

# UH-1 Auxiliary Fuel Cell System Solution

## Lighter. Smaller. Extended Range.

Proprietary fuel cell system solution offers advantages of modern technology.



### Overview

We endeavor to become the industry leader in comprehensive solutions for the U.S. manufactured legacy aircraft and helicopter platforms we support. Critical to our success is a developing a partnership with our customers with the common goal of maintaining their platforms flight ready. The collaboration starts in the field, with the customer, to gain a hands-on understanding of the problem. In this case, an international armed force operating a fleet of UH-1's approached us with a legacy fuel system that presented operational, safety and desired performance issues. The Engineering & Manufacturing Division of the Merex Group was tasked with designing a new fuel system that address all limitations inherent to the original design.

### Background

As platforms age, OEM support for sustainment diminishes and end-users tasked with maintaining operational readiness are faced with critical supply chain deficits. The Merex Group offers its military customer base legacy aircraft solutions that address these shortfalls. We are a global provider of comprehensive support for U.S. manufactured legacy defense platforms including fighters, transports, patrol aircraft and helicopters. Our "Total Support" approach encompasses strategic distribution, repair & overhaul, engineering & manufacturing, modernization solutions and overall program management.

The Engineering & Manufacturing Division of the Merex Group continues to grow its capabilities in order to keep up with the legacy aftermarket demand for engineering solutions, including the re-design and modernization of aircraft systems.

### Business Need

The original fuel system installed on the UH-1 is a 150 gallon capacity bladder with an exposed nylon skin. This design presents operators with

several performance and safety issues. The material is vulnerable to ballistic penetration. The excessive capacity is larger than necessary taking up valuable cabin space. Restriction of access to the fuel line panel and analog gauges present real safety issues.

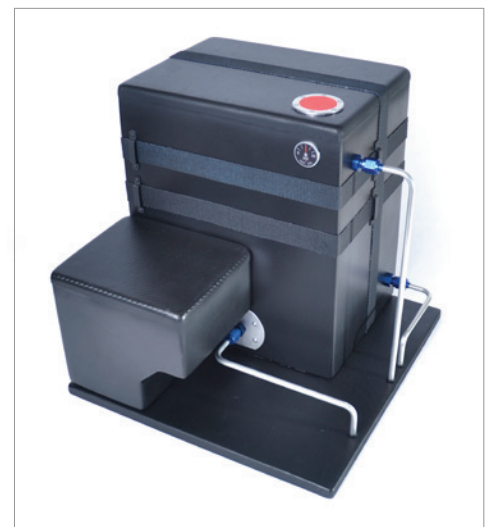
The customer wanted a safer in-flight environment, longer flight capability, a more structurally sound system, modern technology and as much cabin space as possible.

### Solution

The Auxiliary Fuel Cell System Solution was made with design flexibility in mind. The system can be customized to nearly all rotary platforms and varying customer specific parameters that address safety, performance and life extension concerns. Independent of customer specific modifications, the overall design uses modern technology, is lighter, smaller, more structurally sound, safer and offers a non-permanent installation feature.

### Benefits

Merex offers the crashworthy auxiliary fuel cell system at varying levels of ballistic protection in accordance with MIL-DTL-27422C, a fully composite housing, which serves as an extra layer of ballistic protection and prevents fuel leakage into the aircraft cabin. This self-sealing technology improves the structural integrity of the system. Enhanced performance features include a digital fuel level indication system with NVG capabilities. We offer an optional built-in seat that doubles as a compartment for extra cargo space. Merex's design is a non-permanent installation which enables the operator to uninstall, refuel quickly and safely, and reinstall; both a performance and safety upgrade.



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