# National Training Center Update:

## Company & Platoon Observations & Best Practices

### November 2019

Fellow Leaders,

In October 2019, the National Training Center distributed "Recommendations for Commanders to Consider During Home Station Training" to correct a few common shortcomings seen among rotational units. Mastering the fundamentals at echelon and the associated ability to truly focus units on training identified critical collective tasks to a high standard topped the list of recommendations for Commanders to consider.

Defining and *consciously* deciding to master specific fundamental tasks constitutes one of the single most important decisions any Commander will make during their tenure. That decision, more than any other, will drive the readiness focus as it relates to your unit's ability to perform your combat mission. Whether you read doctrine, history, the memoirs of the military's greatest leaders, or simply stories of past battles, the notion of Soldiers mastering fundamental skills required to function effectively under combat conditions, at echelon, ultimately determines the outcome of a battle. True mastery appears when small units can accomplish these tasks under the most complex conditions. As GEN (Ret) Mattis said, "Be brilliant in the basics.  Don't dabble in your job; you must master it.  That applies at every level as you advance."

Consequently, NTC's November 2019 update highlights a selection of the best practices observed among rotational units at the Company level and below. Although not all encompassing, these types of observed best practices are critical to honing and sharpening our skills to fight America's enemies. As leaders incorporate these best practices into their SOPs and train them throughout their formation, the refinement and mastery of the fundamental tasks at echelon can begin to occur.

This document breaks down observations and best practices by formation type to allow for focus among subordinate leaders. While seemingly simple in many cases, readers should remember that in war, even the simplest things are difficult. If you want to truly want to master the fundamentals in your unit, remember this final quote from GEN (Ret) Mattis:

> "Every warrior must know his weapon, his job, and his comrades' reactions so well that he functions without hesitation. A hitter has a quarter of a second to gauge the arc of a curveball and swing his bat. He has practiced so many times that calculating whether to swing is automatic, grooved into his muscle memory. The same is true for the grunt engaged in close combat."

Whether you are a Company Commander, Platoon Leader, First Sergeant, or an aspiring leader, our only desire is to share these best practices to make you and your Soldiers at the tip of the spear the best possible fighting formation possible. If you have any questions or concerns, do not hesitate to ask.

Sincerely,

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## Section I:  Scout Platoon & Cavalry Troop Observations & Best Practices

**Introduction:**  Reconnaissance formations constitute an invaluable asset on a modern battlefield.  The notion that sophisticated enemies, equipped with air defense, electronic attack, as well as cyber capabilities will just allow us to remotely sense their actions prior to commitment of our forces is quickly fleeting.  Responsible for answering Commander's Priority Intelligence Requirements during either reconnaissance or security operations, Cavalry Troops and Scout Platoons often have less time than other maneuver units before being required to act.  For the average Scout Platoon or Cavalry Troop, simple tactical mistakes can have catastrophic effects on a larger formation's ability to understand the situation or maneuver effectively against a determined enemy.  The ability to operate continuously utilizing sound SOPS, basic maneuver techniques and tactics at the crew, section, and platoon level, as well as the ability to share information collected are just of the few tasks these units must do exceedingly well to accomplish their mission.

### Platoon/Troop Maneuver and Dispersion

**Observation:** Cavalry Troops often fail to properly deploy in zone while executing reconnaissance and security operations. Even units that correctly determine the probable line of contact will fail to transition their movement technique and formation appropriately. Often, a unit that should be bounding in platoon wedges, for example, will continue to travel in column even after crossing the probable line of contact. Those units that *do* deploy routinely fail to achieve proper dispersion between sections and vehicles. This lack of dispersion often results in mass casualties. All too often, the enemy engages and destroys the Cavalry Troop as it travels down an MSR in a convoy.

**Best Practice:** Cavalry Troops must maneuver tactically to make contact with the smallest element possible.  To accomplish this, Troops must first develop the enemy SITTEMP to determine the probable line of contact.  That probable line of contact must then become a named phase line.  The Troop must deploy in zone *before* crossing that phase line. Subsequent phase lines should indicate that the Troop has entered into the range of a new enemy weapon system or capability (such as jamming, for example).  The Troop must then *transition* appropriately to respond to the new threat.  In other words, each maneuver graphic must have *meaning*, and thereby should shape the maneuver of the Cavalry Troop.  At the Platoon and Section level, leaders must remain proactive to ensure that their elements and vehicles maintain proper dispersion while maneuvering.  Though it is METT-TC dependent, Cavalry leaders should generally endeavor to disperse their vehicles at near max range of main weapon systems.  This allows elements to remain mutually supportive while denying the enemy the ability to mass fires on several targets at once.

### Cavalry Troop/Platoon Standard Operating Procedures

**Observation:**  Troop SOPs are often underdeveloped, sparingly distributed, and not properly inculcated at echelon throughout the unit.  Some Cavalry Troops arrive to the NTC with no SOP at all; others with an SOP they inherited; many with an SOP that they developed, but failed to properly distribute.  This creates a situation in which junior leaders must become creative problem solvers, even when executing something as routine as PCCs for a dismounted OP.  As a result, a dismounted OP team from 1st Platoon may pack or prepare very differently than a dismounted OP team from 2nd Platoon.  Without standardization, results will vary and outcomes may suffer.  Troops that arrive at NTC without an effective SOP must develop solutions in real time, often to the detriment of mission accomplishment.

**Best Practice:** The better Cavalry Troops develop their SOPs early, distribute them to the lowest level, ensure shared understanding, and enforce compliance constantly. Their leaders review and refresh the SOP after each major training event, following the receipt of some new significant capability or equipment, or when the preferred method of accomplishing a specific task changes. In other words, these formations make the Cavalry Troop SOP a *living document*. Effective SOPs include: PCC/PCI checklists, actions at the short halt, actions on contact, standards for screen set vs. screen established, PMCS and fault verification procedures, procedures for service station vs. tailgate resupply, priorities of work by mission type, ROZ request formatting, troop commander wake-up criteria, troop command post operations, security operations, vehicle operations, uniform standards, OP kits, assembly area operations, and more. Inclusion of these topics allows the SOP to serve as a quick reference guide during field operations and allows subordinate leaders to accomplish their commander's intent without requiring him to issue specified guidance. Formatting the SOP to be pocket sized and weatherproof makes it most effective. Refer to ATP 3-90.90 as a guide for SOP development.

**Troop and Platoon PACE Plans**

**Observation:** Units are often ineffective at executing their full PACE plan because they guard their COMSEC too tightly, emplace their equipment improperly, and have operators who are not trained well enough to effectively troubleshoot their equipment when it malfunctions. Often, individual operators lack the requisite skills for the effective employment and troubleshooting of their communications equipment. Many units have a poor understanding of wave and antenna theory, HF operation, and practical communications employment techniques. Organizations frequently limit SKL access to a small number of individuals, which forces units to displace or halt their maneuver to receive encryption. Preventing the end-user distribution of SKLs slows COMSEC change over tremendously. All too often an entire Troop will sit motionless on the battlefield, unable to communicate for hours, as they navigate the hardship of an inefficient COMSEC changeover.

**Best Practice:** Troops which deliberately train a well thought out communications plan consistently communicate more effectively in a decisive action environment. These Troops integrate dynamic communications employment into every training event, and usually execute quarterly Communications Academies to build operator proficiency. Communications Academies should include: -10 Level operator skills for all radio systems, employment of all communications systems, field expedient antennas, HF Theory and employment, and radio troubleshooting procedures. Increased distribution of SKLs enables easy and rapid access to encryption data without forcing a vehicle or dismounted team to displace from their position. Units must train, certify, and credential as many Soldiers as possible to distribute SKLs to vehicles and dismount teams. Successful organizations have experience employing their PACE plans at long distances. They understand the physical range capabilities of their specific systems, anticipate those capabilities, and effectively transition to longer-range communications systems when appropriate. Troops must routinely conduct thorough communications checks at distance and understand the capabilities and limitations of their systems. Units should execute at-distance communications checks during regular maintenance operations to best understand and employ their communications systems.

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### Section II:  Armor Company/Team Observations & Best Practices

**Introduction:**  The Armor Company/Team constitutes one of the most powerful direct fire capabilities any Brigade in the world can commit to seize an enemy position thru overwhelming firepower, speed, and shock effect.  In a decisive action environment, the ability of these formations to react quickly and decisively hinges on their intricate understanding of unit SOPS, a consistent understanding of their position relative to enemy forces, and the flawless execution of Company and below battle drills. Armor, like other units, achieve this standard by repeatedly ensuring they master truly essential tasks such as the ability to conduct tactical movement, actions on contact, attack by/support by fire, and defense of a position.  They must exercise tactical patience by taking the time to clear restricted terrain, but, once committed, ruthlessly attack.

### Train to Sustain at the Company and Platoon Level

**Observation:**  Leaders from Company to vehicle commander level must be familiar with their role in supporting the unit level sustainment plan. Company and below level leaders are frequently are not familiar with how small unit and individual actions impact the overall sustainment plan, which has the effect of limiting options for the Task Force Commander.

**Best Practices:**  Specific successful unit TTPs for training sustainment at the Company level and below include the following:

• Conduct a Sustainment LPD at home station that explains how all aspects of sustainment are doctrinally executed from the FLOT to the BSA. Walk leaders through their role in the process so they understand the importance of LOGSTATs, 5988E flow, LRP operations, recovery planning, and the composition of unit level maintenance assets.

• Define "Operational Reach" based on sustainment at the company and platoon level. Company and platoon level leaders should understand how long they can operate and how far they can advance during offensive operations based upon their consumption of supplies with a particular emphasis on CL IIIB. Leaders can illustrate this point by defining a phase line or other graphic control measure which constitutes the point where the unit will culminate due to sustainment. This "culmination line" will generally be the farthest from the unit immediately after LOGPAC and will move closer to the unit as they consume supplies; the "culmination line" is further extended when the unit receives resupply.

• Train vehicle recovery in suboptimal conditions. Successful units have trained combat vehicle recovery under fire using a variety of methods (tow bars, cables, straps) while in contact and in elevated MOPP conditions. Soldiers must understand the technical limitations of their vehicles and what they can do based on their experience level and the Commander's risk tolerance.

• Crew Level Sustainment (CL I, III, V, VIII). Establish the load plan for all classes of supply by combat vehicle and explain the importance of updating the LOGSTAT as crews consume supplies during operations. Successful units establish standards that are understood and enforced by junior officers and NCOs.

• Casualty Evacuation. Establish a clearly understood plan for marking vehicles in support of evacuating casualties. VS-17 panels or equivalent marking system on various parts of the vehicle can be effective if understood by the team. Implement a clearly defined standard for what constitutes a non-standard CASEVAC asset and rehearse using said capability. Identify what special equipment must be present beyond the Medic's aid bag and what should be transferred from the organic M113, FLA or Stryker when the vehicle becomes NMC.

