The Right Fit
Mission Command in the Twenty-First Century

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The Army needs to have a more precise and open conversation about mission command. As U.S. Army Europe's opposing force at the Joint Multinational Readiness Center (JMRC), 1st Battalion, 4th Infantry Regiment (1-4 IN), known as the "Warriors," practices Army core competencies, specifically mission command, more than most units based on its mission set. Five or more rotations per year with varied task organizations have enlightened the Warriors' approach to Army Doctrine Reference Publication (ADRP) 6-0, *Mission Command,* which we strive to pass along with this article.[1]

Successful mission command requires the proper organization of individuals outlined in a standard operating procedure (SOP), repetitive iterations of the military decision-making process

Capt. Franklin G. Peachey, 1st Battalion, 4th Infantry Regiment intelligence officer, reviews his current analog enemy situational template after a battle in exercise Combine Resolve 8, which took place 27 May 2017 to 12 June 2017 at the Joint Multinational Readiness Center in Hohenfels, Germany. (Photo by Spc. Naiomy Gaviria, U.S. Army)

(MDMP), and leverage of the appropriate technologies to enable communication. The following sections articulate the underlying reasoning and processes for how the Warriors develop SOPs, employ the MDMP, integrate intelligence, and incorporate technology judiciously so that readers may be able to develop a mission command mindset within their professional relationships.

Role of the Commander

(Written by Lt. Col. Archambault, 1-4 IN Battalion Commander)

ADRP 6-0 invokes mission command's German ancestry, *Auftragstaktik*, but misses an important component of the German concept for mission orders and decentralized execution. Auftragstaktik received its name mostly after the fact, as part of an explanation for how the German army functioned. In short, Auftragstaktik was cultural rather than top-down.[2] Every aspect of the German army organization, personnel systems, and education supported and reinforced the lived expression of this concept. The Warrior Battalion's aim was to create that culture, where mission command was pervasive, and everyone operated on a common vision.

Everything starts with the commander. The commander must feel the pulse of the lived experience of the mission command principles within his or her team. Commanders must

- know whether there is mutual trust between echelons,
- know whether they and their staffs have done everything to facilitate shared understanding,
- know their staffs are producing mission orders,
- be comfortable with and understand the disciplined initiative their subordinates take,
- communicate what prudent risk is for the formation, and
- provide clear commander's intent.

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The Army is a people business, and the commander must emphasize the human dynamic with a nuanced and firm understanding of group communications and of how the group under his or her command understands and develops its particular processes and procedures.

Mission command philosophy at its best provides a lens for focusing energy, for deciding how to balance the art of command with the science of control. To focus energy properly, processes and procedures are not only important, they are also essential. ADRP 6-0 provides a graphic to explain its mission command philosophy. We revisualized the graphic into something more tangible. Figure 1 (on page 3) provides a side-by-side comparison. The revisualization establishes relationships between commanders at different echelons. For example, the disciplined initiative is crucial to the concept, but evinces itself in subordinate action as a result of mission orders, clear intent, and mutual trust.

Standard operating procedures and policies, when adequately written, establish relationships and expectations for the soldiers, noncommissioned officers (NCOs), and officers in the organization. The mission command SOP outlines how the battalion executes the MDMP, executes a combined-arms rehearsal, organizes its tactical operations center (TOC), and manages information and knowledge.

A mission command SOP is not a regurgitation of doctrine. It outlines and provides guidance on how

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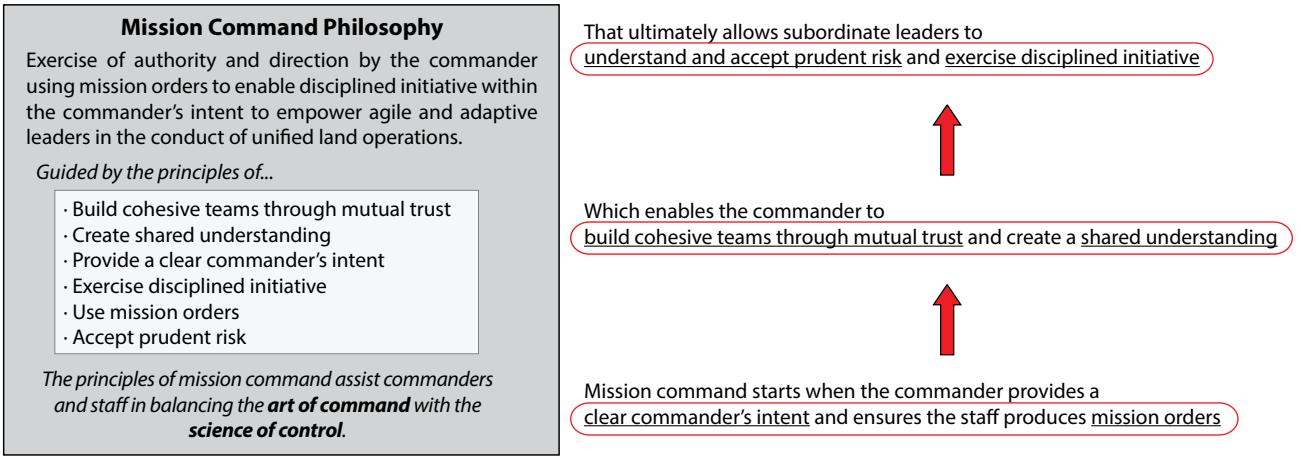


(**Left:** Graphic by Lt. Col. Matthew T. Archambault; **Right:** Graphic from Army Doctrine Reference Publication 6-0, *Mission Command* [Washington, DC: U.S. Government Publishing Office, 17 May 2012])

Figure 1. Mission Command Philosophy

subordinates should act, what their responsibilities are, and what they can expect from others depending on the situation. All SOPs should reduce stress and friction because people know, without being told, what is next. Effectively, the SOP organizes how the staff advises and informs the commander, and it assigns responsibilities among the staff, so the battalion commander does not have to be a staff officer. In large part, success in command includes developing and enacting successful processes for refining SOPs that are team-driven rather than top-down.

