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Working Party on Inland Water Transport

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Item 6 (a) of the provisional agenda

European inland waterway network: European Agreement on Main Inland Waterways of International Importance (AGN)

Proposals on the development of concrete river-sea routes in the European Agreement on Main Inland Waterways of International Importance (AGN)

Note by the secretariat

I. Mandate

1. This document is submitted in line with cluster 5: Inland Waterway Transport, paragraph 5.1 of the programme of work 2014–2015 (ECE/TRANS/2014/23) adopted by the Inland Transport Committee on 27 February 2014.
2. The secretariat recalls that the Inland Transport Committee (hereafter ITC) at its sixty-fourth session adopted the plan of action for the implementation of decisions taken by the Pan-European Conference on Inland Water Transport (Rotterdam, 5–6 September 2001) as annex II to its Resolution No. 250 (ECE/TRANS/139, para. 84) which included actions to prepare proposals on the development of concrete river-sea routes in the context of the European Agreement on Main Inland Waterways of International Importance (AGN) (such as: River Don – Azov Sea – Black Sea – Dnieper – Danube; or Guadalquivir – coastal route E 60 – River Douro – River Gironde – River Loire – River Seine (E 80), etc.). These projects would have to set up conditions and requirements concerning both, sea-river routes themselves (their equipment with necessary aids to navigation, obligatory use of River Information Services, etc.) and vessels which can be used on those routes.
3. The secretariat further recalls that in order to realise this task the preparation of proposals on the development of concrete river-sea routes in the context of AGN was included in the ITC Work Plan for 2014–2018 (Programme activity 02.5: Inland Waterway Transport).

II. Overview of the activities of the Working Party on Inland Water Transport and the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation on the establishment of sea-river and coastal routes in the context of the AGN Agreement

4. The Working Party on Inland Water Transport (hereafter the Working Party or SC.3) may wish to recall the recent progress made by it in establishing sea-river and coastal routes in the context of AGN and its conclusions and recommendations.

5. SC.3 at its forty-first session took note of the report of the Working Party 16 of the World Association for Waterborne Transport Infrastructure (PIANC) “Standardization of ships and inland waterways for river/sea navigation” (TRANS/SC.3/WP.3/1999/21), some conclusions of which are reproduced below, and decided to include this item to its agenda (TRANS/SC.3/143, para. 12).

6. At its forty-sixth to forty-ninth sessions, the Working Party took note of proposals and comments submitted by Belarus, Belgium, the Republic of Moldova, Slovakia, the Russian Federation, the Ukraine and the United Kingdom of Great Britain and Northern Ireland (TRANS/SC.3/2002/7 and Add.1, TRANS/SC.3/2003/3, TRANS/SC.3/2004/11, ECE/TRANS/SC.3/2006/8, ECE/TRANS/SC.3/2007/5). The Working Party decided that (TRANS/SC.3/168, para. 30):

(a) The secretariat could contact Governments concerned with coastal and sea-river shipping with a view to establishing the list of possible sea-river routes in the context of the AGN Agreement; the European Commission should equally be contacted for possible coordination of this project between the United Nations Economic Commission for Europe (UNECE) and the European Union;

(b) Each sea-river route identified could then be completed by Governments concerned with the basic parameters, requirements and information as suggested by Ukraine in table 2 in TRANS/SC.3/2004/11 together with legal and economic implications relating to the development of the route;

(c) In the meanwhile, SC.3/WP.3 could be requested to consider the possibility for elaboration, with the help of its Group of volunteers on Resolution No. 61, of specific technical requirements for sea-river vessels with due regard to limitations they may be subjected to in terms of the navigational season, distance from the coast and from the ports of refuge as well as the height of the waves envisaged. At some stage, this work could be carried out jointly with the International Maritime Organisation (IMO).

7. At its fiftieth session, the Working Party agreed to keep this item on its agenda and come back to it after finalization of work on technical requirements for sea-river vessels (ECE/TRANS/SC.3/174, para. 24).

