

Fortieth session of the ADN Safety Committee

In the last week of August 2022, the 40th session of the UNECE - ADN Safety Committee took place. The meeting was held in hybrid form with interpretation. The agenda was dealt with completely. On behalf of EBU/ESO, Mr René Overveld, Mr Michael Zevenbergen, Mr Van der Linde, Mr Edwin Verberght, Mr Dirk Beernaert and Mrs Elena Siebrecht participated.

Herewith, we would like to inform you about the most important decisions of the Safety Committee and the results of the discussions:

Degassing of inland waterway tank vessels at a reception facility — spring loaded low-pressure valve

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_40E.pdf

A few years ago, at the request of the Netherlands, the Safety Committee had already discussed proposed amendments to improve the regulations on the degassing of tanker ships at degassing facilities. On the proposals for an additional (spring-loaded) valve in the opening for the supply of ambient air into a cargo tank to be degassed, the Safety Committee requested an additional document for decision-making. The sector was consulted on this issue.

In the document now submitted by the Netherlands and Germany, it was explained that the requirement for a spring-loaded low-pressure valve should not be mandatory because it was not practicable for a spring-loaded low-pressure valve to prevent the vacuum valve from opening under normal operating conditions.

The Safety Committee agreed with the argumentation of the proposal and decided to amend the degassing regulations of the ADN accordingly.

Correspondence group on fumigated cargo

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_42E.pdf

The correspondence group on "Fumigated cargo in dry cargo ships" chaired by Germany was set up to discuss the need for regulations on the carriage of fumigated bulk cargoes in the holds of dry cargo ships.

A report on the preliminary results was submitted to the 40th session by Germany, with a request to the Safety Committee to decide in which direction the group's work should continue. The sector is also involved in the work by EBU/ESO and is of the opinion that the issue should not be regulated in the ADN, but in occupational health and safety regulations. The sector is opposed to the transport of fumigated cargo above defined national limits. Transport by inland waterway vessel should only take place after measurement and clearance. In particular, it is important that the skipper is informed if the cargo has been fumigated at an earlier stage before loading onto the inland vessel. Also, personal protection equipment should be worn by the on-board crew and an emergency plan should be in place so that it is known what to do in the event of an alarm.

In its additional document submitted to the meeting, the Netherlands proposed that an informal working group should look more closely at the questions of what dangers fumigated cargoes could cause, what range gases from these cargoes could reach, whether measures against

the effects of exposure to fumigants could be effective and what measures could be introduced into ADN to ensure as far as possible that the fumigants do not leak out of the hold.

The Safety Committee noted the preliminary results of the correspondence group's work and asked that the Netherlands' questions be taken into account in further work on the subject. The correspondence group is invited to continue its deliberations on a best options proposal and present the outcome to the Safety Committee at the January 2023 meeting. The Chair also proposed that the group draws up draft terms of reference for an informal working group.

Opening of openings

Flame arresters for degassing

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_43E.pdf

https://unece.org/sites/default/files/2022-08/ECE_TRANS_WP.15_AC.2_2022_45E.pdf

Germany submitted a proposal formulating amendments for ADN 2025 concerning the regulations for the safe opening of cargo tank openings. For this purpose, the requirements of practice and the legal possibilities for the safe opening of openings on inland tankers had to be examined.

The German Federal Ministry of Digital Affairs and Transport was supported in this by a sub-working group set up for this topic, in which representatives of the inland navigation sector also participated intensively.

The reason for drafting the proposal was the realisation that the requirements for opening openings laid down in the current version of the ADN no longer correspond to today's technical requirements, cargo care, transshipment and quality control requirements.

Chapter 7.2.4.22.2 "Opening of openings of cargo tanks" has been revised in its general provisions and new sections have been drafted on the measures to be regulated and the respective safety requirements.

The ADN in its current version provides that according to 7.2.4.22.2, the opening of sampling openings is only permitted for taking samples and for checking or cleaning empty cargo tanks. In practice, however, measures such as visual inspection, sampling, gas measurement and, in exceptional cases, level measurement and the later addition of stabilisers during the voyage, require opening. The conditions under which these measures may be taken are specified in the proposal.

