Optimized Brigade Combat Team Main Command Post: Survivable and Effective BCT CP Interim Solutions

by CPT Chase S. Baker and LTC Scott C. Nauman

Imagine a scenario in which SGT Gregg is a battle noncommissioned officer (NCO) assigned to the armored brigade combat team (ABCT) main command post (CP), conducting a deliberate attack into "Atropia" to destroy 904th Brigade Tactical Group (BTG) in support of 52nd Infantry Division's mission to cordon the capitol. While the ABCT is conducting mission-command operations for its limited-objective attack, indirect rocket-artillery fire impacts just outside the main CP, sending a fireball through the current-operations (CUOPS) floor. This knocks SGT Gregg off his feet and causes a laceration to his stomach that requires urgent evacuation. Despite receiving a near-direct hit and the main CP becoming somewhat degraded, critical equipment remains operational, so the main CP is able to re-establish and resume mission command of the fight within 60 minutes of impact.

Several Soldiers in outlying soft-skinned vehicles are killed and more than a dozen are wounded, but it could have been much worse. The brunt of the shrapnel and destructive force of the rocket attack was absorbed by armored vehicles arrayed around the perimeter of the main CP, saving SGT Gregg's life and that of several other Soldiers who were inside the main CP at the time of the attack.

During the last six months, several brigades arrived at the National Training Center (NTC) for operations in the decisive-action training environment (DATE) intending to use the modified table of organization and equipment (MTOE) Deployable Rapid-Assembly Shelter (DRASH) large J series for the BCT main CP, while others employed smaller combinations of the DRASH MX and armored vehicles.

The NTC brigade staff-training team (Broncos) observed that large CPs provided less effective mission command due to increased incidences of indirect-fire attacks and long set-up difficulties. In response, the Broncos studied what a brigade headquarters needs, and two primary questions resulted:

- What does it mean to be expeditionary?
- What is the ideal main CP layout for optimizing effectiveness, efficiency, mobility and survivability?

This study included observations from six rotations, including Stryker BCT (SBCT), ABCT and infantry BCT (IBCT) formations. All these have nearly identical main CP MTOEs that focus on the physical layout of tents and equipment, staff training, Soldier discipline and the use of favorable, survivable and defendable terrain.

The lesson-learned from the study proposed an interim solution for a BCT main CP with current MTOE equipment that BCTs may use while conducting decisive action. It also discussed training to optimize mobility in the DATE environment. This CP is a smaller footprint with seven DRASH MX tents, one entry tent, maximum power generation and effective terrain masking. Simply put, the smaller-footprint main CPs maintain a higher survivability rate and more continuous, stable mission command throughout a rotation because they are easier to conceal and they can jump faster. This solution can also be implemented now before the sourcing for Command Post 2025 is complete.

NTC environment

The rotational force-on-force training environment at NTC presents a broad array of challenges and threats that are current and relevant for the foreseeable future. This presents an operational environment (OE) that can be adjusted to emphasize particular problem sets or characteristics. It can also increase or decrease the tempo and the simultaneous unified land operations' core competencies of wide-area security and combined-arms maneuver to emphasize or de-emphasize some aspects of the OE, while adapting to unit proficiency or training requirements. The DATE 2.2 design also provides context and texture to the rotational training unit with political, social-cultural, security/military and economic factors to what they see in the training area.

Further adding to the complexity, NTC provides substantial electronic-warfare and cyber-electromagnetic activities friendly and enemy effects. The training opportunities incorporate enemy precision and wide-area frequency

modulation and Global Positioning Satellite jamming, live enemy unmanned aerial vehicle (UAV) surveillance threats (Figure 1), enemy precision-guided munition capabilities and a substantial cyber environment.

To add context to the DATE, "Donovia" is a resurgent nation that, prior to the early 1990s, was the region's dominant political, economic, military and social player. Internal turmoil lessened Donovia's influence during the 1990s, and Donovia now seeks to rebuild its prior levels of regional and international influence through a combination of assertive diplomacy and military power. However, the desire for economic independence among the other states in the region creates friction between them.

