

Unseen Weakness: A Critical Oversight for Specialized Maintenance in Modern Warfare

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Amateurs talk about strategy and tactics. Professionals talk about logistics and sustainability in warfare.

—General Robert Hilliard Barrow, 27th U.S. Marine Corps Commandant

A Framework for Maintenance

As the Army transforms in contact to better prepare for multidomain operations, maintenance in this new paradigm must transform as well. Initial concepts for what future maintenance may look like are currently under development by U.S. Army Combined Arms Support Command working groups. The planned framework will encompass three levels of maintenance: strategic, support, and tactical.

The strategic maintenance level begins in the corps' rear area and works toward the forward line of own troops. This level contains depot flyaway teams and other U.S. Army Tank-Automotive and Armaments Command depot-level capabilities, a concept designed to bring continental United States (CONUS) capabilities—from depot-level maintainers to advanced manufacturing—into the theater to the point of need.

The support maintenance level services more advanced diagnostic and repair capabilities to build combat power by accelerating repairs and rapidly returning equipment to the

user.¹ As this level will support combat nearly exclusively, the supply support activities (SSAs) will transition to purely technical supply. For those outside the maintenance realm, this means that maintainers will keep on hand only a minimal stock of spare parts and equipment needed to repair and maintain equipment and components. The goal here is to reduce the footprints of brigades and divisions.

Furthest forward is the tactical maintenance level. The most significant proposed change to effect maintenance at this level is a time constraint before evacuation to a higher maintenance level. Repairs exceeding, or expected to exceed, two hours will be candidates for immediate evacuation to allow advanced technicians to complete repairs away from combat operations. Most maintenance at the tactical level will be field-level diagnosis and preventative maintenance.

Intelligence Maintenance

The nature of the intelligence warfighting function is to gather information that supports commanders' decision making across the battlefield. This requires the physical presence of the systems and Soldiers that comprise the warfighting function. Intelligence systems reside at rear-area strategic

command posts and extend up to the forward line of own troops, providing support to commanders at every echelon. The most recent changes to the Army force structure have placed the lowest echelon of intelligence maintenance at the division intelligence and electronic warfare (IEW) battalion or the division general support military intelligence company. While some brigades (mainly in the Army National Guard) maintain a brigade military intelligence company, most are transitioning to the new structure.

One of the principal challenges for intelligence maintenance is the complexity and low density² of systems. These systems are often quick reaction capability or limited material release systems and are frequently updated faster than they can reach sustainment-supported status. This creates additional hurdles for repairs as parts are often available only at the vendor level. The vehicle fleet, in contrast, has the density to keep tires and engine components stocked at the brigade level. When a vehicle component is placed on order, it can often be retrieved from the local stock or the SSA within an hour, allowing work to begin immediately.

Intelligence system parts ordered through the Army Supply System often require months-long lead times due to low demand, resulting in insufficient warehouse stock. The relevant Army depot or the manufacturer typically receives most requisitions for manufacture and release. Utilizing this alternative source of supply can add months to the maintenance process, reducing equipment availability and the odds of mission success. During armed conflict, this could mean a part arriving after a campaign has ended.

For repairs that require vendor-derived parts, the fault must be validated first by Soldiers, then by the U.S. Army Communication-Electronics Command Logistics Assistance Representative, and only then can it be requested from the vendor with the approval of the Integrated Logistics Support Center. This can be a lengthy process, as it depends on contracts between the Army and the vendor. The requested parts arrive directly from vendors and not through the standard supply system. The parts do not have national stock numbers and thus cannot be delivered to an SSA. Moreover, in a CONUS garrison (and even in some established locations outside the continental United States), this transaction is completed utilizing commercial shipping. During some operations, and in particular during armed conflict, this can preclude parts from even entering the theater.

Furthermore, evacuating systems for repair is problematic because intelligence maintenance support activities are structured differently from their ordnance counterparts. Ordnance maintenance is generally structured so that a forward maintenance company at the battalion level can evacuate systems from the brigade support battalion to the division sustainment

brigade or the division sustainment support battalion before they reach depot-level maintenance. For intelligence maintenance support activities, the IEW battalions at the division and corps are structured to operate independently at their respective echelons. If an intelligence system requires evacuation, however, there are no specialized maintenance activities at the theater or corps areas to which maintainers can send that equipment. Instead, it must be transferred directly to the depot level or to the vendor for repairs. Vendor transactions require commercial shipping for evacuation, which requires special approvals to secure funding and further delay shipment.


