



6th Meeting of the IHO Council

Guidelines for ENC derived Paper Charts

Agenda Item 4.1B



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BACKGROUND

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- Member States are starting to offer ENC Derived Paper Charts
- Even if we agree that electronic products are preferable, there is still an important role for paper in the ecosystem of navigation products and services
- Aiming to assist in the preservation of paper, and recognizing that new ENC derived paper products may not completely adhere to existing S-4 standards, new guidance is needed



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ROLE OF THE BACKUP CHART

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- The main objective of the ‘backup’ paper chart should evolve from:

ensuring ‘safe navigation for the remaining part of the voyage in case of ECDIS failure’ (IMO resolution A.817(19), as amended or resolution MSC.232(82))

to

‘enabling safe navigation while proceeding to ‘a safe waiting place’ (open sea or an anchorage) while undertaking repairs or to a pilot boarding ground for subsequent guidance into port’.



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USE CASES FOR ENC DERIVED SNC

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- 1) for ECDIS backup (on ECDIS mandated vessels)
 - a. reduced geographic coverage, i.e. sea buoy to sea buoy
 - b. reduced # of scales
 - c. fixed footprint to support paper navigation
 - d. divergence from S-4 requirements (portrayal etc)
 - e. SOLAS updated process required
- 2) for SoN by non ECDIS mandated vessels
 - a. supporting all scales and geographic coverage for SoN as determined by appropriate authority
 - b. Fixed footprint coverage to support SoN on paper nautical charts
 - c. limited divergence from S-4 requirements
 - d. regulated updated processes required
- 3) for all other non-SoN uses, planning etc.
 - a. no requirement to meet S-4



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WHY DO WE WANT THIS FOR THE IHO?

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- There will likely be many versions of ENC derived paper products, produced by Hydrographic Offices, private companies, private citizens, others.
- Basic guidelines for backup (a noted and important use) will help to ensure that we are all on the same page when providing direction for producers.
- The complexity described in S-4 may not be needed for all use cases, including as a backup.
- This is an important thought exercise considering the state of paper charting and the recognition that it is still useful to many.



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SYMBOLLOGY PROJECT TEAM AND FUTURE OF PAPER CHART

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- Future of Paper – ‘Some hydrographic offices are considering the development of a simplified version of standard paper nautical charts that would reduce the need for chart “finishing.” These simplified products would be intended primarily as a back-up for electronic navigational systems. ~~Although there is not strong support among NCWG or IHO member states in general at this time,~~ There is a clear ~~may be a role for the IHO to help develop a specification, use case, or at least guidelines,~~ for a simplified raster chart product for back-up ~~sometime in the future.~~’



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SYMBOLGY PROJECT TEAM AND FUTURE OF PAPER CHART

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- We shouldn't wait for (or necessarily specify) S-101 for this objective. Basic guidelines should just be ENC to paper.
- Have not seen Symbology Project Team TORs yet but assume that they will not be dealing with requirements including printing, update regime, etc.
- In the interest of leaving no country behind, it is important to expand the thinking behind the ~~end~~ of future of paper nautical charts.



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WHAT ARE WE ASKING FOR?

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- **New Standard**
- **Guidelines**
- **Endorsed Use Case**



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WHAT ARE WE ASKING FOR?

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Hydrographic
Organization

- ~~New Standard~~
- Guidelines
- Endorsed Use Case



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WHAT ARE WE ASKING FOR?

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Organization

- ~~New Standard~~
- Guidelines (we would like this)
- Endorsed Use Case



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WHAT ARE WE ASKING FOR?

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- ~~New Standard~~
- Guidelines
- Endorsed Use Case (might satisfy our request)



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WHAT ARE WE ASKING FOR? MINIMUM FIT FOR PURPOSE CONTENT

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High level guidance as suggested in HSSC 14-05.4C (some examples)

- Should include a blue tint at a depth threshold relevant to the vessel using the chart
- Must include a compass rose or north arrow that indicates magnetic variation
- Must include scale bar and graticules appropriate for use with a GPS and visual and/or radar lines of position
- Must be red light readable
- Must include soundings, contours, wrecks, obstructions, and other hazards to navigation
- Land areas, elevation points, navigation aids, and waterways should be labelled with name and relevant characteristics for navigation



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357 USES OF 'MUST' IN S-4

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A stranded wreck with any portion of the hull or superstructure emerging above Chart Datum, which cannot be drawn to scale (plan view), must normally be shown by the symbol:



A surveyed coastline must normally be represented by a continuous bold line (see B-127), delimiting the land. It should be unbroken by text and other detail as far as possible.





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OFFICIAL CHARTS OR NOT?

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- Should there be an official backup chart?
- Should that be left up to national regulations or raised at the IMO?

