Squad Overmatch:
Software Before Hardware

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Man has fought wars against his fellow man since the beginning of time; this is one of the few constants throughout human history. Along with fighting wars, man has consistently sought better ways to defeat his enemy while avoiding harm to himself. Hands and feet gave way to clubs and sharpened sticks augmented by thrown rocks as standoff weapons, which were in turn defeated by edged weapons and thrown spears. While edged weapons are still in use today, standoff weapons were improved, with spears leading to the bow and crossbow, which were replaced by firearms. Muskets led to repeating firearms, improved into modern assault rifles and machine guns, augmented by heavier weapons systems. Although heavier weapons allow more standoff with more efficient killing of the enemy, another fact has held true; as T.R. Fehrenbach wrote in *This Kind of War: The Classic Military History of the Korean War*, "…you may fly over a land forever; you may bomb it, atomize it, pulverize it and wipe it clean of life — but if you desire to defend it, protect it and keep it for civilization, you must do this on the ground, the way the Roman legions did, by putting your young men in the mud." This means that as long as warfare exists, the Infantry will be an integral part of the action.

Although the idea of finding more efficient ways to defeat the enemy while preserving one's own force is as old as warfare itself, "squad overmatch" has been the mantra of modernization across the Army and specifically in the Infantry over the last few years. It is a multifaceted effort involving combat systems, communications platforms, weapons, and training. Materiel solutions have produced highly agile, networked, and lethal capabilities, resulting in a force that is better prepared to defeat adversaries than a decade ago.

The reason the term squad overmatch was chosen for the effort is because the squad is the building block of any tactical formation. Squads accomplish missions, operating as elements of a larger unit. Overmatch is defined by the *Oxford Online Dictionary* as to "be stronger, better armed, or more skillful than." By that definition, in my opinion, the U.S. Army Infantryman, and squad by extension, is far from full realization of this goal with regards to lethality.

Paratroopers assigned to the 2nd Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade, fire a M240 machine gun at Drawsko Pomorskie Training Area, Poland, on 20 October 2016. (Photo by SGT Lauren Harrah)

Training Shortfalls

Standard weapons proficiency training in the Army does not always lead to "weapons mastery." Weapons mastery is being able to utilize the weapon to achieve effects downrange through deep understanding. It encompasses knowing the weapon's physical and operational characteristics, its operational and mechanical strengths and weaknesses, the ballistic performance and characteristics of its ammunition, engagement techniques and considerations, and being able to keep the weapon in operation while maximizing its potential through lethal and precise fires.

Leaders must possess mastery of not only their assigned weapon, but every weapon system under their direct control and be competent in echelonment of fires, selecting not only the correct weapon but the correct ammunition and engagement technique through intimate knowledge of the capabilities of their element's assigned weapons and an understanding of supporting fires. They must also possess an understanding of weapons that may be employed in support, including artillery and aviation platforms. An excerpt of Army Techniques Publication (ATP) 3-21.8, *Infantry Platoon and Squad*, paragraph 1-52, states that the squad leader:

- Is the subject matter expert on all battle and individual drills.
- Is the subject matter expert for the squad's organic weapons employment and employment of supporting assets.
- Knows weapon effects, surface danger zones, and risk estimate distances for all munitions.
- Uses control measures for direct fire, indirect fire, and tactical movement effectively...

FM 3-21.8 (now superseded by ATP 3-21.8), paragraph 1-45 states: "Every Infantryman, from the private enlisted Soldier, to the general officer, is first a rifleman. As such, he must be a master of his basic skills: shoot, move, communicate, survive, and sustain. These basic skills provide the Soldier's ability to fight. When collectively applied by the fire team, squad, and platoon, these skills translate into combat power."

