



**Economic and Social
Council**

Distr.
GENERAL

TRANS/WP.15/AC.2/2000/4
9 November 1999

ENGLISH
Original: FRENCH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport
of Dangerous Goods

Meeting of Experts on the European Provisions
concerning the International Carriage of
Dangerous Goods by Inland Waterway (ADN)
(Third session, Geneva, 17-21 January 2000)

MISCELLANEOUS AMENDMENTS TO ADN

Submitted by CCNR

The secretariat reproduces below proposals for amendments to Annexes A, B.1 and B.2 of ADN, submitted by CCNR.

Marginal

- 6002 (2) Delete the last sentence.
- (5) (a) Second dash: end, read:
- “... as well as by the acronyms ADN, ADR or RID;”
- 6471 NOTE: Replace “with 25% or more (mass)” by “with 25 to 30% (mass) or with 90% or more (mass) ...”.
- 10 315 (2) Delete: “The training shall be approved by the competent authority” and at the end the phrase “to this Annex”.

GE.99-24129 (E)

10 315
(cont'd)

- (3) Amend to read:
- (a) Delete: “degree of filling, calculation of contents, liquid-level gauging, sampling, checklist, overfilling, pumping”;
- (b) Replace: “gases or vapours” by “gases and vapours”, and “basic knowledge of products” by “knowledge of products”;
- (g) Delete: “certificates attesting a gas-free condition”.

(5) Second sentence: read “... shall be taken at latest ...”.

10 401

(1) Second sentence, replace by:

“For pushed convoys and side-by-side formations this gross mass shall apply to each unit of the convoy or formation”.

Amend the table to read:

Class	Item	Maximum permissible gross mass
1		see marginal 11 401
2	any classified under groups T, TF, TC, TO, TFC, TOC, total any classified under group F, total	120 000 kg 300 000 kg
3	1° to 5° and 21° to 26° with letter (a) or (b), total 11° to 19°, 27°, 28°, 32°(c), 33°(c), 41°, total however, maximum of 12° or 13°	300 000 kg 120 000 kg 30 000 kg
4.1	31°(b), 32°(b), 41°(b), 42°(b), total 7° and 16°(b), 21°, 22° and 25°(a), 26°, 33° to 40°, 44°, 45° and 46°, any with letter (b), total	120 000 kg
4.2	7°, 8°, 18° and 19°, all with letter (b), total	300 000 kg
4.3	15°, 18°, 22° and 23°, all with letter (a) or (b), total	120 000 kg
5.2	1°(b), 2°(b), 11°(b) and 12°(b), total other items, total	15 000 kg 120 000 kg
6.1	any without letter, total any with letter (a), total any with letter (b), total	30 000 kg 120 000 kg 300 000 kg
7		see marginal 71 401
8	any with letter (a) and 6°, 14°, 15° total	300 000 kg
9	any with letter (b), total	300 000 kg

10 401
(cont'd)

Delete: "Example: ... 120 000 kg".

(2) Add the following:

"(2) The maximum quantity of dangerous goods permitted on board a vessel or on board each unit of a pushed convoy or side-by-side formation is 1 100 000 kg.

No quantitative limitation shall apply to dangerous goods not mentioned in the above table."

(3) Present paragraph (2) becomes paragraph (3) with the following addition:

"... of Class 5.2 and the limitation in accordance with (2) above shall not apply ...".

10 403

(3) Delete.

10 404

(2) End, add:

- "- tank-containers;
- tank-vehicles."

Delete marginals 10 403(3), 11 410, 31 410, 43 410, 61 410, 62 410, 71 410 and 91 410 and replace by the new marginal 10 410 to read:

"10 410

Precautions with respect to foodstuffs, other articles of consumption and animal feeds

Packages, including intermediate bulk containers (IBCs), and uncleaned empty packagings, including uncleaned empty intermediate bulk containers (IBCs), bearing labels conforming to models Nos. 6.1 or 6.2, and those bearing labels of Class 9, containing substances of 1°, 2°(b), 3° or 13°(b) of Class 9, shall not be stacked on or loaded in immediate proximity to packages known to contain foodstuffs, other articles of consumption or animal feeds in vehicles and at places of loading and unloading or trans-shipment.

