RESOLUTION MSC.253(83)
(adopted on 8 October 2007)
ADOPTION OF THE PERFORMANCE STANDARDS FOR
NAVIGATION LIGHTS, NAVIGATION LIGHT CONTROLLERS
AND ASSOCIATED EQUIPMENT

ANNEX 31

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THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto shall be performed by the Maritime Safety Committee and/or the Marine Environment Protection Committee, as appropriate, on behalf of the Organization,

RECALLING FURTHER Rule 21, Rule 23 and Rule 34(b) of the Convention on the International Regulations for Preventing Collisions at sea (COLREGs), 1972, concerning the requirements on the use of Navigation Lights,

NOTING that that the purpose of Navigation Lights is to identify ships and to notify their intentions at sea and that the purpose of Navigation Light Controllers is to provide means of control and monitoring of the status of navigation lights onboard the vessel to the Officer of the Watch (OOW),

RECOGNIZING the need to develop performance standards for Navigation Lights, Navigation Light Controllers and associated equipment to be fitted onboard vessels in accordance with COLREGs,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Safety of Navigation at its fifty-third session, and the Maritime Safety Committee at its eighty-third session,

1. ADOPTS the Recommendation on Performance Standards for Navigation Lights, Navigation Light Controllers and associated equipment, set out in the annex to the present resolution;

2. RECOMMENDS Governments ensure that Navigation Lights, Navigation Light Controllers and associated equipment installed on or after 1 January 2009 conform to performance standards not inferior to those specified in the annex to the present resolution.

ANNEX

PERFORMANCE STANDARDS FOR NAVIGATION LIGHTS, NAVIGATION LIGHT CONTROLLERS AND ASSOCIATED EQUIPMENT

1 Scope

These performance standards apply to Navigation Lights (NLs), Navigation Light Controllers (NLCs) and associated equipment to be fitted onboard vessels in accordance with COLREGs. These equipment should be designed, tested, installed and maintained based on these standards, taking into account that the purpose of Navigation Lights is to identify ships and to notify their intentions at sea and that the purpose of a Navigation Lights Controller is to provide means of control and monitoring of the status of navigation lights onboard the vessel to the Officer of the Watch (OOW).

2 Application

In addition to the general requirements set out in resolution A.694(17)[1], navigation lights, navigation lights controllers and associated equipment should meet the requirements of these standards.

3 Definitions

3.1 *Associated equipment* means equipment necessary for the operation of NLs and NLCs.

3.2 *COLREGs* means Convention on the International Regulations for Preventing Collisions at Sea, 1972, including their annexes.

3.3 *Lamp* means a source producing light, including incandescent sources, Light Emitting Diodes (LED) and other non-incandescent sources.

3.4 *Length* means the length overall.

3.5 *Navigation Light (NL)* means the following lights:

.1 masthead light, sidelights, sternlight, towing light, all-round light, flashing light as defined in Rule 21 of COLREGs;

.2 all-round flashing yellow light required for air-cushion vessels by Rule 23 of COLREGs; and

.3 manoeuvring light required by Rule 34(b) of COLREGs.

The light source includes lamps, its housing, placing and means for delimiting the angle of lighting.

[1] Refer to publication IEC 60945.

3.6 *Navigation Light Controller (NLC)* means a device enabling operational control of a Navigation Light.

3.7 *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.

4 Navigation Lights

4.1 General

4.1.1 Unless expressly required otherwise, NLs should appear steady and non-flashing.

4.1.2 Lenses of NLs should be produced in a robust, non-corroding material, which should ensure a long-term durability for the optical qualities of the lens.

4.1.3 A masthead light, sidelights and a sternlight installed on board a ship not less than 50 m in length should be duplicated or be fitted with duplicate lamps.

4.1.4 Only lamps specified by the manufacturer should be used in each particular NL to avoid reduction of NL's performance due to unsuitable lamps.

4.1.5 A sufficient number of spare lamps for NLs should be carried onboard, taking into account the duplication of NLs or lamps, as appropriate.

4.2 Luminous intensity distribution

4.2.1 In the horizontal directions where decrease of luminous intensity to "practical cut-off" is required by section 9 of Annex I to COLREGs, the luminous intensity should be no more than 10% of the average luminous intensity within the prescribed sector for vessels not less than 12 m in length.

4.2.2 Within the prescribed sector in which the minimum luminous intensity is required by section 9 of Annex I to COLREGs, the horizontal intensity distribution of the light should be uniform in such a way that the measured minimum and maximum luminous intensity values (in candelas) do not differ by more than a factor of 1.5, to avoid luminous intensity changes which may result in the appearance of a flashing light for vessels not less than 12 m in length.

