ADVANCING MORTAR SYSTEMS FOR MODERN OPERATIONS

ST Engineering

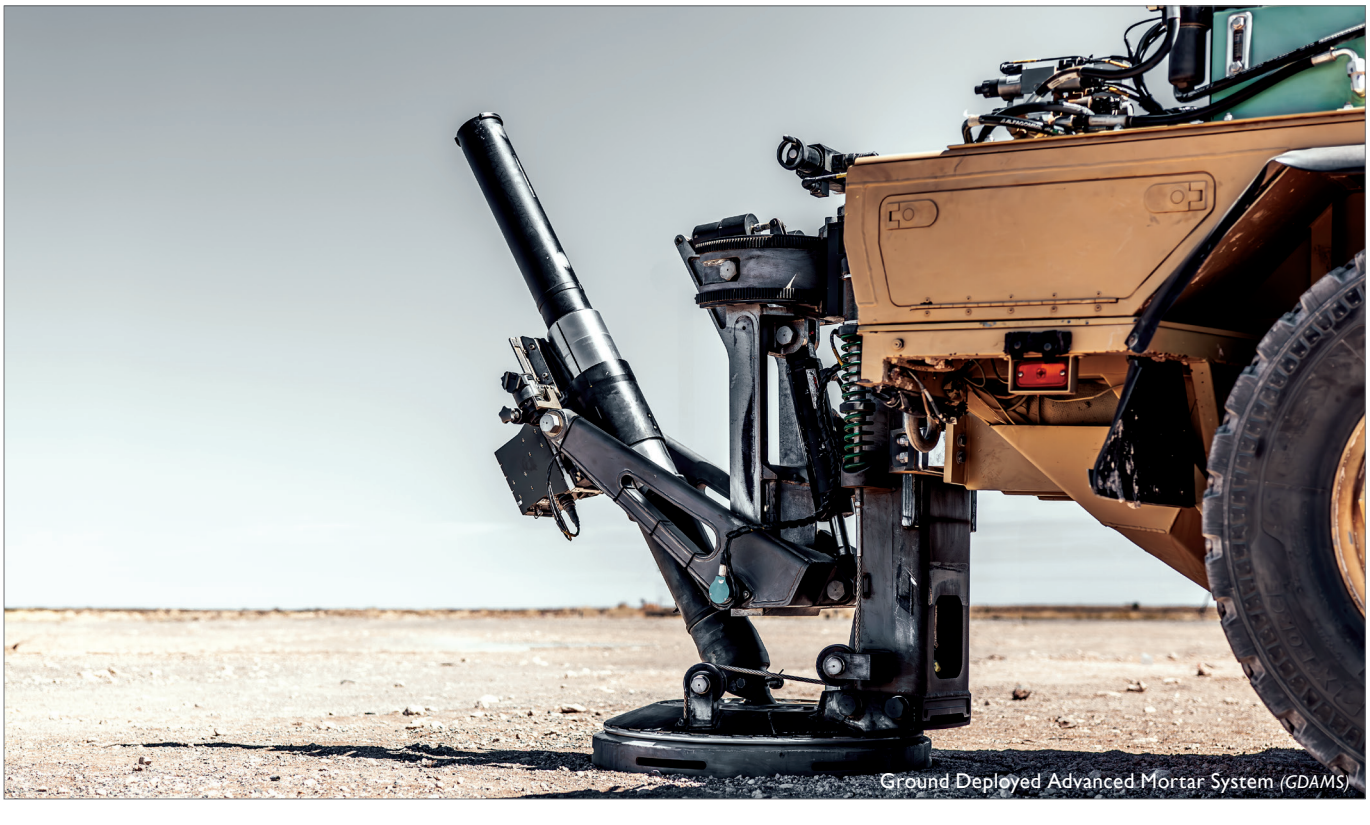
In the modern operational environment, military forces face increasingly complex battlefields, characterised by hybrid threats that combine conventional and irregular tactics.

These require adaptable, efficient, and highly lethal systems. Mortar systems, a key element of artillery and fire support, have evolved to meet these demands, providing commanders with enhanced capabilities integrating speed, precision, and operational flexibility. A notable advancement is the 120 mm Ground Deployed Advanced Mortar System (GDAMS), a next-generation solution designed to deliver precision indirect fire while enhancing the agility and survivability of ground forces.

The 120 mm GDAMS, developed by ST Engineering, marks a crucial leap in mortar technology. This system builds on the proven capabilities of legacy mortars, such as the 81 mm and 120 mm mortars, while integrating cutting-edge technology and advanced design principles. With a focus on modularity, speed, and lethality, the GDAMS addresses modern operational challenges, from rapid deployment and operational readiness to precision targeting and force protection.

THE EVOLUTION OF MORTAR SYSTEMS: FROM LEGACY TO THE FUTURE

Historically, mortars have provided essential indirect fire support, enabling forces to engage targets concealed behind obstacles or at long ranges without a direct line of sight. The shift from older systems like the 81 mm mortar and 120 mm mortar



Ground Deployed Advanced Mortar System *(GDAMS)*

to the 120 mm GDAMS reflects the need for more accurate, and flexible platforms that engage a wider range of targets in diverse environments. This transition aligns with the broader trend towards more vehicle-agnostic, rapidly deployable mortar systems, supporting operations across multiple warfare domains.