## Maintenance During Sustained Operations

**Observation:** Units struggle to create a maintenance focused battle rhythm during rotation and arrive at NTC unprepared to sustain maintenance operations during continuous operations.  Units arrive at NTC without appropriately forecasting CLIII(P) or IX for the rotation, without sufficient bench stock on hand, resulting in vehicles remaining non-mission capable longer than they should and resulting in lost training opportunities for Soldiers.  Units can look at historical data to analyze common maintenance issues and forecast appropriately.  For Tank companies, maintenance often becomes the focus of the rotation, which takes time away from TLPs, planning cycles and other MET tasks.  Tank Companies arrive with systems optimized for garrison operations without a defined maintenance battle rhythm.  DA5988Es and LOGSTATs are not submitted routinely and few units establish a format prior to arrival at NTC.  Maintenance meetings do not occur until operational readiness rates drop below unacceptable levels.

**Best Practice:** Determine average CL III(P) and maintenance stats during planning.  Companies must forecast bench stock for their rotation and stock their SSL accordingly.  The demand signal from home station training will not compare to the OPTEMPO at NTC so command directed fills must be maximized.  Companies must develop a load plan for CLIII(P) on each tank and with the field trains.

## Train to Use Special Equipment

**Observations:**  Leaders and small units are frequently unfamiliar with the basics of how to use the ancillary equipment typically assigned to an MTOE Armor Company. This includes, but is not limited to, mine plows, rollers, and CBRN and communication equipment.

**Best Practices:**  Soldiers at the Company level and below should understand how to employ every assigned piece of equipment in their formation. Specific equipment Commanders should pay special attention to include:

• Plows and Rollers. Units can train on plows and rollers by mounting them during all crew and collective training at home station. Successful crews are familiar with the components of both systems and have done basic familiarization by mounting, dismounting, inspecting, and driving with the plow and/or roller. A successful TTP for home station training may include reserving a training area that allows for digging and having tank crews repeatedly execute a driving course, mount/dismount drills, use of the manual lifting straps (for plows), and the transfer of either plows or rollers to the HHC mine roller section for transport. Units frequently arrive at NTC without ever previously mounting the plows and rollers, are unfamiliar with the components, and have never rehearsed the transportation of either asset.

• Communications Equipment including JBC-P (or JCR), RT-1523s, and SKLs must be associated with their parent system in GCSS_A if applicable and understood at the operator level. Units

that have conducted deliberate training on the individual communications systems and can execute -10 level tasks may save time by not requiring a 25U to execute crew level tasks on every combat platform.

- Radio Net Management. Armor companies are limited by having only six RT-1523 series radios in each tank platoon. Platoon and company level leaders must rehearse company internal PACE plan and understand who monitors platoon internal, company command, fires, battalion command, and battalion A&L and what constitutes an appropriate use of each net. An example of an inappropriate use of an FM net would be using the Company Command net to call a 9 line medevac request while the company commander is using the same net to maneuver the company in contact with the enemy.

- CBRN Equipment. Armor units should incorporate JCAD, A/N VDR-2, A/N UDR-13/14, M256 kits, and equivalent capabilities into training. This will allow the company and platoon level units to update load plans, adjust their tactics according to the threat environment, and update LOGSTAT to reorder consumable items (batteries, M256 kits, etc.).

- CVTESS-MILES and associated TADDS. Incorporate a deliberate block of instruction on the installation, employment, and maintenance of MILES systems for combat and individual platforms. Include TTPs on the practical employment of MILES based on the NTC EXOP with a specific emphasis on boresight procedures and a secondary emphasis on vehicle camouflaging requirements with respect to MILES sensors.

## Prep to Fire Checks

**Observation:** Due to perceived time constraints, Armor forces operating in a decisive action environment often fail to conduct proper pre-fire checks during force-on-force. Correct pre-fire checks are often not performed until immediately prior to live fire, and are typically not performed again. Perhaps the simplest and most basic function of an armor company is to kill the enemy. However, accurately engaging the enemy seems to be one of the hardest tasks for tank crews during live fire. Poor accuracy during live fire seems to come from poor habits during force on force prior to live fire. The TESS does not require full bore sighting procedures, muzzle reference sensor (MRS) checks/updates, armament accuracy checks (AAC) or meteorological data updates, or other pre-fire checks. Essentially, crews can "get away with" abbreviated versions of these essential tasks during force on force. This makes their transition to live fire problematic. Often battle rhythms, SOPs and priorities of work, which were at least adequate during force on force, are no longer effective. Implementing new SOPs and priorities of work either become an oversight that is never corrected, or implemented in hasty fashion. Pre-fire checks (including bore sighting or MRS checks/updates) are rarely conducted after the initial LD for live fire. Meteorological data updates are often only disseminated by a battalion command and control node after a company requests it, which is usually long after initial contact with the enemy and/or long after an update should have been disseminated. Even after the initial request for updated meteorological data, higher headquarters do not disseminate the information with any sort of regularity and it is often up to the subordinate unit to request an update when it occurs to them.

**Best Practice:** Train as you will fight. Your Soldiers will execute in battle what they must perform repeatedly to a high standard during training. Direct that daily battle rhythms, SOPs, and priorities of work be developed and executed as if crews were firing live rounds every time. TESS specific SOPs and priorities of work should be added on during force on force, and then can be either reduced or

eliminated during live fire.  Unit SOPs need to address when to boresight, conduct MRS checks/updates, AACs, and pre-fire checks.  This better prepares units to train as they fight.  During training prior to and at the NTC, units should incorporate the dissemination of meteorological data as part of a battle rhythm or have an SOP that triggers the dissemination.

## Company Movement Techniques and Dispersion

**Observation:** Companies training at the National Training Center often struggle to identify the probable line of contact (PLC) during operations and deploy into proper movement formations and techniques prior to contact.  Often, planning at the company level does not include sufficient red ink on their graphics, which leads to companies failing to transition from movement to maneuver prior to making contact with the enemy.  Enemy direct fire or indirect fire ranges are rarely depicted on graphics as the commander prepares his/her plan.  There are multiple reasons for the lack of sufficient planning at the company level.  Battalion staffs fail to disseminate information in a timely manner, company commanders do not conduct parallel planning with battalion, and the enemy SITTEMP is not fully developed.  We often witness companies remain in column or wedge formations in open terrain without proper dispersion along an avenue of approach toward an objective.  When units fail to identify the PLC and deploy into maneuver formations, they become easy targets for the enemy and rarely reach their objective.

**Best Practice:** Battalion staff should publish WARNORD 1 with the enemy SITTEMP as early as possible, ensuring they stay within the 1/3, 2/3 rule.  The S2 can identify the PLC and provide a threat ring analysis for the commanders to plan a probable line of deployment (PLD) against.  Commanders can conduct IPB and provide a bottom up analysis as they are, more often than not, more familiar with the terrain.  Commanders establish a standard for enemy SITEMP on graphics and conduct PCIs to ensure compliance.

## Train to Task Organize and Combine Arms

**Observation:**  Platoons and Companies must be prepared to support dynamic changes to task organization that support battalion and brigade level mission requirements.  Companies frequently have difficulty employing task organized assets, and platoons struggle to integrate into non-like type units (Armor to Infantry, etc.).

**Best Practices:**  Specific successful unit TTPs to train task organized formations include the following:

• Establish Attachment/Detachment Checklist. Units develop attachment and detachment checklist to support task organization requirements. This includes a reference card to provide in the event the supported unit is not familiar with unit capabilities, limitations and requirements.

• Publish specific times for task organization planning and execution. This allows all assets in the company team to participate in Task Force level rehearsals and execute TLPs at the company and platoon level. Train Company and platoon level leaders to ask for this and/or provide recommendations if not provided by the higher echelon.

• Combine Arms at home station by establishing habitual relationships during collective training. The best units observed at NTC have executed collective training together on multiple occasions prior to arriving at Fort Irwin. Task organized armor, engineer and infantry platoons arrive understanding how

to operate together and are quickly able to combine arms even when operating in a time constrained planning environment.

- Develop unit level SOPs or playbooks that are published and used during home station collective training and include the habitual relationships mentioned above. Units frequently arrive with SOPs that govern operations at the platoon and company level that have not been trained or rehearsed at home station. Company and platoon common TACSOPs are a possible solution.

- Develop, issue and inspect unit level systems to publish analog and digital graphics at the platoon level. Successful platoons and companies have designated individuals to copy or develop graphics, inspect graphics during PCIs and update as the situation develops. Publication of graphics to all organic and attached elements allows company commanders to synchronize assets, de-conflict with adjacent units and combine arms in accordance with Army doctrine.

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## Section III:  Mechanized Infantry Company/Team Observations & Best Practices

**Introduction:**  At the National Training Center, mechanized infantry formations represent some of the hardest working Soldiers on the battlefield.  Capable of clearing restricted terrain ahead of mounted armor formations, seizing and controlling urban areas, and providing support to enable myriad other operations, the four mechanized infantry companies in an Armor BCT often find themselves struggling to keep up with the demands for their formations' capabilities.  For Stryker BCTs, the speed of the Stryker platform combined with the power of anti-tank equipped dismounted formations poses a unique challenge to the enemy.  Yet, often, because they overlook some very fundamental tasks, units fail to realize the true power of these formations.

## Boresighting

**Observation:** MILES rules the battlefield at the National Training Center. OC/Ts have observed that frequent and proper boresighting at the company level is directly correlated with lethality.  Mechanized Infantry Companies that integrate boresighting into their timeline and conduct it prior to LD or while in the defense at least twice daily have a higher success rate because they are able to destroy enemy targets out to their weapon systems' (25mm Bushmaster, 7.62mm COAX, TOW, etc.) maximum effective ranges. Companies that boresight at 300m are not effective as they are not accurately sighting for the weapon's maximum effective range.  Additionally, units often forget that every ABCT is equipped with 125 M3 Bradleys, each readily carrying two TOW missiles – the ability to destroy up to 250 Armor vehicles at a range of 3750 meters.  SBCT anti-tank missiles systems are just as overlooked many times.

**Best Practice:** Units should boresight out to the maximum direct fire range of their weapon system to increase their lethality, regardless of weapon type. The Blackhorse OPFOR conducts boresighting operations multiple times a day and are, therefore, able to destroy Rotational Training Unit vehicles out to 3.5 kilometers and beyond on a routine basis.  For home station training, companies should use their borelight kits and train on borelighting their weapon systems.  This will build the muscle memory at the platoon and individual crew level and will also increase unit discipline to execute boresighting operations while executing Force on Force operations.

## Javelin Proficiency

**Observation:** Company Level Command Launch Unit (CLU) and FGM-148 Javelin Weapon System proficiency has been lacking during multiple rotations.  During National Training Center rotations, the RTU at the company level is often unsuccessful at defeating armored threats with their anti-tank weapons systems due to lack of familiarity with the weapon system and lack of preparation before NTC to integrate the Javelin teams within the maneuver elements.  Companies have not deployed to NTC with a clear task organization of Javelin teams incorporated into their fighting squads. It seems to be an afterthought on who is going to comprise the Javelin team, or in most cases, a lone Javelin gunner.  This is demonstrated throughout the rotation because a Soldier will end up carrying the CLU connected to the Javelin missile, rather than it being carried by a team of two.

**Best Practice:** Company/Troop Commanders should incorporate virtual Javelin training at home station into their training plans, as well as hands-on training on the CLU by all Soldiers within the Company, not just Javelin teams or Weapon Squads, ensuring that as many Soldiers as possible know how to utilize the system.  Companies need to plan how they are going to carry their CLUs and Javelin

missiles over rocky terrain, allowing their dismounted elements to move to the high ground with better observation and fields of fire.

