Logistics COMMAND

STRENGTHENING MDMC'S MANUFACTURING WITH INJECTION MOLDING

Problem Statement

Marine Depot Maintenance Command (MDMC) currently lacks injection molding capabilities, which limits its ability to efficiently produce high-precision, high-volume plastic parts and components for military equipment. As injection molding is essential for manufacturing durable, lightweight, and complex shapes in a cost-effective manner, the absence of this capability results in increased reliance on external vendors, leading to longer lead times, higher costs, and reduced control over production schedules. This gap in capability hinders MDMC's ability to meet the Marine Corps' demand for rapid, high-quality manufacturing solutions and reduces its ability to fully support mission-critical projects and modernization efforts.

Impact Statement

Establishing injection molding capabilities at MDMC will significantly enhance its ability to produce high-precision plastic parts in-house, reducing dependency on external vendors. This capability will enable faster production cycles, reducing lead times and increasing responsiveness to the Marine Corps' urgent needs. MDMC will gain greater control over the manufacturing process, from design to production, allowing for more efficient, cost-effective solutions while ensuring strict adherence to quality standards.

By integrating injection molding, MDMC will be able to produce parts in high volumes without compromising on quality, reducing production costs and providing flexibility to meet both short-term and long-term production requirements. This will improve overall efficiency, ensuring that MDMC can support mission-critical projects and military equipment sustainment without delays, directly contributing to enhanced operational readiness.

Additionally, in-house injection molding will allow MDMC to better monitor and adjust the production process in real-time, improving quality control and reducing the risk of defects or rework. This capability will strengthen MDMC's competitive edge by enabling the production of more complex and advanced designs, ensuring continued support for the Marine Corps' modernization efforts and positioning MDMC as a key partner in defense manufacturing.

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Logistics COMMAND

CAPABILITY FOR IN-HOUSE COMPOSITE MATERIAL MANUFACTURING

Problem Statement

Marine Depot Maintenance Command (MDMC) currently lacks the capability to produce composite material parts and components, which limits its ability to meet the growing demand for advanced, lightweight, and high-strength materials required for military equipment. As composite materials are increasingly used in the defense sector for their durability, reduced weight, and resistance to corrosion, the inability to manufacture these components in-house creates dependency on external suppliers, resulting in longer lead times, higher costs, and potential delays in mission-critical operations. The lack of this capability hinders MDMC's ability to provide timely, cost-effective solutions for modern military applications and limits its role in supporting the Marine Corps' modernization and readiness efforts.

Impact Statement

Developing the capability to produce composite material parts and components will significantly enhance MDMC's manufacturing capacity, enabling faster turnaround times, reduced costs, and increased control over quality and supply chains. This will allow MDMC to directly support the Marine Corps' need for advanced, lightweight, and durable components, improving readiness and operational flexibility. In-house composite manufacturing will reduce reliance on external suppliers, mitigate risks associated with supply chain disruptions, and contribute to faster production cycles, ultimately enhancing the ability to support the Corps' modernization initiatives and ensuring mission readiness.

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DELAMINATION OF TRANSPARENT ARMOR

Problem Statement

Delamination of transparent armor is a significant issue for Marine Depot Maintenance Command (MDMC), as it reduces visibility, compromises safety, and degrades the operational capabilities of tactical vehicles and armored systems. Currently, there are no in-house repair methods for delaminated transparent armor glass, forcing MDMC to requisition new glass—a costly process that involves long lead times. This challenge creates production bottlenecks, decreases asset availability, and increases costs for the Marine Corps.

Impact Statement

MDMC plays a vital role in maintaining and sustaining key ground combat equipment for the Marine Corps and other military services. The inability to repair delaminated transparent armor glass in-house hampers production efficiency and reduces operational readiness. By relying on costly requisition processes with long lead times, MDMC faces delays that extend repair cycles, resulting in lower asset availability and higher expenses. This issue threatens the timely deployment of mission-critical assets, compromising the Corps' ability to support warfighter needs.

Developing an internal capability to restore delaminated transparent armor glass would provide significant advantages. It would reduce repair cycle times, enabling faster turnaround on vehicle repairs and quicker redeployment of assets. In-house restoration would also lead to cost savings by eliminating the need for expensive outsourcing or lengthy procurement processes. Furthermore, this capability would increase flexibility, allowing MDMC to address urgent field requirements and emergent repair needs more effectively.

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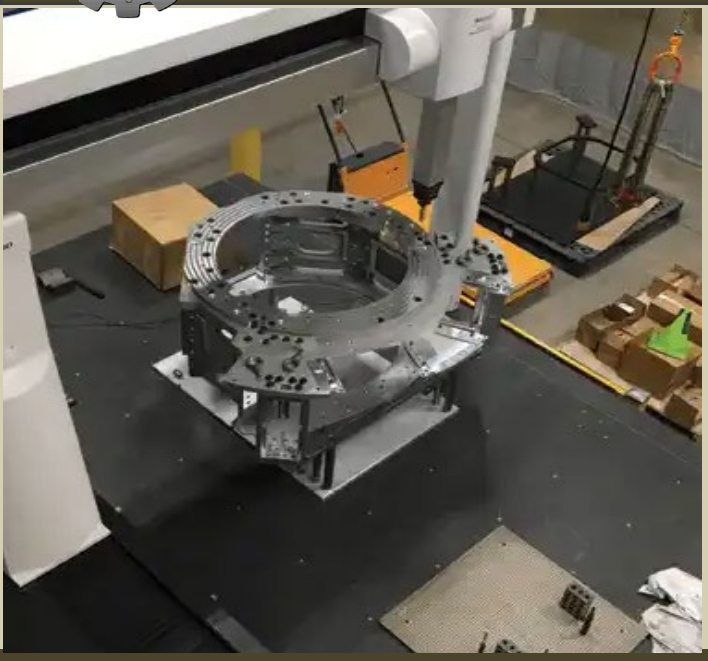
Logistics COMMAND