"Atropia" is a neutral, Western-leaning semi-authoritarian state ruled by the Ismailov family. Atropia "isn't the friend we want but the friend we've got" and possesses significant oil and gas reserves. These rich natural resources generate potential threats from external forces such as "Ariana" and Donovia, who covet those resources. Also, the Atropian government's repressive policies have fueled some internal destabilizing forces, causing Atropia's increasing vulnerabilities to internal threats from its disenfranchised ethnic-minority groups who have violent separatist movements.

At the tactical level of the combined-arms fight, the Donovians are simply an operational strategic command (OSC) with multiple division tactical groups (DTGs) and an integrated fires command (IFC).

At NTC, brigades can expect to fight a task-organized BTG, essentially consisting of four mechanized-infantry battalions, a fires battalion, significant general support, general-support reinforcing and direct support from the IFC (rocket artillery) and division reconnaissance. In addition, brigades must contend with organic enabling capabilities from the brigade recon, a brigade anti-armor company and a support battalion. The OSC and the DTG also have direct support from multiple non-conventional elements throughout the OE, including the Bilasuvar Freedom Brigade (BFB), an irregular guerrilla force that executes non-contiguous reconnaissance and surveillance in zone and direct-action defense within urban areas.

There are also special-purpose forces that operate primarily in urban areas and work to develop guerrilla forces from the populace; these special-purpose forces mirror the capabilities of U.S. Special Forces. All these are combined with a substantial criminal network and a significant Donovian cyber, non-lethal threat that emphasizes information operations. It can essentially change the permissiveness of the political, military, economic, social, infrastructure, information, physical environment and time throughout the zone.[1]

3 doctrinal CPs

Units training in the DATE must employ mission command from the three doctrinal CPs to effectively seize and retain the initiative.[2] The current MTOE for a BCT headquarters (main CP and tactical-actions center (TAC) CPs) within IBCTs, SBCTs and ABCTs contains only minor variations among the different BCTs. Within the BCT main CP, the capability sets are nearly identical, with only the primary combat platforms for the mobile command group (MCG) changing such as Bradley Fighting Vehicles for ABCTs and command-variant Strykers for SBCTs.

Overall, each headquarters is allocated a similar amount of integrated tactical-networking environment and Upper Tactical Internet (TI) systems. Of note, each BCT main is allocated the same number of Force XXI Battle Command Brigade and Below (FBCB2) "TOC kits," Command Post of the Future stations, power-generation systems and a standard DRASH (or similar) system package. The major variation is among vehicle platforms; SBCTs have about twice as many FBCB2 systems as light and heavy BCTs. The amount of mission-command systems provided with the Army Battle Command System (ABCS), Warfighter Information Network-Tactical and FBCB2 grouping leads brigades naturally toward large non-expeditionary main CP establishment standards.

During the previous six rotations, the number of headquarters personnel and attachments who physically worked in the CUOPS integrating cell when a large DRASH was established ranged between 25 to 35 people. The challenge with the large DRASH is that in addition to all the people assigned to work within the DRASH, there is a propensity for an average of 10 more people to congregate within this tent. This causes work to slow due to space availability.

Field Manual (FM) 3-96, ***Brigade Combat Team***, explains that the BCT main CP, TAC CP and MCG are broken into different nodes to maintain survivability and recommends the BCT main either remain outside medium-range artillery or co-locate within a subordinate unit's area of operations, depending on the environment.[3] The manual states, "[CP] survivability is vital to the success of the BCT mission. When concentrated, the enemy can easily

acquire and target most [CPs]. When developing [CP] standard operating procedures (SOP) and organizing the headquarters into [CPs] for operations, the BCT commander uses dispersion, size, redundancy and mobility to increase survivability." The implication is to provide concealment and to prevent identification as a higher command node. Currently, the primary means of survivability for non-hardened DRASH-equipped CPs is camouflage and mobility.

Some key observations of main CP attacks during the past six rotations are divided into a few categories. The first observation category is ease of target acquisition by the opposing force (opfor). In one example where the large DRASH was employed, the main CP received two large-scale rocket attacks with near-zero target-location error (TLE). The near-zero TLE is because the large-size CP's long establishment time enabled multiple enemy reconnaissance assets to acquire target data and effectively measure the grid.

The second observation category is focused on a lack of mobility, specifically a small DRASH footprint, but one that remained in position for more than five days. This main CP received two large-scale rocket attacks. Lastly, the two main CPs that maintained a small DRASH footprint and jumped within two to three days received only direct-fire attacks from the BFB and were not targeted specifically with artillery.

