



STANDARDISATION OF INLAND WATERWAYS



PROPOSAL FOR THE
REVISION OF THE
ECMT 1992
CLASSIFICATION

Report of PIANC WG
179, issued 14
September 2020

Start of Pianc WG 179

- ECMT '92 is current classification of European inland waterways
- Pianc Working Group 179 started in June 2015
- Questionnaire was sent to all National Sections

Current ECMT '92 clasification

CLASSIFICATION OF EUROPEAN INLAND WATERWAYS

Type of inland waterways	Classes of navigable waterways	Motor vessels and barges					Pushed convoys					Minimum height under bridges $\frac{2}{2}$	Graphical symbols on maps	
		Type of vessel: General characteristics					Type of convoy: General characteristics							
		Designation	Maximum length	Maximum beam	Draught $\frac{2}{1}$	Tonnage		Length	Beam	Draught $\frac{2}{1}$	Tonnage			
		L(m)	B(m)	d(m)	T(t)		L(m)	B(m)	d(m)	T(t)	H(m)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
OF REGIONAL IMPORTANCE	To West of Elbe	I	Barge	38.5	5.05	1.80-2.20	250-400						4.0	=====
		II	Kampine-Barge	50-55	6.6	2.50	400-650						4.0-5.0	=====
		III	Gustav Koenigs	67-80	8.2	2.50	650-1,000						4.0-5.0	=====
	To East of Elbe	I	Gross Pinnow	41	4.7	1.40	180						3.0	=====
		II	BM-500	57	7.5-9.0	1.60	500-630						3.0	=====
		III	g/	67-70	8.2-9.0	1.60-2.00	470-700		118-132	8.2-9.0	1.60-2.00	1,000-1,200	4.0	=====
OF INTERNATIONAL IMPORTANCE		IV	Johann Welker	80-85	9.5	2.50	1,000-1,500		85	9.5 $\frac{2}{1}$	2.50-2.80	1,250-1,450	5.25 or 7.00 $\frac{2}{1}$	=====
		Va	Large Rhine vessels	95-110	11.4	2.50-2.80	1,500-3,000		95-110 $\frac{1}{1}$	11.4	2.50-4.50	1,600-3,000	5.25 or 7.00 or 9.10 $\frac{2}{1}$	=====
		Vb							172-185 $\frac{1}{1}$	11.4	2.50-4.50	3,200-6,000		=====
		VIa							95-110 $\frac{1}{1}$	22.8	2.50-4.50	3,200-6,000	7.00 or 9.10 $\frac{2}{1}$	=====
		VIb	g/	140	15.0	3.90			185-195 $\frac{1}{1}$	22.8	2.50-4.50	6,400-12,000	7.00 or 9.10 $\frac{2}{1}$	=====
		VIc							270-280 $\frac{1}{1}$	22.8	2.50-4.50	9,600-18,000	9.10 $\frac{2}{1}$	=====
		VII							195-200 $\frac{1}{1}$	33.0-34.2 $\frac{1}{1}$	2.50-4.50	9,600-18,000	9.10 $\frac{2}{1}$	=====
								285	33.0-34.2 $\frac{1}{1}$	2.50-4.50	14,500-27,000	9.10 $\frac{2}{1}$	=====	

Approach of Pianc WG 179

- Outcome questionnaire: European inland navigation and fleet differ from other continents
- As a result, Working Group 179 focussed on Europe
- Research of developments since 1990 (year of issue of report Pianc WG 9, containing recommendations that resulted in ECMT '92)

Research of WG 179

- Developments in the European fleet (length, beam en draft) and cargo (especially containers)
- Analysis of the overall European waterway network, making use of the Blue Book (UNECE).
- Including dimensions of existing locks and bridges

Major outcome (1)

- Length of vessels and convoys: has in many cases increased. The largest motorvessels are classified in Vb (Extended Large Rhine Vessel, 135 x 11.40) and VIb (Rhinemax, 135 x 17,70).
- Draught of motorvessels: has increased.
- To the category of pushed convoys, the coupled units (motorvessels with barges) are added.

Rhinemax tankvessel Antwerpen (135 x 17,50)



Source: www.vlootshouw.nl

Major outcome (2)

- Developments in containers: higher (high cube (30 cm higher than standard) and wider (pallet wide; 2,50 m).
- Larger values were added to the recommended height under bridges.
- Monitoring of the share of pallet wide containers is recommended in the 'notes to the table'.

Containers on deck: standard and high cubes



Source: J.U. Brolsma

Proposal for a revised IW-classification

- Chapter 7 contains a synthesis of the research, forming the foundation of the proposal
- Chapter 8 contains a proposal for a revised classification, which is presented scheme wise (next slides).

