 ENG1-11.1.10

Formerly ENG1-9.4.3

Input paper for the following Committee(s): check as appropriate Purpose of paper:

**X** ARM **X** ENG **□** PAP **X** Input

**□** ENAV **□** VTS **□** Information

Agenda item 9

Technical Domain / Task Number TD-1 / Task 4 (?)

Author(s) / Submitter(s) Rijkswaterstaat / WVL / Mr. Otto Koedijk

Proposal for modification Guideline No. 1078  
- On the use of Aids to Navigation in the design of fairways -

# Summary

IALA Guideline no. 1078 provides guidance to relevant authorities on the implementation and use of AtoN in the design of fairways including general attention for shore based illumination for the purpose of safety of navigation. Specific recommendations in this respect for the establishment of bank illumination along canals for seagoing vessels are lacking. This document refers to and reflects the results of recent related simulation research in the Netherlands and includes draft recommendations on implementation aspects with the aim for amendment of the Guideline.

## Purpose of the document

* To inform the Committee on the results of a simulation research project in the Netherlands concerning shore based illumination along canals for seagoing vessels;
* To invite the Committee to discuss the hereby going proposal for modification of IALA Guideline no. 1078, chapter 5, specifically proposals for new text for and recommendations in a new paragraph 5.4.3 “Bank illumination for seagoing vessels” and for amendment of a new Annex H Bank Illumination, paragraph 1 “Distances between the lights”;

## Related documents

# IALA Guideline No. 1078 - On the use of Aids to Navigation in the design of fairways -

# Background

Due to the ending of a technical lifecycle of some of the chains of bank illumination along two canals for seagoing vessels in the Netherlands the national competent authority for the design and maintenance of fairways, Rijkswaterstaat of the Ministry of Infrastructure and the Environment, requested the Maritime Institute of Navigation (MARIN) to conduct a research in respect to the usability and necessity for the replacement of the current illumination chains along the North Sea Canal (IJmuiden-Amsterdam) and the Gent-Terneuzen Canal (Ghent/Belgium-Westerscheldt River).

Based on a real time bridge-simulation research it was concluded that bank illumination as such was needed and necessary for the safety of navigation. Rijkswaterstaat also decided

* to include the results of the research into its national design framework for fairways, and
* to present the results, as a contribution to harmonization and for the benefit of IALA membership, to IALA with a proposal for insertion/modification of the relevant parts of IALA Guideline no. 1078.

# Discussion

## Bank illumination of canals for seagoing vessels

The Committee is requested to consider and discuss the results of the above mentioned research and the following proposed text for IALA Guideline no. 1078, Chapter 5.4.3:

*“In the case of canals for seagoing vessels, banks can be illuminated by lighting, preferably in yellow.*

*Illuminated banks deliver an important contribution to safe navigation, because they provide a good relative accuracy, as explained in chapter 4.1.2 of this Guideline. This was recently confirmed by research, carried out by the Netherlands Maritime Institute of Navigation (MARIN) in 2013.*

*Illumination of banks results in enhanced positioning in the fairway, especially in encounters with other seagoing ships or larger inland vessels (such as push barge convoys or coupled units) as well as in long and straight fairways. Bank illumination is considered to be an important AtoN, taking into account the reduced manoeuvrability of larger seagoing vessels in these relative narrow fairways with limited manoeuvrable space.*

*Currently, the distance between lights in existing configurations varies from 200 to 250 meters, as shown in Annex H to this Guideline.” During the simulation research of MARIN in 2013 (see references) distances of 100 respectively 200 meters were examined.*

*It is concluded and recommended that*

* *a 200 metres distance between lights for bank illumination is appropriate (see table in Annex H);*
* *the position and distance between the lights shall be chosen in such way, that the next light will be visible while passing the first light, under all weather conditions;*

## *once bank illumination is established details should be published in the proper publications (e.g. notice to mariners) in order to provide the mariner with adequate information and guidance;*

*However, it is well recognized that geographical and traffic density circumstances may differ in various areas. Therefore the distances between lights can only be recommended and not prescribed. It is the responsibility of the relevant competent authority to decide on the implementation of bank illumination where deemed necessary and on the appropriate distance between the lights”.*

## Proposed amendment Annex H to Guideline no. 1078

*Current examples of bank illumination along canals for seagoing ships are to be found*

* *in Germany (Nord-Ostsee Canal, connecting the North Sea and the Baltic) and*
* *in the Netherlands the North Sea Canal (connecting the North Sea and the port of Amsterdam) and the Ghent-Terneuzen Canal (connecting the inland port of Ghent/Belgium and the seaport of Terneuzen/Netherlands at the Westerscheldt River).*

*1.* ***Distances between lights as part of a bank illumination chain***

*The currently maintained distances between lights for bank illumination for the mentioned  
 canals are shown in this table next to the proposed distances*

|  |  |  |
| --- | --- | --- |
| ***Name of Canal*** | ***Distance between lights in meters*** | ***Recommended distances in meters*** |
| *North Sea - Baltic Canal* | *250* | *250* |
| *North Sea Canal (Amsterdam area)* | *220* | *200* |
| *Ghent - Terneuzen Canal* | *200* | *200* |



*Pictures: North Sea Canal (North Sea - Port of Amsterdam), 26 km, 200m bank illumination*



# References

1. Report nr. 26857-1-MSCN-rev1, MARIN The Netherlands, 10-06-2013, D. ten Hove: Real-time simulations bank illumination.
2. Report nr. 26857-2-MSCN-rev.1, MARIN The Netherlands, 10-12-2013, D. ten Hove: Real-time simulations bank illumination - phase 2.

A summary of the mentioned reports can be made available to the Committee for further support and study reasons.

# Action requested of the Committee

The Committee is requested to:

1. take notice of the results of the research conducted by MARIN
2. study and discuss the relevant recommendations on positioning and distances for bank illumination along canals for seagoing vessels
3. to consider the proposed modifications to Guideline no. 1078 and amend this Guideline, where appropriate
4. approve an eventual amended Guideline no. 1078 and forward this to Council in accordance with the IALA procedures, with the aim for approval.