



# Directional Sound Evacuation - Marine



In the context of Marine safety, Directional Sound Evacuation (DSE) has the following advantages:

- Language independent
- up to 75% improvement in exit times
- Ideal in poor visibility (dense smoke)
- Works in open areas, corridors, stairs
- “Audible exit signs”
- Time saved = Lives saved
- Lower cost – easy retrofit
- ADA & DDA conformance



**What is Localizer<sup>®</sup> technology?**

Localizer<sup>®</sup> directional sound is a broadband, multi-frequency (“white noise”) sound. The sound source is easily and quickly located by our ears, making it ideal for rapid ship evacuation. Details of the technology and the wide variety of applications can be found on the website [www.soundalert.com](http://www.soundalert.com)

Developed at Leeds University, the technology is patented in the UK, USA, Australia and Hong Kong, with applications being processed in EU, Canada and Japan.



**Fire Safety**

Conventional General Alarm sounders and PA systems efficiently warn people in the event that evacuation is necessary, but can give no indication of exit routes. Illuminated exit signs and low location lighting will help only if visible and not obscured by smoke. Localizer-equipped DSE evacuation beacons can identify the nearest evacuation routes even in dense smoke. DSE was recently awarded the Fire Industry Council’s product innovation award and the RINA–Lloyds Register of Shipping Safer Ship award



**Fire at Sea**

The Scandinavian Star disaster showed that rapid evacuation of the smoke-filled areas would have saved lives. Low-Location Lighting has limitations in smoke filled environments where visibility is severely restricted – the recent Nieuw Amsterdam incident illustrated this. LLL gives no indication of direction to the nearest exit and is ineffective in open spaces. Normal wisdom is that evacuees should crouch and follow the evacuation route at floor level. However, whilst hot smoke rises in a stable still atmosphere, it quickly fills down to floor level when cooled by water mist extinguishing systems or disturbed by ventilation systems and people movement.



**Confusion in smoke**

Directional sound technology offers an additional or alternative evacuation method giving audible assistance that can considerably improve exit times. Localizer evacuation beacons positioned at carefully chosen locations guide people along escape routes. In addition to corridors and stairs, Localizer can also guide people out of open spaces, which represent as much as 40% of modern passenger ships, and today have no evacuation aids effective in smoke.



**Signs lost in smoke**

The UK Government’s Maritime & Coastguard Agency recently completed an extensive series of independent tests with University of Strathclyde in which over 400 volunteers participated in trials simulating accommodation, corridors, stairs and open spaces with and without smoke. In these trials improvements of up to 75% in evacuation times were recorded in smoke and 35% in perfect visibility. Following these trials, the Governments of UK and Germany are proposing Directional Sound Evacuation to the United Nations’ IMO for approval within SOLAS regulations as an alternative to Low Location Lighting and mandatory fitment in open spaces. In May 2002, IMO’s Maritime Safety Committee commented: “directional sound is at least as effective as Low Location Lighting and its use is not diminished by smoke”. Full details on the MCA’s website: [www.directionalsoundevacuation.com](http://www.directionalsoundevacuation.com)



Implementation can be proposed using the new SOLAS Chapter II-2 Regulation 17 “Alternative design & arrangements” for a “case by case” approval.



**Design Council Award**

Systems can be installed today as an extension to existing PA/GA systems and hence require no additional type approval.

\* The Localizer is the registered trademark of Sound Alert Technology plc.  
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