III. Classification of waterways

8. The following coastal routes are already included in Annex I of AGN and the Inventory of Main Standards and Parameters of the E Waterway Network (the Blue Book): E 60, E 90 and E 91 waterways, which include coastal routes and E ports on the coasts of the North Sea, the Baltic Sea, the Black Sea, the Adriatic Sea, the Mediterranean Sea and the Caspian Sea suitable for short sea shipping. They are intended to ensure the continuity of the E waterway network throughout Europe and, in principle, do not impose any restrictions on vessels using them. However, dimensions of river-sea vessels should, in

general, meet the requirements for self-propelled units suitable for navigation on inland waterways of classes Va and VIb.

9. For the purpose of promoting the development of river-sea navigation, PIANC has proposed to extend the classification of waterways established in annex III to AGN and Resolution No. 30, "Classification of European Inland Waterways" (TRANS/SC.3/131) with three classes of river-sea vessels (Table 1). According to this classification, only waterways of Class V and higher may apply to river-sea vessels.

Table 1

Classification for inland waterways, extended with the classification for River/Sea vessels proposed by PIANC

Class	Type of unit	Main dimensions of the units (m)			Minimum bridge clearance (m)
		length	beam	draught	
Va	Motor vessel	95–110	11.40	2.50–4.50	5.25 or 7.00 or 9.10
	Pushed convoy	95–110	11.40	2.50–4.50	5.25 or 7.00 or 9.10
	River-Sea vessel (R/S Class 1)	80–90	11.40	3.50–4.50	7.00
Vb	Pushed convoy	172–185	11.40	2.50–4.50	5.25 or 7.00 or 9.10
VIa	Pushed convoy	95–110	22.80	2.50–4.50	7.00 or 9.10
VIb	Motor vessel	140*	15	3.90	7.00 or 9.10
	Pushed convoy	185–195	22.80	2.50–4.50	7.00 or 9.10
	River-Sea vessel (R/S Class 2)	110–120	15	3.50–4.50	9.10
	River-Sea vessel (R/S Class 3)	135*	22.80	4.00–4.50	9.10
VIc	Pushed convoy (6 barges, long)	270–280	22.80	2.50–4.50	9.10
	Pushed convoy (6 barges, short)	195–200	33–34.20	2.50–4.50	9.10
VII	Pushed convoy	285	33–34.20	2.50–4.50	9.10

* Not permitted on the river Rhine

10. PIANC proposed three classes of river-sea vessels, for which a minimum draught of 3.5 m (Classes 1 and 2) and 4.0 m (for Class 3) was specified:

(a) R/S Class 1 was defined, based on existing waterway dimensions, to be used to exploit the existing waterway system as efficiently as possible;

(b) R/S Class 2 was the proposed "state of the art" class, covering modern and near future river/sea transport as it was coming up at the moment of the study;

(c) R/S Class 3 was meant to anticipate for future developments that could not be precisely foreseen at the moment of the study.

11. PIANC has also proposed recommendations for new fluvio-maritime waterways for R/S vessels which are reproduced in Table 2.

Table 2
PIANC recommendations for new fluvio-maritime waterways

<i>R/S class</i>	<i>Maximum permissible dimensions of vessels (m)</i>			
	<i>Length</i>	<i>Beam</i>	<i>Draught</i>	<i>Air clearance (m)</i>
1	90	13	3.5 or 4.5	7 or 9.1
2	135	16	3.5 or 4.5	≥ 9.1
3	135	22.8	4.5	≥ 9.1

Here, for free flowing rivers or partly canalized ones, the permissible draught values were related to the waterway level that is reached 240 days per year on average, following the UNECE Resolution. It was recommended to have depths allowing draughts indicated in Table 2 during 90 % of the year.