When these packages, bearing the said labels, are loaded in immediate proximity of packages known to contain foodstuffs, other articles of consumption or animal feeds, they shall be kept apart from the latter:

- (a) by complete partitions which should be as high as the packages bearing the said labels, or
- (b) by packages not bearing labels conforming to models Nos. 6.1, 6.2 or 9 or packages bearing labels of Class 9 but not containing substances or articles of 1°, 2°, 3° or 13° of that class, or

- 10 410 (cont'd) (c) by a space of at least 0.8 m, unless the packages bearing the said labels are provided with an additional packaging or are completely covered (e.g. by a sheeting, a fibreboard cover or other measures).”
- 11 403 (1) Amend to read:
“(1) Packages containing substances and articles of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall be separated by a distance of not less than 12.00 m from dangerous goods of other classes.”
- 11 407 Amend to read:
“When substances of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights are on board, no goods whatsoever shall be loaded or unloaded, except at the places designated or authorized for that purpose by the competent authority.”
- 11 408 (1) Read:
“(1) Loading and unloading operations of substances of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall not start without permission in writing from the competent authority. This provision also applies to loading or unloading of other goods when substances of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights are on board.”
- 11 410 Delete.
- 11 501 First sentence, read:
“The carriage of substances and articles of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights may only take place in pushed convoys or side-by-side formations if their dimensions do not exceed 195.24 m.”
- 21 301 (1) Insert a second paragraph to read:
“The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”
- 21 312 Read:
“When dangerous goods are carried in containers in open holds ventilation is required only if damage to the containers is suspected or if it is suspected that the contents have spilled inside the container.”

- 31 301 (1) Add a new paragraph to read:
- “The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”
- 31 312 Read:
- “When dangerous goods are carried in containers in open holds ventilation is required only if damage to the containers is suspected or if it is suspected that the contents have spilled inside the container.”
- 31 410 Delete.
- 41 301 Add a second paragraph to read:
- “The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”
- 41 403 Read:
- “Packages with substances and articles of Class 4.1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall be separated by a distance of not less than 12.00 m from dangerous goods of other classes.”
- 41 407 Add:
and 41 408
- “41 407 Places for loading and unloading
- When goods of Class 4.1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights are on board, no goods whatsoever shall be loaded or unloaded, except at the places designated or authorized for that purpose by the competent authority.
- 41 408 Time and duration of loading and unloading operations
- (1) Loading and unloading operations for goods of Class 4.1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall not start without permission in writing from the competent authority. This provision also applies to loading or unloading of other goods, when goods of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights are on board.
- (2) Loading and unloading operations shall be suspended in the event of a thunderstorm.”

41 501 First sentence, read:

“The transport of goods of Class 4.1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights may only be performed in pushed convoys or side-by-side formations if their dimensions do not exceed 195.24 m.”

42 260 (4) Add:

“(4) When the vessel carries goods of Class 4.2, 8°(b) and 19°(b) for which marginal 10 500 prescribes marking with three blue cones or three blue lights, the toximeter referred to in marginal 10 260(1)(d) is required on board together with instructions for use.”

43 301 (1) Insert a second paragraph:

“The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”

43 410 Delete.

52 301 Insert a second paragraph:

“The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”

52 312 Add the following:

“52 312 Ventilation

When dangerous goods are carried in containers in open holds, the holds in question shall be ventilated if damage to the containers is suspected or if it is suspected that the contents have spilled inside the container.”

52 403 Read:

“Goods of Class 5.2 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall be separated by a distance of not less than 12.00 m from goods of other classes.”

52 407 Read:

“When goods of Class 5.2 for which marginal 10 500 prescribes marking with three blue cones or three blue lights are on board, no goods whatsoever shall be loaded or unloaded, except at the places designated or approved for this purpose by the competent authority.”

