be downloaded from the UIC website [www.uic.asso.fr](http://www.uic.asso.fr)
- The project has been initiated and financed by the UIC (Union Internationale des Chemins de Fer), with the participation of the UIRR (Union Internationale des Sociétés de Transport Combiné Rail-Route).
- This partnership reflects the joint concern for maintaining an optimum development of this exciting transport mode.
- The study was carried out by the following team of consultants:
  - Kessel & Partner Transport Consultants, Freiburg
  - KombiConsult GmbH, Frankfurt am Main
  - MVA, Paris
Study on Infrastructure Capacity Reserves for Combined Transport by 2015

- Growth higher than the “freight logistics community” expected
- International CT will continue to maintain a high pace of growth in the period 2015/2002: + 113%
### Study on Infrastructure Capacity Reserves for Combined Transport by 2015

#### 3.- Prognosis of volumes by CT products 2015/2002/1988

<table>
<thead>
<tr>
<th>Market segment</th>
<th>Tonnage (X Mio Tons)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaccompanied</td>
<td>14</td>
<td>44,1</td>
</tr>
<tr>
<td>Accompanied</td>
<td>-</td>
<td>10,4</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>54,5</td>
</tr>
</tbody>
</table>
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4.- International Unaccompanied CT by 2015

- 6.8% average annual growth rate
- 8.5% average annual growth rate

14, 44.1, 103.6 million tonnes
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5.- Concentration on Major Axes

- International CT is highly concentrated on a few corridors in 2002, primarily the North-South axis through Switzerland and the Brenner corridor

- International CT will still be concentrated in 2015, however, all of Europe will be involved in CT and more high-volume axes than in 2002.

- By 2015 approx. 75% of the total transhipment volume of international CT will be handled at intermodal terminals located in 25 major European economic areas
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6.- Concentration of International CT in 2002

CT Trains per day
- 1
- 5
- 10
- 25
- 50
- 75
- 100

Map showing the concentration of international CT trains per day across different European countries.
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7.- Concentration of International CT expected in 2015

CT Trains per day

100
75
50
25
10
5
1

Map showing the expected concentration of CT trains per day by 2015.
8.- The top 25 intermodal terminal areas in Europe
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9.- Modal shift in jeopardy : the Rail Network !

- Despite major enlargement investments, by 2015, tremendous capacity bottlenecks in European rail network will occur.
- Many of those bottlenecks are particularly serious since they affect rail sections, which are strategic and vital for intermodal transport as a whole. These bottlenecks are not a local problem, they affect not only one link but many key services of the European intermodal network (example: Basel or Brenner).
- So they are *Achilles’ heels* to the development of CT.
- Even after enlargement investments capacity is still lacking on strategic links.
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10.- Rate of employment 2015 before consideration of enlargement investments
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11.- Rate of employment 2015 after consideration of enlargement investments
12.- Main international rail axes with bottlenecks by 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Main axes with bottlenecks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Hamburg – Rhein/Main</td>
</tr>
<tr>
<td></td>
<td>Köln – Rhein/Main</td>
</tr>
<tr>
<td></td>
<td>Saarbrücken – Stuttgart</td>
</tr>
<tr>
<td>France</td>
<td>Metz – Dijon</td>
</tr>
<tr>
<td></td>
<td>Lyon – Avignon</td>
</tr>
<tr>
<td></td>
<td>Paris – Orléans – Tours</td>
</tr>
<tr>
<td>Belgium</td>
<td>Freight corridors from/to Anvers</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Greater Basel area</td>
</tr>
<tr>
<td>Spain</td>
<td>Barcelona-Tarragona</td>
</tr>
</tbody>
</table>
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13.- Impact of a bottleneck in the Basel area on the European network
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14.- Modal shift in jeopardy: the Intermodal Terminals!

• By 205 the overall transhipment capacity of European intermodal terminals would be sufficient thanks to a 40% extension of capacity scheduled for the period 2002-2015.

• However, a considerable shortage of capacity will arise in several economic centres even if enlargement measures were carried out as planned. Since those bottlenecks primarily affect key locations of the European intermodal network they might slow down or jeopardize the growth of international CT = Achilles’ heels.

