



IHB File No. S3/8152

CIRCULAR LETTER 21/2010
24 February 2010

URGENT RE-EXAMINATION OF ENC DATA

Reference: ENC Encoding Bulletin issued April 2009.

Dear Hydrographer,

1. The Directing Committee was recently informed by the Chairman of the IHO Hydrographic Services and Standards Committee (HSSC) of a potentially serious issue that has come to light that may affect published ENC data. It seems probable that some ENC producer States may not have fully appreciated the safety implications behind the advice contained in ENC Encoding Bulletin 27 issued in April 2009. As a result, ENC producer States may not have taken appropriate action, especially in relation to ENCs that were already published before Encoding Bulletin 27 was issued.

2. The Chairman of HSSC first became aware of the problem after a maritime delegation visiting the UKHO expressed concern when they saw an area of the world that they were familiar with displayed in ECDIS. The ECDIS was loaded with ENC data that was being reviewed prior to issue. In that data, a significant shoal was not presented to the mariner, nor was any anti-grounding alarm activated in the ECDIS. The Chairman's letter is shown at Annex A.

3. **ENC Encoding Bulletin 27.** Encoding Bulletin 27, which is reproduced in Annex B to this letter, alerts ENC producers to the fact that great care must be taken when encoding isolated shoal depths, such as those often marked as "reported" on paper charts, and which represent a hazard to navigation. Failure to encode these shoal depths, as explained in Encoding Bulletin 27, will result in the depth not being displayed in ECDIS operating in the "standard" or "base" display mode. Most significantly, and not explicitly explained in Encoding Bulletin 27, is that on most ECDIS those same shoal depths will not trigger any automatic grounding alarms in any mode of display.

4. **IHB Letter Alerting ENC Producer States.** Because of the potential consequences for safe navigation if ENCs are available for sale that contain data that does not display optimally in ECDIS, the Directing Committee wrote immediately to all 42 States (Argentina, Australia, Belgium, Bahrain, Brazil, Canada, Chile, China, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, India, Indonesia, Italy, Japan, Rep. of Korea, Latvia, Mexico, Malaysia, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Russian Federation, Singapore, South Africa, Spain, Sweden, Turkey, Ukraine, UK, USA, Venezuela) that are known to have ENCs available for sale.

5. The letter from the Directing Committee strongly encouraged all ENC producer States to urgently review their ENCs to ensure that their data was encoded as explained in Encoding Bulletin 27 and to report their findings back to the Directing Committee as soon as possible. From those States that have responded so far, it has been confirmed that corrective action is required in a number of States' ENCs around the world. The producer States who have responded have indicated that this will be done by urgent re-encoding of the relevant data and the issue of ENC updates in no more than a few weeks.

6. **Promulgation of a Warning to Mariners.** In the meantime, and as a further precaution, some ENC producer States have initiated area warnings to alert mariners to the potential problem until such time as all ENCs have been reviewed and updated if necessary. The text of the warning broadcast in NAVAREA 1 is included at Annex C.

7. **Outreach.** Because of the importance of the current circumstances and the potential impact on ECDIS users, the Secretariat of the International Maritime Organization (IMO) has been briefed and a copy of this letter is being sent to all ECDIS equipment manufacturers, data distributors and stakeholders registered on the ECDIS Stakeholders list maintained by the IHB.

On behalf of the Directing Committee
Yours sincerely,



Robert WARD
Director

Annexes:

- A: Letter from Chairman HSSC dated 11 February 2010.
- B: Copy of ENC Encoding Bulletin 27.
- C: Text from NAVAREA 1 warning issued 15 February 2010.

Letter from Chairman HSSC

11 February 2010

The Directing Committee
International Hydrographic
Bureau

Attention: Director 2

Dear Captain Ward,

The Chair of TSMAD, Mr Barrie Greenslade, and the manager of IC-ENC RENC, Mr Graham Saundercock, have brought to my attention the fact that ENC Encoding Bulletin 27 which was issued in April 2009 may not have been implemented by ENC producer States as thoroughly or as quickly as was intended. Bulletin 27 drew the attention of ENC producers to a potentially serious issue relating to the non-display of shoal soundings in ECDIS under certain conditions, and identified the technical solution required to ensure that ENC data was encoded in such a way as to avoid any such occurrences. As a result of this finding, IHO standard S58 (Edition 4.1 Jan 2010) now includes a check (1796) to identify use of the SOUNDG object in combination with the attribute EXPSON with the classification *Warning*.