Culture builds around relationships. A battle captain, whether a captain, an extra lieutenant, or an NCO, must know what to expect of his or her radio operators and the operations sergeant major. The same is true for MDMP or any process the battalion executes. Everyone on the staff ought to know the position—not the individual because individuals come and go—that is responsible for leading course of action (COA) development.

The expectations for these relationships find expression in SOPs. When the SOPs are repeatedly used, the culture of the unit rises to a higher standard because everyone knows how the unit executes its systems.

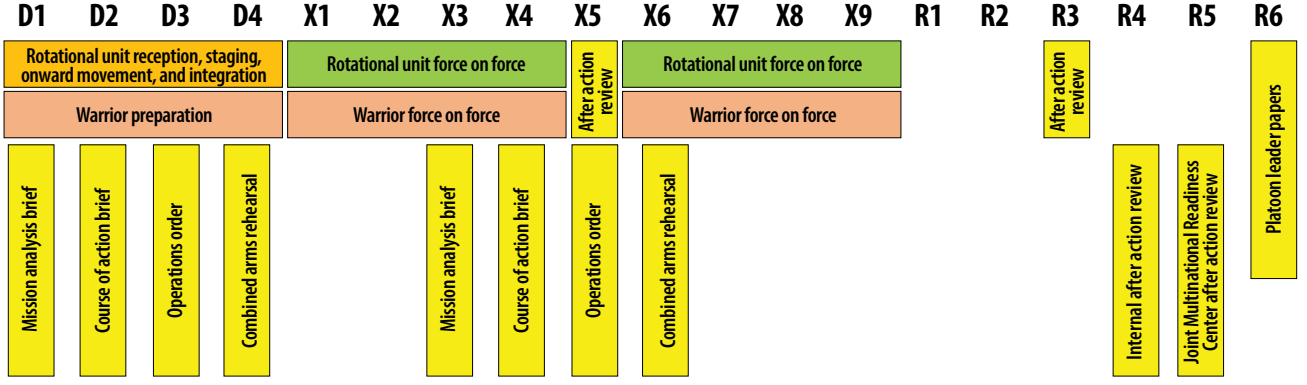
The Warriors conduct MDMP at least twice during rotation, one for an offensive operation and one for a defensive operation, five to six rotations per year. That is an incredible amount of opportunities for the battalion commander, staff, and subordinate commanders to gain a shared understanding and transform that understanding and relationships into SOPs.

Figure 2 (on page 4) illustrates the general timeline.[3] The challenge for those not afforded the opportunity of multiple combat training center rotations is to execute MDMP routinely at home station for annual training guidance, platoon live-fire exercises, and other events that usually fall into the hands of a single staff officer. Whatever the training constraints, it is incumbent upon the commander to treat development and refinement of SOPs as the standard-bearer of shared understanding and development of collective performance excellence.

In accordance with Field Manual 6-0, *Commander and Staff Organization and Operations*, the battalion commander takes mission analysis and COA development briefs from the staff.[4] These briefings are vital for MDMP and, as discussed above, the battalion's culture. These briefings might happen across days, or they might all occur within a single day; mission requirements drive the planning timeline. I never provide directed courses of action. This is the staff's opportunity to show me what I do not know, and challenge me with their ingenuity. Time-dependent, they will wargame both COAs and provide me a COA decision brief.

The dialogue that ensues from these briefs is invaluable. The staff gains an appreciation for how I think and see the battlefield. I am verbalizing my thoughts and creating a vision for what will happen. There are no unexplored assumptions. There can't be if a true dialogue is to occur, hence my organizing briefs so that the staff provides COAs.[5]

Ultimately, after the discussion, I decide on the COA, and the staff briefs the operation order to the company commanders. The mission command SOP guides touchpoints for the commander, regardless of the mission set. The science of control, the SOPs, guides us through understanding, visualizing, describing, and directing. Throughout the entire process of preparing my people for successful engagement in conflict, I am using twenty years of experience, the dialogue with staff and commanders, and finally, the combined-arms rehearsal to refine that visualization and share it.



(Graphic by Lt. Col. Matthew T. Archambault)

Figure 2. A Typical Military Decision-Making Process Schedule during a Rotational Exercise

The Warrior Battalion contends with uncertainty and complexity every rotation. Task organization is never the same, even changing between a single rotation's battle periods. We always have new teammates: a National Guard company, a U.S. Army Reserve company, and often a multinational company. We are also fighting a different enemy every rotation with different capabilities. Sometimes we are fighting a mechanized formation or Strykers, and it is always multinational. Executing battalion-level battle drills would not challenge our opponents, the rotational unit.

My commanders, organic and augmenting, provide me with a confirmation brief immediately following the operation order, and then a backbrief a day or two later. A combined-arms rehearsal follows on a terrain model, which enables leaders down to the platoon level to walk through the operation. Without fail, we discover changes to the plan or synchronization issues that require a fragmentary order. We make the fix on the spot and rehearse the plan again. These are conversations with the subordinate commanders and principle staff. The augmenting commanders provide the greatest opportunity to challenge our way of business because they are new to the battalion. For them, this is all new. It is a training opportunity for both of us, which we do again, during the defensive planning cycle.

