

2K12 Kub mobile surface-to-air missile system fires during multinational live-fire training exercise Shabla 19, in Shabla, Bulgaria, June 12, 2019 (U.S. Army/Thomas Mort)



Getting the Joint Functions Right

By Thomas Crosbie

In July 2017, the Chairman of the Joint Chiefs of Staff announced a special out-of-cycle revision to joint doctrine, adding information to the joint functions. The significance of this policy change was highlighted by the Secretary of Defense in a September 2017 endorsement, where he stressed that inclusion in the joint functions signaled an “elevation” of information throughout Department

of Defense (DOD) thinking and practice.¹ A 2018 article by Alexis G. Grynkewich in this journal elaborated on why this matters to the national security community.² Nevertheless, despite these clear signals that DOD takes the joint functions seriously, and despite their centrality in military doctrine, the joint functions remain little understood by those who have not served in an operational staff role.

This article provides the first organizational history of the joint functions in order to better understand why differences persist in how this concept is implemented in the United States versus its North Atlantic Treaty Organization (NATO) partners. Doing so allows us to better understand enduring challenges in interoperability and persistent cultural clashes within the Alliance. The history reveals that today’s joint functions are built around a core of four kinetic principles (leadership or command and control [C2], maneuver, firepower, and protection), to which subsequent revisions have attempted to add a range of “softer” military fields (intelligence, information, sustainment, and civil-military cooperation), sometimes successfully, sometimes not.

The history of the joint functions is a history of overcoming the resistance in U.S. military thought to placing soft and hard elements of the contemporary battlefield on an equal footing. Viewed from this perspective, another set of questions is raised concerning the persistence

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of U.S. vulnerabilities to foreign military powers focused on exploiting the gray zone between hard and soft power.

Combining Arms and Domains

Jointness is not easy, but it is good—that has been the clear consensus from scholars and practitioners for decades, amply demonstrated in the pages of this journal.³ What makes it difficult is the clash of cultures, command structures, and egos that inevitably occurs when two or more distinct organizations are tasked with working hand-in-glove.⁴ In this sense, the challenges of jointness are not unique to the military and are faced by any complex organization that needs levels of coordination. The benefits are, however, unique, as Robert Leonhard and others have argued.⁵ All else being equal, we expect a force that is better at combining arms and crossing domains will win out over its competitors because jointness enables commanders to compensate for the weaknesses in one weapons system with the strengths of another and to exploit a wider array of vulnerabilities in one's opponent while minimizing one's own exposure to risk. Axiomatically, then, jointness provides benefits in efficiency, freedom of action, and flexibility.⁶

The spirit of combining instruments of power informs policy development at virtually every level and is shared by most, if not all, of America's allied militaries. By contrast, the failure to combine is routinely disparaged as evidence of Service parochialism or even corruption. While critics can be found, the weight of historical evidence and of informed opinion is clearly on the side of jointness.

What does this mean in practice? Most important during times of conflict, instruments of power are combined and integrated through the joint force commander and his or her staff. Officially, a joint force *is* joint when it includes elements from more than one Service. However, it only *does* jointness when it actively combines instruments of power in some productive way. The term *joint functions* has emerged in doctrine as a shorthand way of expressing those dimensions of conflict where combining

Table. The Joint Staff Directorates and Joint Functions

Joint Staff Directorates	Joint Functions
J1, Manpower and Personnel	No equivalent
J2, Intelligence	Intelligence
J3, Operations	Movement and maneuver + fires + protection
J4, Logistics	Sustainment
J5, Strategy, Plans and Policy	No equivalent
J6, Command, Control, Communications and Computers/Cyber	Command and control
J7, Joint Force Development	No equivalent
J8, Force Structure, Resources and Assessment	No equivalent

instruments of power is particularly useful. They are in this sense a sort of checklist to ensure that the latent potential of jointness is in fact being realized.

