

Paper for Consideration by ENCWG7

Mandatory Attribution for Transporter Bridges

Submitted by:	IC-ENC
Executive Summary:	This paper seeks to clarify the attribution requirements for transporter bridges noting that this is not currently explicitly defined in IHO standards.
Related Documents:	S-57 Edition 3.1
Related Projects:	S-58

Introduction / Background

1. IC-ENC has received ENCs containing bridges with category of bridge equal to Transporter bridge, the interpretation of the mandatory attribution has varied between ENC producers and validation software tools. This paper seeks to clarify whether a Transporter Bridge is defined as a fixed or opening structure and confirm the required mandatory clearance attribution.

Analysis/Discussion

2. Within S-57 Appendix A, Chapter 2, the attribute CATBRG has 12 values, CATBRG has two values which correspond to terminology used throughout other ENC documentation, namely fixed bridge (CATBRG 1) and opening bridge (CATBRG 2); the definition for opening bridge includes “opening (movable) bridges are either bascule, vertical lift or swing”, each of these correspond to further CATBRG values. Of the remaining CATBRG values, it is not specified whether they are considered as an Opening or Fixed bridge.

3. S-57 Appendix B.1, Section 3.5.2, Table 3.2 outlines the conditional attribution of clearances on bridge objects.

BRIDGE	over navigable <u>water</u> :	CATBRG	non- <u>opening</u> - <u>opening</u> -	VERCLR VERCCL
			opening bridges with limited clearance when <u>open</u> -	VERCOP
	over non navigable water:	none		

4. CATBRG 8 (transporter bridge) is defined as a bridge that has towers on each side of the waterway connected by a girder system on which a carriage runs. The definition implies a fixed nature of the main bridge structure however there is no indication from the definition if the bridge is to be handled as a fixed bridge. The nature of a transporter bridge gives that the fixed portion of the structure defines its open state, when the carriage is being utilised, the bridge is in its closed state

5. As a result, producers have different interpretations of the mandatory attributes for transporter bridges and have captured transporter bridges with different attribution, Annex A demonstrates the variation in charting practices.

6. S-58 Checks 1799 and 1800 includes transporter bridge in the check conditions, this infers that where CATBRG = transporter bridge, then the bridge would be treated as opening and the required mandatory attributes are VERCCL and VERCOP.

1799	For each BRIDGE feature object where VERCCL or VERCOP are Known AND CATBRG is Not equal to 2 (opening bridge) OR 3 (swing bridge) OR 4 (lifting bridge) OR 5 (bascule bridge) OR 7 (draw bridge) OR 8 (transporter bridge).	BRIDGE object has values of VERCCL or VERCOP without appropriate value of CATBRG.	Ensure appropriate value of CATBRG is populated for BRIDGE object.	Logical consistency	W
1800	For each BRIDGE feature object where VERCCL is Known AND CATBRG is Equal to 2 (opening bridge) OR 3 (swing bridge) OR 4 (lifting bridge) OR 5 (bascule bridge) OR 7 (draw bridge) OR 8 (transporter bridge).	VERCCL populated for BRIDGE object with an inappropriate value of CATBRG.	Ensure appropriate value of CATBRG is populated.	Logical consistency	W

7. Consequently, IC-ENC would like to propose that guidance be issued for producers and the UOC updated to clarify that Transporter Bridges should be considered as an opening bridge when determining the mandatory clearance attributes.

8. Primarily these changes will ensure the producers consistently capture transporter bridges in a manner that is consistent with the S-58 validation checks. Additionally, this change would support the consistent conversion to S-101 data sets where Transporter bridges with VERCCL will be converted into SpanFixed whilst bridges using VERCOP will be converted to SpanOpening.

Recommendation

9. To ensure consistent encoding of transporter bridges, it is recommended that any BRIDGE with CATBRG=8 (transporter bridge) is treated as opening bridge. The mandatory attributes for Transporter bridges would be CATBRG, VERCCL and VERCOP, where VERCOP is the clearance to the support structure and VERCCL is the clearance when the gondola is in operation. It is also recommended that for each CATBRG it is confirmed if they are considered opening or fixed.

