

Air University Advanced Research

Joint All Domain Operations for 2030

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The US Air Force prides itself on the ability to effectively command and control joint and coalition air forces in all phases of conflict. This pride is based on the Air Operations Center (AOC), which was proven to be effective in the Gulf War and the processes have hardened since that conflict which it was designed for.¹ Unfortunately, the original concept assumed an entrenched enemy in open warfare in support of a pre-planned ground battle. Space and cyber were not factors, and electronic warfare was a simple support function. In 2018 Air Force Director of Current Operations, Brig Gen Chance Saltzman, defined Joint All Domain Command and Control (JADC2) as requiring “more than systems in one domain supporting operations in another...Multi Domain Operations (MDO) [now JADO] are high velocity, operationally agile operations...requiring seamless, dynamic and continuous integration of capabilities generating effects in and from all domains.”² GEN Mark Milley, Chairman of the Joint Chiefs, has officially designated the Air Force as the lead service on developing JADC2.³ The Air Force is a natural choice because Airmen are already used to thinking more multi-domain with the natural inclination of Airmen thinking beyond limitations in space and time.⁴ That comfort is with air; JADC2 planning will require comfort with all domains.

There currently are a myriad of problems for the AOC to effectively command and control the six domains: space, electronic magnetic spectrum (EMS) (which includes cyber), air, ground, maritime, and human.⁵ The systems are archaic and don't utilize the same common operating picture and data streams, and the processes are slow and focused on deliberate instead of dynamic effects. Functionality is dependent on experts in specific teams, and driven by a battle rhythm that refuses to fuse and happens concurrently. The solution laid out in this paper is merely one part of the requirement to effectively execute JADC2 in 2030, but it is an important one. The AOC as we know it needs to be completely reimagined organizationally. Instead of the

delineation being time, it should be function and problems, with the focus being on constantly feeding planning and targeting. This reimagines the AOC into the Joint Operations Center (JOC) that still operates at the operational level of warfare but is truly joint and made up of multi-functional, multi-disciplined teams.

The AOC of today functionally seems designed to encourage stovepipes. Two of the divisions are specialized by function for intelligence and mobility (Intelligence, Surveillance and Reconnaissance Division (ISRD) and Air Mobility Division (AMD)) with three others organized by time in the Air Tasking Order (ATO) cycle (Strategy Division (SRD), Combat Plans Division (CPD) and Combat Operations Division (COD)). There are within and outside these divisions a myriad of specialty teams, liaisons, and communications functions. The joint or coalition aspect is generally limited to liaison officers (LNOs) primarily assigned to the COD, where their primary function is communicating with their country's or service's assets. There are additional members TDY or deployed for short stints to act as experts on their airframe or specialty, also primarily working within the COD.⁶ This description of an AOC is already complicated, and this is a surface level primer without the in-depth explanation of the more than twenty teams spread amongst divisions and the products they are all responsible for. This is not an organization that lends itself to easy explanation or understanding for Joint partners who do not have time to become immersed.

The AOC is built around the 72-hour battle rhythm. Within this time frame there are planning cycles happening for targeting, collection, planning, strategic communications, and others depending on the AOC mission. None of these are concurrently synchronized to maximize other effects as they go through the process. This leaves planners writing tasking documents at the end attempting to manually deconflict how to effectively use minimal assets to satisfy

requirements – and this is only when we think of the standard kinetic targets with ISR, all satisfied by air assets. Today it is an extensive time and labor-intensive process, and inefficient with the growth of multi-function platforms. In the future, this process is not possible in a near peer JADO fight. The AOC planning process is slow and focused on deliberate targeting and planning, the speed of a future fight will require a switch to being able to be able to fight dynamically.⁷

So how to address these shortfalls for the future fight? There are many long term funding and acquisition programs in progress to address problems with networks, and the iterative development of an interconnected system-of-systems, Advanced Battle Management System (ABMS) is promised to connect all services for command and control.⁸ We will put those concerns aside, and assume that procurement and implementation goes smoothly. For our purposes, we will discuss the personnel and functional organizations within the JOC of the future. Simply changing the name will not be effective. The future will not allow for a prescriptive micro-managed command and control that we have been able to utilize for the past thirty years. We can no longer assume that the US will be able to quickly and easily gain and maintain air superiority and maritime freedom of movement, that we will be on the offense at all times, and that decentralized centers will be able to have constant uninterrupted communication with forward units.⁹ The ability to operate cut off at the tactical level is being tested now with the dynamic wing concept and Agile Combat Employment being exercised by several wings within the Air Force, where they train to be able to assume the duties that would normally be done for them by an AOC.¹⁰ How then can a future Joint Operations Center command and control all domains, knowing they may be cut off at any time? There must be a switch from prescriptive,

stove piped, detailed management to operational guidance that is fused, multi-disciplinary, and dynamic to allow changes.

No longer will the focus be a watch function monitoring execution with many decisions requiring permission from a higher level. JADC2 will require invigoration of command and control removed from centralized monitoring and execution, with higher echelons building guidance, not a strict plan. To build this guidance, the JOC will be built with multi-functional teams. These teams will have experts in each individual domain, from each service, along with specialists in integrating domains and effects into planning and targeting. Intelligence professionals will no longer be segregated in the ISR/D, but instead will work throughout advising on ISR collection, current intelligence for updates, and intelligence support to targeting.^a In addition, there must be personnel trained to integrate these different domains and capabilities together to answer commander-desired effects.