Classes of navigable waterways	Motor vessels (1)					Pushed convoys and coupled units					Recommended height under bridges	Containers transport capacity
	Type of vessel: general characteristics					Type of convoy: general characteristics						
	Designation	Maximum length (2)	Maximum beam	Draught (3) (4)	Tonnage (5)	Designation	Maximum Length	Maximum Beam	Draught (3)	Tonnage (5)	Height (3) (8) (12)	Containers number (TEU) (5) (6)
	L(m)	B(m)	D(m)	T(t)		L(m)	B(m)	D(m)	T(t)	H (m)		
I	Peniche	38.5	5,05	1.80-2.50	250-400						4.00	
II	Kempenaar	50-55	6.60	2.50	400-650						4.00-5.00	
III	Gustav Koenigs	67-85	8.20	2.50 – 2.70	650-1250						4.00-5.00	
IV (7)	Johann Welker	80-85	9.50	2.50-3.00	1000-1800	IV pc	85 (7)	9.50	2.50-3.00	1250-1450	5.25-6.00 7.00-8.65	54 81
Va	Large Rhine Vessel	110	11.40	2.50-4.00	1500-3500	Va pc	95-110 (9)	11.40	2.50-4.50	1600-3000	5.25-6.00 7.00-8.65 9.10-11.20	104 156 208
Vb	Extended Large Rhine Vessel	135	11.40	2.50-4.00	2300-4400	Vb pc/cu	172-190 (10)	11.40	2.50-4.50	3200-6000	5.25-6.00 7.00-8.65 9.10-11.20	160 240 320
VIa	Rhinemax	135	17.70	2.50-4.50	4500-7500	VIa pc/cu	95-135	22.80	2.50-4.50	3200-6000	7.00-8.65 9.10-11.20	300 400
Vib						Vib pc/cu	185-195	22.80	2.50-4.50	6400-12000	7.00-8.65 9.10-11.20	480 640
Vic						Vic pc	270-280	22.80	2.50-4.50	9600- 18000	9.10-11.20	960
VIIa (11)						VIIa pc	185-200	33.00-34.20	2.50-4.50	9600- 18000	9.10-11.20	960
VIIb						VIIb pc	285	33.00-34.20	2.50-4.50	14500- 27000	9.10-11.20	1440

Vb	Extended Large Rhine Vessel	135	11.40	2.50- 4.00	2300-4400	Vb pc/cu	172-190 (10)	11.40	2.50-4.50	3200-6000	5.25-6.00 7.00-8.65 9.10-11.20	160 240 320
VIa	Rhinemax	135	17.70	2.50-4.50	4500-7500	VIa pc/cu	95-135	22.80	2.50-4.50	3200-6000	7.00-8.65 9.10-11.20	300 400
VIb						VIb pc/cu	185-195	22.80	2.50-4.50	6400-12000	7.00-8.65 9.10-11.20	480 640
VIc						VIc pc	270-280	22.80	2.50-4.50	9600- 18000	9.10-11.20	960
VIIa (11)						VIIa pc	185-200	33.00-34.20	2.50-4.50	9600- 18000	9.10-11.20	960
VIIb						VIIb pc	285	33.00-34.20	2.50-4.50	14500- 27000	9.10-11.20	1440

Notes to the table

- (1) Note: inland waterways are also used by so-called river-sea vessels.
- (2) The primary classification variable is the vessel's beam. Particularly since the length of lock chambers can be larger on a specific waterway, the length of a specific class is a range in this proposal, rather than a maximum length. This also results in overlaps for the tonnage of a specific class
- (3) The first value relates to existing situations on inland waterways and the second value to future developments on inland waterways or, in some cases, also existing situations.
- (4) East of the Elbe there may be exceptions for lower draught in class 1
- (5) This table lists the typical carrying capacity of vessels or pushed convoys in the classes, expressed in tons and number of containers. The maximum (minimum) tonnage is obtained by the maximum (minimum) length, beam and draught of each type of vessels. For some classes, the maximum tonnage (container transport capacity) of coupled units can be higher than that of pushed convoys. The maximum tonnage (container transport capacity) of pushed convoys can be higher with extended barges, particularly in class VIa.
- (6) It is recommended that the share of pallet wide containers in this transport be closely monitored.
- (7) There is a significant group of longer motor vessels and coupled units in class IV with a beam of 9.50m than are mentioned here: motor vessels with a length of 110m, coupled units in the range of 170m-185m.
- (8) Height for container transport: 5.25m – 6.00m for vessels carrying two layers of containers; 7.00m – 8.65m for vessels carrying three layers of containers; 9.10m – 11.20m for vessels carrying four layers of containers. The first value is related to standard container and high cube container transport (with the use of ballasting) and the second value to standard container and high cube container transport without the use of ballasting.
- (9) There is a significant group of pushed convoys, with a length of 135m
- (10) The length of 190m takes into account the existing length of coupled units.