

Nautical Chart Manual Reformatting Project

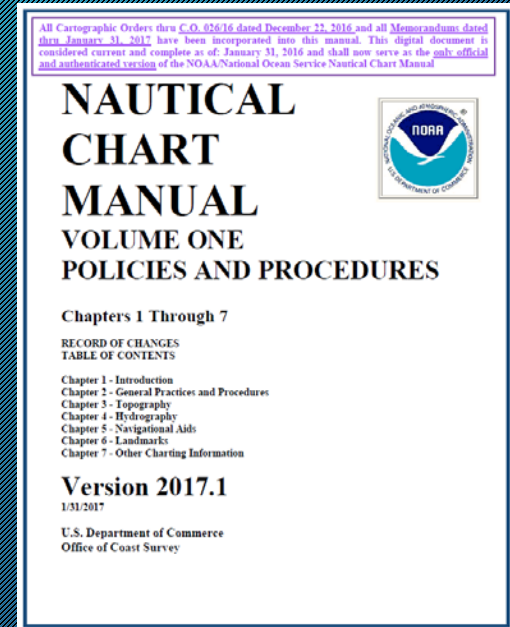


Ence, C., Pe'eri, S., Macek, J., Bartlett, M., Harmon, C., and J. Nyberg
Office of Coast Survey
US Hydro Conference

What is the Nautical Chart Manual?



- History
 - First edition (1920): 34-page pamphlet
 - Seventh edition (1992): ~3,000 pages and three volumes
- Chart compilation guidance
- Symbolology and type specifications
- Projection and datum descriptions
- Unit conversion and rounding rules
- ENC (S-57) encoding rules



Why are we reformatting?



- Information is scattered throughout multiple volumes
 - Prose format
 - New personnel have difficulty finding the important information quickly
 - Updates can be complicated

requestor of similar authority, if the feature is shown on the charts for reasons.

The crossing locations are charted from NOS charts, Hydrographic Surveyors, and similar authoritative sources. The crossing label for cables from these sources due to the lack of a standard label. The preliminary label "OVERHEAD POWER" is used for any cable where identification is questionable. The cables are referred to the Nautical Data Branch for clarification.

The structures that are of landmark value and are shown on the charts are marked with the appropriate landmark symbol and label.

The clearances is maintained by the Nautical Data Branch. The files were compiled primarily from information from construction permits, as well as from other sources.

“ENC-First” Workflow



“At station W-8, install 220 linear feet of 2 inch diameter **fiber optic cable** aerially using **existing utility poles** over the **Grand River South Channel**, with a minimum elevation of 597.5 feet or **20 feet** above the L WD elevation of 577.5 IGLD 1985.”

PERMIT: LRE-2011-00065-N12
Registered as: L-715-2014
Date: 11/10/2012



Aerial

Proposed fiber optic cable on existing utility poles.

OVHD PWR CABS AUTH CL 20 FT
Hall's lot Cntr

Field Name	Field Value
<input checked="" type="checkbox"/> OBJECTID	5
<input type="checkbox"/> LNAM	US002076132400050
<input type="checkbox"/> RCID	1278
<input type="checkbox"/> PRIM	2
<input type="checkbox"/> GRUP	2
<input type="checkbox"/> OBJL	21
<input type="checkbox"/> RVER	1
<input type="checkbox"/> CATCBL	power line
<input type="checkbox"/> SORDAT	20121002
<input type="checkbox"/> SORIND	US,US,reprt,L-715/14
<input type="checkbox"/> VERCLR	6
<input type="checkbox"/> VERCSA	<Null>
<input type="checkbox"/> SCAMIN	44999
<input type="checkbox"/> INFORM	Cables

Update Attributes

Apply Save Template



U.S. Department
of Homeland Security
United States
Coast Guard

LOCAL NOTICE TO MARINERS

District: 9

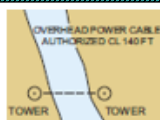
Week: 18/14

What do we need?



