IHB File No. S3/8151/CHRIS

SUBMISSION TO IMO REGARDING THE REQUIREMENT FOR THE REGULAR MAINTENANCE OF ECDIS SOFTWARE

Reference: CL 77/2006 dated 24 November

Dear Hydrographer,

1   The IHB thanks the 13 Member States who replied to the referenced Circular Letter: Chile, Cuba, Finland, France, Greece, Netherlands, Norway, Pakistan, Poland, Russian Federation, Spain, Thailand and United Kingdom. All replies supported the proposal that the IHO should seek the issue of an IMO Safety of Navigation Circular (SN/Circ) regarding the need for the regular maintenance of ECDIS software. Five Member States provided comments and these are given at Annex A.

2   The IHB is aware that the UK, and possibly others e.g. Comité International Radio-Maritime (CIRM), is preparing a submission to the Maritime Safety Committee (MSC), which is due to meet in October, addressing the wider issues of software maintenance on board ships. The IHB, having discussed this matter with IMO, considers that the issue of an SN/Circ, a draft of which is attached at Annex B, is a useful first step in bringing the matter of ECDIS software maintenance to the attention of the maritime community. The IHB will ensure that ECDIS software is fully considered in the wider debate at the MSC, making a further submission if this is considered appropriate.

3   Member States are requested to provide any comments on the draft SN/Circ at Annex B by 16 March 2007.

On behalf of the Directing Committee
Yours sincerely,

Vice Admiral Alexandros MARATOS
President

Annex A: Member States' comments on CL77/2006
Annex B: Draft SN/Circ

MEMBER STATES' COMMENTS ON CL 77/2006

Chile:

We refer to Circular Letter No. 77/2006 dated 24 November 2006, in which the IHB mentions its intention to submit a request to the IMO Sub-Committee on Safety of Navigation (NAV) about Item 6 of the Agenda – Evaluation of the use of ECDIS and of the Development of ENCs, which will be considered by the 53rd Session in July 2007. This Office supports such a proposal and emphasises the importance of having it as a standard, in order to have control on the ships ensuring they navigate with official and updated ENCs displayed on updated navigation systems meeting the standards in force.

Comment by IHB:

The MSC at its 82nd session amended the Agenda for NAV 52 and "Evaluation of the use of ECDIS and of the Development of ENCs" is now Agenda Item 5 and this has been changed in the draft submission.

France:

Suggestions for the preparation of a draft circular regarding the regular maintenance of ECDIS software

1. <u>On the responsibility of the maintenance of the ECDIS software on the one hand, and of the data <u>on the other:</u></u> the regular maintenance of ECDIS software and its data should be placed under the responsibility of the ship's Captain.

2. <u>Access to information on the guarantees of maintenance and standards</u>: upon switching on the machine, the date of the last software update should appear, and when loading the official charts in force, information should be displayed, if the software is not totally compatible. Furthermore, the list of performance standards with their versions and adoption dates must be produced, kept up to date and made easily accessible[1] (reference to standards relevant to ECDIS), so that the software version used on the ECDIS can be compared with it.

3. <u>Access to information on the existence of the latest software updates</u>: the official manufacturers and suppliers should make available to the public and users (web site …) the list of the latest software versions of their products, and include a table specifying the compatibilities with the latest standards in force (IEC, IMO, IHO …).

4. <u>Configuration Maintenance and management:</u> A servicing and maintenance contract (servicing ashore) for ECDIS should be made mandatory, including a mandatory control mechanism by authorized and certified bodies (verification of the result), or by certifying the process used by the maintenance company.

Comment by IHB:

The IHB considers that these matters would be better addressed in a possible "Guidelines for software maintenance" which may be an outcome of the wider debate in the MSC.

Netherlands:

On behalf of the Netherlands CHO I would like to express the Netherlands support for the submission to IMO. The CL77 items do perfectly match with the key elements of a NLHO presentation for the Dutch ship-owner and chart agents' community this week on 19 December.

