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Mission Command—Transforming Command and Control

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Mission Command — Transforming Command and Control

by Dick Pedersen

Abstract

Admiral Mullin stated that future commanders must combine and subsequently adapt some combination of combat, security, engagement, and relief and reconstruction. Today the U.S. Military is faced with ill-structured problems set within complex operational environments. Such conditions are highly likely to continue in the near and distant future. It is also likely that the whole of government approach will not be feasible anytime soon and the military will continue to be the lead actor for projecting all instruments of national power. Admiral Mullins further stated we must create new doctrine and establish new methods for integrating our actions. Complex problems set within complex operational environments cannot be fully understood before beginning to solve them. The true nature of such problems can only be learned through operational actions. The *Capstone Concept for Joint Operations (CCJO)* states that the more widely the premises and practices of *mission command* are infused throughout the joint force, the more effective joint synergy will be. Refinements to various command and control concepts are needed in order to meet future operational requirements. Proposed refinements revolve around: framing the operational environment and its problems, operational design, learning through action, and integrating operations process activities within a more holistic mission command.

Introduction

Admiral Mullen, the Chairman of the Joint Chiefs of Staff, stated in his 2009 *CCJO* that future commanders will combine and subsequently adapt some combination of combat, security, engagement, and relief and reconstruction. He went on to say we need to create new joint and Service doctrine and establish new methods for integrating our actions.¹

Dr. David Alberts asserts that the development of new ideas about future command and control is hampered by the very term command and control.² The current *CCJO* states that the more widely the premises and practices of *mission command* are infused throughout the joint force, the more effective joint synergy will be.³ Any detailed discussions of these two notions are beyond the scope of this paper, but it is pertinent to note that emerging notions of *mission command* are seeking to change command and control definitions, ideas, methods, and lexicons.

Notions of broadening current mission command conceptions are under development and involve new thinking about mission command, battle command, command and control, and warfighting functions. Mission command is currently defined as the conduct of military operations through decentralized execution based on mission orders. Battle command is the art and science of understanding, visualizing, describing, directing, leading, and assessing forces to impose the commander's will on a hostile, thinking and adaptive enemy. Command and control is the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of a mission. The command and control warfighting function is the related tasks and systems that support commanders in exercising authority and direction.⁴

Emerging ideas of expanding mission command go well beyond the long-standing preference for decentralized execution to an imperative for decentralized operations. Future mission command is envisioned to apply the imperative of decentralized operations, where commanders—within the intent (broad purpose) of higher headquarters—frame their own mission problem, develop the situation through action, and adapt their operation or reframe their mission problem altogether, as required. These notions will compel a cultural change. This emerging conception of an expanded mission command may render the term battle command superfluous and call for its elimination from the lexicon. Additionally, it calls for current conceptions of command and control to be subordinated to mission command and that the

command and control warfighting function be replaced by a mission command warfighting function. Once again, any detailed discussions of these emerging ideas are beyond the scope of this paper. They are offered only to outline the opportunity for change that currently exists.

Mission command, in its emerging context, is the exercise of decentralized authority over military means and influence on other means by a properly designated military commander to understand and frame operational problems, visualize solutions, plan and describe actions, prepare for and direct execution, learn through action, continually assess results, and reframe as appropriate in order to prevail in full spectrum operations.

This paper continues the time-honored process for introducing changes to doctrine and methods for integrating military actions that may lead to the changes called for by Admiral Mullen. The discussion is from the perspective of U.S. Army commanders chartered with complex missions, but also has great merit and relevance within joint, interagency, intergovernmental, and multinational command and control processes as well. Five command and control concept refinements for further discussion and subsequent critical evaluation are offered. Briefly, this paper proposes five command and control concept refinements that would:

- 1) Include *framing* as a new major operations process activity,
- 2) Include *design* as a new operations process subcomponent used to conduct framing,
- 3) Improve the understanding of the *context* of key operation process subcomponents by describing them as the methods by which each major operations process activity is conducted,
- 4) Include experiential *learning* through action in conceptual thinking of mission command, and
- 5) Improve the understanding of how mission command interacts with the operations process by describing the operations process as an *integral subset* of mission command.