## Movement and Maneuver Planning and Execution

**Observation:** Movement and Maneuver, both mounted and dismounted, at the Company level is a particular weakness due to the vast distances involved, the open terrain units experience for the first time, and a lack of proper IPB conducted prior to the mission.  Often Companies do not deliberately plan their tactical movements to the objective, which results in entire Companies of Bradleys or Strykers moving down MSRs in a file directly into the enemy's engagement area - dismounts still on board.  Company Commanders should conduct thorough Terrain Analysis and should brief what movement formations the company will move in and when they will change based on unrestrictive, restrictive, or severely restrictive terrain as well as probable enemy contact.

**Best Practice:** The transition from movement to maneuver is deliberate and always incorporated into the scheme of maneuver.  Good Commanders conduct training at home station that focuses on tactical mounted maneuver both during daylight and hours of limited visibility through various types of terrain at the platoon level.  This would allow drivers, Bradley/Stryker commanders, section leaders, and platoon leaders to see what proper spacing and movement formations look like.  Commanders should also train the use of movement formations such as the platoon wedge, echelon left/right, traveling, and bounding overwatch, etc. through the same types of terrain so that the subordinate leaders learn when, where, and why to use each type of formation.   Seemingly simple, affording your platoons the time to simply practice movement formations and techniques constitutes a step often overlooked by Commanders in home station unit training plans.

Dismounted maneuver, especially in open terrain, should also be trained further. Dismounted infantry can have catastrophic effects on enemy formations as they can easily move through severely restrictive terrain and are able to infiltrate enemy positions without being compromised.  Commanders should deliberately plan their vehicle drop-off points (short of the objective, on the objective, or on the far side of the objective) and should ensure that their mounted elements are in a position where they can mutually support dismounted movement to the objective.  Similar to the mounted maneuver training, commanders should conduct dismounted training through restrictive and severely restrictive terrain and should seek to integrate both mounted and dismounted maneuver into training.  Doing this would allow commanders, platoon leaders, and section leaders to learn how to better control both their mounted and dismounted elements so they can always be in a position to mutually support each other.

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## Section IV:  Field Artillery Battery Observations & Best Practices

**Introduction:**  Field Artillery units constitute the single most powerful combat multiplier on the battlefield under the direct control of the BCT Commander.  By adeptly utilizing artillery fires, Commanders can effectively shape the deep fight prior to enemy forces making contact with the lead units of the BCT. They can also provide additional firepower to disrupt, neutralize, or even destroy enemy elements in the close fight.  The decision to employ artillery and the decision to transition the weight of your artillery fires from one task to another cannot be haphazardly controlled.  The deliberate execution of a scheme of fires, conducted in concern with the movement of direct fire ground forces onto enemy positions (the very definition of maneuver) constitutes one of the single most important tasks a Commander must perform to be successful in a decisive action training environment against a near peer threat.

Commanders are responsible for training artillery formations.  This means understanding that, in order to be effective, you must employ your artillery against an enemy which has fire superiority (both in terms of mass and range).  Routinely, Commanders struggle to get artillery formations into the fight due to inadequate home station training plans.  Training small artillery units to operate at the platoon level in a dispersed manner while massing their effects, utilize camouflage, and able to range well forward of the FLOT enables them to operate effectively against enemy formations.

### Reconnaissance Operations for Artillery Positions (RSOP)

**Observation:**  Artillery units often fail to conduct reconnaissance operations for Artillery Positions

**Best Practice:**  Successful firing batteries understand and adhere to Chapter 3 of ATP 3-09.50 and ATP 3-09.70 (Paladin Operations) regarding RSOP. Battery leadership that develops and adheres to a site selection checklist while applying concentrated efforts in identifying and training advanced party personnel (including Fire Direction Center and Battery Trains Personnel) and rehearsing advanced party operations (i.e. individual howitzer positioning, battery trains positioning, area clearance, security, and communication feasibility) are able to meet in-positon, ready to fire timelines that are nested with the brigade's scheme of maneuver.

### Occupy and Defend a Tactical Area

**Observation:**  In a decisive action training environment, every Soldier at every echelon must, without a doubt, be capable of defending their position.  Often, field artillery batteries become so overwhelmed with their ability to deliver fires, they fail to properly occupy and formulate a defensive plan for their assigned tactical area.

**Best Practice:**  Battery Occupations and Defense Operations are a direct reflection of the level of quality put into the RSOP.  A quality RSOP sets conditions for a streamlined occupation and defensive posturing. RSOP personnel must maximize opportunities to analyze terrain for incorporating security posturing during occupations.  Chapters 4 and 5 of ATP 3-09.50 and ATP 3-09.70 discuss multiple relevant techniques for occupations and defense preparations.  Units that train occupation under both digital and degraded conditions and under varying threat levels are more prepared when Opposition Forces attempt to disrupt the brigade's fires assets.  Every Soldier and leader must understand how to create a crew served range card, how to employ a defensive plan, and illustrate a defensive diagram.

### Fire Mission Processing

**Observation:** Fire Mission Processing constitutes a fundamental task for the fires enterprise. The tasks, conditions, and standards are pre-scribed in Army doctrine. Units which truly understand the word 'mastery' have practiced performing these tasks under the most demanding replicated combat conditions possible – at the pace required to succeed in a decisive action training environment against a near peer threat. Great units ruthlessly adhere to these established standards and do not deviate due to time constraints or other pressures found on the modern battlefield. They can perform these tasks – to standard – regardless of the battlefield conditions.

**Best Practice:** ATP 3-09.81 is the system of record for fire command standards. The only authorized deviations are those outlined in the ATPs. NO OTHER STANDARDS SHOULD BE PERMITTED! Successful batteries conduct Platoon and Battery fire mission processing to a validated standard. When that standard is achieve, these unit increase the demands on their formations while still adhering to the common standard of performance to demonstrate true mastery. Battery Leadership that understands when to transition the battery to fully degraded operations are able to maximize fires responsiveness in support of the brigade. Special munitions (i.e. Smoke in Adjust, Excalibur, FASCAM) that are rehearsed from sensor to shooter during the unit's digital system sustainment training and other training events are better prepared to support the brigade during combined arms breach and brigade level defense operations.

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## Section V: Attack Helicopter Company Observations & Best Practices

**Introduction:** When managed correctly, Army Attack Aviation represents the most flexible and powerful combat multiplier a Division Commander can direct to any area of operations. Unlike a counterinsurgency fight, attack aviation in a decisive action training environment must be conserved to affect the fight in accordance with the friendly scheme of maneuver in a synchronized manner. Most often, this implies employing attack aviation, en masse, as a maneuver element to destroy significant enemy capabilities. Whether committed to weight the main effort, employed as a separate maneuver formation as an economy of force or in the deep area, Commanders must specifically focus how attack aviation elements are employed. Today, our attack aviation companies can provide additional capabilities, unheard of during the counterinsurgency days of the early 2000's. Yet, our ability to employ those capabilities is dependent upon a unit's ability to train them effectively at home station.

### Manned/Unmanned Teaming

**Observation:** Attack Aviation Units Often Fail to Employ MUM-T Capabilities

**Best Practice:** AH-64 companies, paired with RQ-7 shadows exercising manned un-manned teaming (MUM-T) tactics are arguably the most valuable *maneuver* resource to a Brigade Combat Team in a decisive action environment. The capability of the onboard sensors and point-target weapons systems provide a vital asset to the Brigade Commander. An attack aviation platoon consisting of four AH-64s and one to two RQ-7s can be paramount in developing friendly COAs, providing early warning, reaction time, and maneuver space, as well as *massing* firepower at the decisive point. However, this delicate asset must be planned and synchronized into the friendly scheme of maneuver or the mission is at risk of failing.

### Planning for Attack Aviation Employment

**Observations:** Maneuver brigades often misunderstand the real-world considerations needed to employ the AH-64 platoon as a maneuver force. As stated in FM 6-0, a COA must be feasible, acceptable, suitable, and distinguishable. ADAM/BAE cells are an integral part of ensuring the attack aviation plan has these attributes. Brigade staffs must trust and value the input provided by the subject matter experts in the ADAM/BAE as well as the Aviation Task Force LNO in providing realistic options to the Commander during MDMP. Planners must analyze in detail how they will employ AH-64s, with strict consideration given to *triggers* driving readiness condition (REDCON) levels. Time-based triggers (that is, simply launching AH-64s as soon as they are available) rarely work out during an offensive or defensive phase because staffs did not analyze fuel consumption, time-distance data, flight time, or crew posture.

Brigade staffs also face difficulty in determining the appropriate attack aviation mission for the appropriate tactical scenario. For example, AH-64 platoons are sometimes tasked with a zone reconnaissance to find and destroy enemy formations during the MDMP process. Two problems arise here; the task and purpose is not doctrinally sound, and the required commander's reconnaissance guidance is often overlooked. The result is the AH-64 platoon focused on minute threats when NAIs with associated PIRs can be answered, providing decision points for the commander. This scenario is exacerbated when subordinate maneuver units lack mutual understanding of the attack aviation mission. A battalion commander or RTO can quickly diminish air-ground integration of a brigade-level operation by giving an on-the-spot task and purpose or "pushing" the AH-64s down to a company.

**Best Practices**: The Aviation Task Force (AV TF) and AH-64 company must be integrated into the unit's planning cycle early and maintain integration throughout the operation. Including the AV TF during the RSOI period is acceptable, but establishing the relationship at home station is optimal. If the brigade and AV TF are not co-located, dialogue must be established as soon as possible by way of VTC or some other means in order to understand the brigade's rotational concept and unit airspace plan. This dialogue should aim to form the basis for ongoing bottom-up refinement during the rotation's execution. AV TF planners must understand their role in conducting terrain analysis in order to submit airspace requests through the ADAM/BAE to provide options for the commander and retain flexibility of maneuver should an attack mission be dynamically re- tasked.

The AH-64 company must also understand their responsibility to provide their own analysis and running estimates and to be able to give reasonable expectations to the commander. The company should be able to receive the mission, execute TLPs, and identify friction points to mitigate during TF-level rehearsals. Furthermore, they should rehearse *contingencies* (such as identifying the use of a holding area vs. launching from the AV TAA) at the company level to overcome unexpected mission changes and exercise mission command to achieve the overall commander's intent during a decisive operation.

In conclusion, Brigade Combat Teams can greatly increase their chances of success with attack aviation by integrating early, providing detailed commander's intent and associated criteria, and developing realistic triggers for the AV TF AH-64s. First, integration will establish the baseline for operational timelines and ensure mutual understanding of airspace submission requirements. Secondly, commander's intent understood at the lowest level will empower the AH-64 air mission commander (AMC) with making timely decisions on the battlefield; for example, a movement to contact mission developing into a hasty attack of the enemy exploitation force. Finally, thoroughly-analyzed triggers based on event and not by time will allow the precise response time to mass firepower at the place and time of the commander's choosing during a deliberate offensive or defensive operation.

