Subject

"Guidance on ECDIS for ships calling at Australian ports" issued from the Australian Government

ClassNK

Technical Information

No. TEC-0896
Date 13 March 2012

To whom it may concern

The Australian Government has noticed (Australian Maritime Safety Authority MARINE NOTICE 7/2012) "Guidance on ECDIS for ships calling at Australian ports."

AMSA said:
Besides conforming to IMO-performance standards and carrying official ENC, when ECDIS is being used for navigation, all masters and officers in charge of a navigational watch should undertake appropriate ECDIS training and documentary evidence of such training must be maintained on board.

For any questions about the above, please contact:

[Survey]
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Attachment:

1. MARINE NOTICE 7/2012

Australian Government
Australian Maritime Safety Authority

MARINE NOTICE

Marine Notice 7/2012

Guidance on ECDIS for ships calling at Australian ports

This notice aims to clarify some of the emerging issues relating to the carriage requirements for Electronic Chart Display and Information System (ECDIS) and provide guidance to ships fitted with ECDIS calling at Australian ports. Two flow charts that address ECDIS related issues and which will be used by AMSA's Port State Control (PSC) inspectors, are attached.

As mandatory carriage of ECDIS will be phased in from 1 July 2012, ship operators and navigating officers of ECDIS fitted ships are encouraged to take this guidance into account.

1. Cargo Ship Safety Equipment Certificate (Form E)

Details of a ship's navigational systems and equipment are recorded in Section 3 of Form E (Record of equipment - Cargo Ship Safety Equipment Certificate). The means of complying with SOLAS Chapter V Regulation 19 (i.e. paper charts and/or ECDIS) needs to be indicated on a ship's Form E. If the ship uses ECDIS for navigation, Form E must clearly state the back-up arrangement in place. If a vessel requires flexibility in using either paper charts or ECDIS as the means of navigation, such an arrangement must be clearly indicated on Form E. In such cases, both paper charts and ECDIS must comply with SOLAS requirements.

2. Determining the means of navigation

When determining the means of navigation being used, apart from an indication on Form E, AMSA's PSC inspectors look for evidence of planning and presentation of the ship's route for the completed or intended voyage and, of plotting and monitoring of the ship's positions throughout the voyage. This information is cross-checked by the PSC inspectors against entries made in the ship's deck log book.

3. Compliant ECDIS

As per SOLAS Chapter V Regulations 18 and 19, for a ship to rely on ECDIS for navigation, the ECDIS installation must conform to the relevant IMO Performance Standards (as specified in Resolution A.817(19) (Performance Standards for ECDIS), as amended by MSC.232(82)). When ECDIS is being used for navigation, it must:

i) be type approved,

ii) be maintained to the latest applicable International Hydrographic Organization (IHO) standards,

iii) use official Electronic Navigational Charts (ENC), and

iv) have an adequate, independent back-up arrangement.

3.1 Type approval of ECDIS

Type approval is the certification process that ECDIS equipment must undergo before it can be considered as complying with the IMO Performance Standards for ECDIS. The process is conducted by type approval organisations and marine Classification Societies.

3.2 Maintenance of ECDIS software

An ECDIS that is not updated to the latest version of IHO standards may not meet the chart carriage requirement as set out in SOLAS Regulation V/19.2.1.4. IMO has issued SN.1/Circ 266/Rev.1 on the need to maintain ECDIS software. The following link provides a list of the latest IHO standards that apply to ECDIS equipment: www.iho.int/mtg_docs/enc/ECDIS-ENC_StdsIn_Force.htm.

3.2.1 ECDIS Data Presentation and Performance Check dataset

IHO has produced an ECDIS Data Presentation and Performance Check dataset that allows mariners to check some important aspects of the operation of their ECDIS. This dataset contains two fictitious ENC cells which navigating officers can load into their ECDIS units to determine if the latest software is installed and if the units are operating optimally. If the check highlights a problem, accompanying guidance notes offer suggested courses of action. The check dataset and accompanying instructions can be downloaded from the IHO website at: www.iho.int/srv1/index.php?option=com_content&view=article&id=585:news&catid=166:1news-links&Itemid=828.