- 52 408 Read:
“(1) Loading or unloading operations for goods of Class 5.2 for which marginal 10 500 prescribes marking with three blue cones or three blue lights shall not be started without permission in writing from the competent authority. This provision applies also to loading or unloading of other goods, when substances of Class 1 for which marginal 10 500 prescribes marking with three blue cones or three blue lights, are on board.”
- 52 501 First sentence, read:
“The carriage of goods of Class 5.2 for which marginal 10 500 prescribes marking with three blue cones or three blue lights may only be performed in pushed convoys or side-by-side formations if their dimensions do not exceed 195.24 m.”
- 61 301 (1) Insert a second paragraph to read:
“The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”
(3) Delete.
- 61 312 (1) Read:
“When dangerous goods are carried in containers in open holds, the holds in question shall be ventilated if damage to the containers is suspected or if it is suspected that the contents have spilled inside the container.”
- 61 410 }
62 410 } Delete.
71 410 }
- 81 301 (1) Insert a second paragraph to read:
- 91 301 (1)
“The measurements may only be made by persons wearing protective breathing equipment suited to the goods carried.”
- 91 410 Delete.
- 110 292 End, add:
“This requirement does not apply to the forepeak and afterpeak.”

120 231 (2) Read:

“(2) The air vents in the engine rooms and the air intakes of the engines which do not take in air directly from the engine room shall be located not less than 2 m from the protected area.”

210 014 Insert under “Miscellaneous”:

“Flame arrester:

means a device mounted in the vent of part of an installation or in the interconnecting piping of a system of installations, the purpose of which is to permit flow but prevent the propagation of a flame front. This device shall be tested according to the European standard EN 12874 (1998);

Flame arrester plate stack:

means the part of the flame arrester the main purpose of which is to prevent the passage of a flame front;

Flame arrester housing:

means the part of a flame arrester the main purpose of which is to form a suitable casing for the flame arrester plate stack and ensure a mechanical connection with other systems;

Steady burning:

means combustion stabilized for an indeterminate period;

Deflagration:

means an explosion which propagates at subsonic speed (see EN 1127-1:1997);

Detonation:

means an explosion which propagates at supersonic speed and is characterized by a shock-wave (see EN 1127-1:1997);

High-velocity vent valve (eductor):

means a pressure-reducing valve with a nominal ejection speed greater than the speed of propagation of a flame, thus preventing the passage of a flame front. This type of installation shall be tested in accordance with European standard EN 12 874 (1998);

210 014
(cont'd)

Types of vessel:

Type N: means a tank vessel intended for the carriage of liquids.

Type N closed: means a tank vessel intended for the carriage of liquids in closed cargo tanks.

Type N open with flame arrester:

means a tank vessel intended for the carriage of liquids in open cargo tanks, where the outward-opening vents are fitted with flame arresters capable of withstanding steady burning.

Type N open: means a tank vessel intended for the carriage of liquids in open cargo tanks.”

210 307

(2) Amend to read:

“(2) Gas-freeing ... through flame arresters capable of withstanding steady burning.

In normal conditions of operation the gas concentration in the vented mixture at the outlet shall be less than 50% of the lower explosive limit.

The suitable venting equipment ... extraction side. The gas concentration ...”
(remainder unchanged).

210 315

(2) Delete: “The training shall be approved by the competent authority.”

(3) Amend to read:

(3) (a) Delete: “labelling of packages”;

(c) Delete: “radioactivity”;

(g) Delete: “certificates attesting a gas-free condition”.

(5) Third sentence, read: “... shall be taken at latest ...”.

210 317

Amend to read:

“(1) An expert for the carriage of gases shall be on board where goods for which a type G vessel is prescribed in the list of substances (Appendix 4) are carried.”

(2) Delete: “to this Annex”.