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## Section VI: Military Intelligence Company Observations & Best Practices

**Introduction:**  The BCT's military intelligence company provides a diverse set of capabilities to a Brigade Combat Team.  Whether facilitating the execution of HUMINT operations in a local urban area, SIGINT operations by attaching small teams forward with reconnaissance elements, or information collection activities with UAV assets, every MICO should allow the Commander to better understand the tactical situation.  Yet, to employ this formation effectively, it should be intimately comfortable operating in small teams, dispersed throughout the organization, trained to provide capability when and where it is needed to facilitate intelligence operations.  Too often, Commanders relegate the training of these small teams to a series of command post exercises without critically thinking through how to best employ these crucial Soldiers on a modern battlefield.

## Location of the MICO Commander and MICO Command Post

**Observation:**  Organic to the Brigade Engineer Battalion, some units fail to capitalize on the capabilities of the MICO Commander and the MICO Command Post.  As a result, this critical C2 node is positioned away from the Brigade, unable to assist the BCT Commander and staff with the intelligence effort.

**Best Practice:**  Locating Company Command Posts (CPs) at the BCT Main CP location maximizes the MICO Commander's ability to tie in to the brigade planning process and enable the brigade's Information Collection Plan. With this location, the MICO commander can be used in numerous ways: in a direct FUOPS capacity with brigade Intel Planners and Collection Manager, in a direct CUOPS capacity by managing his/her assets on the CUOPS floor, and/or in a support capacity by ensuring the MICO assets are resourced and in position for each phase of operations.

## Broad PACE Plan

**Observation:**  Due to a lack of organic comms platforms, many MICOs fail to develop a robust communications plan (PACE) that enables organic elements to report effectively.

**Best Practice:**  The development of a broad PACE plan for each MICO team is critical to the MICOs ability to effectively support the larger intelligence enterprise.  JCR/JBC-P is the most effective means for the company CP to communicate with collection teams and the UAS platoon. Due to frequent enemy jamming capabilities, however, the MICO cannot limit their PACE to simply JCR/JBCP. The MICO must have a broad PACE plan to include upper T/I, TACSAT, HF, and FM systems. Additionally, this PACE plan must be trained and verified prior to NTC Rotations.

## Collection Team Link Up With Maneuver Units

**Observation:**  MICOs frequently re-organize small teams of Soldiers throughout operations to facilitate intelligence operations and answer information requirements.  Quickly detaching from one unit, navigating to the next, and re-integrating into operations with a new unit is a critical skill.  Often, units waste time without adequately tracking these teams and purposely building an SOP to quickly facilitate their movement to the next area of operations.

**Best Practice:**  MICOs must develop a plan to successfully link up collection teams with maneuver units for each phase of the operation. One successful technique to achieve this is to have collection teams present at the brigade Information Collection Rehearsal and brigade Combined Arms Rehearsal.

This allows the team to observe and/or participate in the rehearsals and then link up with a leader from the maneuver unit the team will be supporting. The collection team can then move with that leader back to the battalion TAA and rehearse at the battalion-level prior to pushing out to the company-level.

## Positioning and Securing the UAS Platoon

**Observation:** The UAS Platoon represents a significant information collection and targeting capability for the BCT; however, employment of the platoon in a DATE scenario consistently challenges BCTs to find a suitable position and, just as importantly, secure the platoon against threats in the consolidation area.

**Best Practices:** A significant struggle MICO and BEBs often have is securing and sustaining the UAS platoon due to lack of security resources and the distance between the BEB's FSC and the UAS platoon. Given that only 15 Soldiers comprise the average UAS platoon, securing their entire UAS strip internally presents a struggle. One technique to minimize this burden is to locate the UAS platoon with the Aviation Task Force. By co-locating, the BCT can task the AVN Task Force to secure and resupply the UAS Platoon. Additionally, co-location provides an alternate means of communication to the brigade and MICO in the event the UAS platoon's internal PACE fails. Another technique involves positioning the UAS Platoon adjacent to or near the BSB and support area assets. This technique enables units within the support area to consolidate protection assets. Finally, the BEB Commander can consider, based upon the tactical situation, providing military police support as part of a dedicated mission to secure assets in the consolidation area. Regardless of the technique chosen, Commanders must ensure they position the UAS platoon properly to support the BCT and provide the means to allow the unit to operate securely.

## HCT Security

**Observation:** In a DATE scenario, HCTs continue to collect. They are not a COIN specific formation. The security of these assets in a DATE scenario is critical to their ability to support the BCT.

**Best Practice:** In a Decisive Action environment, HUMINT Collection Teams will have opportunities to conduct Military Source Operations; however, these meets are conducted within a highly-contested area of operation. Leaders must consider who will secure these source meets. Ideally, the BCT should task a Military Police element or another type of element to provide security. If this is not the case, however, the MICO must be prepared to provide internal security. To be prepared, the MICO must ensure adequate equipment weapons are resourced to the teams and the teams are trained to operate the weapon systems.

POC: Sidewinder 11 (MICO) Team

## Section VII: Engineer Company Observations & Best Practices

**Introduction:** Engineer Companies represent some of the most diverse, in demand, formations in a Brigade Combat Team in a DATE scenario. Capable of providing mobility, counter-mobility, or survivability assets these formations uniquely shape a BCTs ability to maneuver against a determined enemy. Effectively integrating these highly specialized units into the scheme of maneuver requires sound SOPs, thoughtful consideration during planning, meticulous tracking during preparation, and integrated support from other maneuver units in the midst of execution. Whether you are a Company or BCT Commander, understanding how to properly integrate engineer support into your operations is paramount to success.

## Rehearsals at All Levels

**Observation:** Regardless of echelon, commanders must ensure the synchronization of combined arms breaches and other engineer operations. No two combined arms breaching operations are the same. The various capabilities employed by engineers, availability of redundant assets, and the enemy situation all demand that engineer operations be rehearsed in great detail prior to execution.

**Best Practices:** Squad, platoon, company, and task force rehearsals with engineers are the key to success. Rehearsals are imperative for all combined arms breaches and other engineer operations. The rehearsal provides shared understanding of the operation from the lowest to highest level. The rehearsal makes clear the times, methods, terms, and reporting requirements required to achieve the mission. Synchronization of the Support Force, Assault Force, Breach Force, and all other SOSRA elements can be refined and identified friction points that can be fixed.

## Availability of Hard Copy Technical Manuals for Mission Critical Equipment (Assault Breacher Vehicle (ABV), Mine-Clearing Line Charge (MICLIC), Volcano, etc.

**Observation:** As the Army gravitated toward electronic technical manuals in the early 2000s, leaders at all levels have failed to realize that in a decisive action environment, access to these manuals either becomes difficult due to enemy electronic warfare capabilities or a vulnerability as Soldiers attempt to utilize electronic means to conduct routine operations. Physical copies of TMs becomes more than just a luxury; it becomes a necessity to maintain combat power throughout the organization.

**Best Practice:** Physical copies of Technical Manuals allow Soldiers and leaders at all levels to identify issues in their equipment, troubleshoot problems, and order parts easily. Physical TMs in austere and dusty environments enable Soldiers to conduct thorough Preventative Maintenance Checks and Services, junior leaders to direct Pre-Combat Checks, and leaders to manage targeted Pre-Combat Inspections. Units that have TMs on hand more readily identify problems during PMCS, and identify solutions to faults more quickly.

## Marking Systems from Rehearsal Through Execution

**Observation:** Marking systems for engineers are often not understood across the maneuver formations, inadequate in directing unit traffic, and not clearly marked for all weather conditions.

**Best Practices:**  Marking methods that are the most effective are at least 1.25m in height, brightly colored, and provide directional information. The most successful marking systems utilized the engineer vehicles providing local near-side security as near-recognition marking by attaching VS-17 panels with arrows to the rear of those vehicles. In the lane, the use of tippy-toms, oversize traffic cones and 8' pickets with engineer tape outlining the left hand rail were all effective. However, the most effective marking method and system did not occur due the use of any specific use of the aforementioned, but from a detailed demonstration of the marking method during combined arms rehearsals at every level.

## Doctrinal Counter-mobility Obstacles and Quality Assurance/Quality Control

**Observation:**  Horizontal Engineer Platoons should rely on standard obstacle designs IAW doctrinal requirements to ensure obstacle intent is achieved

**Best Practice:**  "Construct a Tank Ditch" is a horizontal construction platoon MET and the most common countermobility task executed by a horizontal construction platoon. Most tank ditches are built in accordance with a unit standard without consideration of the obstacle intent or the doctrinal requirements to achieve that intent. Successful platoons utilize unit standard designs based on doctrinal requirements (ATP 3-90.8 Combined Arms Countermobility) and utilize different designs for different obstacle intents. Successful platoons also emplace quality assurance and quality control systems at the operator and blade team levels to ensure the tank ditch is constructed to the selected design standard in order to achieve the effect for which the obstacle is intended.

## EAB Engineer Integration Into BCT Operations

**Observation:**  EAB Engineer units often have difficulty integrating into BCT operations during NTC Rotations.

**Best Practice:**  The most successful EAB Engineers train with the BCT they will support throughout that BCT's preparation for NTC even if it requires deploying from home station to the BCT's location. Pre-rotational training allows units to build trust, learn SOPs, and practice enabler integration prior to arrival at Fort Irwin. If company pre-rotation training is not possible, supporting EAB companies should attempt to deploy the CO HQs and portions of the company, or conduct an integrated CPX in conjunction with BCT training. Additionally, participation in BCT STX, LFX, and even EXEVALs facilitate inclusion of EAB Engineers in the Force on Force Under Live Fire Conditions portion of NTC rotations. EAB Engineers should always travel with a capability brief for supported BEB and maneuver battalions and an integration checklist to ensure they are prepared to support units even when task organization changes occur throughout the rotation.

## Construction Company Route Reconnaissance

**Observation:** Due to organic equipment, route selection for Engineer Construction Companies is often less than ideal.

**Best Practice:** While moving across the battlefield, the routes traversable by LETs and M870 trailers limit the horizontal construction platoon's mobility. While planning and preparing for a movement, successful platoons conduct a thorough route reconnaissance using all reconnaissance means available. Using appropriate PIRs established in the company and platoon SOPs, leaders select routes

to objectives that do not require loaded trailer movement across difficult terrain. Soldiers at all levels in successful platoons conduct route reconnaissance throughout the movement as well in order to confirm or update previous route reconnaissance results. This results in a route to the objective that minimizes damage to the LETs and trailers and maximizes force protection from the enemy.

POC: Sidewinder 14 (EAB MAC/Sapper), 16 (B Co), and 19 (EAB ECC/ESC) Teams.

## Section VIII: Signal Company & Command and Control Best Practices and Observations

Introduction: The criticality of command and control as a warfighting function cannot be overstated. Without the ability to communicate, units cannot conduct synchronized operations. Without proper systems that enable control, synchronization of activities across the formation becomes nearly impossible. Yet, formations habitually dedicate less time to training how to effectively communicate at echelon than many other tasks. The lack of training and associated routine operator level maintenance results in improperly maintained or non-mission capable equipment, automatically degrading the combat power of the larger combined arms team. Remember, if you can't talk, you can't fight.

## Observations

### Maintenance

Lack of Signal Representation – S6s need representatives to integrate with BDE/BN maintenance workflows and attend the daily LOG Sync.

GCSS-A Access –S6s need view access for GCSS-A to ensure maintenance is happening for signal systems.

PCCs/PCIs – Signal Soldiers significantly improve communications by conducting PCCs/PCIs to standard by the end of rotations; however units need to follow up with paperwork (5988-Es).