In U.S. doctrine there are today seven joint functions: intelligence, movement and maneuver, fires, information, protection, sustainment, and C2. For the rest of the NATO community, there are eight, since NATO doctrine also includes civil-military cooperation (CIMIC). Despite their importance doctrinally and organizationally, the joint functions are little known and rarely discussed in the national security community and are often poorly understood by officers entering joint staffs. This is not entirely surprising. The joint functions are a paradox of stability and change. On one hand, they are the pillars of operational doctrine, establishing a coherent framework for what a joint staff can and should do at the operational level of war. On the other hand, the list has undergone significant revision over the years, reflecting deep disagreements on which concepts merit inclusion—and even what each concept means. And while the term itself is fairly new, having only entered common usage with its inclusion in Joint Publication 3-0, *Joint Operations*, in 2006 (and adopted into NATO doctrine in 2011), it reflects ideas that have appeared off and on in U.S. Army doctrine for well over a hundred years.

The challenge facing doctrine writers is how to realize the latent benefits of jointness given real-world limitations in time, attention, and resources. That is where the joint functions come in. By focusing on a delimited set of prioritized areas where joint effects can be achieved,

a joint staff can give structure to the enormous complexity of contemporary military operations.

While a joint staff is designed to organize its work around the joint functions, the joint functions should not be confused with the Joint Staff Directorates (J1–J8), which they superficially resemble (see table). The relationship is clearly accounted for in doctrine. The purpose behind the staff directorates is to ensure that a joint staff has the right mix of expertise across key areas. The doctrine makes clear that an actual staff needs to break up the silos that can be created by the directorates, and instead the experts should mix together in a number of subgroups (listed in the doctrine as “centers, groups, bureaus, cells, offices, elements, working groups, and planning teams”⁷). Once reassigned to their subgroup, staffers need to achieve certain types of effects. The most important effects are sorted into six categories and are the joint functions mentioned above: C2, intelligence, fires, movement and maneuver, protection, and sustainment. More recently, as described below, U.S. and NATO doctrine have both changed to include information to this list, while NATO doctrine also includes CIMIC. Thus, while staffs are commonly divided into eight directorates and are expected to achieve effects through seven or eight functions, the two things are ultimately quite different.

The joint functions, then, were never intended to be another level of organization. Rather, they are a heuristic model for understanding descriptively the way power can be directed to achieve ends on the battlefield.

Figure 1. Elements of Combined Arms in FM 100-5 (1914–1962)

	1914	1923	1939	1941	1944	1949	1954	1962
Infantry	■	■	■	■	■	■	■	■
Engineers	■	■	■	■	■	■	■	■
Artillery*	■	■	■	■	■	■	■	■
Cavalry (Armor)**	■	■	■	■	■	■	■	■
Air Corps***	■	■	■	■	■	■	■	■
Signal Corps	■	■	■	■	■	■	■	■
Chemical Warfare	■	■	■	■	■	■	■	■
Medical	■	■	■	■	■	■	■	■
Quartermaster	■	■	■	■	■	■	■	■
Ordnance	■	■	■	■	■	■	■	■
Transportation	■	■	■	■	■	■	■	■
Military Police	■	■	■	■	■	■	■	■

Key:

* Until 1949, artillery was divided between normal and heavy field artillery.

** Until 1944, cavalry included both armored and horse cavalry.

*** In 1944, air power was discussed in a separate chapter.

Figure 2. Joint Functions in FM 100-5 (1968–1993), FM 3-0 (2001–2017), AJP 3 (2002–2019) and JP 3-0 (2006–2018)

	1968	1982–1993	2001	2008–2017	2002	2011–2019	2006–2010	2011–2017	2018
Command and Control	■	■	■	■	■	■	■	■	■
Movement and Maneuver	■	■	■	■	■	■	■	■	■
Fires	■	■	■	■	■	■	■	■	■
Protection	■	■	■	■	■	■	■	■	■
Intelligence	■	■	■	■	■	■	■	■	■
Sustainment	■	■	■	■	■	■	■	■	■
Information	■	■	■	■	■*	■	■**	■	■
CIMIC	■	■	■	■	■	■	■	■	■
Planning	■	■	■	■	■	■	■	■	■
Targeting	■	■	■	■	■	■	■	■	■

Key:

Green indicates U.S. Army doctrine, purple indicates U.S. joint doctrine, and blue indicates NATO doctrine.

