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MARINE CIRCULAR

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FOR: Ship Owners, Ship Managers, Ship Operators, Ship Masters, Ship Officers, Classification Societies, Flag State Inspectors

SUBJECT: MANDATORY REQUIREMENTS FOR ECDIS & BNWAS UNDER SOLAS

DEFINITIONS:

The following abbreviations stand for:

- “BNWAS” – Bridge Navigation Watch Alarm Systems
- “ECDIS” – Electronic Chart Display and Information Systems
- “ENC” – Electronic Navigation Charts
- “GPS” – Global Positioning System
- “GT” – Gross Tonnage
- “IHO” – International Hydrographic Standards
- “IMO” – International Maritime Organization
- “MODU” – Mobile Offshore Drilling Units
- “RCDS” – Raster Chart Display System
- “RNC” – Raster Navigational Chart
- “RO” – Recognized Organization as defined by IMO Resolution A.789(19)
- “SMS” – Safety Management System
- “SOLAS” – International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended

The term “Administration” shall mean the Tuvalu Ship Registry.

PURPOSE: This Circular is to inform all Owners and Managers of Tuvalu-flagged vessels on the amendments to the SOLAS which becomes effective on 1 January 2011 and revises the SOLAS 74 Chapter V Regulation 19 to include the ECDIS and the BNWAS as mandatory requirements.

REFERENCES:

- (a) IMO Resolution MSC.128(75), Performance Standards for BNWAS, adopted 20 May 2002
- (b) IMO Resolution MSC.232(82), Adoption of Revised Performance Standards for ECDIS, adopted on 5 December 2006
- (c) IMO Resolution MSC.282(86), Adoption of Amendments to SOLAS 74, as amended, adopted on 5 June 2009
- (d) IMO Resolution A.817 (19), Performance Standards for ECDIS, adopted on 23 November 1995
- (e) Tuvalu Marine Circular MC-3/2017/1, ECDIS Guidance for Good Practice
- (f) IMO Circular MSC.1/Circ.1496, Unified Interpretation on the Appendix to the SOLAS Convention Regarding the Records of Equipment Concerning Nautical Charts and ECDIS, dated 21 November 2014
- (g) IMO Safety of Navigation Circular SN/Circ.207, Differences between RCDS and ECDIS
- (h) IMO Safety of Navigation Circular SN/Circ.276, Transitioning from Paper Chart to ECDIS Navigation
- (i) IMO Resolution MSC.350(92), Adoption of Amendments to SOLAS 74, as amended, adopted on 21 June 2013

CONTENTS:

1. ECDIS

1.1. General Requirement

Consistent with SOLAS V/19.2.1.4 and 27, vessels shall carry the nautical charts and publications necessary to plan and display the vessel's route for the intended voyage, and to plot and monitor the vessel's position throughout the voyage. In addition, vessels shall carry nautical charts and publications that might be needed to safely enter a harbor of safe refuge along the intended route.

1.2. Timetable

1.2.1. SOLAS V/19.2.10 sets out a timetable for vessels engaged on international voyages to be fitted with an ECDIS using ENC's:

Type of ships	Size limitation (of or over)	New ships (Construction-Keel lay date)	Existing ships (Ships not new ships)
Passenger ships	500 GT	1 July 2012	Not later than the first survey* on or after 1 July 2014
Tankers	3000 GT	1 July 2012	Not later than the first survey* on or after 1 July 2015
Others	50,000 GT	1 July 2013	Not later than the first survey* on or after 1 July 2016
	20,000 GT	1 July 2013	Not later than the first survey* on or after 1 July 2017
	10,000 GT	1 July 2013	Not later than the first survey* on or after 1 July 2018. No retrofitting requirements to existing ships less than 10,000 GT
	3,000 GT	1 July 2014	No retrofitting requirements to existing ships less than 10,000 GT

***Note:**

The *first survey* means the first annual survey, the first periodical survey or the first renewal survey, whichever is due first after the date specified above.