Now we go out to fight. Personal experiences and technology will influence the idea about how a commander fights on the field, where he should be, etc. However a commander conducts himself, the procedures must refine the process of information flow. Most of the time during the fight, my visualization of events comes from a radio transmission. Today, commanders do not "see" anything. Therefore, it is essential that battalion leadership, from the commander to the platoon leaders, understand and are comfortable with well-tested communication strategies so that nearly everyone continues to maintain shared understanding to the fullest extent possible.

We are a people business. Every aspect of our profession is about people. There is no getting away from people, and there is no getting away from Murphy's Law, friction, fog, and the general chaos of the battlefield. Warfare has not changed enough to preclude the requirement of the commander to place himself wherever he feels it is necessary to best influence the battle. Some may feel that is the TOC. For myself, it

is a mobile tactical command post (TAC), with two HMMWVs, the operations officer's (S-3's) and mine.

Where we go changes every rotation. Sometimes I get an inkling during the combined-arms rehearsal that a company may need help so that I may follow them. Sometimes it will be the main assault. Other times it is with the breach. It is never the same. One way to cope with the friction is to develop this intuition through trial and error during training exercises.

I go that close to the front because it is necessary. Some might ask, what about Joint Capability Requirement (JCR)?[6] We have it, but it is not fast enough. It loses satellite links and goes stale during operations in the dense terrain of Europe. Analog maps continually prove to be faster. Below, the Warrior's signal officer discusses how our battalion integrates communication technology in greater detail.

What are we doing in the TAC during the fight? At this point in the process, we are placing trust in our refinement of the SOPs and relationships and opening up to the "art" of command. Sometimes we are evading enemy scouts. Most of the time, we are standing around, listening to the nets, looking at a map, and thinking. This is the best part. This is the payoff. After all of the preparation with MDMP and the conversations, after all of the visualization I have done, I now get to listen over the radio and see if I recognize what is going on. I do not have to troubleshoot procedure or clarify my intent—my focus is on staying with the information flow so that I can be at the right place at the right time to weigh in. My S-3 fights the battalion. He will come to me for the big decisions. I stay off the net. My intelligence officer (S-2) sits behind me. My truck has three radios, I listen to two nets, and my S-2 listens to the operations and intelligence net. I keep one ear on the battalion command net and the other jumping around on the company command nets, passively listening. My executive officer updates higher headquarters. This is a command. The S-3 is fighting and I am assessing my vision for the reality playing out in the field.

When the rotation is over, after we have experienced how the SOPs functioned, we refine as necessary. Every day, while we are going through preparation or execution, I am making notes about our SOPs, subordinate leaders, and warfare in general. The Army is rebuilding its combined-arms maneuver war machine, and no one really knows what it looks like. It will not be our grandfather's Oldsmobile, AirLand Battle, but it might not be far from it either. After-action reviews (AARs) are the principal method for refining these SOPs, and AARs must involve the commander to ensure the AAR is not a frivolous event.

What is the organization reviewing? Against what standard, and how do we judge the actions that our subordinates and we took? The answer ought to be our doctrine, our SOPs, and our policies. The organization cannot directly affect Army doctrine, but it owns its TACSOP and mission command SOP. The organization cannot change Command Post of the Future, but it does not necessarily have to use it when it does not make sense. Commanders must feel the pulse of the technology used within the formation and know its effects on mission command.[7]

This is the crux of a learning organization. Commanders support and guide the process of collective reflection and refinement. Commanders should ask, how do I know my organization is learning?[8] Where can I find evidence of that learning? From a different perspective, is my current organization or procedures to support that organization proper for the situation within which I find myself? That is why SOP refinement is not the responsibility of a single staff officer, but an organizational responsibility led by the commander.

A leader azimuth check is a method for all the organization's leaders to come together, discuss their SOPs, and determine how to make them more effective. That annual conference helps impart several principles of mission command to include the obvious shared understanding and mutual trust. When the commander creates these events and is involved in the process, subordinates are learning how he or she communicates—the meaning behind his or her words, gestures, and idiosyncrasies. Giving subordinates the opportunity to develop this understanding of their commander creates the conditions for mission command philosophy to permeate the group culture.

As brilliant as commanders like to think they are, the reality is that no commander speaks clearly, concisely, or brilliantly all the time. Once SOPs are functional—maybe not perfect but good enough—the AARs for exercises and training events can be elevated to a much higher level. Now, the organization can stop trying to figure out how to do something, and it can

begin figuring out how to do it better than anyone else, to realize something new.[9] This—the collective reflection and refinement of processes—is the opportunity to appreciate intangibles on the battlefield like time, terrain, and friction. Those three things affect every unit, but the unit with sound mission command, whose SOPs are effective, will not succumb to them. Some concluding recommendations for commanders follow:

1. Get numerous and honest repetitions at MDMP. You do not want your focus to be how you are going to do MDMP. You want to focus on what you have learned from MDMP.
2. Do not pretend you know everything. Listen to your staff. Challenge them, but allow them to challenge you. You might know how best to run a motor pool or live-fire exercise, but on a combined-arms maneuver battlefield, it takes a team effort. You need practice with understanding, visualizing, describing, directing, leading, and assessing.
3. Check your SOPs. Are they being used? Do they make sense? The SOP prevents you from having a conversation about how to do the process and instead maximizes the process so you can focus on the end state.
4. Task organize for every mission. One size does not fit all. The result is a new team at every echelon, which demands you ensure you have communicated clearly and that shared understanding exists.

