

Night-time Lookout – Photochromic Lenses and Dark Adaptation

This notice advises operators, masters/skippers and seafarers on precautions to be taken by those with lookout duties at night.

Background

As part of their investigation into the loss of the sailing yacht *OUZO* and her three crew, the United Kingdom's Marine Accident Investigation Bureau (MAIB) commissioned a report from University College London's Institute of Ophthalmology on photochromic lenses, as these were worn by the lookout on the large ro-ro passenger ferry that was also involved in the incident. Photochromic lenses are those which darken with exposure to strong light and lighten in dark surroundings.

The University College's report demonstrated that the light transmission of these lenses is significantly reduced as compared to ordinary coated and uncoated lenses, which would have decreased the likelihood of the wearer detecting navigation lights.

The report also asserted that an insufficient period of dark adaptation is likely to have been a significant factor in the lookout's failure to see the yacht earlier. It identified significant white light pollution in the wheelhouse which would have reduced the lookout's night vision.

On the basis of these findings, the MAIB recommended that photochromic lenses should not be worn for lookout duties at night. Accordingly, the International Maritime Organization released

the document MSC.1/Circ1280 *Night-time lookout – Photochromic lenses and dark adaptation*.

Dark Adaptation

With respect to taking over the Watch, STCW A/ VIII part 3-1 para 19 states:

“The relieving officer shall ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers shall not take over the watch until their vision is fully adjusted to the light conditions”

No suitable period for dark adaptation is stated, but research indicates that this period is typically 10 to 15 minutes. This needs to be taken into account when determining the watch-keeping regime for the vessel.

On some vessels, crew with lookout duties alternate periods on the bridge with periods of safety checks and fire watches in other parts of the vessel, some of which will be brightly lit. On fishing vessels, the deck lights may be very bright, and crew may come off the deck to take a watch. The same period of dark adaptation will be required every time the lookout returns to the bridge. In addition it is important that dark is maintained on the bridge – making full use of blackout procedures, ensuring that radars and console lights are dimmed appropriately and avoiding contamination from residual light and surrounding uncurtained areas.



Photochromic lenses

Photochromic lenses, even after being in the dark for an extended period and in their most translucent state, can reduce night vision significantly. They should not be worn for lookout duties at night.

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