Also, a recent rotation observed that when a unit used the complete DRASH BCT main CP comprised of the large J tent and more than seven mediums, it only successfully jumped once during 14 days due to the size and complexity of the footprint. Because of size and immobility, the BCT main CP suffered more than 600 rounds of 122mm rocket artillery. This extremely large CP remained under continuous enemy reconnaissance and surveillance (Figure 1). At one point, this CP was degraded and out of the fight for more than 96 hours due to continuous battle-damage assessments as it unsuccessfully tried to reposition the large footprint multiple times.

Figure 1. Blackhorse UAV feed of a BCT main CP. This BCT main CP footprint was extremely easy to find, resulting in near-continuous enemy surveillance. A strike of more than 600 120mm rockets with average enemy TLE near zero destroyed the main CP. Subsequent attacks as the CP tried to reposition resulted in it being combat-ineffective for more than 96 hours during a 14-day rotation. *(U.S. Army photo)*

When implementing the large DRASH main CP in its full configuration, units become incapable of executing a jump when doctrinally suppressed by enemy indirect fire. At its simplest, brigade main CPs routinely consist of more than 170 personnel, but they also have more than 85 vehicles. With 85 vehicles, a unit needs about 170 people to simply crew each vehicle, and at a 10-percent casualty rate (about 17 personnel), there is an average of three to four vehicles left behind. In some cases, this leads to a unit's decision not to jump, thus causing the main CP to remain a targeted entity and perpetuating the situation.

On the other hand, the smaller-footprint main CPs (DRASH MXs only) were not prevented from jumping due to vehicle manning even after suffering more than 10 percent casualties. They have a similar number of people but average less than 65 vehicles.

CP layouts pros and cons

To discuss mission-command-specific capabilities outside of the physical and tactical considerations already discussed, consider both the large and MX DRASH configuration for brigade main CPs as the only variable for discussing systems and internal layouts.

Large DRASH. The large DRASH main CPs provide several benefits to a brigade headquarters. First and foremost is the space available for all warfighting functions (WfF) to have a station on the CUOPS floor, which, if effectively managed, increases situational understanding and WfF integration. Also, the large DRASH tents come with large aluminum frames that provide a solid backbone to emplace monitors, projectors and mapboards while minimizing the near constant "flapping" that occurs when these items are hung near the soft inner shell. The frame also expands the available room provided by the endcaps.

The primary downfall to the size of the large DRASH is the inability of the environmental-control units (ECU) to provide effective cooling in summer. This leads to multiple power failures and system crashes. The large DRASH is extremely difficult to conceal with organic camouflage equipment. Also, the extra room provided by the increased floor space naturally leads to near-constant informal meetings and conversations within the main CP, causing a loss in focus that can force leaders to spend more time enforcing noise discipline than tracking the battle.

MX DRASH. The MX DRASH main CP provides several benefits based on the reduced footprint. Most significantly, the reduced footprint allows the main CP to locate within terrain that provides cover from long-range, low-angle artillery as well as reduced set-up times that allow more frequent survivability moves. In summer, unlike the large DRASH, the MTOE ECUs have no problem providing adequate cooling for all equipment within the main. Using only MX DRASH tents also allows for the use of camouflage nets to reduce direct sunlight as well as visible presence.

Also, with less space available at each WfF station, other members of the functional cells are forced to conduct all WfF internal non-immediate interaction inside their own tents or in protected armored vehicles. The smaller space enables all members of the CUOPS cell to interact more routinely without shouting and provides a more fluid common operational picture.

One of the major shortfalls of a smaller footprint is the capacity to present products for the common group. In the smaller main CP, a battle captain or chief of operations (CHOPS) must make a careful decision as to what products to present within the analog tracker because space to physically hang the products is limited. Also, similar to the large DRASH, the noise level can quickly become unmanageable, and the available space becomes consumed and routinely requires a leader to stand up and physically clear out non-essential personnel.

Proposed CP layouts

In the six rotations studied, each one that used a DRASH MX main CP concept reduced the manning of the main CP floor by having the sustainment and signal personnel work from their functional cell. To mitigate the effects of removing key leaders from the main floor, an observed best-practice to prevent loss of situational awareness was the use of a loudspeaker system that broadcast the soft crew-access unit (CAU) BCT command net throughout the CP and echoed "attention in the TOC" announcements with the public-address system.

