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Shipping Guidance Notice – 063(a)

Digital Versions of IMO Nautical Publications

Repeals SGN 063

To: Ship Owners, Operators, Master's, Classification Societies and Recognised Organisations

References:

- SOLAS Chapter V Regulations 19.2.1.4 & 27
- MSC-MEPC.2/Circ.2 - IMO requirements on carriage of publications on board ships
- MSC/Circ.891 - Guidelines for the on-board use and application of computers
- MSC/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout
- MSC/Circ.1091 - Issues to be considered when introducing new technology on board ship
- Resolution A.813(19) - General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment

1. Introduction

1.1. With the increasing availability and convenience of use of digital nautical publications, the Gibraltar Maritime Administration has no objections to their use in lieu of hard copies. All publications on board ships, regardless of format, should be the latest editions or duly corrected up to date. Please refer to MSC- MEPC.2/Circ.2 IMO requirements on carriage of publications on board ships for more details.

1.2. The following IMO circulars should be consulted when implementing digital nautical publications:

- MSC-MEPC.2/Circ.2 - IMO requirements on carriage of publications on board ships;
- MSC/Circ.891 - Guidelines for the on-board use and application of computers;
- MSC/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout;
- MSC/Circ.1091 - Issues to be considered when introducing new technology on board ship; and,
- IMO Resolution A.813 (19) - General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment

2. Application

2.1. The system requirements contained within section 3 of this Shipping Guidance Notice (SGN) are applicable to Gibraltar ships in respect of SOLAS Chapter V, Regulations 19.2.1.4 & 27, and MSC-MEPC.2/Circ.2.

3. System Requirements

3.1. As a minimum, the hardware should consist of two computer systems (referred here as primary and secondary computers) each having the functionality of a processor unit, display, keyboard, pointing device (such as a mouse) and the means to load software and data updates.

3.2. The processor unit of the computer should be capable of running the official digital nautical publication software products in an effective manner, giving due regard to the specific requirements of the official software products, the operating system in use and the demands of other software products loaded on the computer.

3.3. Full consideration should be given to the following:

- Operating System in use (e.g. Windows or proprietary) - is it supported by the digital nautical publication products that will be loaded onto the system?
- Processor speed (e.g. 1GHz) - is it fast enough to support the loaded products, particularly if nautical publication software will be operating simultaneously with other products?
- Memory: (e.g. 256 Mb) - is it large enough to support simultaneously nautical publication products and other running software?
- Hard disk space free: (e.g. 1 Gb) - is there enough space to load the programme, the data and the necessary updates?
- Essential peripherals, (e.g. keyboard, mouse, internet connection) - are the right peripherals available to load, use and update digital nautical publication software and data?

3.4. The **primary computer** should be installed close to where the voyage is monitored. It should be designed to meet the environmental conditions defined in the International Electrotechnical Commission (IEC) 60945 and be powered from the main and emergency sources of power on the bridge. The effective display area should measure at least 350 millimeters across the diagonal. The display should be able to be varied in brightness and contrast to enable viewing in all ambient light conditions. The lighting over the keyboard should be adjustable to enable use in all ambient situations. Care should be taken in positioning and setting up the display and keyboard lighting so that it does not affect the night vision of bridge watch staff.

3.5. If the display and controls for accessing digital nautical publications are situated close to the conning position or to a look-out position the display at night should be set to appropriate night-time colours. Great care must be taken in setting brightness adjustments to prevent the display and the keyboard lighting from affecting the night vision of bridge watch staff.

3.6. An ECDIS capable of accessing appropriate digital nautical publications may be used as the 'workstation' for the use of such publications. However, digital nautical publications may only be used on ECDIS if the ECDIS equipment has been approved by the flag Administration (type approved) for this purpose.

3.7. The primary computer (if not an ECDIS) may also be used to run other software needed for essential bridge support functions, provided these are checked for compatibility with the officially approved products loaded. Digital nautical publications should be available for instant use at any time during the voyage.

3.8. On some ships, with a poor electrical supply, it may be necessary to power the primary computer system through an uninterruptible power supply (UPS). This is a self-contained battery-driven power inverter that continues to supply good quality electrical power, even when there are fluctuations in the ship's main supply. A UPS can also operate the computer system for some minutes even if there is a complete power failure. It cannot normally be considered to act as the emergency source of power because of the relatively short time before its batteries are exhausted.

3.9. A **secondary computer** is required in case of failure of the primary system. It is ideally situated on the bridge. If not mounted on the bridge, the secondary system may be a good quality office system connected to the ship's normal power supply. It should be situated in a convenient position for access by bridge personnel. It should not be in an area subject to high levels of vibration, heat or humidity, which could lead to damage of the system. The effective display area should measure at least 350 millimeters across the diagonal.

3.10. The secondary system may be used for other applications of a critical or non-critical nature, provided that any software loaded is approved by the master and is checked for compatibility with the officially approved products loaded. During the voyage it must be available for instant access to digital nautical publications in the event of a failure of the primary system.

3.11. If the secondary system is not on the bridge, it is recommended that it is also connected to a colour printer to allow the printing of critical data needed for use at the chart table or elsewhere on the bridge.

3.12. A secondary system is not required if the equivalent paper version of the digital nautical publication is available on the bridge and is maintained up to date. In that case the bridge computer system need only comply with the EMC requirements of IEC 60945 and not the full environmental requirements specified for the bridge environment.

3.13. In placing equipment on the bridge care must be taken to comply with the requirements of SOLAS Chapter V Regulation 15 'Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures'.

3.14. Consideration must be given to protecting the primary and secondary computers (including a network system, if used) against computer viruses. This may be by the installation and regular update of anti-virus software or by strict bridge instructions prohibiting unauthorized use, including the loading of non-approved software or data.

3.15. **Training on the system use** should be provided to enable operators to use it effectively and maintain the databases to be fully up to date. Users new to the particular vessel should be familiarized with the equipment set-up and with the vessel's bridge procedures concerning the use of digital nautical publications, prior to using the equipment.

3.16. Updates available in port should be applied before passage planning commences and before leaving port. If updates are received at sea they should be applied as soon as possible. Any changes relevant to the execution of the passage plan should be noted on the passage plan. Updates need to be applied to both primary and secondary systems. Records should be kept of when updates are received and applied.

3.17. During passage planning it should be checked that any licenses concerning the use of the software and its updates will remain valid for a period in excess of the expected worst-case voyage duration. If this is not the case corrective action needs to be taken.

3.18. A status check of the primary and secondary systems should be made before leaving port and at least once per day in order to ascertain the availability of the systems. This information should be recorded in the ship's log.

3.19. In the event of a failure of the primary or secondary system it should normally be repaired at the next port of call, unless the facilities for such a repair are not available. In the latter case proper thought and action needs to be taken to minimize the effects of failure of the remaining system. That could include, for instance, making a print-out of critical data that may be needed during the voyage before the voyage commences, directly from the digital nautical publication.

3.20. Bridge instructions should be in place to prohibit any unauthorized use of the primary and secondary systems, such as:

- the loading of additional software;
- change of software or hardware configuration; and,
- any use by untrained staff.

Steve Gomez – Chief Surveyor
For & on behalf of the Maritime Administrator

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