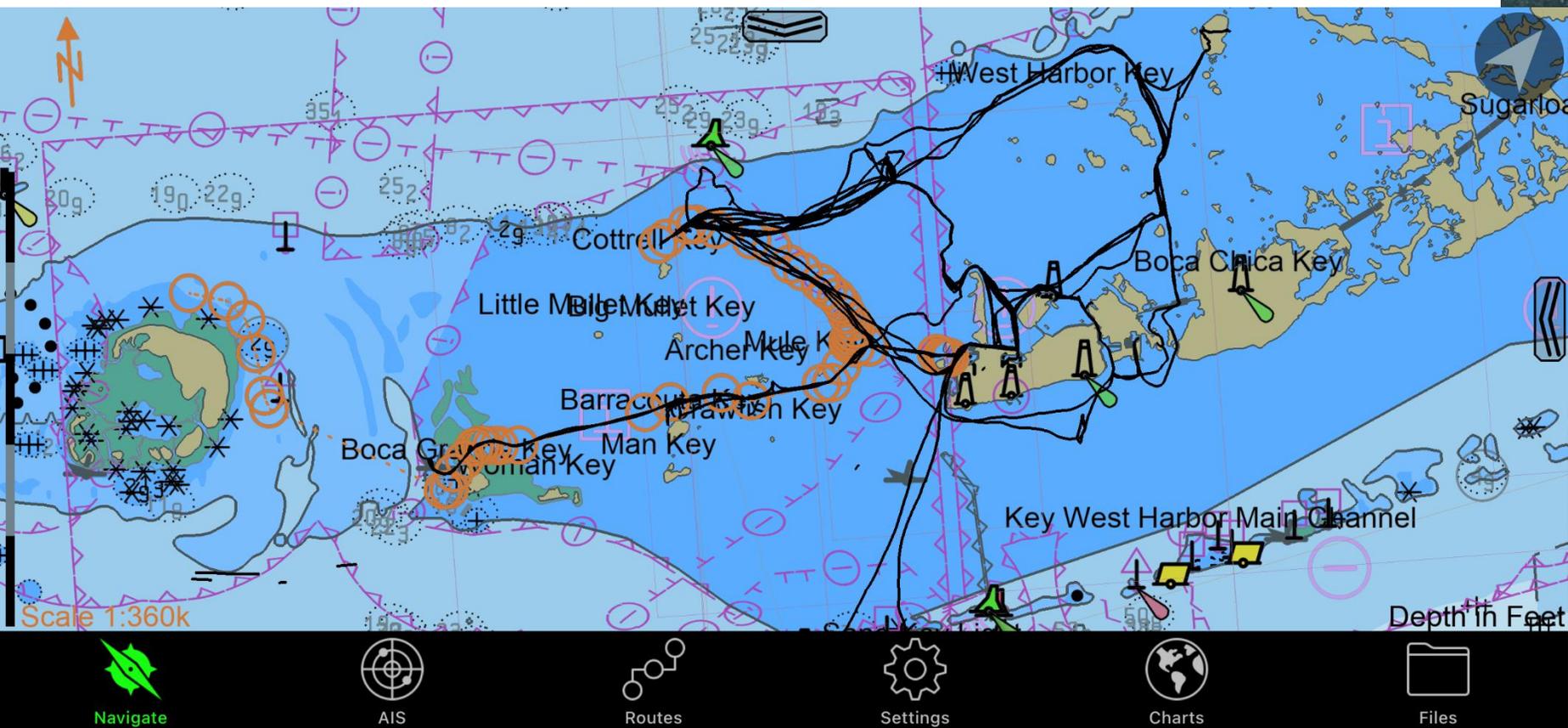


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A RECREATIONAL MARINER'S PERSPECTIVE

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Over 1 million registered recreational boaters in Florida, USA