These five refinements are *not* necessarily posed as a holistic approved solution that will solve all future operational problems. Thus, the proposed refinements are offered in the spirit of first proposing solutions to help define and understand a complex problem as a precursor to careful study, testing, and evaluation. These refinements have the potential to create a new framework of thinking within which more holistic missions can be effectively prosecuted by military commanders, including those requiring the application of and coordination with ‘soft’ power. Taken together, these five refinements may contribute to the creation of new doctrine and methods for integrating military actions that Admiral Mullen suggests are needed for future military success in a complex world.

The Problem with Current Command and Control Concepts

The principle problem with applying traditional command and control concepts in both future and current operational environments is the very idea of ‘commanding’ and ‘controlling’ means that are not under a military commander’s command authority. If it is not traditional command and control military commanders are exercising in current and future operational environments, then what are they exercising and how do they proceed? Identifying what they are actually exercising defines the problem with current command and control concepts. Very succinctly, in current and future operational environments, military commanders must not only apply military power to achieve military objectives, they must also insure the effective application and integration of all national powers to achieve more holistic objectives.

Although traditional command and control notions offer effective ways to correlate military forces and means, there are no commonly understood ways to correlate non-military means or to integrate and apply other types of national power to create the desired conditions. Commanders find themselves in

positions that range from being the lead actor in applying non-military powers with or without interagency representation, to being supporters or facilitators, to doing nothing with them. Commanders must not only optimize their potential combat power, they must optimize their potential *mission power*—the power to accomplish any and all missions across the full spectrum of conflict in any operational environment. Mission power is the power exercised by military commanders to accomplish their assigned mission, not to be confused with ‘normative’ power which relies on civilian rather than military means. All levels of command will continue to face these challenges in future operational environments as the distinctions between the strategic, operational, and tactical layers become less and less distinct.

Since operations in Afghanistan and Iraq began, tactical organizations at every echelon have been conducting continuous, sustained operations over long periods of time. Brigades and battalions are already producing their own versions of long range operational plans because they have found this the best way to articulate a broad set of ideas about how to solve ill-structured problems in complex environments over time.⁵ Although these plans may or may not link a series of related major operations aimed at achieving strategic and operational objectives within a given time and space, they serve the vital purpose of outlining what the unit seeks to accomplish on their twelve-fifteen month combat tour in a complex environment posing ill-structured problems. Problems arise when incoming units’ various frameworks of thinking are not compatible with that of the units they are replacing. Suffice it to say that commanders are looking for, and are in need of, help.

The capability to apply traditional military power to resolve primarily military problems remains a mainstay critical to national security. But current and potential future conflicts require that new capabilities be developed to round out national security capabilities. Today the military faces ill-structured problems within complex operational environments. Such conditions are likely to continue in the near and distant future. Emerging ‘whole of government’ concepts, in many cases, still list the military as the lead actor for applying all instruments of national power. Given these facts, it is appropriate to consider refining command and control concepts in order to enable the military to more effectively meet the challenges of current and future unified actions in full spectrum environments.

Unified action is the synchronization, coordination, and integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort.⁶ For the military, this means simultaneously conducting and effectively integrating offensive, defensive, irregular warfare, and stability operations within complex environments. Major environmental complexities include operations that: involve more than one Service; interact with other U.S. governmental agencies; require interaction with foreign militaries and governmental agencies; interact with nongovernmental organizations; effectively deal with strategic communications in the information age; prevail in the cyber-electromagnetic spectrum; and effectively integrate and apply diplomatic, informational, military, and economic instruments of national power as the means to affect the political, military, economic, social, information, and infrastructure variables within the operational environment.

Future operational environments are forecasted to be competitive learning environments involving many actors where intellectual challenges grow increasingly significant. The true nature of such problems, in many cases, can only be learned as operations are conducted. Commanders must not only continually act in order to learn, they must create systems for learning as they act.⁷ Historically, when operational problems were relatively simple and comparatively well structured, most commanders were able to effectively integrate all the necessary activities to resolve the problems. When operational environments and problems are complex, it is increasingly difficult for commanders to effectively integrate all the requisite activities called for by various problem solving concepts, especially when operating in time-compressed scenarios without the necessary subject matter expertise readily at hand. Contemporary challenges have shown that this reality is not limited to the operational and strategic levels of war. Emerging mission command ideas must thus be broad enough to apply to all levels of war yet specific enough to be practicable at each level. Undoubtedly, mission command will manifest itself somewhat differently at each level of war as it will with each command echelon.