Bulletin 27 pointed out that unless certain data encoding rules were followed, then under certain, but not abnormal, ECDIS operating conditions when using the standard display mode, a vessel could approach and ground on a shoal without the mariner receiving either a visual indication or an audible alarm that the ship is standing into danger. The shoal sounding itself may not even display. This denies mariners the very benefit for which ECDIS was intended and is a potentially serious risk to safe navigation. Although this issue has been discussed at length by various IHO technical working groups in the past two years, there is now evidence to suggest that many ENC producers have not acted upon the advice contained in the encoding bulletin. With the benefit of hindsight, I consider that the bulletin could have been better framed in order to draw ENC producers' attention to the potential navigational danger to which mariners would be exposed if the proper ENC encoding rules were not implemented.

From a technical perspective, I believe the information contained in the Encoding Bulletin is correct. I have nevertheless asked the TSMAD Working Group, through their Chair, to consider issuing a new bulletin, which is even clearer with regard to the implications of inaction. I also wonder whether the current method of promulgating such bulletins on the IHO website is sufficient, in light of the apparent absence of positive action being taken in this case.

In the meantime, because of the safety implications, I think it necessary to ask producer HOs to examine their ENC portfolio as a matter of urgency and, where necessary, take immediate action to ensure that the advice provided in Encoding Bulletin 27 is acted upon. At the same time, because of the potential impact on safety of navigation, it may also be appropriate to invite ENC producer States to promulgate a caution to mariners until such time as their ENC portfolios can be confirmed as unaffected by the potential problems highlighted here.

Captain Vaughan NAIL RN
Chairman of HSSC

Copy of ENC Encoding Bulletin 27

EB27 - UOC Clause 5.3 Soundings

Clause 5.3 of Edition 2.1 (April 2002) of the Use of the Object Catalogue for ENC (S-57 Appendix B.1, Annex A) provides guidance for the encoding of soundings, including the allowable use of the attribute EXPSON to indicate whether the “value of sounding” is within or not within the range of depth of the surrounding depth area. This allows a **SOUNDG** object having a shoaler “value of sounding” than the depth area in which it lies, to be encoded on an ENC. The object class **SOUNDG** is not a base display object in the ECDIS Presentation Library, therefore it is possible for soundings shoaler than a vessels safety depth, as set on the ECDIS, to exist in the navigable area but not be displayed when using some ECDIS display settings. This may result in a potential hazard to navigation being undetected by the mariner.

Encoders are advised, therefore, to use caution when considering the population of EXPSON = 2 (shoaler than the range of depth of the surrounding depth area) for SOUNDG objects, as SOUNDG objects will not be displayed when utilising some ECDIS display settings. Where it is considered that a sounding that is shoaler than the range of depth of the surrounding depth area may be a hazard to navigation, encoders should preferably conduct further investigation of source material in order to encode additional depth contour and depth area information more relevant to the sounding. Alternatively, encoders may consider using an alternate object class (e.g. OBSTRN) to encode the depth.

[April 2009]

Text from NAVAREA I warning issued 15 February 2010

1. The following transmission was made on SafetyNet as a NAVAREA I warning from 1800Z on 15 February 2010 and at routine times thereafter; and as a UK International NAVTEX as an IMPORTANT message:

Mariners are advised that ECDIS may not display some isolated shoal depths when operating in "base or standard display" mode. Route planning and monitoring alarms for these shoal depths may not always be activated. To ensure safe navigation and to confirm that a planned route is clear of such dangers, mariners should visually inspect the planned route and any deviations from it using ECDIS configured to display "all data". The automated voyage planning check function should not be solely relied upon. The International Hydrographic Organization (IHO) is leading technical action to resolve this matter. Further information will be made available through Notices to Mariners.

2. The NAVAREA I coordinator also passed this message to all other NAVAREA Coordinators, for information with a request that they also consider it for transmission.