

Airfield Damage Repair (ADR) Intervention



WHITE Paper





Why Rapid Airfield Damage Repair is a Concern for the Military

Air bases, airfields, and landing zones are often primary targets in military operations. To meet the time-sensitive mission, modern airfield damage repair (ADR) programs offer the latest repair technologies and techniques to reduce the time it takes to return an airfield to operational status. In addition to program evolution, high mobility and expeditionary airfield lighting solutions serve a critical function within the ADR program's goal: to resume flying quickly in a wartime situation.

As joint force operations increase in complexity, the demand for efficient airfield repairs also increases. Department of Defense (DoD) and military entities are adopting repair techniques that have evolved to meet current infrastructure requirements for critical missions, including tactical and mixed load combat operations. The United States Air Force's traditional rapid runway repair (RRR) program has evolved into what is now called airfield damage repair (ADR). This program focuses on cutting edge, commercially available technologies to support airfield operations and increase readiness.



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ADR Improvements to Increase Readiness

During WWI, conventional airfields were almost nonexistent - runway and landing zones were made from wood planks. Changes in modern aircraft also necessitated the change in infrastructure technology. Today, runways are made from concrete, asphalt, pierced steel planking, and AM-2 matting

Airfield damage repair procedures have provided the needed flexibility and agility to keep up with ever-changing surfaces and conditions. To increase readiness, bases are kitted with the equipment and resources suitable for temporary and expedient repair that are sufficient to support the new era of aircraft. Procedures are adaptive and applicable around the world to maximize the use of local materials, bringing less equipment and resources to remote locations.

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“The savings is the logistics. It’s not a big logistics footprint. We can use materials on site with the expectation of getting planes back in the air as soon as we can,” said U.S. Air Force Col. Tim Dotson, 169th Mission Support Group Commander (courtesy [169th Fighter Wing hosts second airfield repair demonstration > 169th Fighter Wing > Article Display \(af.mil\)](#)).

How AV-HMALS® Aligns with ADR Mission

ADR includes many areas of airfield repair including all runway, taxiway and landing zone lights. Avlite's expeditionary airfield lighting solutions are designed for harsh operating environments, require minimal maintenance, and are rapidly deployed. In optimal conditions, the entire airfield can be operational in less than 2.5 hours with six trained crew members and two general-purpose vehicles (courtesy [Microsoft Word - ADR Overview Narrative \(af.mil\)](#)).

The Avlite High Mobility Airfield Lighting Systems (AV-HMALS®) serves an essential role in supporting critical operations performed by the lighting team. These systems offer a portable and self-contained runway designed for deployment on any surface. They feature a variety of power options, including solar, AC, or generator power. Wireless control via an encrypted mesh network enhances runway coverage and comes equipped with a self-healing feature that allows you to freely move individual lights to a new location, within the network, without generating connectivity issues.

AV-HMALS® are scalable and contain portable airfield lighting, cabling and signage for up to a 10,000' runway, including optional PAPI, MALSR, and taxiway lights. The system trailers are designed for flexible maneuvering and rapid deployment. The trailers provide for storage with integrated charging of all lighting equipment via either solar or universal AC voltage.

The Royal Saudi Air Force deployed multiple Avlite HMALS systems in 2021 with future purchases planned. The systems included battery-operated lights, a hard-wired connection for charging, PAPIs, guidance signs, cabling and a simplified approach lighting system for a 10,000' runway.



Want to Utilize AV-HMALS® for Your Mission?

Avlite has provided more details around [military lighting](#).

The U.S. military is continuously evaluating the need to expand their ADR programs and has included Avlite's AV-HMALS® expeditionary airfield lighting systems as part of this important capability. As ADR constantly evolves to meet the ever-changing needs of the US and its allies, Avlite will continue to deliver the most durable, robust and portable systems for militaries worldwide.

About Avlite

Avlite is a global manufacturer of aviation lighting equipment with a rugged portfolio for expeditionary and permanent applications. The Avlite team is dedicated to servicing the aviation industry through efficient design and leading-edge products.

We have a proven reputation for our products engineered for defense, government, and civil operations in remote, harsh environments. Our products include runway, taxiway and approach lighting systems including FAA Certified PAPIs with IR/NVG mode. We proudly hold a program of record for US DOD and NATO expeditionary solar airfield lighting systems including the US Army MOTS system.

Through close working relationships, aviation authorities and private customers around the globe trust Avlite to enhance the safety of their operations.





1. UNWIND CABLE LIGHT BERRY WHITE
2. UNWIND CABLE LIGHT BERRY WHITE/YELLOW
3. UNWIND CABLE LIGHT BERRY
4. UNWIND CABLE LIGHT BERRY
5. UNWIND CABLE LIGHT BERRY

MOUNTING TILES

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|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 10 FT ALUMINUM RIBBON | 20 FT ALUMINUM RIBBON | 30 FT ALUMINUM RIBBON | 40 FT ALUMINUM RIBBON |
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TRAILER-2

65 PSI

65 PSI

TRAILER NUMBER
2
UTS COMPARTMENT

UTS OPERATION



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