1. Charting information kept in one place (“One Stop Shop”)
 - ENC
 - Raster
2. Reflect the new “ENC-First” workflow
3. Organization and content similar to IHO’s S-4
4. Simple to update and track changes

B-382.1
D 26.1



Cable, Overhead Power

Line

CABLE A stranded conductor or an assembly of two or more electric conductors insulated from each other, but laid up together with a strong, waterproof covering. (IHO Dictionary, S-32, 5th Edition, 589)

Encoding	S-57	S-101
Object Class:	Cable, overhead (CBLOHD)	
Attribution:	CATCBL VERCLR	1 (power cable) Populated in feet/meters or -32767 (unknown)
Symbology	NCS-I	NCS-II
Color:	Black 00	
Line Pattern:	LIMITS	LIMITS_L
Label:	SPT LIGHT VERTICAL, BLACK 00, ALL CAPS	

Additional Information

Notice to Mariners Evaluation: Yes

Feature Removal: A charted overhead cable shall be removed when there is conclusive evidence that the feature no longer exists in the charted position. Such evidence shall be from USACE reports, NOS hydrographic surveys, imagery

Record of Changes

Proposed New Format



- Header
 - S-4 / US Chart No. 1
 - Description
 - Geometry
- Definition
- S-57 / S-101 Encoding
- NCS-I / NCS-II Symbology
- Additional Information
- Record of Changes

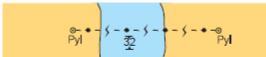
S-4 Comparison



- S-4 contains IHO's regulations and specifications for international (INT) charts
- Started with Section B-300 (S-4, Edition 4.6.0)

S-4

B-382.1 Power transmission lines must be represented, where over or close to navigable waters, by a dashed line with black dots of about 0,6mm in diameter at intervals of about 10mm (or closer where lines cross narrow channels), and with an electric flash midway between each pair of dots.



D26.1

Nautical
Chart
Manual

General Requirements

Overhead cables shall be shown across all charted waterways, including single-line streams. An identifying label shall be charted with each cable, or group of cables, and shall not be removed unless the cable is removed. Clearances shall be added when the waterway is shown with hydrography, a depth legend, depth note, or tabulated depth data upstream of the cable.

NCM
(New Format)

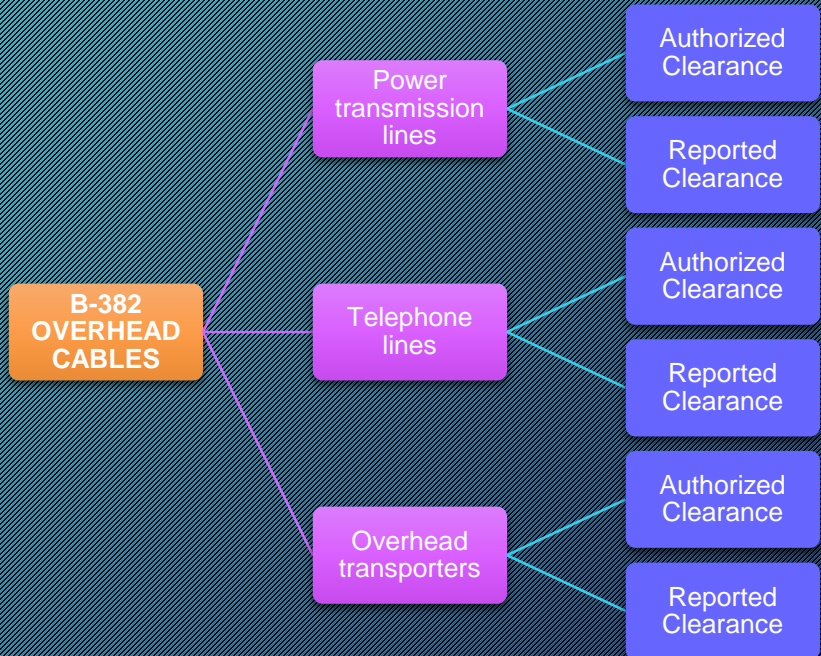
<p>B-382.1 D 26.1</p>		<p>Cable, Overhead Power</p>	<p>Line</p>
<p>CABLE A stranded conductor or an assembly of two or more electric conductors insulated from each other, but laid up together with a strong, waterproof covering. (IHO Dictionary, S-32, 5th Edition, 589)</p>			