Throughout the six-rotation study, the Bronco team compiled all the individual best practices and designed this recommended, optimized physical tentage, proposing a CUOPS that integrated cell-floor layouts. The optimized layout uses seven DRASH MXs and two small DRASHes (1XB NSN 8340-01-514-0515). It provides maximum mobility, functionality and trafficability. This quantity fully enables all WfFs to remain represented at the main CP, and allows for an entry point, briefing area and maximum security.

Figures 2 and 3 detail this best-practice in reference to the recommended DRASH layout SOP. It includes two DRASH MXs connected to create the CUOPS floor and one DRASH MX for each of the following:

- Network operations (NETOPS);
- Plans;
- Fires;
- Intelligence; and
- A briefing tent.

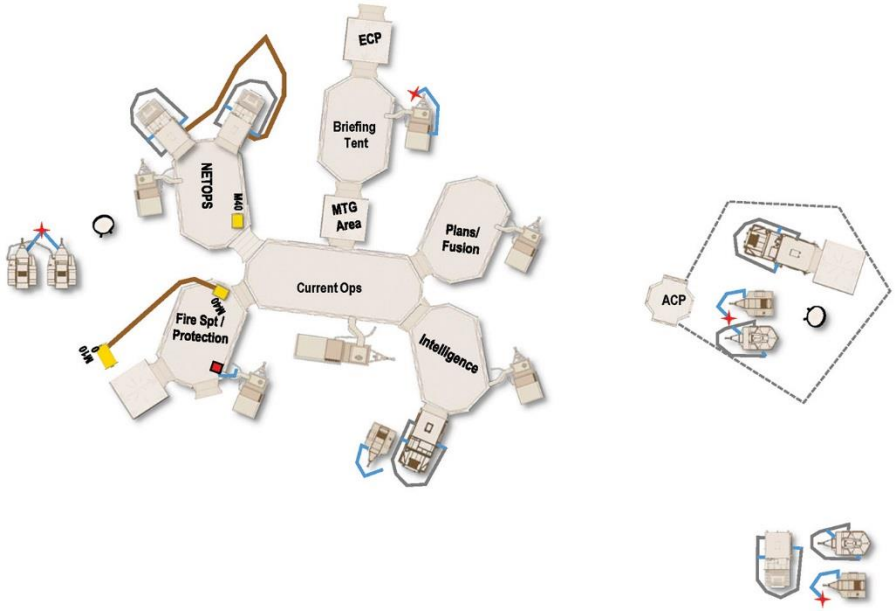

Figure 2. BCT layout CoA 1.

