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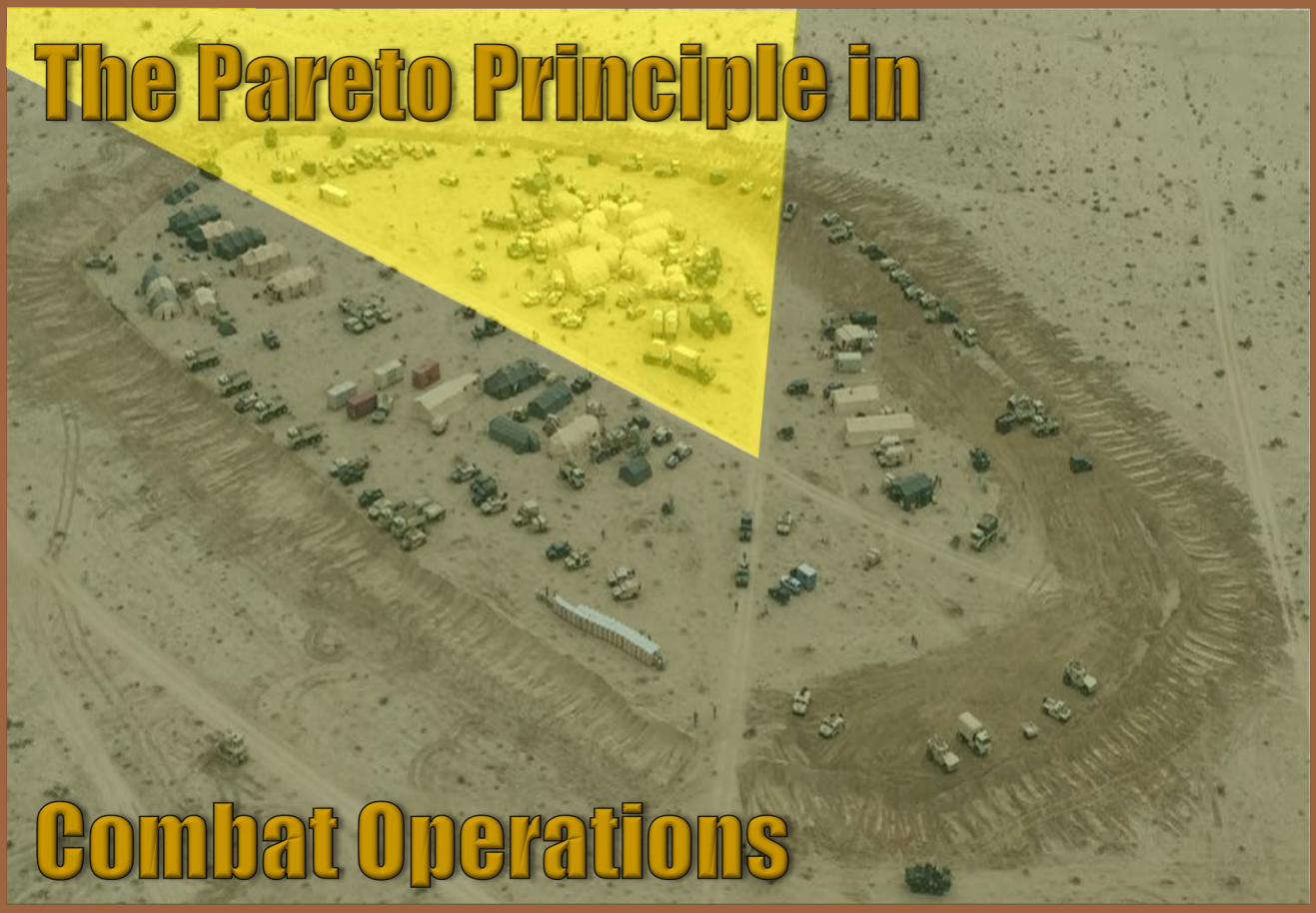

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The Pareto Principle in Combat Operations

