Task Leader: Robert Trainor USCG

**Definitions:**

IALA – A Sound transmitted in order to convey information.

Note: The term "Sound signal" is frequently used to describe the apparatus generating the sound. This use is deprecated.[[1]](#footnote-1)

**Current IALA policy:**

Although sound signals still exist, it has been IALA policy since 1985 that these devises should only be used as a hazard warning.[[2]](#footnote-2)

**Arguments for Sound Signals**

Provides a recognizable signal to the mariner regardless of the state of visibility

May be more important for mariners with limited electronic navigational aid systems

**Arguments against Sound Signals**

Inability of the human ear to accurately judge the direction or distance of the sound source

Contrary winds are very unfavorable to the propagation of sound

Background noise aboard a vessel impacts the likelihood that signal audibility

May be considered a nuisance by the local community

**Topics to consider:**

Should sound signals be deployed as ATON for purposes other than to warn the mariner of a hazard?

How do other IALA member nations deploy ATON sound signals?

Are ATON sound signals relevant to most mariners? How relevant? Under what conditions would mariners consider ATON sound signals important or even relevant?

Is hazard warning an ATON?

IALA definition of Aid to Navigation – Any device or system, external to a vessel, which is provided to help a mariner determine position and course, to warn of dangers or of obstructions, or to give advice about the location of a best or preferred route.

**E-109 Recommendation on the calculation of the range of a sound signal – May 1998**

**Summary:**

Three factors to consider when determining the NR of a sound signal:

Emission of sound

Propagation of sound

Audibility onboard ship

* Physiological acoustics tells us that the perception of a signal depends mainly on the noise prevailing at the listing point.

Pn = nominal range = The distance at which, in foggy weather, a lookout positioned on a the wing of a bridge has a probability of 90% of hearing the signal when subjected to a noise equal to or in excess of that found in 84% of large merchant vessels – calm weather no intervening obstacles.

Pu = usual range = The distance at which, in foggy weather, a lookout positioned on a the wing of a bridge has a probability of 50% of hearing the signal when subjected to a noise equal to or in excess of that found in 50% of large merchant vessels – calm weather no intervening obstacles.

**O-113 The Marking of Fixed Bridges over Navigable Waters – May 1998**

**Summary:**

**4 SOUND SIGNALS**

One or more sound fog signals may be used to warn the navigator of the presence of a bridge. Any type of sound fog signal may be used for this purpose. If a number of sound fog signals are placed at different points on a bridge or its supports, their characters should be different from each other.

**O-139 The Marking of Man-made Offshore Structures – Dec 2008**

**Summary:**

**2.1 MARKING OF OFFSHORE STRUCTURES IN GENERAL**

2.1.2.5 Each structure may carry one or more sound signals so constructed and fixed as to be audible upon approaching the structure from any direction.

2.1.2.6 The sound signals should be placed not less than 6m and not more than 30m above MHWS with a range of at least 2 nautical miles. The character shall be rhythmic blasts corresponding to Morse letter « U » (· · ¾) every 30 seconds.

2.1.2.7 The minimum duration of the short blast shall be 0.75 seconds. The sound signals shall be operated when the meteorological visibility is two nautical miles or less.

**Conclusions:**

Hazard warnings should be considered as ATON based on the IALA definition of an ATON.

While there are certain disadvantages associated with ATON sound signals, certain IALA member nations may glean advantages from deploying them to identify hazards, which is consistent with the IALA Navigation Manual (NAVGUIDE).

Sound signal guidance is considered to be well covered in the NAVGUIDE and associated IALA recommendations. After discussion with the Chair and V-Chair of the Committee it was agreed that a recommendation on the use of audible signals as AtoN and their future use was required. It is expected that the information in the NAVGUIDE can be rationalised.

1. IALA Dictionary, [www.ialathree.org/dictionary](http://www.ialathree.org/dictionary), p 3.1.025 [↑](#footnote-ref-1)
2. IALA NAVGUIDE, 2010, p128 [↑](#footnote-ref-2)