## **Economic Commission for Europe**

### **Inland Transport Committee**

**Working Party on the Transport of Dangerous Goods** 

22 August 2024

Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Geneva, 10–13 September 2024 Item 2 of the provisional agenda **Tanks** 

# Issues and consequences which may arise if dual certification of intermodal tanks should no longer be permitted

# Report from the Working Group on Tanks intersessional meetings held on 9 and 30 July 2024

**Transmitted by the International Tank Container Organisation (ITCO)** 

### Executive Summary

Dual certification for intermodal tanks has been used for more than 30 years to facilitate safe transport of bulk dangerous goods liquids in deep-sea maritime environments in addition to dedicated land/rail transits. These benefit from a high utilisation factor which has environmental and sustainability benefits. Intermodal tanks often have a service life of twenty or more years after which they are capable yielding 95 per cent by weight in recycled metals.

Nonetheless, although there are no safety issues resulting from dual specification tanks, indeed there are safety benefits, enforcement in a dual certification environment can require specific training to avoid confusion. Also, periodic and intermediate testing on a global basis can be demanding but is currently conducted satisfactorily.

This document sets out the issues and consequences associated with a proposed ban on dual certification (RID/ADR Chapters 6.7 and 6.8) whilst also seeking ways in which industry can assist enforcement agencies in monitoring dual certification.

## I. Schedule of issues and consequences on a ban on dual certification

- 1. Intersessional meetings took place on 9 and 30 July 2024. An initial schedule of issues and consequences was produced for the meeting to focus discussion, and to ensure that these points were clear and complete and seek other, as yet unrecorded, issues.
- 2. The schedule was developed through the meetings and is reproduced in the Annex to this document.

## II. Issues and consequences - Work in progress from WG on Tanks

3. The intersessional meetings acknowledged assistance from the Working Group on Tanks to ensure that UN portable tanks approved to Chapter 6.7 of IMDG by states other than RID/ADR territories, would be accepted for use in RID/ADR territories. France was also recognised for a draft proposal to permit bottom discharge operations for portable tanks working on land/rail service, which otherwise would have been limited to top discharge only transport (due to potential maritime transit). (See issues 1 and 2 listed in the meeting notes in the Annex).

## III. Issues and consequences resulting from a ban on dual certification

- 4. **Dangerous Goods List:** It was stated that the list in Chapter 3 of RID/ADR includes approximately 60 substances which are provided with a Chapter 6.8 Tank Code but not a Chapter 6.7 Portable Tank Instruction. There are also a few substances which have a portable tank instruction but not a tank code. Unless work is done to balance these lists, a ban will effectively restrict trade in requiring industry to reduce regulatory cover to only one of the two certifications (see Issue 3 listed in the meeting notes in the Annex).
- 5. Hermetic sealing and fill ratio: Currently dual certified intermodal tanks fitted with safety relief valves preceded by a Bursting Disc (Frangible Disc) qualify as hermetically sealed according to Chapter 6.8. This enables the dual certified intermodal tank to carry a payload of up to 3 per cent more volume per transport movement for particular classes of substances. A portable tank, single certified, would be denied this possibility resulting in 3 per cent more journeys with associated environmental costs. This could be mitigated by amendments to RID/ADR to permit rail/land based portable tank transits to qualify for equivalent fill ratios as permitted in Chapter 6.8 (see Issue 4 listed in the meeting notes in the Annex).
- 6. Data plate replacement/modification for in-service units: Well over 90 per cent of intermodal tanks manufactured over many years have been dual certified ISO tanks resulting in estimates by ITCO of some 600,000 in circulation worldwide. The costs to industry of replacing the data plates at approximately Euro 80 per unit (excluding labour/handling) would result in a Euro 48 million charge. If as currently proposed, industry is required to process this number of tanks in 2.5 years, this equates to over 650 per day. One can only speculate the significantly challenging difficulty in accurately and remotely replicating and modifying data on these data plates on a global basis. In addition to funding this material procurement, and project managing the process, managements would need to assess the marketing plans for each unit and work out how to minimise future losses through lack of flexibility in regulatory cover for future work. The overhead cost of this should not be underestimated. Once an accreditation is removed from an intermodal tank, it may not be possible to change it back. It should be noted that this volume of change would also burden the inspection bodies approved to undertake the supervision of this work (see Issues 5 and 6 listed in the meeting notes in the Annex).
- 7. Regulatory provisions to operate on multimodal routes: RID/ADR provisions in 1.1.4.2 Carriage in a transport chain including maritime or air carriage, 1.1.4.3 Use of IMO type portable tanks approved for maritime transport, and 1.1.4.5 Carriage other than by road,

