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Working Party on the Standardization of Technical
and Safety Requirements in Inland Navigation

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**RESOLUTION NO. 61, “RECOMMENDATIONS ON HARMONIZED EUROPE-WIDE
TECHNICAL REQUIREMENTS FOR INLAND NAVIGATION VESSELS”**

Amendments to Chapter 15, “Special provisions for passenger vessels”

Note by the secretariat

I. INTRODUCTION

1. At its thirty-fourth session, the Working Party took note of the amendments to EU Directive 2006/87/EC laying down technical requirements for inland waterway vessels (hereafter, Directive 2006/87/EC) and decided to study the amendments to identify those which should be included in Resolution No. 61 (ECE/TRANS/SC.3/WP.3/68, paragraph 29). The amendments to Directive 2006/87/EC included a series of amendments to Chapter 15 on specific requirements applicable to passenger vessels.

2. This document presents a list of possible amendments to Chapter 15 on special provisions for passenger vessels of Resolution No. 61 based on the comparison between Resolution No. 61 and the amended text of Directive 2006/87/EC. The additions to the original text are highlighted in bold and the text to be deleted is highlighted in strike-through.

II. PROPOSED AMENDMENTS TO CHAPTER 15, “SPECIAL PROVISIONS FOR PASSENGER VESSELS”

3. Amendments to Article 15-1 - General provisions

- (a) Amend paragraph 15-1.1 as follows¹
The following provisions shall not apply:
- (i) **Articles 4-4.3.11, 4-4.1.2, 4-4.2;**
 - (~~ii~~) 8-1.6.2, sentence 2 and 8-1.6.2 ;
 - (~~iii~~) (iii) Article 9-2.11.3, sentence 2, for rated voltages of over 50V.
- (b) Add a new paragraph 15-5.1.3² and renumber the following paragraph accordingly
Vessels without their own power cannot be licensed for passenger transport.
- (c) Amend paragraph 15-1.3 as follows³
On passenger vessels, areas shall be provided for use by persons with reduced mobility, according to the provisions of this Chapter. If the application of provisions of this Chapter which take into account the specific safety needs of persons with reduced mobility is difficult in practice or incurs unreasonable costs, the Administration may allow derogations from these provisions. **These derogations shall be mentioned in the ship’s certificate.**

4. Amendments to Article 15-3 - Stability

- (a) Amend paragraph 15-3.1 as follows⁴
It shall be proved by a calculation based on the results from the application of a standard for intact stability that the intact stability of the vessel is appropriate. All calculations shall be carried out free to heel, trim and sinkage. **The lightship data taken into account for the stability calculation shall be determined by means of a heeling test.**
- (b) Amend paragraph 15-3.3 (i) as follows⁵
the maximum righting lever h_{\max} shall occur at a heeling angle [~~$\varphi_{\max} \geq 15^\circ$~~ **of $\varphi_{\max} \geq (\varphi_{\text{mom}} + 3^\circ)$**] and shall not be less than 0,20 m. However, in case $\varphi_f < \varphi_{\max}$ the righting lever at the downflooding angle φ_f shall not be less than 0,20 m
- (c) Amend paragraph 15-3.3 (ii) as follows⁶
the downflooding angle φ_f shall not be less than ~~15°~~ **($\varphi_{\text{mom}} + 3^\circ$)**
- (d) Amend paragraph 15-3.3 (iii) as follows⁷
the area A under the curve of the righting levers shall, depending on the position of φ_f and φ_{\max} , reach at least the following values:

¹ Based on Article 15.01, paragraph 1 of Directive 2006/87/EC.

² Based on Article 15.01, paragraph 3 of Directive 2006/87/EC.

³ Based on Article 15.01, paragraph 4 of Directive 2006/87/EC.

⁴ Based on Article 15.03, paragraph 1 of Directive 2006/87/EC.

⁵ Based on Article 15.03, paragraph 3 (a) of Directive 2006/87/EC.

⁶ Based on Article 15.03, paragraph 3 (b) of Directive 2006/87/EC.

⁷ Based on Article 15.03, paragraph 3 (c) of Directive 2006/87/EC.

