

**13<sup>th</sup> CHRIS MEETING**  
**17-19 September 2001, Athens, Greece**

**COLOURS & SYMBOLS MAINTENANCE WORKING GROUP**  
**- ACTIVITY REPORT (SEPTEMBER, 2001) -**  
(excluding the 12<sup>th</sup> C&SMWG Meeting, IHB, Monaco, 12-14 September 2001)  
(*Brent BEALE, CHS*)

At the November 1999 meeting of the Colour and Symbols Maintenance Working Group a work program was established. In addition, supplementary work was identified at the joint C&SMWG/TSMADWG meeting held in Monaco in September 2000. While the results of some of those activities are incomplete the following represents a brief progress and activity report on the program.

**PUBLISHED AMENDMENTS TO S52**

At the request of the TSMADWG, an analysis of changes to S52 stemming from modifications to S57 edition 3.1 was made. The adopted amendments include changes to the PL (look-up tables, symbol library, and conditional symbology procedures for “restricted areas”) and have been published by the IHB as Maintenance Document #3. A temporary .dai file has been produced under contract and it is available from the IHB.

As a result of changes to the tolerances for ECDIS monitor calibration defined in IEC 61174, the corresponding amendments to S52 have been drafted and are planned to be published by the IHB this year.

**DEVELOPMENT**

**Single Colour Palette**

ECDIS manufacturers have experimented with colours and in some cases developed effective colour schemes resulting in fewer colour palettes and a sharper contrast in data presentation. A single colour palette scheme has been developed (DAY-BLUE) which attempts to use darker blue colours integrated with more vivid navigational aids colours.

In February 2001, Mr. Steve Grant (CHS retired) was contracted to examine outstanding ECDIS display issues that have been identified by Canadian mariners. He was asked to identify and isolate those problems in order to develop an action plan that will attempt to improve the Presentation Library.

Initially, Steve worked with our contractor to develop the specifications for the DAY-BLUE palette and a prototype PL with the new palette included. Several copies of that PL were distributed to shipping companies and to the ECDIS manufacturers who serve those companies. Our hope is that manufacturers will incorporate this developmental Presentation Library into the ECDIS so that feedback from mariners can be obtained and then passed to C&SMWG members.

If the results are favourable then the C&SMWG will consider this change to the official IHO Presentation Library.

**Reduce the Number of Palettes**

The current Colours and Symbols Standard for ECDIS specifies five colour tables. They are intended to provide the mariner with a system in which all critical information will be visible under all levels of illumination encountered on the bridge of a ship without adjusting the contrast and brightness controls on the monitor. However, based on observation of operational systems, mariners do not necessarily

make use of all the tables. Instead they use a subset of the tables and adjust the monitor controls to make the display brightness consistent with the ambient illumination.

A contract was undertaken with the Defense and Civil Institute of Environmental Medicine (DCIEM) in Toronto, Canada to determine if the number of colour tables could be reduced. The study has been completed and concluded that three new colour tables could replace the current five palettes specified in the standard when the brightness and contrast is adjusted by the operator.

### **Simplify Monitor Calibration**

A second part to the DCIEM contract was to examine methods that would simplify the calibration process of ECDIS monitors. The primary means of simplifying calibration was to:

1. reduce the number of measurements made during the characterization process and/or;
2. reduce the number of colours that need to be measured during the verification phases of the measurement process.

The full report concluded that these methods not be used to simplify the characterization process in the calibration of ECDIS monitors.

### **SYMBOLIZATION CHANGES**

Based on using the Presentation Library at sea with type approved ECDIS several important changes have been developed to address concerns raised by mariners. These proposed changes would help to clarify the presentation of ENC features and include three significant issues:

#### **No Data/Unsurveyed Areas**

The Australian HO pointed out that there is a requirement to increase the prominence of potentially dangerous unsurveyed and partly surveyed areas. The proposed solution is to symbolize the area boundary with the same prominent line style as the safety contour.

#### **Dredged Areas**

Canadian Mariners have complained that the pattern of gray dots indicating a dredged area obscures the display of the own ship symbol. The Captain of a 1999 sea trial vessel in the Great Lakes noted that he needed to have the dredged depth immediately available, without cursor inquiry.

The solution adopted is to symbolize these areas similar to the presentation on the paper chart (white background, dashed boundary) and a centered symbol with a dredged value.

#### **Overscale Areas**

Many objections have been heard regarding the vertical line symbolization of the overscale portion of a display compiled from ENCs of different navigational purposes.

The proposed solution is to go back to the old centered symbol OVERSC01, consisting of two concentric squares, intended to illustrate expanded data.

#### **Labeling the Safety Contour**

Since the contours available in the ENC vary widely from one area to another, the default contour selected by the conditional symbology procedure will change, often quite frequently. Consequently the mariner will seldom know what contour he is seeing highlighted as the safety limit. The proposed solution incorporates the use of contour labeling on the safety contour to avoid any confusion about the depth of the displayed safety contour.

#### **OTHER**

Canadian Hydrographic Service staff received training in using the software required to construct PL amendments.

Mr. Goodyear (C&SMWG Chair) and Mr. Roberts (C&SMWG Secretary) indicated to the IHB early in the summer of 2001 that they would stand down from those positions and they have subsequently resigned. In addition, Mr. Beale, who assisted Mr. Goodyear, will no longer be available to provide technical co-ordination of the work.