allow flexibility when applying RID/ADR regulations to intermodal transits. Amendments to RID and ADR may be necessary to ensure that any ban on dual certification will not limit the flexibility provided by these clauses whether the dual certified intermodal tank is reassigned as a portable tank or as a tank container (see Issue 7 listed in the meeting notes in the Annex).

8. Chemical producers in Europe (particularly Germany) specify that dangerous goods "in" and "out" use regulation RID/ADR Chapter 6.8: It is recognised that this issue is an operational decision made by commercial chemical producing businesses to limit the scope and complexity of training required by their staff in goods in/out to only one regulatory system which applies to both road tankers and intermodal tanks. This has contributed to high levels of safe practice. Nonetheless, this operating decision puts deep sea intermodal tank operators at a disadvantage to road tanker operations in the event of a ban on dual certification, despite the environmental benefits of intermodal road/rail operations and European Union policy to promote intermodal transport (see Issue 8 listed in the meeting notes in the Annex).

### 9. Proposal to force all intermodal tanks to become portable tanks only:

- (a) Historically, most existing swap tank fleets were only manufactured as swap tank containers to Chapter 6.8. Also there is a population of 20ft ISO tank containers which are also not manufactured as portable tanks. Both these populations would be made redundant if their current accreditation to Chapter 6.8 was removed. If a method was established to retrospectively qualify them as portable tanks, they are highly likely to have thinner shells than that required to conform to an "equivalent" tank instruction. The same situation exists for swap tanks which were built specifically to service the land/rail routes in RID/ADR territories using Chapter 6.8 accreditation but were also qualified at new build for the nearest Chapter 6.7 Tank Instruction. In both of the above cases, in the event of being forced to become portable tanks, their ability to transport the same list of hazardous goods would be very sharply curtailed.
- (b) Chapter 6.8 Swap tanks are targeted at land/rail transport for dangerous goods and have a key role in the environmental benefits of transitioning more freight from road to rail. Chapter 6.8 accreditation means that the shell thicknesses are approximately the same as those for road tankers in the same chemicals transport market. The European Union has published an environmental strategy, the European Union "Green Deal", which targets a reduction in greenhouse gas emissions of 90 per cent by 2040 and 45 per cent by 2030. Moving freight from road to rail is cited as key issue in this European Union strategy since this change in mode of transport is credited as achieving a 65 per cent CO<sub>2</sub> reduction for the same tonnage shipped. If swap tanks were forced towards deep sea Chapter 6.7 accreditation, a typical current swap tank specification would carry an additional 500 kg of steel. This conflicts with the strategic aims of the European Union "Green Deal".
- (c) In the event of a ban on dual certification, but with a voluntary option, it would be reasonable to assume most deep-sea intermodal tanks would gravitate towards Chapter 6.7 and most swap tanks to Chapter 6.8 (see Issue 9 listed in the meeting notes in the Annex).

# IV. Mitigating actions that might be considered to avoid the need to ban dual certification, unless the following measures do not solve the problems

10. **Resolve confusion on dual certification:** Contributions were made explaining that enforcement inspections were not easy because effectively two different regulatory codes were in play at the same time. ITCO therefore agreed to sponsor a document proposing that an annotation could be made in transport documentation to clarify what code applies to each transport operation:

### 1. Add new paragraph in 5.4.1.1.25 to Chapter 5.4 of ADR:

"Special provision for tanks approved as both UN portable tanks and RID/ADR tank-containers.