Case			A
1	$\varphi_{max} \leq \varphi_{max} = 15^\circ$ 15° or $\varphi_f \leq 15^\circ$		0.07 m·rad to angle $\varphi = 15^\circ$ up to the smaller of the angles φ_f or φ_{max}
2	$15^\circ < \varphi_{max} < 30^\circ$	$\varphi_{max} \leq \varphi_f$	0.055 0.035 + 0.001 · (30 - φ_{max}) m·rad up to the angle φ_{max}
3	$15^\circ < \varphi_f < 30^\circ$	$\varphi_{max} > \varphi_f$	0.055 0.035 + 0.001 · (30 - φ_f) m·rad up to the angle φ_{max}
4	$\varphi_{max} \geq 30^\circ$ and $\varphi_f \geq 30^\circ$		0.055 0.035 m·rad up to the angle $\varphi = 30^\circ$

where: h_{max} is the maximum lever;

φ the heeling angle;

φ_f the downflooding angle, that is the heeling angle, at which openings in the hull, in the superstructure or deck houses which cannot be closed so as to be weather tight, submerge;

φ_{max} the heeling angle at which the maximum righting lever occurs;

φ_{mom} **the maximum heeling angle according to (v);**

A the area beneath the curve of the righting levers.

(e) Amend the first sentence in paragraph 15-3.4 as follows⁸

The heeling moment due to one-sided accumulation of persons shall be calculated according to the following formulae:

$$M_p = g \cdot P \cdot y = g \cdot \sum P_i \cdot y_i \text{ [kNm]}$$

where: P = total mass of persons on board in [t], calculated by adding up the maximum permitted number of passengers and the maximum number of shipboard personnel and crew under normal operating conditions, assuming an average mass per person of 0.075 t;

y = lateral distance of centre of gravity of total mass of persons P from centre line in [m];

g = acceleration of gravity ($g = 9.81 \text{ m/s}^2$);

P_i = mass of persons accumulated on area A_i in [t];

$$P_i = n_i \cdot 0.075 \cdot A_i \text{ [t]}$$

where: A_i = area occupied by persons in [m²];

n_i = number of persons per square meter.

$n_i = \del{3.75} \mathbf{4}$ for free deck areas and deck areas with movable furniture; for deck areas with fixed seating furniture such as benches, n_i shall be calculated by assuming an area of ~~0.45~~ **0.50** m in width and 0.75 m in seat depth per person;

y_i = lateral distance of geometrical centre of area A_i from centre line in [m].

⁸ Based on Article 15.03, paragraph 4 of Directive 2006/87/EC.

- (f)
- Amend
- paragraph 15-3.7 as follows
- ⁹

The applicant shall prove, by means of a calculation **based on the method of lost buoyancy**, that the damaged stability of the vessel is appropriate **in the event of flooding**. All calculations shall be carried out free to trim and sinkage.

- (g)
- Replace
- the table in paragraph 15-3.9 (ii) with the following table
- ¹⁰

	1-compartment status	2-compartment status
Dimension of the side damage		
longitudinal l [m]	0,10 · LWL, however not less than 4,00 m	0,05 · LWL, however not less than 2,25 m
transverse b [m]	B/5	0,59
vertical h [m]	from vessel bottom to top without delimitation	
Dimension of the bottom damage		
longitudinal l [m]	0,10 · LWL, however not less than 4,00 m	0,05 · LWL, however not less than 2,25 m
transverse b [m]	B/5	
vertical h [m]	0,59; pipework installed according to Article 15-2.13 (iii), shall be deemed intact	

- (h)
- Amend
- paragraph 15-3.9 (iii) as follows

For 2-compartment status each bulkhead within the extent of damage will be assumed to be damaged. **This means that the position of the bulkheads shall be selected in such a way as to ensure that the passenger vessel shall remain buoyant after flooding of two or more adjacent compartments in the longitudinal direction.**

- (i)
- Add
- a new paragraph 15-3.10 (iv)

the calculation of the free surface effect in all intermediate stages of flooding shall be based on the gross surface area of the damaged compartments.

