18th CHRIS MEETING
Cairns, Australia, 25.–29. September 2006

REPORT OF THE CHRIS COLOURS & SYMBOLS
MAINTENANCE WORKING GROUP (CSMWG)

From June 2005 – June 2006

Submitted by:	Mathias Jonas, Germany
Executive Summary:	Report on the work undertaken and progress made by the Colours and Symbols Maintenance Working Group, since CHRIS17, and future plans
Actions to be taken:	CHRIS to note the report, and endorse the future plans.
Related documents:	CHRIS letter No. 1/2006 (call for reports)
Related projects:	Not applicable

1. Chairman: Dr. Mathias JONAS (Germany)

    Tech. Co-ordinator: vacant

    Secretary (acting): Mr. Chris ROBERTS (Australia)

2. Membership: IHO   ***Australia***, Canada, Finland, ***France***, ***Germany***, ***Norway, UK, USA, Venezuela***

                  Non-IHO   ***SevenCs***, NDI, C-Map, CARIS, Offshore Systems Inc., Canadian Coast Guard, , DCIEM (Canada), Furuno Finland, ***GEOMOD***, ***Jeppesen Marine, Transas Group***, Raytheon Marine, Kelvin Hughes, USCG, ***SAM Marine Electronics***, CIRM, IEC TC80, **DNV Type Approval**, Wismar University

3. Meetings: CSMWG16 Meeting 29.–31. May 2006 in Monaco at IHB (Attendees of CSMWG16 marked in bold/italics)

4. Activities Actions resulting from CHRIS17 minutes (see Section A)

                        Actions resulting from CSMWG16 Agenda (see Section B)

Section A: Actions resulting from CHRIS17 minutes

Draft symbolisation for S-57 e 3.1.1 added objects.

For the new objects, object attributes and attributes values proposed by the S-57 Supplement No. 1, new symbolisation is proposed for CHRIS 18 approval. Details of the proposal are contained in Annex A of this report.

Reconsider the "linear depth areas" issue at its next meeting and C&SMWG Chair to prepare a paper on the matter, including proposed action, for submission to CHRIS18.

In order to depict the safety contour correctly for the whole variety of coded line objects and area objects in combination with user settings, the current method to detect the safety contour currently included in the PresLib was revised and will be issued as a deferred amendment to PresLib 3.3. The software implementation for new and existing systems should be jointly forced with the introduction of the S-57 Supplement No. 1 objects and the visualisation attached to it. Along the dates of this road map plus a grace period to be defined by CHRIS national HO´s are requested to continue the encoding of linear depth areas.

For adaptation of the Presentation Library to future S-100 series, assess and monitor the move towards Symbolization Registry System.

Based on investigations made under contract between CSMWG and a consultant from ECDIS industry, it was discussed how the existing PresLib could be developed towards compliance with future products based on S-100 series. It was decided that the consultant will continue to participate DGWIG work on portrayal registries for hydrographic data. The sorting out of symbols and colours of the PresLib to form a symbol specifications registry will be continued under contract in the same way as the sorting out of CSPs and look up table entries of PresLib to form a portrayal/feature rules registry. It is expected to get first draft versions of such registries in ISO compliant form by CSMWG17 in June 2007. Until this target date the hired consultant will further investigate three alternative options to host the registry of symbols as well.

Make the description of ECDIS symbols (PL Addendum) available free of charge on the IHO website.

The PL-addendum is available for free download under :
www.iho.shom.fr/publications/downloadlist

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continue low-level maintenance of PL e3.3, including the necessary support for S-57 E3.1.1.

See section B/technical issues of this report

<u>Section B: Actions resulting from CSMWG16 Agenda</u>

Technical Matters

Presentation of S-57 3.1.1 compliant data in type approved ECDIS devices not providing the compliant visualisation.