When a tank, being used for the carriage of dangerous goods, is dual approved as both a UN portable tank and an ADR tank-container, the following statement shall be included in the transport document:

"Carriage in accordance with the provisions for ADR tank-containers", or

"Carriage in accordance with the provisions for portable tanks" as appropriate."

### 2. Add new paragraph in 5.4.1.1.25 to Chapter 5.4 of RID:

"Special provision for tanks approved as both UN portable tanks and RID/ADR tank-containers.

When a tank, being used for the carriage of dangerous goods, is dual approved as both a UN portable tank and an RID tank-container, the following statement shall be included in the transport document.

"Carriage in accordance with the provisions for RID tank-containers", or

"Carriage in accordance with the provisions for portable tanks" as appropriate."

#### 3. Add a new Note under 1.1.4.2.3:

"For the carriage of dangerous goods in dual approved tanks as both UN portable tanks and RID/ADR tank-containers, see 5.4.1.1.25."

- 11. <u>Continue to harmonise Chapters 6.8 and 6.7 for Chapter 6.7 applications during road/rail transport movements within the RID/ADR territories,</u> to encourage industry to voluntarily withdraw Chapter 6.8 accreditation on ISO UN Portable Tanks:
  - Complete the bottom outlet concession work for portable tanks operating on road/rail service described in paragraph 3 above;
  - Equalise Dangerous Goods Lists as described in paragraph 4 above;
  - Equalise hermetic sealing and fill ratio similar treatment as described in paragraph 5
  - Expect Chapter 6.8 service inspections costs to rise and/or a reduction in service levels outside the territories.

# V. Mitigating actions that might be considered to ensure a smooth transition for industry into a ban on dual certification

- 12. Complete the work described in paras. 10 and 11 above to allow industry to reduce costs associated with dual certification and voluntarily reduce widespread reliance on this practice or prepare for a ban.
- 13. In the event that a ban on dual certification becomes mandatory:
  - Implement a transitional arrangement to preserve the status of in-service units; or
  - Rather than replace or amend data plates allow the removal of marking decals as appropriate (see Issue 5.1 listed in the meeting notes in the Annex);
  - Extend implementation period. (See Issue 6.1 listed in the meeting notes in the Annex).

### VI. Conclusion

14. ITCO thanks all attendees at the intersessional meeting of the Working Group on Tanks for their active participation and constructive contributions. ITCO intends to provide further support and advice for this process as and when required.

## Annex

Intersessional meetings took place on 9 and 30 July 2024. A schedule of issues and consequences relating to a potential ban on dual certification was developed by the intersessional WG and is reproduced in this Annex.

## Working Group on Tanks - Intersessional Meetings to identify "issues and consequences" if Dual Certification should be no longer permitted. 9 and 30 July 2024

Identify all issues and consequences that may arise from such a complex change. It was suggested that these meetings should develop a list of issues that need to be addressed to enable a smooth transition for industry if dual approval should no longer be permitted.

