

Transport of dangerous goods

Report on the 41st session of the ADN Safety Committee

The 41st session of the UNECE ADN Safety Committee was held in the last week of January 2023.

As usual, the Committee was composed of representatives of the Ministries of the Contracting States, representatives of the European associations EBU/ESO, the classification societies, safety experts and representatives of the chemical and oil industries. On behalf of EBU/ESO, Ms Siebrecht and Mr Michael Zevenbergen, Mr Ton Wingelaar and Mr Dirk Beernaert took part.

Prior to the meeting, the working documents and informal documents submitted for decision and discussion were prepared and discussed by associations and ministries in the contracting states. Equally as the national delegations, the EBU/ESO are entitled to submit their own documents/proposals and to make statements.

The common goal of the Safety Committee is to continuously review the regulations of the ADN to see whether they correspond to the current safety standard and requirements, whether they can be implemented in practice or need to be amended.

Herewith we would like to inform you about the most important discussions and decisions:

Opening of openings

https://unece.org/sites/default/files/2022-12/WP.15-AC.2-41-inf06e_0.pdf

After Germany had proposed an amendment to Chapter 7.2.4.22 "Opening of cargo tank openings" at the 40th session of the Safety Committee and submitted it for discussion, the informal document presented at the 41st session addressed all the delegations' questions and suggestions for improvement. Among others, it explains in more detail which measures require opening for which purpose and through which opening this is carried out. In addition, the exceptional case is defined when a sample may be taken in open form although closed sampling is prescribed. Furthermore, the document contains a proposal for a definition of "sampling opening" in 1.2.1 which formulates the equivalence of other openings. The focus is always on the safety aspect, so that the respective safety conditions are specified for each measure.

The background to the proposal is the fact that the relevant provisions of Part 7 are some of the oldest in the ADN/ADNR and have not been evaluated in detail with regard to their practicability since they came into force. From today's perspective, the regulations/prohibitions no longer meet the requirements, are partly impracticable and make it impossible to carry out certain activities on board. Legal regulations outside the ADN ("tax regulations") may also make it necessary to open the doors. Unfortunately, there are currently no technical alternatives that make opening avoidable.

The Safety Committee reacted mostly positively to the document submitted by Germany and asked for a working document on which a decision can be taken to be submitted for the August 2023 meeting. The industry representatives stressed the need for legal certainty and welcomed adapted provisions in line with the proposal for the ADN 2025 edition.

Correspondance group “fumigated cargo”

<https://unece.org/sites/default/files/2022-12/WP.15-AC.2-41-inf10e.pdf>

The correspondence group on the subject of "Fumigated cargo in dry cargo vessels" under the leadership of Germany was formed following the 39th session to discuss the need for regulations on the carriage of fumigated cargoes in the holds of dry cargo ships. The sector is involved in the work of the group.

The conclusions of the correspondence group are reflected in the document. The proposal is to include the relevant fumigated cargoes by a substance number in the ADN. It is preferred to regulate the subject by means of a special provision and not in a separate section 5.5.5. A definition of "fumigated cargo" should also be formulated.

There is agreement that the transport of fumigated cargoes should not be permitted without prior gas free measurement, nor should fumigation take place during the journey. It is also important that information about the fumigation is ensured between the consignor of the cargo and the carrier. In the event of a release of gases despite prior gas free measurement, measures must be laid down for the crew on board. It is also considered useful to label the ship so that control authorities, for example, are warned.

The Dutch delegation agreed to submit a proposal for a special regulation. It is clear that no constructional measures should be required for the dry cargo vessels (gas tightness), nor should the vessel require an ADN certification or an ADN expert be on board when carrying these goods.

EBU/ESO had originally opposed the proposal to include regulations in the ADN because regulations already exist on this subject in the area of occupational health and safety. However, these differ in the individual countries, so that a special provision in the ADN is now advocated under certain conditions in order to create uniform regulations in the 18 ADN contracting states.

Traning of experts

https://unece.org/sites/default/files/2022-12/ECE_TRANS_WP15_AC.2_2023_2E.pdf

https://unece.org/sites/default/files/2022-12/ECE_TRANS_WP.15_AC.2_2023_3E.pdf

<https://unece.org/sites/default/files/2022-12/WP.15-AC.2-41-inf08e.pdf>

For the 41st meeting, the informal working group "Expert Training" presented, among other topics, its updated work plan as well as the results from the discussions of the previous meetings. Particularly worth mentioning is the revision of the ADN questionnaires, also to the effect that the questions were simplified by shortening the sentences or formulating them more simply. The aim of this revision is to achieve a higher pass rate in examinations. If the measure proves to be ineffective, another option to be discussed is to extend the duration of the examination.