Furthermore, the definition of a sampling opening (defined in 1.2.1 ADN) is extended in the sense of practical use to the effect that other equivalent openings may be opened for the above-mentioned purposes, provided that they meet the same safety requirements.

In an initial discussion, the Safety Committee welcomed the proposal in view of the need for clear regulations in the ADN with regard to the safe opening of openings. EBU/ESO also welcomed the proposal, but suggest to include further necessary measures such as tank cleaning in order to cover all operations during loading, navigation and unloading that require the opening of the cargo tanks in chapter 7.2.4.22.2.

Due to the complexity and scope of the proposal, delegations were invited to submit their detailed comments in writing to the German delegation, on the basis of which a revised proposal, if necessary, would be submitted to the Safety Committee again in January 2023 for discussion.

In connection with the proposal "Opening of openings", the Safety Committee also discussed the document submitted by the Netherlands on flame arresters during degassing.

The background to the proposal was an identified inconsistency between the requirements of ADN 7.2.3.7.1.3 for degassing into the atmosphere and the equipment of current ships. ADN 7.2.3.7.1.3 states that during degassing, the gases must be discharged from the tank through a flame arrester which is resistant to steady burning. In most ships, however, the gases are conducted through the opening for the gas discharge line, which is fitted with a detonation- and deflagration-proof flame arrester. Given that no incidents involving steady burning are known and that such incidents are unlikely due to the nature of degassing, the Dutch delegation is of the view that detonation- and deflagration-proof flame arresters are better able to counteract the dangers that could occur during degassing into the atmosphere.

As the proposed amendment to the wording of ADN 7.2.3.7.1.3 also concerns a paragraph which is subject of the proposal "Opening of openings", the Safety Committee decided that the proposals should be decided in parallel.

Presentation of a project for crew-reduced vessels for the transport of dangerous goods on inland waterways/risk analysis

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_46E.pdf

<https://unece.org/sites/default/files/2022-09/WP.15-AC.2-40-inf02e%20website.pdf>

<https://unece.org/sites/default/files/2022-09/WP.15-AC.2-40-inf03e%20website.pdf>

The Safety Committee heard a presentation of a joint project by SEAFAR and HGK Shipping for crew-reduced vessels controlled from a control centre on land. After dry cargo vessels have already been successfully operated within the project, vessels with ADN approval are also to be appropriately equipped with cameras and sensor technology and operated remotely with reduced crews on part of the Belgian waterways. A detailed risk analysis was carried out in advance.

The Safety Committee noted that the issue of automatisisation is becoming increasingly important also in inland navigation and welcomed the initiative of Seafar and HGK Shipping. Some delegations pointed out a number of important aspects that still needed to be considered, such as responsibility issues in the case of a crew-reduced/unmanned vessel in the event of an accident or technical failure. In addition, the level of safety for the transport of dangerous goods should preferably be further increased through innovative technologies.

The Safety Committee also noted that the discussions in the CCNR and CESNI should first be followed in this context and if necessary, the ADN should be adapted at the appropriate time.

Proposal regarding transitional provisions of gas detectors

<https://unece.org/sites/default/files/2022-07/WP.15-AC.2-40-inf05e.pdf>

<https://unece.org/sites/default/files/2022-07/WP.15-AC.2-40-inf05a1e.pdf>

In the document, EBU/ESO propose that devices (in this case specifically gas detectors) which are approved according to a certain standard when they are introduced to the market should remain approved for the rest of their technical lifetime. This should also apply if new standards are introduced that do not provide for additional (testing) requirements. Alternatively, the current transitional provision for gas detection equipment is to be extended until 31.12.2034.

The proposal was largely welcomed, especially by CEFIC and Germany. However, France asked for an investigation into whether gas detectors approved according to the now obsolete standard also meets the safety requirements of the current standard.

