1. The International Association of Lighthouse Authorities (IALA) has been considering for some time, at the request of the Maritime Safety Committee, the question of unification of marking of wrecks in international waters.

2. The study took account of the fact that in North American waters no distinction is made between the marking of wrecks and the marking of other dangers whereas in European waters wrecks are marked distinctively. Consequently, it was felt that whereas it was not necessary to alter the North American system it was necessary to provide a solution applicable mainly to European waters where the Lateral and Cardinal systems are being used.

3. The system of marking wrecks approved by IALA is given as an attachment to this Circular. The proposed system is an expanded Cardinal system and the lighthouse authorities of the following countries have agreed to introduce it in their areas of responsibility after due promulgation: Belgium, France, Federal Republic of Germany, Italy, Netherlands and the United Kingdom.

4. The Association further believes that the proposed system could be easily introduced on a universal basis by countries which use the Lateral system although the solution was primarily designed to resolve the divergencies that exist in European waters.

5. Care should be taken, in an area where the Lateral system is also used, that the shape of the main buoys of the expanded Cardinal wreck marking system does not lead to confusion. The emphasis should be on plainly distinctive
top-marks. The shapes of the buoys themselves are optional except that they should not be cren, conical or spherical.

6. As the Maritime Safety Committee will consider this matter at its next session (26-30 March 1972) and in view of the fact that so far only limited response to the ILA proposals has been received, it will be appreciated if Member Governments submit their comments to the proposed system and, if possible, indicate whether it could be applicable to them. Such comments will be conveyed to the Maritime Safety Committee to enable it to reach a decision on the possibility of recommending the solution for universal application.

7. It should be noted that ILA is further considering the wider issue of the unification of the buoyage systems at international level.
MARKING OF WRECKS
IN INTERNATIONAL WATERS

PROPOSAL BY THE INTERNATIONAL ASSOCIATION OF LIGHTHOUSE AUTHORITIES

The expanded Cardinal System is described below, marks being placed in the Northern, Southern, Eastern and Western quadrants as necessary.

Normal marking of wrecks

The buoys placed in each of the quadrants shall have the following characteristics:

Northern quadrant (NW to NE)
Shape or Type: Conical
Topmark: 2 green cones, point upwards
Colour: Green with a wide white horizontal median band
Light: Green flashing Morse letter "N"

Southern quadrant (SE to SW)
Shape or Type: Can
Topmark: 2 green cones, point downwards
Colour: Green with a wide white horizontal median band
Light: Green flashing Morse letter "A"

Eastern quadrant (NE to SE)
Shape or Type: Conical
Topmark: 2 green cones, base to base
Colour: Green
Light: Green interrupted quick flashing

Western quadrant (SW to NW)
Shape or Type: Can
Topmark: 2 green cones, point to point
Colour: Green
Light: Green quick flashing.

Wreck buoys should, where possible, carry the letter "W" of if space permits, the word "WRECK" in a distinctive colour.

Any sound signals used on wreck marks shall be such as not to be mistaken for neighbouring sound signals.

The number of buoys required to mark a wreck shall be decided by the Lighthouse Authority concerned having regard to the position of the wreck and natural features or obstructions in the vicinity and to the nearby shipping lanes or channels.

.../...

+ The significance of the topmark is of importance at all times and particularly when it is not possible to provide buoys of the appropriate shape. The cones in each case shall be clearly separated.
Marking of recent dangerous wrecks

In addition to the normal marking described above, each wreck buoy marking a recent dangerous wreck may be reinforced by the temporary use of a supplementary buoy placed as close as practicable to the wreck buoy. The purpose of the supplementary buoy is to warn the mariner of a new danger. It shall be placed on the safe water side of its adjacent normal wreck buoy to provide the mariner with amplified information.

The characteristics of each supplementary buoy shall be as follows:

<table>
<thead>
<tr>
<th>Shape or Type</th>
<th>Spherical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topmark</td>
<td>Orange** in colour and the same shape as the topmark on the adjacent wreck buoy*</td>
</tr>
<tr>
<td>Colour</td>
<td>Orange **</td>
</tr>
<tr>
<td>Light</td>
<td>White quick flashing</td>
</tr>
</tbody>
</table>

The supplementary buoy (or buoys) may be withdrawn when the Lighthouse Authority is satisfied that the details of the recent dangerous wreck has been sufficiently promulgated.

Supplementary buoys should, if possible, carry the letter "W" or if space permits, the word "WRECK" in a distinctive colour.

Any sound signals used on the supplementary buoys shall be such as not to be mistaken for neighbouring sound signals.

Wreck marking vessels

Vessels temporarily marking the site of a recent dangerous wreck shall display as far as practicable the same light and topmark shapes as prescribed for a normal wreck buoy in that position. Where possible such vessels should also display a quick flashing white light at a distance of 2 metres above the flashing green light.


.../...

* The significance of the topmark is of importance at all times and particularly when it is not possible to provide buoys of the appropriate shape. The cones in each case shall be clearly separated.

** The orange colour should be as different as possible from the red of navigational buoys in the vicinity.
Notes:

The proposal for the modified wreck marking described above takes into consideration the following points:

(1) The expanded Cardinal System maintains the green colour as a distinguishing characteristic for wreck marking.

(2) It also uses colour schemes and buoy shapes that are compatible with the Cardinal System employed for marking natural hazards; i.e., conical shape with median band of contrasting colour in Northern quadrant and cylindrical shape with wide median band in contrasting colour in the Southern quadrant.

(3) The marking of the Eastern and Western quadrants remain unchanged.

(4) The topmarks selected for the added Northern and Southern quadrants are double conical topmarks as are the present Eastern and Western quadrant buoys.

(5) The additional coverage in the Northern and Southern quadrants provides the marking Authority with greater flexibility in the number and position of buoys required to adequately mark the wreck. It can be marked with one, two, three or more buoys as deemed necessary to indicate
   (a) the location of the wreck and
   (b) the side of preferred passage.

(6) This proposal does not call for any new techniques nor is it beyond the capabilities of any existing Lighthouse Authority.

(7) This proposal does not require mariners to relearn a "new system" since the Northern and Southern quadrant buoys are similar in shape and colour scheme to those of the present Cardinal System.

(8) The use of a green flashing light in international waters would immediately be associated with wreck marking. The Morse code characters "N" and "A" are not allocated to either the Lateral or Cardinal Systems. They are complementary to each other as are the quadrants which they mark.

(9) The recommendation for the use of the supplementary (orange) buoy presupposes that there will be instances where it will be beneficial to mariners to draw their attention to an abnormal situation, such as an uncharted (recent) wreck, by the introduction of an added emphasis. This supplementary buoy, which will readily attract the attention of the mariner, will also serve to further inform the mariner as to the side of safe passage.

(10) As with the normal wreck buoy, the number of supplementary buoys used to mark any given wreck will depend on specific conditions in each instance and will be determined by the Lighthouse Authority taking the action to mark the wreck.
SYSTÈME CARDINAL ÉLARGI POUR LA SIGNALISATION DES ÉPAVES
EXPANDED CARDINAL SYSTEM FOR WRECK MARKING

NW  Qk.Fl.  NE
Morse 'N'

Qk.Fl.
Sc.

Qk.Fl.
Sc.

Int. Qk.Fl.
Sc. Int.

Qk.Fl.
Sc.

Morse 'A'

Qk.Fl.
Sc.

Vert - Green
Sc. Int. = Scintillant interrompu
Int. Qk. Fl. = Interrupted quick flashing.

Orange - Orange
Sc. = Scintillant
Qk. Fl. = Quick flashing