



# The Mitchell Forum

## Clearing the Fog and Friction of Command and Control

by Col Frederick Coleman, USAF

### About the Forum

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### Introduction

There's never been a better time to be in the command and control (C2) business. The joint staff is investing heavily in the Joint All Domain Command and Control (JADC2) program, which is designed to accelerate commanders' decision cycles and close operational gaps. In turn, all the military services have programs nested under JADC2. The Department of the Air Force has the Advanced Battle Management System (ABMS); the Department of the Army has Project Convergence; and the Department of the Navy has Project Overmatch. The Air Force is also deep in the throes of overhauling its tactical C2 platforms by divesting their legacy Joint Surveillance Target Attack Radar System (JSTARS) and replacing their Airborne Warning and Control System (AWACS) with the more modern E-7 Wedgetail. At the same time, the service is advancing their Tactical Operations Center (TOC) family of systems concept.

With all this upheaval, it's tough to keep track of who's doing what to modernize command and control. There's a lot of fog and friction, and that can lead to redundant, duplicative, and sometimes unnecessary research, experimentation and testing that comes at a high dollar cost and an even higher opportunity cost. One source is the common mischaracterization of C2 and its conflation with related functions. To help dispel some of this fog and friction, C2 practitioners, customers, and developers should return to the use of precise, doctrinally grounded terminology by offering a very simple definition of C2, describing the relationship between battle management and C2, and differentiating C2 from other warfighting functions. Getting the language right will help clarify requirements, which in-turn will speed up delivery of capabilities.

## Defining Command and Control \_\_\_\_\_

Joint doctrine defines command as the authority a military commander lawfully exercises over subordinates to assign missions.<sup>1</sup> It goes on to describe command as “the art of motivating and directing people and organizations to accomplish missions.” Control is the commander’s direction to his forces; it is a form of communication that conveys decisions and intent. Joint Publication 1 says, “to control is to manage and direct forces and functions consistent with a commander’s command authority.”<sup>2</sup> The authority to control is inherent in command, but command is not always inherent in control. Often the personnel or systems that execute control are acting on the commander’s behalf—implementing the commander’s authority, but they do not hold that authority themselves. *Simply put, command is the authority to tell someone what (or what not) to do, and control is the act of telling someone what (or what not) to do.*

Command and control exists at all levels of war. At the strategic level, the president or the secretary of defense have the authority and the ability to direct the U.S. Armed Forces to undertake a campaign or a specific mission. For example, C2 at the strategic level might look like Congress issuing a declaration of war or the authorization to use military force. At the operational level, combatant commanders and component commanders have the authority and the ability to develop and direct specific forces to achieve strategic objectives. C2 at the operational level might look like an execution order issued by a combatant command or an air tasking order (ATO) issued by an air component commander. At the tactical level, trained personnel use systems and platforms to direct and coordinate actions and activities in order to meet operational objectives.

## The Relationship Between Command and Control and Battle Management \_\_\_\_

C2 at the tactical level is often referred to as battle management (BM). The people who conduct battle management are referred to as battle managers. C2 at the tactical level might look like a battle manager determining where to send the next set of scrambled fighters when several lanes require additional support. For clarity, it is important to note that at the terminal level (mission task execution), there are activities that take place that can be considered command and control but are not battle management. For example, a flight lead directing the tactic for an intercept or a joint terminal attack controller (JTAC) clearing a striker to employ ordnance are both forms of command and control but are not battle management.

Battle management is a subset of C2. Joint Publication 3-01 defines battle management as “the management of activities within the operational environment based on the commands, direction, and guidance given by appropriate authorities.” It goes on to describe battle management as the act of determining “where, when, and with which force to apply capabilities against specific threats.”<sup>3</sup> Command authorities can be delegated to any level, including to battle managers. However, battle managers are not required to hold command authorities themselves in order to conduct battle management; they simply need to manage activities consistent with the authorities of the commander.

## Differentiating Command and Control from Other Functions \_\_\_\_\_

C2—the authority and the ability to direct forces—is arguably the oldest function of warfighting. Our predecessors, going back to antiquity, recognized C2—by various names—as critical to victory in warfighting. Today, C2 is one of the seven joint functions defined in joint doctrine.