Signal Equipment Readiness – Units that have large amounts of signal equipment that is NMC greatly benefit by conducting a maintenance stand-down/rodeo driven by 5988-E/ESRs.

### RETRANs

Mission Preparations – Codify signal mission briefs and validation in unit SOPs and constantly rehearse to avoid atrophy.

Mobility of RETRANs/CPs – Displace unit CPs and RTX sites with enhanced configuration/field expedient methods to increase the ease of transition.

Integration of S6s in CUOPs – S6s should leverage the assistant S6 to integrate into CUOPs which greatly enhances situational awareness of unit RETRANs locations and status.

### Shared Understanding

Battle Tracking – S6s need to be more in tune with the fight, Commander's Intent, and building near/short term projections and COAs.

Digital COP – BDE S6s generally have no digital COP from which BN S6s can gain a shared understanding across the battlefield to prevent duplication of efforts and track outages.

Cross WFF synchronization - S6s should leverage meetings and gatherings already in place to get face time and share plans, lessons learned, and solutions. S6s need to attend CARs, Daily BDE Maintenance Meetings, and strictly enforce S6 Sync.

Signal Synchronization – S6 synch meetings tend to lack attendance and a consistent agenda.

Planning – BDE/BN S6s must recommend TOC locations and leadership must enforce those locations to ensure ability to communicate adjacent and higher.

**Other Observations**

HF Usage – Units that have the most effective use of HF across the BDE have an ALE plan that covers Brigade and Battalion specific HF nets.

TOCNET – Leverage TOCNET to bridge the gap between Upper and Lower TI through the EMCSU. This saves RETRANs assets and better enables the TOC to quickly communicate with subordinate units.

Cyber Network Defense – Units that detect the Cyber OPFOR at the perimeter neutralize threat activity before an enemy foothold can be developed.

COMSEC – Well rehearsed and smoothly conducted COMSEC changeover synchronized with the Division and enablers prevents a drop in JCR numbers from which units generally never recover.

HCLOS – Units are not using HCLOS. This causes units to place TOCs out of line of sight with the BDE TOC, causing secondary issues with FM. HCLOS leverages high throughput while also providing a means to counter satellite jamming.

**Best Practices**

Upper TI utilization – Develop skillsets required to produce and disseminate shared understanding through COPs on Upper T/I hosted platforms.

S6 Battle Rhythm – Establish and enforce S6 Sync meeting as a battle rhythm event.

Maintenance – Begin deliberate integration with the maintenance community and workflows beginning with PMCS.

COMMEX/VALEX – Leadership needs to provide focus and insistence on the use of combined long range, RETRANS integrated, FM digital nets with associated systems during COMMEX and VALEX and enforce a CHOPS run Mission Command Validation Exercise.

**Unit P.A.C.E Plans & RETRANS Training at Home Station**

**Observations:** FM is the P in the P.A.C.E. (Primary, Alternate, Contingency, and Emergency) plan for most units coming through the National Training Center. Commanders love the push to talk capabilities of the FM network. The Army been using FM for so long that it has become relatively easy and there is an FM radio in almost every vehicle in our formations. If the FM radio goes down in a command vehicle the commander can easily switch vehicles and be on a different FM radio.

As our Signal formations have become very capable of Installing, Operating, and Maintaining (IOM) our upper tier communications platforms, units are more often attempting to prioritize High Frequency (HF) radio communications but have come up short due to the amount of on-the-move radios truly needed in

a Large Scale Combat Operations (LSCO) fight.  While the Army is getting better at leveraging HF, we are still a ways off from a truly utilizing this method as a part of a viable P.A.C.E. plan.

A general over-reliance on upper T/I has come at a cost that many leaders do not realize until they arrive at the National Training Center.  That cost is FM retransmission (RETRANS) capability.  Once commanders realize they are not adept at effectively communicating at long distance, their priority quickly changes.  This realization pushes RETRANS to the forefront of the Signal Company's priority of effort.  Rightly so, as it draws the most attention when a commander is unable to communicate across a battle space from mobile platforms.

**Best Practices:** Commanders must understand the risk that is being assumed by neglecting RETRANS at home station.  Signaleers must know the commander's intent and educate command teams.  Commanders must ensure that the S6 has a good Signal estimate and the dedicated time to conduct all Signal Assessment Tables.  The S6 must speak in plain language and tie everything to the mission statement, intent, and the plan, making the Signal priority of work clear, realistic, and attainable.

In a time constrained environment, leaders must take every opportunity to get the repetitions and rehearsals at every echelon. This though applies to RETRANS teams as well.  When FM is the P in the P.A.C.E., FM RETRANS naturally becomes the Commanders priority.  In turn, RETRANS becomes the S6's and Signal Company Commander's number one priority.

In a tactical formation, Communicators must prioritize trained and validated RETRANS teams.  How do we guarantee we are ready when it is our turn?  Signal leaders must get reps and sets at home station.  Begin with RETRANS drills through proper pre-command checks and pre-command inspections.  Ensure everything from the spares to the right antennas are on-hand and fully mission capable. Do not immediately train teams at great distances across training areas.  Start with a static display in a common area with dual net RETRANS to make sure everything works and teams can learn from each other.  Conduct consolidated crew/team drills side by side to allow Soldiers to learn what other teams look like.  Use the PRM-36 on all equipment to ensure that the power amplifier is pushing out 50 watts.  Rehearse tear down, jump, and re-establishment.  Rehearse under different conditions (at night, MOPP in the heat of the midday, MOPP at night).

Formations must keep equipment, both vehicle and communications, properly maintained.  Assess the standard PMCS of vehicles on "Motor Pool Mondays."  Is it acceptable?  Are we deploying to the corner of the motor pool, establishing all antennas, turning on all generators, and building out all radio systems with proper COMSEC?  How else do we validate that everything works and that we have the right antennas?  Are we rehearsing RETRANS of digital FIRES net with actual AFAATDS and proper antennas?  We know we cannot successfully do that with a COM-201; the data loss is too high. We must use the OE-254.

Do our Soldiers properly fill out the DA Form 5988-E?  Do leaders ensure the form makes it to the G-Army clerk and the clerk takes the time to input the discrepancies into G-Army in order to get the equipment replaced or fixed?  Leaders are telling commanders that everything works by not putting the equipment on the ESR.  Do we truly know the process?

| Main or TAC CP could be established in any phase. It is the Commander's decision based on situation, tempo, enemy capabilities, etc. Decision affects PACE. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase I** (Joint Phase: Deter) (Army Role: Prevent) | | **Phase II** (Joint Phase: Seize Initiative) (Army Role: Conduct LSCO) | | **Phase III** (Joint Phase: Dominate) (Army Role: Conduct LSCO) | | **Phase IV** (Joint Phase: Stabilize) (Army Role: Consolidate Gains) | | **Phase V** (Joint Phase: Enable Civil Authority) (Army Role: Consolidate Gains) | |
| | Voice | Data | Voice | Data | Voice | Data | Voice | Data | Voice | Data |
| **P** | FM NET (VHF) | STT (Ka) | FM NET (VHF) | SMART-T (X) | FM NET (VHF) | SMART-T (X) | FM NET (VHF) | STT (Ka) | SVOIP | STT (Ku) |
| **A** | TACSAT (UHF) | SNAP (X) | TACSAT (UHF) | GRRIPS (BGAN) | TACSAT (UHF) | GRRIPS (BGAN) | TACSAT (UHF) | SNAP (X) | FM NET (VHF) | SNAP (Ka) |
| **C** | HF | JBC-P (L) | HF | JBC-P (L) | HF | JBC-P (L) | HF | JBC-P (L) | HF | SNAP (X) |
| **E** | IRIDIUM | GRRIPS (BGAN) | IRIDIUM | * | IRIDIUM | * | IRIDIUM | GRRIPS (BGAN) | IRIDIUM | JBC-P (L) |

**Legend**

BGAN: Broadband Global Area Network
FM: Frequency Modulated (Denotes SINCGARS Radio Net [e.g. command net])
GRRIPS: Global Rapid Response Information Package Solution
HF: High Frequency
JBC-P: Joint Battle Command Platform
NIPR: Non-Secure Internet Protocol Router
SINCGARS: Single Channel Ground and Airborne Radio System
SMART-T: Secure Mobile Anti-Jam Reliable Tactical Terminal
SNAP: SIPR/NIPR Access Point

STT: Satellite Transportable Terminal
TACSAT: Tactical Satellite
UHF: Ultra High Frequency
VHF: Very High Frequency
WIN-T: Warfighter Information Network – Tactical
✦ Main CP Established
▲ Main CP Displaced
* No feasible solution

**Figure B-1. Example unit PACE by phase of an operation**

| | Mission Command | Movement and Maneuver | Fires | Sustainment | Intelligence | Protection |
|---|---|---|---|---|---|---|
| **P** | FM (CMD Net) | FM (O&I Net) | FM (Fires (V) Net) | FM (A&L Net) | FM (O&I Net) | FM (O&I Net) |
| **A** | JC-R (Z) | JC-R (Z) | JC-R (Z) | JC-R (Z) | JC-R (Z) | JC-R (Z) |
| **C** | TACSAT (X) | HF (Y) | HF (Y) | HF (Y) | HF (Y) | LMR |
| **E** | HF (Y) | TACSAT (X) | TACSAT (X) | RUNNER | TACSAT (X) | * |

**Legend**

A&L: Administration and Logistics
CMD: Command
FM: Frequency Modulated (Identify SINCGARS Radio Net [e.g. command net])
HF: High Frequency
JC-R: Joint Capabilities Release
LMR: Land Mobile Radio
O&I: Operations and intelligence
TACSAT: Tactical Satellite
V: Voice

X: Identify uplink/downlink or channel
Y: Identify channel or address
Z: Identify role name or chat room
*: No feasible solution

**Figure B-2. Example unit PACE by Warfighting Function**

| | Long Haul Communications | Ground Communications |
|---|---|---|
| **P** | TACSAT (X) | FM (CMD Net) |
| **A** | HF (Y) | TACSAT (X) |
| **C** | Iridium | * |
| **E** | DTCS (X) | * |

**Legend**

CMD: Command
DTCS: Distributed Tactical Communications System
FM: Frequency Modulated (Identify SINCGARS Net)
HF: High Frequency
TACSAT: Tactical Satellite
X: Identify uplink/downlink or channel
Y: Identify channel or address
Z: Identify role name or chat room
*: No feasible solution

**Figure B-3. Example unit PACE by decisive point in operation (air assault)**

References:

TC 6-02.1, The United States Army Signal Corps 2019 Training Strategy (Draft), Chapter 3 Training

FM 6-02, Signal Support to Operations (Draft), Chapter 2 (Signal Support by Army Echelon, Core Competencies, Training, and the Army Network

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## Section IX:  BSB Distribution Company Observations and Best Practices

**Introduction:**  The role of the BSB distribution company is to plan, direct, and supervise supply distribution to the brigade. It conducts daily receipt, storage, and issue of supply classes I, II, III, IV, V and IX and transports cargo for the brigade. This unit is employed in the brigade support area and operates throughout the supported brigade area.