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Executive Summary

The Pareto principle simply stated is that 80% of the desired results are derived from 20% of the input (also known as the 80/20 rule in which roughly 80% of the effects come from 20% of the causes). This principle has been proven in business and finance, in addition to military implications. From this principle, the paper focuses on key components that produce the greatest impact across the brigade combat team (BCT). The Army's focus on decisive action (DA) is suffering from a decade of counter insurgency (COIN) operations; necessitating a much more rapid evolution in preparing for a near peer threat across multiple domains. Inability to adapt the military's current training to fit the current threat, increases the probability of a deadly learning curve in the next war or conflict. According to the Pareto principle, marked improvement is achieved through increasing focus on the best 20% of processes related to combat training; specifically, reconnaissance, command and control (C2) nodes, the common operational picture (COP), and sustainment. Each of these focal points tie in and support each other in a highly complex battlefield.

The Army since 9/11 has focused on counter insurgency. Now, as the military adjusts strategic focus to near peer threats across multiple domains, the ability to transition from the counterinsurgency fight to a full-scale, direct action engagement has proved to be difficult. Units still have difficulty in adapting mobile and capable C2 nodes, planning synchronized air and fires assets, prioritizing reconnaissance, and developing mobile sustainment programs. The United States military needs to be prepared to respond to any emerging threat in a moment's notice; fortifying the need to take a more in-depth look into how training can be improved. Utilizing the Pareto principle in the planning, preparation, and execution of combat operations, especially in a combat training center (CTC) environment maximizes time and effort to rapidly evolve our force. The four sequential cornerstones of decisive action combat operations, based on the Pareto principle are; reconnaissance (intel), command and control (C2), sustainment, and the common operational picture (COP).

Reconnaissance

In recent training exercises, 80% of the time, the unit conducts a reconnaissance in force against a stronger armored force with home-field advantage. The results trend from lucky to catastrophic. The loss of combat power and strategic math of their tactics is wrong. Doctrinally, when enemy contact is expected, bounding overwatch is the best method to gain and maintain enemy contact while preserving combat power (FM 3-90-2, figure 3-8). Essentially, the reconnaissance in force is misused because of a common misunderstanding of the seven fundamentals of reconnaissance. Specifically, "Do not keep reconnaissance assets in reserve (FM 3-90-2, 1-4)." Although every reconnaissance asset should be employed, this does not mean they should march forward as a civil war firing line onto an open field. In contrast, an entire brigade (BDE) training scenario was paused and re-written because of a sniper team with pictures and imagery from their S2. Their efforts led to the identification and apprehension of so many high value targets (HVTs) that he and the S2 prevented a battalion (BN) urban assault movement without a shot fired. Light infantry combat outpost techniques from Afghanistan have been utilized within the CTCs to dominate a superior armored force by locating and directing maneuver and fires to eliminate the threat. Task organized "area exploitation teams" with retransmissions (Retrans), Javelins, forward observers (FOs), Joint Terminal Attack Controllers (JTACs), snipers, and mortar teams allocated with a supporting maneuver element quickly leap frog across large areas to dominate terrain. Once the enemy was identified, the remaining maneuver forces easily dominated and controlled the fight. These techniques combine enablers, stealth, and speed to gain and maintain contact with the minimum threat to reconnaissance forces possible. However, these techniques are rarely utilized at this point. Even advanced units who air assault in listening post/observation posts (LP/OPs) are finding it difficult to effectively establish long distance communication and no fire areas (NFAs) to protect their positions from friendly fire. Long range communications need to be exercised with friendly OPs identified with NFAs in the common operational picture to ensure success. In practice, the top 10% of reconnaissance operations that yield the desired result are bounding LP/OPs; which retain combat power and can be task-organized with multiple force enablers to dominate key terrain and maintain enemy contact, while also being incredibly difficult to locate and neutralize. For reconnaissance to remain effective, the communication of intelligence must be clearly provided to S2 and command to develop the enemy read and published in common operational picture (COP).

Maneuvering units would greatly benefit from two simple tactics, techniques, and procedures (TTPs); mounted drill and ceremony and lead element reconnaissance (or point man). In the Ranger Handbook, utilizing a point man is the most effective way to ensure a maneuver unit makes contact with the smallest element possible. Making contact with the smallest element possible allows leaders maximum time and space to make the most appropriate tactical decision for the situation. This principle is also effective in current CTC scenarios, where the lead element provides eyes forward and the main body reaction time in the defense, attack, or movement to contact. Secondly, exercising mounted drill and ceremony helps rapidly transition from maneuver to direct-fire engagement enabling the commanders to direct units and firepower where and when they need it. Those doing this in infantry and armor units have found it to be an excellent strategic team building exercise.