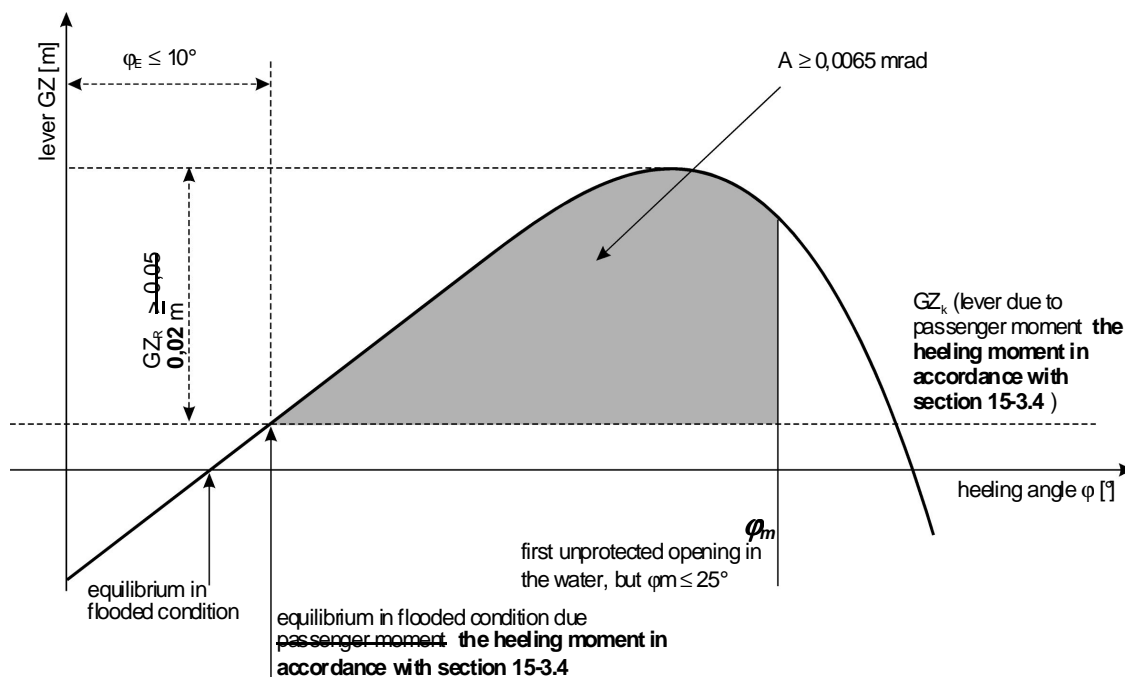
- (j)
- Amend
- paragraph 15-3.11 (ii) as follows

beyond the equilibrium position the positive part of the righting lever curve shall display a righting lever value of $GZR \geq 0,02$ **0,05** m with an area $A \geq 0,0065$ **0,0025** m·rad. These minimum values for stability shall be met until the immersion of the first unprotected opening or in any case before reaching a heeling angle ~~$\phi_m \leq 25^\circ$~~ **ϕ_m of 25°**;

⁹ Based on Article 15.03, paragraph 7 of Directive 2006/87/EC.

¹⁰ Based on Article 15.03, paragraph 9 of Directive 2006/87/EC.

(k) Move the graphic from 15-3.11 (iii) to 15-3.11 (ii) with the following modifications¹¹



Where:

ϕ_E is the heeling angle in the final stage of flooding taking into account the moment in accordance with section 15-3.4;

ϕ_m is the angle of vanishing stability or the angle at which the first unprotected opening immerses or 25°; whichever is less is to be used;

GZR is the remaining righting lever in the final stage of flooding taking into account the moment in accordance with section 15-3.4;

GZK is the heeling lever resulting from the moment in accordance with section 4;

5. Amendments to Article 15-6 - Passenger rooms and areas

(a) Amend paragraph 15-6.3 (i) as follows¹²

rooms or groups of rooms designed or arranged for 30 or more passengers or including berths for 12 or more passengers shall have at least two exits. On day trip vessels one of these two exits can be replaced by two emergency exits; **rooms, with the exception of cabins, and groups of rooms that have only one exit, shall have at least one emergency exit;**

(b) Amend paragraph 15-6.5 (i) as follows¹³

they shall have a clear width of at least 0,80 m. If they lead to rooms used by more than 80 passengers, ~~at least 0.01 m per passenger~~ **they shall comply with the provisions mentioned in (3)(iv) and (v) regarding the width of the exits leading to connecting corridors;**

¹¹ Based on Article 15.03, paragraph 11 (b) of Directive 2006/87/EC.

