

WHITE PAPER

THE CHALLENGES OF PROVIDING AIR SUPPORT TO HUMANITARIAN AID OPERATIONS

Temporary Heli & Airfield Lighting



Avlite[®]
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Avlite Systems an international designer & manufacturer of complete aviation lighting systems; airfield, heli & obstruction

We believe technology improves navigation™

White Paper Overview

Topic:

The Challenges of Providing Air Support to Humanitarian Aid Operations

Product Focus:

Portable Airfield Lighting System & EMS Kits (portable LZ lighting)

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Introduction

The size and scale of natural and man-made disasters is on the rise, vulnerability and fragility are increasing, there are major funding discrepancies and operating settings grow increasingly difficult. Although humanitarian aid operations have become more effective over recent years, operators must continue to search for ways to better preclude and prepare for disasters. To respond in a manner that is more flexible, better adapted to new realities and to the needs of afflicted populations, while relieving suffering, maintaining dignity and saving lives – which is the ultimate purpose of humanitarian work.

There is a need for substantial influence in shaping the future of humanitarian aid on a wide range of issues. These include ethical and needs-based action, enhanced disaster preparation and management, resilience-building, partnerships with non-traditional key players and emerging donors, innovative approaches and greater effectiveness and accountability, for all international stakeholders.

Natural disasters are the consequences of natural hazards, which are naturally occurring physical phenomena caused either by rapid or slow-onset events having atmospheric, geologic and hydrologic origins, for example earthquakes, floods, droughts, hurricanes and tsunamis.

Man-made disasters are usually the result of things going wrong in our complex technological society. They include: blackouts, hazardous material spills, air pollution, house fires, radiation leaks, food or water contamination, and industrial chemical releases.

Since the early 1990s, there has been both an increase in the number of disasters – both natural and complex – and a change in the nature of emergencies leading to a substantial increase in humanitarian assistance. Natural disasters have increased drastically; during 2000 – 2009 there were 385 natural disasters, an increase of 233% since 1980– 1989, and of 67% since 1990– 1999.

The Problem

Improving aid delivery has been an ongoing problem, and it continues to be precedence as the rising needs of crisis-affected populations overwhelm the response capacities and resources of humanitarian actors. Information sharing for on-the-ground management, and effective coordination, remains the weakest link in aid delivery.

In times of natural disaster or conflict, populations can quickly become displaced, isolated and left without proper access to food, water and shelter. A rapid response can save lives and air transport is often the only way to quickly move supplies and personnel to where they are needed.

The ultimate aim of humanitarian interventions is to reduce the loss of life. In order for crisis-affected populations to survive they need food and clean water, shelter from the elements and the injured and sick require healthcare, ultimately it is these four aspects that determine a person's survival.



Providing aid delivery and key personnel to affected areas, depends on access and the availability of air support. Air transportation is most effective to locations with limited access, in some cases where situations deteriorate rapidly, and pose great risk to aid workers safety, air support is require to recover personnel quickly.

Pilots have countless challenges to recover personnel in both day and night conditions, posing a safety risk to all on-board and the aircraft.

The Solution

The pressure for pilots to land safely and conduct these air operations rapidly in various ecological conditions such as; inclement weather, at night, unfamiliar landing sites or runways makes aid operations inherently dangerous, and the hazards associated with aid operations are resulting in an increasing number of incidents or accidents.

There is an apparent need for improved provision for air support, to increase safety for pilots, aircraft and the crisis-affected population. Temporary lighting solutions that are easily transportable, fully autonomous and offer rapid deployment are critical to saving lives and increasing the safety of all involved.





Rotary Solution

EMS Temporary Helipad Kit

The Avlite EMS portable helipad lighting kit is ideal for medevac and other emergency situations where a temporary landing area is needed and can be easily configured and deployed to suit local requirements.

The Avlite EMS Helipad Kit provides temporary lighting at emergency landing zones. The helipad lights have a minimum range of 2 miles (4km) and an autonomy in excess of 750 hours. The lights have a strong magnetic base to hold them securely on the steel base plates provided, preventing them from being dislodged by rotor wash. The steel plates come in high visibility aviation yellow.

All components are neatly housed in a sturdy storage case on wheels for easy and convenient transportation.

The kit is available in two configurations. The AV-HP-EMSKIT-5 can be used when maximum portability is required and offers visible and full NVG support for smaller helicopters. It contains four steady burning green visible/IR (infrared) lights, one flashing white visible/IR (infrared) light and mounting plates all stored in a portable case.

The AV-HP-EMSKIT-9 offers both visible and full NVG support. It consists of eight steady burning green visible/IR (infrared) lights, one flashing white visible/IR (infrared) light, mounting plates and portable storage case.

