MAINTENANCE REPORTS

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Aviation Safety Blog
24-03

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Lance Cpl. Danielle E. Howell, an aviation maintenance data specialist with Marine Light Attack Helicopter Squadron 773, listens as Staff Sgt. Fernando Gallardo, staff noncommissioned officer in charge of the maintenance administration division, HMLA-773, provides instruction on how to log engine maintenance records here. (U.S. Marine Corps photo by Gunnery Sergeant Katesha Washington)

Reliable maintenance is the backbone of any successful aviation operation and the Navy and Marine Corps are no exception. To ensure the safety and efficiency of their aircraft, these military branches rely on a comprehensive system of maintenance reports. These reports not only document the status of aircraft, ground support equipment, test equipment and lifesaving equipment but also play a critical role in decision-making, mission readiness and budget management. This article delves into the different types of maintenance reports used in Navy and Marine Corps aviation, highlighting their significance and how they contribute to maintaining a formidable air fleet.

Daily or **Flight Deck Status Reports** provide a snapshot of the aircraft's condition, particularly on carriers and amphibious assault ships. These reports are compiled by flight deck personnel and include essential information such as the number of available aircraft, their mission readiness status and any issues requiring immediate attention. Flight deck crews rely on these reports to determine which aircraft can be launched for missions, ensuring that only safe for flight and mission ready assets take to the skies. This real-time information is crucial for maintaining an effective air combat capability.

The aircraft **Maintenance Action Form** (MAF) is the cornerstone of maintenance reporting in Navy and Marine Corps aviation. The MAF documents discrepancies and corrective maintenance actions performed on aircraft, aircraft weapons systems, aircraft components and ground support equipment, including routine inspections, repairs and component replacements.

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Each MAF is meticulously filled out, detailing the nature of the work, parts used and the technicians responsible. These reports are invaluable for tracking the maintenance history of each aircraft, associated equipment helping maintenance crews anticipate future needs and ensuring compliance with safety standards.

The **Aviation Maintenance Material Management** (AV3M) system is a comprehensive maintenance reporting framework encompassing maintenance, material and flight operations data. The AV3M is used to manage the aircraft readiness, identify maintenance trends and allocate resources effectively. The system generates reports covering everything from scheduled maintenance tasks to unscheduled repairs and parts inventory. By analyzing AV3M reports, commanders can make informed decisions about aircraft availability and deployment, ultimately enhancing mission success rates. Studying these reports can also help identify significant weaknesses in training, corrosion control, problematic weapons systems and improper documentation so that maintenance leaders may address those issues.

Unscheduled maintenance reports are essential for addressing unexpected issues with aircraft. These reports document malfunctions, breakdowns or anomalies that require immediate attention. They include details such as the time and location of the issue, the affected aircraft's identification and a description of the problem. Rapid response to these reports is critical to minimize downtime and ensure aircraft are ready for their next mission. Unscheduled maintenance reports also contribute to a culture of safety, allowing engineers and technicians to identify and rectify recurring problems.

End of Mission (EOM) reports are filed after each aircraft mission, providing valuable feedback on the aircraft's performance. These reports include data on fuel consumption, equipment functionality and any in-flight issues. By aggregating EOM reports, maintenance crews can identify wear and tear patterns associated with specific mission types, helping to tailor maintenance schedules and optimize aircraft performance.

Intermediate Level (I-Level) maintenance involves extensive maintenance tasks on aircraft and support equipment. Used as a secondary source of data recovery, the Buffer Management Tool (BMT) helps allocate resources efficiently. The BMT allows maintenance crews to prioritize tasks based on the criticality and readiness status of aircraft and support gear. The tool assists with workload balancing by allowing maintenance managers to track the progress of various maintenance tasks and their dependencies. It helps manage spare parts and supplies by tracking inventory levels. The BMT can also integrate predictive maintenance algorithms that help predict when a component or system might fail. Ultimately, efficient I-Level maintenance using the BMT can lead to cost savings by reducing the time aircraft spend on the ground and minimizing the need for expedited parts shipments.

A **Due in from Maintenance** (DIFM) status report in I-level maintenance serves as a critical document to track and manage repair and maintenance processes of avionics and electronic components that are removed from aircraft for servicing. The DIFM reports detail information about the off-equipment assets (e.g., avionics or electronic, engines, airframes components, etc.) being sent to the repair shop. This includes the component's part number, serial number, condition and reason for removal. It tracks the progress of the component through the repair process, notes when it was received, the date work started and any delays or issues encountered during repair. It includes information on the quality checks and inspections

performed during the repair process, ensuring that the component meets required standards and is safe for reuse, it also helps in managing the inventory of spare parts. The DIFM status report may include cost-related information, such as the cost of repairs, parts and labor, which helps in budgeting and cost control. Maintenance planners can identify trends in component failures and plan preventive maintenance actions more effectively.

A **Broad Arrow** (BA) report is submitted by I-Level maintenance activities whenever an item of support equipment (i.e., bench/test set/operational test program set (OTPS)/rolling stock) is inoperative (loses its capability to perform its designated function) and the loss of function impacts or potentially impacts the ability of the I-level activity to provide support. There are several different BA reports that need to be submitted throughout the process of identifying and ultimately re-establishing repair capability, but the most important to get out initially is the BA Failure Report. This report is initiated by the repair activity and is addressed to applicable aircraft controlling custodians: COMNAVAIRPAC/LANT, applicable Marine Aircraft Wings or type-wings. It is important that the correct codes within the organization are included in the message to ensure the appropriate people are informed of the situation and can provide support. When an aviation unit is embarked, the **Aviation Maintenance Readiness Report** (AMRR) should annotate BA information. The remarks section of the BA Failure Report lists the failure data including nomenclature, part number, serial number, system affected, calibration requirements, tech assist messages, next higher assembly, outstanding docs and any applicable remarks. For each required part, the BA Failure Report should include document number, requisition MILSTRIP date, time, group (DTG), part number, quantity ordered; source, maintenance and recoverability (SM&R) code, commercial and government entity codes (CAGE), national item identification number (NIIN), etc.

In Navy and Marine Corps aviation, aviation maintenance reports are the lifeblood of mission readiness. They provide critical data on aircraft, weapon systems, ground support equipment, aviation life support systems, status, facilitate resource allocation and enhance safety. The careful documentation and analysis of these reports ensure these military branches maintain a formidable air fleet, ready to respond to any challenge.

Cover: U.S. Marine Corps Cpl. Kade Atwood, UH-1Y aviation technician (left) and Cpl. Brandon Taylor, UH-1Y Huey aviation mechanic, Marine Light Attack Helicopter Squadron (HMLA) 167, 2nd Marine Aircraft Wing, conduct routine maintenance on a UH-1Y Huey on Marine Corps Air Station (MCAS) New River in Jacksonville, North Carolina. (U.S. Marine Corps photo by Cpl. Trey Michael)