The Safety Committee took note of the work plan and agreed to it.

The revised question catalogues were initially submitted as informal documents and will be published after the final changes have been incorporated in the course of spring/summer 2023.

Alternative propulsion systems/fuels in inland navigation: identifying necessary adjustments in the ADN

https://unece.org/sites/default/files/2022-11/ECE_TRANS_WP.15_AC.2_2023_9E.pdf

At the 40th meeting, EBU/ESO drew the attention of the Safety Committee to the question of whether and how the ADN needs to be adapted in its provisions concerning the use of alternative propulsion/fuels by inland vessels carrying dangerous goods.

The use of low flashpoint fuels is regulated in 7.X.3.31.1, but only reference is made to section 1 of Annex 8 of the ES-TRIN. This section referred to liquefied natural gas (LNG) at the time of inclusion in the ADN. The European Committee for the Elaboration of Standards in Inland Navigation (CESNI) is now further developing Annex 8 to include other alternative fuels such as hydrogen and methanol. The requirements for fuel cells have already been defined, the requirements for hydrogen storage are almost finalised and the requirements for methanol storage have already been adopted. EBU/ESO therefore proposed to either delete the reference to the ES-TRIN on the grounds that the technical requirements for propulsion and auxiliary systems are not contained in the ADN, but in the ES-TRIN and in national regulations, so that it does not seem reasonable to include these requirements into the ADN. As an alternative, it was proposed to delete the reference to section 1 (LNG), but otherwise to keep the reference to Annex 8 of the ES-TRIN.

The Safety Committee was unable to reach a consensus. In any case, option 2 appeared to be the preferable one. It was recommended to avoid overlapping/duplication of the provisions on the installation of alternative propulsion systems (inside or outside the engine room) /use of alternative fuels. A list of possible systems (e.g. methanol, fuel cell) will be drawn up, taking into account the work of CESNI on ES-TRIN. A set of criteria in a further step will be developed in order to assess such alternative propulsion systems/fuels in the context of the safety provisions of the ADN.

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

<https://unece.org/sites/default/files/2022-12/WP.15-AC.2-41-inf07e.pdf>

TNO (Netherlands Organisation for Applied Scientific Research) has shown in a study on the question of the revision of 9.3.4 ADN that the collision energy and thus the risk of damage to a cargo tank has increased in recent years due to the increasing dimensions and size of inland vessels. This is accompanied by an increased probability of a rupture in a cargo tank resulting in a product spill.

Based on the results of the study, the Safety Committee was asked to assess whether amendments to the construction regulations for newbuildings of tankers are necessary. Based on the fact that no accidents with cargo spillage due to collisions were reported despite the increase in collision energy, the Safety Committee came to the conclusion that an amendment in the construction provisions is not necessary from today's perspective. The sector could confirm this.

However, the issue will continue to be monitored and TNO will provide more data to the Safety Committee in a timely manner.

Proposals by the informal working group on substances

https://unece.org/sites/default/files/2022-11/ECE_TRANS_WP.15_AC.2_2023_1E.pdf

The document contains the suggestions of the informal working group on “Substances” for amendments of the ADN, which had already been supported by the Safety Committee at the 40th session and which the working group had included in the report of its 12th meeting.

The proposals have now been submitted in an official working document by Germany to the 41st meeting.

The Safety Committee adopted most of the proposals. Some points (I, III, VII) will have to be dealt with again by the informal working group. A corresponding document is expected for the coming meeting in August.

ADN Checklist

https://unece.org/sites/default/files/2022-12/WP.15-AC.2-41-inf11e_0.pdf

The Dutch delegation proposes to thoroughly revise the ADN checklist according to 8.6.3, as one of the most used documents of the ADN. The submitted document does not yet contain any concrete proposals for amendments, but a request to the members of the ADN Safety Committee to submit suggestions to the Dutch delegation by the end of March 2023. Based on the received proposals, the delegation will prepare a document for the upcoming August meeting.

The Safety Committee welcomed the idea for revision and agreed with the approach. The EBU/ESO representatives announced that they would consult the international inland navigation sector.

Transport of Carbon Dioxide

https://unece.org/sites/default/files/2022-11/ECE_TRANS_WP.15_AC.2_2023_6E.pdf

At the 39th session of the ADN Safety Committee, EBU/ESO had asked for consideration whether it would be possible to harmonise the conditions of carriage for CO₂, ethylene and LNG by including remark "42" in column (20) of Table C.

