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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)

Thirty-sixth session
Geneva, 27-31 January 2020
Item 5 (b) of the provisional agenda
Proposals for amendments to the Regulations annexed to ADN: other proposals

9.3.3.13.4 of ADN

Transmitted by the Recommended ADN Classification Societies[*, **]

Introduction

1. A major modification to the Regulations for the Carriage of Dangerous Goods in the Rhine (ADNR) article 9.3.3.13.3 has been made in 2007, implementing new damage stability requirements for type N double hull / with independent tanks. For this purpose, a second paragraph has been added.

2. The second paragraph of article 9.3.3.13.3 specifies that damage stability calculation is requested.

3. Article 9.3.3.15 gives the criteria to be considered.

4. With the next revisions of the ADNR and ADN, the second paragraph of article 9.3.3.13.3 has been modified several times, but the aim of this paragraph remains the same: requesting to have damage stability for double hull / independent tanks.

5. For existing vessels built before 2007, the transitional provision should remain as it is mentioned in ADN, otherwise these vessels would need to comply with damage stability requirements and most of them are not designed for this.

6. Extracts of ADN showing evolutions of the regulations are presented below for information.

[*] Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/WP.15/AC.2/2020/16.

[**] In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/2018/21/Add.1, cluster 9.3).

1. ADN 2011 (damage stability required in 9.9.9.13.3, paragraph 2 with transitional provisions)

"9.3.3.13 *Stability (general)*

9.3.3.13.1 Proof of sufficient stability shall be furnished. This proof is not required for single hull vessels with cargo tanks the width of which is not more than 0.70 B.

9.3.3.13.2 The basic values for the stability calculation - the vessel's lightweight and location of the centre of gravity - shall be determined either by means of an inclining experiment or by detailed mass and moment calculation. In the latter case the lightweight of the vessel shall be checked by means of a lightweight test with a tolerance limit of ± 5% between the mass determined by calculation and the displacement determined by the draught readings.

9.3.3.13.3 Proof of sufficient intact stability shall be furnished for all stages of loading and unloading and for the final loading condition.

For vessels with independent cargo tanks and for double-hull constructions with cargo tanks integrated in the frames of the vessel, floatability after damage shall be proved for the most unfavorable loading condition.

For this purpose, calculated proof of sufficient stability shall be established for critical intermediate stages of flooding and for the final stage of flooding. Negative values of stability in intermediate stages of flooding may be accepted only if the continued range of curve of the righting lever in damaged condition indicates adequate positive values of stability.".

1.6.7.2.2.2 Table of general **transitional provisions**: Tank vessels

9.3.1.13 9.3.3.13	Stability (general)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.13.3 paragraph 2	Stability (general)	N.R.M. from 1 January 2007 Renewal of the certificate of approval after 31 December 2044

2. ADN 2013 (paragraph 2 of 9.9.9.13.3 of ADN 2011 has been removed)

"9.3.3.13 *Stability (general)*

9.3.3.13.1 Proof of sufficient stability shall be furnished. This proof is not required for single hull vessels with cargo tanks the width of which is not more than 0.70 B.

9.3.3.13.2 The basic values for the stability calculation - the vessel's lightweight and location of the centre of gravity - shall be determined either by means of an inclining experiment or by detailed mass and moment calculation. In the latter case the lightweight of the vessel shall be checked by means of a lightweight test with a tolerance limit of ± 5% between the mass determined by calculation and the displacement determined by the draught readings.

9.3.3.13.3 Proof of sufficient intact stability shall be furnished for all stages of loading and unloading and for the final loading condition for all the relative densities of the substances transported contained in the vessel substance list according to 1.16.1.2.5.

For every loading operation, taking account of the actual fillings and floating position of cargo tanks, ballast tanks and compartments, drinking water and sewage tanks and tanks containing products for the operation of the vessel, the vessel shall comply with the intact and damage stability requirements.

Intermediate stages during operations shall also be taken into consideration.

The proof of sufficient stability shall be shown for every operating, loading and ballast condition in the stability booklet, to be approved by the relevant classification society, which classes the vessel. If it is unpractical to pre-calculate the operating, loading and ballast conditions, a loading instrument approved by the recognized classification society which

classes the vessel shall be installed and used which contains the contents of the stability booklet.

NOTE: ...".

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels

9.3.1.13 9.3.3.13	Stability (general)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.13.3 paragraph 2	Stability (general)	N.R.M. from 1 January 2007 Renewal of the certificate of approval after 31 December 2044

"1.6.7.2.2.4 Paragraphs 9.3.1.13.3, 9.3.2.13.3 and 9.3.3.13.3 may be applied until 31 December 2014 in the version applicable on 31 December 2012.".

3. ADN 2015: same as ADN 2013

4. ADN 2017: addition of 9.3.3.13.4

"9.3.3.13 *Stability (general)*

9.3.3.13.1 Proof of sufficient stability shall be furnished. This proof is not required for single hull vessels with cargo tanks the width of which is not more than 0.70 B.

9.3.3.13.2 The basic values for the stability calculation – the vessel's lightweight and location of the centre of gravity – shall be determined either by means of an inclining experiment or by detailed mass and moment calculation. In the latter case the lightweight of the vessel shall be checked by means of a lightweight test with a tolerance limit of ± 5 % between the mass determined by calculation and the displacement determined by the draught readings.

9.3.3.13.3 Proof of sufficient intact stability shall be furnished for all stages of loading and unloading and for the final loading condition for all the relative densities of the substances transported contained in the vessel substance list according to 1.16.1.2.5.

For every loading operation, taking account of the actual fillings and floating position of cargo tanks, ballast tanks and compartments, drinking water and sewage tanks and tanks containing products for the operation of the vessel, the vessel shall comply with the intact and damage stability requirements.

Intermediate stages during operations shall also be taken into consideration.

The proof of sufficient stability shall be shown for every operating, loading and ballast condition in the stability booklet, to be approved by the recognized classification society, which classes the vessel. If it is unpractical to pre-calculate the operating, loading and ballast conditions, a loading instrument approved by the recognized classification society which classes the vessel shall be installed and used which contains the contents of the stability booklet.

NOTE: …

9.3.3.13.4 Floatability after damage shall be proved for the most unfavourable loading condition. For this purpose, calculated proof of sufficient stability shall be established for critical intermediate stages of flooding and for the final stage of flooding.".

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels

9.3.1.13 9.3.3.13	Stability (general)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.13.3 paragraph 2	Stability (general)	N.R.M. from 1 January 2007 Renewal of the certificate of approval after 31 December 2044

5. Proposal

9.3.3.13.4 should have been reintroduced together with a transitional provision as in ADN 2011.

The proposal is:

Add the following entry in the table 1.6.7.2.2.2:

Paragraphs	*Subject*	*Time limit and comments*
9.3.3.13.4	Stability (general)	N.R.M. from 1 January 2007 Renewal of the certificate of approval after 31 December 2044.