

IALA COUNCIL 65th session



12-15 December 2017
IALA Headquarters

11 – IALA TECHNICAL ACTIVITIES

11.2 – ENG

11.2.2 – ENG Committee papers for consideration at the 65th Session of the IALA Council

Note by the Secretariat

1. INTRODUCTION

The following papers are submitted from the 7th session of the ENG Committee (ENG7) for consideration of the Council at its 65th session.

2. DRAFT RECOMMENDATIONS FOR APPROVAL

2.1. The Council is requested to approve the following draft Recommendations.

- **C65-11.2.2.1 (ENG7-11.1.1) Draft IALA Recommendation R0201(E-200-1) Ed.2 Marine Signal Lights - Colours**

The E-200 series of Recommendations on Marine Signal Lights is being revised into four short recommendations on colour, range, measurement and effective intensity and the remainder of the information from the annexes of the old Recommendations will be transferred to Guidelines using the principle of Recommendations containing information about *what to do* and Guidelines containing information of *how to do it*.

Recommendation R0201(E-200-1) Marine Signal Lights - Colours has been revised to Edition 2 with removal of “how to do it” annex content to a new Guideline. Following four years notice, temporary colour regions have been removed. Recommendation numbering has been updated in accordance with the new numbering scheme and the format has been updated to conform to the new style for IALA Recommendations.

- **C65-11.2.2.2 (ENG7-11.1.2) Draft IALA Recommendation R0202(E200-2) Ed.2 Marine Signal Lights – Calculation, Definition and Notation of Luminous Range**

Recommendation R0202(E-200-2) - Marine Signal Lights – Calculation, Definition and Notation of Luminous Range has been revised to Edition 2 with review of the Recommendation and alignment with IALA document strategy. Recommendation numbering has been updated in accordance with the new numbering scheme and the format has been updated to conform to the new style for IALA Recommendations.

- **C65-11.2.2.3 (ENG7-11.1.4) Draft IALA Recommendation R0204(E200-4) Ed.2 Marine Signal Lights - Determination and Calculation of Effective Intensity**

Recommendation R0204(E-200-4) Marine Signal Lights - Determination and Calculation of Effective Intensity has been revised to Edition 2 with removal of “how to do it” annex content to a new Guideline.

The modified Allard method has been adopted as the recommended method for determination of effective intensity of an AtoN light. Recommendation numbering has been updated in accordance



with the new numbering scheme and the format has been updated to conform to the new style for IALA Recommendations.

The remaining Recommendations E200-3 and E200-5 of the E-200 series remain valid until they are replaced in the 2018-2022 work period.

- **C65-11.2.2.4 (ENG7-11.1.5) Draft IALA Recommendation R0108(E-108) Ed.4 Surface Colours Used as Visual Signals on Marine Aids to Navigation**

IALA Recommendation R0108(E-108) - Surface Colours Used as Visual Signals on Marine Aids to Navigation has been revised to Edition 4 with alignment with IALA document strategy.

Descriptive content has been transferred to a new IALA Guideline G1134 - Surface Colours Used as Visual Signals on Aids to Navigation, C65-11.2.2.11.

- **C65-11.2.2.5 (ENG7-11.1.20) IALA Recommendation R0141(E-141) Ed.4 - Training and Certification of Marine Aids to Navigation Personnel**

IALA Recommendation R0141(E-141) Ed.4 - Training and Certification of Marine Aids to Navigation Personnel has been updated to Edition 4.

It recommends that National members and other appropriate Authorities, providing or intending to provide Marine Aids to Navigation services, use the IALA guidance for training and the related Model Courses as the basis for the certification of AtoN personnel.

The revision includes deletion of Model Course E-141/2 for senior managers and updating to include IALA Guideline 1100 - The Accreditation and Approval Process for AtoN Personnel Training. The title and wording of the Recommendation were reviewed to avoid using the word “standards”.

3. DRAFT GUIDELINES FOR APPROVAL

3.1. The Council is requested to approve the following draft Guidelines.

- **C65-11.2.2.6 (ENG7-11.1.3) Draft IALA Guideline G1065 Ed.3 - AtoN Signal Light Beam Vertical Divergence**

Guideline G1065 - AtoN Signal Light Beam Vertical Divergence has been revised to Edition 3.

The purpose of this Guideline is to assist the user with the specification of the vertical divergence of a lantern selected for a particular Marine Aid to Navigation, focussing on light source vertical divergence, range and focal height. The AtoN may be a fixed platform or a floating platform such as a buoy or lightvessel.

