

Closing the Lethality Gap: Trend Analysis from Sullivan Cup 2022 and Application of Integrated Weapons Training Strategy (Part II)

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Established in 2012, the Sullivan Cup is the Armor Branch's premier biennial competition inviting the best crews from units across the Army to Fort Benning, GA. Invitations for this competition historically went out exclusively to Abrams crews, but this year, for the first time in the competition's storied history, the Armor Branch invited Bradley crews to compete. They did not disappoint.

The competition saw seven Abrams and five Bradley crews compete. Crews demonstrated their abilities through execution of individual and crew-level tasks over the course of seven events. Heavily weighted among these events were the live-fire events, Gunnery Tables IV and VI, where crews showcased their skill and proficiency on their respective platforms.

Crews competed against each other and according to standards outlined in Training Circular (TC) 3-20.31, **Training and Qualification, Crew**, dated March 2015. Throughout execution, observed trends specific to the direct-fire engagement process became apparent and are applied here for the purpose of analysis as representative across the greater Armored Force.

Each engagement required members of the crew to use practiced techniques to acquire, engage and destroy the presented target(s). This process is outlined in TC 3-20.31-4, **Direct Fire Engagement Process (DIDEA)**, and describes the steps of this process in depth: *detect, identify, decide, engage* and *assess*. This article's purpose is to examine and juxtapose the common trends identified during the 2022 Sullivan Cup across the framework of the DIDEA process.

Detect

Target detection was an arduous part of the engagement process for competitors. Crews struggled to detect most targets in the allotted target-exposure time, with troop targets and long-distance vehicle targets being among the most difficult for crews to identify.

Vehicle-crew evaluators (VCEs) observed crew members using erratic scanning patterns during engagements, scanning left-to-right without transitioning to near-to-far, thus failing to account for depth and slope of the range. Crews struggled to identify their left and right limits, failed to effectively scan the space in between, or were scanning in high magnification.

In most instances, the vehicle commander (VC) depended on the gunner to scan and detect targets rather than using their Commander's Independent Viewer, inhibiting full use of the optics capability available on their platform(s). When VCs leveraged their primary sight to double the scanning fields, they scanned in the same direction as the gunner, limiting observation of the engagement area by half.

These techniques were addressed by assigned VCEs during the after-action report (AAR) process between phases and tables. VCEs coached crews on proper scanning methods according to TC 3-20.31-4 and advised them to establish target-reference points, assign sectors and use overlapping scanning to maximize observation of the range. Several crews quickly implemented the coaching from the VCEs and displayed remarkable improvement during their qualification table.

The preceding techniques should be identified before a live-fire event and corrected during simulation(s) training. As outlined in doctrine, simulations give crews ample time and resources to establish effective scanning methods/techniques and build good habits that eventually become forged in their "muscle memory." The instructor-operator of the simulator should constantly monitor for inconsistent scanning techniques of the crew(s) through their training and continually reinforce the use of proper scanning and search methods.

A good baseline to train and evaluate a crew's ability to effectively scan the breadth of their sector begins with TC 3-20.31-4 and should be emphasized in a detailed brigade and/or battalion standard operating procedure (SOP).

Master Gunner Common Core, Tank Commander's Course and Bradley Commander's Course thoroughly train students on the direct-fire engagement process and provide a standard method of engagement for weapons and platforms on the battlefield. Students attending these courses will learn to evaluate direct-fire procedures to identify procedural errors that violate the principles of direct fire; to integrate procedures, duties and responsibilities; and to advise commanders on assigned weapon and ammunition capabilities.

Identify

Throughout the duration of the gunnery tables, crews consistently struggled to understand the prompts that were given to them by the tower and translate those prompts to the type and number of targets presented. Crews also misclassified vehicle targets, often mistaking a truck target for a personnel carrier or vice versa.

A lack of experience was determined to **not** be a contributing factor in misclassification. The lack of knowledge in how to manually adjust the image displayed in the thermal sights played a key role in target misclassification.

An immediate solution to this problem begins with the scripts used at gunnery and throughout the gates to live-fire. Scripting should be tactically based and not administrative unless absolutely necessary. Implementing the use of tactical prompts during simulations training familiarizes the VC and gunner with similar prompts they will receive while on the range. Also, developing familiarization training that details the capabilities and limitations of the sights and controls will build crew members' knowledge of their platforms and enhance proper implementation.

Abrams master gunner and Bradley master gunner courses train students at the mastery level. A portion of these courses focuses on the commander's and gunner's primary sight(s), providing in-depth instruction in the operation, components, capabilities and limitations of each sight.

Decide

Both Abrams and Bradley crews consistently struggled to prioritize their targets, oftentimes engaging the first target they acquired. Target prioritization is described in TC 3-20.31-4 and establishes the order of engagement. Crews are advised to engage near before far, frontal before flank and stationary before moving.

While postured in a defensive fighting position, crews had enough time to acquire both targets and prioritize targets accordingly. However, a common trend found crews consistently engaging moving before stationary or far before near. The assessment is that the absence of target prioritization was a byproduct of the detection process issues described earlier.