- (i) For a passenger ship, this is the first renewal survey for "Passenger Ship Safety Survey";
- (ii) For a cargo ship (non-passenger ship), this is either the "Cargo Ship Safety Equipment Survey" or the "Cargo Ship Safety Survey" (combined survey for vessels that choose to combine all SOLAS certificates in one).

- (iii) For both passenger ships and cargo ships which are under construction and falls into the scenario where the keel is laid before the date specified above but the ship is delivered after, then the *first survey* shall refer to the vessel's "Initial Survey".
 - (iv) Although the "*first survey*" may not coincide with dry docking, owners should be aware that substantial work could be involved in retrofitting this equipment, which could take the ship out of service. Therefore, due consideration should be made to carrying out the necessary modifications in dry dock before the mandatory implementation date.
- 1.2.2. The above-mentioned information on the new requirement and its implementation is intended to enable Ship Owners / Managers / Operators to plan early to avoid any unnecessary disruption to operations.
- 1.2.3. Ship Owners / Managers / Operators would appreciate to note that there is no mandatory carriage requirement for the carriage of ECDIS for existing cargo ships of below 10,000 GT, and vessels may be exempted from the requirements of SOLAS V/19.2.10 if the vessel will be permanently taken out of service within two years of the implementation dates above.

1.3. Carriage Requirements

- 1.3.1. As defined by SOLAS V/2.2, nautical charts are issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institutions.
- 1.3.2. All vessels shall carry an adequate portfolio of corrected, nautical charts for the vessel's planned voyage. All charts shall be of a large enough scale and have enough detail to make safe navigation of the area possible.
- 1.3.3. Masters shall ensure that any charts required by port state regulations for ports where the vessel will be calling during a voyage are onboard and updated as necessary.
- 1.3.4. This Administration recognises that an ECDIS satisfies the chart carriage requirements of SOLAS Regulation V/19.2.1.4 provided that it meets the following criteria:
- 1.3.4.1. conforms to relevant IMO performance standards. ECDIS units fitted on or after 1 January 1996 to before 1 January 2009 must comply with IMO Resolution A.817(19) as amended by IMO Resolutions MSC.64(67) and MSC.86(70). ECDIS units fitted on or after 1 January 2009 must comply with IMO Resolution MSC.232(82);
 - 1.3.4.2. uses up to date ENCs;
 - 1.3.4.3. maintained to be compatible with the latest applicable IHO standards; and
 - 1.3.4.4. has an adequate, independent back-up arrangement as required by SOLAS V/19.2.1.5.
- 1.3.5. Part A of MSC.1/Circ.1503 found in Tuvalu Marine Circular MC-3/2017/1, contains a clear, detailed summary of the Chart Carriage Requirement of SOLAS, including back up requirements to ensure safe navigation in case of ECDIS failure.

- 1.3.6. In areas where ENCs have not been issued, or are not of an appropriate scale for the planning and display of the vessel's voyage plan, the ECDIS operated in the RCDS mode or paper nautical charts can be used. If an ECDIS is operated in the RCDS mode, an appropriate portfolio of up-to-date paper charts must be carried onboard and be available for use.
- 1.3.7. The vessel's manager is responsible for determining the form of charts to be used onboard as the primary means of navigation. The form of chart used as the primary means of navigation shall be indicated in the Company's SMS. **All navigation work must be done on the form of chart indicated in the Company's SMS.**
- 1.3.8. IMO Circular MSC.1/Circ.1496 provides a unified interpretation for how to document the form(s) of nautical charts carried onboard on the vessel's Record of Equipment (Form E, C or P as appropriate).
- 1.3.9. If a vessel is fitted with ECDIS but paper nautical charts are designated in the Company's SMS as the primary form of navigation, the Safety Equipment Certificate should indicate that both ECDIS and nautical charts are provided as indicated in IMO Circular MSC.1/Circ. 1496, Scenario 3. As per IMO Circular MSC.1/Circ.1496 scenario 3, when paper charts are used as the primary means of navigation they may also be regarded as the ECDIS back-up arrangements.