The principles in place for symbolisation of unknown objects and known objects carrying unknown/invalid attributes and/or unknown/invalid attribute values are sufficient and, consequently, there is no need to change the rules of the PresLib. However, insufficient logging of the existence of such combinations and bad accessibility of the inform attribute values should course in enhanced requirements for affected ECDIS functionality. Resulting actions of CSMWG are as follows:

- Draft CSMWG bulletin entry to explain that some ECDIS may not be able to display/access attributes of such objects
- Check for possible clarification of PL User´s Manual that even for unknown objects INFORM and/or TXTDSC attributes must be accessible for display and picking (potential Deferred Amendment)
- Advice TSMAD to mandate coding of INFORM/TXTDC for such unknown objects/known objects with invalid attribute and/or invalid attribute value)
- Raise at CHRIS18 for possible IHO letters to CIRM, IEC TC80 and Type Approval Authorities and other stakeholders to report proper symbolisation but unsatisfactory logging and picking
- Proposed enhancements of tests for processing of unknown objects, attributes and attributes values to IEC (see action items of 5.2 above)
- advice IEC /TC80/WG7 ECDIS to add a test for logging and picking of unknown objects/known objects with invalid attribute and/or invalid attribute value (proposed changes to IEC 61174 6.5.1.c and d contained in CSMWG16-5.2F)

Bearing of a directional light

In order to avoid visualisation of a directional light bearing by two different lines a special method of encoding is forwarded to TSMAD to create an appropriate entry at the ENC bulletin board for encoders

Symbology for tide ways

New symbolisation was adopted for line objects für tide ways to become a Deferred Amendment of PresLib, Edition 3.3

Pontoons as Group 1 / PERSTA, PEREND

The advice not use PER- and DAT-attribution for Group 1 objects is forwarded to TSMAD to create an appropriate entry at the ENC bulletin board for encoders

Use of FOULGND1 for WRECKS of CATWRK 3

In order to show the "hash"-symbol for CATWRK means "distributed remains of wrecks". even if VALSOU is known, a new look up table entry is developed to become a Deferred Amendment of PresLib, Edition 3.3

Introduction of alternating colours for sector lights	For a light construction providing alternating colours over same sector encoding tests will be conducted. The results will be forwarded to TSMAD to create an appropriate entry at the ENC bulletin board for encoders.
Revised CSPs to visualize Soundings over dangers	The introduction of this new CSP is pending until the ongoing revision of the M-4 part affecting the classification of wrecks is finalised. The planned new CSP of special shape is to become a Deferred Amendment of PresLib, Edition 3.3.
Display priority of UNSARE-objects	Display priority of UNSARE-objects was lowered to '1', as defined for all group 1 objects to become a Deferred Amendment of PresLib, Edition 3.3.
LNDARE point features	For depiction of LNDARE point features a new look up table entry was developed to become a Deferred Amendment of PresLib, Edition 3.3
Display of DGPS stations	An special symbol was developed to become a Deferred Amendment of PresLib, Edition 3.3

Operational Matters

Review of CSMWG entries on the IHO web site	The content of the IHO websites presenting scope and activities of CSMWG was fully revised and adapted to the common IHB web site structure. Special advice will given to stakeholder for re-testing of selected items affected by new symbology with regard to type approval
Set up of a new deferred amendment compilation for PresLib Edition 3.3	The deferred amendment Paper No.5 will include all amendments adopted at CSMWG15 and CSMWG16 and posted at the IHO website under /publications/download list
Road map for new PresLib Edition 3.4 to be set in force jointly with S-57, Edition 3.1.1	Annex B of this report contains a proposed road map for introduction of PresLib Edition 3.4 absorbing all deferred amendments adopted since CSMWG15 and include symbolisation of S-57 Supplement No. 1 in a joint approach with the setting in force of S-57 Edition 3.1.1. It is suggested to mandate the implementation of both components after 1.1.2008 for all new systems to be installed and existing systems who seriously used to fulfil the SOLAS-carriage requirements with nautical charts. CHRIS18 is requested to discuss the road map and the effects of such an approach to the stakeholders and the strategy to communicate these decisions.
Reorganisation of CHRIS as HSSC	CSMWG members are concerned about the proposed structure of future HSSC locating the TSMAD-succesor under the DATS Sub-comittee whereas the CSMWG-successor will be placed under a different Sub-committee SDPS .It is not clear how both subordinate bodies which are closely linked by their tasks will communicate in future – directly or only via the extra step through the sub-committee which will probably lead to delays and a loose in co-operation.

