

Peaking at LD: A Way to Achieve Maintenance Excellence

By LTC Jay Ireland

The job of a combined arms battalion (CAB) commander is to deliver lethal platoons, sections, and crews to the brigade and division commander. Lethality in a CAB begins with fully functional equipment. Trained crews, platoons, and companies cannot accomplish their assigned mission essential tasks with broken kit. Therefore, every CAB commander's goal should be to maximize the readiness of their combat platforms for the precise moment they are needed.

What follows goes beyond looking at operational readiness rates (ORR) to determine the health of a unit's maintenance. It defines a more holistic approach to help battalion commanders establish the systems necessary to give the brigade and division commanders what they require – a combat credible force at the decisive point.

The questions, therefore, are how do you achieve maintenance excellence and how do you know when you are there? The quickest and most accessible method to assess maintenance performance would be to monitor ORR. It would be incomplete, however, to label a CAB proficient at maintenance because they have a high ORR at any randomly selected time. Rather, units that have their maintenance highest when that OR is needed most, essentially “at the line of departure (LD),” should be considered the gold standard. It is also unrealistic and potentially problematic to expect units to always maintain 100 percent ORR as vehicles are almost always in a state of degradation. However, ORR across the entire unit should follow a predictable heartbeat in advance of, during and following major training windows. Battalion commanders know they have peaked at LD from a maintenance perspective when every crew can shoot gunnery from their own platform, platoon live fires happen with all vehicles assigned to the platoon, and all vehicles drive off the rail cars to their combat training center (CTC) rotation.

A battalion that does not properly resource/protect services, refill shop stock lists (SSLs), reorder basic issue items (BII), and repair lethality-related maintenance faults will only achieve peak maintenance if they are lucky. It is more likely that unscientific units will enter gunneries or CTC rotations with fleets that struggle to keep up with the demands of the operating environment. I submit that battalion commanders should not always define maintenance success as a high ORR but rather look to create a culture of lethality through maintenance that focuses on accountability, preventive maintenance checks, and services (PMCS) that generate repairs, SSL replenishment and leader development.

Culture of lethality via maintenance

Maintenance centers around these thoughts: Does everything you are authorized and assigned work exactly as it is designed? If not, what are you doing about it?

The single most important component of lethality in a CAB is a battalion-wide culture that refuses to accept anything but fully mission capable equipment. This culture can be difficult to establish because it requires buy-in from every echelon in the formation in a time where there more demands on an armored brigade combat team (ABCT) than ever. With that in mind, it's essential to acknowledge we do not have enough mechanics even when fully manned to drop off our vehicles at the forward support company (FSC) like a service station.

That acknowledgement is even more important when considering the current mechanic shortfalls across the force. Crews need to be empowered, trained, and required to do their own skill-level 10 (operator) maintenance as a way of vehicle ownership. After all, the mechanics won't be the ones pulling the triggers, and the crews should be the ones who know their vehicles the best, what works and what doesn't. Unfortunately, we have not developed a machine that can automatically diagnose a vehicle's faults by plugging the tank into the computer. As a result, the crews must be engaged, informed and care about getting their vehicle to operate exactly as it was designed.

The trick to establishing a culture of maintenance lies in leader development beginning with the lowest echelon about the role of the equipment status reports (ESR) - both the wide-open look and the non-mission capable

(NMC) report. Battalion commanders should be spot checking ESRs every single command maintenance to set the tone, spot problems and ensure compliance. As the saying goes, commanders cannot expect what they don't inspect. Additionally, it's helpful to make any vehicle that hits the NMC prepare a commander's critical information requirement from the company commander to the battalion commander because it forces a commander's dialogue about maintenance that might not occur otherwise.

When Soldiers start seeing parts ordered against the faults they've been writing on the 5988Es for months, they begin to trust that their leadership actually listens to them, and that maintenance is important. Conversely, 5988Es that come back empty week after week and ESRs that have nothing on them erodes that trust. How can we possibly expect our crews to do a PMCS by the book for hours at a time in the heat (or cold) of the motor pool if we cannot ensure their work results in action?

Leader development

Leader development continues in the battalion through the service briefs (in and out briefs). When I was a young lieutenant, the service briefs were the single most stressful events in my very young career because I was asked to know everything about my equipment from top to bottom. My battalion commander expected me to understand how the tank worked, never allowed me to use acronyms without first spelling them out, demanded a deep understanding of the processes associated with maintenance to include the wide open ESR and checked to ensure the entire company, including the mechanics, was pulling in the same direction.

More importantly, the service in brief should be a contract between the lieutenant and the battalion commander about what will get done in the three-plus weeks that follow, and the out brief should be a description of what occurred/what needs to be policed up. I cannot begin to describe how much I have learned about my battalion from these briefs and how critical they are to maintenance program excellence when you get them right. If your organization does not have set service windows like a tank and Bradley formation (should), then set them quarterly and call them maintenance deep dives following the same construct as above.