It is likely that even tactical commanders will continue to face complex problems where the burden to achieve the requisite situational understanding lies squarely on their shoulders alone.⁸ What is needed is a way to rapidly and continually evolve and share reliable mental constructs of the problems at hand.⁹ Traditional command and control concepts are ineffective when operating within interagency or intergovernmental environments, or even in some multi-national environments. Operations with joint and multi-national forces, along with a mix of current and future organizations and systems with varying degrees of interoperability, exacerbate this challenge. Given these considerations and the problems associated with current command and control concepts, it is appropriate to discuss how to transform current command and control concepts to be more relevant and useful.

Probably the biggest challenge with changing current command and control concepts is the natural institutional resistance to change. Emerging notions of a new and more holistic definition of mission command clearly demonstrate that senior leaders recognize change is needed and are setting conditions for just such change. Although an opportunity for change has been created, exactly what the changes should be are not clearly articulated and are thus in question. A related concern is the notion that a large institution can only absorb so much change at one time because too much change equates to ‘cultural change’ which garners even stronger resistance. An institution’s natural response to any suggestion of substantive change is to resist such change for any variety of rational. Institutional change must thus be introduced, implemented, and managed very carefully, lest no changes be made at all.

The Proposals

Refinements to command and control concepts should be prudently considered in order to meet current and future operational challenges. Emerging framing and design concepts seek to enable shared understanding of the complexities of the operational environments and its problems. There are conflicting views of how framing and design fit into the operations process and how they relate to the military decision making process (MDMP). It is generally accepted that commanders must learn through action, but it is not clear how commanders accumulate and synthesize full spectrum knowledge and ensure it is inculcated throughout their organizations. The current description of the commander’s role in the operations process enhances current operations process activities. Describing the role of the operations process within emerging notions of mission command will enhance mission accomplishment in current and future complex, uncertain environments.

When facing complex problems it is increasingly important to consider how the operations process can better support commanders as they seek to understand operational complexities, devise useful problem structures for complex problems, and visualize innovative problem solving approaches. Complex problems cannot be fully understood until solutions are proposed and developed through collaborative discussion and then learned about through actions executed. Along this line of thinking, and assuming the very idea of refining command and control concepts is itself a complex problem, the next five sections discuss the proposed refinements in some detail.

P1: Include *framing* as a new major operations process activity.

The first three proposed refinements relate directly to the operations process. The first is to include *framing*—the act of establishing a situational context by examining a problem from multiple perspectives—as a new major command and control activity performed during the operations process.¹⁰

The operations process currently consists of four major command and control activities performed during operations: planning, preparing, executing, and continuously assessing progress of an the operation.¹¹ This paper proposes that framing be considered a new major operations process activity that precedes planning and follows execution. Current and future operational environments present situations of rapid change where only flexible, adaptive, and learning organizations can prevail. Commanders at all levels must continually balance time and resource demands between framing and the

other major operations process activities and must facilitate continually learning, adapting, and appropriate reframing.

Current and future complex problems pose a set of undesirable conditions that lack clear solutions or even consensus on the nature and scope of the problem. An understanding of the environment must first be framed by analyzing the operational variables in order to provide a view emphasizing the human aspects of the operational environment.¹² Problem framing then describes the initial conditions upon which action will be predicated. Initially, the description of these conditions may be incomplete, but will provide a basis from which the commander can begin to operate and learn the true nature of the operational problems. Framing the problem defines the art of the possible, warns what may be unachievable, and anticipates the potential evolution of both the operational environment and the problem as operations are executed. A mutual understanding of the problem and its context empowers leaders at every level to adapt their operations rapidly toward the desired ends.¹³ A frame is thus a perspective from which an amorphous, ill-defined problematic situation can be made sense of and acted upon.¹⁴ Given current and future complex problems facing commanders, the art of problem framing must become a requisite part of their career-long education, training, and experiences.