**Observations**

a. Units often fail to use H-hour sequences for distribution operations resulting in challenges achieving distribution in accordance with the distribution synchronization matrix.

b. Most Alpha Distribution Companies struggle to protect themselves while conducting convoy operations causing desynchronization of BCT distribution.

c. Alpha Company Soldiers struggle to conduct logistics tasks under limited visibility conditions inhibiting their ability to operate safely at night.

d. Alpha Companies often fail to understand the impact of shifting JCR/JBC-P from prime movers to gun trucks, which disrupts their ability to communicate.

**Best Practices**

a. H-hour sequence distribution operations. The distribution companies that struggle to meet logistics package (LOGPAC) departure times rarely have established timelines for planning and preparing missions. Most company-grade leaders know the one-third / two-third rule for troop leading procedures (TLP), but few have a process for implementing it. H-hour sequencing LOGPAC preparations helps young lieutenants and their NCOs prioritize efforts by providing a simple checklist. Make a standard H-hour sequence and an emergency resupply H-hour sequence. Commanders can reduce the requirements in the emergency resupply sequence by establishing a distribution QRF by identifying Soldiers and equipment that remain in a ready status to execute LOGPACs.

   (1) Always assign Assistant Convoy Commanders (ACC).  A Convoy Commander without an ACC will most certainly face lapses in PCCs, PCIs, execution planning, and/or convoy briefs.  Make sure Convoy Commanders know they can select their own assistant if one is not already identified.  Teach Lieutenants early on that they can rely on their NCOs, and do not have to bear the burden alone.

   (2) Communicate with receiving units prior to every mission. The strongest distribution companies require their Truck Master and XO to maintain daily communications with Field Trains Command Posts (FTCP) and Combat Trains Command Posts (CTCP). The FTCP can confirm CTCP locations, ensure CTCPs are tracking and ready to receive any LOGPACs scheduled for the day, and determine any changes to requirements. Contact CTCPs prior to every mission to establish a communication channel before sending Soldiers on the road. Ensure Convoy Commanders know the frequencies and JCR/JBC-P role names of every CTCP they will be supporting on their missions.

(3) While at home station practice the unit Tactical Standard Operating Procedures (TACSOP) in day-to-day operations. Treat every task like a mission. Submit stand-to-reports (STANREPs) to the S3 and relevant staff sections. Establish radios and JCR/JBC-P TOC kits in the orderly room to exercise RTOs and maintain radio communications with convoys, the battalion headquarters, and receiving units. Plot routes on JCR/JBC-P. Make these tasks second nature for Soldiers when it is time to fight.

b. Every BSB TACSOP identifies convoy security roles, responsibilities, and battle drills, yet many units struggle to protect themselves while conducting tactical convoy operations. Distribution companies that excel at convoy security share common traits. Home station training and pre-convoy rehearsals are the biggest indicators of how successful a unit will be on the road. Take every opportunity to exercise gun truck maneuvers and battle drills; do not simply rely on situational training exercises (STX) to get repetitions.

(1) Train gun crews on proper maneuver techniques and how to react to contact to break away from convoys and maneuver to engage the enemy. Practice shifting turrets along routes in order to maintain 360 security while focusing specific systems on likely enemy avenues of approach. Practice placing gun trucks in positions of relative advantage to secure tactical halts and LRPs.

(2) Pre-convoy rehearsals are more than a box check. Practice scenarios and require crews to explain their role and walk through their actions as the scenario unfolds. Confer with S2 prior to every mission and tailor rehearsals to the situation. Rehearsals become more important when assigned gun trucks do not fall under the supported company. These Soldiers may not be familiar with the supported company's standard operating procedures (SOP). Rehearsals give them the opportunity to synchronize with the rest of the formation.

c. There are Soldiers in every formation that struggle to focus their night vision devices (NVDs). Some Soldiers give up and attempt to drive with blurry vision. Commanders should test their Soldiers' ability to focus their NVDs by having them read a sign in the dark. When conducting blackout drive training choose nights with little to no illumination and nights with high illumination to help Soldiers understand the challenges and impacts of each condition.

d. Often logistics prime movers drawn from Army Prepositioned Stock are unequipped with mounting kits compatible with current JCR/JBC-P models. If the distribution company has them installed in prime movers at home station, consider deploying organizational prime movers with JCR/JBC-P installed. Consider the impacts of using JCR/JBC-P in gun trucks if the unit trains with them in prime movers at home station. Which gun trucks are slated for perimeter security? This will affect gun crews' work rest cycles and create gaps in perimeter security when they are on mission. If the battalion centralizes control of gun trucks under a single company, the JCR/JBC-Ps installed in those gun trucks may no longer be under the distribution company's control. Effort must be made to ensure those trucks have updated overlays and points of contact for the receiving units prior to mission execution. Increasingly, units struggle to utilize JCR/JBC-P effectively. Operators must know how to communicate, create overlays, and navigate via JCR/JBC-P. These systems can malfunction for any number of issues. Teach operators to troubleshoot them at the user level. Use JCR/JBC-P for day-to-day tasks in order to improve competency.

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## Section X: Transportation Composite Truck Company Best Practices & Observations

**Introduction:** According to ATP 4-11 (Motor Transportation Operations), one Transportation Composite Truck Company (Heavy) is designated per Division with an Armored Brigade Combat Team (BCT). The CTC is assigned to the Sustainment Brigade in support of Division operations usually attached to a Combat Sustainment Support Battalion (CSSB) (Sustainment Handbook, 2019). The CTC Mission is to perform Transportation and convoy security support to Sustainment Brigade operations for a Heavy Division. They provide transportation assets for the movement and distribution of dry and refrigerated containerized cargo, general non-containerized cargo, ammunition, bottled water, bulk water (when equipped with tank racks / hippos), heavy equipment, tanks and oversized loads as well as perform unit moves, transport personnel, and provides escort services for contracted trucks.

**Observations.**

a. During large-scale combat operations (LSCO), most CTCs struggled with both internal and external communications, particularly long-range communications during convoy operations, which inhibits their ability to execute battle drills and perform movement control.

b. CTCs and other CSSB subordinate units rarely deploy with company SOPs. The complex nature of LSCO requires specific guidance detailed in company SOPs. Given that CSSB subordinate units do not deploy with their organic battalion headquarters, they deploy untrained on their attached battalion Tactical Standard Operating Procedures (TSOP).

c. CTCs that do not have or maintain analog and digital tracking tools have difficulty planning for and tracking equipment, personnel, and missions which desynchronizes them from the supported unit.

d. CTCs that have PCC/PCI checklists and enforce PCCs/PCIs greatly increase their responsiveness and survivability during LSCO.

e. CTCs do not always properly disperse commodities in convoy configuration or in the Division Support Area (DSA) resulting in complete loss of one or more classes of supply in the event of an attack. This greatly affects the ability of the CTC and the CSSB to conduct distribution during combat operations.

**Best Practices.**

**a. Communication systems and processes:** It is vital for CTCs to have the ability to communicate with their higher headquarters, other companies, and most importantly with their convoys out on mission. During LSCO, long-range communication is usually only possible through Joint Capabilities Release (JCR). Terrain features and extreme weather conditions often greatly reduce the FM transmission range. Without FM re-trans sites, CSSBs and CTCs rely solely on JCR, limiting the unit's PACE plan. Currently, JCR has several variants that require different installation kits, wiring cables, and mounts which causes friction when units draw equipment from Army Prepositioned Stock (APS). Successful units conduct detailed analysis to ensure all systems are compatible and have the correct

installation kits for different JCR and vehicle variants. These systems require the same or most current software updates in order to connect with other systems. Units should meet these conditions by conducting a Communication Exercise (COMEX) at echelon prior to deployment.

**b. Updated SOPs:** Successful CTCs have and maintain a comprehensive company SOP that defines specific transportation tasks and supplements the battalion TACSOP. In accordance with ATP 4-11 "The combat sustainment support battalion is a flexible and responsive unit that executes logistics throughout an area of operations, providing transportation" and other services to the supported maneuver brigade; "the CSSB is tailored to meet specific mission requirements". The tailored nature of the CSSB that provides that flexibility means that it is not able to provide subordinate units with a TACSOP during training. A Company SOP helps provide a common understanding of CTC operations outlining convoy and mission procedures, battle drills, timelines (N-hour sequence), and anything else pertinent to accomplishing the mission.

**c. Digital and analog tracking products:** Approximately 50% of CTCs deploy with analog or digital trackers for missions, personnel, equipment, maintenance, communications, and Sensitive Items (SI). Deploying with current digital and analog tracking products facilitates unit reporting, mission planning, personnel status, maintenance management, and assists leadership with planning and managing operations. During the operation, the unit has the opportunity to refine products while conducting their mission but this is much more difficult if they do not have a base product already.

**d. Understanding and enforcement of proper pre combat checks/ pre combat inspections (PCCs/PCIs):**   The CTC and many of the units assigned to the CSSB frequently ignore how import PCCs and PCIs are for successful mission accomplishment. These inspections ensure that soldiers and units are adequately prepared to execute operations to standard, which prevents Soldiers from becoming complacent. Unit's should document these standards in PCC/PCI checklists in their SOP and disseminated in writing to all Soldiers for implementation. PCC/PCI checklists should include all equipment and supplies that might be required for changes of mission to mitigate risk. In LSCO, a mission can extend from a few hours to up to over 36 hours long. Leaders tasked with convoy missions are required to support Soldiers with water, fuel, and food for these extended periods. Maps assigned to each vehicle will help the convoy as a navigation aid even if the convoy has operational JCRs or BFTs. Convoys frequently get lost when equipment malfunctions, convoy integrity is lost, or the convoy leaves the main road. All of these situations endanger the mission, equipment, and possibly Soldiers' lives. In addition, posting a nine-line MEDEVAC and other reports such as UXO, SALUTE, call for fire/air support, and COMMO cards in vehicles enables agility during an emergency.

**e. Conduct transportation for movement and distribution of supplies:** There are several best practices for conducting successful movements. Warrior task and battle drill (WTBD) proficiency is the baseline for success. Weapons training, driver's training, and tactical communications all increase Soldier survivability in combat and provide the framework for collective tasks. Proper dispersion of commodities in convoy configurations as well as in the Division Support Area (DSA) prevents complete loss of one or more classes of supply in the event of an attack. Lastly, established and well-rehearsed collective battle drills greatly increase the survivability of the unit during area defense and convoy security. Rehearsed collective battle drills are integral to reducing operational, tactical, and environmental risk.

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## Section XI: Brigade Medical Company Observations & Best Practices

**Introduction:** The Brigade Role 2 MTF has the capability to provide packed red blood cells (liquid), limited x-ray, clinical laboratory, operational dental support, combat and operational stress control, preventive medicine, and when augmented, physical therapy and optometry services. The Role 2 MTF provides a greater capability to resuscitate trauma patients than is available at Role 1. Those patients who can return to duty within 72 hours are held for treatment as long as the Role 2 remains in place and/or has the lift capacity to move patients during a displacement. The Role 2 is also responsible for evacuation of patients from each battalion's Role 1 (ATP 4-02.55).