* NATO doctrine in 2002 splits the Information function into “Public Information” and “Information Operations”

** U.S. JP 3-0 in 2006 (revised in 2008 and 2010) lists information tasks under the heading “Other Activities and Capabilities”

Joint Functions in Army Doctrine, 1905–1954

But why these particular functions, and what does it mean for the integrity of the list that this has changed and remains contested? To answer these questions, it is necessary to briefly look

back over the history of the doctrine. The starting point is 1905 with the publication of the U.S. Army’s first combined arms manual, Field Manual (FM) 100-5, *Field Service Regulations*.⁸ Surprisingly, the first extended discussion of what combining arms actually

entails would not arrive until the fourth edition (1914), where combined arms are described as the effective balancing of the Infantry, Artillery, Cavalry, Special Troops (mostly Engineers), and Heavy Field Artillery.⁹

In these early days, manual writers focused on what made up the combined arms. The 1923 edition adds the Signal Corps and Air Service and renames “Special Troops” as “Engineers.” It also states clearly the value of combining arms: “No one arm wins battles. The combined employment of all arms is equal to success.”¹⁰ Five more editions followed (in 1939, 1941, 1944, 1949, and 1954), with each adding elements to the list. By 1954, the list had grown to include 10 components: Infantry, Armor, Artillery, the Corps of Engineers, Signal Corps, Chemical Corps, Army Medical Corps, Quartermaster Corps, Transportation Corps, and Military Police Corps. So unwieldy was this list that the 1962 edition cut back to the original 1923 list: Infantry, Engineers, Artillery, and Armor. Notably, information and intelligence elements are entirely absent throughout, since these were viewed as separate from the combined arms.

What we can conclude is that Army doctrine writers have long been committed to the idea that the combining of land power elements enables gains on the battlefield. This belief has tended toward a kitchen-sink effect, with more and more elements highlighted as standing to benefit from combination until order is restored by a return to first principles—clearly visible in figure 1. Prodigality balances against parsimony.

A quirk of the doctrine up to this point is that the writers never quite got around to explaining how a commander should manage all of this complexity. The doctrine exhorted combined effects and described the elements that needed to be combined, but it failed to specify how the elements should be balanced. In hindsight, then, FM 100-5 from 1905 through 1954 had fairly modest aims, ensuring only that future leaders, when called on to lead a campaign, would at least know what arrows were in their quiver.

Joint Functions in Army, Joint, and Alliance Doctrine, 1968–2019

The major intellectual breakthrough came with the doctrine revisions of the 1960s, when the doctrine writers finally began to nail down the specific ways combining arms can lead to better outcomes (see figure 2). In the 1968 revision of FM 100-5, the writers switched from presenting a laundry list of functional elements that can be combined to identifying the types of needs that these elements can address. The doctrine now described the need for “multicapable forces” that combine their elements to achieve better outcomes in five fields: intelligence, mobility, firepower, combat service support, and C3 (command, control, and computers).¹¹

For a time, this insight was forgotten. When General William E. DePuy drafted the famous “Active Defense” edition of FM 100-5 (1976), he dispensed with much of the verbiage and most of the concepts of earlier manuals, preferring a livelier style, with vivid examples drawn from recent experience. Dissatisfaction with DePuy’s manual led General Donn A. Starry to oversee the publication of the equally renowned “AirLand Battle” edition (1982).¹² Here, DePuy’s ideas about active defense were blended with Starry’s ideas about AirLand Battle and with the 1968 manual’s ideas of multicapable forces. In the 1982, 1986, and 1993 editions, this intuition was refined through discussion of the so-called elements of combat power, now listed as maneuver, firepower, protection, and leadership, which replaced C3. This tighter focus—dropping intelligence and combat service support from the discussion—perfectly reflects what has been described as the Army’s cultural shift toward preparing for high-tempo, conventional force engagements.¹³

Despite the prominent place given to these “elements of combat power” in the Army manuals of 1982, 1986 and 1993, the first joint publication on the topic, Joint Publication (JP) 3-0, *Doctrine for Joint Operations*, 1993, makes no mention of these principles. Nor do they appear in the 1995 or 2001

editions. Nevertheless, Army doctrine writers were still very much committed to these concepts, and in the 2001 edition of Army operational doctrine (redesignated from FM 100-5 to FM 3-0), a new element of combat power was added to the list: information. This was not to last. Interestingly, the next edition, released in 2008, drops information and brings back intelligence, which had been missing since the 1968 edition, and defines these elements of combat power as “warfighting functions.” This remains, as of 2018, the current state of Army thought, which builds its description of the Army’s capabilities around six warfighting functions: mission command (the new name for C2), movement and maneuver, intelligence, fires, sustainment, and protection.

