

**6th CSPCWG MEETING
IHB, Monaco, 1-3 December 2009**

Paper for Consideration by CSPCWG

Supplementary Internal Graduation

Submitted by:	UK
Executive Summary:	UKHO has received significant amounts of customer feedback implying strong preference from many chart users for additional internal graduation.
Related Documents:	S-4 B-212.8, INT2.
Related Projects:	None

Introduction / Background

UKHO has received significant amounts of customer feedback implying strong preference from many chart users for additional internal graduation. UKHO has therefore changed its policy not to add internal graduation to modified facsimile (adopted) charts. Wherever the producer nation allows, UKHO will add internal graduation.

Analysis / Discussion

S-4 B-212.8 states: Supplementary (subsidiary) internal graduation may be used for skewed charts (see B-212.9). They may [should?] also be inserted on other charts (particularly those with additional folds) to facilitate plotting. This is particularly useful for users when the chart is folded back, so that the border graduation is not accessible.

Supplementary graduated meridians and parallels should be spaced not more than 450mm apart. Any plans with a side longer than 450mm should also include additional internal graduation. The graduations should be labelled at the same interval and using the same style as in the main border graduation, with longitude labels normally above the parallel and latitude labels normally to the right of the meridian. At intersections of graduated meridians and parallels, latitude labels (with N/S qualifier to differentiate them from longitude labels) should be inserted to the right of the meridian and below the parallel, while longitude labels (with E/W qualifier) should be inserted above the parallel and to the left of the meridian. This may be varied to avoid important chart detail [eg by moving the label below the parallel or to the right of the meridian or by the omission of degree figures or the entire label, as appropriate]. At the intersection of a graduated line with an ungraduated line, the latter may be broken to insert a label.

UKHO has received strong user requests for such supplementary graduation on all charts. Apparently, the expense of such traditional navigators' instruments as 450mm brass parallels means that many navigators today are using cheaper and shorter plastic instruments. In order to offset the disadvantages of such instruments, closer meridians and parallels with internal graduation greatly facilitate plotting. (Closer compass roses are another helpful addition).

Conclusions

The addition of internal graduation will enhance safe plotting.

Recommendations

Other HOs may wish to consider UKHO's change of policy, noting feedback from chart users (or producer nations agreeing to modifications on adoption by printer nations).

If considered useful, then S-4 B-212.8 could be amended from 'may' to 'should' as shown in

[] above, to imply that internal graduation is recommended.
The longer sentence in [] could be considered if the recommendation from CSPCWG6-8.4 is accepted.

Justification and Impacts

Justification: enhance safe plotting.

Impacts: minor changes to S-4
Some additional work on NE and NC
Possible changes to chart border software
Possible changes required to INT2

Action required of CSPCWG

The CSPCWG is invited to:

- a. note UKHO's change of policy
- b. consider whether this should be recommended to the IHO community
- c. consider whether any changes are required to S-4 and INT2.