

9th CSPWG MEETING
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Paper for Consideration by CSPCWG

Toroidal buoys

Submitted by:	UK
Executive Summary:	How should toroidal-shaped buoys be charted?
Related Documents:	S-4 (and possibly INT1)
Related Projects:	None

Introduction / Background.

A buoy shaped like a ring in the horizontal plane, usually with a central support and mainly used for oceanographical purposes, is called a **toroidal buoy**.

Extracts from The Mariner's Handbook:

ODAS: The larger moored buoys for use in deep water are can-shaped, the smaller ones for use closer inshore (usually 2–3 miles offshore) are **toroidal**.

ATLAS (Autonomous Temperature Line Acquisition System) buoys have been deployed across the central and eastern Pacific Ocean both North and South of the Equator, and also in the tropical Atlantic Ocean to collect and transmit information relating to ocean currents, temperatures, and related meteorological data. They are **toroidal** in shape, orange and white striped with a mast containing a radar reflector and quick flashing light, and a mooring cable beneath them carrying instrumentation and an anchor. These buoys should be given a clear berth of at least 6 miles.

Note: the large 'can-shaped' ODAS buoys are usually charted by the 'LANBY' symbol Q26. The smaller ones are charted by 'the appropriate buoy symbol' – B-448.3 and B-462.9.

Example of a toroidal ODAS buoy.



Analysis / Discussion.

Comment from a UKHO ENC compiler:

These are inserted on the ENCs as ODAS buoys and 'Buoy shape' left empty with INFORM attributed with '2m Toroidal shape' - I do not think this is particularly good as it just adds to the INFORM clutter. You hardly ever describe the dimension of a buoy and if it is agreed that toroidal is close to a can shape, then I will issue a policy to the team.

Should CSPCWG give a lead (especially as the majority of ENC are compiled from paper charts)?

Should we have a separate symbol for 'toroidal' (doughnut) shape buoys?

If not, which buoy shape is appropriate? 'Pillar' would seem better than 'can', judging from the example graphic. S-4 B-462.5 currently states:

Buoys (other than spars) which are relatively tall in relation to their diameter, but otherwise have no distinctive shape, must be charted by the symbol shown. This symbol should be used for both 'high focal plane' and similar, smaller pillar buoys. In the IALA System, the shape of a pillar buoy has no navigational significance.

As such buoys seem to be used mainly (perhaps entirely) for data collection instruments, their shape does not have an IALA meaning; therefore 'can' is not appropriate. Another possibility would be 'spherical' but that does imply a particular shape which is significantly different from toroidal.

Conclusions.

None

Recommendations.

S-4 B-462.5: Add 'and toroidal-shaped data collection buoys' at the end of the penultimate sentence.

S-4 B-448.3 and B-462.9: Add to qualify 'the appropriate buoy symbol': 'Such buoys are often toroidal-shaped, which should be charted as a pillar buoy'. Amend shape of second example at B-448.3 to pillar.

All the above changes to be 'clarifications'.

INT1: The examples at Q58 (right hand) and Q59 could be amended to pillar buoys instead of spherical.

Justification and Impacts.

Provides guidance for paper chart and ENC compilers.

Avoids introducing a new symbol.

Action required of CSPCWG.

The CSPCWG is invited to:

Consider the options for charting 'toroidal-shaped' buoys.

Advise the WG officers on what action to take.