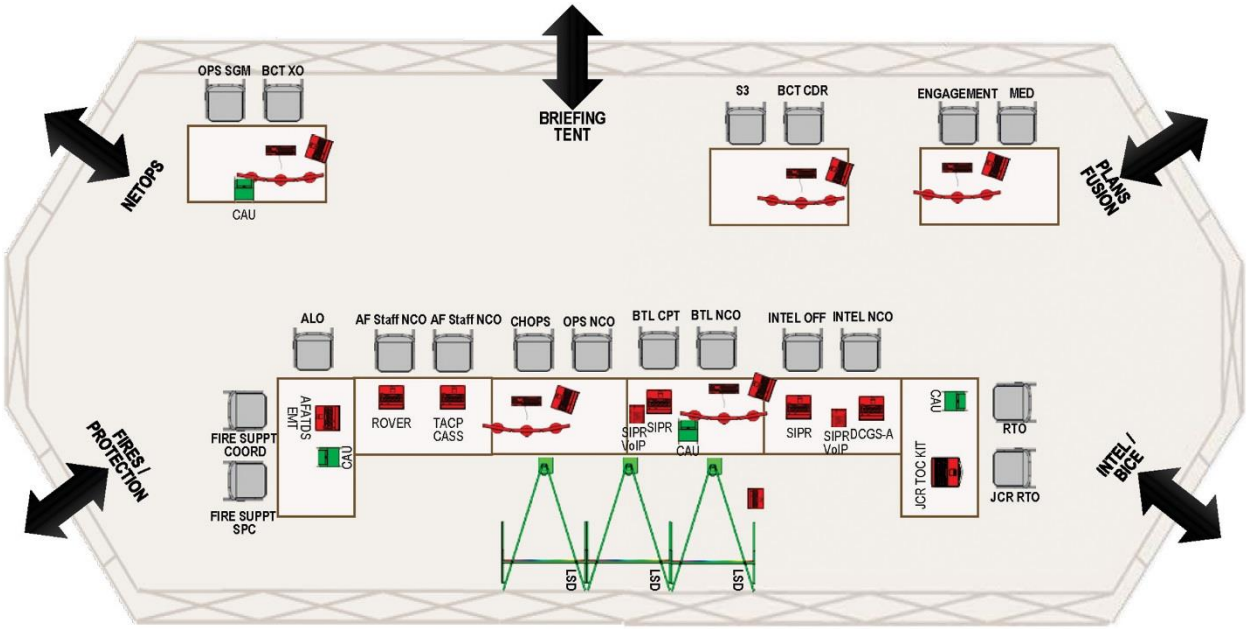

Figure 3. BTC layout CoA 1 CUOPS cell.

In addition to the tents, the second most important piece of the main CP is the CUOPS floor. The recommended layout is a “long U” format. Essentially, it’s four standard DRASH tables exactly in the middle of the tent facing the long wall, with one more table on each end perpendicular to the long tables and three tables along the back wall for leaders. The WfFs array along the U in a location closest to their respective functional cell tent. All projection capability, the travel-among-troops box storage and unneeded equipment goes in front of the tables under the projector area.

Figures 4 and 5 depict an alternate course of action (CoA) using the same equipment but a different ergonomic flow for the WfF functional cells.

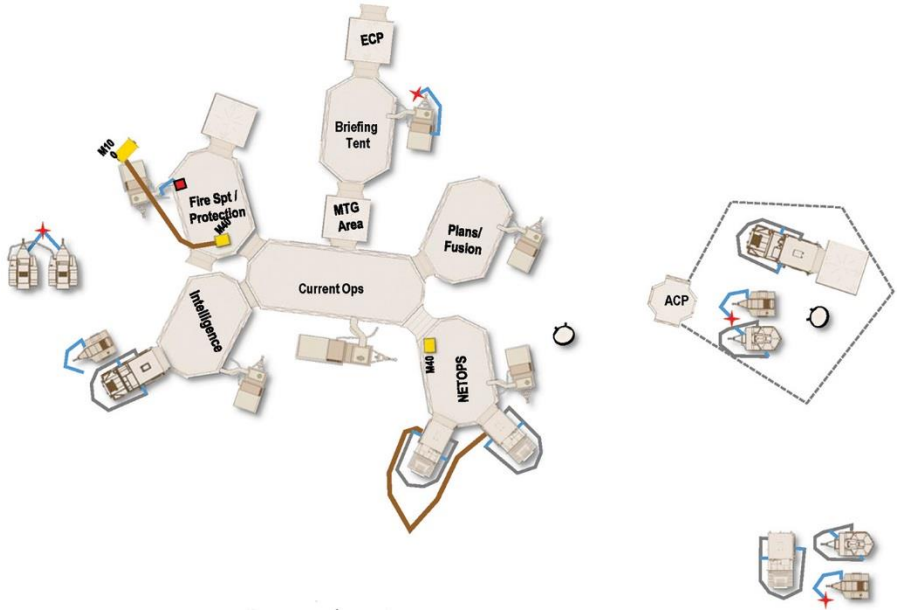

Figure 4. BCT layout CoA 2.

