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Agenda item 6 (b)

Subject: Elimination of bottlenecks and the completion of missing links

Note: Reproduced below for comments by SC.3 delegates are section 2.2.3, section 4.4 and Annex IV of the first draft of the report on identification of bottlenecks, missing links and quality of service in infrastructure networks, which is being prepared under the auspices of the UNECE Working Party on Transport Trends and Economics (WP.5). The full draft is available at the WP.5 Webpage: http://www.unece.org/trans/main/wp5/inf20.html.

"A Methodological Basis for the Definition of Common Criteria regarding the Identification of Bottlenecks, Missing Links and Quality of Service in Infrastructure Networks"

First draft report, August 2007

I. Policy background and history of previous work in Inland Waterways (Section 2.2.3)

1. For inland waterways, speed is typically less of a consideration in terms of quality of service. Additionally, capacity of the network as a whole is significantly influenced by the fact that inland waterways are constructed to very different specifications with marked differences in capacity. UNECE, for example, identifies seven different categories (I through to VII).

2. There are thus major, structure-dependent bottlenecks to use of certain types of craft. However, the cost-effectiveness of measures to tackle such issues is always likely to be problematic. In TRANS/WP.5/R.60 bottlenecks induced by inadequate lock capacity were seen as the prime bottleneck issue for inland waterways and a procedure for calculating lock capacity was given. In TRANS/SC.3/159, two types of bottleneck were distinguished: *Basic Bottlenecks*, which are sections of E waterways whose parameters are not in conformity with the requirements of European Inland Waterways, Class IV; and *Strategic Bottlenecks*, which are other sections satisfying the basic requirements of Class IV but which nonetheless ought to be modernised to improve the structure of the network or to increase the economic capacity of inland navigation traffic. This work has since been taken forward further by the UNECE Working party on Inland Transport SC.3) as part of its work on the AGN (see Annex 4).

3. Overall, although TRANS/WP.5/R.60 did work through some case studies for each mode of construction projects aimed at relieving bottlenecks, in no case was there a direct application of any bottleneck identification procedure. The report

did not proceed as far as recommending a specific methodology for bottleneck identification, which it saw as further development work to be done, but simply set out arguments for the indicators noted above as potentially practicable guides to identify where bottleneck issues may be present. It was, however, quite clear and explicit (section 6) about the potential value, if achievable, of definitions of bottleneck and missing link criteria, based on a quality of service concept and sharing a common methodology that could be internationally applied.

4. In this regard it is also interesting to note papers reviewed at the 19th session of the UNECE Working party on Transport Trends and Economics held in September 2006 (UNECE 2006a). This paper, together with associated documents, reports the responses to a questionnaire, using the criteria suggested in TRANS/WP.5/R.60 by 15 countries associated with the AGC, AGR and AGN networks, and shows that devolved requests for bottleneck and missing link identification based on such criteria are, at very least, capable of being acted upon. Without some meta-analysis, this does not directly establish accuracy or consistency, but it is broadly supportive of this style of approach.

II. Recommendations for the Inland Waterway Network (Section 4.4)

5. In general, the inland waterway system is relatively small and specialised. The amount of analytical work that has been done in relation to missing links is negligible and that on bottlenecks is limited and has mostly been standards-driven. In this sector, a 'light touch' analysis at the national level seems appropriate, especially as substantial progress seems to have made under the auspices of the Working Party on Inland Water Transport (see Annex 4).

Missing links

6. It is recommended that national administrations should review the identification of missing links as established in the *Blue Book* based simply on their expert knowledge of their own network without formal guidelines, save that their thinking should have an explicit focus on expediting international freight movement and that they should be aware of possibilities for development in multi-modal transport.

Bottlenecks

7. It is recommended that the standards-based guidelines adopted by the UNECE Inland Transport Committee should continue to be employed. National administrations should continue to identify:

   Basic Bottlenecks - sections of E waterways whose parameters are not in conformity with the requirements of European Inland Waterways, Class IV;
   Strategic Bottlenecks - other sections satisfying the basic requirements of Class IV but which nonetheless ought to be modernised to improve the structure of the network or to increase the economic capacity of inland navigation traffic.
   In view of the progress already made in this area (Annex 4) relatively little extra work may be needed.

III. Bottlenecks in Inland Water Transport (Annex 4)

The following is derived from material provided by UNECE setting out the current status at July 2007 of work on the inland waterway network.

Most important bottlenecks in the E-Waterway Network

The UNECE Working Party on Inland Water Transport (SC.3) is paying special attention to the issue of bottlenecks in inland waterways as part of its work on the *European Agreement on Main Inland Waterways of International Importance* (AGN). To support the AGN implementation, the Working Party has issued a so-called *"Blue Book*" (ECE/TRANS/SC.3/144/Rev.1, 2006) on technical characteristics of European inland waterways and ports of international importance, which provides UNECE member states with:

- A common definition and classification of inland waterway bottlenecks (see definitions below)
- A list of bottlenecks and missing links in the E Waterway Network.

Since October 2002 CS.3 has been maintaining an inventory of the most important bottlenecks and missing links in the E-Waterway Network (Resolution No.49,ECE/TRANS/SC.3/159), which as of July 2007 identified 42 strategic and 31 basic bottlenecks in eighteen countries of Western, Eastern and Central Europe, including bottlenecks on the Danube, Sava, Rhine, Moselle, Elbe, Main, Oder, Don, Volga and on other major European inland waterways.

Policy responses

Compared to the road and railway sectors, the infrastructure capacity on inland waterways is more dependent of weather conditions, since a low level of water is often the major cause of restrictions. The other main factor relates to infrastructure and involves insufficient lock capacity. Many policies aimed at removing bottlenecks, therefore, focus on improving/adding locks and barrages and represent long-term projects requiring substantial financing.

States party to the AGN agreed to adopt its provisions as a coordinated plan for the development and construction of a network of inland waterways, and, therefore, undertook to work on removing the bottlenecks and missing links. The Working party monitors the progress in this work and regularly updates the Blue Book and Resolution No. 49.

Definitions

Bottlenecks and Missing Links in the Network of Main Inland Waterways of International Importance

In the course of its work on the draft AGN Working Party SC.3 endorsed the following definitions of "bottlenecks" and "missing links" in the inland navigation

network, elaborated by the ad hoc Group of Experts on Inland Waterway Infrastructure:

Those sections of the European waterway network of international importance that have parameter values being substantially lower than target requirements are called bottlenecks.

There are two kinds of bottleneck:

Basic bottlenecks are the sections of E waterways whose parameters at the present time are not in conformity with the requirements applicable to inland waterways of international importance in accordance with the new classification of European inland waterways (class IV);
Strategic bottlenecks are other sections satisfying the basic requirements of the class IV but which, nevertheless, ought to be modernized in order to improve the structure of the network or to increase the economic capacity of inland navigation traffic.

Missing links are such parts of the future network of inland waterways of international importance that do not exist at present.

The basic condition for the elimination of bottlenecks and completion of missing links is the positive result of economic evaluation" (TRANS/SC.3/133, paragraph 18).

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