Further, paragraph 1-46 states:

> *"Infantrymen must be able to accurately engage the enemy with all available weapons. Soldiers and their leaders must therefore be able to determine the best weapon-ammunition combination to achieve the desired effect. The best combination will expend a minimum of ammunition expenditure and unintended damage. To make this choice, they must know the characteristics, capabilities, and vulnerabilities of their organic and supporting assets. This means understanding the fundamental characteristics of the weapon's lay (direct or indirect), ammunition (high explosive [HE], penetrating, or special purpose), trajectory (high or low), and enemy targets (point or area). Properly applying these variables requires an understanding of the nature of targets, terrain, and effects."*

However, many Soldiers and leaders never progress beyond the weapons training presented during One Station Unit Training (OSUT), with skills such as moving target engagements seldom trained or later tested at home station. Unless the local commander perceives a need or the Soldier is being trained as a designated marksman (DM) or sniper, training isn't typically conducted at ranges beyond 300 meters, nor is training in adjusted point of aim (holds and leads) routinely conducted. Marksmanship training utilizing night vision devices, thermal weapons sights, or under chemical, biological radiological, and nuclear (CBRN) conditions wearing the protective mask and/or other appropriate protective garments may not be conducted on a regular basis, depending on the organization.

Weapons handling skills are a weak point of training, with Soldiers expected to be capable of reloads and simple stoppage reductions upon completion of OSUT. Home-station training often fails to place appropriate emphasis on these skills through continuing reinforcement drills. Skills in reducing complex stoppages including charging handle impingements or bolt overrides aren't typically trained either formally or at unit level, producing weak weapons handling skills.

Studies conducted by the Human Resources Research Organization (HumRRO), Army Research Institute (ARI), Rand Corporation, and others have consistently found training to be lacking in producing weapons mastery. A contributing factor according to multiple studies is a lack of trained instructors to teach skill at arms. The Rand Corporation found that the Army is the only U.S. military branch without formal weapons instructor courses to develop unit-level trainers in its 2014 report *Changing the Army's Weapon Training Strategies to Meet Operational Requirements More Efficiently and Effectively*. The newly instituted Master Marksmanship Trainer Course (MMTC), designed to provide trained and qualified instructors with the rifle/carbine, offers a partial solution.

Another major contributing factor is the degradation of training and knowledge presented in training and doctrine

An Infantryman from the 2nd Squadron, 3rd Cavalry Regiment, fires an AT-4 anti-tank weapon as another Soldier assists during a range on 23 April 2016 at Adazi Military Base, Latvia. (Photo by SGT Paige Behringer)

over the last few decades. For example, a rifleman at the beginning of World War I was expected to hit a point target at distances exceeding 600 yards with only rudimentary iron sights; the modern rifleman, equipped with a red dot or even magnified optic, is in many cases challenged to hit a point target at only 300 meters. The 1954 *Trainfire I* study conducted by HumRRO specifically sought to find an acceptable solution rather than producing weapons mastery, illustrated by the statement, "Throughout, the aim has been to produce more efficient combat riflemen with economy of ammunition and training time, utilizing the type and quality of instructors likely to be available in time of mobilization." *Trainfire* forms the basis of weapons training to this day.

This article has so far focused on skills with the rifle/carbine as it is by far the most issued weapon in the Army. However, lacking rifle mastery is but a small symptom of the larger systemic problem. While rifles are the most numerous weapons in the Army, crew-served weapons including specialty weapons such as the FGM148 Javelin missile or the M3 Multipurpose Anti-Armor Weapon System (MAAWS), known as the Carl Gustav, are even more important to man with properly trained personnel due to their capabilities and employment considerations.

While many say "shooting is shooting," there is much more than meets the eye with regard to different weapons. Shooting is shooting and the functional elements of employment, ballistics, and the effects of wind and weather are constants, but some aspects change between weapons and ammunition. Employment techniques and considerations may also vary widely; without proper training, this is lost on the end user and the leader.

With the 11H military occupational specialty (MOS) being absorbed by 11B, formal training on the tube-launched, optically-tracked, wireless-guided/Improved Target Acquisition System (TOW/ITAS) at the Soldier level was abandoned. As a result, anti-armor systems are typically manned by personnel that have been trained within their organizations, not necessarily by qualified instructors.

The machine gun is the most casualty producing weapon in most formations. Analyzing force structure within sister services and allied forces, the U.S. Marine Corps and multiple foreign armies consider machine gunnery important enough to have a specific machine gunner MOS. Not only is machine gunnery just a duty position within the Army, it is only addressed with a familiarization during OSUT and little to no formal training outside of organizational courses. Machine gunnery is commonly taught in local machine gun leader courses and only briefly touched on during NCO Education System (NCOES) courses. Considering the importance of machine gunnery, the Army places woefully insufficient attention training on it.