Intelligence Warfighting Function

(Written by Capt. Franklin Peachey, 1-4 IN intelligence officer)

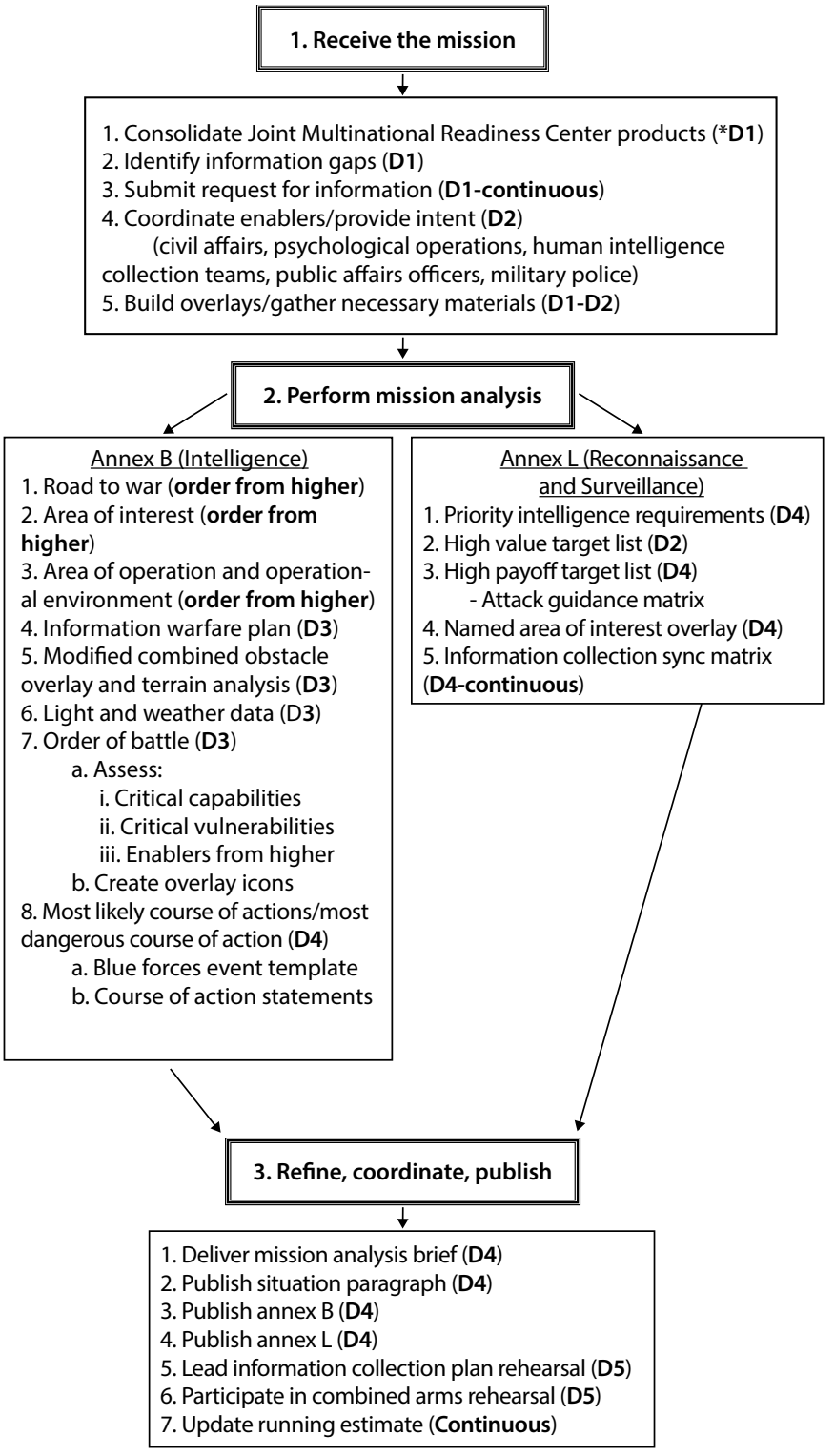
Intelligence within tactical mission execution exists simply to support the commander with relevant, predictive, and tailored assessments.[10] An assessment is not a certainty; instead, it is a delicate balance between logical problem solving and the use of an informed intuition. When time is of the essence, this balance relies to a greater degree on an officer's informed intuition. To integrate these intelligence assessments within a mission command system, a close working relationship between the commander and the intelligence officer is crucial. The S-2 must understand the commander's decision-making process and gain trust.

Intelligence sections exist to organize the ever-growing amount of information flowing into a TOC and then condense that information into intelligence for an assessment to the commander. This is not a mechanical procedure that can follow a rote formula. The S-2 must balance time committed to logical problem solving (informing battlefield visualization) with assessments made through informed intuition (providing predictive analysis).[11] Below is a tactical situation that demonstrates the need for an effective balancing of both.

A reconnaissance attack identifies a dismounted infantry company defending a hill, clearly isolated and unsupportable from their main battle line. The S-2 makes a rapid assessment of where the enemy may maneuver that company. Logical problem-solving dictates parameters of time available for movement, distance to the next defendable piece of terrain, etc., but the S-2 must make a rapid assessment that enables the commander to take action to exploit a tactical advantage. Instead of laying out all possibilities in a logical problem-solving process, an experienced S-2 uses informed intuition to provide a rapid assessment to the commander of where that combat power is going to shift. There is no certainty in war, and there is no time to incorporate every possible data point into the assessment that can lead to analytical paralysis, forfeiting an intelligence officer's chance to effect time-sensitive decision-making.