Battalion commanders will know they have hit the mark with their leader development when the Soldiers hold their leadership to task:

- Where is my Bradley seat, sergeant?
- My heater has an -18 status, why haven't you picked it up yet?
- Why is my M113 not deadlined on the ESR?

The platoon leader and the executive officer should know every day that their Soldiers understand how to read the ESR and understand who's at fault when 5988Es come back blank. Too often, commanders deflect the responsibility to "do maintenance" onto the battalion executive officer, FSC, and field maintenance technician, leaving the commander free to focus on things like training management and lethality. Instead, commanders need to lead from the front during command maintenance, wearing coveralls, doing their own PMCS, and rotating throughout their entire formation to ensure compliance. Commanders, after all, prioritize with their presence.

Battalion commanders focus on metrics

Operational readiness is most definitely important, but it is only one measurement of readiness. True maintenance superiority can only be assessed using a wide range of variables: SSL replenishment, to-standard service completion, number of crews that qualified off their platforms, working Joint Battle Command – Platform/frequency modulation communications, BII on hand and signed for on bill of materials, ESR understood at user level, technical manuals used during PMCS, leaders present during maintenance, etc.

The best way to understand the strength of the maintenance culture is to randomly select wide open ESRs across the battalion and check for completion. The language across the ESR can be complicated to include sources of supply, status, priority, estimated ship dates, quantity on hand/issued/next level, etc. Units that have prioritized leader development, have engaged senior leadership present during PMCS, and have a maintenance meeting that supports the commander's intent will have wide open ESRs that accurately reflect the maintenance status of the fleet. This will also demonstrate the way ahead to fix the identified deficiencies. Undeveloped programs will have wide open ESRs that show no faults, old faults whose parts came in long ago, parts at the next level but have not been picked up, long lead estimated ship dates with no supply action requests associated to speed up the process,

etc. It is important to focus on your support vehicles in addition to your combat platforms. Many CABs can have perfectly functioning tanks and Bradleys but have broken tactical operations center generators, fuelers and MKTs.

SSL is also a fantastic way to evaluate the health of a maintenance program because of how tricky it is to get right and how important SSL is to keep the fleet ready while still training. There are two essential things to consider with SSL:

1. Are the field maintenance teams (FMT) properly inventorying and consuming their SSL, and
2. Are the FMTs automatically replenishing their SSL?

The Army mandates that FMTs inventory their SSL every quarter but that is a bare minimum. Rather, FMTs should be mandated by their company executive officer to consume every single part they pull from the SSL daily. If the system is set up correctly, the parts that get consumed are then automatically reordered. This is important because SSL gets reordered at 05/12 priority, meaning that it takes months for many of these parts to get restocked. Units that understand the importance of SSL are sticklers about keeping their parts bins stocked full and the parts flow consistently working in their favor. Properly filled SSLs can prolong training opportunities and save countless vehicles from hitting the print.

Services are another window to the maintenance soul of a battalion. Not only must the battalion commander look to monitor the completion of services, which is important in itself, but must also set the conditions necessary for the proper execution of services. Training management is the foundation of service execution as CABs execute tank and Bradley services the same way they do gunneries, situational training exercise lanes, or CTC rotations – in that they are resourced, protected and enforced. When commanders write their annual, semi-annual, and quarterly training guidance, subordinate commanders should understand that services require leader development, standards (akin to training and evaluation outlines), and they must not be sacrificed for any reason. Services provide excellent leader development opportunities for young Armor leaders and should result in all members of the battalion being significantly better trained on their platform than before the service began.

Maintenance excellence systems

Command maintenance executed properly, without exception, is the single most important system for a CAB. Command maintenance is the beginning of the PMCS process that begins on Monday mornings when crews, with the NCO and officer leadership present, conduct their checks using the technical manuals (TMs) as a guide. First line leaders, especially the officers, should be encouraged to get access to GCCS-A, so they can pull their own maintenance related forms to monitor the process. Crews then place the faults right from the TM on the 5988Es and only stop when their first line leader has inspected the 5988E and the vehicle, to ensure completion. When complete with all the 5988Es for the company, the company executive officer then takes those forms to be inspected by the battalion executive officer in the battalion tactical operations center established in the motor pool. When the battalion executive officer approves, the company commander may now switch to ancillary equipment that the commander's briefed for approval at the battalion training meeting. Some of this equipment includes muzzle boresight devices, small arms, machine guns, gas masks, tentage, camouflage nets, etc.