1.4. ECDIS Training

- 1.4.1. Part E of IMO Circular MSC.1/Circ.1503 found in Tuvalu Marine Circular MC-3/2017/1 summarizes the current ECDIS training requirements to ensure that Masters and deck officers serving onboard vessels fitted with ECDIS meet the mandatory training requirements of the STCW Convention. These requirements apply on all ships fitted with ECDIS, even if paper charts are indicated in the Company's SMS as the primary means of navigation.
- 1.4.2. Every Master and deck officer assigned to a vessel fitted with ECDIS must be certificated as competent in the use of ECDIS as required by STCW Tables A-II/1, II/2, and II/3. This requirement applies even if an ECDIS is used for training as permitted.
- 1.4.3. All Masters and deck officers are required to complete two (2) levels of training:
 - 1.4.3.1. Knowledge of the capability and limitations of ECDIS operations including a thorough understanding of electronic navigational chart data, options in the event of loss of GPS signal, data accuracy, presentation rules, display options and other chart data formats as well as the dangers of over-reliance; and
 - 1.4.3.2. Proficiency in operation, interpretation and analysis of information obtained from ECDIS including the use of functions that are integrated with other navigation systems, safe monitoring and adjustment of information, confirmation of vessel position by alternative means, e.g., plotting bearings and ranges, efficient use of settings to ensure conformance to operational procedures, adjustment of settings and values to suit the present conditions and situational awareness while using ECDIS.
- 1.4.4. Type Specific Training is to be completed in accordance with the shipboard SMS procedures prior to an officer assuming a navigational watch. It is intended to familiarize the watch officer with the basic operation of the ECDIS equipment

aboard the vessel to which they are assigned, including route planning and execution.

- 1.4.5. A fitted ECDIS may be used for training if there are two fitted units onboard, or the primary means of navigation is paper charts. Using ECDIS for training is not equivalent to conducting all required navigation work on the primary ECDIS or paper nautical charts. Vessel managers should provide guidance addressing the use of ECDIS for training to ensure that the safety of navigation is not compromised.

1.5. Nautical Publications

- 1.5.1. At a minimum, vessels shall carry sailing directions, lists of lights, notices to mariners, tide tables, and current table for the vessel's planned voyage in accordance with SOLAS V/19.2.1 and V/27. Other publications, including a nautical almanac and coast pilots (where issued) shall also be carried.
- 1.5.2. Masters shall ensure that any nautical publications required by port state regulations for ports where the vessel will be calling during a voyage, are onboard and updated with the latest published corrections.
- 1.5.3. Nautical publications shall be issued officially by or on the authority of a Government, authorized Hydrographic Office, or other relevant government institution. All nautical publications shall be currently updated to the latest edition of Notices to Mariners that is available onboard.
- 1.5.4. Electronic nautical publications may be used to either partially or fully fulfill the requirements of SOLAS Chapter V, provided the following conditions are met:
 - 1.5.4.1. Nautical publications required for intended voyage planning (examples include sailing directions, coast pilots, light lists, tide and current tables, etc.) must be provided with electronic or paper back-up arrangements.
 - 1.5.4.2. Relevant back-up copies must be corrected and ready for use when needed. When an electronic back-up is carried, portions of the publication needed for the planned voyage shall be printed and included with the voyage plan unless the electronic backup is an independent computer system with its own emergency source of power.

2. BNWAS

2.1. General Information

The introduction of Regulation V/19.2.2.3 requires passenger ships irrespective of their gross tonnage and cargo ships of 150 GT and upwards, regardless of their dates of construction to be fitted with a BNWAS.