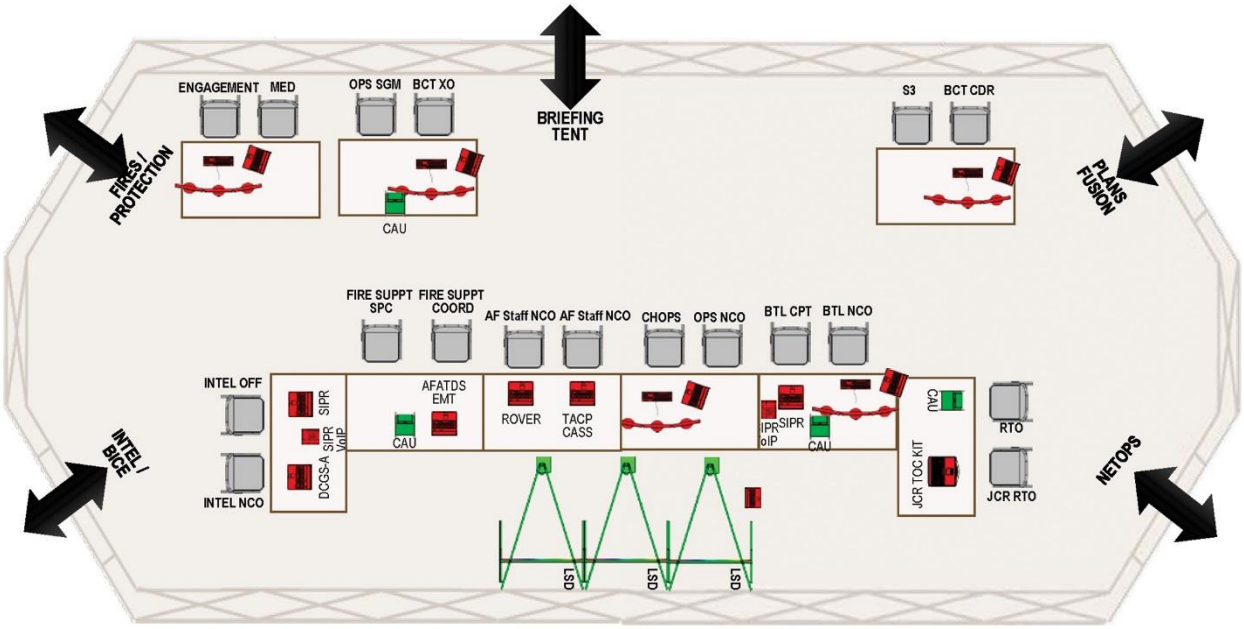

Figure 5. BCT layout CoA 2 CUOPS cell.

The current DRASH layout, even in the proposed configuration, provides little physical protection. Throughout the current OE, the threat of direct- and indirect-fire attacks against mission-command nodes is very real. While the solution to reduce footprint and conduct passive protection (camouflage) is a viable solution in the immediate to near term, we must look past soft-skin applications that both decrease physical presence and increase protection, mobility and modularity.

A proposed solution is to modularize the individual WfF functional cells into containerized units that maintain internal wiring, climate control and power-distribution adaptability, and are ruggedized and armored. A 20-foot military van with Kevlar sheeting throughout the inside, a climate-control unit mounted on the front or top, and internal wiring with all computers built into semi-permanent racks that are modular on the inside provides the

hard outer cover, while the CUOPS floor remains in a tent system in the center (Figure 6). The containerized system also reduces vehicle requirements.

