

JEMS COMMUNICATIONS	Periodicals Home	Search	User Pref	Help
JEMS Home	Table of Contents	All Issues	About this Journal	<< Issue >> Issue

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*Hands On: Gear, Gadgets & Great Ideas
In Every Issue*

Light the Way: Evaluating landing zone lights for prehospital helipads

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- [Previous article](#) in Issue
- [Next article](#) in Issue
- View [print version](#) (PDF)
- [Drug links](#) from Mosby's DrugConsult

Sections

- [Overview](#)
- [Put to the test](#)
- [Publishing and Reprint Information](#)

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FLITE SITE



Helicopter use for rapid transport of critically injured patients has increased dramatically during the past 10 years. Along with this more frequent use has come high-profile, tragic loss of life as helicopters have crashed, leading to a greater awareness of aeromedical transport safety issues. The majority of helicopter crashes occur during take-off and landings, which is where a needed evaluation of landing zone safety tools comes into play.

Responsibilities ranging from hazard abatement to landing zone (LZ) selection and preparation during night operations are now becoming routine tasks for many fire departments. Determining what lights to use when illuminating a designated or temporary emergency helipad is part of that assignment.

A wide variety of LZ lights exists, and, until recently, no specific review process for their efficacy and efficiency has been presented. This month, an evaluation process used in conjunction with one of the busiest helicopter transportation systems in the country is described.

Overview

TOP

Landing zone lights are intended to be used at night or in low-light situations to demarcate the boundaries of a safe landing area for a helicopter. These zones should be illuminated by a system that allows the inbound pilot to readily identify the area. Traditionally, the size of a landing zone is a 50' x 50' area during the day, and 100' x 100' area at night.

Landing zone lights come in many different types and configurations. The most important decision factors in purchasing an LZ light kit are cost and size. The cost of a set of lights used to help land an infrequently used helicopter is an important factor. In that case, it's desirable to have lights, but not at a great expense to the department. The size of the lighting system is equally important. Lighting system storage requirements may be a concern on an engine, rescue or command vehicle, where space is always at a premium.

Traffic barricade light



One of the more popular types of lighting systems for landing zones is the typical traffic barricade lighting system. Using a readily available, cost-efficient system to mark the boundaries of a safe LZ has proven to be a popular choice for many fire departments.

Flashing strobe lights of varying shapes and sizes are also popular, due to their compact size and electrical efficiency. Small batteries can power a light visible from a distance for the inbound pilot.



Another LZ light option is a flat, circular set of LED bulbs. This round "pad" uses small LEDs lit in a sequential pattern to make it appear that the light is spinning.

After researching styles and types of lights available for use as illumination for LZs, four specific models were identified for evaluation: the traffic barricade style; a small triangular strobe made by FLITE SITE; EFLARE, a 7" electric flare that stands on a round base; and the TURBOFLARE SOS, a flat, round device that uses LED bulbs.

Put to the test

TOP

A local aeromedical program agreed to assist in a field evaluation of the LZ light packages. The program is one of the largest of its type in the country and lands its "birds" in multiple counties and terrains. The test site was a large school parking lot with ambient lighting similar to that found at typical emergency landing zones.

Four separate landing zones were established, with sufficient distance between landing zones to isolate each light set and allow the pilot and safety officer to compare the four different types.

After the light systems were set up and illuminated, the helicopter made several passes and then landed in one of the LZs. During takeoffs and landings, we also evaluated the stability of each system in rotor wash. The pilot then made a determination as to which was the most effective set of lights.

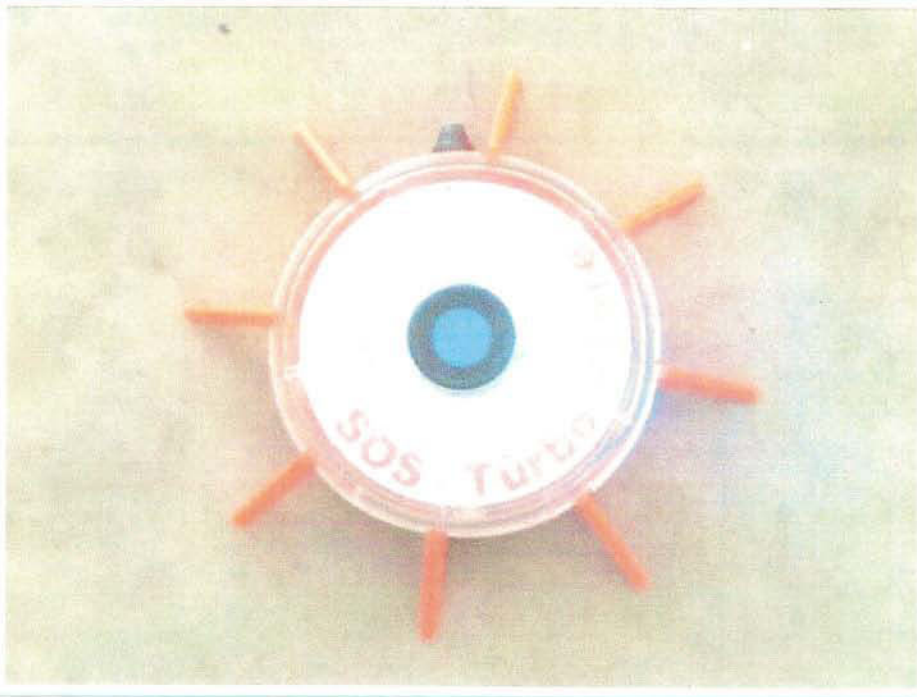
The least visible LZ lights were traffic barricade lights, which are designed to transmit light horizontally into incoming traffic at eye level. When approaching from an elevated angle, the pilot was unable to easily identify these flashing traffic barricade lights.

Next lowest on the evaluation ranking was the FLITE SITE. The strobes were not visible to the inbound pilot until he was almost directly above the LZ.

The second-best visibility product rated by the pilot was the EFLARE. This device allowed for greater visibility, but during take-off and landing, the device was blown almost seven feet away from the corner of the landing zone by the rotor wash. The flashing strobes are visible, but because they aren't constantly lit, they don't provide the pilot with a constant visual cue to the LZ boundaries.

The most visible light evaluated was the TURBOFLARE SOS. The constantly lit, circular-pattern moving lights were not only the most visible, but also provided constant visual contact with the outer boundaries of the landing zone.

Turboflare SOS



Both long-range visibility and constant illumination of the LZ boundaries provide the highest level of visual effectiveness and safety for the inbound helicopter crew. These criteria are key components to consider when selecting a set of lights to illuminate a night, emergency landing zone for a helicopter.

For more information about the TURBOFLARE SOS, call 702/ 567-9464 or visit www.turboflareUSA.com.

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