Issue No.	Issues/Consequences	Proposal No.	Potential Resolutions Offered for Consideration.	Feedback
	Resulting from a potential Ban on Dual Certification			
1	IMDG approved UN Portable Tanks rejected when offered for service in RID/ADR Territories  The non-recognition of UN Portable Tanks undermines the universality of the UN Portable Tank project and is a driver for dual certification using local regulations, in this case RID/ADR Ch 6.8.	1.1	IMDG approved UN Portable Tanks Explicitly recognised The RID/ADR Working Group on Tanks recognised this issue in their February 2024 Session and recommended an amendment to Note 2 after the heading of Chapter 4.2 to allow the use of UN Portable Tanks approved to Ch 6.7 of IMDG by states other than RID/ADR territories within the territories of RID/ADR.	This proposal was adopted by the Joint Committee in its Spring Session and will be confirmed in RID/ADR 2025
2	Bottom Discharge allowances for UN Portable Tanks used in the Road/Rail mode is more restrictive than for Tank Containers.  Top discharge only in a marine environment reduces the potential harm to container ships resulting from a bottom valve leak which may persist through the ship transit. However, on land mode the bottom valve is more visible during transit, and it is preferable, for safety reasons, to avoid utilising pressurised gas to discharge liquid dangerous substances through a top discharge system.	2.1	ITCO recognises the excellent work undertaken by France in proposing a clear and concise methodology by which UN Portable Tanks would be permitted to operate bottom discharge configurations as equivalent to Ch 6.8 Tank Containers in Road / Rail mode within the territory.  With reference to ECE-TRANS-WP.15-AC.1-2023-46e_0 https://unece.org/sites/default/files/2023-08/ECE-TRANS-WP.15-AC.1-2023-46e_0.pdf ECE-TRANS-WP15-AC1-2023-GE-inf-29e https://unece.org/sites/default/files/2023-09/ECE-TRANS-WP15-AC1-2023-GE-inf-29e.pdf [In the event that a decision was made to ban dual certification, this specific issue could be resolved by completing the work on discharge equivalence between Ch 6.7 and 6.8 for land-based modes.}	
3	The Dangerous Goods List includes 60 substances which are provided with a Ch 6.8 Tank Code but not a Ch 6.7 Portable Tank Instruction.	3.1	Is it possible to create Portable Tank Instructions for those substances with only a Ch 6.8 Tank Code?	
		3.2	Is it possible to create Ch 6.8 Tank Code for those substances with only a Portable Tank Instruction?	

This restriction works both ways because there are also many substances listed with a Portable Tank Instruction but not a Tank Code.

[UIC – by email] Operational enforcement is problematic when there is uncertainty over which regulation is applicable on any one transport operation for a dual certification intermodal tank – considerable training is required for inspectors on applying both codes simultaneously and verifying compliance.

However it was noted that the disparity in substance lists of the two regulations would cause significant operational problems if dual certification was disallowed. "It occurs regularly that the product in a certain dual-approved tank cannot be carried according to one regime but can be carried according to the other"

3.3 [Roy Boneham] Observed that an important issue for enforcement officers on dual certified intermodal tanks is a consideration of which certification applies to each dangerous goods transport operation, has drafted a paper for submission which seeks to simply amend Chapter 5.4 of RID/ADR to require the following: -

"Special provision for tanks approved as both UN portable tanks and RID/ADR tank-containers"

When a tank is being used for the carriage of dangerous goods and is dual approved as both a UN portable tank and an RID/ADR tank-container, the following statement shall be included in the transport document:

"Carriage in accordance with the provisions for RID/ADR tank-containers"

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"Carriage in accordance with the provisions for portable tanks"

as appropriate.

[Those who spoke at the second meeting were very supportive of this proposal]

3.4 Provision for ongoing flexibility – Dual Type Approval, Single Operating Certificate

Less preferably than 3.3 above, If the intermodal tank industry and inspection bodies are permitted to implement "dual" Type Approval at manufacture only (qualified by Initial Inspection Certificates at the factory) but are permitted to issue only one "operating" inspection certificate at any one time, concerns about the burdens on Inspection Bodies around the global marketplace will be much reduced.

- Operational complexity would be reduced.
- Potential to change operating code from Ch 6.7 to Ch 6.8 and vice versa by "Exceptional Inspection" removes the fear of being trapped into the "wrong accreditation" for new operations
- Operationally, this solution reduces the potential for confusion on which code applies at any one time.