The initial problem frame sets parameters for reframing the problem as the commander's understanding expands and the problem becomes clearer or changes over time. This understanding is the basis for unity of effort at every command level and must consider all instruments of power. Ultimately, the initial problem frame sets the conditions for learning about the problem as operations are conducted.¹⁵ Within the context of mission command, when commanders learn the actions undertaken have not yielded the desired conditions, they must consider whether to reframe the problem. Reframing is restarting the operational design after discarding the hypotheses or theories which defined either the environmental or problem frame.¹⁶ *Reframing* occurs naturally during or following execution after an organization has assessed and learned while operating to solve a problem.¹⁷ If framing is a major operations process activity, there must be a method by which to conduct it. This paper proposes that design is the method by which framing is conducted.

P2: Include *design* as a new operations process subcomponent used to conduct framing.

Currently, key subcomponents of the operations process include MDMP, rehearsals, and RDSP (rapid decision and synchronization process). It is proposed that *design* be added to the beginning of the operations process as the method used to frame the operational environment and the problems within it. In this context, design is a method, not to be confused with 'the operational design' which is synonymous with 'the frame'. Design is a method for applying critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them. Critical thinking captures the reflective learning essential to design.¹⁸ Design is a commander-led method that involves a cycle of inquiry, contextual understanding, and synthesis that includes rigorous debate and collaboration within the constraints of available time and people.

Design can begin by creating graphic and narrative descriptions that capture the history, current conditions, future goals, relevant actors, tendencies and potentials within the operational environment. Learning about the operational environment typically involves analysis of the operational variables.¹⁹ This enables visualization of the environment not only in terms of enemy, adversary, friendly, and neutral actors, but also in context of the political, military, economic, social, information, infrastructure, physical environment, and time variables.²⁰ Descriptions of risks, resources, and tensions between relevant actors are considered once analysis yields the appropriate understanding of the environment. Analysis results are synthesized into problem sets and then an operational approach that seeks to change existing conditions into desired conditions is developed. Design promotes an enhanced level of situational understanding, enables the ability to frame the problem, provides a basis for further learning, and enhances the commander's ability to provide insightful planning guidance.

There are competing views of the proper context for design and the other operations process subcomponents. One extreme view is that design supersedes the MDMP and renders it obsolete. The

other extreme is that everything outlined in design is already embedded within the MDMP and is thus unnecessary. A misunderstanding is that design is another version of systemic operational design involving overly engineered procedures. An associated misunderstanding is that any analysis using the operational variables is walking down the road of system of systems analysis and effects based operations. Another view immediately rejects any ideas perceived as bounding or more narrowly focusing the ‘campaign’ design process. Yet another view is that design should remain solely at the operational and strategic levels and has no place at tactical levels because of time and personnel resource constraints. An improved contextual description of the key operations process subcomponents, discussed in the next proposition, would serve to clarify their relationship to each other and to the major operations process activities in a way that is be relative and useful at all echelons of command.

P3: Improve the understanding of the *context* of key operation process subcomponents by describing them as the methods by which each major operations process activity is conducted.

To improve understanding of the operations process, we should focus on the *context* of the operations process. Design, MDMP, rehearsals, and RDSP (rapid decision and synchronization process) are the principle methods necessary to effectively execute the major activities of framing, planning, preparing, and executing, respectively. Design is the process used to *frame* the operational problem and set conditions for MDMP. Design seeks to frame the problem and MDMP seeks to solve the problem. MDMP is the process used to *plan* the operation and set conditions for rehearsals. Rehearsals are the primary procedures used to *prepare* for the operation and set conditions for RDSP. RDSP is the process used to *execute* the operation. Should it be learned that the operation needs to continue, the nature of RDSP decisions and continual *assessments* of operational effectiveness set conditions for a new iteration of design which is then the method used to *reframe* the problem and set conditions for another MDMP.

