



Way Out Evacuation Systems Pty Ltd. wishes to address two maritime safety issues. They are relevant to three of the Terms of Reference. The Quality of Ships, Operational Issues and Crew Welfare.

**Evacuating passengers and crew in the case of an onboard fire with thick smoke filling passenger and crew areas.**

**Evacuating passengers and crew to designated muster points, where there is a total loss of light, due to failure of the electrical lighting supply.**

These two safety issues cause great stress and not infrequently, loss of life. The risk of loss of life can be substantially reduced, by the installation of a Maritime Low Location Lighting Evacuation System.

A Low Location Lighting Evacuation System is a lit evacuation path. The system is fitted to the walls, stairwells, and doors. Set no more than 150 mm off the floor. It incorporates a system of signs and messages, directing passengers and crew towards a muster station.

A Low Location Lighting System is designed to provide a lit passage of evacuation when there is complete loss of power or smoke reducing visibility or both. The lit condition is only available in a state of emergency where evacuation is required.

A Low Location Lighting System provides an effective, clear, and fail-safe method, directing passengers and crew away from danger. There is a global movement to vessels being required to have Low Location Lighting Evacuation systems fitted.

Wayout Evacuation Systems believes that the Standing Committee recommend that uniform safety regulations apply to all vessels in the Coastal Waters of Australia. These regulations require that a Maritime Low Location Lighting System be installed on all vessels registered for more than 32 passengers or 1500 tonne for a non passenger vessel.

This would insure all crew and passengers in the event of an electrical failure (causing a state called blackness) and / or an onboard fire, the vessel becoming smoked logged, the best possible chance of being able to be evacuated in times of emergency.

A recommended Low Location Lighting System should be used in Australia which is consistent with the standard adopted by the IMO and fully specified under the following regulations.

1974 Solas Convention. Reg. 11-2/28 (passengers) 11-2/41 (Crew)  
Fully complying with IMO Resolution A752 (18)  
IMO Resolution A653 (16)

**In addition**

All non-electrical Low Location Lighting Systems should be made of aluminium and the of PVC should be prohibited.

The Australian Maritime Safety Authority shall require an owner or manager of a vessel to have light readings taken by an approved tester throughout the vessel. The vessel owners or managers must be able to demonstrate, by way of a NATA test report, that the non-electrical Maritime Low Location Lighting System can pass the IMO regulations with the light levels operating on that vessel.



## The Two Safety issues

Where Passenger and crew safety is commonly compromised

- A smoke logged environment (An area filling with smoke)
- Sudden Darkness caused by loss of light or smoke or both (a state of blackness)

A sudden state of absolute blackness (Loss of electrical power).

Blackness is a state where there is no visible sign or light that can give a person a sense of orientation and position. There is no horizontal or vertical plane that the person can identify with. Distance is lost. The idea of turning left, right, or moving forward or reversing is also lost. It is difficult for a person to establish a position relative to an exit point.

In this state a person can become disorientated, confused and panic can be a natural reaction.

Lights do go off and there can be various delay times before back up lights cut in.

A Low Location Lighting System in this case would cause a band of light to appear along the wall of a passage way, stairwell and door. There would be a clear directional instruction for the passenger/crew to make their way to a muster point without any panic or alarm.

Smoke logged or smoke filled areas (Fire on Board) Evacuation Systems that are not Low Location Systems are ineffective in a smoke filled environment.

Smoke has the following characteristics:

It immediately rises. It then turns back and falls. It holds a level no less than 150 mm above a floor. Smoke will not cover a floor. This is why the instruction is given in a fire to get as close to the ground as possible and roll or crawl out.

The single biggest cause of asphyxiation is that a person tries to walk/run through smoke to get out. They become affected, lose consciousness and die.

**Signs above doors and signs on walls above 150 mm are ineffective in smoke, and if they are plastic, they will probably melt in the heat.**

The only place a written evacuation instructions can be given and an evacuation system can be placed, is as close to the floor as possible. A Low Location Lighting System that is fixed to a wall at 150mm is the only effective method of communicating to a person who is attempting to get out of a smoke filled area such as an engine room or a passenger cabin area.

It is for this reason the IMO regulations require Low Location Lighting Systems to be fitted 150 mm from the floor.

A Low Location Lighting System in this case would cause a band of light to appear along the wall of a passage way, stairwell and door. There would be a clear directional instruction for the passenger/crew to make their way to a muster point without any panic or alarm.

### PHOTOLUMINESCENT

Photoluminescent is a chemical pigment which has the quality of being able to store light, either via the sun or electrical light. Its absorption of light is held by the pigment, and retained over time. In a state of darkness the light is automatically released. This creates an effect of having an electric light glowing, but without the use of electricity.

This is an ideal quality where in an emergency, there is no electricity and/or smoke is very dense. The Photoluminescent pigment glows for up to 24 hours without having to be recharged and therefore ideally suited to a Maritime environment.



## **Vessels in Australia are using the existing mix of Regulations to avoid fitting emergency Low Location Lighting Evacuation Systems.**

There are a number of different regulations causing inconsistency to the administration of safety standards, in the Australian Maritime Industry.

We submit that sudden loss of light and or fire on board a vessel can happen to any vessel in any water, at any time, therefore all vessels should be consistently fitted out with evacuation systems that give the best chance of safe evacuation.

All vessels need to be fitted with an evacuation system that gives passengers and crew the best chance to get to a muster station and subsequent safety, reducing the possibility of asphyxiation and/or panic causing collisions between people moving in opposite directions, resulting in suffocation and death.

### **EXAMPLES OF THE INCONSISTENCY**

A vessel carrying three hundred passengers not leaving a state should not be exempt from safety responsibilities that affect another vessel that travels between two states even though the distance, and number of passengers carried are the same.

A vessel carrying passenger should not be exempt from safety responsibilities as another vessel travelling over the same route, because it has a different hull configuration!

A vessel carrying 1000 passengers, which has multiple decks and stairwells of varying natural light should not be exempt from safety responsibilities because it is in a harbour!

### **Background: Way Out Evacuation Systems Pty Ltd.**

Australia's only designer, manufacturer and installer of Photoluminescent Maritime Low Location Lighting Systems.

Way Out Evacuation Systems Pty Ltd. Maritime Low Location Lighting System Brand Named "LumInk" has been approved by Lloyds Shipping Register and Det Norske Veritas, as a Low Location Lighting System conforming to the IMO standards.

Way Out Evacuation Systems Pty Ltd. has installed a photoluminescent Low Location Lighting System into the Spirit Of Tasmania. A 1300 passenger/vehicular ferry operating between Tasmania and Victoria. (The subject of the video)

This system has been thoroughly tested and deemed to comply with the Australian Maritime Safety Authority.

Way Out Evacuation Systems Pty Ltd. specializes in the development of Commercial and Industrial Photoluminescent products.

Way Out Evacuation Systems Pty Ltd. is regarded as one of the most innovative and developed Photoluminescent Design and Manufacturing Company in the World.