3.3 Carriage of official Electronic Navigational Charts

Ships using ECDIS for navigation must carry Electronic Navigational Charts (ENC, which are official vector charts) or, where ENC data has not been published, Raster Navigational Charts (RNC, which are scanned, geo-referenced images of official paper charts). The ENCs and RNCs must be issued by, or on the authority of, a government, national Hydrographic Office or other relevant government institution. They must be of the latest available edition and be kept up to date using the latest available notices to mariners.

3.4 Back-up Arrangements for ECDIS

Appendix 6 to IMO Resolution MSC.232(82) specifies the requirements for adequate, independent back-up arrangements. The main requirements are to enable a timely transfer to the back-up system during critical navigation situations and allow the vessel to be navigated safely until the termination of the voyage. AMSA considers the following will meet the back-up requirements for ECDIS:

i) an independent, fully compliant second ECDIS unit, connected to ship's main and emergency power supply and connected to systems providing continuous position fixing capability; or

ii) adequate and up to date paper charts (including relevant large scale charts) necessary for the intended voyage.

The back-up ECDIS must be loaded with relevant ENCs and the voyage plan before commencement of the voyage. Similarly, if paper charts are being used as the back up, they must be readily available and the voyage plan must be shown on them. In confined waters, the back-up arrangement must be ready for immediate use.

4. Mode of ECDIS operation

A type approved ECDIS, when using current editions of ENC with the latest corrections available, operates in ECDIS mode. An alternative mode, known as Raster Chart Display System (RCDS) mode, can only be used if there are no suitable ENCs available for the area being navigated. In recent years, ENC coverage has increased rapidly. However, there may still be some areas (e.g. the polar regions) for which ENCs have not been issued.

In Australia's case, ENCs exist for all well-used coastal shipping routes and for all major ports. Hence, unless a ship will be operating in or transiting through an area for which there are no suitable ENCs, ECDIS should not need to be operated in RCDS mode in Australian waters. IMO has issued SN.1/Circ.207/Rev.1 to address the differences between RCDS and ECDIS.

5. Charts to be used in areas not adequately covered by ENCs

ENC coverage of the world's busiest ports and shipping routes connecting them, is substantially complete. Away from major shipping routes, ENCs may be limited to small scale coverage. In circumstances when greater detail is required, it may be necessary to use RNCs. When planning

a passage in more remote areas, mariners should note:

i) any caution embedded in an ENC, advising of the need to refer to larger scale charts for some areas, and

ii) any areas within an ENC showing no data within that scale band (usage code).

Where any significant area needs to be traversed using ECDIS in RCDS mode, mariners should critically consider the ability of their ECDIS to provide an adequate 'look-ahead' capability and, if necessary, acquire appropriate paper charts.

When referring to RNC or appropriate paper charts, they should be maintained up to date in all cases.

6. SOLAS chart carriage requirement

Until 1 July 2012 (and until 2018 for other ships, as per the implementation timetable set out in SOLAS), passenger ships, tankers and cargo ships of 500 gross tonnage and upwards engaged on international voyages, have three options to meet their SOLAS obligations for the carriage of nautical charts and publications:

i) adequate and up to date paper charts necessary for the intended voyage; or

ii) a type approved ECDIS operating with ENCs and a second IMO compliant ECDIS as an adequate and independent back-up; or

iii) a type approved ECDIS operating with ENC and with adequate and up to date paper charts to serve as a back-up necessary to complete the intended voyage.

7. ECDIS training requirements

The Manila Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW) and STCW Code will enter into force from 1st January 2012. This will make ECDIS training mandatory from 1 July 2013 for all officers serving on board ECDIS fitted ships. All officers in charge of a navigational watch, both at the management and operational level, will be required to undertake ECDIS training, as described below:

7.1 Generic ECDIS training: All masters and officers in charge of a navigational watch should, as a minimum, complete generic ECDIS training that follows IMO Model Course 1.27 and conforms to the relevant STCW requirements.