(3) (d) Delete: “certificates attesting a gas-free condition”;

210 317 (h) Replace: “contamination” by “fuites” (concerns the French text only).
(cont’d)

(5) Replace “type C” by “type G” (concerns the French text only) and the last sentence by:

“When the refresher or advanced training course is taken in the year preceding the date of expiry of the certificate, the new period of validity shall begin on the expiry date of the preceding certificate, but in other cases it shall begin on the date of certification of participation in the course.”

210 318 Amend to read:

“(1) An expert for the carriage of chemicals shall be on board where goods for which a type C vessel is prescribed in the list of substances (Appendix 4) are carried.”

(2) Delete: to this Annex”.

(3) (h) Replace: “contamination” by “pollution”.

(5) Replace the last sentence by:

“When the refresher or advanced training course is taken in the year preceding the date of expiry of the certificate, the new period of validity shall begin on the expiry date of the preceding certificate, but in other cases it shall begin on the date of certification of participation in the course.”

210 402 (4) End, add:

“During unloading it may also issue the derogations of paragraph (3).”

210 410 (1) Amend to read:

“(1) Loading ... completed, and questions 1 to 18 of the checklist have been checked off with an “x”. Irrelevant questions should be deleted. The list ... shore facilities. If a positive response to all the questions is not possible, loading or unloading is only permitted with the consent of the competent authority.”

210 416 Delete the present paragraph (7) and add:

“(7) When a tank vessel conforms to marginal 321 222(5)(d) or 331 222(5)(d), the individual cargo tanks shall be closed off during transport and opened during loading, unloading and gas-freeing.

(8) Persons entering the spaces of the below-deck cargo area during loading or unloading shall wear the equipment referred to in marginal 210 260(1)(a) if this equipment is prescribed in Part II.

210 416 Persons connecting or disconnecting the loading and unloading pipes or the
(cont'd) vapour pipes, or taking samples, carrying out measurements, replacing the flame
arrester plate stack or relieving pressure in cargo tanks shall wear the equipment
referred to in marginal 210 260(1)(a) if this equipment is prescribed in Part II.

(9) During loading or unloading in a closed tank vessel of substances for which
an open type N vessel with a flame arrester is sufficient according to the list of
substances (Appendix 4), the cargo tanks may be opened using the safe
pressure-relief device referred to in marginal 321 222(4)(a) or
marginal 331 222(4)(a).

(10) Paragraph (9) shall not apply when the cargo tanks contain gases or vapour
from substances for the carriage of which a closed-type tank vessel is required in
the list of substances (Appendix 4).”

210 419 Add a new marginal to read:

“210 419 Inerting of tank vessels

The cargo tanks of a closed tank vessel, loaded or empty, which have not been
cleaned of substances for which the use of a closed tank vessel of type C or type N
with anti-explosion protection is prescribed in the list of substances (Appendix 4)
shall be inerted in accordance with marginal 210 418.

The inerting shall be performed so as to ensure that the oxygen content is less than
8% in volume.

Inerting is not prescribed when the tank vessel is in conformity with
marginal 321 222(5) or marginal 331 222(5).”

210 422 Amend to read:

“(1) Opening of cargo tank apertures shall be permitted only after the tanks have
been relieved of pressure.

(2) Opening of sampling outlets and ullage openings and opening of the
housing of the flame arrester shall not be permitted except for the purpose of
inspecting or cleaning empty cargo tanks.

When in the list of substances (Appendix 4) anti-explosion protection is required,
the opening of cargo tank covers or of the housing of the flame arrester for the
purpose of mounting or removing the flame arrester plate stack in unloaded cargo
tanks shall be permitted only if the cargo tanks in question have been gas-freed
and the concentration of flammable gases in the tanks is less than 10% of the
lower explosive limit.

210 422 (3) Sampling shall be permitted only if a device prescribed in the list of
(cont'd) substances (Appendix 4) or a device ensuring a higher level of safety is used.

Opening of sampling outlets and ullage openings of cargo tanks loaded with substances for which marking with two blue cones or blue lights is prescribed in the list of substances (Appendix 4) shall be permitted only when loading has been interrupted for not less than 10 minutes.

(4) (Present paragraph (3)).

(5) (Present paragraph (4)).

