INTERNATIONAL MARITIME ORGANIZATION

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MARITIME SAFETY COMMITTEE
88th session
Agenda item 25

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ANY OTHER BUSINESS

Operating anomalies identified within ECDIS

Submitted by Japan, Norway, the United Kingdom, the International Chamber of Shipping (ICS) and the International Federation of Shipmasters' Associations (IFSMA)

SUMMARY

Executive summary:	This document wishes to bring to the attention of the Maritime Safety Committee issues that have been identified within ECDIS
Strategic direction:	5.2
High-level action:	5.2.4
Planned output:	5.2.4.1
Action to be taken:	Paragraph 8
Related document:	SN.1/Circ.266

Introduction

1 The United Kingdom is pleased to note the increasing competence in both training and operation of ECDIS. However the United Kingdom, in consultation with Japan, Norway, ICS and IFSMA, wishes to bring to the attention of the Organization issues that have come to light affecting the operational performance of some ECDIS systems.

2 Over the course of the last 9 months, two NAVAREA warnings (Annex) have been issued to alert mariners to anomalies in the operation of some ECDIS systems. These relate to display and alarm behaviour in particular system configurations. The anomalies were discovered by "chance" inspection of ENCs within a small number of ECDIS systems and it is considered possible that other anomalies remain to be discovered.

3 The existence of such anomalies is not surprising given that ECDIS is the first complex, safety-related, computer-based navigational system. It is recognized in other transport domains that the testing of complex systems and equipment, by itself, cannot be comprehensive enough to ensure that software errors which could affect operational integrity are eliminated. It is likely that similar issues will arise with new complex systems in future.

4 Given the widespread use and the impending implementation of the ECDIS carriage requirement, it is important that any anomalies identified by mariners are reported to and investigated by the appropriate authorities to ensure their resolution. Accordingly,

Administrations should encourage vessels under their flag to report such anomalies and give consideration to alerting mariners where such anomalies might affect safety of navigation.

5 A number of points need further consideration if appropriate levels of operational integrity for complex, software-based systems are to be ensured now and into the future. These include:

.1 how to ensure that any significant problems identified are communicated to affected users;

.2 how to ensure that performance standards, type approval processes and training are updated in the light of any anomalies found; and

.3 the need for a mechanism to ensure that system anomalies are rectified and any revisions are implemented on all affected systems within reasonable timescales.

Proposal

6 In order to better understand the extent of the issue, this document proposes that Administrations or another designated body or bodies should seek to collect, investigate and disseminate information about ECDIS anomalies. They should:

.1 encourage seafarers to provide reports on such anomalies, with sufficient detail on the ECDIS equipment and ENC, to allow analysis;

.2 treat the identity of the reporter as confidential;

.3 agree to share information with other IMO member organizations on request; and

.4 issue alerts to mariners where such anomalies might affect safety of navigation.

7 This document proposes that the Committee request submissions on the elements in paragraphs 5 and 6 for the next meeting of the Committee.

Action requested of the Committee

8 The Committee is invited to consider the points and the proposals above, and decide as appropriate.

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ANNEX

NAVAREA I WARNINGS

Number 230/10

As previously notified by NAVAREA warning, mariners using ECDIS are advised not to rely solely on automated voyage planning and monitoring checks and alarms. It is recommended that mariners undertake careful visual inspection of the entire planned route to confirm that it, and any deviations from it, is clear of dangers. The ECDIS display should be configured to display all soundings during this inspection.

Particular care should be taken when planned routes cross areas where only small scale ENCs (Usage Bands 1 and 2) are available. In some display configurations, such as when no names are shown, small islands and other point features may be difficult to identify or could be obscured by surrounding depth contours. Some ECDIS systems appear only to undertake route check functions on larger scale ENCs and therefore alarms might not activate. This may not be clearly indicated on the ECDIS display.

The International Hydrographic Organization (IHO) is leading technical action to investigate these matters in consultation with ECDIS equipment manufacturers. Further information will be made available through Notices to Mariners.

Cancel 037/10.

Number 037/10

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.