**Observations.**

a. Few BCTs (2 of an observed 19 rotational units) incorporate adequate medical training into combined home station training events prior to CTC rotation and deployment. Adequate medical training includes processing patients from point of injury (POI) through the Role 2 including CASEVAC, MEDEVAC, and MASCAL at echelon.

b. The BCT's senior medical NCO is rarely, if ever, involved in medical planning.

c. Successful BCT medical communities communicate constantly, via FM, JCR, and face-to-face, to ensure shared understanding that facilitates effective medical planning at echelon. BCT's achieve the most successful medical support by ensuring that health service support integrates with the rest of sustainment and the maneuver warfighting function through over-communication.

**Best Practices.**

a. Patient simulation, and therefore CASEVAC/MEDEVAC, is rarely exercised from POI through Role 2 during home station training. Consequently, medical planners are unable to identify friction points in unit SOPs prior deployment. Most unit's died of wounds (DOW) rate improves over the course of an exercise where medical systems are tested, which enables process refinement. Units that conduct rigorous medical training at all echelons, or conduct a dedicated medical planning event prior to deployment have significantly lower DOW rates in all phases of the operation. While those medical professionals still encounter challenges, very few are those addressed during home station training. Units that stress their medical system from POI through Role 2 achieve shared understanding between the BCT Surgeon Cell, SPO Medical Logistics Officer, and the Brigade Support Medical Company (BSMC), which results in a notably lower DOW rate.

b. When possible, the BCT's senior medical NCO should be involved with medical planning. The 68W50 who holds the BSMC 1SG position is the most senior medical NCO in the BCT and is typically an untapped resource. Failing to integrate that NCO into planning is a lost opportunity for the BCT to capitalize on their wealth of knowledge and experience.

c. Proactive communication and over communication across a BCT's medical activities is essential to a successful medical support plan. A steady horizontal and lateral flow of information between the battalion and brigade medical planners is essential, but not always achieved. The BCT medical community should practice constant communication and collaboration during home station training. There are often systems that support this style of communication built in to a BCT's daily reporting

requirements. The medical common operating picture (MEDCOP) is generally required from BNs to BDE twice daily. What though, does the BCT Surgeon Section do with that information? How do they compile it into a useful product for operations? Will the Role 1s and Role 2 receive that compiled information, whether as a JCR overlay or a raw data push? Is the data compiled in a medium that is largely inaccessible to the medical nodes during large-scale combat operations (LSCO) through a system such as CPOF?

    (1) Generally, medical nodes update the community every time they relocate. If that is not SOP, it needs to be. This must be executed for planned Role 1 and Role 2 displacements and for unplanned survivability moves and minor location adjustments. For example, if an AXP is pushed out to a location chosen by map recon and the personnel on ground determine it needs to adjust because it is too inaccessible to be useful or it is too exposed, then bottom-up refinement is critical. However, every Medical Officer (MEDO) is responsible for ensuring they have the most up to date information regarding the elements and capabilities around their unit, which makes reaching out for updates or confirmation of no-change crucial to effectively plan for and coordinate area support medical coverage.

    (2) As the medical community works to ensure proactive communication within, they also need to include planners from the maneuver and the rest of the sustainment warfighting functions. Often medical planning occurs in a vacuum, even when the plan is operationalized though the BCT S3, understanding is not shared across the formation. At a minimum the BCT S3 and S4 must receive the medical plan and MEDCOPs daily to create that shared understanding. This is crucial when a First Sergeant in the company trains is looking for the nearest Role 1 to expedite CASEVAC.

    (3) It behooves BCT medical planners to integrate with the other warfighting functions to further shared understanding, and to ensure that their plan is nested with the Concept of Support and Concept of Operations. The medical community needs to maximize every available touchpoint to verify that the Health Service Support (HSS) plan adheres to the Army Health System principle of conformity, which requires inclusion in the Combined Arms Rehearsal (CAR) and Sustainment rehearsal. The BCT CAR is the best venue for medical planners to assist the BCT's leaders in rehearsing CASEVAC through every phase of the operation. Similarly, the sustainment rehearsal presents a frequently underutilized opportunity to ensure that the medical plan is synchronized with sustainment and supportable.

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## Section XII: Forward Support Company Observations & Best Practices

**Introduction:** The Forward Support Companies (FSC) provide direct logistic support to each maneuver battalion in a Brigade Combat Team (BCT). The FSC Commander is responsible for assisting the battalion S4 and, executing logistics support according to both the BSB and supported maneuver commander's guidance, and serving as the link between organizations (FM 3-96, 9-7). To accomplish these tasks, the FSC echelons assets across the battlefield throughout the company trains, combat trains, and field trains. Synchronizing these elements requires unfettered communication between the key nodes at each echelon including the supported battalion Tactical Operations Center (TOC), Combat Trains Command Post (CTCP), and Field Trains Command Post (FTCP). Manning and equipping the CTCP and FTCP is an implied task for the FSC but, it should be well defined. A symptom of BCTs tendency to perform collective training at the battalion level and of FSC culture which prides itself on not requiring support from the BSB is that Forward Support Companies struggle to provide adequate support during large scale combat operations (LSCO).

**Observations.**

a. FTCPs and CTCPs struggle to communicate between each other and the supported battalion Tactical Operations Center (TOC) which inhibits their ability to synchronize sustainment and track the battle. FTCPs are not often outfitted with the right communications networks to talk to their battalion, are not equipped with personnel that have a clear task and purpose, and are not tied in to their supported battalion's synchronization meetings. As a result, the FTCP is unable to describe their battalion's tactical situation, combat power status, and support requirements to the BSB causing desynchronization of sustainment that compounds over time. Similarly, the CTCP struggles to communicate with their TOC and does not remain in communication with the FTCP. This inhibits critical support function synchronization with the supported maneuver companies. This problem causes the FSC to execute LRPs to old company positions, and the BSB Distribution Company to execute LOGPACS to the CTCP when the FSC is not postured to receive supplies. These challenges in turn create the need for emergency resupply at the company trains.

b. It is common practice to co-locate the Unit Maintenance Collection Point (UMCP) with the CTCP. The intent is to place the UMCP close to the fight to limit how far non-mission capable (NMC) equipment needs to be retrograded for repair. This linkage creates challenges because the CTCP needs to move frequently for force protection and to keep pace with their battalion. This inhibits the ability of the UMCP to establish and effect significant repairs. These repairs can take many hours and require extensive troubleshooting, during which the NMC vehicle and maintenance team are immobile. The result is that UMCPs end up dragging NMC equipment with them as they displace across the battlefield. This means that in large scale combat operations where a maneuver battalion's operational readiness rate (ORR) can rapidly fall as low as 50%, the FSC recovery capability is quickly exceeded, and the UMCP inevitably leaves a trail of NMC equipment across the battlefield. This equipment has no security and, usually still has its crew with it because the FSC may not have the ability to transport the additional personnel when it displaces. This situation both inhibits the ability of the FSC to regenerate that equipment and, creates a significant force protection concern.

c. The FSC maintenance platoon is only equipped with basic capability to support ground support equipment (GSE), quartermaster equipment, electronic and missile systems, armament, metalworking, and fabrication. The FSC is either not authorized these personnel or, is only authorized one or two

20/10 level Soldiers. This shortfall limits the FSC's ability to conduct complicated maintenance tasks in these areas and limits their capacity to conduct basic tasks at large volume, which can be detrimental to the battalion's ability to shoot and communicate.

d. FSCs do not have adequate security and, rely too heavily on Army Prepositioned Stock (APS) to mitigate this shortfall. The FSC is not authorized up-armored combat platforms on its modified table of organizational equipment (MTOE) to protect itself. As a result, the CTCP is inadequately defended and FSC convoys frequently travel without security. This is dangerous in large scale combat operations where it is necessary for divisions and brigades to establish bypass criteria to maintain momentum; bypass criteria is inevitable and creates an environment where platoon size enemy elements will be present in the rear area. This coupled with the capability of peer adversaries to deploy special operations forces into the rear area creates an environment where security for logistics assets is essential. To mitigate this shortfall, FSCs and maneuver Battalion Commanders train to rely on APS to draw convoy protection platforms. This is a relic of COIN operations and is not appropriate for large scale ground combat which, will occur in a theater without sufficient APS to equip every unit in a Division or Corps size force.

e. FSCs frequently do not integrate well into BSA defense when they have forces echeloned to the FTCP or when present at the BSA for resupply. FSC personnel in the BSA often behave like transients, floating within the support area without reporting to a local headquarters. This causes the BSB to lose visibility of what personnel are inside the BSA which is detrimental to avoiding fratricide, maintaining accountability, and providing medical care to casualties during an attack. Failure to incorporate FSC Soldiers into the BSA defense plan creates dead space around the perimeter as it naturally expands to accommodate additional personnel.

**Best Practices.**

a. The FTCP is responsible for coordinating logistics requirements with the BSB and assisting the BSB distribution company with configuring LOGPACs to the supported battalion. To do this the FTCP and CTCP need to be equipped to execute the entire battalion PACE plan. This should include both upper and lower TI capabilities to mitigate the contested electromagnetic spectrum that exists during large scale combat operations and intervening terrain down the lines of communication. Both nodes also need to have common operating picture products that mirror what their battalion TOC is using to maintain situational understanding. In addition, the battalion must conduct an internal LOGSYNC that includes the S4, CTCP, FTCP, FSC Commander, and a representative from the battalion S3. This meeting will build the battalion's sustainment COP and create synchronization by arming key personnel with the right information and creating a venue to hold them accountable. Although the FTCP needs experienced personnel, their selection should be based on personality and experience in the unit rather than position. If the FTCP is unfamiliar with how the battalion fights, then they will be ineffective. The value of the FSC Commander is their position as the senior logistician in the supported battalion, which allows them to act as a forward observer for the sustainment enterprise to synchronize their company's efforts. To effectively command, the FSC Commander needs the ability to move up and down and lines of communication between nodes to observe support actions, make corrections, and the interface with both the BSB and supported Battalion Commanders. To support their mobility, the FSC Commander should not be directly tied to either the FTCP or CTCP.

b. The UMCP needs to be relatively stable to be effective. One technique is to allow the UMCP to remain in place when the CTCP displaces. This enables the UMCP to attempt to get as many NMC vehicles as possible mobile to facilitate the movement. The FSC and CTCP does not usually have enough security assets to protect two sites which means that separating the UMCP and CTCP involves significant risk. An alternative is to place the UMCP in the BSA with the FTCP, while leaving partial field maintenance teams (FMT-) forward to execute quick repairs with on hand shop stock that do not require extensive troubleshooting. Although this increases the time for NMC equipment to get to the UMCP, it unburdens the CTCP from the most significant factor that detracts from its mobility and, one of its most vulnerable activities. While in the BSA, the UMCP has easy access to the SSA's Common Authorized Stockage List (CASL) which shortens their wait time for parts and reduces the requirement to push CL IX forward on LOGPACs. Placing the UMCP at the BSA enables the Battalion Maintenance Technician to easily attend the Brigade Maintenance Meeting in person so that he can collaborate with the Brigade Maintenance Technician, SSA Accountable Officer, and the commodity shop warrant officers in the BSB's Maintenance Company. Co-locating the maintenance platoon with the FTCP also arms the latter with an officer, warrant officer, and senior NCO capable of fulfilling the FTCP's responsibilities on behalf of their supported battalion.

c. FSCs should leverage the commodity shops in the BSB maintenance company to call forward additional, more experienced personnel to supplement their own capability. This should be requested through the CTCP, and coordinated by the FTCP. Calling these personnel forward enables the battalion to leave the affected equipment in place which includes weapons, generators, radios, environmental control units, and night vision devices. This equipment is usually quick to repair and, significantly degrades the battalion's lethality if pulled back to the UMCP by either degrading its infrastructure or, reducing their Soldier's ability engage the enemy.

d. The supported battalion can to attach an infantry platoon to the FSC to ensure that it has adequate security both at the CTCP and, on convoys. In the absence of this task organization, FSCs need to prepare to fight with the equipment that they have on their MTOE. This means installing ring mounts on every vehicle that will travel on a convoy. To be effective in this capacity, FSCs must certify crews through gunnery table six. In conjunction with arming logistics platforms, CTCP personnel must train to establish dismounted fighting positions for security because in the absence of an attached security element, the preponderance of the FSC vehicles capable of carrying a weapon will be assigned to convoys.

e. FSC personnel assigned to the FTCP and, temporarily situated at the BSA must report to the BSB headquarters and be incorporated into the BSA defense plan. The FTCP is responsible for serving as the supported battalion's mission command node within the BSA and must maintain accountability of, and exercise command and control over all personnel from their battalion present in the BSA. These personnel should be assigned fighting positions on the perimeter to contribute to the defense, as the BSA expands to accommodate them. This will also ensure that the BSB maintains accountability of FSC and supported battalion personnel in their perimeter and, will in turn reduce the likelihood of fratricide.