The general approach that devices approved in the past can be used until the end of their technical service life, i.e. the ship can receive a certificate of approval even though the devices do not comply with the new standards, was rejected by the Safety Committee; instead, consideration must be given on a case-by-case basis.

As no decision can be taken on the basis of an informal document, EBU/ESO will prepare a working document for the January 2023 meeting, in which it must be explained in particular that the standard cited in the ADN 2019 version has not undergone any safety-relevant changes compared with the previous standard.

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

<https://unece.org/sites/default/files/2022-07/WP.15-AC.2-40-inf09e.pdf>

With this proposal, EBU/ESO drew the Safety Committee's attention to the issue of the increasing use of alternative propulsion systems/fuels in inland navigation and called for an examination in the near future of which amendments might be necessary in the ADN so that ships carrying dangerous goods are also allowed to use such innovative, environmentally friendly technologies.

The Safety Committee supported the proposal in principle. It is important that the entire inland waterway transport sector contributes to the climate and sustainability objectives of the European Union and the United Nations. Although paragraph 1.5.3.2 authorises the competent authority under certain conditions to give a certificate of approval for experimental purposes if a vessel is equipped with technical innovations that deviate from the provisions of the ADN, this can only be regarded as a transitional option. The investing sector must be assured that the innovative technologies will be approved on a permanent basis.

The Safety Committee agreed that it might be useful to form an informal working group on the issue at a later date. In the January 2023 meeting, the current status of the discussions in CESNI and the CCNR, among others, on the alternative propulsion systems currently being researched for inland navigation should initially be presented to the Safety Committee in the form of expert presentations. It is up to EBU/ESO to continue this topic.

Informal working group on the "Training of experts"

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_34E.pdf

The Safety Committee noted the report of the twenty-second meeting of the informal working group on "Training of experts". The revision of the question catalogue in accordance with the provisions of the 2023 edition of the ADN will continue, so it is expected that the revised catalogue will be adopted by the informal working group in its next meeting in September 2022 and presented to the Safety Committee in the January 2023 meeting.

Some delegates were in favour of extending the duration of the examinations from 60 to 75 minutes (basic course). The background to this is a discussion that has been going on for several years about improving the examination conditions and the question of how the pass rate can be increased without lowering the examination quality. In the 38th session (2018),

EBU/ESO introduced an examination on this subject within the informal working group by INF.11, whereby 2.5 minutes per question were proposed for both the basic and the repeat course.

However, it will first be awaited how the examination statistics will turn out in the coming year.

With regard to the possibility of interrupting the basic course over the weekend, the possibility of distance learning and the integration of e-learning concepts in the context of practical exercises, the Safety Committee was informed that these issues would also be considered by the RID/ADR/ADN Joint Meeting at its autumn session in 2022.

Special authorisation concerning UN No 1977, Nitrogen, refrigerated, liquid

https://unece.org/sites/default/files/2022-06/ECE_ADN_2022_4E_2.pdf

In its proposal, the Belgian delegation informed the Safety Committee of the special authorisation already granted to two tankers for the carriage of UN 1977, nitrogen, refrigerated, liquid. It was confirmed by the delegation of the Netherlands that the competent Dutch authority had also agreed to this authorisation, which was submitted as an annex to the document for the meeting. In its request, Belgium asked for consideration of the special authorisation and the proposal for corresponding additions to UN 1977 in Table C of the ADN.

The Safety Committee requested the Belgian and Dutch delegations to submit a revised document for the January 2023 meeting, taking into account in particular the Safety Committee's editorial suggestions for improvement from the meeting and addressing the question of how the safety recommendations made in the special authorisation should be dealt with in Part 7 ADN. In addition, consequential amendments to Chapter 3.2 are to be considered. The entry in Table C would then be amended accordingly for the ADN 2025 version.