4	Hermetic Sealing and Fill Ratio  Ch 6.8 Tank Containers do not automatically require a Safety Device to relieve excess pressure. Ch 6.7 automatically requires a Safety/Pressure Relief Device. However, a dual approved intermodal tank fitted with a Safety/Pressure Relief Valve and an in line burst disc qualifies as a Hermetically Sealed tank.  Currently these Ch 6.8 Tank Containers are permitted fill ratios of up to 3% more volume on many substances, than Ch 6.7 Portable Tanks (4.3.2.1 and 4.2.1.9). This would be denied to UN Portable Tanks should dual certification not be permitted. [Note that this equates to a capital investment of 3% extra in terms of key equipment, including motive equipment to convey the underfilled tanks]	4.1	Is it possible to create provisions within the Dangerous Goods List to allow Portable Tanks to comply with Ch 6.8 regulations for Hermetic Sealing when being used in Road / Rail mode within the territory?	
5	Data Plate Replacement / Modification  A current dual certified Intermodal Tank is required to provide the following information on a metallic plate:  Ch 6.7 – 27 data items in 6.7.2.20 (for liquids tanks)  Ch 6.8 – 20 to 32 data items in 6.8.2.5 (for all tanks) and Ch 6.8.3.5 (for Class 2 tanks)  There are two major consequences of a requirement to replace/modify here  a) Technician Time/Cost: Of the potential 600,000 dual certified tanks, most tanks will have been constructed to previous issues of the regulations and some dual certified tanks up to 20 years old (RID/ADR). A technician would need a considerable amount of time to derive information on the original plate and manage the procurement of a replacement or	5.1	A significant administrative, cost and QC burden would be reduced if the Type Approval and the data plate were not affected, just the removal of non-data plate Portable Tank Instruction marking in accordance with 4.2.5.2.6 or removing the marking of the Tank Code according to 4.3.4.1.1. as in the below image.	

modification. Drawings may not be readily obtainable in many cases and photographs of plates are notoriously unreliable. Repeated attempts may be needed to transfer the information from a container in service anywhere in the global supply chain to a technician tasked with procuring a new replacement plate or guide an operator on a modification.

b) Direct Material Cost: ITCO's Paper INF 12 for the September 2023 RID/ADR Joint Meeting estimated the basic cost of Euro 48 million for only plate modifications on 600,000 dual certified intermodal tanks.



### 6 Aggressive Implementation Timescale

The current proposal is to transition all dual certified intermodal tanks within a 2.5-year period. The estimated population of 600,000 tanks would need to be processed and modified at a rate of 657 tanks per day. For each one:

- An assessment and decision need to be made on whether Ch 6.7 or 6.8 is to be applied on each of 657 tanks per day, and,
- Depots, approved inspection body Inspectors, decals and data plates, and instructions need to be in place on a global basis.
- Management Time/Cost: Management systems would need to be set up to consider the individual circumstances of each intermodal tank when it is due a periodic or

6.1 Extend timetable to implement removal of dual certification:

If it is impossible to provide transitional rights to continue for in-service intermodal tanks, is it possible to arrange changeover initially on a voluntary basis to enable industry to pilot management and quality system controls? Full implementation could be introduced at the first Periodic Test after a preparation and planning period – say two years after the regulation is first published? Industry would need considerable support.

[Comment Alain Leclerc] Suggested we just change everything to Ch 6.7 – over maybe 5 years not 2.5 or suggested we also consider making the change on first entry to RID/ADR territory

[Comment Roy Boneham] Proposed that regulators should follow convention and not change existing intermodal tanks – use Transitional Measures to phase in a split 6.7 or 6.8 accreditation.