Engage

Prior to executing gunnery tables, crews from both platforms were provided a separate day to boresight and conduct live-fire accuracy screening test / zero their gunner's auxiliary sight (GAS) / auxiliary sights, main gun and coaxial machinegun. Crews on both platforms struggled to effectively zero their GAS / auxiliary sights and coax, and engagements suffered as a direct result.

Crews used poor firing techniques during engagements, specifically with their coaxial machinegun. Crews engaged with the coax the same way they would engage with their main guns: by laziness and firing center mass, often missing the target. Crews on both platforms received coaching during AARs that encouraged use of a "Z" pattern while engaging troop targets. Crews that did attempt to use a pattern while engaging troop clusters appeared timid about applying any aggressive movement while the coax was firing.

Moving targets also proved to be problematic for some crews. Once on target, gunners displayed difficulty in applying a smooth and consistent track while attempting to follow the target. Gunners often jerked the hand station while attempting to transition to high magnification, lasing and firing, leading to inconsistent engagements.

Unit master gunners should assess their crews' performance on basic tasks in advance of a gunnery density. They should provide commanders with sound recommendations on more training that will greatly benefit their formation(s). A proven method consists of the integration of gunnery-skills-test tasks into battle rhythm events or

by selecting two tasks to perform on “Maintenance Mondays” after preventive-maintenance checks and services is complete. The placement of tracking boards with *basic*, *advanced* and *advanced with switchology* graphics (see Figure 1) in a motorpool or local training area provides crews the opportunity to build fundamental manipulation skills in all their optics.

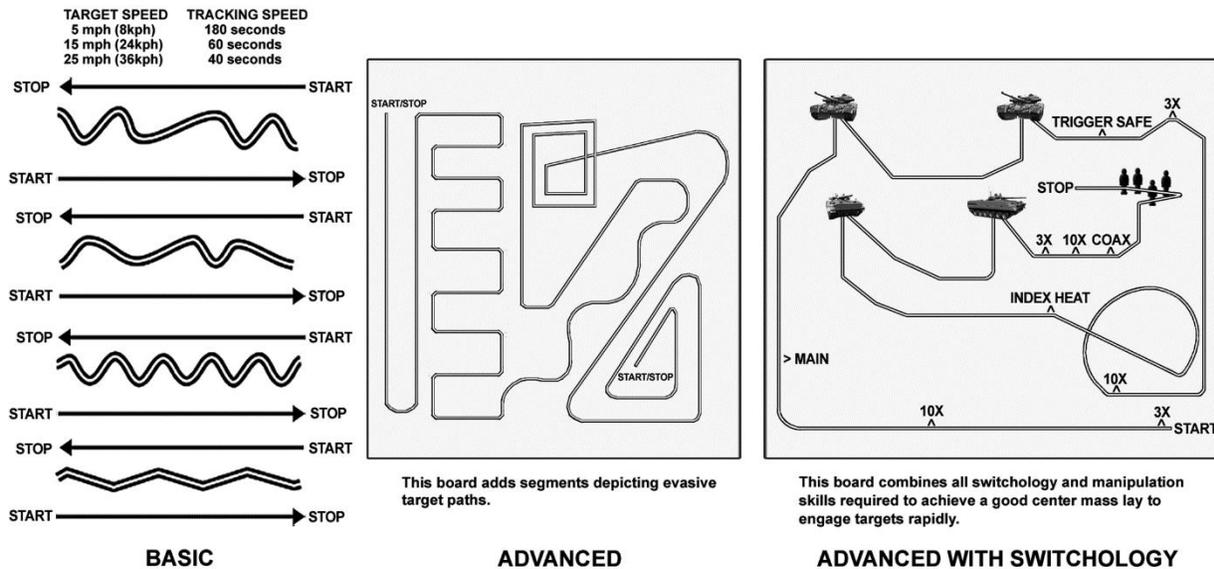


Figure 1.

Assess

Observed across multiple engagements, crews lacked the ability and confidence to assess their engaged targets for themselves and were heavily dependent on the tower to provide an assessment for them. When the crews were able to determine they missed the target, the VC would often fail to provide the gunner with a correction after observing the round impacting short, over, left or right of the target. If a correction was issued, the VC would instruct to gunner to “go up a little bit” and void any frame of reference for the gunner to make an accurate correction.

Standardizing a correction to “a target form” or “half-target form” would provide gunners a known distance to better adjust their fires and enable them to accurately re-engage the target. Outlining this method in a gunnery SOP would establish a solid foundation for all gunnery training.

Proficiency in the live-fire engagement process is a perishable skill. If not trained consistently or integrated into normal battle rhythm, these skills degrade over time. The responsibility to create this proficiency falls solely on the shoulders of all leaders within the formation. They must build repetition in all aspects of training and steadily advance their crews’ skills in lethality. The disciplined force, willing to constantly hone their profession and manufacture lethality, will triumph on the battlefield.

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Acronym Quick-Scan

AAR – after-action report

DIDEA – detect, identify, decide, engage and assess

GAS – gunner’s auxiliary sight
SOP – standard operating procedure
TC – training circular
VC – vehicle commander
VCE – vehicle-crew evaluator