12. The Russian Federation in ECE/TRANS/SC.3/2003/3 noted that some of existing Russian and Ukrainian vessel types corresponded fairly closely to those suggested by PIANC, although a draught of 4.5 m was unacceptable for the inland waterways along the routes in question and most of the river-sea vessels operated in the Russian Federation and Ukraine did not fully comply with all the height and draught limitations on certain waterways along the route of the future waterway ring around Europe. It was stressed that there was a need for developing new types of river-sea vessels with dimensions meeting the requirements for navigation both along the combined deep-water network of the European part of Russia and the Dnieper, and along the Rhine-Main-Danube route.

13. Chapter 20B of Resolution No. 61, “Special provisions applicable to river-sea navigation vessels”, establishes the following sea navigation zones for river-sea vessels on the basis of the admissible wave height: zones RS 2.0, RS 3.0, RS 3.5, RS 4.5, RS 6.0 and restricted zone between ports of the same country (domestic voyages).

14. The Working Party may wish to come back to classification of waterways for river-sea vessels which could be added to Resolution No. 30.

IV. Ports and other onshore facilities, navigation safety and other factors to be considered

15. It was stressed by PIANC that classification of waterways, though useful to help develop sea/river trade, was not the only factor to take into account. Ports play a very important role too, and it is necessary to be sure that the advantages of the sea/river direct transport will not be upset by poor or expensive port conditions, taking into account the detrimental attitude of some entrance ports which try to prevent sea/river vessels going further through special technical or financial constraints.

16. According to the PIANC conclusion, there are two main types of ports concerned by sea/river trade:

- private wharfs of various industries or storage facilities; their settling alongside waterways should be favoured to help door-to-door direct links between the participants of transport operations when the volume of goods which could be concerned is important
- public ports, whatever may be the operating method, for which the equipment level should not try to compete with those existing in large seaports. It is the strength of such small ports to be able to offer, with pragmatism and, in cooperation with their clients, economical and flexible solutions regarding, for example, handling.

17. In addition to accomplishing classification or considering port development, it is of importance to have an indication of the benefits that could be realized by improving the logistics in the entire transport chain, given the actual trade patterns.

18. Other factors were specified by Ukraine and Slovakia which should be taken into account when developing coastal routes (TRANS/SC.3/2004/11):

(a) General characteristics of route and navigation conditions on different sections including overall length of route, length of individual sections, actual navigation conditions on specified sections;

(b) Factors influencing the navigation safety: navigational aids (onshore and floating), availability of river information service (RIS), environmental safety;

(c) Basic technical characteristics of corresponding sea and river ports along the route;

(d) Legal conditions governing fleet operation and international cooperation along the route etc.

V. Proposals of concrete river-sea routes made by member States

19. SC.3 agreed that coastal shipping could promote the establishment of a Pan-European ring of waterways around the whole of Europe, the Danube-Don route and the deep-water network of European Russia, and also the Rhine-Main-Danube waterway. The European Waterway Network, which passes through or along the coasts of 16 European countries, is particularly attractive because river-sea vessels can enter the Caspian Sea via the Volgograd-Astrakhan branch (river Volga). The possibility of using other water transport systems adjacent to sea ports should also be considered.

20. Parameters of the European Waterway Network as reproduced from the proposal of Ukraine (TRANS/SC.3/2004/11) are shown in Table 3.

21. In particular, the routes River Don-Sea of Azov-Black Sea-Dnieper-Danube route and Dnieper-Vistula-Oder were proposed as concrete routes for possible extension of the AGN Agreement.

22. It was also proposed during the discussions to elaborate a clear definition and criteria for sea-river routes and establish waterway parameters for them.

23. A draft questionnaire was proposed by the Ukraine on basic stages in the development of governments' proposals for the development of river-sea routes (TRANS/SC.3/2004/11, para. 20 and Table 2).