Contribution to IHO work program 2008 – 2012	CSMWG members stating that their expertise is limited to current model of visualisation of chart content provided by the PresLib in place. Any continuation in chart display standardisation after 2008 to set up visualisation rules for S-100 compliant products will make a reconstitution of the affected subordinate body necessary. Those individual who will take over this task in this time frame should have excellent knowledge about S-100 products as well software technology to deal with. The CSMWG in its current shape has therefore very limited abilities to contribute to a strategic planning of such a wide timely horizon based on technology which is not within the core of their expertise.
Status of IMO discussion about revised ECDIS PS and future ECDIS carriage requirements	IMO approves revised IMO PS at NAV52, CSMWG will put a revision of S-52 on the agenda of CSMWG17 in 2007. This revision would aim to • Delete App. 1 Update (absorbed bei IMO PS) and App. 3 (absorbed by IHO Hydrographic dictionary) • Merge App.2 with S-52 main document to become the new main document • Rename S-52 to 'Colours&Symbols Specifications for ECDIS Presentation Library' • Issue as S-52, Edition 3.4 by end of 2007

Liaison Matters

IEC TC80 WG13 – status of development of IEC 62288	Due to the decision of CHRIS15 the CSMWG concentrated the PresLib on chart symbols, while IMO handle navigational symbols assisted by IEC. CSMWG recommended input for colours for navigational symbols (to avoid conflict and arrange testing) was intentionally kept out from IMO SN CL243 because these requirements apply to the whole range of navigation requirements including bicolour displays. Instead IEC is currently defining this level of presentation details in the IEC 62288 which is close to finalisation. CSMWG will comment the announced CDV a soon as available.

Annex A

Proposal of colours and symbols used to display the new object classes to be introduced in S-57 Ed. 3.1.1

1. Presentation of ESSA / PSSA

Revised INT1 of November 2005 specifies ESSA boundaries in green and PSSA boundaries in magenta colours (N 22). In the very likely case that an ESSA covers an intertidal area (example: the Dutch and German Wadden Sea), the green boundary will be nearly invisible on the intertidal green background. In addition the radar overlay is making use of greenish colours which would superimpose the boundaries. Therefore, only the magenta colour for the purpose of <u>both</u> ESSA and PSSA boundary visualisation in ECDIS is stated as useful option. The visualisation should be supplemented by a centred symbol of the text string "ESSA" or "PSSA".
According to the proposed enhancements of the ENC Product Specification, area type ESSAs and PSSAs are encoded as objects of class RESARE, whereas point type ESSAs and PSSAs are encoded as objects of class CTNARE.

The following entries into the look up tables for ESSAs and PSSAs of point type and area type are proposed.

1.1 ESSA

Point: Point symbol "chinfo06", display priority 4, over radar, display category STANDARD, viewing group 26050
"CTNARE","","SY(CHINFO06)","4","O","STANDARD","26050"

Area: Centered point symbol "essatext" with boundary linestyle "essapssa", display priority 5, sub radar, display category STANDARD, viewing group 26010
 "RESARE","CATREA27","SY(ESSATEXT);LC(ESSAPSSA)","5","S","STANDARD","26010"

1.2 PSSA

Point: Point symbol "chinfo06", display priority 4, over radar, display category STANDARD, viewing group 26050
"CTNARE","","SY(CHINFO06)","4","O","STANDARD","26050"

Area: Centered point symbol "pssatext" with boundary linestyle "essapssa", display priority 5, sub radar, display category STANDARD, viewing group 26010
"RESARE","CATREA28","SY(PSSATEXT);LC(ESSAPSSA)","5","S","STANDARD","26010"

1.3 Presentation example of ESSA and PSSA

These new look up table entries for ESSA and PSSA would result into the display presentation as shown in Fig. 1. The symbol definition to be added to the PresLib is shown in Fig. 1 A.

Fig 1. ESSA and PSSA (Centered Symbol and Boundary)

Symbol Name:	SY(**PSSARE01**)
	RN: 519

Symbol Explanation:	PSSA - centered symbol
Look up table affected:	CSP …
Pivot Point Column:	6.35
Pivot Point Row:	6.35
Width of Bounding Box:	12.70
Height of Bounding Box:	5.00
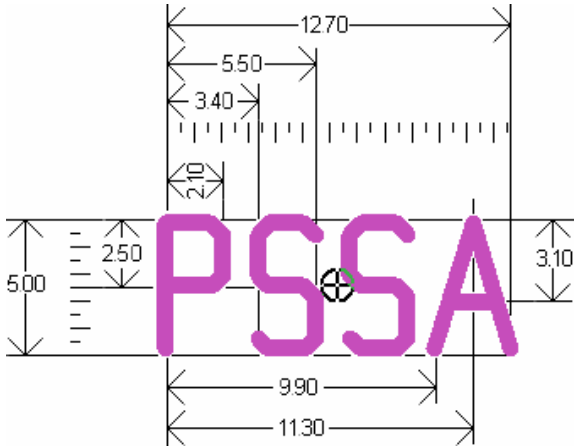
Symbol Colours:	■	CHMGD
Comments:	Line weight 0.6 mm	
Examples on ENC:	N/A	