The Way Ahead

As new intelligence systems are developed for the multi-domain battlefields of the future, military intelligence systems maintainers must be documented as the primary maintainers of those systems and trained in their maintenance and repair, regardless of whether the vendor or program manager provides this training as a part of the initial fielding or as a stand-alone course. Army Regulation 750-1, *Army Materiel Maintenance Policy*, states that “Maintenance by contract personnel is prohibited” in “systems operating forward of the Corps rear boundary during Large Scale Combat Operations.”³ While exceptions can be requested for weapons systems requiring contractor logistics support forward of the corps’ rear boundary, this policy clearly articulates that Soldiers must be recognized as the primary maintenance solution.

With Army Soldiers taking the lead as primary maintainers, the Army supply system must incorporate specialized parts and lowest replaceable units and make them orderable through a full material release upon system fielding. Parts not in the supply system cannot be ordered through the Global Combat Support System—Army (the program of record for sustainment). They cannot travel using organic systems, Soldiers, or combat logistics trains that can deliver parts to a conflict zone. Releasing the parts in this manner will allow stockage of low-density parts across the battlefields at SSAs, as well as viability for spares.

The complexities inherent with multidomain operations and intelligence systems distributed across the battlefield create a need for IEW maintenance sections to store spare components and repair parts locally for immediate accessibility. Division and corps IEW battalions’ maintenance sections have AN/ASM-146/147 transportable electronic shop shelters,⁴ allowing for the transport and storage of critical spares at the site of repair. Storing repair parts at the forward echelon enables sourcing critical components to complete repairs in hours rather than weeks or months. This minimizes downtime for repairs and ensures commanders have access to the maximum amount of intelligence for making timely decisions.

Depending on future restructuring decisions for Army maintenance, there may be a need to restructure intelligence maintenance to enable a scaffolding progression.⁵ This would facilitate the repair of more complex parts and advanced training for maintainers further from the forward line of own troops. Preventing the need to evacuate intelligence systems from the theater will allow return to service in mere days, as the transportation burden of shipping components or systems to U.S. locations is eliminated. As IEW sections support more complex systems through transformation, the need for more complex intelligence maintenance structures is an inevitability.

Intelligence systems maintenance is critical to sustaining the intelligence enterprise at every echelon. Unlike fleet maintenance, intelligence systems maintenance is a low-density and often invisible component of the maintenance enterprise that is rarely, if ever, included in plans or orders. The unseen weakness is the critical *omission* of specialized maintenance in modern warfare. For intelligence system maintenance, reliance on contractor logistics support to sustain systems during multidomain operations is impractical. 

Epigraph

“Q&A: Marines’ (General Robert—ed.) Barrow Backs SALT—And Conventional Rearming,” *San Diego Union*, November 11, 1979, C4.

Endnotes

1. Combined Arms Support Command (CASCOM), “Sustainment Today, Tomorrow and the Future,” PowerPoint presentation for Multidomain Operations Maintenance Concept Development Touchpoint with CASCOM, November 22, 2024, slide 4.

2. Low density, in this context, refers to a process that considers a range of factors to ensure sustainability and efficiency and can significantly reduce development time and cost.

3. Department of the Army, Army Regulation 750-1, *Army Materiel Maintenance Policy* (Government Publishing Office [GPO], 2023), 34-35.

4. Department of the Army, Technical Bulletin 43-0123, *Aviation Electronics Configuration Directory* (GPO, 1981[obsolete]), 113, <https://aviationandaccessories.tpub.com/TB-43-0123/TB-43-01230030.htm>.

5. Scaffolding is a teaching technique that delivers lessons in units requiring progressively less instructional support as training proceeds. For a more detailed discussion, see “Scaffolding Content,” Office of Curriculum, Assessment, and Teaching Transformation, University at Buffalo, 2025, <https://www.buffalo.edu/catt/teach/develop/build/scaffolding.html>.

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