Action Required of ENC WG

The ENC WG is invited to:

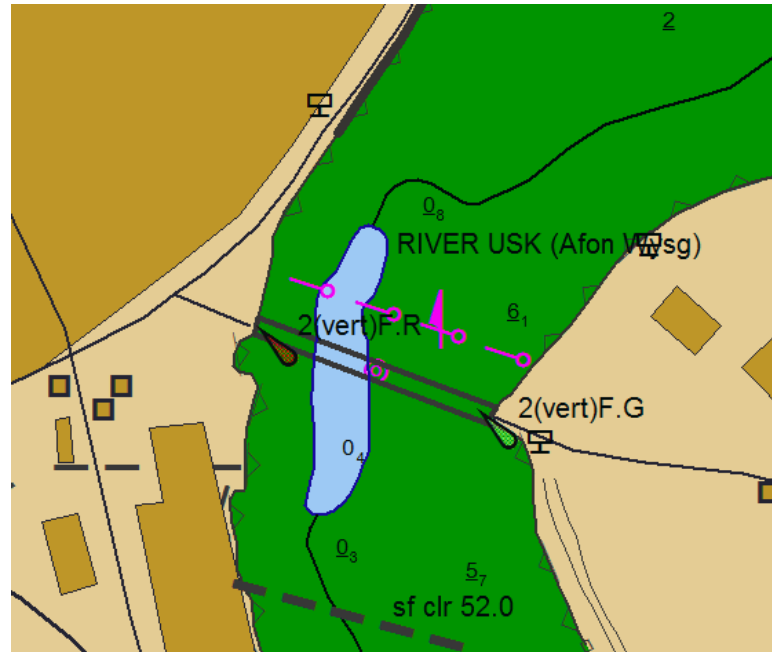
- a. Include an update to the UOC at its next update to include guidance that Transporter Bridges are classified as opening structures, clearance attribution should therefore include VERCOP and VERCCL.

Annex A

Example 1 - Newport Transporter Bridge captured on GB50864D

The Newport Transporter Bridge has been captured with CATBRG = 8 and vertical clearance VERCLR:

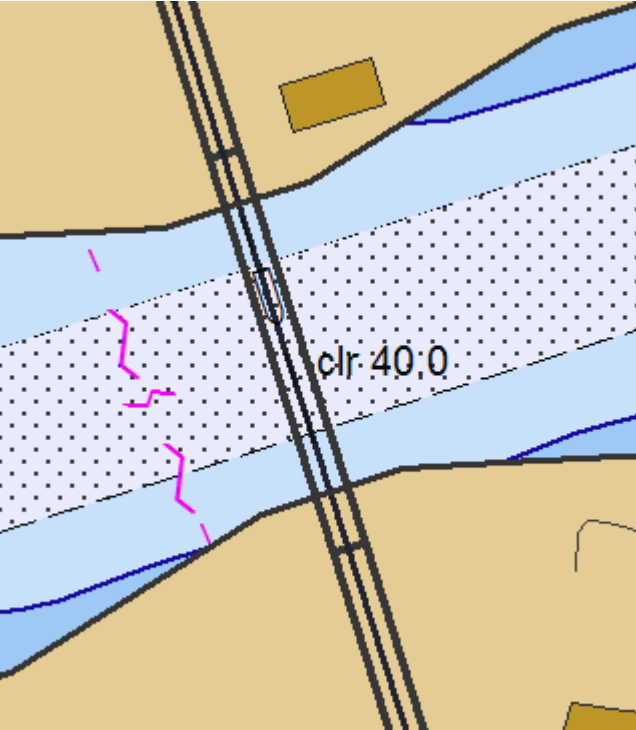
Attribute	Value
<transporter bridge>	transporter bridge
Vertical clearance	52.0
Vertical datum	Highest astronomical tide (HAT)
Information	Headway Indicator Lights for Southern Distributor Road Bridge



Example 2 – Rendsburger Hockbrücke Transporter Bridge

Rendsburger Hockbrücke Transporter Bridge has been captured with CATBRG = 1, and VERCLR

Attribute	Value
Object name	Rendsburger Hochbrücke
Category of bridge	fixed bridge
Vertical clearance	40.0
Nature of construction	metal
Conspicuous, visually	visual conspicuous
Conspicuous, radar	radar conspicuous
Vertical datum	Local datum



Example 3 – Rochefort-Martou Transporter Bridge on FR57415A

The Rochefort-Martou Transporter Bridge has been captured with CATBRG = 8, VERCLR and VERCCL

Attribute	Value
Category of bridge	transporter bridge
Vertical clearance	45.0
Vertical clearance, closed	< empty >
Vertical datum	Mean high water springs
Scale minimum	44999
Information	Mean high water springs level at Rochefort : 6.5 m
Information in national language	Niveau de la pleine mer moyenne de vive-eau à Rochefort : 6,5 m

