

**Paper for Consideration by NCWG**  
**Symbolisation of wrecks with new techniques**

<b>Submitted by:</b>	The Netherlands
<b>Executive Summary:</b>	New survey techniques on wrecks
<b>Related Documents:</b>	S4 B-422
<b>Related Projects:</b>	

### **Introduction / Background**

The most reliable survey method for wrecks is dredging but as technology improves there are other methods to measure a reliable least depths for wrecks. We received the following request from our survey department to discuss in the NCWG, unfortunately well after the deadline of the submitting of papers...

### **Analysis / Discussion**

In the surveying of wrecks we have to deal with the following issues:

- Least depths of dredged wrecks (with symbol K27) have a higher reliability than wrecks surveyed by soundings. Especially in the past with SBES this was a common rule and well-defendable.
- With new MBES techniques (like Water Column Imaging (WCI) it should be possible to obtain a least depth of an obstruction with high reliability. However: this has not been proved by a thorough comparative investigation yet (at least not that we know of...)
- If the WCI-method gives a reliable result (equal with dredging) it will be a much more efficient method. However: in charting the dredging symbol K27 cannot be used

In some countries WCI-depths will replace dredged depths when they result in a deeper sounding. At the moment NL still has the rule that a deeper sounding, as a result of WCI, will not replace a charted dredged wreck sounding. When the sounding is shoaler it will be charted as wreck with depth by sounding (K26)

In the next maintenance period of our survey vessels the dredging equipment will be removed from the vessel. This equipment needs a lot of maintenance and is very sensitive for defects. The dredging surveys will be replaced by WCI-techniques, combined with a high resolution MBES. This comes together with trials in order to have a better idea of the precision and reliability of the results.

For charting it would be desirable to indicate that the symbol for a wreck with sounding obtained from these high-precision techniques is recognizable as very reliable (as is a dredged wreck). For ENC's there are some attributes dealing with the accuracy/confidence in the wreck sounding:  
 QUASOU for the quality of measurement  
 TECSOU for the sounding technique

### **Conclusions**

Tbd

### **Recommendations**

Tbd

### **Justification and Impacts**

Possible options to symbolize a high precision sounding in a wreck are:

- Add this in the description of the symbol used for the wreck (K26 or K27)
- Create a new symbol for the wreck

**Action required of NCWG**

The NCWG is invited to discuss this subject and find a cartographic acceptable solution.