The intelligence section is the tool within the battalion to execute deliberate thinking about the enemy, but "the fruits of that type of analysis can set the stage for rapid cognition."[12] The S-2 must balance reviewing a mountain of analytical data points provided by the section with the need for a rapid assessment. This must be done by intuitively deducing from that mountain those data points that are most useful in producing a relevant, predictive, and tailored assessment for the commander's immediate use. This is possible through clearly defined processes and procedures for organizing an intelligence section, which aids both in the tempo of these assessments and their accuracy (see figure 3, page 7). Without taking the time to define and refine processes and procedures, intelligence teams will not be able to develop fully the balancing of logical problem solving and informed intuition within the heat of battle.

Just as a maneuver element will reflexively execute a battle drill when making unexpected contact, an intelligence section must have clearly defined battle drills to execute intelligence preparation of the battlefield (IPB), MDMP, and battle tracking (see figure 3, page 7). An intelligence section must have a tailored task organization



*D= days; the analysis above assumes five days from receipt of mission to execution

(Graphic by Capt. Franklin G. Peachey)

Figure 3. Battle Drill 1: Intelligence Preparation of the Battlefield

and troops-to-task to support IPB, MDMP, and battle tracking, independent of the personalities involved. In order to develop these systems, the intelligence officer must evaluate in detail the tasks to be completed and manage talent accordingly; a holistic excel document can serve as a base knowledge management tool for these systems. With personnel aligned against each task, the section can develop, refine, and rehearse battle drills and SOPs.

The next objective is to achieve mastery. Repetition is not enough to achieve mastery.[13] For true mastery, the section must plan, prepare, and execute its own staff exercises to rehearse and ingrain the task organization, battle drills, and SOPs.

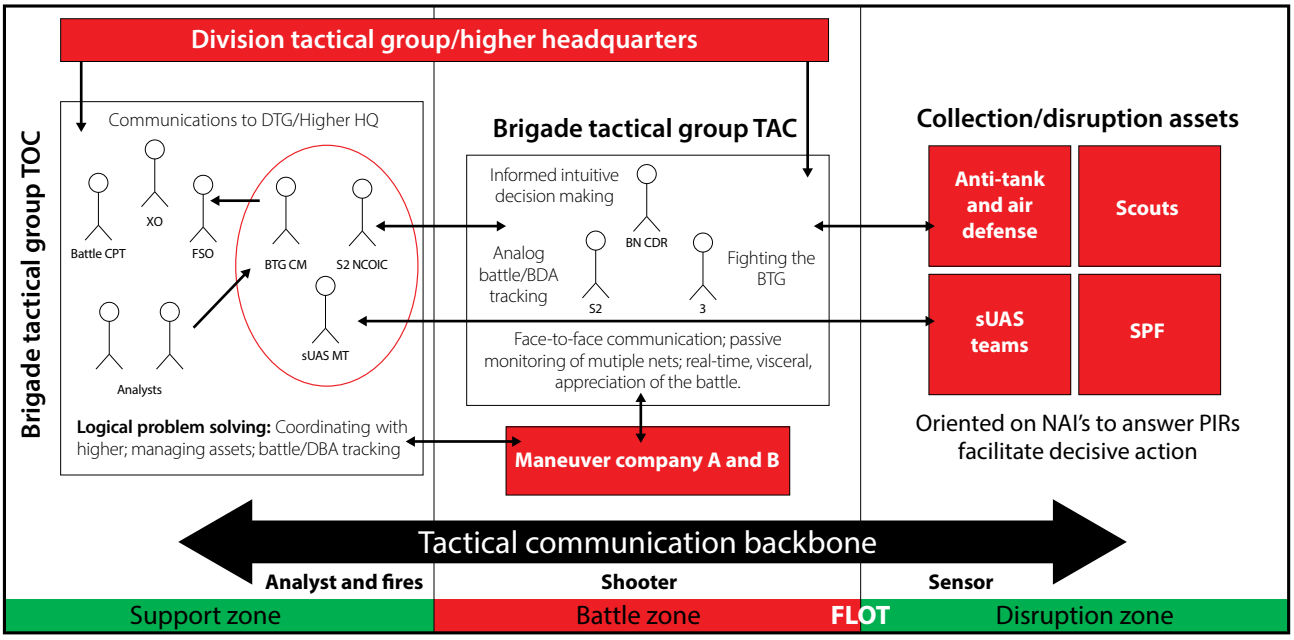
These staff exercises do not need to be elaborate, or significantly time-consuming. Instead, they should be tailored to build muscle memory during moments of significant fluidity (e.g., TOC movements, battle tracking during main attacks, and rapid IPB execution after identification of significant changes in the operating environment). With these systems and practices in place, privates in the Warrior Battalion for less than a year have the confidence in themselves and their team to take the initiative and make intuitive leaps in an analysis that they would not have previously. This preparation enables an S-2 to focus the analytical skills of the section, which in turn feeds directly into the informed assessments developed during the planning process.

As the intelligence section begins planning, it incorporates the logical and intuitive capacity

of the entire staff. IPB is not completed in isolation. The executive officer sponsors it, and the S-2 facilitates it. The S-2 uses the analysis provided by the section and the staff to develop the enemy's courses of action. An S-2 must continuously seek additional input from the staff and commanders during COA development but remain cognizant of the source in the development of their assessment. When the S-2 briefs mission analysis to the battalion commander, it is on behalf of the staff and their collective analysis.