The Army requires a paradigm shift concerning weapons training to maximize overmatch potential. Leaders must be formally trained not only how to maintain and fire their weapons, but in their employment and in training subordinates. The Army must realize that all elements require weapons proficiency to achieve mission success while facing modern hybrid threats. While the Infantry is tasked with closing with and destroying the enemy by means of fire and maneuver, any element must be prepared to react to contact at any time. Therefore, all Soldiers, MOS or unit immaterial, must demonstrate weapons proficiency with the goal being weapons mastery.

The Way Ahead

Formalized training programs are necessary to educate the force and produce unit-level trainers to maximize proficiency across the Army. Some of this training already exists, both as Maneuver Center of Excellence (MCoE) courses and as troop schools conducted by units at home station. A holistic approach to weapons mastery must be undertaken to have maximum impact. The approach requires changes or additions to doctrine, schools, and reportable training requirements under Army regulations.

Changes to doctrine are already in progress with Training Circular (TC) 3-22.9, *Rifle and Carbine*, being published in May 2016; other TCs covering other weapons and training strategies are forthcoming. Changes to schools have also begun with improvements to the Heavy Weapons Leaders Course (HWLC) and additional weapons training modules to the Basic Leaders Course (BLC) and Advanced Leaders Course (ALC). However, more is still needed to maximize overmatch through weapons mastery.

Updating doctrine only addresses some of the issues. The root problem is a lack of institutional knowledge throughout the Army resulting from a lack of comprehensive training. Implementing courses to build institutional knowledge within the NCO Corps produces mastery at the unit level and across the Army. The following courses would fill the training gap:

• **Javelin Gunner Course** — The Javelin Gunner course should be restructured to include the M3 MAAWS for a mission tailorable Javelin/MAAWS team. It covers the Javelin, the M3 MAAWS, target recognition, M3 ammunition, and engagement techniques. The Javelin/MAAWS Gunner Course is designed for Skill Level 1 Soldiers and is a seven-day program of instruction (POI) producing the 2C additional skill identifier (ASI).

• **Master Marksmanship Trainer Course** — MMTC produces master marksmanship trainers and includes four levels or phases. Level 1 is a two-week POI training weapon (M16/M4) characteristics, cycle of operation, sights and optics, ballistics, the effects of wind and weather, marksmanship fundamentals, and coaching. Level 2 is a one-week POI training short-range marksmanship (SRM) while digging deeper into marksmanship fundamentals by teaching recoil management and teaching weapons handling skills such as reloads. Level 3 is a one week POI training mid-range marksmanship (300-600 meters) and covers concepts including environmental impacts on ballistics, range determination, target detection, moving target engagements, magnified optics, and angle fire. Level 4 is the final one-week POI, producing an efficient master trainer at the unit level through training management; training aids, devices, simulators and simulations (TADSS); surface danger zones (SDZ); teaching methodology; DA PAM 350-38; and competition. The MMTC pipeline produces extremely knowledgeable trainers capable of conducting comprehensive training with the M16/M4.

• **Small Arms Instructor Course (SAIC)** — SAIC is similar to the Small Arms Weapons Expert (SAWE) course that was briefly conducted under the MCoE. Successful completion of MMTC Levels 1-3 is a SAIC prerequisite. This course focuses on the M320, M249, M9, and adult learning theory in a two-week POI, producing qualified instructors to train Soldiers in employment of squad-organic weapons and should have an ASI attached. Coding at least one squad leader position per platoon within infantry companies and reconnaissance troops for the SAIC-qualified ASI ensures an NCO Corps capable of training squad-organic weapons proficiency through advanced knowledge.

• **Machine Gun Leader Course (MGLC)** — MGLC is similar to the SAIC but specific to machine gunnery. Successful completion of MMTC Levels 1-3 is a prerequisite. MGLC trains adult learning theory, briefing techniques, weapons maintenance, machine-gun theory, crew drills, employment of machine guns (M249, M240, M2, and MK19), echelonment of fires, and an overview of SDZs in a three-week POI, producing qualified instructors to train Soldiers in employment of machine guns and should have an ASI attached. Coding weapons squad leader positions for the MGLC ASI ensures expert leadership and training at the platoon level with belt-fed weapons systems.

