Economic Commission for Europe

Inland Transport Committee

12 December 2022

English

Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)

Forty-first session
Geneva, 23-27 January 2023
Item 4 (c) of the provisional agenda
Implementation of the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN): interpretation of the Regulations annexed to ADN

Discussion of the impact of increased collision energies on the rules for construction of tank vessels

Transmitted by the Government of Austria

Summary

Executive summary:	Since TNO's study for the revision of 9.3.4 has shown that collision energies, and thus the risk of damage to a cargo tank, have increased in recent years, the Safety Committee should consider whether this results in a need for a change in the construction regulations.
Action to be taken:	Discussion in the Safety Committee
Related documents:	Presentation of TNO

Introduction

1. TNO's study for the revision of section 9.3.4 has shown that the size and mass of vessels on inland waterways has increased significantly in recent years. As a result, much higher energies occur in collisions and the likelihood of a cargo tank rupture and product leakage increases.

2. This applies not only to ships with cargo tanks with a volume of more than 380 m^3, but also to ships with smaller cargo tanks.

3. From an Austrian perspective, however, it should be taken into account that although the probability of a serious accident involving a cargo spill has increased for ships with smaller cargo tanks, the impact of a cargo spill is much lower compared to ships with large cargo tanks.

4. It should also be considered that although the probability of accidents with cargo spillage has increased, no accidents with cargo spillage due to collision have been reported

in recent years. This can be interpreted as an indication that the existing rules for construction for tank vessels in Sections 9.3.1 through 9.3.3 provide adequate safety even with the increased collision energies.

5. Extrapolating the evolution of the fleet in recent years, both the maximum mass of the largest vessels and the average mass of the fleet are expected to continue to increase. There are currently no generally applicable maximum permissible masses of inland vessels on the European waterways and there is no possibility to introduce such general restrictions in the ADN.

I. Proposal

6. The ADN Safety Committee should discuss the question of whether the increased collision energies on the European waterways result in a need to revise the construction requirements for new buildings of tank vessels with cargo tanks up to 380 m^3 in sections 9.3.1 to 9.3.3.

7. In doing so, the ADN Safety Committee should also take into account:

(a) that for these vessels, because of the smaller cargo tanks, the effects of a tank rupture and the associated cargo leakage are less than for vessels with cargo tanks of 380 m^3 to 1000 m^3 in accordance with section 9.3.4; and

(b) that despite the increase in collision energy, no accidents involving cargo leakage due to collisions have been reported.

II. Justification

8. The TNO study is limited to the provisions for vessels with large cargo tanks in section 9.3.4, but it has shown that vessels with cargo tanks up to 380 m^3 in accordance with sections 9.3.1 to 9.3.3 are also likely to experience greatly increased energy in collisions, increasing the likelihood of severe cargo tank damage and product spillage.

9. The Safety Committee should therefore advise whether the results of the study also have consequences for the construction requirements in sections 9.3.1 to 9.3.3.