COA development and war-gaming. When the staff begins war-gaming, the intelligence officer comes to the table with a fundamental understanding of the enemy's composition, and has coordinated for collection assets to begin to refine the details of enemy disposition.

During war-gaming, the intelligence section must be confident in their assessments to give the battalion staff an accurate perspective of the threat. The war-gaming session should be frustrating, even contentious. The S-2 is the spoiler to all the hard work and best-laid plans the



BDA—Battle damage assessment
BN CDR—Battalion commander
BTG CM—Brigade tactical group collection manager
DTG—Division tactical group
FLOT—Forward line of own troops
FSO—Fire support officer
NAI—Named areas of interest
PIRs—Priority intelligence requirements
TAC—Tactical command post
TOC—Tactical operations center
S-2—Intelligence officer
S-3—Operations officer
S2 NCOIC—S-2 noncommissioned officer in command
SPF—Special purpose forces
sUAS MT—Small unmanned aerial systems master trainer
XO—Executive officer

(Graphic by Capt. Franklin G. Peachey and depicts how mission command works in practice during tactical action, with specific emphasis on intelligence collection, processing, and dissemination.)

Figure 4. 1st Battalion, 4th Infantry Regiment Intelligence Mission Command Document Template

Concurrent with the development of COAs, the S-2 works closely with the collection manager and operations personnel to establish priority intelligence requirements (PIRs) and align collection assets. Once the S-3 approves the PIRs and the staff begins executing MDMP in earnest, the S-2's role becomes twofold. First, initial movement of collection assets begins while the intelligence section continually revises its assessments as the data begin to flow. Secondly, the S-2 plays an active role in friendly staff develops. The same is true once the commander selects a friendly COA and the battalion moves to the combined-arms rehearsal. The S-2 must act as the spoiler and incorporate the enemy's combined-arms approach simultaneously within multiple domains to give the battalion an accurate look at the risk to be mitigated in their plan. This pressure encourages maneuver commanders to react deliberately to likely enemy actions, developing shared understanding across the battalion as they do so.

Overall, the intelligence officer must synchronize the section's assessments across the staff and be confident in their presentation during key MDMP events.

Once this planning phase ends, the importance of an ingrained mission command system within the battalion and the intelligence section grows exponentially. As reconnaissance elements gain and maintain contact with the enemy, analysts are sorting and consolidating the reporting, then feeding it to the collection manager, the small-unmanned-aerial-system master trainer, and the intelligence NCO in charge of the TOC intelligence cell. With this initial analysis, the intelligence cell updates the common operating picture and the battle damage assessment, answers PIRs, coordinates relevant targeting information with the fires cell, pushes actionable intelligence to the TAC via the operations and intelligence net, and continuously refines the employment of collection assets (see figure 4, page 8). A synchronized section using an ingrained mission command system can better multitask and more efficiently conduct analysis and intelligence dissemination.

Beyond these battle-tracking tasks, the intelligence cell uses two specific synchronization sessions a day to maintain a shared understanding across the force. First, the intelligence cell conducts an intelligence synchronization with the reconnaissance company. This includes reviewing the common operating picture, adjusting PIRs, validating named areas of interest, and refining the collection plan for the following twenty-four hours. From this synchronization, the S-2 refines the enemy COA and provides an updated assessment during the second daily synchronization session, which consists of both an operations and an intelligence update brief to all commanders.

By collocating with the commander during the fight, the S-2 can have face-to-face communication and can gain a real-time appreciation for the fluidity of the battle (see figure 4, page 8). The S-2 must balance a dependency on information from the intelligence cell with his or her own analog tracking systems. The two vital pieces of information that the commander needs about the enemy are always enemy disposition and composition (battle damage assessment and relative combat power analysis). A simple means of tracking through an analog system is by having a pushpin board continuously synchronized with information from the intelligence cell.

There must be a balanced use of analog systems with technological enablers. Whether due to sophisticated electronic warfare jamming or to the threat posed to survivability that a large digital presence will have, all elements must be prepared to execute mission command and combat operations in a digitally denied environment. It is crucial not only to understand the threat but also to continuously train to operate in a nonpermissive environment. Ultimately, it is the S-2's duty to provide relevant, predictive, and tailored assessments to the commander no matter the technical or tactical constraints.

Some concluding recommendations for intelligence officers include the following:

1. Train and use the intelligence section for logical problem solving; keep informed and be available to make the intuitive leaps in the analysis when they are necessary.
2. Be informed and available to provide relevant, predictive, and tailored assessments to the battalion commander at all times.
3. Owning IPB as a staff process is critical to the successful execution of MDMP. Bring your NCOs, other members of the staff, and the commanders to discuss enemy COAs.

Mission Command Warfighting Function

(Written by Capt. Jennifer Sims, 1-4 IN signals officer)

Communications technology (CT) permeates human existence at an ever-increasing rate, with a piece of digital CT for every aspect of life.[14] The U.S. military is not immune to this, as digital CT covers every echelon and function, despite the Army not taking a significant philosophical look at technology.[15] While CT's ability to overcome human communication gaps is obvious, there is an improper association that more technology is good. In land conflict, one must consider the impacts of CT on mission command. While CT overcomes shortfalls in human capability, CT is not synonymous with mission command, and its current pervasive application degrades the human aspects of executing mission command and leads to an undesirable reliance on CT for this execution. The mission command war-fighting function uses personnel, networks, information systems, processes, and equipment to facilitate how commanders and units

fight rather than dictating that commanders and units use prescribed technology.