References:

S57		INT 1
RESARE	N22	*PSSA*
		PSSA

Figure 1 A: Symbol definition of centred Symbol for PSSA to be amended to the PresLib Addendum

2. Presentation of ASL

The proposal for the display of ASL on ECDIS follows the specification for ASLs (M 17) revised INT1 of November 2005. The resulting look up table entry reads as follows:

2.1 Archipelagic Sea Lane
Area: Boundary linestyle "aslare01", display priority 5, sub radar, display category OTHER, viewing group 35020
"ARCSLN","","LC(ASLARE01)","5","S","OTHER","35020"

2.2 Archipelagic Sea Lane Axis Line
Line: Dashed line, 2 pixels wide, colour CHMGF, display priority 5, sub radar, display category OTHER, viewing group 35020
"ASLXIS","","LS(DASH,2,CHMGF)","5","S","OTHER","35020"

2.3 Presentation example of ASL

These new look up table entries for ASL would result into the display presentation as shown in Fig. 2. The symbol definition to be added to the PresLib is shown in Fig. 2 A.
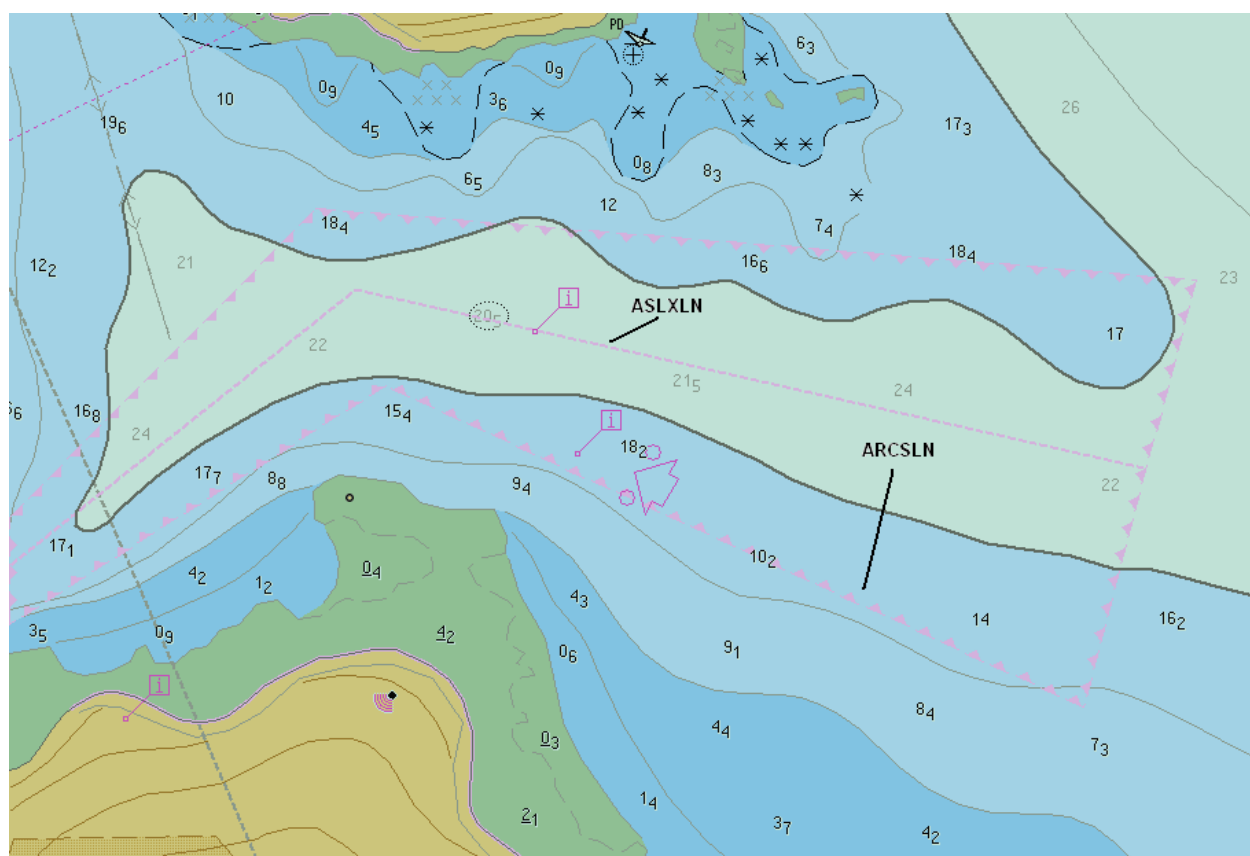