The Guideline content was reviewed and the format was updated to new IALA document structure.

- **C65-11.2.2.7 (ENG7-11.1.6) Draft IALA Guideline G1073 Ed.2 - Conspicuity of AtoN Lights at Night**

Guideline G1073 - Conspicuity of AtoN Lights at Night has been revised to Edition 2.

With the proliferation of built up shorelines and consequent increase in light pollution, the mariner often has difficulty in detecting and identifying AtoN lights against a background scene of general lighting and individual bright light sources. Features such as town or street lighting, harbour area floodlighting, architectural lighting and lit signage may look enchanting but can cause serious problems for a mariner trying to identify an important AtoN light. Guideline G1073 provides an overview of the factors affecting the usefulness of a marine AtoN light and ways to improve its effectiveness by increasing conspicuity.

Following the IALABATT/IALALITE Workshop in Koblenz a review of Guideline 1073 was completed with the Annexes to the Guideline containing historical examples being removed to the IALA Wiki. The Guideline was updated to include the latest light source technology and conspicuity assessment. Guideline format was aligned with IALA documentation structure.



- **C65-11.2.2.8 (ENG7-11.1.7) Draft IALA Guideline Ed.1 - Commissioning of AtoN Equipment and Systems**

This is a new Guideline.

The impact of ineffective AtoN equipment verification can extend far beyond the inconvenience and additional costs of having to undertake an unplanned repair. The delivery of these important services could have a direct impact on safe navigation. It is fundamental in providing effective Marine Aids to Navigation (AtoN) that their performance and reliability meet operational needs. To ensure this is achieved, it is important that components, equipment and systems are checked before implementation, fitment and use through structured commissioning.

Guideline G1140 provides guidance on commissioning and provides examples of key commissioning checks for various types of AtoN.

- **C65-11.2.2.9 (ENG7-11.1.8) Draft Guideline G1136 Ed.1 - Providing AtoN Services In Extremely Hot and Humid Climates**

This is a new Guideline which was developed by the ENG Committee from work carried out at the successful IALA Workshop on the subject of Marine Aids to Navigation (AtoN) Services in Extremely Hot Climates in Doha, Qatar in September 2016.

In view of the volume of shipping and the unique challenges of working in hot climates, there is a need to provide guidance on the special challenges of providing AtoN services in areas of extremely hot and humid climates. This Guideline addresses specific challenges associated with these climates, covering both technical and managerial aspects.

- **C65-11.2.2.10 (ENG7-11.1.9) Draft Guideline G1092 Ed.2 - Safety Management for AtoN Activities**

Guideline G1092 - Safety Management for AtoN Activities has been revised to Edition 2.

The Guideline provides an overview and practical guidance to managing safety in the AtoN work place in the form of a general guide on the development, implementation, monitoring, review and auditing of safety management systems

The Guideline was updated to reflect new information, the content was extended and minor editorial changes were made.

- **C65-11.2.2.11 (ENG7-11.1.28) Draft IALA Guideline G1134 Ed.1 - Surface Colours Used as Visual Signals on AtoN**

This is a new Guideline developed from the annexes in IALA Recommendation R0108(E-108) - Surface Colours Used as Visual Signals on Marine Aids to Navigation (C65-11.2.2.4). In accordance with the new IALA document structure the content of the Recommendation R0108(E-108), was amended with “what to do” content retained in the Recommendation and “how to do it” content moved to the new Guideline.

A surface colour is a colour perceived to belong to a surface. The colour of an ordinary surface, such as an ordinary paint or an opaque plastic material, is the most common kind of surface colour and is known as an ordinary colour. Other kinds of colours include fluorescent (or luminescent) colours, transilluminated colours (for example, the colours of internally illuminated panels) and the colours of retro-reflecting materials. Guideline G1134 provides guidance on how to use surface colours for AtoN.

- **C65-11.2.2.12 (ENG7-11.1.30) Draft IALA Guideline G1135 Ed.1 - Determination and Calculation of Effective Intensity**

This is a new Guideline developed from the annexes in IALA Recommendation R0204(E200-4) Ed.2 - Marine Signal Lights - Determination and Calculation of Effective Intensity (C65-11.2.2.3). In



accordance with the new IALA document structure the content of the Recommendation R0204(E-200-4), was amended with “what to do” content retained in the Recommendation and “how to do it” content moved to the new Guideline.

The purpose of this document is to describe how to calculate the effective intensity of a given flash of light when viewed at the IALA defined illumination threshold for visual signalling. The scope of G1135 is all flashing Marine Aid-to-Navigation signal lights with a flash duration of five seconds or less. Lights with a flash duration of greater than five seconds may be considered as continuous or fixed lights.