(6) (Present paragraph (5)).

(7) Paragraphs (1) to (6) do not apply to oil-separator vessels or supply vessels.”

221 418 Add a new marginal:

“221 418 Inerting of gaseous phases in tanks

When anti-explosion protection is required in accordance with the list of substances (Appendix 4), any air present in the cargo tanks and in their piping there shall be purged in an appropriate manner using an inert gas and they shall be kept air-free.”

221 301 } Paragraph (1), insert a new paragraph 2 to read:

231 301

241 301

261 301

281 301

291 301

“The measurements may only be made by persons wearing protective respiratory equipment suited to the substance carried.”

311 210 (2) Amend to read:

“(2) The lower edges of doors in the sidewalls of superstructures and the coaming of access hatches to under-deck spaces shall have a height of not less than 0.50 m above the deck.

This requirement need not be complied with if the wall of the superstructures facing the cargo area extends from one side of the ship to the other and has doors the sills of which have a height of not less than 0.50 m. The height of this wall shall be not less than 2.00 m. In this case, the lower edges of doors in the sidewalls of superstructures and the coamings of access hatches behind this wall shall have a height of not less than 0.10 m. The sills of engine room doors and access hatches shall, however, always have a height of not less than 0.50 m above the deck.”

- 311 221 (1) (g) Amend to read:
“(g) a nozzle connected to a sampling device of the closed type which may only be opened once a gas-tight connection has been made to the sampling device;”
- 311 232 (2) Read:
“(2) Open ends of air pipes of all oil fuel tanks shall lead to 0.50 m above the deck. Their open ends ...” (remainder unchanged).
- 311 240 (2) Read:
“(2) In addition the engine rooms, the pump-rooms and all spaces containing essential equipment (switchboards, compressors, etc.) ...” (remainder unchanged).
- 321 200 (1) Add a new paragraph (c):
“(c) Vapour pipes and gas discharge pipes shall be protected against erosion.”
- 321 210 (2) Read:
“(2) The lower edges of doors in the sidewalls of superstructures and the coamings of access hatches to under-deck spaces shall have a height of not less than 0.50 m above the deck.

This requirement need not be complied with if the wall of the superstructures facing the cargo area extends from one side of the ship to the other and has doors the sills of which have a height of not less than 0.50 m. The height of this wall shall be not less than 2.00 m. In this case the lower edges of the doors in the sidewalls of superstructures and of coamings of access hatches behind this wall shall have a height of not less than 0.10 m. The sills of engine-room doors and access hatches shall, however, always have a height of not less than 0.50 m above the deck.”
- 321 212 (6) Read: “321 226(3)”.
- 321 220 (2) Insert after the second sentence:
“These requirements are not applicable when the bulkhead between the engine-room and the cofferdam comprises fire-protection insulation 'A-60' in accordance with SOLAS II-2, Regulation 3.”
- (4) End, add: “capable of withstanding a deflagration”.

321 221 (1) (g) Amend to read:

“(g) a connecting nozzle to a sampling device, closed or partly closed, which can only be opened once a gas-tight connection has been made to the sampling device and/or a sampling opening, as required in the list of substances (Appendix 4);”

(11) Read:

“(11) The sampling openings shall have a diameter of not more than 0.30 m. They shall be fitted with a flame arrester plate stack, capable of withstanding steady burning and shall be so designed that the opening period will be as short as possible and that the flame arrester plate stack cannot remain open without external intervention.”

(12) Delete.

321 222 (4) (a) Read:

“(a) Each cargo tank ...

- safety devices ... vacuums. When the list of substances (Appendix 4) requires anti-explosion protection, the vacuum valve shall be fitted with a flame arrester capable of withstanding a deflagration and the pressure-relief valve with an eductor capable of withstanding steady burning. The gases shall be discharged upwards to the valves,
- a connection ... ;
- a device ... or shut.”

(5) Read:

“(5) (a) Insofar as the list of substances (Appendix 4) prescribes anti-explosion protection, a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a flame arrester with a fixed or spring-loaded plate stack, capable of withstanding a detonation.