CMM MACHINE AND PROGRAMMING



Problem Statement

Marine Depot Maintenance Command (MDMC) is currently using an outdated Coordinate Measuring Machine (CMM) that is impacting the efficiency of measuring and programming complex components. The machine is prone to breakdowns, calibration issues, and is incompatible with modern digital systems and CAD models, causing slow processing speeds and extended lead times. Programming is manual and time-consuming, leading to errors and inefficiencies. Additionally, the aging equipment makes it difficult to maintain skilled personnel, further hindering productivity and quality control in critical manufacturing processes.

Impact Statement

Upgrading to a modern Coordinate Measuring Machine (CMM) system will automate programming directly from CAD models, eliminating the need for manual coding. This will reduce errors, enhance productivity, and significantly speed up the programming process. Automation will streamline the measurement process, ensuring faster and more accurate results, particularly for complex components used in advanced manufacturing such as additive manufacturing and CNC machining.

The new CMM system will feature advanced calibration tools that ensure consistent accuracy and reduce calibration errors often found with outdated machines. Real-time data analysis capabilities will enable quick identification of measurement discrepancies, allowing for immediate corrective actions and reducing the likelihood of defects or rework. This will directly improve quality control and enhance overall system reliability.

Additionally, the new CMM will integrate seamlessly with modern digital systems, eliminating manual data translation between CAD and the machine. This integration will reduce setup times, lower lead times, and improve compatibility with evolving technologies. By upgrading to this system, MDMC will boost manufacturing efficiency, support mission readiness, and future-proof its operations for continued excellence in advanced manufacturing and maintenance.

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Logistics COMMAND

LASER PROJECTION DEVICE FOR MARKING METHODS

Problem Statement

MDMC's current fabrication, welding, and assembly processes rely on manual layout and marking methods, which are time-intensive, prone to human error, and inefficient for high-precision components. These traditional approaches slow down production, increase rework, and reduce overall throughput, directly impacting depot-level maintenance efficiency and mission readiness.

Impact Statement

Without a Laser Projection Device, MDMC faces continued inefficiencies, increased labor costs, and delays in manufacturing and repair operations. Implementing this advanced laser-guided system would enable precise digital templating, faster setup times, and improved accuracy, ultimately enhancing production efficiency, reducing errors, and ensuring mission-critical assets are returned to service faster.

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Logistics COMMAND

SECURED MOBILE STORAGE

Problem Statement

Marine Force Storage Command (MFSC) requires a secure, mobile asset storage solution to rectify current inefficiencies and security gaps in tool management. At present, assets are stored in inconvenient locations with access limited to a few keyholders, which impedes the workflow of warehouse personnel. A mobile, secure unit, positioned near the workspace, would provide personnel with ready access to their tools while ensuring complete asset visibility, accountability, and security. This solution must be able to secure assets, both laptops and tablets via a cypher lock or a CAC enabled interface.

Impact Statement

MFSC plays a vital role in the logistical lifecycle of critical assets, overseeing their receipt, issue, and storage to ensure mission preparedness. The current lack of a centralized, secure, and proximate storage solution severely hampers operational efficiency and introduces significant security vulnerabilities. By relying on disparate, inconvenient storage locations with limited key-holder access, MFSC faces process delays that extend task completion times, reduce asset accountability, and increase the risk of loss. This issue directly threatens the timely execution of support tasks, compromising MFSC's ability to sustain the warfighter.

Developing an internal capability for secure, mobile asset management would provide significant tactical and financial advantages. It would drastically reduce asset retrieval times, enabling a faster operational tempo and quicker turnaround on mission-critical tasks. In-house, point-of-need storage would also lead to substantial cost avoidance by minimizing asset loss and eliminating the administrative burden of tracking misplaced equipment. Furthermore, this capability would increase logistical flexibility, allowing MFSC to rapidly position and stage assets to support dynamic and emergent operational requirements more effectively.

To achieve this, MFSC must first invest in the appropriate infrastructure. Acquiring a hardened, mobile storage container integrated with a DoD-compliant digital access control system (CAC/Cypher Code) is essential for establishing a sustainable, long-term solution. By implementing this technology, MFSC can bridge the current gaps in security and accountability, creating an auditable and controlled asset environment. Ultimately, this investment will enhance MFSC's core logistical mission, improve materiel readiness, and ensure that vital assets remain secure, accounted for, and immediately available to support the warfighter in any mission environment.

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