PMCS continues throughout the week as mechanics move to verify faults based on the company executive officer prioritization for the FMT, the form 5988Es inputted by the GCCS-A clerk and the military occupational specialty (MOS) 92As (automated logistical specialists) in the motor shop. Then, new form 5988Es get printed for the company executive officers. The process continues as the platoon leader can now make sure all the faults are on both the updated form 5988Es and the ESR (either the NMC or wide open ESR depending on the fault). Battalion commanders can assess if there is a culture of maintenance in the battalion by asking crews (gunners/operators) to go line-by-line on the wide open ESR and compare it to their last completed PMCS to see if parts are being ordered. This check is vital because it allows the battalion commander to see broken linkages in the maintenance system.

The battalion and company maintenance meetings are critical systems as well. These forums are the place to begin with an ESR scrub to ensure: every fault has a part against it, supply action requests have been submitted for long lead exchange control documents, parts labeled at -18 (or "in the bin") have been picked up from the supply support activity (SSA), or they are on hand/properly secured by the FMTs. The maintenance meetings are also a place for SSL management. Properly stocked SSLs minimize deadline faults during a training event or routine

maintenance operations. Again, SSL stockage and inventories must be planned months in advance because it takes millions of dollars and weeks for parts to start flowing after automatic reordering of all non-deadline fault (05-12 priority) SSL parts.

The maintenance meeting is also an important means of conveying commander's intent to the maintenance team: maintenance control tech, maintenance control officer, battalion maintenance officer (BMO), and the FMT. As stated previously, the battalion and company commanders must take an active role in the management of the maintenance process of their echelon including prioritization, course correction, and task completion. Company commanders must be held accountable for the actions of their FMTs, especially when those FMTs are attached to the maneuver companies as is the case with most CABs. While the battalion executive officer is the primary executer of the battalion commander's intent to run the unit's maintenance program through the company executive officers, I cannot overstate how important the battalion commander's role is in setting the tone with the company commanders. If the boss doesn't care about maintenance, then the lower echelon commanders won't care either. Company commanders should be answering questions about the status of the FMT's SSL, the reason for the delay in the agreed upon service schedule, and why the FMTs have not been able to pick up their Class IX (repair parts and components) from the SSA. It is easy to spot battalion commanders who prioritize maintenance because they have excellent material management to include timely overaged repairable-item list execution, empty bins at the SSA, historical records of material release orders, and accurate delivery monitors (VL06Is). The converse manifests itself with parts overflowing in the bins, old track sitting around for months without being turned in, and a lack of awareness at the end user level as to what is on order.

The final system that must be addressed is the battalion training meeting. Battalion commanders should not separate maintenance from training. The BMO, who is probably the #1 lieutenant in the battalion post platoon leader time, should brief the service windows during the mid-long range planning horizons to ensure training events and services are deconflicted. Another good indicator as to the seriousness of the battalion's commitment to maintenance is the caliber/military occupational specialty of the BMO. Hard core maintenance enthusiasts make the position nominative and sought after, while those who do not understand the BMO's role will often put new second lieutenants or excess officers into the billet. With the right person in the job, the BMO can greatly increase the overall effectiveness of a unit's maintenance by monitoring company service plans, deconflicting training and maintenance, ensuring effective 5988E and PMCS flow, freeing up the maintenance tech from staff work, and watching for trends happening around the Army. Commanders who fail to account for services before they start planning training, invariably attempt to jam services into inappropriate windows that aren't protected, and everything becomes the dreaded "rolling services."

Conclusion

Maintenance proficiency at battalion level is often defined by a high ORR. While an accurate ORR is important, it is only a small part of what battalion commanders must accomplish to be considered excellent at maintenance operations. Therefore, it is more valuable to assess a battalion commander's ability to "peak at LD" regarding maintenance as it demonstrates understanding of all the many levers that drive maintenance. Additionally, going away from the notion that high ORRs need to occur 100 percent of the time and moving toward the idea that ORRs should have a predictable "heartbeat" creates a scenario that is more sustainable and grounded in the realities associated with today's budgetary and manning operational environment.

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Acronym Quick-Scan

ABCT – armored brigade combat team

BII – basic issue items

BMO – battalion maintenance officer

CAB – combined arms battalion

ESR – equipment status report

FMT – field maintenance team

FSC – forward support company

GSCC-A – Global Combat Support System – Army

LD – line of departure

NMC – non-mission capable

ORR – operational readiness rate

PMCS – preventive maintenance checks and services

SAR – supply action request

SSL – shop stock list



U.S. Army Pvt. Rosa Guzman, an allied trade specialist assigned to 1st Battalion, 68th Armor Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, welds a part of an M2A3 Bradley Fighting Vehicle during maintenance at Drawsko Pomorskie, Poland, Aug. 31, 2022. The 3/4 ABCT is among other units assigned to the 1st Infantry Division, proudly working alongside NATO allies and regional security partners to provide combat-credible forces to V Corps, America's forward-deployed corps in Europe. (U.S. Army National Guard photo by SPC Hedil Hernandez)