Mission command is a human endeavor, while CT is merely a tool that can overcome human limitations. CT allows the human voice to carry over unlimited distances, it allows for virtually limitless storage of information and data, it creates a means for multiple people to share input on data collection and processing to create information, and it provides the means to share that limitless storage of collaborative products over an unlimited distance. This grants a substantial capability to commanders at all levels when executing mission command, but leads units to focus on CT when establishing mission command systems. Most people immediately think of specific CTs when someone mentions mission command. CT, however, only makes up two components of a mission command system, networks and information systems, and not personnel, SOPs, or facilities and equipment.[16] This narrow focus creates a situation where commanders attempt to fill gaps in the other components of mission command with CT.

Land conflict is a complex venture. The number of variables that can affect any operation is immense, if not infinite. From factors ranging across a spectrum such as weather or enemy actions, most plans will face unexpected elements during their execution that require deviations. A holistic mission command system allows units to adjust to these variables without further direction from their command. A system that relies upon CT will require command intervention and undermines the inherent value of Auftragstaktik.

CT provides an illusion of situational understanding when every unit at every level is capable of seeing every other unit's exact position. CT facilitates ad-hoc querying of an icon for what that unit may be doing but does not synchronize the unit. CT cannot make a commander's intent clear or help units adjust quickly when they miss the intent. CT cannot tell a unit what to do when they are unsure. CT cannot mitigate risk or explain what disciplined initiative may be in the face of that risk. CT does not adequately make up the intangibles within the art of command if a unit ignores the human dimensions. CT merely enables people, placed in the proper locations with the proper tools, to execute well-defined and practiced SOPs. When a unit does not give proper deference to the human aspects of mission command, a commander, or a member of their staff, must use CT to resolve unexpected events instead of the unit merely responding.

Mission command in 1-4 IN is people executing their assigned duties in accordance with rehearsed SOPs. CT allows people to reach out further than they may have otherwise been able to, but it does not place individuals where they need to be or execute SOPs autonomously. Only a well-practiced SOP ensures data and information collection and dissemination occurs properly and reaches the requisite people. With the SOPs for the execution of mission command, a commander and the S-6 can employ CT with an accuracy that is more precise than spreading CT to every spot it can be.

When CT is ubiquitous, it is significantly easier to rely on it rather than develop and practice SOPs. One can visualize reliance on CT and the human dimension of mission command as having a linear relationship, where the less a unit focuses on the human dimension, the more reliant they are on CT, and vice versa. Decreasing reliance on CT is desirable, as it carries enemy and friendly vulnerabilities to reliability. Everyone has experienced one of these vulnerabilities and knows the frustration when a relied-upon system fails, leaving one unable to communicate.

Enemy electronic warfare and cyber capabilities have the ability to deny, disrupt, and degrade analog and digital communications, but enemy vulnerabilities also extend beyond the electronic warfare and cyber domains. Digital CT in command posts requires significant equipment, including a satellite dish placed outside of tree coverage and logistical efforts that create increased vehicle traffic, all of which give a large visual signature for direct or indirect targeting. Vehicles with digital CT require a satellite connection, meaning tree cover or steep terrain inhibit systems from functioning properly, and a recent publication theorized the potential compromise of computer systems onboard combat platforms making the whole platform combat ineffective.[17]

Friendly vulnerabilities can be both external and internal, some of which are interference, network congestion, misconfiguration, or malfunction. Units that are highly reliant on CT are likely to have many CT devices in use, increasing the specter of interference between systems as well as causing congestion from multiple people attempting to communicate via the same means at the same time. Internally, a human will still have to configure CT systems, both physically and technically, creating the potential for human

error to lead to a misconfiguration. While training and system testing can reduce this risk, some functions are only testable at the point they are necessary, such as a radio system reaching a given point, or a battle tracking system receiving and sending multiple streams of data from and to multiple locations. The ability to fix the misconfiguration and restore service can vary greatly between people and systems, but the vulnerability to imperfect reliability remains.

These vulnerabilities make overreliance on CT dangerous. While some reliance is unavoidable, reducing reliance on CT to the lowest possible levels lowers the threat. A unit reduces reliance by focusing on the human dimension and taking a surgical approach to the application of CT. 1-4 IN relies on SOPs for conducting mission command and takes a precise approach for selectively integrating CTs to connect people and not for explicating their responsibilities or placing them in the proper locations. Lower echelons have well-defined boundaries, phaselines, code words, and mission sets, so knowing where other units does not require looking at a screen, only normal situational awareness. As a result, the Joint Capability Requirement screens remain black.[18] Rather than Command Post of the Future, the battalion uses an analog map. The unit ensures a robust very-high frequency (VHF) radio network rather than ultra-high frequency radio channels because the tactical command post is almost always in a position to communicate with the entire formation. Finally, a rigidly enforced communications contingency plan sets an expectation for when communications become degraded; 1-4 IN focuses on the human dimensions of mission command, using CT precisely and reducing risk from its vulnerabilities.

Some concluding recommendations for signal officers include the following:

1. CT plans have a primary, alternate, contingency, and emergency (PACE) methods for a reason. If your higher headquarters dictates CT that does not make sense for your operations, provide them feedback and use the auxiliary means as appropriate. Operations dictate communications, not the other way around.
2. Establish the communications plan based on a deep understanding of current operations. Changes in the maneuver plan will necessitate changes in the communications plan.
3. Ensure the formation understands the impacts from using or not using each piece of CT. Remember that these impacts are not restricted to the communications realm.