- **C65-11.2.2.13 (ENG7-11.1.19) Draft Guideline G1100 Ed.2 - The Accreditation and Approval Process for AtoN Personnel Training**

Guideline G1100 - The Accreditation and Approval Process for AtoN Personnel Training has been revised to Edition 2.

The aim of Guideline G1100 is to ensure conformance with the standards and requirements of AtoN training. Competent Authorities as well as training officers are encouraged to adopt this Guideline on the Accreditation and Approval process for AtoN personnel training. It is similar to guidance set out in IALA Guideline 1014 - The Accreditation and Approval Process for VTS Training to ensure that a common standard is maintained across all aspects of the provision of AtoN services.

The revision of G1100 comprises a complete review and addition of annexes to ensure compatibility with Guideline G1014 on the accreditation and approval process for VTS personnel.

3.2. The Council is requested to approve the draft revision of the Guideline G1067 series on power systems.

The purpose of the Guideline G1067 series on power systems is to assist Authorities in the selection and design of power systems for Marine Aids to Navigation (AtoN).

The Guideline G1067 series was updated to reflect information from the successful workshop on Sustainable Light and Power for the Next Generation in Koblenz, Germany, in March 2017. The format of each Guideline was updated to conform to the new IALA document structure.

- **C65-11.2.2.14 (ENG7-11.1.12) Draft IALA Guideline G1067-0 Ed.3 - Selection of Power Systems for AtoN and Associated Equipment**

Guideline G1067-0 - Selection of Power Systems for AtoN and Associated Equipment is an overarching guideline and needs to be read in conjunction with the other parts of G1067.

The Guideline was revised to Edition 3 and updated following the realignment of the document to the new IALA documentation structure.

- **C65-11.2.2.15 (ENG7-11.1.13) IALA Guideline G1067-1 Ed.2 - Total Electrical Loads of AtoN**

Guideline 1067-1 - Total Electrical Loads of AtoN provides guidance on determining the total electrical loads for a system and includes worked examples for different systems.

The Guideline has been revised to Edition 2 and updated following the realignment of the IALA documentation to the standards. The content was updated to reflect developments in technology and clarification of calculations.

- **C65-11.2.2.16 (ENG7-11.1.11) Draft IALA Guideline G1067-2 Ed.2 - Power Sources**

Guideline G1067-2 - Power Sources provides guidance on the selection and design of power sources and is meant to assist users to properly select and maintain power sources used in Marine Aids to Navigation systems.

The Guideline has been revised to Edition 2 and updated following the realignment of the documentation to the IALA documentation standards. The content was updated to reflect



information from the IALA workshop on Sustainable Light and Power for the Next Generation in Koblenz in 2017.

The Guideline replaces IALA Guideline 1044 - Renewable Energy Sources for Aids to Navigation (June 2005) and includes text from IALA Guideline 1042 - Power Sources for Aids to Navigation (December 2004), which it also replaces.

- **C65-11.2.2.17 (ENG7-11.1.10) Draft IALA Guideline 1067-3 Ed.2 - Electrical Energy Storage for AtoN**

IALA Guideline 1067-3 - Electrical Energy Storage for AtoN has been revised to Edition 2.

The Guideline provides maintenance directives, operating criteria and safe handling guidance for energy storage devices commonly used in marine Aids to Navigation applications. It is meant to assist users to properly select and maintain energy storage systems used in Marine Aids to Navigation.

4. DRAFT GUIDELINE AND CALCULATION TOOL FOR APPROVAL

- **C65-11.2.2.18 (ENG7-11.1.22) Draft IALA Guideline Ed.2 G1039 - Designing Solar Power Systems for AtoN**

Guideline G1039 - Designing Solar Power Systems for AtoN has been revised to Edition 2.

This Guideline provides information on the design of PV solar power systems and describes how to use a Microsoft Excel spreadsheet solar sizing calculation tool (C65-11.2.2.19) to assist with designing a PV solar power system.

The first two sections of the Guideline provides some technical information on both solar panels and batteries, to assist with use of the solar sizing tool. The remaining sections provide specific information related to the use of the solar sizing tool.

The Guideline with the associated IALA Solar Power System Calculation Tool (C65-11.2.2.19) and the Manual for Meteorological Data for IALA Solar Power System Calculation (C65-11.2.2.20) will be made available free of charge on the IALA website.

