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## TECHNICAL ALERT No. 16-46

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### Atmosphere testing instruments – SOLAS XI-1 Regulation 7

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#### 1. Introduction

- 1.1. A new Regulation 7 was added to Chapter XI-1 of the International Convention for the Safety of Life at Sea 1974, as amended (SOLAS) by IMO Resolution MSC.380(94) and entered into force on 01 July 2016.
- 1.2. Regulation 7 requires every ship to which Chapter I of SOLAS applies to carry an appropriate portable atmosphere testing instrument or instruments and for suitable means to be provided for the calibration of such instruments.
- 1.3. Regulation 7 should be read in conjunction with:
  - i. IMO Resolution A.1050(27), *Revised recommendations for entering enclosed spaces aboard ships*; and
  - ii. IMO Circular MSC.1/Circ.1477, *Guidelines to Facilitate the Selection of Portable Atmosphere Testing Instruments for Enclosed Spaces as Required by SOLAS Regulation XI-1/7*.
- 1.4. This Technical Alert outlines the Bahamas Maritime Authority (BMA) position on the means of calibration to be provided for portable atmosphere testing instruments carried on Bahamian ships and on the use of colorimetric gas detection tubes to meet the requirements of Regulation 7.

#### 2. Background

- 2.1. The BMA has received a number of requests for clarification on the final sentence of Regulation 7 highlighted above, specifically whether or not means of calibration of the atmosphere testing instruments need to be on board the ship.

2.2. The BMA has also received requests for clarification on whether or not colorimetric tubes (e.g. "Dräger Tubes") are acceptable to meet the Regulation.

2.3. Regulation 7 of SOLAS Chapter XI-1 states:

*"Every ship to which chapter I applies shall carry an appropriate portable atmosphere testing instrument or instruments. As a minimum, these shall be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces. Instruments carried under other requirements may satisfy this regulation. **Suitable means shall be provided for the calibration of all such instruments.**"*

2.4. Regulation 7 of SOLAS XI-1 relates to the testing of the atmosphere before entry into enclosed spaces.

2.5. It is recommended that each ship should also be provided with calibrated and tested multi-gas detectors suitable for measuring the level of oxygen, carbon monoxide and other gases as appropriate, during the entry, as per paragraph 8.2 and 9.3 of Resolution A.1050(27). These may be the same instrument(s) used prior to entry into the enclosed space (other than colorimetric tubes referred to in section 4) or may be additional instruments.

### **3. Means of calibration**

3.1. The BMA is mindful of the fact that there are numerous atmosphere-testing instruments in the market, with differing calibration requirements.

3.2. The Company<sup>1</sup> should consider the instrument manufacturer's calibration instructions when determining the means of calibration of the instrument.

3.3. There is no explicit carriage requirement for calibration equipment in the Regulation and there is no prohibition on sending an instrument ashore for calibration.

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<sup>1</sup> The "Company" is the entity responsible for the management of the ship in accordance with the ISM Code. For ships which the ISM Code is not applicable, the Company is the Managing Owner in accordance with Section 52 of the Merchant Shipping Act.

- 3.4. Accordingly, the BMA considers "suitable means of calibration" may include:
- i. On board calibration using the instrument manufacturer's instructions (and calibration equipment if provided); or
  - ii. Calibration ashore.
- 3.5. Where the instrument is calibrated ashore, the Company must ensure that an alternative atmosphere-testing instrument is available on the ship whilst the first instrument is ashore for calibration. A valid calibration certificate should accompany the "in use" instrument at all times.
- 3.6. Where recommended by the instrument manufacturer, span gas, containing the correct gas mix for the instrument(s) carried, should be carried on board for the purposes of "bump testing" of the instrument before use.

#### **4. Colorimetric gas detection tubes**

- 4.1. Colorimetric gas detection tubes (commonly known by the brand names *Dräger* and *Gastec*) are available for the detection of various gasses, including those specified in MSC.1/Circ.1477.
- 4.2. The BMA considers colorimetric tubes acceptable for the detection of one or more of the gasses specified in MSC.1/Circ.1477 prior to entry to a space, if the tubes are within their expiry dates and have been stored in accordance with manufacturer's instructions.
- 4.3. Colorimetric tubes should not be used during entry into enclosed spaces to monitor oxygen and carbon monoxide levels as per paragraphs 8.2 and 9.3 of Resolution A.1050(27).

#### **5. Validity**

- 5.1. This alert is valid until the publication of revision 8 of the Bahamas National Requirements.

#### **6. Revision History**

Rev.0 (26 September 2016) – First issue

