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| From: ANM Committee | ANM18/9/3  Formerly ANM17/WG2/WP4 |
| To: EEP Committee | 21 October 2011 |

Liaison Note

Design of Daymarks in Aids to Navigation

# Introduction

The ANM Committee has received the following input regarding Daymarks in AtoN:

ANM 17/9/6 Comparable Range of Daymarks and Lights

ANM 17/9/10 Draft Guideline ‘On the Design of Daymarks in AtoN’

ANM 17/9/15 Ambiguous Daymarks and Objects Conflicting with AtoN Daymarks

EEP Committee is drafting a guideline ‘On the Design of Daymarks in AtoN’ (in the EEP Work Program). ANM Committee was asked to contribute input to this draft. The ANM committee appreciates the opportunity to comment on this document.

In this context the input papers 17/9/6 and 17/9/15 were considered.

# Action requested

The EEP Committee is asked to take into account the following considerations and proposals:

* ***Sections*** and ***Headlines*** of the draft Guideline, if referred to, are written in ***bold italics****.*
* *Text*of the draft Guideline, if referred to, is written in *italics*.
* Considerations of ANM members are written in ‘Standard’.
* Proposals for new text are in **bold letters**.

***Section 2 ‘Scope’***

The following should be added:

**‘The competent authority should ensure that structures and objects in the vicinity of fairways and waterways do not conflict with marks according to the IALA Maritime Buoyage System.**

**If such structures include daymarks, these will be designed and maintained in accordance with the IALA Maritime Buoyage System and this guideline.**

**If other structures or objects are designed and built in the vicinity of the waterway, conflict between these and the daymarks (according to the MBS and this guideline) should be avoided.’**

***Section 4 ‘Basic principles’***

The text

*‘The visual task is to provide a daymark, according to the IALA Maritime Buoyage System, that can be easily identified at a given distance, against a given or prevailing background. This means that the mariner identifies the shape, the colour and colour combination.*

*The range of the daymark should be comparable to the night range of the light. However, in general, the range of the daymark is usually less than the light range.’*

The last two sentences should be deleted and replaced as follows:

**The visible range of a daymark will be determined by the Competent Authority in an overall assessment of navigational requirement for the waterway or particular location. A daymark’s visible range will not necessarily be linked to the range of the associated light.**

**‘Ideally, the range of an AtoN’s daymark should be comparable to the range of its light. However, in general since the range of the daymark is less than the light, the following** **alternatives may be employed:**

1. Ensure that the distance between lighted AtoN are consistent with their visual daytime range;
2. Place unlighted AtoN between lighted AtoN;
3. In cases where the daymark is deemed not necessary to safe navigation it may not be necessary to consider the range of the daymark.’

***Section 5.1.2*** ***Compact Daymarks*** (Could also be an own item 5.1.5)

Swedish Maritime Administration (SMA) is looking into using rubber or flexible plastic bristles to create daymarks that will be more resilient to severe ice conditions. If this is successful the use of top-marks on ice buoys will likely be reviewed in Sweden.’

So, the following text should be included in 5.1.2 or 5.1.5:

**‘Some competent authorities are investigating alternative materials for compact daymarks; for example, the Swedish Maritime Administration (SMA) is looking into using rubber or flexible plastic bristles to create daymarks that will be more resilient to severe ice conditions.’**

In ***Section 8.1*** – There is no consideration of snow and ice build-up when designing daymarks on floating aids. This can have major impacts:

1. visibility of a daymark (by the way: also of the light!) may be reduced or entirely obscured,
2. stability of the buoy, is this issue covered by other guidelines?

Proposal:

**‘Accumulation of snow and ice on buoys should be taken into consideration when designing buoys for areas where such conditions are common. A lighted buoy with the lantern covered in ice will have its light diminished or even distorted. Using steep angles, smooth surfaces and few projecting objects such as top-marks can reduce the effects.’**

***Section 16 ‘CLIMATE EFFECTS’***

**ENVIRONMENTAL LIMITATIONS** should be the headline, only a part of it is ‘Climate’

*Section 16.1 ‘environmental limitations*’ says:

*‘Buoys located in areas exposed to annual drifting ice, possibly of considerable thickness, that can destroy equipment mounted on the buoy body. Buoys in such areas must generally be designed with a conical body with a minimum of projections and be completely sealed. Use of additional daymark boards or topmark may not be feasible. Consequently the use of can shape for lateral buoys is not always possible.’*  
The above statement is very good, however the below comments in section 11 and 12 make it a bit unclear:

***Section 11 ‘Conclusions and Recommendations’***

One of the bullet points says:

*‘Top-marks are mandatory in buoys which do not have the specific shape defined for the type of mark.’*

***Section 12 ‘SUMMARY*** ***of recommendations on daymarks’***

provides the same statement but in different wording:

*‘Where the buoy does not have the specific shape corresponding to the type of mark, a top-mark is obligatory.’*

We need to clarify that the use of top-marks on buoys that do not follow the guidelines regarding daymark shape should not be mandatory where ice conditions or other physical hazards make the use of top-marks impractical.

Proposal for section 11 and 12:

**‘Top marks may be used on buoys that do not have the specific shape defined for the type of mark, as defined in the IALA MBS, section 2.3.2.’**

***Section 11, ‘Conclusions and Recommendations’***

* Bullet points should be numbered. Makes it easier to refer.
* Section 11 and 12 should come in the end of the document, because they are ‘***Conclusions and Recommendations and Summary’***

***Section 12 (or ANNEX I ?!) ‘Summary of recommendations on daymarks’***

Instead of:

*‘For all colours except black: when viewed in the direction of the sun, the object may appear to be black.’*

It would be better to say:

**‘Regardless of its actual colour, when viewed in the direction of the sun, an object may appear to be black. When the sun is low on the horizon this effect may remain until the observer is very close to the object, which emphasises the importance of distinct shapes of AtoN.’**