
Letter to HSPT on S-44 “Exclusive Order” BSHC24 Conference in Gdansk, Poland

1. BSHC Re-Survey MWG work on HSPT S-44 ed6 drafting

MWG has discussed thoroughly the HSPT drafting work on S-44 ed 6 in MWG 15, 16, 17, 18, 18B and 19 meetings (being MWG task C.3).

Participating MWG members feel that the matrix approach is useful together with the table (for Hydrographic Office use). Some more development of S-44 is desired, since the technology and the environmental concerns are progressing rapidly.

As under keel clearance (UKC) is to be utilized to the last decimetre (I wouldn't dare to say last centimetre) for efficient as well as environmentally safe shipping, MWG proposes a letter to HSPT in order to introduce more stringent order to S-44 ed 6, than current Special Order (S-44 ed 5). Finnish Swedish Implementation of S-44, including Exclusive Order is in real use in Finland and Sweden since December 2010.

This “Exclusive Order” is and can be utilized in shallow waters – dredged areas, rugged and static seabed areas, where e.g. there is no significant tide such as in inland waters and in the Baltic Sea.

For S-102 bathymetric models to be utilized in efficient shipping it is vital to use accurate standardized hydrographic surveys.

2. MWG proposal to BSHC24

Baltic Sea Hydrographic Commission 24th conference proposes to IHO HSPT to develop the S-44 ed 6 further to respond to the needs of minimizing under keel clearance (UKC) and producing accurate S-102 bathymetric models. One item may well be to include into the table I a more stringent order as Special Order. This could be called “Exclusive Order” as is currently in Finnish – Swedish Implementation of the S-44 ed 5 (FSIS-44).

The values of this “Exclusive Order” may well be discussed at the HSPT having the FSIS-44 Exclusive Order values as reasoned base.

[Majority of the] BSHC24 participating member states sees, that this type of more stringent order is needed due to rapid development of hydrographic technology, utilising accurate S-102 bathymetric models in minimizing under keel clearance and increased environmental concerns.

This “Exclusive Order” will be then available in the S-44 ed 6 table I for member states to use, when seen appropriate and necessary.

FSIS-44 Tables

	Exclusive order	Special order	Order 1a	Order 2
Aids to navigation and significant topography³	0.5	1.0	2.0	5.0
Coastline and topography less significant to navigation horizontal uncertainty (m)	5	10	20	20
Depth horizontal uncertainty ⁴ (m)	2.0	2.0	5.0 + 5% of depth	20 + 10% of depth
vertical uncertainty $\pm \sqrt{a^2 + (b \cdot d)^2}$ (m)	a = 0.15 b = 0.004 d = depth	a = 0.25 b = 0.0075 d = depth	a = 0.50 b = 0.013 d = depth	a = 1.0 b = 0.023 d = depth
Cubic feature detection capability⁵	> 0.5 m >0.2m (bar sweeping)	> 0.7 m >0.3m (bar sweeping)	at least > 2 m or 10% of depths	> 10% of depths
"Full sea floor search"	required	required	required	required
Fairway areas⁶ Other depth areas⁷	Exclusive decision Exclusive decision	0 - 20 m -	20 - 100 m 0 - 100 m	100 m - 100 m -

Example; maximum uncertainty of depth, 95% level of confidence distribution

Depth of reference	Horizontal uncertainty (m) □ depth uncertainty (m)			
6 m	2.0 □ 0.15	2.0 □ 0.25	5.3 □ 0.51	20 □ 1.01
10 m	2.0 □ 0.16	2.0 □ 0.26	5.5 □ 0.52	21 □ 1.03
20 m	2.0 □ 0.17	2.0 □ 0.29	6.0 □ 0.56	22 □ 1.10
50 m	2.0 □ 0.25	2.0 □ 0.45	7.5 □ 0.82	25 □ 1.52
100 m	-	-	10 □ 1.39	30 □ 2.51
400 m	-	-	-	60 □ 9.25