Fig. 2 ASL (Boundary and Axis Line)

Symbol Name:	LC(**ARCSLN01**)
	RN: 520

Symbol Explanation: boundary of archipelagic sea lane
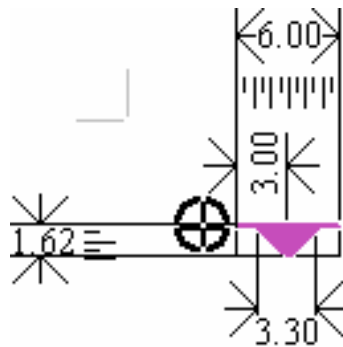
Look up table affected: area symbols with plain boundaries
                            area symbols with symbolized boundaries

Pivot Point Column: -2.00
Pivot Point Row: 0.00

Width of Bounding Box: 6.00
Height of Bounding Box: 1.62

Symbol Colours: [■] CHMGD

Comments: Line weight 0.3 mm

Examples on ENC: N/A

References:

S57	INT 1	
FAIRWY	M17	▲ ▲ ▲

Figure 2 A: Symbol definition of boundary of archipelagic sea lane to be amended to the PresLib Addendum

3. Presentation of Generic Object

For the presentation of such Objects CSMWG suggests to different approaches which do not rule out each other. On the contrary, both solutions could be adopted because they cover different options of application.

First Approach

Because there's no further information available (beside the value of the attribute INFORM), a well known attention grabbing symbol seems to be appropriate as <u>default</u> symbolisation. To distinguish a generic object symbol from the standard "Non ENC object" symbol (magenta question mark), an exclamation mark shaped in a magenta filled circle is proposed. The new symbol is proposed to be named 'GENATT01' (general attention).

The following entries into the look up tables for Generic Objects of point, line and area type are proposed:

Point symbol "genatt01", display priority 6, sub radar, display category STANDARD, viewing group 21020
"GENOBJ","","SY(GENATT01)","6","S","STANDARD","21020"

Line: Linestyle genatt01" , display priority 6, sub radar, display category STANDARD, viewing group 21020
"GENOBJ","","LC(GENATT01)","6","S","STANDARD","21020"

Area: Centered point symbol "genatt01" with dashed boundary, display priority 6, sub radar, display category STANDARD, viewing group 21020
"GENOBJ","","SY(GENATT01);LS(DASH,2,CHMGD)","6","S","STANDARD","21020"

3.4 Presentation example of Generic Objects according to Approach No. 1

These new look up table entries for GENOBJ according to this approach would result into the display presentation as shown in Fig. 3. The symbol definition to be added to the PresLib is shown in Fig. 3 A.
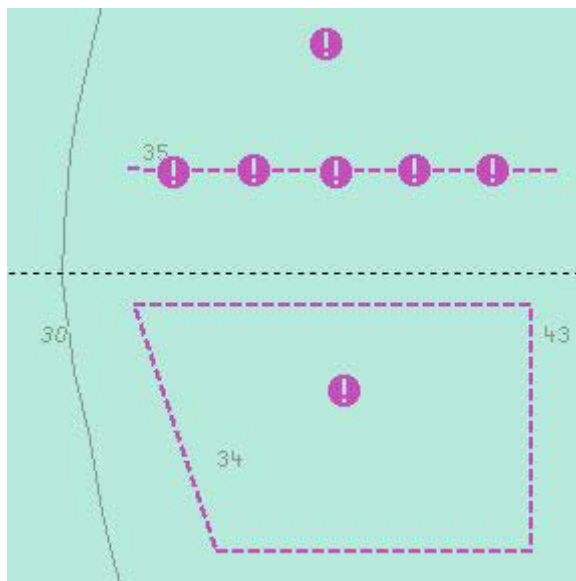
Fig. 3 GENOBJ (Generic object)

| Symbol Name: | SY(**GENOBJ01**) |
| | RN: 522 |

Symbol Explanation: unknown object

Look up table affected: paper chart point symbols
                              area symbols with plain boundaries
                              simplified point symbols
                              area symbols with symbolized boundaries