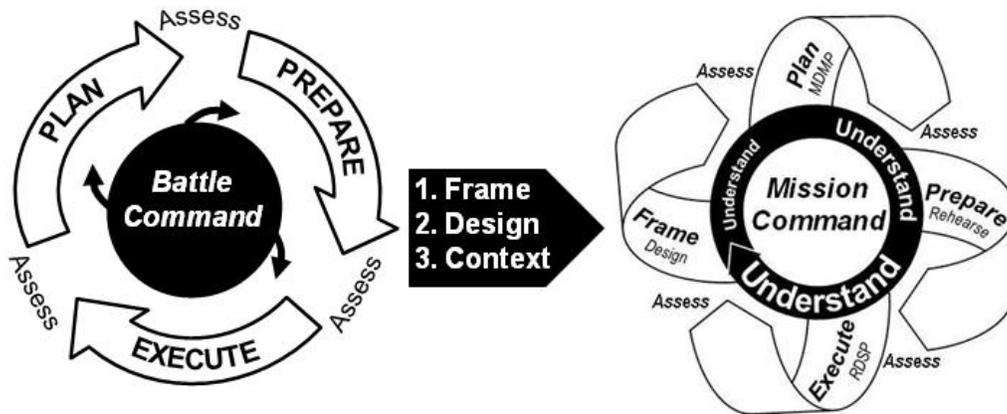


Figure 1: Refining the Operations Process

Two-dimensional diagrams, even if they appear circular, tend to make any role, process, or methodology appear linear. In fact, command and control concepts are anything but linear or circular. Peter Senge, a noted expert on organizational learning, asserts that mental models represent a belief, idea, or deeply held internal image about how something works. Very often, we are not consciously aware of our mental models or the effects they have on our behavior. Sometimes these images limit us to familiar ways of thinking and acting.²¹ Figure 1 portrays how our mental model of the operations process²² might transform to portray the new ideas. Framing, design, and the context by which design and the other subcomponents relate to each other and to the process as a whole are included. The commander’s understanding grows with the conduct of each major operations process activity while each major activity simultaneously sets the conditions for the next major activity.

The current operations process implicitly assumes that plans and orders from higher headquarters have framed the problem for their subordinates. Although orders flow from higher to lower, understanding often flows from lower to higher, especially when operational problems are complex.²³ According to *The U.S Army Functional Concept for Battle Command, 2015-2024*, a refined operations process consists of five major command and control activities performed during operations: *framing*, planning, preparing, executing, and continuously assessing while operating.²⁴ The commander remains at the center of the operations process, leading it. The primary purpose of each major operations process activity is to increasingly enhance the commander’s situational understanding while simultaneously setting conditions for the next major operations process activity. All command echelons (tactical, operational, and strategic) must conduct some degree of framing, planning, preparing, executing, and assessing activities within the constraints of available time and personnel. Within the *context* of the operations process, the key operations process subcomponents are the methods by which each respective major operations process activity is conducted.

P4: Include experiential learning through action in conceptual thinking of mission command.

The fourth proposed command and control concept refinement is to include *learning* as a mission command activity. Since the future entails complex problems that cannot be fully understood before beginning to solve them, commanders must *experientially learn through action* to gain or enhance their situational understanding. This is not to say that the commander’s staff and other partners do not also learn through experience, but the perspective discussed here is that of military commanders conducting their mission command activities.

