

The Log Tests Flares and eVDSDs Against Mission Bay Cityscape

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The Log set out on Mission Bay with Sirius Signal to test the effectiveness of pyrotechnic flares versus eVDSDs after USCG Sector San Diego cleared the test and tasked SAR and Satellite.

SAN DIEGO— You may have gotten a chance to read the Feb 17- March 2 issue of the *Log* newspaper, and hopefully, you came across the article titled, “Marine Flares “It’s Not the Future.” The article goes in-depth about the harmful statistics that pyrotechnic flares produce in several categories and why boaters should begin transitioning to eVDSDs— electronic Visual Distress Signal Devices.

I am returning to the subject to discuss my experience comparing the two in action. I was able to go out with Anthony Covelli, the CEO of [Sirius Signal](#), a two-time winner of the Pittman Innovation Awards in the Safety category, based in San Diego, and observe firsthand all the capabilities of pyrotechnic flares versus eVDSDs.

Captain Ed Jilka took Covelli and me about three miles out of Mission Bay just after sunset to observe the launching of pyrotechnic flares compared to turning on the eVDSD. The results were a no-brainer.

Before I explain the results, I would like to highlight some shocking facts about pyrotechnic flares. First, did you know that an ignited pyrotechnic flare burns at more than 2,000 degrees F? Let’s assume every boater carries protective wear to protect themselves from those degrees. However, even if they do, and the flare is ignited according to the instructions, they still malfunction.

On New Year's Day of 2023, a Dutch sailor set off a flare according to instructions, and the flare exploded immediately with fatal consequences. It is unclear why the flare exploded. The full story can be read here, <https://www.yachtingmonthly.com/boat-events/mets/news-mets/flare-death-in-pacific-reignites-flare-debate-92681>.

In addition to the extreme degrees and the risk of handling the flares, they only burn for a mere three minutes, and when a difficult situation presents itself, you'll need more than three minutes. Comparatively, the eVDSDs battery lasts for several hours and has a much longer shelf life than the pyrotechnic flares.

To prepare for the test, Sirius Signal staffers Shea Nagle, Debbi Cange, and Joe Gallo organized the event. Nagle was in charge of lighting the pyrotechnic and was suited up in welding gloves, welding safety eyewear, and a smock. Gallo executed the eVDSD display operation, and Cange managed perimeter security and fire suppression in case anything caught fire. Various Mission Bay Lifeguards and Emergency Medical Services were present, and the USCG San Diego Sector communicated with us throughout the entire operation. All light sources were displayed above the line of sight.

The day before we conducted the test, four pyrotechnic flares had been purchased from West Marine. As Covelli, Jilka, and I waded in the dark, we were confused when we saw nothing from the shore after Nagle had been instructed several times to light off the pyrotechnic flare. This was because, in the first two attempts to light the flares, the flares were duds and did not ignite— another instance you don't want to run into in an emergency.

After the pyrotechnic flare launch was successful on attempt three, we watched the red flame fizzle as it blended in with the cityscape's background of traffic, car, and business lights. We then tested the eVDSDs.

We tested two versions of the eVDSD, [the C-1003](#) SOS Distress Light, as well as the [C-1002](#) Two Color Distress Light. The LED signal complies with all night visual distress signal (VDS) requirements. Additionally, when combined with the included orange daytime distress signal flag, it meets all USCG requirements for the day and night VDS.

The C-1003 Beacon is the better version of the now-discontinued C-1001. It is powered by a high-performance, programmable microprocessor controlling an SOS flash pattern signal flashed through an even brighter and more potent LED. The design provides an omnidirectional light display for surface rescue craft and a vertical beam visible to aircraft flying overhead with improved flotation now even higher off the water and is visible up to 10 nautical miles. This eVDSD will cost about \$90. I watched as the SOS pattern stood out amongst the lookalike lights from the city behind it from three miles out.

The C-1002 two-color eVDSD is the world's first marine safety electronic flare to meet the new USCG safety standard, RTCM 132.00.0. The C-1002 is five times brighter than any approved device on the market — incorporating 13 LEDs. In addition, the C-1002 includes the Sirius Signal App for iOS & Android cell phones, taking boating safety to a new level using LTE service. This eVDSD will cost about \$300. When displaying this eVDSD during the test, there happened to be a traffic stop in close proximity. However, I was still able to differentiate the red and blue cop patroller's lights versus the red-orange and cyan light pattern of the C-1002 for the entire 15 minutes of the test.

These American-made eVDSDs will last upwards of ten years compared to pyrotechnic flares that, have a shelf life of between 36-42 months and cost about \$40 for a three-pack of Red Handheld flares.

The burden of responsible and safe disposal also accompanies pyrotechnic flares. While you may be able to find a local marine flare disposal event, that's not always the case when boaters need to throw their old flares out. Unused flares that are disposed of improperly can contaminate groundwater with a toxic chemical called perchlorate. In 2005, the state of Rhode Island did a study examining perchlorate levels in a state reservoir and discovered that one unburned flare could contaminate 240,000 gallons of water. Expired pyrotechnic flares are considered household hazardous wastes and explosives and must be disposed of at a permitted hazardous waste facility. State laws and regulations prohibit hazardous waste disposal in waterways, trash, and municipal landfills.

This article isn't to say don't use pyrotechnic flares. If you are heading out on the water and that is your only option, please use it. This article encourages boaters to make the change to eVDSDs- a change that will benefit your wallet as much as it will your safety.

The takeaway from this test was the effectiveness of the eVDSD compared to the pyrotechnic flare. Overall, eVDSDs are brighter, last longer, are safer, and better for the environment. In addition, they stand out compared to other lights and are easier to care for than pyrotechnics. For more information or to purchase an eVDSD, please visit <https://siriussignal.com/>.