



# TECHNICAL INFORMATION

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## **Subject: Guidelines for use of Electronic Nautical Publications (ENPs) (SOLAS V/19.2.1.5)**

Noting that the use of Electronic Nautical Publication (hereinafter referred to as ENP) has been increased, many inquiries related to the use of ENPs including PSC issue have been identified recently. In this regard, this technical information is issued for the purpose of ship's safe navigation and preventing PSC deficiencies, so shipowners/operators and KR surveyors are invited to note this technical information and take action as appropriate.

### Actions to be taken by shipowners / operators

When the ENP is already installed and in use on board, it should be ensured that the relevant certificate (e.g. PS, SE certificate) is correctly marked referring to this guideline. If the actual status differs from the certificate, contact a convenient KR branch office to request reissuance of the certificate. In case of new installation of ENPs, contact a convenient KR branch office to request a survey and reissuance of the certificate.

### Actions to be taken by surveyors

For the above request from shipowners/operators, if the instructions herein are satisfied, the certificate should be issued as follows.

#### **(1) Passenger ship Safety certificate (PS) Form P**

Mark as "Provided" on item 2.3 and 2.4.

##### 5. DETAIL OF NAVIGATIONAL SYSTEM AND EQUIPMENT

Item	Actual Provision	Item	Actual Provision
1.1 Standard magnetic compass*	Fitted	2.3 Nautical publication	Provided
1.2 Spare magnetic compass*	Fitted	2.4 Back up arrangement for electronic nautical publication	Provided
1.3 Gyro compass*	Fitted	3.1 Receiver for a global	

## (2) Cargo ship Safety Equipment certificate (SE) Form E

Mark as "Provided" on item 2.3 and 2.4.

### 3. DETAIL OF NAVIGATIONAL SYSTEM AND EQUIPMENT

Item	Actual Provision	Item	Actual Provision
1.1 Standard magnetic compass*	Fitted	1.8 Means of correcting heading and bearing	Fitted
1.2 Spare magnetic compass*	Fitted	1.9 Transmitting heading device (THD)*	-
1.3 Gyro compass*	Fitted	2.1 Nautical chart / Electronic chart display and information system(ECDIS)**	Provided
1.4 Gyro compass heading repeater*	Fitted	2.2 Back up arrangement for ECDIS	-
1.5 Gyro compass bearing repeater*	Fitted	2.3 Nautical publication	Provided
1.6 Heading or track control system*	Fitted	2.4 Back up arrangement for electronic nautical publication	Provided
1.7 Pelorus or compass bearing device*	Fitted		

## 1. References

### (1) SOLAS Regulation V/2.2 – Definition of Nautical publication

*Nautical chart or **nautical publication** is a special-purpose map or book, or a specially compiled database from which such a map or book is derived, that is issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution and is designed to meet the requirements of marine navigation.*

### (2) SOLAS Regulation V/19.2.1.4 – Carriage requirement for Nautical publications

*Nautical charts and **nautical publications** to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this subparagraph...*

### (3) SOLAS Regulation V/19.2.1.5 – Carriage requirement for ENPs

***back-up arrangements** to meet the functional requirements of subparagraph.4, if this function is **partly or fully fulfilled by electronic means***

### (4) SOLAS Regulation V/27 – Up to date of Nautical publications

*Nautical charts and nautical publications, such as sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications necessary for the intended voyage, **shall***

be adequate and up to date.

**(5) MSC-MEPC.2/Circ.2 - IMO requirements on carriage of publications on board ships**

*The publications may be carried in the form of electronic media such as CD-ROM in lieu of hard copies.*

**(6) MSC.1/Circ.891- Guidelines for on board use and application of computers**

**(7) MSC.1/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout**

**(8) MSC.1/Circ.1091 - Issues to be considered when introducing new technology on board ship**

In accordance with above SOLAS regulation V/19.2.1.4, all ships irrespective of size shall have nautical charts and nautical publications, as defined in SOLAS V/2.2, to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage.

In addition, SOLAS regulation V/19.2.1.5 allows electronic means to partly or fully fulfil the above requirement, provided that there is an appropriate back-up arrangements. Therefore, ENPs having appropriate back-up arrangement may be used as a means to meet the carriage requirement of nautical publications.

## **2. Background**

Such as electronic certificate and electronic record book under MARPOL, the IMO has been recently carrying out various work in order to accept electronic means in lieu of traditional paper-based documents. Similarly, the use of ENPs is rapidly increasing due to various reasons such as cost reduction and work efficiency improvement.

However, no performance standards or guidelines for such ENPs have been provided by IMO, following survey instruction, based on the guidelines of some flag States or service suppliers, should be followed where ships provided with ENP on board. Additionally, where any instruction was given by ship's flag administration other than this instruction, such instruction should be applied to ships of that flag.

## **3. Requirements of ENPs**

### **(1) System Requirements**

Computer systems used for ENP should meet the stated hardware and software requirements of the product. Computers used to run other software applications simultaneously may require enhanced memory and disc space to avoid slow software response times.

## **(2) System location**

Nautical publications are required for voyage planning and must also be easily accessible by ships' officers at all times during the passage. For this reason ENP systems must be located on the bridge and should be conveniently situated close to either the planning or voyage monitoring stations.

## **(3) Back-up arrangement**

To ensure continuous availability of the ENP data in the event of computer system failure an appropriate backup must be provided. The back-up arrangement can be a **second computer** or **other alternatives, such as printing out those parts of the publication relevant to the voyage** can be valid if the printouts are able to convey all necessary information (e.g. in colour if required).

Where a vessel uses a central server / network to provide backup, an appropriate workstation should be identified as the secondary system. This should be documented in the ship's bridge procedures. If this secondary system is located away from the bridge then it is recommended that it is connected to a printer to enable navigationally significant data to be made available on the bridge.

## **(4) Power supply**

The ENP system must be available at all times during the voyage and therefore the power should be supplied from **ship's main source of electrical power and also emergency source\* of electrical power**. An uninterruptible power supply (UPS) may be useful to eliminate fluctuations in the ship's main supply that would cause interruption to the primary system. However UPS can normally only operate a computer system for a short period and in the event of power failure it cannot normally be considered to be the emergency source of power for the system.

*\* In general, the internal battery of a laptop is not recognized as an emergency power source in accordance with KR rules.*

## **(5) Computer hardware**

Computer hardware used for ENP must not interfere with the operation of other bridge systems. To achieve this and to ensure compliance with the requirements of Regulation 17, Chapter V of SOLAS 'Electromagnetic compatibility', it is recommended to use computer hardware designed to meet the environmental conditions defined in IEC60945. Type approval for computer hardware is not required.

## **(6) Display size**

Screen size and resolution should be chosen to ensure a clear display of navigational information (taking into account the complexity of the display, the distance the screen is to be viewed from, the ambient light conditions etc). A minimum screen size of 350mm (diagonal) is strongly

recommended.

**(7) Display brightness**

The display should be able to be varied in brightness and contrast to enable viewing in all ambient light conditions. When used at night, care should be taken to ensure that screen glow and keyboard lighting do not affect the night vision of bridge watch staff.

**(8) Updating publications**

To meet the requirements of Regulation 27, Chapter V of SOLAS, ENP should provide a facility for incorporating update information at least at the same frequency as that provided in any paper equivalent. Updates for ENP can be provided by CD media, email or downloaded using the internet. Updates should be applied to both primary and backup systems as soon as is practical.

-END-

Distributions: KR surveyors, Ship owners, Other relevant parties

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