Features

- Range in excess of 2 miles (4km)
- Easy to configure & deploy
- Long-life, user-replaceable battery
- Ultra-high intensity LEDs
- Magnetic bases hold the lights securely in place
- Easy-to-handle case
- Robust, high impact & lightweight construction
- IP67 waterproof rating
- ON/OFF switch for easy activation
- Flashing white light with integrated IR (infrared) provides NVG signature
- Available in two configurations suitable for either large or smaller helicopter landing areas
- Designed to comply with ICAO Annex 14 requirements

(AV-HP-EMSKIT-9)

Typical Applications

- Temporary Helipad Lighting
- Stand-by system in event of power failure
- Additional Helipad (Grass LZ) for 2 inbound Helicopters with only 1 Fixed helipad
- Humanitarian Aid Operations
- Search and Rescue Operations
- Medevac
- Resources



Fixed Wing Solution

Avlite Solar Portable Airfield Lighting System (PALS)

Avlite Systems' Solar Portable Airfield Lighting System (Solar PALS) is a convenient, fully transportable, autonomous lighting system for easy, rapid deployment supporting temporary or long term operations for both civil and defence airfields.

Once deployed, the lighting system can be controlled via a 2.4GHz encrypted mesh network capable of being operated from the tower, ground, or approaching aircraft by a Pilot Activated Lighting Controller (PALC).

The Solar PALS trailer contains all lighting and ancillary equipment required to support temporary or sustained fixed and rotary operations. The standard configuration is suitable for an airfield with a 5000ft/1500m runway.

- 52 x RF Controlled Runway Edge Lights (AV425-RF)
- 12 x RF Controlled Threshold Lights (AV425-RF)
- 4 x RF Controlled Runway End Identifier Lights (AV425-RF)
- 24 x RF Controlled Taxiway Edge Lights (AV-70-RF)
- Pilot activated lighting controller (PALC)
- Handheld controller(s)
- Mounting accessories

Avlite offers completely customizable solutions for their customers, Avlite trailers can be designed in a range of configurations for any application.

The Avlite Solar PALS Trailer has been built to military grade standards with an integrated charging system that allows for the full complement of lights to be simultaneously charged using standard external mains power feeds. A

solar auxiliary system with battery backup provides power to the critical control equipment during deployment.

Features

- All-in-one portable solar airfield lighting system
- Heavy-duty trailer design for transportation and storage
- In-trailer charging system for all lights when in storage
- Complete wireless control of airfield lighting once deployed
- Other trailer configurations available on request
- Customisable lighting configurations available to suit various applications
- Optional Infrared (IR) Mode, illumination invisible to the naked eye to support enhanced vision and NVG operations

Typical Applications

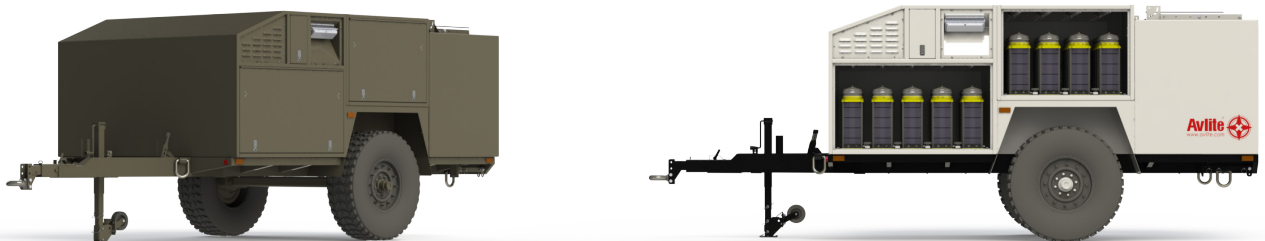
- Emergency airfield lighting
- Stand-by system in event of power failure
- Helipad Lighting
- Military Camps & Bases
- Humanitarian Aid Operations
- Medevac
- Resources



EMS Temporary Helipad Kit



Avlite's Solar Portable Airfield Lighting System Trailer (Solar PALS)





Conclusion

Enhancing disaster or crisis preparation and management is paramount, it is vital that we have key staff, equipment and supplies ready to be deployed rapidly in response to a humanitarian crisis. These systems and staff ensure that emergency relief supplies and standby arrangements are in place to deliver humanitarian responses.

Air transportation delivers key personnel and aid, but often pilots find themselves entering unknown locations, with limited information on the conditions they are entering. Due to power outages or damaged infrastructure pilots are landing in dangerous unlit conditions.

Having Avlite's Portable Lighting Solutions on standby for rapid deployment ensures, runways have adequate lighting through the use of the solar portable airfield lighting system. The Solar Portable Lighting System offers complete solar autonomous operating, requiring no power. This offers the convenience and safety for runways to be set up in remote locations to accepting incoming aid supplies.

Avlite's EMS Helipad Kit should be deployed with key management personnel, offering additional safety if conditions deteriorate, requiring emergency extraction of personnel at night.

Our solutions should become a part of all humanitarian aid preparation supplies.

For more information about our solutions please contact Avlite Systems.

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All Avlite Systems products are manufactured to exacting standards under strict quality control procedures. Avlite's commitment to research and development, investing in modern equipment and advanced manufacturing procedures has made us an industry leader in solar aviation lighting.

By choosing Avlite Systems you can rest assured you have chosen the very best.

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