• Locations with major capacity bottlenecks by 2015 are in particular:
  - Genk
  - Wels, Wien
  - Praha
  - Hamburg, Köln, Mannheim/Ludwigshafen, München
  - Barcelona, Valencia
  - Milano
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15.- Modal shift in jeopardy : the Achilles’ heels of Intermodal growth !

• The persistence of Achilles’ heels such as those identified will impede the growth of international combined transport by 2015 and jeopardize the modal shift policy.

• Thus the international combined traffic is expected to achieve 25 million tons annually less than forecasted.

• Any delay or suspension of the planned infrastructure enlargement investments would worsen the situation.

• The very existence of Achilles’ heels both in rail network and terminals make the interdependency of national infrastructure investment schedules perfectly clear. Investments carried out in one country would be devalued if enlargement investments in other countries, which are linked by intermodal services, were suspended or cancelled.
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16.- Actions to be undertaken (1)

**Infrastructure enlargement investments**

- Infrastructure investments must be implemented as planned and in due time, both for railway network and for terminals.
- Additional investments, both for railway network and for terminals, are required to enable modal shift.
- International co-ordination both for rail network and terminals investments is required
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16.- Actions to be undertaken (2)

Productivity gains

- **RU and IM** must continue and expand the various actions contributing to alleviating infrastructure bottlenecks and improve the efficiency and quality of rail operations (best practices) e.g. homogeneization of train path scheduling, bi-directional traffic, interoperable production systems, increased train length (generalized 750 m), high and sustainable reliability of service

- **Intermodal operators** - in co-operation with RU and IM – must continue and expand efforts designed to overcome infrastructure deficits such as efficient production systems to bundle volumes, like GATEWAY, Y-shuttle or other hub services, enforcement of capacity management system (CMS) aimed at increasing the capacity load factor of trains.

- **Intermodal Terminal Managers**, in cooperation with the RU’s and the Intermodal Operators, must continue and expand actions to improve their capacity through enhancement of management and staff qualification, process organization and operations, increased flow factor, extended opening and working times.
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16.- Actions to be undertaken (3)

**Priority rules**

- Priorities between passenger and freight trains must be reviewed in light of the desired modal shift and with regard to the respective infrastructure employment efficiency.
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17.- Conclusion and follow up

• Most important study in the field since AT Kearney
• Big challenges ahead:
  – present networks, both railway and terminals, are insufficient to cope with the projected growth
  – new business and operating models are required in the Intermodal chain
• CTG prepares a UIC sponsored 2 to 3-year Project to propose further inquiries and actions to follow up on the study
• All Intermodal actors are concerned and are invited to contribute
• The Industrial Shippers can not be left out of the debate (time windows…)
• EU Commission already interested, CTG action plan will be submitted
• Other actors also sollicited for contribution: UIRR, EuroPlatform, New Opera, ….
Intermodality Europe-Asia: the Intercontainer experience

- ICF is a subsidiary of 25 European railways
- ICF is the Pan-European Intermodal Operator
- Headquarters in Basel, Switzerland
- Subsidiaries all over Europe
- Pan-European Network of Intermodal Trains
Pan-European Network Operator

CTG Presentation to the ECMT/UE/UN Conference, Kiev 28/9/2004
Trans-Saharan Magistrale (TSR)
The Opportunity for Rail: a good connexion with the CIS Network

- **Eastern Rail Route** – interesting for North-Eastern China
- **Western Rail Route** - interesting for North-Western China
Transit Time

- By Ship
  Shanghai->Rotterdam
ca 26/27 days (Port/Port)
- Or by TSR;
  China via Zabaikalsk to
  Europe, ca 30 days
- TSR is faster to end
  destinations in Europe
Service

- active tracing from station of origin to station of destination
- processing in ICF-Train systems through TSR, with contractual transit times
- disposition of containers
The Intercontainer experience

- The European Railways have developed through ICF a transport and logistic system
- The products involved give connections between Europe and China/Mongolia/Japan
- Through scheduled trains giving shorter transit times than by ship: for instance 28 days between Kobe (Japan) and Duisburg (Rhur region in Germany)
- Shipping is however cheaper
- Nevertheless, rail is a real option for Japan-Poland, and connections with Mongolia and North-East China
- Problems to overcome are:
  - costs related to the disposition of containers, due to unbalanced traffics,
  - lack of commercial back up from the Railway companies,
  - need for concrete competitive commercial conditions and related logistic organisation: disposition of containers, customs procedures, wagon management,...