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[1] In principle, IMO's responsibility in liaison with the IEC and IHO

NLHO would like to contribute with one remark:

Short introduction of present and/or future IHO-Stakeholders relationships to demonstrate that IHO has changed to a chain partner and sees her activities as a public service for the maritime community with a high level of maritime community demand related work programmes in stead of supply related. See also the CHRIS 2004 documents with regard to "co-operation with industry" and "guidelines for proposed new work items (and of course the HSCC/IRCC objectives). Such an introduction more or less emphasizes that the impact of the submission to IMO is aimed at the whole chain and that it is not just a one-sided IHO-favourable submission.

I hope that the submission contributes to the awareness that an ECDIS-contract is not just a fire-and-forget contract but needs a proper service level agreement with focus at soft- and hardware repair and update.

Comment by IHB:

The IHB has included reference to the ECDIS Stakeholders' Forum in order to highlight the "partnership" with Industry.

Pakistan:

It is pleased to inform that Pakistan Navy Hydrographic Department has no objection in the submission of the point under reference to IMO NAV. Furthermore, it is also suggested that IMO may consider publishing the list of those ECDIS manufacturers who have incorporated the changes as per the recommendation of IHO standard for the information/education of ECDIS buyers.

Comment by the IHB:

This matter could be discussed within the wider debate at MSC although it is considered unlikely that IMO would wish to undertake such a task.

United Kingdom:

UKHO, together with UK's Maritime and Coastguard Agency (MCA), welcome the IHO initiative outlined in CL77/2006 and fully support such a submission to IMO NAV53. We would be pleased to comment on your draft paper, prior to submission to IMO NAV53, if you consider that would be helpful.

You may also be interested to know that UK (MCA) is in the process of developing a paper for submission to the meeting of IMO's Maritime Safety Committee (MSC 83), to be held in October 2007, to raise the wider issue of regular maintenance of software for navigation and radio communication systems.

SUB-COMMITTEE ON SAFETY OF
NAVIGATION AND RESCUE
53rd session
Agenda item 5

NAV 53/5/x
Xx xxxxxx 2007
Original: ENGLISH

EVALUATION OF THE USE OF ECDIS AND ENC DEVELOPMENT

Maintenance of ECDIS Software

Note by the International Hydrographic Organization (IHO)

SUMMARY	
Executive summary:	This document requests that consideration be given to the issue of an SN Circular regarding the maintenance of ECDIS software.
Action to be taken:	Paragraph 8
Related documents:	SOLAS V/16, V/18 and V/19; resolution A.817(19) as amended; resolution MSC.232(82).

Introduction

1.   Resolution A.817(19) as amended introduced a Performance Standard (PS) for the Electronic Chart Display and Information System (ECDIS). The 2000 amendments to the International Convention for the Safety of Life at Sea (SOLAS) at regulation V/19.2.1.4 specifies chart carriage requirements and accepts ECDIS as meeting the chart carriage requirement of this subparagraph.

2.   SOLAS V/16.1 requires that "The Administration be satisfied that adequate arrangements are in place to ensure that the performance of the equipment required by this chapter is maintained". SOLAS V/18.2 requires that "Systems and equipment, including associated back-up arrangements, where applicable, installed on or after 1 July 2002 to perform the functional requirements of regulations 19 and 20 shall conform to appropriate performance standards not inferior to those adopted by the Organization" and in a footnote refers to the ECDIS PS.

3.   The ECDIS PS, Resolution A.817(19), as amended, at paragraph 1.4 for ECDIS installed between 1 January 1996 and 1 January 2009, and resolution MSC.232(82) at paragraph 1.3 for ECDIS installed on or after 1 January 2009 require that "ECDIS should be capable of displaying all chart information necessary for safe and efficient navigation …..".

4.   ECDIS equipment comprises both hardware and software elements and in order to meet the above requirements the software element should comply with the relevant current editions of the IHO Standards governing the transfer and presentation of electronic chart information.

5.   The current IHO standards for ECDIS (in 2007) are the Electronic Navigational Chart (ENC) Product Specification (S-57 Ed.3.1 and Supplement No.1 (Ed.3.1.1)), the ECDIS Colours and Symbols Presentation Library (S-52 PresLib Ed.3.3); the IHO Data Protection Scheme (S-63 Ed.1.1); and the Raster Navigational Chart (RNC) Product Specification (S-61 Ed.1.0).