Discussion



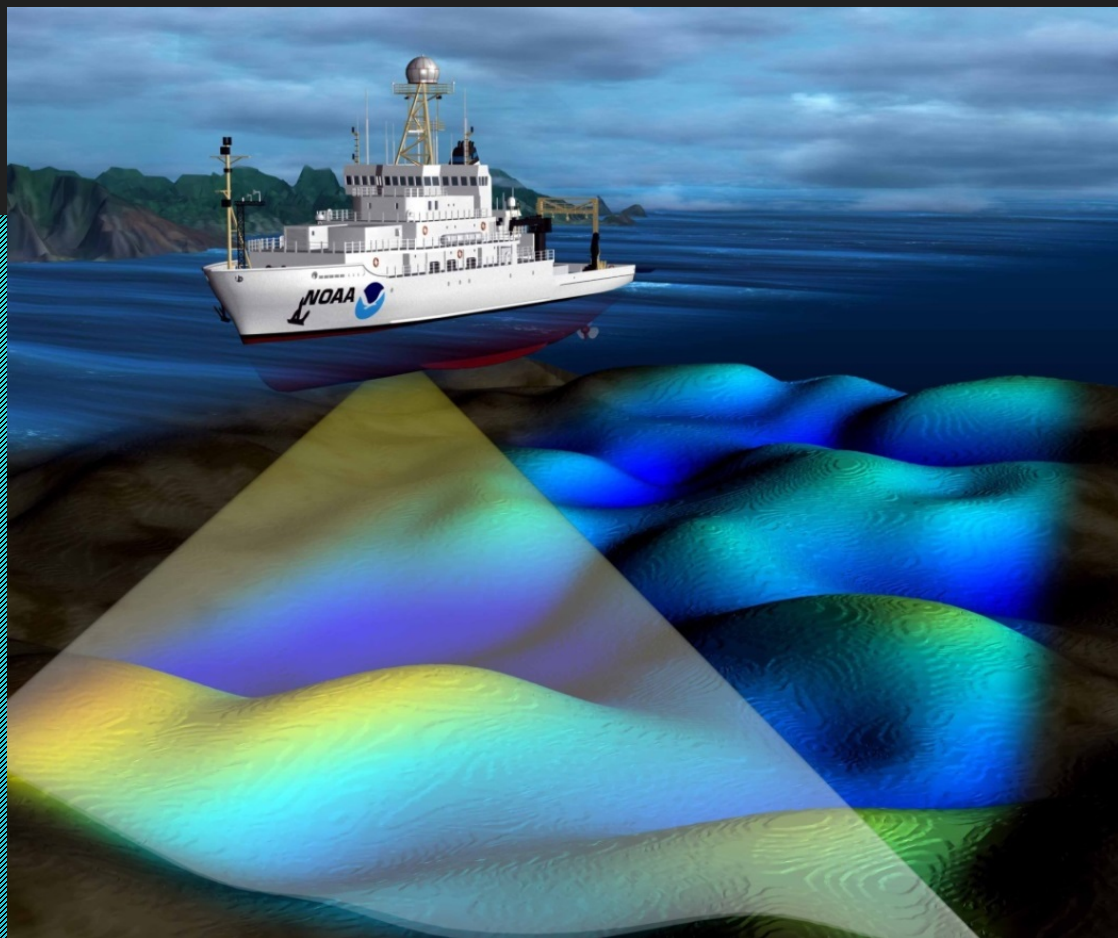
- Started with: 53 sections (B-300)
- After assessment: 176 records (at 75% completion)
- Total: How many NCM Pages?



Conclusions



- Discovering limitations
 - Two documents *do not* have a one-to-one relationship.
 - US Chart No. 1 does not provide examples for all instances.
- Improving workflow
 - Charting guidance should be easy to find for everyone
- Selecting the best medium
 - Standalone pages are difficult to manage
 - Web interface with database driven pages



Thank you!