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Paper for Consideration by CSPCWG
Lights classification

Submitted by:	France (SHOM)
Executive Summary:	Rules to classify lights
Related Documents:	S-4, B-470.5, CSPCWG CL08/2012
Related Projects:	/

Introduction / Background

CSPCWG looks for guidelines about the classification of major lights (see CSPCWG CL 08/2012) in order to improve S-4, B-470.5 and to help cartographers. SHOM uses a classification of lights based on four classes and five levels of representation.

Analysis / Discussion

The French rules are the following:

Lights are divided into 4 classes according to their importance and their use for each type of navigation. The class of a light is not only its range or its power, but also its position and other features. That a light is unwatched or not is irrelevant.

Lights classes are the following:

Class 1 - Inner light: light within the bounds of a port of a closed harbour, of a river, or a narrow passage, which is useful to the sailor when he is engaged in port, the Harbour, the river or the passage. Are not included in this class input or end of pier of port lights which included in the device access to this port, are nevertheless visible from outside and are top class.

Class 2 - Local navigation light or light of approach: outdoor light in a port, a closed harbor or a river, used for navigation in the immediate vicinity of the coast (local navigation), or in the later stages of access to a port or a harbour. Its range is less than 10 miles in the case of lights with fixed support.

Class 3 - Coastal navigation light: light enough important by its situation and its characteristics and required for coastal navigation (located 10 miles from the coast about). Its range is usually 10 to 14 miles for a light with fixed support. Some jetties lights due to their location or their range, can be considered as lights of coastal navigation.

Class 4 - Landfall light: light important which is the first overview from the high seas or light whose range is greater than 15 statute miles. The light float (light-vessel) and landfall buoys or buoys at the entry of traffic separation schemes are usually in this class.

These lights are generally international fires. They are included in capital letters in the books of lights.

Classes 2, 3 and 4 defined above correspond to "Major lights", as opposed to the "Minor lights".

When there is doubt or ambiguity for the classification of a light, it is always classified in the class superior.

Scale of charts	E >1:30 000	1:30 000> E > 1:75 000	1:75 000 > E > 1:350 000	1:350 000 > E > 1:750 000	1:750 000 > E > 1:2 10 ⁶	1:2 10 ⁶ > E > 1:4 10 ⁶
Lights classes						
Inner light	L	L	X	X	X	X
Local navigation or approach light	L	L	S / L	S / L	X	X
Coastal navigation light	L	L	L	S / L	S / L	X
Landing light	L	L	L	S / L	S / L	S / L

L: large symbol

S: small symbol

X: no symbol

The small size should be used on the charts of the classes 3, 4, 5 and 6 for some lights in places where the topographic configuration, given the scale of the chart, allows not the use of the large size.

If the conventions of generalization are that a light must not appear on a chart (see below) (legend of type L0), the landmark or the corresponding buoy shall normally not appear no more.

The classification of lights is also use to determine the level of representation and the details of the legend. In this way, five types of representation and legend have been fixed.

L0: No figuration, neither light nor its support. In general, lights covering, because of their range, only areas where the chart does not allow to navigate, must be disposed of a chart.

L1: Star of light or figuration of the support, simplified or not, flare, fog signal symbol and radio-electric station signal symbol. For lights of class 1, this representation does not include in general fog signal symbol.

L2: Light star or figuration of the support, flare, with a legend given the type of light, the complete rhythm, colors, range (this item will be omitted for the least important lights, at the smallest scales and generally for buoys). For lights of class 1, this representation contains the period instead of the range.

L3: The previous type representationsupplemented by an indication of the period of the light, of the period and the nature of the fog signal, as well as by the characteristics of the possible radio beacons.

L4: Full representation, corresponding to the preceding L3 type, to which are added elevation of the light source (and the range for lights of 1 class). For floating marks, this representation therefore concerns only the most important elements (Light-vessel and Superbuoy).

Scale of charts	E >1:30 000	1:30 000> E > 1:75 000	1:75 000 > E > 1:350 000	1:350 000 > E > 1:750 000	1:750 000 > E > 1:2 10 ⁶	1:2 10 ⁶ > E > 1:4 10 ⁶	1:4 10 ⁶ > E
(category of the chart)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lights classes and type of support							

1	fixed	L4	L2	L0	L0	L0	L0	L0
	floating	L3	L1	L0	L0	L0	L0	L0
2	fixed	L4	L3	L2	L1	L0	L0	L0
	floating	L3	L2	L2	L1	L0	L0	L0
3	fixed	L4	L4	L4	L3	L0 ⁽¹⁾	L0	L0
	floating	L3	L3	L3	L2	L0	L0	L0
4	fixed	L4	L4	L4	L3	L2	L1	L1
	floating	L3	L3	L3	L3	L2	L0 ⁽¹⁾	L0

⁽¹⁾ Exceptionally L1

Notes:

a/ This table is prepared for mean values of the scale of the charts in their category and for an average importance of marks in their class. In addition, it is assumed that the area concerned is covered by a homogeneous set of charts at well distributed different scales and is a navigation area of normal difficulty equipped of a standard European-style markup.

Adjustments are to do when departure from these conditions. It will be particularly taken into account the following:

- When there is ambiguity on the level of representation of a mark, it is still represented in the higher category. The distribution of marks between class 3 and class 2 can be tricky.
- The choice of the types of representation shall be determined so that the chart gives mariners to sufficiently complete information for the type of practiced navigation regardless of the additional information contained in literature (lists of lights, sailing directions...). Nevertheless, the chart must remain clear and for this purpose the different types of representation may be simplified by deleting some non-priority items. *The order of these items is fixed in paragraph 4.8.3.3.3.c with respect to lights.*
- Inner lights marking the ends of the piers will have a type of representation limited to L1 (Star and flare) even at the larger scales if they do not have a particular interest for navigation.
- On the 4 category charts, buoys marking the channel does are not represented, with the exception of the entrance buoys. The fairway is so indicated.

b/ Rating of a chart in its class is carried at the time of its publication or edition. This classification is sometimes theoretical, because in some cases a portion of the chart is used for navigation that would normally require a map of lower category,

- Either because there is no such a chart
- Either because a chart change is not necessary given the followed road.

In this case it is therefore necessary to consider that part of the chart (especially for the representation of the aids to navigation) is classified in the lower category; This leads to describe certain marks with a higher type of representation than what would be normal in the matter of the category of the chart.

Conclusions

This proposal could constitute a reference to complete the current explanation in the S-4 and provide some guidelines “easier” to follow by the cartographers.

Recommendations

France recommends the CSPCWG to examine these additional guidelines.

Justification and Impacts

France thinks that the content of S-4 on this topic can be improved to increase standardisation of nautical charts.

This proposal could be examined and approved by CSPCWG later by a circular letter as the subject is relatively complex.

This way of classification needs to classify each mark and type of charts in database in order to get an automatic classification. SHOM has done like this since two decades at least.

Action required of CSPCWG

The CSPCWG is invited to:

- c. note this proposal and examine the possibility of improving S-4 in a more “specified” way as it is written above.