The other joint functions are intelligence, fires, movement and maneuver, protection, sustainment, and information.<sup>4</sup> C2 is also one of five Air Force core missions. The other core Air Force missions are air and space superiority; intelligence, surveillance, and reconnaissance (ISR); rapid global mobility; and global strike.<sup>5</sup>

### C2 is not ISR

In the Air Force, C2 is often conflated with the ISR mission, conveyed as a singular concept, “C2ISR.” Doctrinally, C2 and intelligence are unique joint functions. Similarly, C2 and ISR are unique core Air Force missions. They work in tandem with each other, but they are as different from each other as any other two functions or missions. Conflating C2 and ISR is the equivalent of conflating air superiority and ISR. The air superiority mission is extremely important and is both informed by and informs the ISR mission. In fact, success against a peer adversary is highly unlikely in the absence of ISR (i.e., if effectors like fighter assets

must rely solely on their own organic sensor, or no sensor at all). Similarly, ISR enhances understanding about the operational environment, and the decision quality of C2 practitioners is directly correlated with the accuracy of their perception of the operational environment. For battle management in particular, surveillance plays a crucial role, without which battle managers’ decision timeliness and capacity is severely limited.

Although C2 and ISR are interdependent, they are different missions that require different and unique skill sets. This is particularly true of the intelligence function of ISR, apart from surveillance and reconnaissance. At a macro level, all the Air Force’s core missions share overlaps, but lumping them together as a single concept or single acronym obfuscates critical requirements.

### C2 is not battle management

Similar to C2ISR, it is common to see the joint term “battle management” conflated or adjoined to the term “C2”. Often this is expressed through the non-doctrinal but



Explanation of the layers to command and control.  
 Source: Courtesy of Col Frederick Coleman, USAF.

very common term, “battle management command and control,” abbreviated to “BMC2”. Not only does the term BMC2 not exist in doctrine, but if battle management is a subset of C2, then BMC2 is redundant. Using terms like BMC2 obfuscates the type of function being described. There is a significant difference in the requirements of a tactical C2 system—a battle management system—used to pair airborne fighters to threats, and an operational C2 system used to develop an air tasking order for an entire theater. To use an analogy, battle management is to C2 what defensive counter air (DCA) is to air superiority (AS). Just as BM is a subset of C2, DCA is a subset of air superiority. Adjoining BM to C2 via the acronym BMC2 is as contextually confusing as adjoining defensive counter air to air superiority via the acronym “DCAAS” (an acronym that has never been used in the history of airpower).

When discussing systems, taskings, or requirements, “BMC2” is unclear. Instead, it is more helpful to use the doctrinal term “battle management” if discussing the tactical control mission or the term “C2” if referring to the broader C2 mission that also resides at the operational and strategic level of war.

### **C2 is not communication or computers** \_

Finally, the function of C2 is dependent on communication. Control requires the ability to communicate. Relatedly, in many

cases C2 is also dependent on computers. Because of this dependency, some have taken to changing the acronym “C2” to “C3” (command, control, and communication) or “C4” (command, control, communication, and computers). Again, these deviations from doctrinal vernacular are unhelpful. C2 is not the only joint function or core mission that is dependent on communication and computers. In fact, it could be argued that the ability to communicate and compute is a fundamental element of any modern joint function or core mission. But that doesn’t mean a “C” should be added to all military acronyms.

### **Conclusion**

The U.S. military’s ability to command and control its forces has been a competitive advantage for decades and will be decisive in a peer or near-peer fight. As C2 experts from the DoD and the defense industry continue their efforts to modernize this joint function and core mission, it will be important to communicate using precise language. Catchy acronyms like “C2ISR,” “BMC2,” and “C3” mask critically important functions that should be treated as separate but interdependent capabilities executed by qualified practitioners. Forgoing these buzzwords in favor of more precise terminology will help clear up some of the fog and friction in the enterprise, and in so doing, hopefully help accelerate innovation. 🌟

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### **Endnotes**

- 1 Joint Publication 1, Doctrine for the Armed Forces of the United States, March 25, 2013, incorporating change 1, July 12, 2017, p. XX.
- 2 Joint Publication 1, p. I-18.

- 3 [Joint Publication 3-01](#), Countering Air and Missile Threats, April 21, 2017, p. II-27.
- 4 Joint Publication 1, p. XII.
- 5 [“Air Force Core Missions.”](#) U.S. Air Force, August 15, 2013.

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