2.2. Timetable

2.2.1. BNWAS is required to be fitted in accordance with the following time table:

Type of ships	Gross tonnage	New ships (Construction-Keel lay date)	Phase-in Deadline	
			Constructed (keel laid) on or after 1 July 2002	Constructed (keel laid) before 1 July 2002
Passenger ships	ALL	On or after 1 July 2011	Not later than the first survey* on or after 1 July 2012	Not later than the first survey* on or after 1 January 2016
Cargo Ships	150 GT and over but less than 500 GT	On or after 1 July 2011	Not later than the first survey* on or after 1 July 2014	Not later than the first survey* on or after 1 January 2018
Cargo Ships	500 GT and over but less than 3000 GT	On or after 1 July 2011	Not later than the first survey* on or after 1 July 2013	Not later than the first survey* on or after 1 January 2017
Cargo Ships	3000 GT and over	On or after 1 July 2011	Not later than the first survey* on or after 1 July 2012	Not later than the first survey* on or after 1 January 2016

***Note:**

- (i) Please refer to *first survey* guidance notes in Section 1.3.1 under the ECDIS Timetable;
- (ii) It may also be any other survey, if the Administration deems it to be reasonable and practicable, taking into account the extent of repairs and alterations being undertaken.
- (iii) For a ship under construction where the keel is laid before, but the ship is delivered after, the date specified in the relevant regulation, the initial survey is the "first survey."

2.2.2. Once fitted, BNWAS must be used whenever the vessel is underway. It is recommended that BNWAS is also used at anchor, if appropriate. Again, there may be a need to amend the SMS to ensure that its operating procedures address the new requirements.

2.2.3. BNWAS performance standards are specified in IMO Resolution MSC.128(75).

2.3. General Requirement

- 2.3.1. BNWAS, regardless of when installed, fitted with motion detectors to serve as the reset function must meet the following additional requirements:
 - 2.3.1.1. The sensors cover only the area of the bridge forward of any bridge curtains;
 - 2.3.1.2. The area of the bridge covered by the motion sensor does not include bridge chairs, unless the chair is integral to the primary conning position, such as in a cockpit style operating position; and
 - 2.3.1.3. Moving bridge curtains will not reset the BNWAS.
- 2.3.2. Ship operators must include guidance on what operating situations the BNWAS should be operated in the different modes (automatic, on and off) in their SMS.
- 2.3.3. For systems fitted with motion sensors to serve as the reset function, the SMS must include a procedure for the crew to check the system at least once a day to ensure it is operating correctly.

2.4. Acceptance of BNWAS installed prior to 1 July 2011

- 2.4.1. The new Regulation 19.2.2.4 provides for a BNWAS installed prior to 1 July 2011 to be exempted, at the discretion of the Administration, from full compliance with the BNWAS performance standards adopted in IMO Resolution MSC.128(75).
- 2.4.2. This Administration will, upon recommendation from the Class / RO that issued the vessel's International Cargo Ship Safety Equipment Certificate, accept BNWAS installed prior to 1 July 2011 that do not fully meet the standards specified in IMO Resolution MSC.128(75) on condition that:
 - 2.4.2.1. The system is manufactured for marine service;
 - 2.4.2.2. Audible alarms or visual indicators are provided in the wheelhouse and on the bridge wings; and
 - 2.4.2.3. Second and third stage audible alarms are raised in locations deemed appropriate by the Class / RO of the vessel.
- 2.4.3. A replacement of the BNWAS in the future shall one that is Type approved to fully comply to IMO Resolution MSC.128(75), as amended. The RO will be authorised to issue the interim/full term exemption certificate accordingly which should be attached to the vessel's International Cargo Ship Safety Equipment Certificate.

2.5. Self-Propelled MODUs

This Administration will, on a case-by-case basis, consider requests for self-propelled MODUs to be exempted from the requirements of SOLAS Chapter V, Regulation 19.2.2.3 and 19.2.2.4 regarding installation of a BNWAS.

Yours sincerely,

Deputy Registrar
Tuvalu Ship Registry