Command and Control

Combat training centers are one of the few places where you can stretch an entire brigade combat team across 1,000 square miles of open terrain. This also stretches the command and control capabilities of even the best command network. Military units and command nodes should function at 75% at all times so that there is always room to focus increased efforts on immediate changes or priorities. Based on the one-third, two-third rule for planning and operations, most units are taking two-thirds of the time to plan leaving maneuver units little to no time for rehearsals, parallel planning, or bottom-up refinement. The military decision making process (MDMP) takes time, but in a time constrained or decisive action environment, the key components need to be exercised and refined to prevent operational planning paralysis. If the MDMP is the process, the most important 10% of the process are the fighting products. Commit to a rapid decision-making process and expand to an MDMP when time is available. Get the fighting products that synchronize forces and enablers out to the lowest levels as soon as possible. The fighting products and the common operational picture (COP) are the greatest 10% of valued added focus as the foundation of MDMP. It is critical to utilize the rapid making decision process and then elaborate into MDMP “if” time is available. Time is critical when reacting to an enemy constantly moving against you. The CTCs always focus on planning in time-constrained environments. When facing a real enemy, timelines will never shift right in your favor.

The planning timeline is further complicated by the need to jump command nodes to establish situational awareness, effective communication, and maintain survivability. C2 nodes, still large and unrefined from COIN, can take hours to days to jump losing vital enablers in the process. Within the past three years, there has been a brigade main over fifty acres in size, complete with berms and wire. The opposing forces (OPFOR) are well rehearsed in finding and targeting these C2 nodes easily. Because of negative impact on planning and timelines, the indirect fire missions from opposing forces is rarely adjudicated and sometimes cancelled all together. This causes units to have a false sense of security and do not realize that they were targeted by hundreds of rounds from multiple launch rocket systems (MLRS) or enemy field artillery. New technologies utilized by OPFOR can pinpoint C2 nodes for unmanned aircraft system (UAS) confirmation and quickly draw lethally accurate fires. Our forces must adapt to a more mobile and refined command and control structure. The best practices divide and exercise the command and control platforms regularly. Units need to work out of their mobile command infrastructure at home

station and conduct exercises weekly to quarterly depending on their training cycle. Deployment is not the time to refine your command platforms. Best practices effectively use the Main, tactical command post (TAC), and mobile command group to shift their perspective focus on future operations (FUOPs), current operations (CUOPs), or the deep to close fight. Personnel and mission essential equipment in the primary, alternate, contingency, emergency (PACE) plan need to have clearly defined roles and responsibilities. For command and control (C2), command and staff should almost start from scratch asking, what do I need to do my job? Start with a minimalist approach in order to shake off decades of the mobile forward operations base (FOB) mentality. If your command platforms are too big to jump or set up quarterly at home station, how do you think they will fair in combat?

Facing a near peer threat, each of your communications systems may face jamming or technical issues that are not encountered while training at home station. To plan your communications, a best practice is the Marine Corp Systems Planning Engineering and Evaluation Device (SPEED). The Department of Defense approved software can provide analysis of your current communication plan or be utilized as a communications reconnaissance asset to determine the best planned position of communications systems by type. The tool is invaluable to know when and where communications issues can occur in time and space. Too often, units turn to their alternate communication to find it was never established and the primary is no longer viable. Facing a near peer threat, there will be jamming and denial scenarios of almost every communication system. A PACE plan should be prioritized and exercised on each system by function. The intelligence warfighting function should have their own PACE as an example for all reconnaissance elements to feed information into the COP as handled by S2. A command net had significant impact on operations when all brigade and battalion commanders were coordinating in real time over frequency modulation (FM), added S2 intel updates provided exemplary situational awareness and synchronized the entire brigade. It is unfortunate that this is not a more common practice across all BCTs. It is often the neglected fundamentals that provide the greatest impact.

