



BEYOND THE COUNT: BDA FOR MODERN WARFARE

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Introduction

Techniques for conducting battle damage assessments (BDA) during large scale combat operations (LSCO) are sorely lacking in current doctrine. On the surface it seems easy: count what you killed so you know what the enemy has left. Unfortunately, the nuances and complexities of a modern battlefield make this seemingly simple process extremely difficult, especially given minimal doctrinal references. Additionally, U.S. forces have not participated in LSCO in decades, so native institutional knowledge is also lacking. Units have endeavored to piece together BDA teams and solutions, but they all struggle. This paper is designed to set a common baseline for considerations for a division or corps to conduct BDA effectively in an LSCO fight. The principles we observe through simulated battles during Warfighter exercises are equally effective in true conflict.

Pre-Conflict: Build Your Team and Establish Your Process

Roles and Responsibilities. Regardless of echelon, internal roles and responsibilities must be explained thoroughly in a unit's standard operating procedure (SOP). Since division- and corps-level BDA teams are often pieced together from external organizations using, for example, a mobilized reserve component or expeditionary military intelligence brigade personnel, having a clear explanation of their roles and responsibilities upon their arrival in theater is critical to starting strong and minimizing the initial lag that occurs when taking on a new, unfamiliar role. Who provides the collected BDA? Where is it collected? How is the collected data processed? What are the required end products and assessments?

In addition to their standard internal roles, units must explicitly task subordinates with specific responsibilities within

the BDA process: corps must direct divisions; divisions must direct brigades; and so on. Failure to provide explicit direction results in duplicated effort and wasted manpower—or, worse, units failing to deliver reports because each echelon assumed it was the responsibility of the other. Both are extremely common pitfalls in Warfighter exercises. Ideally, subordinate responsibilities within the BDA process are published in an operation order, which ensures both organizations clearly understand what is expected and have a reference document, as opposed to relying on a more informal email or verbal conversation.

Units must understand how organizations outside of their control—such as higher headquarters (HHQ), adjacent units, other services, and partner nations—publish BDA, where it is published, how frequently it is disseminated, and how they can incorporate each organization's information into their own BDA processes. This information should be recorded and reviewed regularly for accuracy to prevent inaccurate enemy assessments as the result of incomplete reporting. Most significantly, a specific unit member should be tasked to collect that data and incorporate it into the unit's overall assessment. Keep in mind that allies' BDA may be collected through a liaison or a Security Force Assistance Brigade, not directly from the ally's military force. This information is best captured by stating it clearly within the internal roles and

responsibilities discussed previously. For example: 1) BDA analyst #1 is responsible for collecting Air Force BDA every four hours from portal folder YYY at <https://abcd.com>; that information should be copied into the unit BDA tracker. 2) BDA analyst #2 is responsible for pulling country M's BDA from chat room XYZ at least once an hour and adding it to the unit's BDA tracker.

Units often conduct sensor-to-shooter technical rehearsals prior to Warfighter exercises. During these rehearsals, units practice receiving reports from a variety of sources, from signals intelligence to full motion video to counterfire radars. Those reports are then processed through the fires channel until a fire mission is executed. A similar rehearsal would be helpful for BDA teams. Overlapping responsibilities can make the BDA process particularly challenging, however, so if possible BDA teams from different echelons should meet to talk through as many different vignettes as possible to clarify responsibilities.

Collection and Dissemination Procedures. With roles and responsibilities established, the next step is to create formats and procedures for collecting BDA from across the battlefield. Units should designate a standard BDA reporting format to ensure not only that reporting is limited to the relevant information, but also to forestall the necessity of interpreting multiple different formats before the battlefield can be assessed productively. Ideally, the chosen format will be mirrored as closely as possible in the requirements from HHQ to minimize reformatting. And once a format is established for subordinates, its use *must* be enforced!

Once the format is standardized, reporting timelines must be established and enforced as well. Not all units will require the same timeline. For example, ground maneuver elements regularly in contact with the enemy along the forward line of own troops (FLOT) may provide updates every four to six hours, while an element operating in the rear area only provides an update once a day. Fires elements may provide updates more or less frequently depending on their operational tempo, but elements focused on the destruction of high payoff target systems should prepare much more frequent updates. Aviation brigades engaged exclusively in deep attacks may need to provide just a single update after each mission, while aviation support along the FLOT may require more regular updates. The takeaway here is that there is no one-size-fits-all solution—each subordinate unit must have a function-specific timeline.

Collecting BDA from external sources is more typical at echelons corps and above, but there may be special situations where lower echelon units should consider some of these sources. For example, Air Force strikes or allied operations occurring within a division's area of operations (AO) could be tallied by the division before submission to Corps, but that

should be deconflicted with Corps before operations commence to prevent duplicate reporting.

Once BDA is collected and processed from all applicable sources, the unit must disseminate a consolidated BDA product back out to its HHQ, subordinates, and adjacent units. This allows those elements to refine their understanding of the enemy's remaining capabilities. Reports should be sent on a system and in a format that everyone, especially all subordinate units, can use. An assessment disseminated on the Secure Internet Protocol Router, for example, offers no benefit for allies who can only access the Mission Partner Environment; likewise, an assessment posted to the MAVEN Smart System does not help a subordinate who works in the Command Post Computing Environment but has no MAVEN account.