This equipment may consist of:

- (i) a flame arrester fitted with a fixed plate stack, where each cargo tank is fitted with a pressure-relief valve capable of withstanding a deflagration and an eductor capable of withstanding steady burning;

321 222
(cont'd)

- (ii) a flame arrester fitted with a spring-loaded plate stack, where each cargo tank is fitted with a pressure-relief valve capable of withstanding a deflagration;
- (iii) a flame arrester with a fixed or spring-loaded plate stack;
- (iv) a flame arrester with a fixed or spring-loaded plate stack, where the pressure-measuring device is fitted with an alarm system in accordance with marginal 321 221 (7).

When a fire-fighting installation is permanently mounted on deck in the cargo area and can be brought into service from the deck and from the wheelhouse, flame arresters need not be required for individual tanks.

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.

or

- (b) Insofar as the list of substances (Appendix 4) prescribes anti-explosion protection, a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a pressure/vacuum relief valve incorporating a flame arrester capable of withstanding a detonation/deflagration.

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.

or

- (c) Insofar as the list of substances (Appendix 4) prescribes anti-explosion protection, an independent vapour pipe for each cargo tank, fitted with a pressure/vacuum relief valve incorporating a flame arrester capable of withstanding a deflagration and an eductor incorporating a flame arrester capable of withstanding steady burning. Several different substances may be carried simultaneously.

or

- (d) Insofar as the list of substances (Appendix 4) prescribes anti-explosion protection, a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a

321 222 (cont'd) shut-off device capable of withstanding a detonation, where each cargo tank is fitted with a vacuum relief valve capable of withstanding a deflagration and an eductor capable of withstanding steady burning.

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.”

321 226 (3) Second sentence, read:

“The residual cargo tanks shall be equipped with:

- a vacuum valve and an eductor.
The eductor shall be so regulated as not to open during carriage. This condition is met when the opening pressure of the valve meets the conditions set out in the list of substances (Appendix 4) for the substance to be carried. When the list of substances (Appendix 4) requires anti-explosion protection, the vacuum valve shall be capable of withstanding deflagrations and the eductor steady burning;
- a device for measuring the degree of filling;
- connections, with shut-off devices, for pipes and hoses.”

Last sentence, read:

“Residual cargo tanks, intermediate bulk containers or tank-containers placed on the deck shall be located at a minimum distance from the edge of the vessel equal to not less than one quarter of the vessel's breadth.”

321 232 (2) Read:

“(2) The open ends of the air pipes of all oil fuel tanks shall lead to not less than 0.50 m above the open deck. Their open ends and the open ends of overflow pipes leading to the deck shall be fitted with a protective device consisting of a gauze diaphragm or a perforated plate.”

321 240 (2) Read:

“(2) In addition, the engine rooms, the pump-rooms and all spaces containing essential equipment (switchboards, compressors, etc.) ...” (remainder unchanged).

321 242 (4) End, add:

“The requirements of marginal 321 252(3)(b) are not applicable to the unloading of substances having a flash point of 61 ° C or more when the temperature of the product is at least 15 K lower at the flash point.”

321 292 End, add:

“This requirement does not apply to the forepeak and afterpeak.”

331 200 (1) (c) Add a new paragraph (c):

“(c) Vapour pipes and gas removal pipes shall be protected against erosion.”

331 210 (2) Amend to read:

“(2) The lower edges of doors in the sidewalls of superstructures and the coaming of access hatches to under-deck spaces shall have a height of not less than 0.50 m above the deck.

This requirement need not be complied with if the wall of the superstructures facing the cargo area extends from one side of the ship to the other and has doors the sills of which have a height of not less than 0.50 m. The height of this wall shall be not less than 2.00 m. In this case, the lower edges of doors in the sidewalls of superstructures and the coamings of access hatches behind this wall shall have a height of not less than 0.10 m. The sills of engine room doors and access hatches shall, however, always have a height of not less than 0.50 m above the deck.”