Sustainment

Sustainment has been a luxury over the past decade which leaves us struggling to adapt to a more mobile and fluid battlefield. Forward operations bases (FOBs) and combat outposts usually had the food, fuel, water, and ammunition needed readily available like clockwork. Combat operations became routines, scheduled and planned in advance. Facing the threat ahead combined with current CTC focus, sustainment must be fluid and flexible. Forward support companies (FSCs) and brigade support battalions (BSBs) are the lifeblood of all operations. Unit leaders struggle with forecasting fuel, water, and ammunition needs during continuous combat operations. The friction is that sustainment is almost an afterthought. To synchronize sustainment with operations, I believe the greatest Pareto value is in the COP and frequent mobilization exercises.

A troubling concept in casualty treatment and evacuation plans is the notion that “it’s a non-commissioned officer (NCO) problem.” The Army is preparing for a peer to peer threat. There will be casualties in training and in combat. All leaders need to prepare in order to minimize casualties and have a system in place to support mass casualty events. Too often the casualty and

sustainment plans are left to each battalion. Medical assets usually end up collocated or spread too thin. If you know the decisive operation will assume the most risk and casualties, bring forward or task organize all medical assets to support accordingly. If adjacent or rear units can share or cooperate in casualty care, more Soldiers can be saved. There are great threats and our Soldiers demand great care. In a DA fight, front line air evacuations will most likely not be possible. Air assets may still be planned behind indirect fire assets and in planned air corridors to maintain a synchronization of all assets in time and space. When moving rapidly in unknown terrain, clearly marked routes should be available. With training casualties or against a near peer threat, a wrong turn on an evacuation route could be fatal. Again, with sustainment and medical asset coordination, I believe the greatest Pareto value is in the COP and a well-rehearsed SOP.

Common Operational Picture

A picture is worth a thousand words, however, the common operational picture is the most grossly misunderstood term in Army mission command. For instance, leaders utilize segmented products like: Logistics COP, Sustainment COP, air defense and airspace management (ADAM) COP, protection COP, or the COP as described as the analog map in the Main command post. This is not common, nor operational. The brigade combat team consists of four to five thousand specialized soldiers, weapons, and equipment. If you want every soldier fighting with a common situational awareness, you need a good COP. A good COP supports all mission command principles and systems (ADRP 6-0, Ch 2-3). A common operational picture also supports the six functions of a command post; primarily by distributing information, integrating and synchronizing resources. The COP further supports the subsequent functions of a command post (CALL Newsletter 95-7, Sec II);

Receive Information

- Monitor tactical situation
- Maintain and update unit locations and activities
- Monitor enemy situation
- Maintain a status of critical classes of supplies

Analyze Information

- Consolidate reports
- Anticipate events and activities, taking appropriate action as required
- Conduct predictive analysis based on the tactical situation
- Identify information that relates to the commander’s critical information requirements (CCIR)
- Identify the need to execute contingency plans based on the current situation

When creating or developing your units common operational picture, think of; what does every soldier need to know and why? Every warfighting function (WfF) should be represented with the basic need-to-know graphics. Done right, your COP will simplify the MDMP or rapid decision making process, enable every soldier, and develop what General Patton referred to as the “harmony in battle” from his musicians of Mars quote (below). The executive officer (XO)

should be the approving authority for sustainment operations, the S2 primary for intelligence input, etc. With these principles and graphics identified as the most valuable 10% that produce the 90% of value added outputs. The COP helps set the foundations for planning and necessary operational outputs required to synchronize the battle across all echelons and warfighting functions.