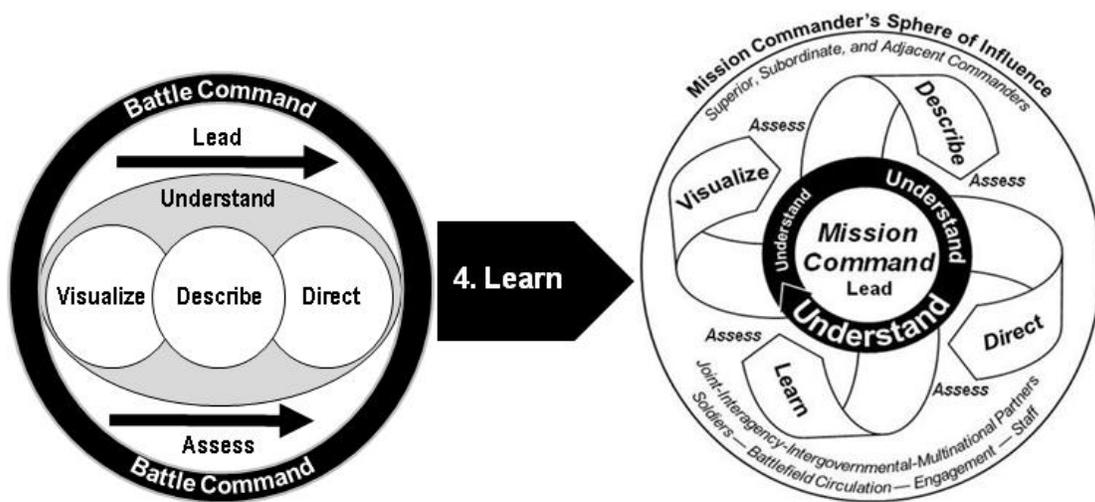


Figure 2: Transforming battle command into mission command

Commanders continually learn and increase their situational understanding through a variety of means. They influence and are influenced by their interaction with their staffs during the major operations process activities. They also influence and are influenced by other commanders, soldiers, battlefield circulation, engagement, and partners from joint, interagency, intergovernmental, and multinational organizations. In the context of learning as a mission command activity, experiential learning through action is the culmination of all learning activities in the operational environment leading to greater situational understanding. Figure 2 portrays how our mental model of battle command²⁵ might transform into a more holistic mission command model that includes learning and acknowledges the interaction and influence from more sources than the staff and the operations process.

Learning, assessing, and understanding are related but are not the same. Assessing is simply the process of measuring effectiveness. Understanding is an appropriate recent addition to how battle command was previously described. Commanders begin to understand by analyzing data and information on the enemy and the operational variables. This enables them to develop an understanding of the situational context and to frame operational problems.²⁶ Understanding is a continual function of cognitively analyzing, processing, and synthesizing assimilated facts, data, and information to draw conclusions and make sense of something. The commander gains increasingly greater understanding with each major operations process activity.

For clarity of purpose, it is necessary to describe the context of *learning* as a mission command activity. Unquestionably, all learning in future complex environment must effectively account for all instruments of power and all environmental variables. There are many modes, methods, and ways of leaning, all of which should be capitalized upon by all participants throughout any and all operations. The *Army Leader Development Strategy* calls for a commitment to life-long learning through an appropriate balance of training, education, and experience.²⁷ Learning is the cognitive activity that leads to greater understanding. Learning, in the context of a mission command activity, refers primarily to experiential learning through action. Such learning occurs when assessments of actions alter cognitive processing and yield recognition (re-‘cognition’) of better situational understanding. Said another way, experiential learning through action occurs when memories of actual operational cause and effect experiences become part of commanders’ instincts.

P5: Improve the understanding of how mission command interacts with the operations process by describing the operations process as an *integral subset* of mission command.

The last proposed operating concept refinement is to describe the operations process as an *integral subset* of mission command. Current conceptual thinking is that battle command describes the commander’s role in the operations process and that the commander drives the operations process. Although currently both battle command and the operations process are described as complimentary processes that interact, they are still principally described as two distinct entities; one that belongs solely to the commander and one oriented on the staff where the commander plays a driving role.

When facing complex problems, current mental models make it difficult for commanders to effectively integrate all the requisite activities called for by both battle command and operations process concepts. The likelihood of unified action in full spectrum operations continuing to pose complex problems warrants reconsidering how to think about the interaction between the operations process and what is currently called battle command. This is not to suggest that current and emerging ways of thinking are not organized with a clear focal point, because they are. However, after discussion and evaluation, it may be discovered that the appropriate focal point is a newly defined, commander-centric, integrated, and holistic mission command—not design, MDMP, or even the operations process.

Future commanders at all levels must continually expand their capacity to create their own future. Doctrine compiles mental models and ideas through which commanders see themselves, their environment, and adversaries. As a learning organization, we must recognize the power of these mental models and continually assess them to ensure they remain correct and relevant.

Although the commander plays a very appropriate role within the operations process, it may be helpful—and more congruent with commander-centric thinking—to consider that the operations process has a role in mission command. Figure 3 portrays this way of thinking in a commander-centric, integrated, and holistic mission command mental model. The commander *leads* all activities and, with the staff’s assistance, continually *assesses* the situation. All major operations process activities increasingly enhance the commander’s ability to *understand* the situation while simultaneously setting conditions for the next major operations process activity. Framing helps the commander *visualize* and set conditions for planning. Planning helps the commander *describe* requisite operational actions and set conditions for preparing. Preparing helps the commander *direct* operational actions and set conditions for execution. Executing seeks mission accomplishment and enables the commander to experientially *learn*

through action and set conditions for reframing, if deemed necessary. This commander-centric, integrated and holistic mission command mental model enables the commander to harness the collective intellectual capability of all operational participants by duly considering their input and discourse on the issues.