Finally, all collection and dissemination processes need an established and tested Primary, Alternate, Contingency, and Emergency plan, known as a PACE plan. How deep that plan goes will be based on how much risk the unit is willing to accept, but at the very least it must include contingencies that preserve the ability to assess enemy capabilities at all times.

Working groups and quality control are essential due to the ambiguities inherent in basing enemy capabilities assessments on a wide variety of battle damage reports. Some disagreement between units and echelons about what remains on the battlefield is inevitable; those differences should be resolved within the intelligence warfighting function into a single, cohesive narrative that allows all G-2s to brief the same overall assessment to commanders. Whether BDA discussions happen in a separate BDA working group or as part of the intelligence synchronization meeting, the important thing is that the discussions happen.

As units build trust across the team by identifying and resolving differences in these working groups, there must also be an element of quality control at various points in the process. Remember that high quality BDA reporting enables high quality results and assessments. Divisions should provide quality data consistently, which allows corps to trust the assessments of divisions without rechecking their work. The same standard applies for divisions down to brigades. When subordinates report incomplete grids or misidentify equipment in enemy formations, their HHQ loses trust and is forced to check their work, resulting in wasted time and manpower. Before submitting BDA reports, each unit needs to validate both the integrity of their data *and* their assessment of it. Destroyed equipment should be associated with an appropriate enemy unit based on order of battle and location on the battlefield. If incomplete data is received from external organizations such as special operations forces or other services, someone must be tasked to investigate and correct that data. For example, if division artillery (DIVARTY) reports killing 6x multi-launch



Soldiers attack their objective during aerial insertion and battle damage assessment training at the Cincu Training Center, Romania. (U.S. Army photo)

rocket systems, that's not enough information. Either the unit needs to return to DIVARTY for confirmation of the specific system destroyed, or the unit must determine the specific system(s) based on the location of the battlefield. A report cannot simply be discarded if it is incomplete.

Initial Assessment and Ongoing Updates

Understanding how the enemy employs its key systems is critical to identifying which systems matter at each echelon, where to focus BDA tasks for each echelon, and how to weight the effort of the BDA team. The opposing force confronted during a Warfighter exercise will be equipped and organized differently from our real-world adversaries, so it is important to evaluate and understand the enemy in each situation. How the enemy employs its systems will also change over time. For example, fires assets initially employed as battalions may be forced to start operating as batteries, or batteries may have to operate as sections, as attrition takes its toll. The number of air defense systems per radar may increase or decrease in response to battlefield successes or defeats.

Continually assessing how the enemy employs its systems will inform the BDA plan. The type and number of systems a unit targets will change as the enemy adjusts its tactics, techniques, and procedures. One day BDA analysts may be looking for 6-plus systems in formation, while the next day the target has changed to 1 or 2 systems operating independently. The "so what" of the battle damage assessment will also change from day to day. One day, destroying 10x artillery pieces may take out less than 10% of its capability, while a few days later, destroying the same amount of equipment may completely remove the enemy's ability to affect a

critical operation and force their commander to reposition assets or commit his reserve.

Understanding the enemy also refines the high-payoff target list (HPTL) to prioritize high-value munitions appropriately. During a Warfighter exercise, the enemy will have 6 or more different air defense systems enabled by 8 or more different radars, totaling hundreds of pieces of equipment. A corps' HPTL that includes simply "air defense" will result in targeting many systems that should not be a corps problem, ultimately wasting hundreds of precision munitions. HPTLs should be refined properly to classify targets carefully, then delegated to the appropriate echelon for disposition. Targeting efforts should then be focused accordingly.

Accounting for the enemy's deception operations, decoys, repairs, reinforcements, and replacements for BDA purposes is the most difficult part of understanding the enemy. Each of these factors is important and must be taken into account when formulating BDA. Often, initial assessments may simply acknowledge an "intelligence gap" and apportion assets to collect against that gap. Later, as intelligence is refined, the unit can begin to understand how widespread enemy decoys are, how quickly they can repair damaged systems, and when/where reinforcements are employed. The BDA team can then incorporate this updated intelligence and adjust their assessment.

Of note, identifying and accounting for enemy decoys is one area where units will see incredible divergence between Warfighter exercises and real-world combat. Many real-world systems and capabilities that help us identify decoys simply cannot be replicated in our current simulated environment.

So, while decoys must be identified in both situations, the final methodology and results used in each will be dramatically different. It is important to remain fluid. Many of these aspects of understanding the enemy will change as the battlefield changes. It is vital that units begin operations with an initial enemy assessment but regularly update that assessment based on the many rapid changes that inevitably occur across the battlespace.

During Conflict

Have an Adaptive Plan for BDA Collection and Targeting.