List of interpretations of the classification societies

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_29E.pdf

The Safety Committee agreed in principle with the interpretations of transitional provision 1.6.7.2.2.2 and paragraphs 9.3.2.11.8 and 9.3.4.1.1 proposed by the informal working group of the Recommended ADN Classification Societies in paragraphs 3 to 5 of the document. However, it stated that it was preferable to amend the provisions for the ADN 2025 version accordingly. It was recalled that the provisions of ADN should always be worded clearly enough to avoid the need for interpretation as much as possible. The representative of the Recommended ADN Classification Societies agreed to prepare a proposal to amend the ADN regulations for the January 2023 meeting.

In addition, the Safety Committee welcomed the proposal from the Recommended ADN Classification Societies, together with the contributions of Germany and the Netherlands, to prepare a comprehensive list of interpretations that the classification societies have discussed in the past and to present it for discussion at the next session.

Supervision of loading and unloading, supervision from the shore

https://unece.org/sites/default/files/2022-06/ECE_TRANS_WP.15_AC.2_2022_49E.pdf

The document submitted by the Netherlands raises the question of whether supervision of loading and unloading from shore should be extended beyond the immediate vicinity of the manifold.

The rationale is that supervision of the entire process of loading and unloading a liquid cargo is essential and any immediate possibility of leakage of cargo should be detected immediately and appropriate action undertaken. Supervision should therefore be carried out continuously during loading and/or unloading operations.

It was discussed in the Safety Committee whether the supervision area should be increased so that shore-side supervision can also detect leaks beyond the 3 metres around the manifold.

The safety committee came to the conclusion that the extension of the supervision area would not be a safety improvement. It was very well illustrated via a short presentation that beyond a certain distance leakages are no longer perceptible to the human eye from the shore side. Supervision is very well organised both from the shore side and from the ship's side. Extending the scope of supervision would also have legal implications and could raise questions of responsibility and liability, including data protection issues.

EBU/ESO indicated that it would be better to make improvements on the preventive side in order to avoid accidents and to put forward proposals in the area of the ADN control list (8.6.3).

The Safety Committee rejected any changes to the current provisions and recommended focusing more on possible preventive measures as well. The Dutch delegation offered to provide more detailed information for the next meeting on the incidents that could possibly have been avoided by extending the area of supervision.

ADN 9.3.4 revision

https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf022e_0.pdf

The Safety Committee heard a presentation on the current status of the project that has been running for several years to analyse the possible use of cargo tanks with a volume of more than 1000 m³. Based on the results of this project led by TNO (Netherlands Organisation for Applied Scientific Research), the provisions in 9.3.4 could be revised. The TNO representative announced that more detailed results would be published shortly in three different reports. So far, the research had found that the collision energy statistics had changed over time (2005-2017) and would need to be updated. The maximum tank size limit of 1000 m³ is appropriate, but exceptions are possible for special cargoes such as liquefied natural gas and liquefied hydrogen based on a quantitative risk analysis. The calculation methods for collision capability must also be adapted.

For the January 2023 session, the recommended ADN classification societies proposed to draft some proposals for amendments to paragraph 9.3.4.

The Austrian delegation pointed out that according to the new statistics, vessels were generally heavier and that due to the increase of traffic on inland waterways, it was indeed necessary to revise the provisions attached to ADN to take account of the higher risks and collision energy.

Transport of Carbon Dioxide (CO₂), refrigerated, liquid

<https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf18e.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: "42.

Remark "42" in column (20) reads: "42. 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 Safety Committee had decided to mandate the informal working group on substances to examine the application. At the 40th meeting of the Safety Committee, this working group now supported EBU/ESO's proposal with the suggestion that it should be included in the conditions of carriage that there must be sufficient distance from the triple point. Information must be provided on special characteristics of the substance in connection with carriage. Additional entries could be necessary in the transport document.

EBU/ESO will submit a working document for the January 2023 meeting with a proposal to amend the entry in Table C.

Undetectable substances for which a toximeter is required

<https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf12e.pdf>

At the 39th meeting of the Safety Committee, CEFIC and EBU/ESO had raised the issue of dangerous substances that could not be measured with a toximeter, which is a problem that exists for a long time.

