



# Directional Sound in Aircraft

## Directional Sound – an essential aircraft evacuation technology:



- Language independent
- Major improvements in exit times
- Ideal in poor visibility (dense smoke)
- Enables rapid, orderly evacuation
- Optimal use of exits
- Time saved = Lives saved
- Low cost – easy retrofit
- Integrates with existing systems



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



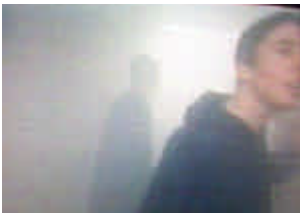
Fire Safety



Survivable aircraft fires



Increasing risk



Lost in smoke

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 aircraft 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.

In the event of an emergency aircraft evacuation, experience shows that passengers nearly always move forward – even if the nearest exit is behind them. This leads to overloading of forward exits, panic and poor evacuation times. In some tragic cases, this has also led to unnecessary and avoidable loss of life. Illuminated exit signs may help but only if they are visible and not obscured by smoke and passengers remember to look behind them. Directional Sound beacons ensure passengers identify only available evacuation exits even in dense smoke. This is especially relevant to passenger aircraft, where toxic smoke in confined cabins can have catastrophic consequences. Localizer was recently awarded the Fire Industry Council and RINA~Lloyd’s Register safety awards, and is being proposed to the United Nations by UK and German Governments for used on ships. See [www.directionalsoundevacuation.com](http://www.directionalsoundevacuation.com)

### Aviation Applications

Fatalities in survivable aircraft accidents are often caused by inhalation of poisonous smoke. Rapid evacuation of the smoke-filled cabin would save lives. This is perhaps most graphically illustrated in the 1985 Manchester Aircraft fire, which was fully survivable but resulted in 55 deaths. The AAIB report clearly indicated the potential value of directional sound guidance toward exits.

Existing methods have limitations in smoke filled environments where visibility can be severely restricted and normal vision is impossible due to the chemical effects of smoke on the eyes. Smoke similarly affects the ability to shout guidance. Advice that evacuees should assume an all-fours position and trace the evacuation route at floor level will drastically slow evacuation. Even so, some people will still remain on their feet – with resulting confusion and chaos.

Directional sound works well in any visibility, but is without equal in poor visibility. Directional sound offers an additional or alternative evacuation method giving audible assistance, directing passengers to exits and considerably improving exit times with no language barriers. Evacuation trials recorded on thermal image cameras with a **major aircraft manufacturer** have shown dramatic improvements in aircraft evacuation. These trials have shown that passengers with directional sound guidance leave the aircraft via the nearest / optimal exit for them, resulting in an orderly and rapid aircraft evacuation, and optimal use of all available exits without any exit becoming overloaded. There was no conflict with the cabin staff – all of whom found the system helpful.

**Sound Alert will make evacuations faster, more efficient and more survivable.**



Design Council Award

\* The Localizer is the registered trademark of Sound Alert Technology plc. Taurus Park, Europa Boulevard, Warrington, WA5 5YT, United Kingdom Tel: +44 (0)1925 446139 Fax: +44 (0)1925 446139 [www.soundalert.com](http://www.soundalert.com)