Table 3
Main parameters of the European Waterway Network

Waterway	Departure and arrival points	Distance (km)	Fairway depth (m)	Fairway width (m)	Class of waterway	Number of locks	Dimensions of locks (m)			Main ports
							Length	Width	Depth at sills	
River Danube	Sulina-Kelheim	2 411	1.75–7.30	150–1 300	Vb, VIb, VIc, VII	18	190–310	12–34	3.5–5.0	Izmail, Reni, Galati, Brăila, Ruse, Lom, Beograd, Novi Sad, Vukovar, Dunaújváros, Budapest, Komarno, Bratislava, Vienna, Linz, Regensburg, Kelheim
Main-Danube canal	Kelheim-Bamberg	171	2.70	36–39	Vb	16	190	12	4.0	Nuremberg, Bamberg
River Main	Bamberg-Mainz	385	2.5–2.9	36–50	Vb	34	295–345	11.5–12.0	3.0	Aschaffenburg, Frankfurt
River Rhine	Mainz-Rotterdam	536	2.1–5.0	120–210	VIb, VIc	–	–	–	–	Cologne, Dusseldorf, Krefeld, Duisburg, Schwelgern, Walsum
North Sea	Rotterdam-Brunsbüttel	515	Sea section			–	–	–	–	Rotterdam, Brunsbüttel
Kiel canal	Brunsbüttel-Kiel	99	11.3	104	VIb	4	300	42	14.0	–
Baltic Sea	Kiel-St. Petersburg	1 437	Sea section			–	–	–	–	Kiel, St. Petersburg
River Neva*	St. Petersburg-Schlisselburg	74	4.0–12.0	250 and more	Vb	–	–	–	–	–
Lake Ladoga*	Schlisselburg-Sviritsa	147	Up to 70	–	Vb	–	–	–	–	–
River Svir*	Sviriza-Voznesenye	221	4.0–16.6	70-500	Vb	2	265	21.5	4.6–6.9	Podporozhye
Onezhskoe Ozero*	Voznesenye-Vytegra	54	Up to 35	–	VIb	–	–	–	–	–

Waterway	Departure and arrival points	Distance (km)	Fairway depth (m)	Fairway width (m)	Class of waterway	Number of locks	Length	Width	Depth at sills	Main ports
Volga-Baltic canal*	Vytegra-Cherepovets	368	5.0–15.0	90 and more	Vb	8	265	17.8	4.2–5.5	Vytegra, Belozersk, Cherepovets
							<i>Dimensions of locks (m)</i>			
Rybinsk reservoir	Cherepovets-Rybinsk	69	Up to 30	–	VIc	1	290	30.0	4.1	Rybinsk
River Volga	Rybinsk-Krasnoarmeysk	2 206	Up to 41.0	–	VIc	5	278.8–290.0	29.6–30.0	3.5–5.5	Yaroslavl, Kostroma, Nizhny, Novgorod, Kazan, Ulyanovsk, Samara, Saratov, Volgograd
Volga-Don canal	Krasnoarmeysk-Lock No. 13	101	4.00	38	Va	13	145	17.8	4.0	–
River Don	Lock No. 13-Azov	483	3.60	50–120	Va	4	145	17–18	3.4–4.0	Kalach-na-Donu, Rostov-na-Donu
Sea of Azov	Azov-Kerch	350	Sea section			–	–	–	–	Azov
Black Sea	Kerch-Sulina	617	Sea section			–	–	–	–	Sulina
Total		10 244				105				

*Volga-Baltic waterway

VI. Future work

24. The Working Party may wish to continue this activity on the basis of previous decisions, in particular, to update information on river-sea routes and vessels, to continue work on terms and definitions, to invite interested member States to make evaluation of technical and economic aspects and formulation of proposals for the development of river-sea navigation. The Working Party may wish also to come back to a draft questionnaire on basic stages in the development of governments' proposals for the development of river-sea routes.

25. Furthermore, the Working Party may discuss possible cooperation on this matter with UNECE Working Party on Transport Trends and Economics (WP.5) and UNECE Working Party on Intermodal Transport and Logistics (WP.24) in terms of forecasts of cargo flows in Europe and the most attracting coastal routes for freight and passenger transport in order to accommodate river-sea navigation to the European transport needs.