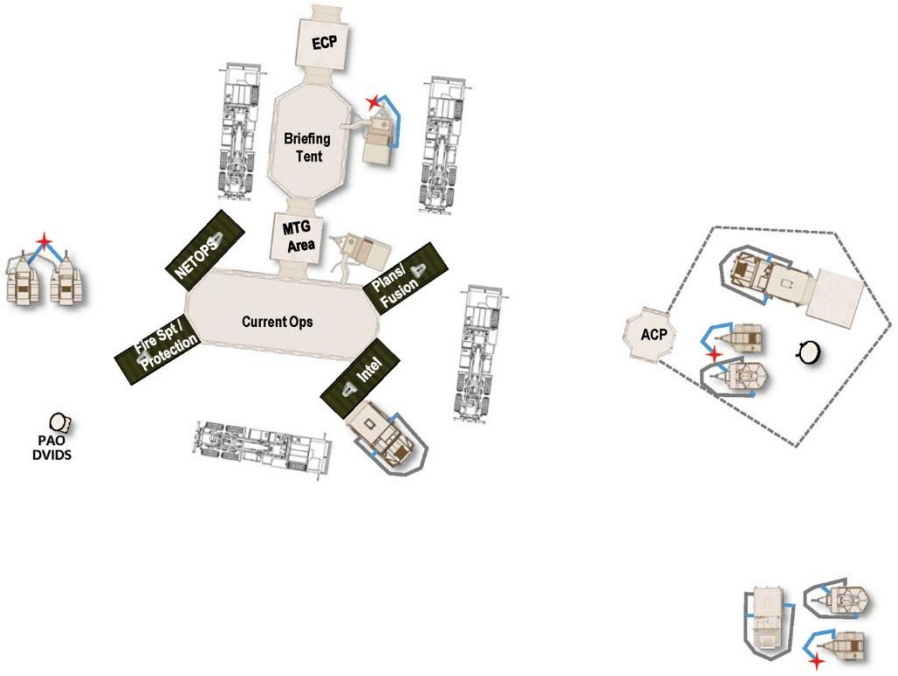

Figure 6. BCT layout: proposed military-van solution.

Also, this proposal may be viable for the BCT TAC CP. The critical improvements are mainly protection, mobility and establishment times.

Another expeditionary option is based on a tested system used by 11th Armored Cavalry Regiment (ACR), which operates as the NTC opfor. It is a brigade command center comprised of "expando vans" (Figure 7). It includes two expando vans and a small DRASH tent as a connecting boot.

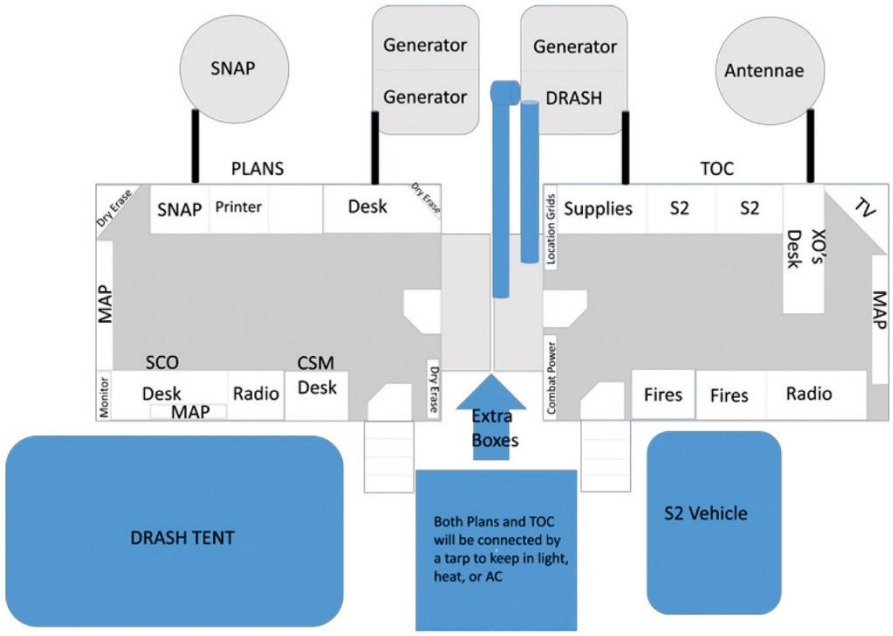

Figure 7. Expando-van concept that 11th ACR uses.

A shortcoming of this model is it lacks a meeting space and severely limits the number of available WfF integrating cell representatives. It does, however, maximize mobility and establishment timelines. The configuration 11th ACR uses does not account for Upper TI ABCS systems and the space they consume. A unit adopting the expando van could easily use a TAC CP configuration or, by using a third expando van, make space for the other WfFs.

Bronco basic tips

Maximizing the capabilities of the current systems requires discipline and training with all personnel in their current position exercising all three BCT command nodes. Units are encouraged to execute at least one CP exercise using their field systems before arriving at NTC. Also, it's imperative that units resource their headquarters to train how to jump the main CP.

One unit focused its staff decisively on establishing and jumping the main CP for most of a week. This reduced their tear-down and establishment times by two-thirds. While a week-long "jump exercise" may not be available to all units, dedicating even two days may reduce times by half. A unit outside the control group reduced its jump time by half in the first two days, and the rest during the next two days, primarily as NCOs learned the battle drill and maximized their troop to task-efficiency.