7.2 Type specific ECDIS training: In accordance with IMO Circ. SN.1/Circ 276 (Transitioning from paper chart to Electronic Chart Display and Information Systems (ECDIS) navigation) shipowners and operators should ensure that their ship masters and navigating officers are provided with a comprehensive familiarisation programme and type-specific training. 'Trickle-down' training (i.e. one officer training another) is not acceptable without a structured and formalised process being in place to facilitate such training. If the generic training includes training on the type of ECDIS equipment installed on board, then the training documentation must indicate this clearly.

7.3 On board familiarisation: In accordance with the ISM Code, the company should establish procedures to ensure that personnel are given proper familiarisation with their duties and equipment. ECDIS familiarisation training in the safe and effective use of shipboard ECDIS equipment should be clearly documented.

8. Port State control inspections

With a phased carriage requirement for ECDIS commencing in 2012, AMSA's PSC inspectors will increasingly focus on the means by which ships meet their SOLAS chart carriage requirements and the effectiveness with which the navigational task is being conducted.

The following is a list of ECDIS issues which AMSA's PSC inspectors pay close attention to:

- appropriate declaration in Form E
- ECDIS type approval certificate, confirming that the ship's ECDIS complies with the relevant IMO performance standards and IEC test standards

- maintenance of the ECDIS equipment to the latest applicable IHO standards
- use of ENCs, including their latest editions and corrections to the latest available notices to mariners
- adequate independent back-up arrangements (as detailed on Form E), ensuring safe navigation for the remainder of the voyage in the event of an ECDIS failure
- documentary evidence of generic and type specific ECDIS training undertaken by the master and navigating officers
- evidence of familiarisation training for the use of ECDIS equipment carried onboard
- documented procedures for navigating officers using ECDIS
- listing of ECDIS as critical equipment in the ship's Safety Management System
- conformance and alignment with input from sensors (e.g. heading, speed, rate of turn etc.) and its presentation on the ECDIS display
- evidence of periodic tests and checks of the ECDIS equipment that need to be carried out as part of the Safety Management System
- demonstration of operational competency by the ships navigating officers (e.g. safety checking of a voyage plan)

9. ECDIS flow charts

The attached flow charts outline ECDIS related implementation and operational issues and the related deficiencies that could be invoked by AMSA PSC inspectors. The assessment of any ECDIS related deficiencies (along with any remedial action determined) may vary, depending on the circumstances of each case.

Further enquiries regarding this marine notice can be addressed to:

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Mick Kinley
A/g Chief Executive Officer
23 January 2012