¹² Based on Article 15.06, paragraph 3 (a) of Directive 2006/87/EC.

¹³ Based on Article 15.06, paragraph 5 (a) of Directive 2006/87/EC.

- (c) Add a new paragraph 15-6.20¹⁴

By analogy, rooms in which crew members or shipboard personnel are accommodated shall comply with the provisions of this Article.

6. Amendments to Article 15-9 – Life-Saving Appliances¹⁵

- (a) Amend paragraph 15-9.1 as follows¹⁶

In addition to the lifebuoys specified in 10-5.4.2.1 (iv) and 10-5.4.3 (iii) all parts of the deck intended for passengers and not enclosed shall be equipped with lifebuoys on both sides of the vessel, positioned not more than 20 m apart. **Lifebuoys shall be considered as suitable if they comply with**

- a recognized international standard

- the International Convention for the Safety of Life at Sea (SOLAS 1974) Chapter III Rule 7.1 and the International Life-Saving Appliance (LSA) Code, paragraph 2.1.

The Administration may require lifebuoys to be fitted with lifelines or self-igniting lights additionally to those referred to in 10-5.2.3.2. **Half of all the prescribed lifebuoys shall be fitted with a buoyant cord at least 30 m long with a diameter of 8 to 11 mm. The other half of the prescribed lifebuoys shall be fitted with a self-igniting, battery-powered light which will not be extinguished in water.**

- (b) Add a new paragraph 15-9.4 as follows¹⁷

In addition to the lifebuoys referred to in paragraph 1, individual life-saving equipment shall be within reach for all shipboard personnel. For shipboard personnel not responsible for undertaking duties according to the safety rota not inflatable or semi-automatically inflatable lifejackets according to the internationally recognized standards are allowed.

- (c) Add new paragraph 15-9.5 as follows¹⁸

Passenger vessels shall have appropriate equipment to enable persons to be transferred safely to shallow water, to the bank or to another craft.

- (d) Add new paragraph 15-9.6 as follows¹⁹

In addition to the life-saving equipment referred to in 15-9.1 and 15-9.2, individual life-saving equipment shall be available for 100 % of the maximum permitted number of passengers. Not inflatable or semi-automatically inflatable lifejackets according to the internationally recognized standards are also allowed.

- (e) Add new paragraph 15-9.7 as follows²⁰

The life-saving appliances shall be stowed on board in such a way that they can be reached easily and safely when required. Concealed storage places shall be clearly marked.

¹⁴ Based on Article 15.06, paragraph 19 of Directive 2006/87/EC.

¹⁵ To fully bring Article 15-9 in line with the relevant article of EU Directive 2006/87/EC (Article 15.09) will require amendments to Article 10-5 of the resolution.

¹⁶ Based on Article 15.09, paragraph 1 of Directive 2006/87/EC.

¹⁷ Based on Article 15.09, paragraph 2 of Directive 2006/87/EC.

¹⁸ Based on Article 15.09, paragraph 3 of Directive 2006/87/EC.

¹⁹ Based on Article 15.09, paragraph 4 of Directive 2006/87/EC.

²⁰ Based on Article 15.09, paragraph 8 of Directive 2006/87/EC.

- (f) Add new paragraph 15-9.8 as follows²¹
Life-saving equipment shall be checked according to the manufacturer's instructions.
- (g) Add new paragraph 15-9.9 as follows²²
The ship's boat shall be equipped with an engine and a searchlight.
- (h) Add new paragraph 15-9.10 as follows²³
A suitable stretcher shall be available.