The remark "42" in column (20) reads as follows: "Loading of refrigerated liquified gases shall be carried out in such a manner to ensure that unsatisfactory gradients do not occur in any cargo tank, piping or other ancillary equipment. When determining the holding time (as described in ADN 7.2.4.16.17) it shall be assured that the degree of filling does not exceed 98 % in order to prevent the safety valves from opening when the tank is in liquid full condition. When refrigerated liquified gases are carried using a system according to 9.3.1.24.1 (b) of 9.3.1.24.1 (c), a refrigeration system is not required."

EBU/ESO had noted that when remark "42" was introduced, it was added to column (20) of Table C for ethylene and methane. This means that these substances can be transported without a refrigeration system because of the comparable heat conductivity and holding time requirements. For CO₂, on the other hand, this does not apply, although the ships (type G 1.1) meet the same design and intrinsic insulation requirements in terms of holding time. If there is no refrigeration system, the safe carriage of carbon dioxide is possible in accordance with the provisions of ADN 7.2.4.16.17 (calculation of the holding time taking into account the anticipated duration of carriage) under the same requirements as for methane and ethylene.

EBU/ESO had also submitted additional information on the behaviour of CO₂ in relation to transport temperatures. The triple point of CO₂ is relatively high compared to other refrigerants (-56.57 °C). Below this temperature of -56.57° C, CO₂ can sublime, which leads to problems in cargo tanks and piping systems and must be avoided in any case.

The working document submitted to the 41st session contains the proposal to add remark 42 to the entry in Table C, which was amended insofar as the possibility of solidification must be avoided and therefore the transport temperature should be kept above -41°C and thus kept away from the triple point of CO₂. The Safety Committee supported the proposal in principle, but noted that the possibility of solidification and thus keeping away from the triple point must be strictly avoided and that an indication of the pressure should also be included in the remark. The transport document must also contain a note on avoiding solidification of the product.

EBU/ESO will submit a revised document for the next August meeting in accordance with the comments of the Safety Committee, so that the amendments will be included in the ADN 2025 edition.

Not empty loading arms/hoses

<https://unece.org/sites/default/files/2023-01/WP.15-AC.2-41-inf20e.pdf>

In this document, EBU/ESO criticise that incidents related to non-empty loading arms/hoses before and/or after loading/unloading occur repeatedly. On the one hand, this leads to environmental pollution, on the other hand, the cargo residues can hit the ship's crew members and cause health problems. The problem, which was already discussed at the 23rd session (January 2017), but which was insufficiently dealt with from the sector's point of view, is underpinned by 105 incidents reported to the Platform Zero Incidents (PZI) over the past 7 years.

During the meeting, EBU/ESO proposed the formation of a working group to develop proposals for improvement at the ship/shore interface under the ADN. The Safety Committee discussed the issue and came to the conclusion that the formation of a working group was premature. It was suggested that consideration be given to whether the inclusion of a separate item in the ADN checklist might be an option. In addition, direct conversations should take place between the ship side and the operators of the onshore facilities in order to find solutions. Reference was also made to the relevant regulations of the CDNI Convention, but the CDNI is only applicable in 6 Contracting States.

EBU/ESO will continue to deal with the issue, explore the option of including a note in the ADN checklist and discuss with the authorities the incidents reported on PZI.

Maximum contents of cargo samples on board of supply vessels or "other vessels delivering products for the operation of vessels"

<https://unece.org/sites/default/files/2023-01/WP.15-AC.2-41-inf19e.pdf>

The EBU/ESO proposal aims to amend 7.2.4.1.4 ADN to allow the maximum content per receptacle to be increased to 1 litre on board of supply vessels or other vessels delivering products for the operation of vessels. The current regulation provides for a maximum content of 500 ml in accordance with 7.2.4.1.1 ADN.

The background of the request is the fact that the limitation to 500 ml does not comply with the current requirements of the standard ISO 13739:2020 - Procedures for the transfer of bunkers to vessels. This standard requires that samples of fuels in a quantity of at least 500-750 ml be taken when quality problems occur.

The Safety Committee asked for the coming August meeting to explain whether receptacles with a volume of 1 litre have an approval in accordance with ADR and whether there can be safety risks if the quantity of cargo samples is doubled. It has to be investigated why the regulation in 7.2.4.1.1 imposed a restriction on the quantity of samples and whether the reasons for this are still valid today.

The 42nd session of the ADN Safety Committee will be held in Geneva from 21-25 August 2023.

Elena Siebrecht, Secretary

Michael Zevenbergen, Chair