Conclusion

The Warrior Battalion practices its trade over and over again, without the distractions inhibiting other battalions and brigades. We also do not have a higher headquarters with an information demand mandating usage of specific mission command systems that are not conducive to maneuver. Luxuries aside, the Army can benefit from the JMRC's perspective within the continued dialogue about mission command; so, as combined-arms maneuver competence evolves, it is not being inhibited. The alternative is to place the desire for combined-arms maneuver at the altar of communications technology rather than the demands of the situation.

A generation of leaders are comfortable with CT based on their experiences in the contingency operations in Iraq and Afghanistan, where those systems have evolved. However, the necessities of combined-arms maneuver are different just as the assumptions across the range of military operations for leveraging mission command and utilizing CT vary. The authors of this article have vast experience in Iraq and Afghanistan in a variety of positions. Those experiences formed, in part, the optic for how we've viewed mission command not only for this paper but also for fighting this battalion. This battalion's experience has been that effective mission command emerges when commanders ensure their organization and systems are clear and codified in SOPs; plan thoroughly, and often, so the entire team understands each other and trust emerges; and execute based on the command's needs, not on constraints imposed by technology. It is our sincere hope this article helped further the dialogue and perhaps provided a useful insight into mission command. ■

Notes

1. Army Doctrine Reference Publication (ADRP) 6-0, *Mission Command* (Washington, DC: U.S. Government Publishing Office [GPO], 17 May 2012).

2. John T. Nelsen II, *Auftragstaktik: A Case for Decentralized Battle* (Fort Belvoir, VA: Defense Technical Information Center, September 1987), 21.

3. 1-4 Infantry Regiment (IN) receives an order from the Operations Group, Joint Multinational Readiness Center for each phase or battle period during a rotation. While there are directed actions, or injects, to achieve training objectives, and the unit must update its higher headquarters and backbriefing the Operations Group, the Warrior Battalion experiences "free play"—the ability to plan and fight as freely as the opposing rotational unit.

4. Field Manual 6-0, *Commander and Staff Organization and Operations* (Washington, DC: GPO, May 2014), 9-3.

5. Peter Senge, *The Fifth Discipline: The Art & Practice of Learning Organization* (New York: Random House, 1990), 217. "When a team becomes more aligned, a commonality of direction emerges, and individuals' energies harmonize. There is less wasted energy. In fact, a resonance or synergy develops … There is a commonality of purpose, a shared vision, and understanding of how to complement one another's efforts."

6. Joint Capability Requirement is the incremental upgrade of Force XXI Battle Command Brigade and Below, and Blue Force Tracker.

7. Martin van Creveld, *Command in War* (Cambridge, MA: Harvard University Press, 1987), 261. "No single communications or data processing technology, no single system of organization, no single procedure or method, is in itself sufficient to guarantee successful or even adequate conduct of command in war."

8. Senge, *The Fifth Discipline*, 220–21. "The discipline of team learning requires mastering the practices of dialogue and discussion … the discipline of team learning requires practice."

9. Daniel Goleman, Focus (New York: HarperCollins, 2013), 28. "If we haven't practiced enough, all of these (activities) will take deliberate focus. But we have mastered the requisite skills to a level that meets the demand, they will take no extra cognitive effort—freeing our attention for the extras seen only among those at the top levels."

10. Army Doctrine Reference Publication (ADRP) 2-0, *Intelligence* (Washington, DC: U.S. GPO, 31 August 2012), chap. 2-2.

11. Malcom Gladwell, Blink: The Power of Thinking without Thinking (New York: Little, Brown, 2005), 141. "Truly successful decision-making relies on a balance between deliberate and instinctive thinking."

12. Ibid., 141.

13. Malcom Gladwell, *Outliers: The Story of Success* (New York: Little, Brown, 2008). Gladwell describes how "researchers have settled on what they believe is the magic number for true expertise: ten thousand hours." Whether it is actually closer to eight thousand or to twelve thousand, one thing is clear: if someone is going to be an expert in their field, they must strive for maximum repetition.

14. Drew Silver, "Chart of the Week," Pew Research Center, last modified 14 March 2014, accessed 7 November 2017, http://www.pewresearch.org/fact-tank/2014/03/14/chart-of-the-week-the-ever-accelerating-rate-of-technology-adoption/; Daniel Burrus, "The Internet of Things Is Far Bigger than Anyone Realizes," Wired (website), November 2014, accessed 7 November 2017, https://www.wired.com/insights/2014/11/the-internet-of-things-bigger/.

15. "Project Manager Mission Command," PEO-C3T (Program Executive Office Command Control Communications-Tactical) (website), accessed 17 November 2017, http://peoc3t.army.mil/mc/.

16. ADRP 6-0, *Mission Command* (Washington, DC: U.S. GPO, 17 May 2012), 3-8–3-11.

17. Asymmetric Warfare Group, *The Defense of Battle Position Duffer: Cyber Enabled Maneuver in Multi-Domain Battle* (Fort Meade, MD: Asymmetric Warfare Group, 2016), 5–6.

18. Two key issues keep 1-4 IN from greater use of Joint Capability Requirement systems, the speed of position-location updates and the requirement to connect to a satellite. In high-intensity conflict, units are moving faster and events are taking place quicker than the rate of updates, meaning commanders using the systems are receiving inaccurate information and thus making potentially incorrect decisions. Additionally, units must operate in tree cover and steep, undulating terrain, both of which can degrade the connection to the satellite. This effect increases the further north operations take place.

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