With a clear understanding of the enemy and high-payoff targets selected, the targeting team and the collection team can begin their process of detecting and delivering appropriate effects against those targets. It is critical that BDA is deliberately apportioned as part of the collection plan; otherwise, munitions and other effects will be expended without a clear method for determining effectiveness. The planned BDA must then be executed. This seems like it should go without saying, but often units are unable to confirm target destruction because the necessary collection assets have been redirected. The second critical requirement of BDA collection is ensuring that someone is tasked with processing, exploitation, and dissemination (PED) of collected data. If an asset records an image of a location or tracks a signal for BDA purposes, someone must execute the PED to ensure the results are included in the unit's BDA summary. The final, and often most overlooked, aspect of BDA collection is the use of non-imagery assets. While units are usually capable of successfully planning for full motion video or other imagery of enemy systems, they often overlook other means to confirm the destruction of enemy systems. Counterfire radars, ground moving target indication, and signals intelligence are all effective ways to assess destruction of systems. When the enemy stops shooting, moving or communicating, it signals success that must be assessed, even if there is no image of a burning hulk.

Once a collection plan is created and executed with dedicated PED support, units often find that duplicate reporting can occur as responsibilities overlap on a complicated battlefield. A target destroyed by fires elements, in support of an aviation brigade, operating within a division battlespace, could be reported by all three of those elements. Attack aviation engaging targets along the front line could have their targets reported by active ground elements in the same area. Imagery analysts pulling destroyed equipment reports from routine sources could include equipment already reported destroyed by the Air Force. These conflicts can be mitigated with extremely thorough roles and responsibilities—however, there will always be unique situations that warrant implementing a method to identify and remove duplicate reporting. A combination of grid comparisons and a visual overlay of BDA

reporting is recommended; this will identify not only exact duplicates but also those that are slightly offset.

As an effective collection plan identifies targets for destruction, the unit also needs targeting goals tied to critical events, decision points, or triggers. Targeting projections should be based on targeting plans; however, units often struggle to project future BDA that drives those assessments and informs operations planning effectively. Instead of projecting BDA based on which enemy systems are the targeting priorities for each day, units typically default to a standard daily degradation of 10% to 20%. By synchronizing targeting goals closely with targeting projections, units can effectively plan and assess operations to ensure progress and alignment with goals. For example, an operation may require destruction of 20x artillery systems and 8x multiple rocket launch systems (MRLS) in a certain section of the battlefield. Given its available collection assets to detect and precision munitions on hand to deliver, the unit may have a targeting projection of 10x artillery systems and 4x MRL systems per day. At the end of Day One of operations, the unit could assess whether they met their targeting projection, whether they are on track to meet their overall goal on Day Two, and, if not, whether they need to adjust the timeline of their operation.

Create an Assessment. When all the numbers have been crunched and the unit knows how many enemy systems remain, they can move on to the actual assessment, which is the part of the BDA process that provides the most value to other staff sections. As the product that informs the commander's decision-making, this is the most important part of the process. Accurate data is not helpful unless it is turned into information and then distilled into knowledge. Units often get caught up in reporting the number of systems killed but never get around to discussing the "so what" of a true assessment. Stating that "12x 9A52s were destroyed" does not help a commander nearly as much as "we have destroyed half of the enemy's long-range rocket capability in 12th DIV's AO. This forces the enemy commander to reposition fires assets and gives U.S. forces fires overmatch for the next 24 hours."


Things to consider when drafting an assessment include: what was the effect on a specific enemy capability—i.e. half destroyed, no longer combat effective, forced to operate as sections instead of batteries? Is there a gap on the battlefield now? How long will it take the enemy to adjust? Was an enemy decision point triggered? Was the enemy forced to modify its COA? Some of these assessments can be done by the BDA team, while others will require input from fusion analysts with better knowledge of enemy actions. Some assessment sections may require input from specialists in other warfighting functions; for example, the protection team may need to provide information about how the enemy air defenses might adjust coverage after certain losses.

Units also need to consider how they are going to assess non-kinetic effects. Many of the same considerations come into play here, such as how an enemy's capability was affected, how long the effect will last, or how the enemy will adjust; nevertheless, this can be more complicated than assessing kinetic effects. For an accurate understanding of non-kinetic effects so an accurate assessment can be included in their product, BDA teams will need to work closely with the specialty staff sections that coordinate non-lethal effects.

To facilitate understanding of the written assessment, it is helpful to include some sort of visualization. The format for that visualization will depend on how the unit commander assimilates information most effectively. There are a variety of options, e.g. kill charts, color coded percentages, bar charts, or pie charts. Some units utilize a map overlay, while others use a simple cartoon sketch with minimal operations graphics and a few major phase lines. The specific format is far less important than ensuring the commander receives a complete, accurate assessment in a timely manner. The commander thus has the necessary tools to make informed

decisions and plan operations against a clear understanding of what enemy capabilities remain on the battlefield and their locations.

Conclusion

Despite its apparent simplicity, the process of assessing battle damage to produce effective BDAs presents significant complexities. Although doctrine does not currently outline BDA processes for division and corps echelons, commanders still require comprehensive reporting. A thoroughly planned process that clearly outlines roles and responsibilities, combined with a trained and adaptive team, ensures efficient and effective BDA during LSCO. This in turn informs better planning and decision making—and that leads to a more lethal force. 

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