Figure 3: Commander-centric, integrated, and holistic mission command mental model

Conceptual thinking of mission command must holistically revolve around the commander, but must effectively harness the collective intellectual capacity of the staff and others. The operations process is an *integral* commander-led and staff-managed *subset* of mission command that influences and is influenced by the commander. Rather than the commander being an extension of the operations process with a role to play in it, the operations process must be an extension of the commander’s conceptual thinking. Just as each mission command activity is always performed to the degree time allows, each major operations process activity is also performed to the degree time allows, regardless of whether a particular command echelon has a staff section specifically focused on it. This way of thinking focuses each major operations process activity on supporting the appropriate mission command activity leading to greater and greater understanding and enabling better inclusiveness, integration, and commander-centric thinking, activities, and actions.

Conclusions

Enacting changes to time-honored command and control concepts is a complex problem. Effectively integrating operations process within mission command activities in current and future environments is also a complex problem. Complex problems cannot be fully understood until possible solutions are proposed and developed through collaborative discussion and learned about through action. This paper provides a starting point for that process by offering five substantive proposals that may now be discussed and evaluated in order to stimulate the future adaptive transformation of command and control concepts. Specifically, the paper proposed that we:

- 1) Include *framing* as a new major operations process activity. Ill-structured problems within complex operational environments mandate that framing occur before planning.

2) Include *design* as a new operations process subcomponent used to conduct framing. The design process should be codified so there is a commonly understood and practicable way to conduct framing at all levels of command.

3) Describe the *context* of key operations process subcomponents as the methods by which each major operations process activity is conducted. The extents to which design, MDMP, rehearsals, and RDSP are conducted are a function of time and people available at any particular command echelon.

4) Include experiential *learning* through action in conceptual thinking of a newly defined mission command. A corollary is that the commander must establish and maintain a framework for organizational learning in order to effectively disseminate and inculcate accumulated knowledge throughout the organization.

5) Describe and think of the operations process as an *integral subset* of a new, holistic mission command concept. This is more conducive to the commander leading and ensuring all the requisite mission command and operations process activities are conducted in an inclusive, integrated, and holistic fashion.

These five proposed command and control concept refinements, after proper discussion and validation, may better enable the military to more effectively meet the challenges of current and future unified actions in full spectrum environments. Although the discussion in this paper is from the perspective of U.S. Army commanders chartered with complex missions, the ideas put forth here have great relevance and merit within joint, interagency, intergovernmental, and multinational command and control processes. These ideas should now be collaboratively discussed, experimented with, and further developed in order to better learn the true nature of the problem set and ultimately to solve the complex problems associated with current and future commander-centric, integrated, and holistic mission command. These five refinements within the context of a newly defined mission command concept offer a framework within which both ‘soft’ power and ‘hard’ power can be transformed into ‘smart’ power. This is not the beginning of the end, or even the end of the beginning, but merely the continuation of a traditional and time-tested process for improving doctrine and methods.

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¹ Office of the Chairman of the Joint Chiefs of Staff, *Capstone Concept for Joint Operations (CCJO)*, version 3.0, 15 January 2009, pp. iii-iv.

² Alberts, David S., Agility, Focus, and Convergence: The Future of Command and Control, *The International C2 Journal, Volume 1*, 1 November 2007, p. 1.

³ *CCJO*, pp. 25-26

⁴ Department of the Army, *Field Manual 3-0, Operations (FM 3-0)*, February 2008, pp. G-2 – G10.

⁵ Banach, Stefan J., Colonel, Educating by Design, *Military Review*, March-April 2009, p. 97.

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- ⁶ *FM 3-0*, p. G15.
- ⁷ Department of the Army, *TRADOC Pam 525-5-500, The U.S. Army Commander's Appreciation and Campaign Design (CACD)*, 28 January 2008, p. 19.
- ⁸ *TRADOC Pam 525-5-500 (CACD)*, p. 12.
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- ¹⁰ *TRADOC Pam 525-5-500 (CACD)*, p. 21.
- ¹¹ *FM 5-0*, p. vi.
- ¹² *FM 3-0*, p. 1-5.
- ¹³ *TRADOC Pam 525-5-500 (CACD)*, p. 17.
- ¹⁴ Johnson, Robert, Colonel, Information briefing on *Design* presented to GEN Dempsey and Gen Mattis (*Design briefing*), 28 July 2009.
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