Looking at the joint and Alliance levels, the idiosyncrasies of Army thought come into focus. In 2002, NATO published its first joint operations doctrine, Allied Joint Publication (AJP) 3, *Allied Joint Operations*.¹⁴ The imprint of U.S. Army doctrine is plain to see in this document, with the elements of combat power now renamed “Joint Capabilities,” which included most of the persistent elements of the Army manuals (C2, maneuver, fires, intelligence, and sustainment, renamed logistics), dropped protection, and added a number of unfamiliar items: planning, targeting, and CIMIC. Also included were two information functions: information operations and public information. Where Army doctrine downgraded the role of information in this period, NATO emphasized it.

Meanwhile, American joint doctrine was revised in 2006 to finally incorporate the Army’s elements of combat power, now named for the first time as *joint functions*. Where NATO doctrine split information between information operations and public information, U.S. joint doctrine included it in the vague category “Other Activities and Capabilities,” a seventh joint function encompassing psychological operations and deception. The 2011 and 2017 versions of JP 3-0 dispensed with information entirely but brought it back as a fully fledged joint function with much fanfare in 2018.¹⁵

NATO and U.S. joint doctrine were finally coordinated with the revision of NATO AJP-3, *Allied Joint Doctrine for the Conduct of Operations*, in 2011.¹⁶ NATO’s joint capabilities became joint functions. Public information was folded into information operations, and the outlier concepts planning and targeting were dropped entirely. In 2019, the doctrine underwent one last revision, with information operations renamed simply information to align it with the 2017–2018 U.S. doctrine. The current state of NATO doctrine thus defines eight joint functions: command and control, maneuver, intelligence, fires, sustainment, information, protection, and CIMIC. The current state of U.S. joint doctrine is identical, except it excludes CIMIC.

Joint Functions Doctrine: Lessons Learned

At the center of military innovation since World War II has been the promise of realizing tactical, operational, and strategic gains through combining arms and crossing domains. Combining, integrating, and making joint: these are the explicit goals of the joint force, DOD, and the unified combatant commands, and they are now routinely celebrated by the separate Services as well. The joint functions are the doctrinal culmination of taking jointness seriously, and the shifts we have traced in what constitutes the joint functions can be taken as a broader history of joint thought at the operational level of war.

What, then, should we make of this storied history? The most important lesson concerns the nature of doctrine itself. Although the joint functions may seem evolutionary, their history is filled with starts and stops, with detours and roadblocks, each signaling a shift in how the doctrine writers understood the nature of war. The impermanence and inconsistencies of the doctrine studied here can serve as a reminder that no doctrine is ever final, nor will it ever replace informed judgment.

Similarly, there is a lesson here in the false appearance of uniformity. As the doctrine has developed, the writers seek agreement in language and expression,

but this may mask deeper disagreements in the actual meanings of words. NATO joint functions are not exactly DOD joint functions—nor are they Army warfighting functions.

Finally, this brief history raises another set of questions that demand reflection. If the joint functions express the military's collective wisdom on how to best combine arms and cross domains—how to do jointness—then what should we conclude from the reluctance of the doctrine to put soft power concepts (information, most notably, but also intelligence and CIMIC) on equal footing as hard power concepts (fires, maneuver, protection)? Does the adoption of information as a joint function in 2017 resolve this problem, or do these same vulnerabilities persist? These and other questions about how to develop the right doctrine at the right time remain to be answered.

