

November 11, 2020

Dear William Estakhri,

We contacted CalOSHA via email about the dangerous strobing LED lights that CalTrans uses on their utility trucks and were told to submit a formal report. The CalOHSAs website directed us to your office. What follows is a description of the safety hazard caused by LED strobe lights.

LED strobe lights are a new technology that CalTrans has implemented on nearly all their utility trucks. The probable goal was to make the utility trucks more visible to drivers. However, the result was that drivers are now having high intensity strobing light shined into their eyes exactly at the time when drivers need their vision to avoid colliding with the CalTrans vehicles and/or workers.

A study by Rensselaer Polytechnic Institute concluded that LED flashing/strobing lights, "produce more highly saturated colors, thereby causing greater discomfort and disability glare. As a result, first response workers are at higher risk for being injured or killed in vehicle crashes because approaching drivers cannot see them." - <https://www.sae.org/publications/technical-papers/content/2019-01-0847/>

In addition to the above study, it is well known that strobe lights are used as torture via the technique of sensory overload. - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4890253/>

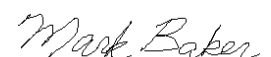
Different people will react differently to the intense strobe lights. A person with PTSD may experience flashbacks - <https://medium.com/invisible-illness/your-brain-has-malfunctioned-589a677eb97a>. A person with autism may yell, scream or act irrationally - <https://integratedtreatmentservices.co.uk/blog/sensory-intolerance-in-autism>. A migraine sufferer may incur a debilitating migraine headache - <https://headaches.org/2017/03/27/light-headache-disorders-understanding-light-triggers-photophobia>

Here is a link to a video of a utility vehicle (not CalTrans) at night with strobing LED lights. - <https://youtu.be/ma0hGwHivO4>. Here is a daytime video of a CalTrans vehicle with strobe lights - <https://youtu.be/hFbipfmaPfy>

Given the research and articles cited above that high intensity strobing/flashing lights cause CalTrans workers to suffer discomfort and disability glare, and that their lives are in danger because the driving public cannot see them on the side of the road, and because the driving public is also being subjected to this intense light that reduces vision and may cause migraines, emotional disturbance or flashbacks, we ask that CalOSHA issue a ban on all CalTrans LED strobing/flashing lights.

The research article specifies that a static, white light on the side of the vehicle would improve the safety of the CalTrans workers and the public. However, we would like to stress that the high color temperature, high luminance LED lights are also a serious distraction, so the limit should be 50 nits of luminance for daytime and 20 nits of luminance for nighttime.

Sincerely,



Mark Baker, B.S.E.E.

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