Pivot Point Column: 3.00
Pivot Point Row: 3.00

Width of Bounding Box: 6.00
Height of Bounding Box: 6.00
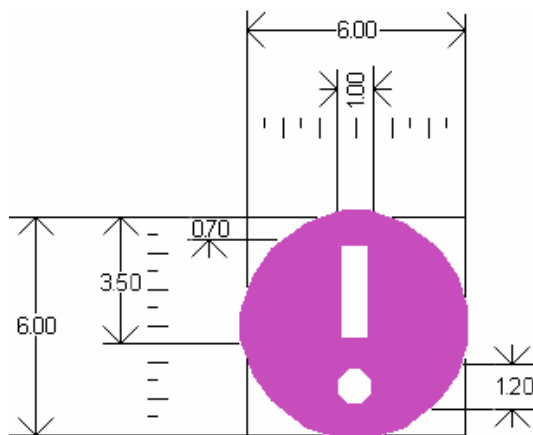
Symbol Colours: [■]   CHMGD

Comments: Line weight 0.3 mm

Examples on ENC: N/A

References:

S57	INT 1
N/A	N/A	

Figure 3 A: Symbol definition of generic object symbol to be amended to the PresLib Addendum

Second Approach

As stated for the use of the GENATT01 to depict the GENOBJ, its visualisation is a generic one, what means that the symbol does not explain its purpose more visually than grabbing attention. For the user it remains to pick it up if he wants to learn more about the nature and the designation of this object. The second approach proposed by CSMWG to visualize such objects in a more individual way is a de facto re-animation of the concept of cartographic objects known from earlier editions of S-57 and PresLib. This method effectively binds a direct call of a symbol by its dedicated PresLib symbol name to the encoded object. This call would be activated by a new optional attribute (tentatively) called SYMNAM. If this new attribute is populated with a valid symbol name from the PresLib (to be taken from the PresLib, Edition 3.3 Addendum), the specified symbol will be displayed on ECDIS. If this new attribute is not populated, the default symbology as described under "First Approach" will be displayed. This approach is providing encoders with an option to select the symbol they think best reflects the nature of the feature. It may be a precursor to S-101 where the portrayal may become part of the product specification.

This solution seems to be an elegant one – however advance discussions with ECDIS stakeholders have to be made in order to estimate the needed efforts in software adaptation on ECDIS manufacturers and data production side.

Annex B

Road map how to implement and set S-57, Edition 3.1.1
and PresLib, Edition 3.4 jointly into force

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┌─────────────────────────────┐         ┌──────────────────────┐
│ ▸ S-57 Supplement No. 1      │────────▶│ ▸ S-52 PresLib       │
│   New Obj/Attr/Attr Value    │         │   New Symbols        │
└─────────────────────────────┘         └──────────────────────┘
             │                                      │
             ▼                                      ▼
┌─────────────────────────────┐         ┌──────────────────────┐
│ ▸ 30 July 06                 │◀────────│ ▸ 15 July 06         │
│   Adoption TSMAD             │ ◀╌╌╌╌╌  │   Proposals for      │
└─────────────────────────────┘         │   symbolisation      │
             │                          └──────────────────────┘
             ▼
┌─────────────────────────────┐
│ ▸ Sept 06                    │
│   Stakeholder                │─────┐
│   Adoption CHRIS             │     │
└─────────────────────────────┘     ▼
             │              ┌──────────────────────┐
             ▼              │ ▸ CSMWG17 June 07     │
┌─────────────────────────┐ │   Draft Immediate     │
│ ▸ Dec 06,               │▶│   Amendment           │
│   IHO Member            │ └──────────────────────┘
│   States                │            │
└─────────────────────────┘            ▼
             │              ┌──────────────────────┐
             ▼              │ ▸ PresLib. Edition 3.4│
┌─────────────────────────┐ └──────────────────────┘
│ ▸ Implementation        │◀──────────┘       │
│   of S.57, E3.1.1 &     │                   │
│   PresLib, E.3.4        │                   │
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│ ▸ 1.1.08 Set jointly in force for new and │◀┘
│   existing systems                        │
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