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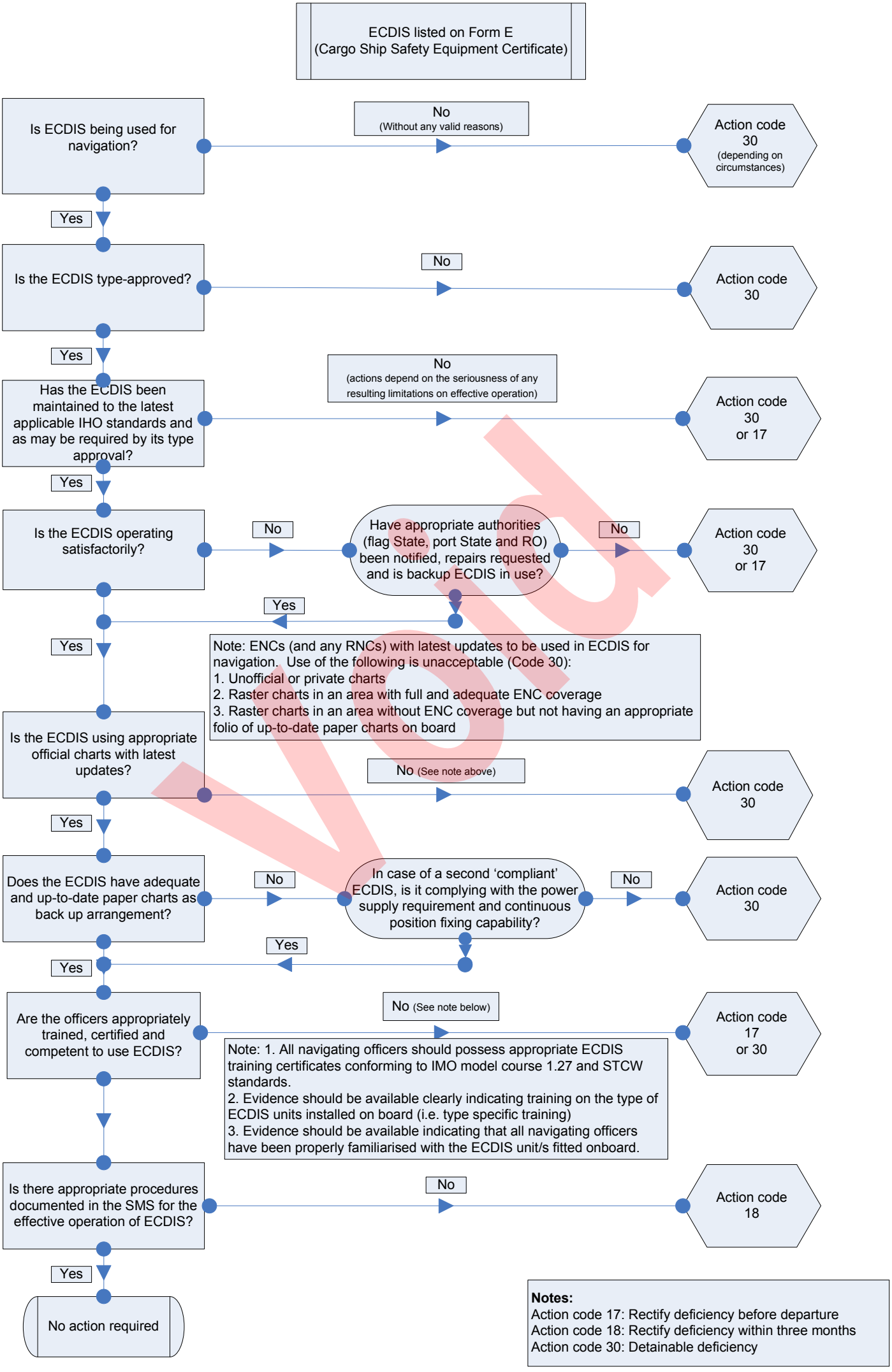
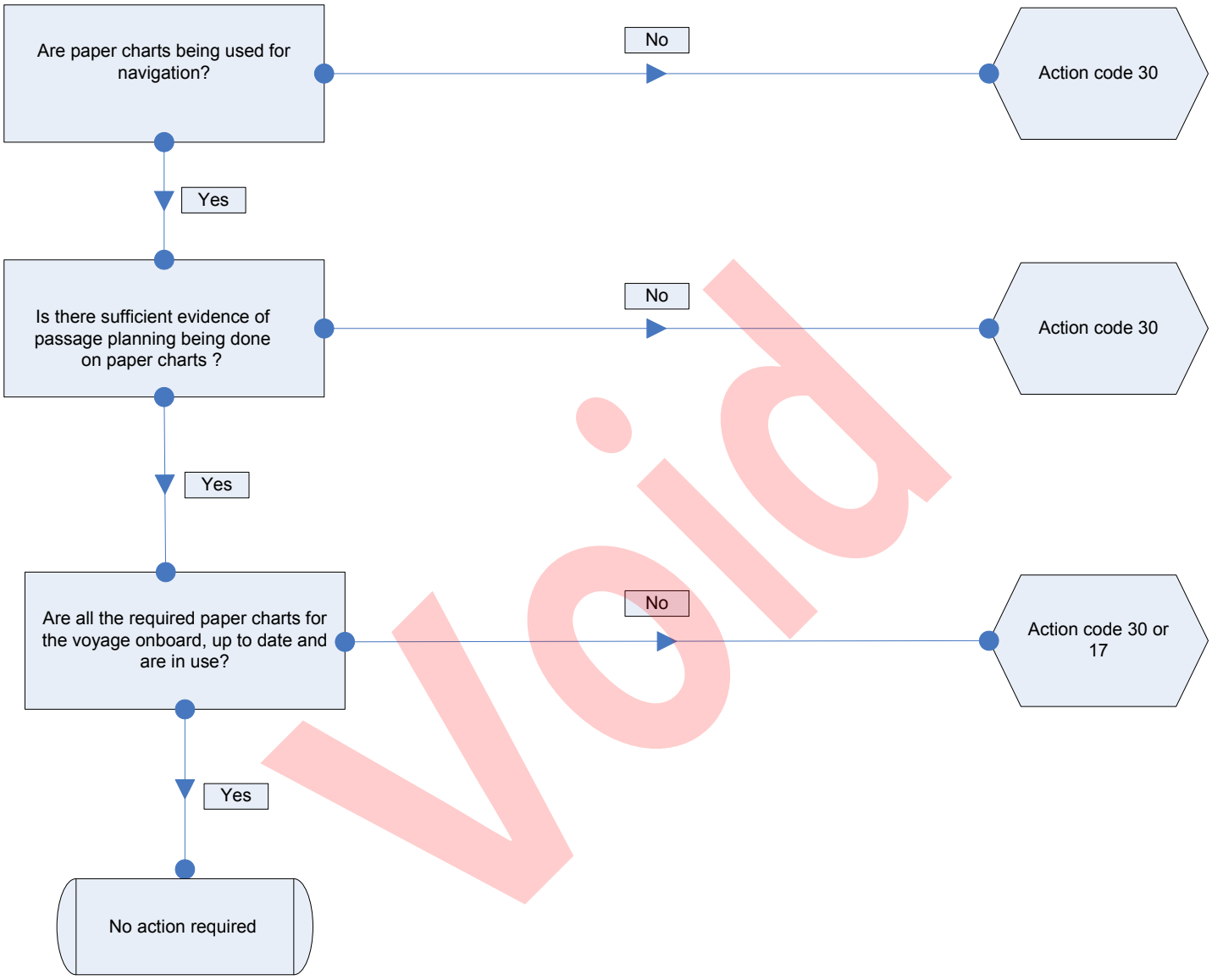
File No: 2011/2699


