



Integrating Aviation Practices Into the Ground Maintenance Process

An Alaska Army National Guard Black Hawk helicopter mechanic conducts post-flight maintenance on the tail rotor in Yuma, Arizona. U.S. Army Alaska National Guard photo by CPT Balinda O'Neal.

By LTC Linus D. Wilson

Maintenance remains a cornerstone of all military operations, directly impacting conflict outcomes. Aviation and ground maintenance are disparate in their application but are similar in their shared purpose of building combat power and providing commanders with options. A recurring challenge across many motor pools is the absence of standard operating procedures and effective organization.

To enhance ground maintenance capabilities and increase operational readiness (OR), maintenance leaders should implement daily production control (PC) meetings; adopt the Problem, Plan, People, Parts, Time, Tools, Training (P4T3) methodology; and integrate deliberate training gates—modeled after the Aviation Maintenance Training Program (AMTP)—into their daily maintenance practices. Additionally, maintainers should establish standardized maintenance timelines for predictable and routine tasks.

Implement Daily PC Meetings

The first step is for commanders to host a PC meeting to set daily maintenance priorities based on pacing items, mission requirements, and available parts—not solely on non-mission capable (NMC) status equipment.

Mirroring an aviation PC meeting, ground maintenance control officers should review Department of the Army (DA) Form 5988s, *Equipment Maintenance and Inspection Worksheet* (DA, 1991); coordinate, schedule, and prioritize maintenance; monitor test, measurement, and diagnostic equipment status; maintain parts status; direct supply operations; and coordinate inspections and road tests to baseline the priority of work across battalions.

Daily PC meetings maximize efficiency across companies by focusing resources on tasks most essential to mission accomplishment. Daily briefings by company representatives on expected completion times, work stoppages, and parts shortages enforce accountability and provide supply sections critical updates and lead time for parts procurement. Additionally, PC meetings provide a forum for leaders to emphasize the importance of maintenance, reinforce priorities, and discuss upcoming training and mission requirements, ultimately driving maintenance efforts.

Adopt the P4T3 Methodology

The P4T3 approach, proven effective in aviation maintenance, provides a holistic framework to plan maintenance tasks.

More specifically, “P4T3 is a planning concept allowing commanders, leaders, and maintenance personnel to coordinate and plan the personnel and resources required to perform maintenance. Using the P4T3 concept streamlines maintenance operations and normally saves time and resources” (DA, 2020, p. 1-15). Adding P4T3 to ground maintenance may significantly increase OR.

Problem

A key difference between aviation and ground maintenance is the identification of underlying problems. Ground maintenance often addresses faults reported on DA Form 5988 without a systematic process for identifying the underlying issue. Properly identifying the problem and not just addressing the symptoms is essential for efficient and effective maintenance.

Plan and People

Develop a detailed plan using the appropriate technical manuals and team expertise. A common shortfall in motor pool maintenance is the misallocation of personnel, where leaders assign mechanics to tasks based on availability rather than expertise. Maintainers should be assigned based on experience level, pairing junior maintainers with senior mentors. Senior maintainers should

focus on leadership and mentorship, not solely administrative tasks. Aligning experience levels with task difficulty will improve problem-solving and foster professional development.

Parts, Time, and Tools

Parts ordering is inefficient and extends NMC time due to either poor problem diagnosis leading to unnecessary orders, or reactive ordering where parts are requested only as needed. Senior maintainers should confirm the accuracy of part numbers and quantity and the availability of required tools prior to tasks assignment. This ensures tasks are resourced and reduces overall maintenance time by minimizing tool-search delays. This efficiency allows leaders to rapidly redeploy maintainers and equipment.

Training

The final and arguably most critical component of P4T3 is training. Adopting a ground maintenance training program mirroring the AMTP provides a structured approach to developing and evaluating maintainer proficiency. As highlighted by industry expert, Roy H.

Williams, “Training is not an expense, but an investment in human capital.” The AMTP “standardizes aviation maintenance across the Army ... to promote predictability and builds the knowledge base needed to provide maintenance excellence” (DA, 2020, p. 1-3). It creates a deliberate gated training method requiring maintainers to perform specified

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— Roy H. Williams

tasks in a crawl, walk, run approach. A ground maintenance training program will allow commanders to gain valuable insights into unit strengths, track individual proficiencies, optimize talent management, and proactively address training needs. Individual maintenance level designations can be linked with established industry standards and

professional military education, allowing maintainers to transfer their skills to the private sector. This integration is not simply about adopting new programs, it’s about fostering a culture of continuous improvement and professional development within the ground maintenance force.

The Cultural Impact

Unlike aviation maintenance, ground maintenance often exhibits shortfalls in accountability, emphasizing a hierarchy of responsibility rather than individual duty. Holding individuals accountable not only reinforces standards but instills a sense of ownership, which can result in a greater sense of pride and professionalism in their work. By institutionalizing standard practices (e.g., conducting daily PC meetings, P4T3, and adopting the AMTP), ground units across our formations can foster a climate of standardization, accountability, and professional growth.

Conclusion

Adopting proven aviation practices like daily PC meetings, P4T3, and AMTP, creates a valuable opportunity to positively shift ground maintenance practices. By focusing on standardized procedures, proactive planning, and continuously developing training, ground units can boost readiness, support mission demands, and develop a more capable and flexible sustainment force. Moreover, this approach builds a strong maintenance culture rooted in organization, skills, and mission success.

Biography:
LTC Linus Wilson is currently a student at the Air War College on Maxwell Air Force Base, Montgomery, Alabama. He was commissioned and went on active duty as an Aviation Officer in October 2004 after graduating from Troy University, Troy, Alabama. His previous assignments include 127th Aviation Support Battalion Commander in the 1st Armored Division Combat Aviation Brigade at Fort Bliss, Texas; Deputy Commander Joint Special Task Force–Somalia; as well as assigned Organization Personnel & Force Development, Fort Rucker, Alabama; and Brigade Executive Officer, 1st Aviation Brigade, Fort Rucker.



U.S. Army Soldiers conduct maintenance on an AH-64D Apache helicopter at the Joint Multinational Readiness Center Hohenfels, Germany, September 10, 2025. U.S. Army photo by PFC Ariana Smith.

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