This historical understanding of the joint functions is intended to overcome the longstanding reluctance to place soft power elements of the modern battlefield on the same footing as hard power elements. Given that competitors are increasingly oriented toward exploiting our political vulnerabilities, getting the joint functions right—striking the right balance between hard and soft power—is more important than ever. JFQ

Notes

¹ James N. Mattis, memorandum, "Information as a Joint Function," September 15, 2017, available at <www.rmnda.army.mil/records-management/docs/SECDEF-Endorsement_Information_Joint%20Function_Clean.pdf>.

² Alexis G. Grynkeiwich, "Introducing Information as a Joint Function," *Joint Force Quarterly* 89 (2nd Quarter 2018), 6–7.

³ See, for example, John Gordon IV, "Joint Power Projection: Operation Torch," *Joint Force Quarterly* 3 (2nd Quarter 1994), 60–69; Williamson Murray, "The Evolution of Joint Warfare," *Joint Force Quarterly* 31 (3rd Quarter 2002), 30–37; and William O. Odom and Christopher D. Hayes, "Cross-Domain Synergy: Advancing Jointness," *Joint Force Quarterly* 73 (2nd Quarter 2014), 123–128.

⁴ Jan Angstrom and J.J. Widen, *Contemporary Military Theory: The Dynamics of War* (London: Routledge, 2015), 93–109.

Joint Publications (JPs) Under Revision (to be signed within 6 months)

JP 1, *Doctrine for the Armed Forces of the United States*

JP 2-0, *Joint Intelligence*

JP 3-10, *Joint Security Operations*

JP 3-31, *Command and Control for Joint Land Operations*

JP 5-0, *Joint Planning*

JP 6-0, *Joint Communications System*

JPs Revised (signed within last 6 months)

JP 3-02, *Amphibious Operations*

JP 3-07.4, *Joint Counterdrug Operations*

JP 3-09, *Joint Fire Support*

JP 3-16, *Multinational Operations*

JP 3-17, *Air Mobility Operations*

JP 3-30, *Command and Control of Joint Air Operations*

JP 4-0, *Joint Logistics*

JP 4-04, *Contingency Basing*

JP 4-09, *Distribution Operations*

JP 4-10, *Operational Contract Support*

⁵ Robert Leonhart, *The Art of Maneuver: Maneuver Warfare Theory and AirLand Battle* (New York: Ballantine Books, 1991), 93–94. See also Angstrom and Widen, *Contemporary Military Theory*, 95.

⁶ Angstrom and Widen, *Contemporary Military Theory*, 95.

⁷ Joint Publication (JP) 3-33, *Joint Task Force Headquarters* (Washington, DC: The Joint Staff, 2007).

⁸ Clinton J. Ancker III, "The Evolution of Mission Command in U.S. Army Doctrine, 1905 to the Present," *Military Review* (March–April 2013), 42–52. For a fuller history of U.S. Army doctrine, see Walter E. Kretchick, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence: University Press of Kansas, 2011).

⁹ Field Manual (FM) 100-5, *Field Service Regulations* (Washington, DC: Government Printing Office, 1914), 74–76.

¹⁰ FM 100-5, *Field Service Regulations* (Washington, DC: Government Printing Office, 1923), 11.

¹¹ FM 100-5, *Operations of the Army Forces in the Field* (Washington, DC: Headquarters Department of the Army, 1968), 1–5.

¹² The story of the 1976 and 1982 versions of FM 100-5 is recounted in Romie L.

Brownlee and William J. Mullen III, *Changing an Army: An Oral History of General William E. DePuy, USA Retired* (Washington, DC: U.S. Military History Institute and U.S. Army Center of Military History, 1986); and John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973–1982* (Fort Monroe, VA: Historical Office, U.S. Army Training and Doctrine Command, 1984).

¹³ Michael R. Melillo, "Outfitting a Big-War Military with Small-War Capabilities," *Parameters* (Autumn 2006), 22–35.

¹⁴ Allied Joint Publication (AJP) 3, *Allied Joint Operations* (Brussels: North Atlantic Treaty Organization [NATO], September 1, 2002).

¹⁵ Grynkeiwich, "Introducing Information as a Joint Function."

¹⁶ AJP-3(B), *Allied Joint Doctrine for the Conduct of Operations* (Brussels: NATO, March 16, 2011).