Disciplined units do not just put the tents up quickly; their Soldiers ensure maximum functionality of the tentage. Much as one can identify efficient staff officers simply because they actually brought a computer mouse to the field, a disciplined headquarters is easily identifiable when their tent is fully extended and locked out to prevent collapse in severe weather; the hook-and-loop seams are properly and completely connected to maximize ECU effectiveness; and other efficiencies are in place such as snap links for quick cabling and labeled power-distribution units.

Lastly, one concept to increase mobility we observed during the study was to maintain a jump CP as a "warm base." Essentially, this means keeping the TAC CP set up but minimally manned to passively track in the event of a jump or an attack; this enables the key and primary staff to rapidly transition to a secondary node with minimal loss of situational awareness. The downside to this concept is the reduction in fighter-management capability by keeping a small second staff active continuously. It did prove to be a beneficial tactic when the main CP was initially targeted. The staff jumped to the TAC CP within 20 minutes and continued the fight while the main CP conducted a survivability move.

Overall, the recommended DRASH design enables units executing both DATE 2.2 scenarios and beyond to bridge the expeditionary gap in main CP employment until a more mobile and protected system is fielded to BCT headquarters as part of the Army's Command Post 2025 project.

The opportunities for the enemy to conduct debilitating indirect-fire attacks is still a real threat. Some may recognize the opening vignette as the summary of the destruction caused in 2003 when then-COL David G. Perkins' 2/3 Infantry Division BCT's main CP was attacked. Although not perfect, the recommended CoAs described in this study will better enable survivability and deployability, which increases the chance that "SGT Gregg" survives an attack and continues providing effective mission command from the BCT main CP.

LTC Scott Nauman is the brigade senior trainer (Bronco 07) at NTC's Operations Group, Fort Irwin, CA. Previous assignments include squadron commander, 3-71 Cavalry, Fort Drum, NY; brigade S-3, 2nd Brigade, 1st Infantry Division, Fort Riley, KS, and Operation New Dawn, Baghdad, Iraq; battalion S-3, 1st Battalion, 18th Infantry, Fort Riley, and Operation Iraqi Freedom (OIF), Baghdad; observer/coach, Joint Multinational Readiness Center Operations Group, Hohenfels, Germany; and commander, Company A, 2nd Battalion, 6th Infantry, Baumholder, Germany, and during OIF I, Baghdad. His military education includes Command and General Staff College, Armor Officer Advanced Course, Infantry Officer Basic Course and Airborne and Ranger schools. LTC Nauman holds a bachelor's of science degree in Middle Eastern history from the U.S. Military Academy, West Point, NY, and a master's of arts degree in organizational leadership from the University of Oklahoma. His awards include the Bronze Star with two oak-leaf clusters.

CPT Chase Baker is currently an observer/coach/trainer at NTC, Fort Irwin. Previous assignments include assistant brigade operations trainer (Bronco 3A), Operations Group, NTC, Fort Irwin; assistant squadron operations trainer and troop trainer (Cobra 3A and Cobra 11), Operations Group, NTC; commander, Company C, 52nd Infantry, Joint

Base Lewis-McChord, WA; battalion maintenance officer, 4-70 Armor, Baumholder, Germany; and platoon leader, 3rd Platoon, Company C, 1-35 Armor, Baumholder. His military education includes the Cavalry Leader's Course, Maneuver Captain's Career Course, Armor Officer Basic Course and Air Assault School. He holds a bachelor's of science degree in international relations from the U.S. Military Academy at West Point and is currently an MBA candidate with the George Herbert Walker School of Business and Technology.

Notes

[1] U.S. Army Training and Doctrine Command (TRADOC) G-2, ***Decisive-Action Training Environment (DATE)***, Version 2.2, Fort Leavenworth, KS, April 2015.
[2] Combined Arms Doctrine Directorate, Army Doctrinal Reference Publication 3-0, ***Unified Land Operations***, Fort Leavenworth, KS, May 2012.
[3] U.S. Army Maneuver Center of Excellence, FM 3-96, ***Brigade Combat Team***, Fort Benning, GA, October 2015.

The CP layout's importance, illustrated in photos

Figure 8. What do you see? Aerial view of the BTG's main CP from the opfor's Outlaw UAV.

Figure 9. What the enemy sees: aerial view of rotational unit's BCT main CP from the opfor's Outlaw UAV.

Figure 10. Zoomed-in aerial view of the BTG main CP from the opfor's Outlaw UAV.