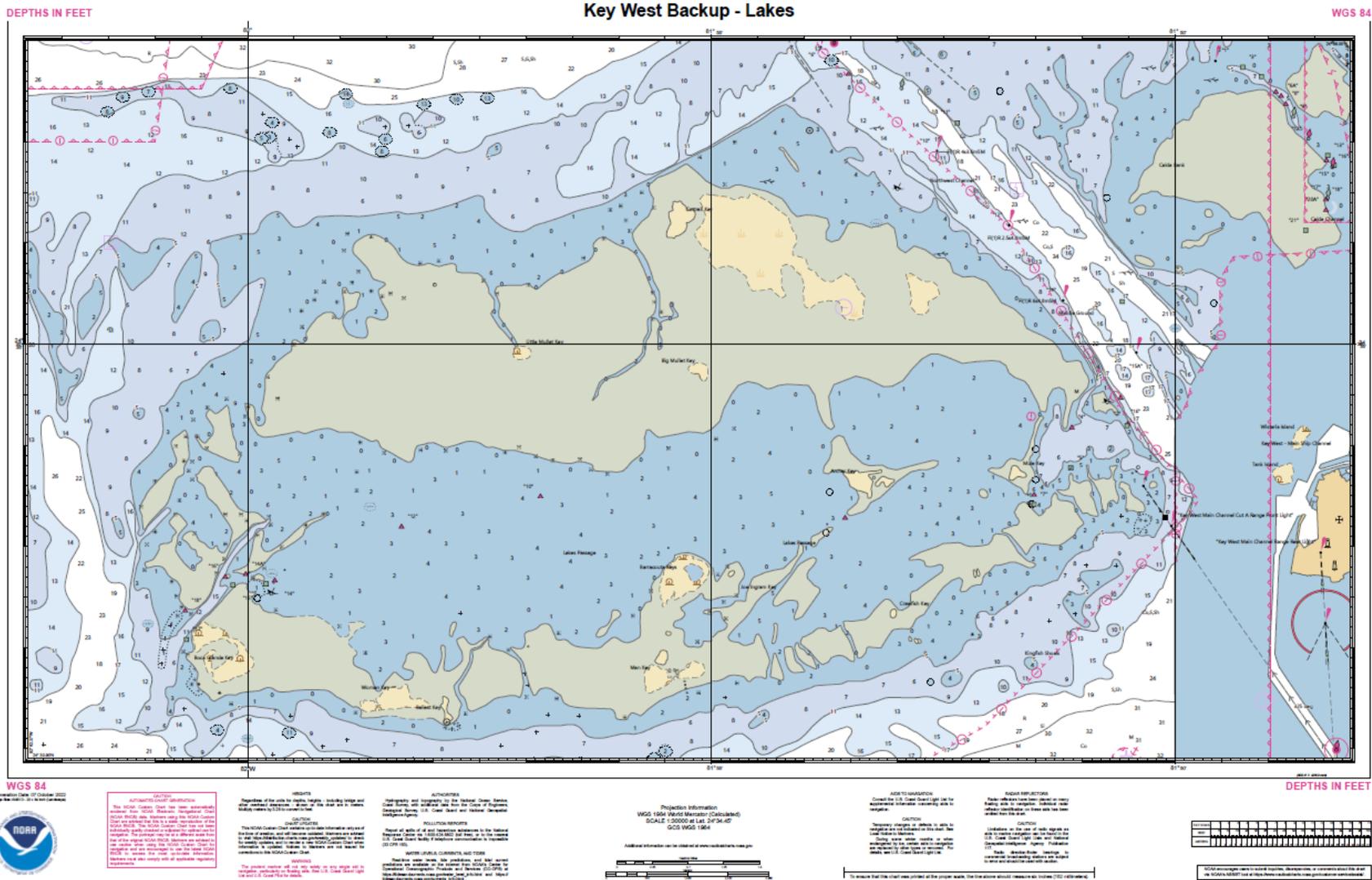
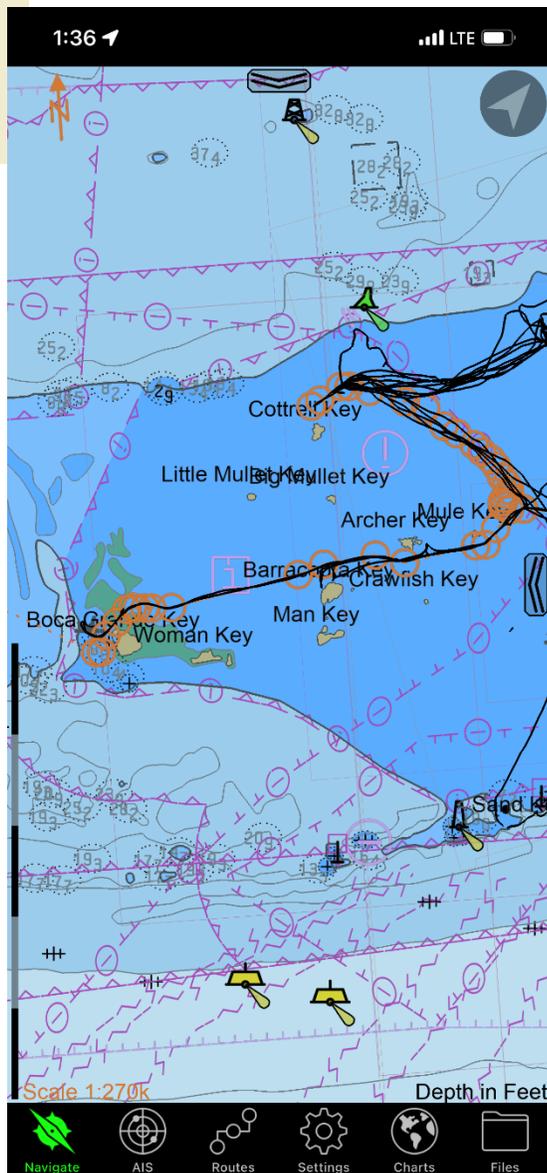
C-6, IHO Secretariat, Monaco, 18 – 20 October 2022



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A RECREATIONAL MARINER'S PERSPECTIVE

International Hydrographic Organization



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ACTION REQUIRED OF COUNCIL

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The Council is invited to:

- a. note this Paper;
- b. endorse, the need for specifications relating to printing ENC derived paper charts.
- c. Task the Nautical Cartography Working Group via HSSC to create a minimum guideline for ENC derived paper charts. The sponsors of this paper will prepare the initial draft for consideration.
- d. Consider investigating the different possibilities and limitations with an ECDIS 'Back-up' system, when provided by paper charts, e.g. if it should not be required to support berth to berth navigation.
- e. Consider the broad future of SNC, including the three use cases presented



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Thank you very much!
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