	accredited as Ch 6.7 Portable Tanks. (Response MH – Ch 6.8 Swap tanks are a vital means of re-assigning freight from road to rail which is a key EU objective – See 9 below)  [Roy Boneham] Note Baltic Memorandum as well as "short international" marine routes			
8	Chemical producers in Europe (particularly Germany) specify that dangerous goods in and goods out use regulation RID/ADR Ch 6.8. (Same protocols for intermodal tanks as Road Tankers)  If a ban is introduced most intermodal tanks are likely to opt for CH 6.7 because of the marine deep-sea qualification. This is a training/quality/safety/management issue for chemical producers and a restriction of trade issue for intermodal tank operators.  [Roy Boneham] Stated that this should not happen – these companies have the know-how and the resources to add complexity.  [Alain Leclerc] If/when ISO tanks become Portable			
	Tanks only, the chemical producers would have to conform. (MH response – or utilise road tankers to the detriment of a key EU environment strategy incentivising the transfer of freight onto road/rail mode – using the most efficient containers – swap tanks,			
9	It has been suggested that <b>all</b> intermodal tanks should be converted or future restricted to UN Portable Tank accreditation	11.1	Maintain Ch 6.8 accreditation for Intermodal Tank Containers	
	<ul> <li>Many intermodal swap tanks historically have been manufactured to Ch 6.8 Tank Container regulation only and cannot be retrospectively made to conform to UN</li> </ul>			

	Portable Tank regulation. This includes units not only in the territory but those being used currently outside the territory for example in the middle east or south America.  b) Given that a general-purpose road tanker or swap tank container would be manufactured as an L4BN model, the equivalent UN Portable Tank specification of T11 has a steel shell penalty of at least 500 kg per 35,000 l swap tank unit  a. This would make intermodal transport uncompetitive with road transport and acts directly against the "EU Green Deal" Strategic objective to move freight from road to rail. [EU Modal Strategy to transition significant freight transport from road to rail to assist in meeting the target to reduce 90% GH Gas emissions by 2040 and 45% by 2030]  b. A penalty of 500kg Tare Weight increases environmental impact by 1-2% whether penalised through MGM or volume.  c) Many intermodal ISO tanks are dedicated to RID/ADR Ch 6.8 service within the territories and would be redundant if forced to change to Portable Tank Ch 6.7 accreditation.			
APP X 1	Alternative Routes to improving the regulation of dual certified intermodal tanks  The intermodal tank industry has been structured on dual certification for over 30 years, and it is uncertain how to realign its standard fleet specifications without this facility. Dual IMO1/RID-ADR tanks were very	APPX 1.1	Inspection Bodies are facing higher costs in training, recruitment and supervision of Ch 6.8 tanks on a global basis since RID/ADR 2023 was adopted.  It is understood that that since recent enhancements in inspection bodies duties have been adopted in RID/ADR, those bodies are concerned about costs of recruitment and shortages of trained inspectors for supervising RID/ADR Ch 6.8	This is a Commercial Issue and discussion on this subject is not permitted by the Trade Association.

common in the 1990s and this morphed into the UN Portable Tank/RID/ADR dual model T11/L4BN soon after the turn of the century.	intermediate, periodic, and exceptional inspection services on a global basis.  Can we find a non-regulatory commercial solution to this burden?
Can the problems which have given rise to the call for a ban on dual certification be solved by other means?  It is estimated that 90% of all industry capital investment is based on this dual approval solution and there is no obvious data telling us what increase in investment in transport units will be required if the dual certification option is removed from the marketplace. The industry is certain that the removal of this flexibility will reduce the operational opportunities for tanks and asset usage efficiency will drop.	APPX 1.2 If dual certification is retained, how can these regulations be harmonised to assist in the inspection management of Partial Overlap Issues between Ch 6.7 and Ch 6.8  Inspection "Passed Test Date" tolerance for Intermediate Tests  Exceptional Test rules for modifications (eg changing from T12 to T11  Clarify data plate conformity to RID/ADR Ch 6.8 (Currently rely on Tank Code only – eg L4BN) (UN symbol clarifies Ch 6.7 conformity)
Can we resolve the issues which have prompted the call for a ban at source?	APPX 1.3  Confusion regarding what regulatory code applies at any one time  The Intersessional meetings on this matter have drawn out a proposal to amend the DGN to specify what code applies to any one operation/route.  A request has been made after the second intersessional meeting to consider whether extra markings on the dual certified tank might be useful in addition to those regulatory Placarding and Orange Plate markings required in RID/ADR 5.3.