331 211 (7) Read:

“(7) Where a vessel is constructed with cargo tanks which are independent of the structure of the vessel, the space between the wall of the hold space and the wall of the cargo tanks shall be not less than 0.60 m. The space between the bottom of the hold space and the bottom of the cargo tanks shall be not less than 0.50 m.

The space may be reduced to 0.40 m under the sump pumps.

If the above-mentioned spaces are not feasible, it shall be possible to remove the cargo tanks easily.”

(9) Read:

“(9) Where services spaces are located in the cargo area under deck, they shall be arranged so as to be easily accessible to permit persons wearing protective clothing and breathing apparatus to operate easily the equipment contained therein. They shall also be designed so as to allow an injured or unconscious person to be removed without difficulties, if necessary by means of fixed installed equipment.”

331 211 (10) and (11) Add the following:
(cont'd)

“(10) Cofferdams, double-hull spaces, double bottoms, cargo tanks, hold spaces and other accessible spaces shall be arranged so that they may be completely inspected and cleaned. The dimensions of openings, except for those of double-hull spaces and double bottoms not having a wall common to the cargo tanks, shall be sufficient to allow a person wearing breathing apparatus to enter or leave the space without difficulties. These openings shall have a minimum cross-section of 0.36 m² and a minimum side length of 0.50 m. They shall be designed so as to allow an injured or unconscious person to be removed without difficulties, if necessary by means of fixed installed equipment. In these spaces, there shall be not less than 0.50 m between the strengthening members. In the double bottom this space may be reduced to 0.45 m.

Cargo tanks may, however, have circular openings with a diameter of not less than 0.68 m.

(11) Paragraph (6)(c) does not apply to type N open.”

331 212 (6) Read: “and 331 226(3)”.

331 220 (2) Insert after the second sentence:

“These requirements are not applicable when the bulkhead between the engine room and the cofferdam has an 'A-60' fire protection insulation according to SOLAS II-2, Regulation 3.”

(4) End, add: “capable of withstanding a deflagration”.

331 221 (1) (g) Amend to read:

“(g) a connecting nozzle, closed or partly closed, to a sampling device which can only be opened once a gas-tight connection has been made to the sampling device and/or a sampling opening, as required in the list of substances (Appendix 4);”

(5) (c) Add the following:

“(c) Supply vessels and other vessels which may be delivering products required for operation shall be equipped with a connecting nozzle conforming to European standard EN 12 827 and a rapid closing device enabling refuelling to be interrupted. A control facility shall actuate this device by a binary signal from the section of the facility for the prevention of overflowing located on the supply vessel. It shall be possible to actuate the rapid closing device independently of the binary signal.

331 221
(cont'd)

The control facility shall convert the binary signal into a signal actuating the rapid closing device.

The electrical circuits actuating the rapid closing device shall be secured according to the quiescent current principle or other appropriate error detection measures. The state of operation of electrical circuits which cannot be controlled using the quiescent current principle shall be capable of being easily checked.

It shall be possible to transmit the binary signal to the control facility using a fail-safe electrical circuit fitted with a white coupling device socket conforming to publication IEC 309, for 40 to 50 V DC, with the keying lug position at 10 o'clock.

The rapid closing device shall actuate a visual and an audible alarm on board.”

(11) Amend to read:

“(11) The sampling openings shall have a diameter of not more than 0.30 m. They shall be fitted with a flame arrester plate stack capable of withstanding continuous burning and shall be so designed that the period during which they remain open is as short as possible and that the flame arrester plate stack cannot remain open without external intervention.

Flame arrester plate stacks are not required on board type N open tank vessels.”

Amend to read:

331 222

(4) (a) Amend to read:

“(a) ...

for the open N type with flame arrester:

- safety equipment fitted with flame arresters capable of withstanding continuous burning and designed to prevent ...;

for the closed N type:

- devices for preventing unacceptable overpressure or vacuum. Where anti-explosion protection is required in the list of substances (Appendix 4), the vacuum valve shall be fitted with a flame arrester capable of withstanding a deflagration and the pressure relief valve with an eductor acting as a flame arrester capable of withstanding continuous burning.