6.   The IHO ECDIS data standards have been subject to controlled revision since ECDIS was first introduced. The latest revision in January 2007 introduced Supplement No. 1 to the ENC Product Specification S-57 Ed3.1 (Ed.3.1.1) specifically to include recently introduced IMO requirements for Particularly Sensitive Sea Areas (PSSA) and Archipelagic Sea Lanes (ASL) and to cater for any new and important requirements in the future, such as the IALA Emergency Wreck Marking Buoy. However, older ECDIS equipment and ECDIS equipment which is not upgraded to read S-57 Ed.3.1.1

data or to present it using the S-52 Presentation Library Ed.3.3 may be unable to display these or other features optimally or at all, and the appropriate alarms and indications may not be activated even though the data has been included in the ENC.

7.   At the 2nd meeting of the IHO ECDIS Stakeholders Forum (ESF), a forum intended to bring industry and hydrographic offices together, concern was expressed that ECDIS software in use at sea was not necessarily being updated to reflect the latest editions of the IHO Standards. This view was considered further, and endorsed, by the IHO Committee on Hydrographic Requirements for Information Systems (CHRIS) who considered that the issue of a Safety of Navigation Circular might be appropriate to bring the limitations of not using the latest IHO standards to the attention of Administrations and mariners.

Action requested of the Sub-Committee

8.   The Sub-Committee is invited to consider the issue of an SN circular a draft of which is enclosed at the Annex.

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ANNEX

SN/Circ.xx
Xx 2007

MAINTENANCE OF ELECTRONIC CHART DISPLAY SYSTEM (ECDIS) SOFTWARE

1.   The Sub-committee on Safety of Navigation (NAV), at its [fifty third session (23 – 27 July 2007)], approved the issue of an SN/Circ.

2   Member Governments are invited to bring this information to the attention of all concerned for information and in particular to ensure that mariners always have the latest safety related information available to them.

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Annex

1.   The 2000 amendments to the International Convention for the Safety of Life at Sea (SOLAS) accepted that ECDIS could meet the chart carriage requirements of SOLAS. ECDIS Performance Standards have been adopted by IMO, resolution A.817(19) as amended and MSC.232(82). The ECDIS Performance Standards also refer to the relevant International Hydrographic Organization (IHO) Standards that govern the transfer and presentation of the chart information used in ECDIS.

2.   ECDIS equipment comprises both hardware and software. It is important for the safety of navigation that ECDIS works in accordance with the IMO Performance Standards and is capable of displaying all the relevant digital information contained within the chart database (that is; the Electronic   Navigational   Charts   (ENCs)   supplied   by   Hydrographic   Offices).

3.   In January 2007, Supplement No. 1 to the IHO ENC Product Specifications (S-57 Ed.3.1.1) was introduced in order to include, within the ENC, the recently introduced IMO requirements for Particularly Sensitive Sea Areas (PSSA), Archipelagic Sea Lanes (ASL) and to cater for any new and important requirements in the future such as the IALA Emergency Wreck Marking Buoy.

4.   Older ECDIS equipment and ECDIS equipment which is not upgraded to read S-57 Ed.3.1.1 data or to present it using Edition 3.3 of the S-52 Presentation Library may be unable to display the latest charted features optimally or at all, and the appropriate alarms and indications may not be activated   even   though   the   data   has   been   included   in   the   ENC.

5.   The latest editions of the IHO standards (2007) governing ECDIS are:

IHO ECDIS Standards	Current Edition
Electronic Navigational Chart (ENC)	S-57 Edition 3.1 and S-57 Edition 3.1.1
Raster Navigational Chart (RNC)	S-61 Edition 1.0
ECDIS Display and Presentation	S-52 PresLib Edition 3.3
ENC Data Protection	S-63 Edition 1.1

6.   A catalogue of all the current IHO standards is maintained on the IHO web site (www.iho.int).

7.   Administrations, ship owners and Masters should ensure that ECDIS equipment, both hardware and software, is maintained and performs as required in the latest standards.

8.   Mariners should refer to the manufacturer's Users Guide for direction on determining the latest software configuration status of their ECDIS equipment.

9.   Mariners who determine that the software in their ECDIS equipment is not up to date and compatible with the latest IHO standards should contact the relevant ECDIS equipment manufacturer or the manufacturer's agent to seek the necessary software upgrades.

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