EEP18 Input / Information paper

Agenda item 8.1

Task Number 2

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IALA plastic buoys questionnaire German answer

Introductory note

# Summary

According to the report of EEP 17 the status is as follows:

8.1.5. Plastic buoys questionnaire (Activity 2.1.1)

The replies to plastic buoy questionnaire, input papers EEP17/8/9, EEP17/8/10, EEP17/8/14, EEP17/8/15, EEP17/8/25A and EEP17/8/26 were noted.

It was noted that a useful number of replies had been received, covering a total of 17,000 buoys currently in service worldwide.

The questionnaire results were reviewed and tabulated (now EEP18/8/4).

Action Item

Committee members from Bahrain, France, Ireland, Hong Kong SAR, Germany, Oman, Scotland & USA are specifically requested to reply to the Plastic Buoy Questionnaire (EEP16/output/6).

Action Items for Members

42 Committee members from Bahrain, France, Ireland, Hong Kong SAR, Germany, Oman, Scotland & USA are specifically requested to reply to the Plastic Buoy Questionnaire (EEP16/output/6).

43 Committee members are requested to answer the cost section of the Plastic Buoy Questionnaire (EEP16/output/6).

Looking into the replies, it seems as if the environmental and vessel traffic conditions are not the only factor, may be not even the major factor for the decision to deploy plastic buoys. Economical factors like the specific ratio work cost to material cost and energy cost could be important for the specific decision in each country. It may be varying quite much from countries to country.

Another point which will influence the investment in a fleet of new plastic buoys might be the economic situation of the whole country. Does the state feel having money enough to make an investment in new technology in order to save money in the following decades or is the priority to save money now, in let’s say the next three years?

Everybody wishes to have the money to invest in the future, but does every state really have the money? The poor man’s life is expensive (German proverb)!

But there may be other more technical aspects to keep the steel buoys in some cases. E. g. it seems that the majority of big Four-Season Lighted Buoys are still steel buoys.

In Germany in February 2012 the decision for plastic buoys has been made for the Baltic Sea for all buoys smaller than 2.5 m diameter including small lighted buoys. This will be an amount of about 1400 buoys, most of them unlighted.

The German response is at Annex A to this paper.

# Action requested of the Committee

Committee members are requested to consider the response at Annex A when completing their own questionnaires.

1. German response to questionnaire

This questionnaire is designed to gather information from IALA members on their experiences with the use of plastic buoys. This will then be collated and used to enable members to make informed choices on the selection of the most appropriate material for their specific buoy application.

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1. How many buoys do you have in your current buoy fleet ? ………………………………..…
2. Regarding the materials of construction, how many are:

39701

Steel …………………………………………………………………………..……………….

0

Composite metal & plastic ………………………………………………………..…………

178

Plastic ……………………………………………………………………………………..…..

Other (please specify) ……………………………………………………………………….

1. Buoy fleet by buoy body diameter and material, please complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| Material | 1m dia or less | 1 to 2.2 m dia | Greater than 2.3m dia |
| Steel | 1827 | 1980 | 163 |
| Composite metal & plastic |  |  |  |
| Plastic | 152 | 20 | 6 |
| Other (please specify) |  |  |  |

1. For your plastic buoy fleet, what type of plastic material is used ?

PE

1. Are the plastic buoy bodies filled or empty ?

x

Filled Empty

Please specify filler type …………………………………………………………………………………...

11

1. How many years have you been using plastic buoys ? …………………………………...….
2. Regarding the location / conditions of service for your plastic buoys, check the boxes that apply:

|  |  |
| --- | --- |
| Inshore | X |
| Offshore |  |
| Exposed |  |
| Sheltered | X |
| Breaking waves |  |
| Dries at low tide |  |
| Severe UV exposure | X |
| Severe sub zero temperature | X |

1. Are your plastic buoys a commercial design or your own authority’s design ?

x

Commercial Design Own Design

1. How often do you visit your buoys at sea ?

|  |  |  |  |
| --- | --- | --- | --- |
| Material | 1m dia or less | 1 to 2.2 m dia | Greater than 2.3m dia |
| Steel | every 1 to 2 year | every 1 to 2 year | every 1 to 2 year |
| Composite metal & plastic |  |  |  |
| Plastic | every 1 to 2 year | every 1 to 2 year | every 1 to 2 year |
| Other (please specify) |  |  |  |

1. For your plastic buoys, what is the main reason for inspection / maintenance at sea ?

Check moorings and remove marine growth (same as for steel buoys), mooring optimization considered

1. How often do you return your buoys to shore for maintenance ?

|  |  |  |  |
| --- | --- | --- | --- |
| Material | 1m dia or less | 1 to 2.2 m dia | Greater than 2.3m dia |
| Steel | North Sea: every 1 to 2 years,  Baltic Sea: every 3-4 years | North Sea: every 1 to 2 years,  Baltic Sea: every 3-4 years | North Sea: every 1 to 2 years,  Baltic Sea: every 3-4 years |
| Composite metal & plastic |  |  |  |
| Plastic | No maintenance during lifetime | every 6 years | every 6 years |
| Other (please specify) |  |  |  |

1. For your plastic buoys, what is the main reason for inspection / maintenance ashore ?

a) 60 additional unlighted plastic buoys are only used in winter/ice on positions where there are lighted buoys in the other time of the year

b) 5 % damage or loss of plastic buoys

c) Light / Solar equipment

1. What experience do you have in modifying plastic buoys to take new navigation aids, such as AIS ?

No experience yet

14. Have you experienced any in service defects with plastic buoys (such as colour retention, mechanical failure, mechanical damage, mooring lug wear) ?

1. App. 5 % damage or loss of plastic buoys for ice and collision and other reasons
2. Colour retention, but has become better with the newer plastic buoys
3. mooring lug wear
4. Please detail any experience you have of repairing or re-painting plastic buoys ?

Repaint of letters and numbers (we also use adhesive films or welded letters and numbers)

1. Can you provide any cost comparisons between plastic buoys and traditional steel buoys (this may include initial cost, use of a smaller ship to support the buoy fleet, reduction in buoy maintenance facilities, reduction in overall maintenance costs)

The analysis of these questions may be available in the middle of 2012.

1. Are you planning to purchase more plastic buoys in the near future ?

x

Yes No

Not sure, still under consideration

1. What is the anticipated life of your plastic buoys ? ………………………………………
2. What is your disposal policy for plastic buoys at the end of their life ?

Recycling

1. With your experience, what is your general opinion of the use of plastic buoys ?

With respect to buoys used in coastal, estuary and offshore area this question will be answered after a few more tests especially regarding the nautical appropriateness and durability under sea conditions.

The decision about the use of plastic buoys will be made depending on the analysis (cost comparison) which is nearly finished and may be available in the middle of 2012.

1. Please provide some photographs of your plastic buoys with sizes & weights (please resize and compress any photographs before insertion)
2. ........
3. Appendix heading 1
   1. Appendix heading 2
      1. Appendix heading 3