



INF. 18

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RID: 8th Session of the RID Committee of Experts' standing working group
(Utrecht, 20 to 24 November 2017)

Subject: Extra-large tank-containers

Information and questions from Switzerland

1. A new type of tank-container has been developed by BASF and the Belgian tank-container manufacturer van Hool¹. The 45 and 52-foot tank-containers are based on the technology of 20 and 30-foot containers, which are already used in combined transport. The so-called "BASF class tank-containers" (B-TC) can be transported with container railway wagons, so they offer greater flexibility than traditional railway tank-wagons. The B-TC has a maximum volume of 73,000 liters and a payload of 66 metric tons, meaning its load capacity is double that of today's typical tank-containers and similar to that of a chemical tank-wagon.
2. Within the industrial sites, the B-TC can be moved independently from railway tracks by specially developed automated guided vehicles (AGVs). They can be stored efficiently – up to 6 B-TC can be stacked atop each other. A new type of railway wagon has also been developed specifically². Weighing only 16.5 tons, it has an increased load capacity. It is also 5 cm lower than similar wagons, allowing the B-TC to be carried on tracks presenting a G1 loading gauge. In our understanding, the B-TCs are not intended to be carried on public roads, due to their weight and size.
3. From July 2017, it was anticipated that 90 B-TCs would be in use at the BASF site in Ludwigshafen and another 550 are to be delivered in 2018. The company intends to replace its tank-wagons with B-TCs in the next few years.

¹ Detailed information is available here: <https://www.basf.com/de/en/company/about-us/sites/ludwigshafen/the-site/news-and-media/news-releases/2017/05/p-17-183.html>.

² More information available here: <http://tatravagonka.sk/wagons/sgmmns-52/?lang=en>,
http://tatravagonka.sk/inc/uploads/2017/04/Sgmmns-52_nahlad.pdf.

4. Switzerland took note of these new developments with great interest. Such innovations, which make the transport of dangerous goods by rail more efficient and better meet the economic and practical requirements of today's industry, should be supported.
5. However, the tank-containers that have been developed raise some safety issues which should be discussed. Because the B-TCs are intended to be carried by rail only, the RID Committee of Experts' standing working group seems to be the right entity to handle this subject.
6. As far as we are informed, the B-TCs are designed according to the requirements for tank-containers in RID Chapter 6.8. However, based on initial discussions with international tank experts, it is not clear whether it is possible to build tank-containers of this size in compliance with the relevant RID/CSC/UIC requirements.
7. Furthermore, the requirements for tank-containers in RID Chapter 6.8 differ in some points from the provisions for tank-wagons. Among other things, the differences concern the thickness of the shell (which may be reduced according to RID 6.8.2.1.19), the dynamic longitudinal impact tests to be performed under the maximum permissible load (5 g required for tank-wagons according to EN 12663-2 vs. 2 g for tank-containers according to UIC 592 and CSC) and the special items of equipment required for tank-wagons only, according to RID 6.8.4 (especially TE 22). These differences may increase the probability of dangerous goods being released in case of an accident involving B-TCs rather than tank-wagons.
8. These differences are not new and are accepted for all currently available tank-containers. The RID Committee of Experts' standing working group should however determine whether they raise safety issues in relation to this new product, for the following reasons:
 - B-TCs are more than twice the size of commonly available tank-containers. This may have an impact on the design requirements as well as on the potential impact if the entire contents are released.
 - The intended use is different to that of commonly available tank-containers, as B-TCs are intended to replace a large number of tank-wagons. This may therefore have a significant impact on the risks inherent in dangerous goods transport if the safety level of B-TCs were to be significantly inferior to the safety level of tank-wagons.
9. We are well aware of the fact that it will be difficult for the RID Committee of Experts' standing working group to react to this late document. However, we believe that the discussion on this issue should be launched without delay. We do not expect any decision to be taken at this session, but would be grateful for any advice we might receive. We will consider submitting a formal document to the next meeting in May 2018. In the meantime, organising a meeting of the working group on tank and vehicle technology to discuss this subject may be a way forward. Technical issues could also be submitted to the RID/ADR/ADN Joint Meeting and its Working Group on Tanks.
10. At this stage, the questions raised are as follows.

Questions for the RID Committee of Experts' standing working group

- Can the representatives of the industry or competent authorities provide detailed technical documentation regarding B-TCs, including information on the tests performed?
- Can the RID Committee of Experts' standing working group confirm that B-TCs have been designed, tested, and approved in conformity with RID and other applicable regulations?
- Is the safety level of the system composed of a B-TC on a carrying wagon sufficient?

- Would the substitution of a large number of tank-wagons by B-TCs have a significant impact on the risks inherent in the transport of dangerous goods and can the resulting risks be considered acceptable?
- Are the current requirements of RID adequate to ensure that the safety level will not deteriorate and the risk level will not increase in future due to this development?
- If the safety level of B-TCs is considered sufficient, should the requirements for tank-wagons be revised in order for them to remain competitive in terms of cost, weight, etc.?
- What is the best way forward in order to find answers to these questions?

Pictures



Picture 1: B-TC on a wagon, compared with a 20 ft tank container.



Picture 2: Within the industrial site, the B-TC can be carried by automated guided vehicles.

All information above, including pictures, from BASF-Website, see footnote 1



Picture 3: B-TC on specially designed carrying wagon (SBB Infrastruktur, 08.11.2017)



Picture 4: Close-up view of tank end with service equipment above buffers (SBB Infrastruktur, 08.11.2017)