7. Amendments to Article 15-10 – Electrical equipment

- (a) Delete paragraph 15-10.4
- (b) Delete paragraph 15-10.5
- (c) Add a new paragraph 15-10.3²⁴
There shall be an emergency power plant, consisting of an emergency power source and emergency switchboard, which, in the event of a failure of the supply to the following electrical equipment, can immediately take over as their replacement supply, where the equipment does not have its own power source:
 - (a) signal lights;
 - (b) audible warning devices;
 - (c) emergency lighting in accordance with paragraph 3;
 - (d) radiotelephone installations;
 - (e) alarm, loudspeaker and on-board message communications systems;
 - (f) searchlights that can be operated from the wheelhouse;
 - (g) fire alarm system;
 - (h) other safety equipment such as automatic pressurised sprinkler systems or fire extinguishing pumps;
 - (i) lifts and lifting equipment within the meaning of Article 15-6.9 (ii).
- (d) Add a new paragraph 15-10.4²⁵
The light fittings for the emergency lighting shall be marked as such.
- (e) Add a new paragraph 15-10.5²⁶
The emergency power plant shall be installed outside the main engine room, outside the rooms housing the power sources referred to in Article 9-1.2.1, and outside the room where the main switchboard is located; it shall be separated from these rooms by partitions according to Article 15-11.2. Cables feeding the electrical installations in the event of an emergency shall be installed and routed in such a way as to maintain the continuity of supply of these installations in the event of fire or flooding. These cables shall never be routed through the main engine room, galleys or rooms where the main power source and its connected equipment is installed, except insofar as it is necessary to provide emergency equipment in such areas.

²¹ Based on Article 15.09, paragraph 9 of Directive 2006/87/EC.

²² Based on Article 15.09, paragraph 10 of Directive 2006/87/EC.

²³ Based on Article 15.09, paragraph 11 of Directive 2006/87/EC.

²⁴ Based on Article 15.10, paragraph 4 of Directive 2006/87/EC.

²⁵ Based on Article 15.10, paragraph 5 of Directive 2006/87/EC.

²⁶ Based on Article 15.10, paragraph 6 of Directive 2006/87/EC.

The emergency power plant shall be installed either above the margin line or as far away as possible from the power sources according to Article 9-1.2.1, so as to ensure that, in the event of flooding in accordance with Article 15-3.9, it is not flooded at the same time as these power sources.

- (f) Add a new paragraph 15-10.6²⁷

The following are admissible for use as an emergency power source:

(i) auxiliary generator sets with their own independent fuel supply and independent cooling system which, in the event of a power failure, turn on and take over the supply of power within 30 seconds automatically or, if they are located in the immediate vicinity of the wheelhouse or any other location permanently manned by crew members, can be turned on manually; or

(ii) accumulator batteries, which, in the event of a power failure, turn on automatically or, if they are located in the immediate vicinity of the wheelhouse or any other location permanently manned by crew members, can be turned on manually. They shall be capable of powering the abovementioned power consumers throughout the prescribed period without recharging and without an unacceptable voltage reduction.

- (g) Add a new paragraph 15-10.7²⁸

The projected operating period for the emergency power supply is to be defined according to the defined purpose of the passenger vessel. It shall not be less than 30 minutes.

- (h) Add a new paragraph 15-10.8²⁹

The insulation resistances and the earthing for electrical systems shall be tested on the occasion of inspections according to Article 2-9.

- (i) Add a new paragraph 15-10.9³⁰

The power sources according to Article 9.1.2.1, shall be independent of each other.

- (j) Add a new paragraph 15-10.10³¹

A failure of the main or emergency power equipment shall not mutually affect the operational safety of the installations.

8. Amendments to Article 15-11 – Fire Protection

- (a) Add a new paragraph 15-11.12³²

Stairs shall be made of steel or another equivalent non-combustible material.

²⁷ Based on Article 15.10, paragraph 7 of Directive 2006/87/EC.

²⁸ Based on Article 15.10, paragraph 8 of Directive 2006/87/EC.

²⁹ Based on Article 15.10, paragraph 9 of Directive 2006/87/EC.

³⁰ Based on Article 15.10, paragraph 10 of Directive 2006/87/EC.

³¹ Based on Article 15.10, paragraph 11 of Directive 2006/87/EC.

³² Based on Article 15.11, paragraph 12 of Directive 2006/87/EC.

9. New article 15-14 - Waste water collection and disposal facilities

- (a) Add a new article 15-14 as follows³³ (and renumber the following articles accordingly)

15-14 Waste water collection and disposal facilities

1. Passenger vessels shall be equipped with waste water collecting tanks or appropriate on-board sewage treatment systems.

2. Waste water collection tanks shall have sufficient capacity. Tanks shall be fitted with a device to indicate their content level. There shall be on-board pumps and pipes for emptying the tanks, whereby waste water can be passed from both sides of the vessel. It shall be possible to pass waste water from other vessels through.

The pipes shall be fitted with a discharge connection according to a recognized international standard.

³³ Based on Article 15.14 of Directive 2006/87/EC.