• **Heavy Weapons Leaders Course** — HWLC is currently conducted and undergoing improvement at the MCoE. It produces qualified NCOs trained to lead Soldiers in employment of heavy weapons and produces the B8 ASI. Restructuring should lead to HWLC covering heavy and specialty weapons including the Javelin, TOW/ITAS,

MAAWS, and shoulder-launched munitions (SLM); the M2 and MK19 would be moved to the MGLC. Successful completion of MGLC should be a HWLC prerequisite. Coding anti-armor section leaders and senior scouts in the Infantry brigade combat team (IBCT) formation with the B8 ASI provides expert leadership and training at the platoon level with heavy and specialty weapons.

• **Small Arms Master Gunner (SAMG)** — The SAMG course would be the finishing course to certify master gunners in the IBCT formation and could be accomplished by slightly restructuring the Master Gunner Common Core currently being conducted at the MCoE. It replaces MMTC Level 4 and consists of training management, the Digital Training Management System (DTMS), range development and construction, and SDZ development in a two-week POI. Successful completion of SAIC, MGLC, and HWLC is required to attend the SAMG course. The SAMG course produces qualified master gunners for the IBCT, just as the Bradley master gunner (ASI J3) and Abrams master gunner (ASI K8) are utilized in the ABCT and the Stryker master gunner (ASI R8) in the SBCT, and should be assigned an ASI which replaces all previously earned weapons ASIs. Each infantry company and reconnaissance troop training NCO position within the IBCT should be coded for the SAMG ASI; each battalion/squadron of any type of formation excluding the ABCT and SBCT should have a SAMG-coded position in the S3 section. All SAMGs can be utilized to expertly assist in the planning, conduct, and management of individual weapons skills and maneuver live-fire training.

The solution that best maximizes throughput for needed courses is a semi-centralized one. Divisions should activate training units, resourced by petitioning for a modified table of organization and equipment (MTOE) increase or by the U.S. Army Training and Doctrine Command (TRADOC) providing positions aligned with and assigned to each division; the training units are filled from within the division. Separate battalions and brigades use the nearest division training unit to resource the necessary training seats. All of the above listed courses would be conducted at home station by the divisional training units (as accredited by the MCoE and TRADOC) with the exception of SAMG; within the active component, this increases throughput tenfold over conducting courses only at the MCoE while providing significant savings in temporary duty (TDY) expenditures. Using this solution, only 100 NCOs (10 per division), could produce approximately 1,600 MMTC Level 3, 720 SAIC, 720 MGLC, 720 HWLC qualified leaders, and 720 Javelin/MAAWS qualified gunners annually by conducting one quarterly instance of each course with a 4:1 student-to-instructor ratio for MMTC and 6-8:1 for all others.

Soldiers with Company C, 2nd Battalion, 27th Infantry Regiment, 3rd Brigade Combat Team, 25th Infantry Division, fire the Javelin anti-tank weapon at the Pohakuloa Training Area, Hawaii, on 28 July 2016. (Photo by SPC Patrick Kirby)

Further, divisional training unit cadre will externally evaluate weapons employment during company combined arms live-fire exercises (CALFEXs), providing brigade commanders with objective analysis of weapons mastery levels within their organizations.

Conclusion

The Army will and should continue to seek materiel solutions to enable overmatch at all echelons. However, without an increase in weapons proficiency, squad overmatch will not be fully realized. In his book *The Acts of King Arthur and His Noble Knights,* John Steinbeck wrote, "The purpose of fighting is to win. There is no possible victory in defense. The sword is more important than the shield and skill is more important than either. The final weapon is the brain. All else is supplemental."

Widespread weapons mastery will never be reached without a significant change in training, rendering materiel solutions less effective than they could be. In order to truly achieve overmatch, the Army must prioritize professional development within the NCO Corps concerning small arms and anti-armor weapons systems.

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