- **C65-11.2.2.19 (ENG7-11.1.26) Draft IALA Solar Power System Calculation Tool Ed.2**

The IALA Solar Power System Calculation Tool has been available to IALA members since 2004.

It has been revised to Edition 2 following work carried out at the IALA workshop on Sustainable Light and Power and in Koblenz in 2017 and completed by the ENG Committee.

The MS Excel calculation tool provides an iterative method of designing a solar power system for fixed or floating AtoN installations. A description of how to use the tool including limitations is provided in Guideline G1039 (C65-11.2.2.18).

- **C65-22.2.2.20 (ENG7-11.1.27) Draft Manual for Meteorological Data for IALA Solar Power System Calculation Tool**

This is a new manual to assist users of the IALA Solar Power System Calculation Tool with acquiring solar energy data.

The IALA Solar Power System Calculation Tool depends critically on accurate solar energy data over a number of years for the area in which the solar power system will be located. The Manual for Meteorological Data for IALA Solar Power System Calculation Tool supports the Excel based Solar Power System Calculation Tool (C65-11.2.2.19) and provides a description of how to extract relevant solar energy data from a public NASA website.

5. WITHDRAWAL OF IALA GUIDELINES

5.1. The Council is requested to revoke the following Guideline



Revised Guideline G1067-2 replaces IALA **Guideline 1044** on Renewable Energy Sources for Aids to Navigation (June 2005). Hence Guideline 1044 is no longer necessary.

Revised Guideline G1067-2 includes text from IALA **Guideline 1042** on Power Sources for Aids to Navigation (December 2004), superseding Guideline 1042. Hence Guideline 1042 is no longer necessary.

6. DRAFT MODEL COURSES FOR APPROVAL

6.1. The Council is requested to approve the following revised Model Courses.

Most of the World-Wide Academy Model Courses are either reviewed or developed by the ENG Committee and as such submitted by this Committee to the Council for approval.

During its seventh session, the ENG Committee finalised six revised Model Courses. They have been reviewed and updated to ensure compliance with the current IALA documentation. The format has been updated to the new corporate style.

The finalised documents are submitted for approval as input papers C65-11.2.2.21 to C65-11.2.2.26.

- C65-11.2.2.21 (ENG7-11.1.14) Draft IALA Model Course L2 Module 10.1&2 Remote monitoring of AtoN Ed.2;
- C65-11.2.2.22 (ENG7-11.1.15) Draft IALA Model Course L2 Module 11.1-5 AtoN structures, materials, corrosion and protection Ed.2;
- C65-11.2.2.23 (ENG7-11.1.16) Draft IALA Model Course L2 Module 11.6 Preservation of structures Ed.2;
- C65-11.2.2.24 (ENG7-11.1.17) Draft IALA Model Course L2 Module 11.7 Maintenance Planning and Records Ed.2;
- C65-11.2.2.25 (ENG7-11.1.18) Draft Model Course L2.8.1 AIS AtoN Operations Ed.2;
- C65-11.2.2.26 (ENG7-11.1.21) Draft Model Course L1.1 Aids to Navigation Manager Training Ed.2.

7. WITHDRAWAL OF IALA MODEL COURSE

The Council approval is requested to revoke Model Course E-141/2 (Senior Manager Training) which is no longer relevant and is revoked by Edition 4 of IALA Recommendation R0141(E-141).

8. DRAFT MANUAL FOR APPROVAL

8.1. The Council is requested to approve the following draft Manual.

- **C65-11.2.2.27 (ENG7-11.1.25) Draft IALA Complementary Lighthouse Use Manual (Publisher version)**

The IALA Lighthouse Conservation Manual is being revised to Edition 2 and retitled to the IALA Complementary Lighthouse Use Manual to more accurately reflect the content.

Historical lighthouses are a unique part of a nation's heritage and hold great significance to local and national communities. The IALA Complementary Lighthouse Use Manual provides an easily-understood set of basic principles and checklists that will help an authority consider, design, plan and manage a number of complementary uses for their historical lighthouse estate.

During the 7th session of the ENG Committee the Heritage Forum, working with the ENG Committee, updated the content of the Manual to reflect trends and experiences. Neil Jones from Trinity House, UK, volunteered to use a desktop publisher to produce a printable version which will be distributed at the IALA Conference in 2018.

The Council is requested to approve the text of the IALA Complementary Lighthouse Use Manual as in paper C65-11.2.2.27. The Council is further requested to approve the addition of suitable photographs

to produce a final publishable version for distribution at the IALA Conference in 2018, along the lines of the example provided at input paper C65-11.2.2.28.