ECDIS listed on Form E
(Cargo Ship Safety Equipment Certificate)
Is ECDIS being used for navigation?
No
(Without any valid reasons)
Action code 30
(depending on circumstances)
Yes
Is the ECDIS type-approved?
No
Action code 30
Yes
Has the ECDIS been maintained to the latest applicable IHO standards and as may be required by its type approval?
No
(actions depend on the seriousness of any resulting limitations on effective operation)
Action code 30 or 17
Yes
Is the ECDIS operating satisfactorily?
No
Have appropriate authorities (flag State, port State and RO) been notified, repairs requested and is backup ECDIS in use?
No
Action code 30 or 17
Yes
Yes
Note: ENCs (and any RNCs) with latest updates to be used in ECDIS for navigation. Use of the following is unacceptable (Code 30):
1. Unofficial or private charts
2. Raster charts in an area with full and adequate ENC coverage
3. Raster charts in an area without ENC coverage but not having an appropriate folio of up-to-date paper charts on board
Is the ECDIS using appropriate official charts with latest updates?
No (See note above)
Action code 30
Yes
Does the ECDIS have adequate and up-to-date paper charts as back up arrangement?
No
In case of a second 'compliant' ECDIS, is it complying with the power supply requirement and continuous position fixing capability?
No
Action code 30
Yes
Yes
Are the officers appropriately trained, certified and competent to use ECDIS?
No (See note below)
Action code 17 or 30
Note: 1. All navigating officers should possess appropriate ECDIS training certificates conforming to IMO model course 1.27 and STCW standards.
2. Evidence should be available clearly indicating training on the type of ECDIS units installed on board (i.e. type specific training)
3. Evidence should be available indicating that all navigating officers have been properly familiarised with the ECDIS unit/s fitted onboard.
Is there appropriate procedures documented in the SMS for the effective operation of ECDIS?
No
Action code 18
Yes
No action required
Notes:
Action code 17: Rectify deficiency before departure
Action code 18: Rectify deficiency within three months
Action code 30: Detainable deficiency

ECDIS NOT listed on Form E
(Cargo Ship Safety Equipment Certificate)



Notes:
Action code 17: Rectify deficiency before departure
Action code 30: Detainable deficiency