331 222
(cont'd)

Gases shall be discharged upwards. The opening pressure of the eductor and the opening pressure of the vacuum valve shall be permanently marked on the valves;

- a connection for the safe return ashore of gases escaping during loading;
- a device for the safe depressurization of the cargo tanks, consisting of at least a flame arrester capable of withstanding continuous burning and a stop valve ..." (remainder unchanged).

(5) Amend to read:

“(5) (a) Insofar as anti-explosion protection is prescribed in the list of substances (Appendix 4), a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a flame arrester with a close-spaced or spring-loaded plate stack, capable of withstanding a detonation. Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.

This equipment may consist of:

- (i) a flame arrester fitted with a fixed plate stack, where each cargo tank is fitted with a vacuum valve capable of withstanding a deflagration and an eductor capable of withstanding continuous burning;
- (ii) a flame arrester fitted with a spring-loaded plate stack, where each cargo tank is fitted with a vacuum valve capable of withstanding a deflagration;
- (iii) a flame arrester with a fixed or spring-loaded plate stack;
- (iv) a flame arrester with a fixed or spring-loaded plate stack, where the pressure measurement device is fitted with an alarm system conforming to marginal 331 221(7).

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.

or

331 222
(cont'd)

- (b) Insofar as anti-explosion protection is prescribed in the list of substances (Appendix 4), a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a pressure/vacuum relief valve incorporating a flame arrester capable of withstanding a detonation/deflagration.

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.

or

- (c) Insofar as anti-explosion protection is prescribed in the list of substances (Appendix 4), an independent vapour pipe for each cargo tank, fitted with a pressure/vacuum relief valve incorporating a flame arrester capable of withstanding a deflagration and an eductor incorporating a flame arrester capable of withstanding continuous burning. Several different substances may be carried simultaneously.

or

- (d) Insofar as anti-explosion protection is prescribed in the list of substances (Appendix 4), a vapour pipe connecting two or more cargo tanks shall be fitted, at the connection to each cargo tank, with a shut-off device capable of withstanding a detonation, where each cargo tank is fitted with a vacuum valve capable of withstanding a deflagration and an eductor capable of withstanding continuous burning.

Only substances which do not mix and which do not react dangerously with each other may be carried simultaneously in cargo tanks connected to a common vapour pipe.”

331 225 (11) First sentence, replace by:

“Paragraphs (1)(a) and (c), (2)(e) and (3) do not apply to type N open unless the substance carried has corrosive properties (hazard 8). Paragraph (4)(b) does not apply to type N open.”

331 226 (3) Amend to read:

“(3) ...

in the case of a protected system:

- a device for ensuring pressure equilibrium fitted with a flame arrester capable of withstanding continuous burning;

331 226
(cont'd)

- an ullage opening;
- connections, with stop valves, for pipes and hoses;

in the case of a closed system:

- a vacuum valve and an eductor.
The eductor shall be so regulated that it does not open during carriage. This condition is met when the opening pressure of the valve meets the conditions required in the list of substances (Appendix 4) for the substance to be carried. When the list of substances (Appendix 4) requires anti-explosion protection, the vacuum valve shall be capable of withstanding deflagrations and the eductor continuous burning.
- a gauging device ..." (remainder unchanged).

331 231 (2) Read:

"(2) The open ends of the air pipes of all oil fuel tanks shall lead to 0.5 m above the open deck. Their open ends and the open ends of overflow pipes leading to the deck shall be provided with a protective device consisting of a gauze diaphragm or a perforated plate."

331 240 (2) Amend to read:

"(2) In addition the engine rooms, the cargo pump-rooms and all spaces containing essential equipment (switchboards, compressors, etc.) ..."

331 242 (4) End, add:

"The requirements of marginal 331 252(3)(b) are not applicable in the case of the unloading of substances having a flash point of 61 °C or more when the temperature of the product is at least 15 K lower at the flash point."