The 120 mm GDAMS is a key development in this regard. Its ability to integrate with commercial and military vehicles, combined with its lightweight yet durable construction, makes it adaptable to varying operational requirements. GDAMS enables forces to suppress enemy positions, neutralise threats in hard-to-reach areas, and deliver effective counter-battery fire against hostile artillery.

The partnership between ST Engineering and Babcock, a leader in systems integration, enhances GDAMS' capabilities. Built in the UK, the GDAMS represents the first 120 mm mortar system manufactured in decades, marking a significant industrial and operational milestone. This collaboration enables ST Engineering to offer a complete, end-to-end solution for GDAMS, including design, manufacturing, operational support, and training. UK-based production ensures regional availability, operational readiness, and sustainability for military forces across Europe and beyond.

GDAMS is manufactured at Babcock's production facility in Devonport, United Kingdom

RAPID DEPLOYMENT AND TACTICAL ADVANTAGE

In modern warfare, speed and flexibility are crucial. GDAMS is designed to meet these demands, offering rapid deployment and operational responsiveness across battlefield scenarios. Whether mounted on a 4x4 military vehicle or a lightweight commercial vehicle, the system offers maximum flexibility for commanders, enabling quick adaptation to rapidly changing conditions.

Platform agnostic: Compatible with any lightweight commercial or 4x4 military vehicle

The GDAMS features a modular barrel design that supports 81 mm and 120 mm munitions, ensuring compatibility with legacy systems while delivering the enhanced firepower and performance of next-generation platforms. Its elevating angle, ranging from +45 to +80 degrees, and ±90-degree traverse allow it to engage targets at different angles, making it effective in offensive and defensive operations.

The system can be deployed and operational in 15 seconds, providing a rapid response to emerging threats. This ability to shoot and scoot — fire and reposition quickly — ensures the system remains mobile, a key advantage in modern combat where counter-battery fire and enemy detection are constant threats. GDAMS can stow just as quickly, ensuring that crews stay mobile and avoid being targeted after firing. This flexibility significantly enhances operational tempo, allowing forces to maintain the initiative in fast-paced engagements.

Crewed by just two personnel, the GDAMS reduces manpower requirements compared to traditional mortar systems. This streamlined configuration helps ease logistical burdens while maintaining the necessary firepower to accomplish mission objectives.

PRECISION AND INTEGRATION: ENHANCING LETHALITY AND MINIMISING COLLATERAL DAMAGE

The 120 mm GDAMS integrates advanced fire control systems and GPS-guided munitions for unmatched precision on the battlefield.


Two-person crew operation, significantly reduces manpower requirements

With real-time data sharing via command-and-control networks, GDAMS enables pinpoint strikes on high-value targets while minimising risks to non-combatants and friendly forces. This precision is crucial in manoeuvre warfare, where timely target destruction can decisively impact engagements.

Its integration with networked systems further enhances effectiveness in the digital battlefield, allowing GDAMS to rapidly identify, track, and engage targets with exceptional accuracy. This synchronisation supports collaborative targeting and faster decision-making, ensuring seamless integration into modern joint operations.

SAFETY AND SURVIVABILITY: PROTECTING THE CREW AND ENHANCING OPERATIONAL SUSTAINABILITY

While the 120 mm GDAMS delivers high lethality and precision, it also prioritises the safety of its crew — an essential consideration in high-intensity combat scenarios. A standout feature of the system is its patented blast diffuser technology, which significantly improves crew protection during operations. This innovative system channels combustion gases from the firing process into a series of chambers, diverting them away from the crew and reducing the risk of injury caused by pressure and gas build-up.

The blast diffuser protects personnel and reduces the system's noise signature, making it less detectable by enemy forces. This capability is particularly valuable in counter-battery operations, where minimising the noise generated by artillery is critical to avoiding detection and retaliation. By reducing noise and gas exposure, GDAMS enhances operational survivability and crew well-being, allowing units to operate effectively under high-intensity conditions.

GDAMS IN TOMORROW'S BATTLEFIELD

The 120 mm GDAMS marks a major advancement in mortar technology, offering a highly adaptable, high-performance solution for modern military operations. As armed forces shift towards more mobile, flexible, and precision-focused capabilities, GDAMS plays a crucial role in supporting manoeuvre warfare, countering hybrid threats, and ensuring rapid responses to emerging battlefield conditions.

With its precision, mobility, and modularity, GDAMS enables forces to modernise without replacing legacy systems. Its integration with advanced fire control technology ensures it remains at the forefront of battlefield capabilities. As defence needs evolve, GDAMS delivers the agility, adaptability, and lethality necessary to stay ahead of future threats, ensuring forces remain prepared in an unpredictable world. ■


Patented blast diffuser reduces noise exposure, minimising auditory signatures