SPIN- TN, Working Group 3

Innovative Transport Vehicles on the Danube and its Tributaries

Comments by Bernd Birklhuber

Table 2:
Melk-Dürnstein: there is no bridge in this section: delete “6.65”
Dürnstein-Vienna: add “7.64” for air clearance
The 2 lock chambers in Vienna Freudenau are 270x24 m and are located between 1921 and 1922.

Page 7, last paragraph:
Low values of h/L can not be prevented in commercial navigation on the Danube. A typical h/L ratio is 2,5/75 = 0,03. If the critical values below 0,2 should be avoided, the maximum permissible length would be 12,5 m. The only possibility to avoid the critical region is to avoid the critical speed.

Page 9, 1.2.4:
Some examples of good values for T, L and v for different sections of the Danube should be mentioned.

Page 10, 2.1.1:
The 10 vessels of the Stein-type have not been built for Germany, but for the DDSG in Austria.

Page 12, vessel draught:
The necessary clearance between vessel and waterway bottom depends on the structure of the bottom. Trials in Austria have shown, that 0,7 m is necessary to prevent destruction of propellers in case of stones with a diameter of about 7 to 10 cm.

Page 12, vessel air draught:
In the backwater sections of hydroelectric power stations the vertical clearance is almost never greater than the clearance at HWL (for example Reichsbruecke in Vienna).

Page 13, restrictions of Danube selfpropelled vessels:
Beam and length can be called “unrestricted by the waterway”, but especially beam values, which do not correspond to the lock chambers, lead to a very un-economic use of the infrastructure and longer waiting times for all vessels at locks. A beam of 11,4 or 23 m should be recommended.

Page 13, 2.1.3:
Only TEU containers are taken into consideration here. Although capacities are normally expressed in TEU, there are a lot of other types, which should be taken into account for the design of the vessel.

Page 15, 2.1.6:
There have been several accidents with capsizing container vessels on the Rhine. The Rhine Inspection Rules contain stability requirements for container vessels since then. The same requirements have been adopted for the ADN-D by the Danube Commission.

Page 22, 2.2.1:
Restrictions for road traffic and waiting times at borders are important arguments for Ro-Ro transport.

Page 28, Fig. 2.15:
If the vessel does not have ramps on the full length, a different and relatively expensive kind of infrastructure in the ports would be needed for loading and unloading.

Page 28, 2.2.4:
Why does the desirable draught of 1.4 m only apply to Ro-Ro vessels and not to container vessels?

Page 29, third paragraph:
Catamarans and single hull vessels should be taken into account.

Page 29, Table 4:
The numbers for the crew are much too high for western companies (maximum 5 persons).

Page 33, 3.1.2:
The combination of steel and aluminium causes problems with electrolytic corrosion, which require additional investments for protection.

Page 34, last paragraph of 3.1.2:
I agree, but at the moment the situation has to be accepted as a fact and the expensive calculations have to be considered.

Page 38, Fig. 3.10:
Are there already experiences with use in dirty water and in shallow water sections, where gravel and stones are sucked through the propeller?

Page 39, last paragraph:
As far as I know experience with the use of big Pump-jets in shallow water sections is still missing.

Page 41, last paragraph of 3.3.1:
The non-road machinery directive of the EU, which applies to inland navigation, should be mentioned.

Page 41, 3.3.2, third paragraph:
The fuel storage problem should be mentioned.

Page 43, 4.1, third paragraph:
The large crews are only on push boats from eastern countries. Vessels from Germany, Austria and Hungary for example do not have bigger crews any more.

Page 43, 4.1, fourth paragraph:
I suppose that the push boats from Romania are the type which is sinking, when the hull is damaged, because the connection between the bulkheads and the bottom of the vessel is not watertight. They are not really a good example for technology.

Page 49, Fig. 4.8:
The vessel is a perfect example for operation in the critical Froude area.

Page 53, 4), last paragraph:
I do not agree at all: punishment for new building is really the last thing we can need on the Danube.