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## Section XIII:  BSB Headquarters & Headquarters Company Observations & Best Practices

### (Field Feeding & Mortuary Affairs)

**Introduction:**  This paper outlines observations and describes best practices of Brigade Support Battalion Headquarters and Headquarters Company's Field Feeding Section and Mortuary Affairs (MA) Soldiers while deployed during large-scale combat operations (LSCO). Successful field feeding teams deploy prepared and proficient in several key areas, which include but are not limited to utilization of the commodity shops, synchronization with BN staff, and maintenance management. The Field Feeding Section provides field-feeding support with the use of all available equipment and personnel within the specified time constraints in the mission OPORD and in accordance with (IAW) the approved Army standards identified in commanders guidance, applicable internal and external TASOP, and approved Army regulation.

**Observations.**

a. Field Feeding teams are not equipped with all applicable regulations, internal and external tactical standard operating procedures (TASOP). Technical manuals (TMs) and field manuals (FMs) are not on-hand as reference material. Many field feeding teams train without authorized modification table of organization and equipment (MTOE), associated Basic initial issue (BII), and fully mission capable equipment.

b. Gray water pits areas are not established or established to standard. Field Feeding Section/Team personal hygiene is not to standard exposing other Soldiers to disease and non-battle injury.

c. Command Teams are often not prepared to conduct mortuary affairs operations. Companies often do not establish Company Level Evacuation and Recovery (CLEAR) teams leaving them unprepared to recover the remains of fallen Soldiers.

d. Battalions often fail to conduct semi-annual search and recovery/CLEAR team training IAW JP 4-06, Chapter 4. MA personnel are not equipped with all applicable regulations, internal and external tactical TASOPs. Technical manuals (TMs) and field manuals (FMs) are not on-hand as reference material.

**Best Practices.**

a. The Field Feeding Section may lack access to main supply routes, external logistical support, and may not be not accessible to all supported and supporting customers/units. By using ATP 4-41, figure 6-1 and establishing a Battalion TASOP, a field kitchen layout with the proper distances can be established. Reviewing planned layouts prior to site selection can give units an understanding of where to establish a field feeding kitchen site, including a gray water pit.

b. Monitor field feeding equipment, operations, maintenance, and safety procedures for compliance with appropriate TMs and TASOP. Report field feeding equipment shortages to the unit supply section. Perform before, during, and after operations preventive maintenance checks and services (PMCS) on assigned equipment.

c. Field Feeding Section/Team manages the waste management and disposal by ensuring proper waste disposal procedures comply with environment, federal, state, local, laws. Burn, bury, backhaul, or

use dumpsters to dispose of waste from field feeding site(s) as approved or directed by appropriate environmental agency and/or higher headquarters. Remove waste from the field feeding area at least once a day or as frequent as necessary to minimize rodents, wild animals, or present an unsanitary field-feeding site. Clean and sanitize field feeding equipment IAW applicable equipment TM.

d. The Field Feeding team must realize that they are Soldiers first. No matter their responsibilities, when the unit is in contact they are part of the brigade support area (BSA) defense.

e. Focus on utilizing the assigned 92M to conduct their roles and responsibilities in MA operations as well in training. Include the 92M in planning to ensure that mortuary affairs is incorporated into the concept of support. Command teams must communicate MA operations to adjacent units and higher headquarters.

f. Conduct semi-annual training for MA operations to include search and recovery, and clear team training to achieve understanding of the roles and responsibilities of these elements at echelon.

g. When units do not have a 92M, request additional training from the supporting home station Sustainment Brigade or the Mobile Training Team (MTT) from MAC located in Ft. Lee, VA. MA units or MACP teams may be requested through command channels for integration into scheduled Combined Training Center rotations.

h. MA Soldiers must create and implement a Standard Operating Procedure (SOP) based on Mortuary Operations from the unit level to their higher echelon.

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## Section XIV: BSB Maintenance Company Observations & Best Practices

**Introduction:** This paper outlines observations and describes best practices of Field Maintenance Company (FMCs) while deployed as rotational training units (RTUs) to the National Training Center (NTC) during FY19. Identifying lessons learned and best practices allows FMC commanders and Leaders to better assess, plan, and prepare units for Large Scale Combat Operations (LSCO). Successful FMCs come to the NTC prepared and proficient in several key areas, which include but not limited to utilization of the commodity shops, synchronization with BN staff, and battalion maintenance meeting. The Army's two-level maintenance system (field and sustainment levels) generates and regenerates combat power, which is critical for fight and win during LSCO. The Brigade Support Battalion (BSB) can maximize its FMCs potentials to enhance the Forward Support Company (FSC) capabilities to sustain supported unit's combat operations.

**Observations.**

a. Underutilization of the FMC's commodity shops by the BSB to enhance FSC capabilities to generate combat power. The Communications and Electronics Maintenance (C&E), Armament, and Ground Support Equipment (GSE) sections, generally, generate minimal work-orders within the BSA. The BSB commodity shops are capable of producing and generating more timely and efficient repairs in support of the BDE.

The greatest assets the FMC has that FSC deficient are subject matter expert or knowledge and experiences in GSE and Armament shop. Based on Modification Table of Organization and Equipment (MTOE), FMC's GSE and Armament Section are authorized one WO2 and one E7 for each section along with 10-30 level maintainers. A typical FSC only authorized one E5 and two 10 level Soldiers for each section. The knowledge and experience disparity between FMC and FSC in GSE and Armament Shop is huge. Another key deficiency with FSC is that it does not have organic ELM shop. The FSCs rely entirely on FMC for missile, electronic, and radar maintenance. BSB can dispatch a team of knowledgeable and experienced personnel that circulates to each FSC location to share their knowledge and skills to close the knowledge gap. This action will enhance the FSC's capabilities to support combat operations.

b. The Logistics Synchronization (LOGSYNC) meeting is not clearly generating the requirements for the FMC and is focused more on distribution synchronization. The FMC's involvement in the LOGSYNC can set planning horizons for the FMC and all units requiring FMC assistance with recovery support or maintenance support. In numerous missions, the company was not aware of its mission until a few hours prior to Start Point (SP). Convoy did not have an assigned convoy commander; convoy briefs to Soldiers were substandard with no clear routes, actions on objective, or accountability of personnel and sensitive items. Lack of sync meeting disrupts information flow from the SPO and BN S3 to the company, which caused lack of preparation from the company level for PCC/PCI, equipment preparation, and troops to task.

c. The FMC often does not provide their resident expertise to enhance the Brigade Maintenance Meeting. The Brigade Maintenance Meeting is crucial to maintaining and tracking equipment to ensure equipment is mission support capable. Leaders and Soldiers at every level need to know sustainment operations will cease if equipment is not fully mission capable.

**Best Practices.**

a. The long distance from the Brigade Support Area (BSA) poses a challenge for the FSC to retrograde to BSB for back-up support such as armament, C&E, and occasionally GSE support while focusing on supporting combat operations. The BSB concept of sustainment (COS) briefings and rehearsals should include the FMC's capabilities to inform the supported units of its capabilities for back-up and limited pass-back support. The BSB needs to advertise its capabilities and ability to conduct maintenance at numerous locations within the BDE AO with a mobile team of commodity shops. This advertisement can be accomplished by simply conducting battlefield circulation to the unit maintenance collection points.

A basic mobile commodity shop from each section could consist of a maintenance technician, driver, shop or truck with repair tool kit or modified to meet mission requirement. Each person on the team should be the expert on his/her related military occupational specialties (MOS) and equipment his/her section is responsible to maintain. The mobile maintenance team could conduct battlefield circulation to each FSC location to provide maintenance assistance and subject matter expert assessment of equipment. The maintenance technician can provide subject matter expert opinion and the driver can be the experience repair of his/her section, together this team can troubleshoot, assess, and if conditions allow, fix the equipment on site. The mobile team could generate additional work-orders and enhance the FSC's maintenance capabilities. Using this method, this team allows the BSB to be flexible, agile, responsive, concentrates resources at crucial moment and location in the battlefield in order to support the FSC to enable the maneuver unit's combat operation.

The availability of the mobile maintenance team enables the FSC commander to establish the maintenance priorities based on the mobile maintenance team's BFC schedule and to prepare equipment based on operational requirements. The FSC coordinates for maintenance support through the BSB maintenance control section and Support Operations Officer to request work-orders on equipment that the FSC needs to return to mission capable to support combat operation. The SPO can surge capabilities to meet operational requirement. The mobile maintenance team and FSC can combine their efforts to repair NMC equipment and quickly return it to the fight.

b. BSB SPO and with the support of the BSB CDR needs to enforce subordinate unit's Leaders attend the COS briefs and rehearsals in order to understand sustainment operations. This action allows Leaders at every echelon to reduce friction and increase shared understanding.

BSB SPO and S3 need to build sustainment synchronization matrix. The BSB tracks the common operation picture of logistics support for each battalion in the BDE to ensure a timely delivery of required support at the decisive place and time. Synchronizing between the SPO team, BSB S3, and BSB subordinate units is crucial in anticipating sustainment or maintenance requirement for timely support and to create a sync matrix that every unit at each echelon could understood and be able to execute. The sync matrix allows SPO to track commodity on a LOGPAC, the BSB S3 can battle track and task unit for the mission, and subordinate units can anticipate requirement and build their troops to task. The main purpose of internal synchronization is information sharing to reduce ambiguities and anticipate requirement.

c. The unit's Equipment Status Report (ESR) should include in the daily Commander's Update Brief (CUB) as a forcing function for daily maintenance meeting. The company commanders need to be ready to brief their equipment status. The BN XO, maintenance technician, and Maintenance Control Officer (MCO) are vital to the BN and BCT maintenance programs and will better inform the commanders.  The BN/BCT XOs need to be aggressive in executing the maintenance meeting and ensure that it happens based on the unit's battle rhythm.

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