4.2.3 Within the prescribed sector in which the minimum luminous intensity is required by section 10 of Annex I to COLREGs, the vertical intensity distribution of the light should be uniform in such a way that the measured minimum and maximum luminous intensity values (in candelas) do not differ by more than a factor of 1.5, to avoid luminous intensity changes which may result in the appearance of a flashing light for vessels not less than 12 m in length.

4.3 Special requirements for lights using LEDs

The luminous intensity of LEDs gradually decreases while the electricity consumption remains unchanged. The rate of decrease of luminous intensity depends on the output of LEDs and temperatures of LEDs. To prevent shortage of luminous intensity of LEDs:

.1 An alarm function should be activated to notify the Officer of the Watch that the luminous intensity of the light reduces below the level required by COLREGs;

or

.2 LEDs should only be used within the lifespan (practical term of validity) specified by the manufacturer to maintain the necessary luminous intensity of LEDs. The lifespan of LEDs should be determined and clearly notified by the manufacturer based on the appropriate test results on the decrease of luminous intensity of the LEDs under various temperature conditions and on the temperature condition of LEDs in the light during operation, taking the appropriate margin into account.

5 Navigation Light Controller

5.1 An NLC should facilitate ON/OFF controls of individual NLs.

5.2 An NLC should provide visual indications of "ON"/"OFF" status of NLs.

5.3 Pre-programmed NL group settings may be provided.

5.4 An NLC on board a ship not less than 50 m in length should provide the alarm for:

.1 failure of power supply to NLs; and

.2 failure, including short circuit, of a lamp which is switched ON.

5.5 An NLC on board a ship not less than 50 m in length should present the status of all NLs in a logical presentation, meeting the requirements set out in resolution MSC.191(79), *e.g.*, by symbol marks on a display.

5.6 All indicators of an NLC should be dimmable to ensure easy reading without disturbing the night vision of the Officer of the Watch. The brightness of a display, if fitted, of an NLC should be controllable.

5.7 An NLC should support the use of standardized serial interfaces for marine navigation and communication systems[2].

5.8 The NLC should have a bi-directional interface to transfer alarms to external systems and receive acknowledgements of alarms from external systems. The interface should comply with the relevant international standards[2].

6 Power supply and fallback arrangements

6.1 Each NL should be connected, via separate circuits, to a NLC located on the bridge in order to avoid any NL failure, including short circuit, that affect any other NLs connected to the NLC. A NLC may only be additionally connected to special signal lights such as lights required by canal authorities.

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[2] Refer to IEC 61162 series.

6.2 It should be possible to operate the NLC and NLs when supplied by an emergency source of electrical power in accordance with the appropriate requirements of chapter II-1 of the 1974 SOLAS Convention, as amended.

6.3 Automatic switch over to the alternative source of power is permitted.

7 Associated equipment

Screens for sidelight may be a part of a ship's structure. All associated equipment should be produced in a robust, non-corroding material, which should ensure a long-term durability for the relevant operation.

8 Marking

Each NL should be marked with:

.1 the manufacturers name or symbol, and designation of type;

.2 the type/category of the NL in accordance with COLREGs;

.3 serial and certificate number;

.4 head line directions;

.5 range in nautical miles; and

.6 nominal wattage of the light source in watts, if different values lead to different ranges.

9 Installation of navigation lights and associated equipment

In addition to the relevant requirements of COLREGs, the installation of NLs and associated equipment should comply with the following requirements:

.1 The manufacturer of NLs should provide guidance on the installation of NLs and the design and installation of screens for sidelights, as required by COLREGs;

.2 NLs should be installed in such a way so as to prevent navigation watch keeping personnel from direct or reflected undue glare;

.3 NLs should be installed in such way as to ensure that the light shows over the required arcs of visibility, and should satisfy the required vertical separation and location requirements in all normal operating trim conditions; and

.4 Equipment for operation of the manoeuvring light, mounted in accordance with COLREGs, should be located at conning position. The equipment may be located near the steering wheel or the autopilot/track control.

10 Maintenance

10.1 NLs should be so designed that the lamp specified by the manufacturer can be efficiently and readily replaced, without elaborate recalibration or readjustment.

10.2 NLs, NLCs and associated equipment should be so constructed and installed, as necessary, that they are readily accessible for inspection and maintenance purposes.

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