

Navigation regulatory considerations for Hydrographic Organizations
Council Information Paper

Submitted by:	United States
Executive Summary:	As nations and chart producers consider options for the future of the paper nautical chart, and use of digital data on all vessels, there are regulatory issues that need to be considered.
Related document:	IHO Assembly Proposal 2.3 – The future of digital charting and Decision A3/15 HSSC15 Decision 15/07 IHO ECS Project Team (TORs) The Future of the Nautical Paper Chart IHO Report

References

- A. The International Convention for the Safety of Life at Sea (SOLAS), Chapter V, Regulation 19 *Carriage requirements for shipborne navigational systems and equipment*.
- B. National regulations regarding maritime navigation
Example: Titles 33 and 46 of the United States Code and both Titles 33 and 46 of the U.S. Code of Federal Regulations (CFR): Subchapter P, *Ports and Waterways Safety, Part 164, Navigation Safety Regulations*

Introduction/Background

1. The move to digital navigation is considered to improve safety of navigation of vessels. As nations, regions, and individual marine chart producing agencies consider options to maintain, refine, or terminate nautical paper charts, there is a need to consider the impacts of SOLAS, individual national regulations, and/or those established by regional organizations.
2. International and national navigation regulations have been in place for many years. These regulations define the operational structure that regulated **vessels** must have to navigate safely and comply with the established regulatory environment. As written, regulations mandate an acknowledged “means to navigate” and a way to “plan and display the ships route”.

Analysis/Discussion

3. SOLAS, Chapter V, Regulation 19 *Carriage Requirements*, establishes the following operational regulations:
 - Reg 19, Section 2.1 establishes carriage as affecting “**all ships, irrespective of size**”.
 - Reg 19, Section 2.1.4 defines the requirement to carry nautical charts and publications, and specifically states “An ECDIS may be accepted as meeting the chart carriage requirements....”
 - Reg 2, Section 2.2 defines a nautical chart as a means which 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.

These regulations indicate that ships fitted with ECDIS may use digital data, but a ship not fitted with an ECDIS, may not. As most ships “irrespective of size” are not expected to install ECDIS, this indicates paper charts will still be required for all non-equipped ECDIS ships. These ships will not gain compliance with SOLAS regulations using unregulated digital means for navigation.

4. SOLAS, Chapter V, Regulation 1.4 however establishes the option for national Administrations to determine to what extent the provisions of regulations 15, 16, 17, 18, **19**, 20, 21, 22, 23, 24, 25, 26, 27 and 28 do not apply to the following categories of ships:
 - .1 ships below 150 gross tonnage engaged on any voyage;
 - .2 ships below 500 gross tonnage not engaged on international voyages;and
 - .3 fishing vessels.
5. National regulations tend to follow this model, but may differ. For example, in the United States 33 Code of Federal Regulations (CFR), Part 164, Section 164.33 establishes requirement that “each vessel” to have “marine charts”. Additional guidance is contained within the US Coast Guard, Navigational and Vessel Inspection Circular (NVIC) 01-16, May 21, 2020 that provides operational guidance for inspection personnel regarding the use of Electronic Charts and Publications in lieu of paper charts, maps and publications. Specifically, this NVIC:
 - Recognizes similarities and differences between national and SOLAS regulations for subject vessels. Additionally, **recognizes the usability and advantages in cost and space of electronic over paper.**
 - Establishes that the terms regarding “charts” includes data conforming to IHO ENC, including iENC.
 - Requires, in certain cases, that the “display” must be tested against (and meet) IEC and/or Radio Technical Commission for Maritime (RTCM) for Electronic Chart Systems (ECS) - RTCM 10900.7
6. The domestic regulations of other nations may also differ from SOLAS. Complicating this, there are other vessels that are not subject to SOLAS or specific national regulations. This list will generally include government owned vessels and may include other vessel classes and type of operations.
 - For ships not subject to SOLAS (public ships, smaller craft, etc), chart producing agencies need to consider how these ships are regulated. How this is done is not standardized between nations, and based on the size of the ships that are managed, it may be difficult to coordinate with all the regulatory bodies and documents. For example, a large Navy may have different regulatory documents for different types of ships, based on size, area of operation, and type of operation.
7. Regional impacts should also be considered. As ships sail between nations and within differing regulatory environments, Hydrographic Offices (HOs) should consider how they support, or hinder, the ability to move away from paper and encourage the approved use of digital data, including the future S-100 framework.

Recommendations

8. As HOs consider the future of digital navigation and paper charts, consideration should be given to the international **and** national regulatory environment.
 - a. HO's should review their national regulatory situation for **all categories** of vessels including those which may nationally exempted from SOLAS regulations.
 - b. RHCs -may review the regional situation, highlighting issues where national implementation may adversely impact regional vessel traffic.
 - c. If needed, HO's to encourage regulatory agencies to consider the improved safety and utility of digital data.

Action proposed to the Council

9. The Council is invited to:
 - Take note of the paper and the recommendations