Dangerous goods for which a toximeter is required in ADN 3.2.1 Table A column 9 and 3.2.3 Table C ADN column 18, but which cannot be measured with a toximeter because no suitable tubes are available for the substance, are currently not allowed to be transported by inland waterway vessel. As a consequence, there is a "reverse modal shift" towards road/rail transport, where, notably, no toximeters are required.

A practical example is the transport of titanium tetrachloride (TiCl₄), which was transported in tank containers on inland waterway vessels, which is now unfortunately being transported by road again (approx. 8000 tonnes/year).

CEFIC and EBU/ESO point out that this problem could be solved by extending the regulations of the ADN so that a substance does not only have to be measured directly, but that determination through secondary products would also be allowed with the help of measuring instruments approved for the secondary products. Since titanium tetrachloride hydrolyses in the presence of water (atmospheric humidity) and forms hydrogen chloride in the process, it is possible to detect titanium tetrachloride indirectly through the hydrogen chloride formed by using a measuring device that detects HCl.

The Safety Committee had asked the informal working group on substances to look into the problem and consider the approach proposed by CEFIC and EBU/ESO. The working group supports the approach and proposes a four-step procedure.

According to this, the definition of a toximeter should first be extended. Other devices that are fit for purpose should also fall under the definition. It can then be checked which substances can be directly detected with the devices that fall under the new definition. If this is not possible, the question arises as to the indirect measurement method, in which the reaction product is measured. Finally, it must be examined how to proceed with substances that can be measured neither directly nor indirectly. In the area of dry cargo shipping, stowage on deck could possibly be considered.

The Safety Committee was able to follow the solution approach and welcomed the proposal from the informal working group on substances to deal with the question of how the solution approach described could be implemented in the text of the ADN regulations.

Loading on top

<https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf12e.pdf>

The informal working group on substances also dealt with the topic of "Loading on top" at its meeting in spring 2022. The basis for the consultation on this subject were the decisions taken by the informal working group "Loading on top in inland vessels". According to this, only loading on top of the same cargo should be considered.

In its report, the informal working group presented a proposal for a definition of the term "same cargo". The proposed definition includes three conditions, namely the same entry in Table C, no reactions between the batches of the cargo and no reactions between the cargo and the structural materials of the vessel.

The mixed loading of several batches of the same cargo could then be made possible by means of a new remark in column (20) of Table C. This remark should be assigned to entries in Table C for which there is a need for mixed loading of several batches and for which the conditions set out in the definition of "same cargo" can be met. The basis for this is a developed "positive list".

The Safety Committee agreed to this approach. Following this, amendments would still be necessary to the provisions on documentation, adjustments to Part 7, Chapter 7.2 "Tankers" and to the provisions on the stabilisation certificate.

Loading and unloading instructions

<https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf13e.pdf>

The background and reason for the formation of the informal working group "Loading and unloading instructions" is the fact that there are no loading and unloading instructions in the ADN yet. Although such an instruction is required according to Part 9, there is no information on who has to prepare it and which safety conditions apply. The informal working group was set up after the Dutch delegation, on its own initiative, submitted a first draft to the Safety Committee, which was prepared with the involvement of authorities and the sector.

The Safety Committee took note of the outcome of the informal working group meeting this year and could follow the aspects set out in paragraphs 6 to 8 of the informal document. The working group was encouraged to continue its work and present at the January 2023 meeting.

Certificates and other shipboard documents in electronic form

<https://unece.org/sites/default/files/2022-08/WP.15-AC.2-40-inf14e.pdf>

The report of the first meeting of the newly established informal working group "Certificates and other shipboard documents in electronic form" was presented to the Safety Committee.

In the first step, a list of documents was drawn up which are appropriate for digitisation. Certificates are not to be considered for the time being. The group will examine in a next step which data formats are best for dematerialising documents.

The discussion on the development of telematics at the RID/ADR/ADN Joint Meeting and on the implementation process of Regulation (EU) 2020/1056 on electronic freight transport information (eFTI) will be followed.

The Safety Committee asked the working group to continue its work and to report back at the next meeting.

Elena Siebrecht, Secretary