

# Reliable portable power

Soldiers have to carry more equipment than they did 50 years ago, and much of it requires a portable power source. Mike Manna, vice-president of product management for batteries and energy at **Ultralife**, discusses the latest technology in this area.

## What are Ultralife's main products and services?

**Mike Manna:** Ultralife is split into two business segments that reflect the markets we serve: Battery and Energy Products, and Communications Systems. Whether the client is looking for an off-the-shelf design or a custom one, we can deliver a solution that fits its application.

Our Battery and Energy Products division provides a range of high-energy power systems, non-rechargeable and rechargeable, for commercial and defence applications. Ultralife manufactures batteries using various compounds, including lithium manganese dioxide, nickel metal hydride, lithium manganese oxide, lithium polymer and lithium thionyl chloride.

As a market leader when it comes to providing batteries for military applications, Ultralife has a solid technical base in cell and battery design. This base crosses over to commercial sectors such as medicine, security, metering and telematics.

The Communications Systems division works on innovations to meet constantly changing mission requirements. Our power management and communications solutions range from amplifiers and soldier modernisation kits to engineering services for mobile, modular and fixed-site systems.

## Ultralife celebrated its 20th anniversary in 2011. Can you tell us how the company has developed during this time?

Ultralife's initial flagship product was the lithium 9V battery, which continues to dominate the long-life 9V market. We recently announced a next-generation 9V battery, which boasts improved features.

Due to our expertise in non-rechargeable lithium and rechargeable lithium-ion chemistries, Ultralife became a major supplier to the military. Batteries such as the BA-5390, BA-5372, UBI-2590 and Land Warrior have made Ultralife a leader in this field.

## How do you keep up with constant technological advances in the military space?

Ultralife has developed a strong relationship with significant original equipment manufacturers and customers. They know that when an advanced energy solution is needed, Ultralife has the engineering and operational expertise to work with their staff and deliver a power solution that will enhance their competitive edge. In addition, we are continuously improving our engineering capabilities and working with top-tier electronic component suppliers to make sure that we stay at the forefront.

## Have military demands grown in the past decade?

Absolutely. Military demands have increased in terms of the number of applications that need portable power, their technological requirements and the volume of units that are being deployed. Soldiers now carry more gear, including sophisticated electronic devices. This shift has led to the advancement of power sources with the highest energy density. There has been a clear move towards rechargeable batteries to reduce costs and waste, along with greater demand for more functionality from power solutions.

Ultralife Smart Circuit® technology, which features SMBus smart battery technology, is designed for users who need functionality and performance not available from traditional batteries and chargers. We have several development efforts that will push the energy density of our industry-leading BA-5390 battery even higher, boosting energy by 30-50% with only a minimal weight increase. Products that provide more energy for a comparable weight are exactly what today's defence forces require.

## What other projects do you have in the pipeline?

Ultralife recently announced the introduction of the GenSet Eliminator, a patent-pending storage and power system designed to reduce fuel consumption and maintenance costs by up to 25-30%. An indirect benefit of fuel optimisation is a potential reduction in casualties associated with in-theatre military fuel convoys, which are frequent targets of attack.

The GenSet Eliminator provides energy storage capabilities to generators and renewable energy sources, promoting optimum efficiency through the continuous charging and discharging of Ultralife's lithium-ion batteries, which are incorporated into the system. It is mobile, flexible and scalable, with 10-50kWh of battery storage, and significantly reduces fuel consumption while enabling the primary generator or power source to operate at 85-95% of its rated load capacity.

The switch between the primary energy source and battery power is seamless and allows for silent, zero-emission operation when the batteries are in use. The batteries also enable continuous monitoring, and offer reduced weight by up to a factor of five compared with lead-acid batteries. They can function at operating temperatures of up to 60°C without degradation. ■

### Further information

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