> "There is still a tendency in each separate unit…to be a one-handed puncher. By that I mean that the rifleman wants to shoot, the tanker to charge, the artilleryman to fire…That is not the way to win battles… To get harmony in battle, each weapon must support the other. Team play wins. You musicians of Mars must not wait for the band leader to signal you…You must each of your own volition see to it that you come into this concert at the proper place and at the proper time."
>
> - GEN George S. Patton Jr, 8 JUL 1941, to the men of the 2nd Armored Division

I would suggest these simple WfF basics to conduct the symphony:

- Command & Control: (Text) Mission, CDR's Intent, Key Task, End-State, decision synchronization matrix (DSM), priority information requirements (PIR). Planned Retrans sites, LP/OPs with NFAs, BN boundaries, and tactical task graphics.
- Fires: Planned targets (BDE & BN), set UAV no-fly zones around targets (TGTs) and target areas of interest (TAIs). If everyone knows the targets, everyone can be an observer and use them as known points.
- Intelligence: A current S2 read of enemy slant and position [situation template (SITEMP)/event template (EVENTEMP)] is the most important graphic that should be included on every COP down to the lowest level. Soldiers need to know where the enemy is at all times. The maximum effective range of the enemy weapons needs to be clearly identified so that friendly forces can safely plan and practice their transitions from maneuver to direct fire engagement. Define the reconnaissance zone. By standard operating procedure (SOP), allow any and all UAS to operate in that zone freely. BNs will no longer have to request when or where to fly. All soldiers will know where friendly UAS aircraft should be to identify likely enemy UAS assets not in that sector. Do not litter the map with hundreds of named areas of interest (NAIs) or ground reference point (GRPs).
- Sustainment: In combat, a soldier should never have to guess their nearest medical facility or where to get an emergency resupply. Publish these basic points on the COP to ensure no loss of life from "I should have known." Mark the routes, casualty evacuations (CASEVACs) taking a wrong turn costs too many notional "training-lives" that are easily avoidable.
- Movement & Maneuver: Every soldier should know their BN boundaries and friendly air corridors to enable positive identification (PID) of friendly and enemy aircraft at a distance.
- Protection: Cleared routes, obstacles, minefields (planned or emplaced) should be common knowledge across all echelons.

The method to publish and distribute these basic graphics should have a practiced and rehearsed PACE plan. In theory, graphics can be built or consolidated on Command Post of the Future (CPoF) and then sent out via tactical messaging. These systems and processes must be established and tested before deployment. It is too late to "try" once deployed. Methods of distribution can include CPoF down to the battalion level. A Joint Capabilities Release (JCR) or Joint Battle Command Platform (JBCP) product can reach down to company or platoon level depending on the vehicle platforms. An analog print or Microsoft Office product can be distributed analog or digitally down to the lowest level possible. It is also up to the units to decide the subject matter experts on these graphics and their distribution. If published as an approved 2525 graphic on an Army Battle Command System, all graphics will cross populate via the Data Dissemination Server (DDS) without the need to reproduce graphics on each system. Operators or digital master gunners must know how to pull or publish the data in the DDS. If the COP is enforced and exercised by SOP, each warfighting function can produce their part on their designated system of choice [Advanced Field Artillery Targeting and Direction System (AFATADS), (Air and Missile Defense Workstations) (AMDWS), Tactical Airspsce Integrated System (TAIS), JCR, CPoF, etc.]. The most common platform to consolidate the graphics would be CPoF or JCR/JBCP. From CPoF, you can still utilize tactical messaging to communicate between CPoF and JCR/JBCP platforms. Although CPoFs are generally considered easier to produce graphics on, they are only available down to the battalion level. To truly have a COP, these graphics must be disseminated by JCR/JBCP or a single page Microsoft Office product. The true test is if a platoon can fight off of it and understand all the adjacent synchronized enablers. Once the COP is distributed down to the lowest levels, it also supports shared understanding, rehearsals, parallel planning, bottom-up refinement, and synchronization of assets. The COP should support 90% of all operations and depends on the top 10% of subject matter experts by warfighting function and the system operators necessary to distribute the COP via the PACE plan. Essentially, the COP can simplify the planning process and synchronize/enable every soldier in the formation with a shared understanding.

Conclusion

The need to adapt current combat training and preparation is of paramount importance due to the inevitability of future conflict in potentially complex combat environments. Utilization of the Pareto principle allows leaders to determine which training priorities will yield the greatest results on the battlefield. Based on the fundamentals of: shoot, move, communicate, sustain, and protect; it is the reconnaissance, command and control (C2) nodes, the common operational picture (COP), and sustainment that are the most value-added focus for current combat training. Each enables and synchronizes the other aspects into the symphony of battle.