

FOCUS ON:

Warfighter Support Enhancement

DLA Energy invents and reinvents helium supply chain

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A reassuring sight for U.S. troops in Iraq and Afghanistan is the presence overhead of one of the Army's unmanned, lighter-than-air sentinels known as aerostats.

The aerostats, which bear resemblance to the Goodyear and MetLife blimps that hover over the Rose Bowl, are fitted with advanced technologies to provide a lightweight, affordable component in the Army's array of intelligence, surveillance and reconnaissance sensor platforms. With several LTA programs operating in theater, the Army's aerostats provide precise, local intelligence information and situational awareness around the clock for the protection of U.S. forces and our coalition partners.

DLA Energy Aerospace Energy, in San Antonio, Texas, is the Department of Defense's integrated material manager for helium. Aerospace Energy began supplying helium to the U.S. Central Command's area of responsibility when the first aerostats deployed for Operation Iraqi Freedom in 2003. In order to do that, DLA Energy had to establish the helium supply chain, literally from the ground up.

"There is no natural source of helium in Iraq or Afghanistan," said Sharon Murphy, director of Aerospace Energy. Rather than being extractable from the atmosphere, helium is a byproduct of mining for natural gas and is only found in a few places around the world, Murphy explained. From these few sources, helium is cooled to liquid form where it can be stored and moved in specially-designed cryogen-





On the previous page: Crews prepare a moored aerostat for launch at a forward operating base in Afghanistan Dec. 7. These tethered airships are kept aloft with the gaseous helium provided by Defense Logistics Agency Energy's Aerospace Energy business unit. And, now, DLA Energy is bringing that support even closer to the warfighter. U.S. Army photo by Spc. Jennifer Spradlin.

ic containers and later converted to gas.

To support the Army's unprecedented requirement for bulk gaseous helium in Southwest Asia, DLA Energy conducted extensive market research and contracted with a regional supplier to convert liquid helium into gaseous form. However, there still remained the challenges of how to get the commodity to the warfighter and ensure timely sustainment.

To meet the challenge of getting the helium from the production location to the forward area of responsibility, airlift would be required. And, airliftable conveyances for gaseous helium would be needed almost immediately to transport the product.

So, Aerospace Energy experts teamed with NASA, the U.S. Air Force and the Department of Energy to rapidly obtain and refurbish a fleet of 1960s-era compressed-gas tube trailers that could be transported aboard military aircraft.

In addition, DLA Energy designed and oversaw manufacture of an innovative type of bulk container, the High Pressure Cylinder Assembly, which consolidates 25 individual high-pressure gas cylinders into a single-manifold cage, and can be forklifted or sling loaded for transport by helicopter.

With the refurbished tube trailers and the invention of HPCAs, DLA Energy was able to quickly establish an effective, streamlined helium supply chain for the ISR aerostat warfighter, Murphy said.

Now, seven years into providing this unique support, DLA Energy has again been presented with a challenging opportunity—to take the overseas helium supply chain to another level of invention.

The Army's marriage of aerostat and ISR sensor technologies has produced life-saving results for our warfighters, especially for those currently engaged in operations in Afghanistan, said Murphy. As a result, senior DoD leaders and commanders in the field, keenly aware of the aerostat program's value, have enhanced tactical capability in Operation Enduring Freedom by expanding aerostat coverage in the area of responsibility. More aersostats and increased coverage also means a greater demand for helium.

DLA Energy has been an active partner throughout the Army's planning to increase the aerostat presence. Earlier this year, Aerospace Energy experts collaborated with the Department of the Army's Directorate of Intelligence and individual aerostat program offices to effectively reinvent the concept of operations for the OEF helium supply chain.

"While we knew we needed to expand our helium container fleet to meet more robust mission requirements" explained Murphy, "we also knew we had arrived at the time where our business model could simply not continue to place growing demands on military airlift."

The Aerospace Energy team rose to the challenge. They established procurement contracts for new containers. And, more significantly, they reshaped the entire helium approach and established a support means which would have previously been considered impossible.

In October, Aerospace Energy introduced the first-of-its-kind, deployable liquid-to-gas helium conversion, or "transfill" facility inside Afghanistan. Now, gaseous helium no longer needs to be airlifted from outside the theater. Trailers and HPCAs can be refilled and reissued to the warfighter without ever leaving the ground—or the country—and in only one-third the time previously required for a retrograde movement and resupply.

DLA Energy will soon field its second helium transfill facility in Afghanistan, providing the insurance for a world-class solution to an unprecedented challenge.

So, this bowl season, when DLA Energy employees catch a glimpse of a blimp over the stadium, they may be reminded of the similar technology being employed by U.S. warfighters to detect potential threats, and of the important, evolving support DLA Energy provides. 