The new process will begin with an initial team of expert operational planners, as they translate strategy from the combatant command and joint force commander to operational lines of effort, and assign them to multi-disciplinary teams. These plans will have intent, and then left-right boundaries for maneuvering as required by the execution element. Multi-functional teams will plan for a specific line of effort, with constant checks and relationships with their counterparts working on separate efforts. Because the goal is to enable execution elements to operate without constant JOC support, these plans will be written with different options, taking into account possible enemy actions and reactions.¹¹ The strategy team of expert planners will assess each different teams plan, and ensure that they are functionally supportive of each other

^a If providing intelligence updates is a requirement, this task should be assumed by the A2 or a small command brief team designated to the commander. Intelligence updates for the command level right now are a constant distraction and manning draw from being able to provide intelligence preparation of the environment to planners and support to targeting.

and the operational and strategic objectives. This framework will maximize the executing commander's ability to be agile while still meeting intent. Quick reaction to change will be a hallmark of future warfare, with the time taken to react and decide likely the determining factor of success in a technologically equal peer fight.¹²

In addition to the multi-functional fusion teams, removal of the 72 hour AOC battle rhythm will enable better integration of effects that do not fit neatly within that time frame (cyber, information operations, space).¹³ Because time isn't a limit on what can be accomplished before the team is forced to complete its work for the next stage, it removes the disincentives to include domains or effects that are longer to plan for or see an impact from. Rather than the current planning method where plans are built and then passed along to the next stage, with very little time afforded for assessment of how effective the plan was before they immediately begin the next day, this less time bound structure allows flexibility. Additionally, it allows for more a dynamic relationship with time – instead of only moving forward, dedicating a team to a line of effort throughout the process will enable the flexibility to adjust to what's happening in the current fight. The convergence of these effects in different domains will enable us to overwhelm adversaries.¹⁴ As the difference between open warfare and peacetime becomes continuously more blurred and overlapping, this flexibility to plan creates more streamlined and effective guidance for tactical units.¹⁵

The output of this better designed command and control will be true operational guidance, which will clearly explain commander's intent and priorities to enable the scheme of maneuver. It will no longer be thousands of pages of documents with the air tasking order, airspace deconfliction, and target lists that are changed before take off. Most importantly to execute JADO, the guidance will be written to account for all domains and effects, with all

elements working synchronously and to maximize impact. The requirements to affect this change are myriad – cultural, systematic, programmatic, and doctrinal. Ultimately though, the best weapon the Department of Defense has is its people. How people function within an organization, and how that organization’s design effects output must be considered along with the technology or system requirements to elevate JADC2.

¹ Lingel, S., Hagen, J., Hastings, E., Lee, M., Sargent, M., Walsh, M., ... & Blancett, D. Joint All-Domain Command and Control for Modern Warfare. 1

² Ibid, 7-8

³ Hitchens, T. (2020, July 27). Milley Assigns Service Roles In All-Domain Ops Concept. Retrieved August 07, 2020, from <https://breakingdefense.com/2020/07/milley-assigns-service-roles-in-all-domain-ops-concept/>.

⁴ Department of the Air Force, *Volume 1 Basic Doctrine: Airmindedness*. Maxwell AFB, AL: Curtis E. Lemay Center for Doctrine Development and Education. 2015. https://www.doctrine.af.mil/Portals/61/documents/Volume_1/V1-D23-Airmindedness.pdf.

⁵ Reilly, J. (2016). Multidomain Operations: A Subtle but Significant Transition in Military Thought. *Air and Space Journal*, 30(1). Retrieved August 3, 2020, from https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-30_Issue-1/V-Reilly.pdf

⁶ Department of the Air Force, *Air Force Tactics Techniques and Procedures 3-1. AOC*, (Nellis AFB, NV: USAF Warfare Center, 2010). 32.

⁷ Rozman, J. (2020). Integrated Air and Missile Defense in Multi-Domain Operations. 3

⁸ Freedberg, S. J., Jr. (2019, November 08). Air Force ABMS: One Architecture To Rule Them All? Retrieved July 27, 2020, from <https://breakingdefense.com/2019/11/air-force-abms-one-architecture-to-rule-them-all/>.

⁹ Department of the Air Force. *Annex 3-1 Department of the Air Force Role in Joint All Domain Operations (JADO)*. Maxwell AFB, AL: Curtis E. Lemay Center for Doctrine Development and Education, 1 June 2020, 30.

¹⁰ Mills, Patrick, James A. Leftwich, John G. Drew, Daniel P. Felten, Josh Girardini, John P. Godges, Michael J. Lostumbo et al. *Building Agile Combat Support Competencies to Enable Evolving Adaptive Basing Concepts*. Rand Arroyo Center, Santa Monica, CA, 2020.

¹¹ Joint Chiefs of Staff, *Joint Publication 3-30: Command and Control for Joint Air Operations*, (Washington DC: Department of Defense, 2019).

¹² Clark, J.P., Joe Broome, Derrick “Tank” Franck, Jr., and Michael Loftus. 2020. “Command in Joint All-Domain Operations: Some Considerations.” *Carlisle Scholars Program*, July.

¹³ Department of the Air Force. *Annex 3-1 Department of the Air Force Role in Joint All Domain Operations (JADO)*. Maxwell AFB, AL: Curtis E. Lemay Center for Doctrine Development and Education. 1 June 2020. 17.

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- ¹⁴ Nisperos, E. (2020, June 01). Joint All Domain Effects Convergence: Evolving C2 Teams. Retrieved August 05, 2020, from <https://othjournal.com/2020/03/10/joint-all-domain-effects-convergence-evolving-c2-teams/>
- ¹⁵ Joint Chiefs of Staff, *Joint Doctrine Note 1-19: Competition Continuum*, (Washington DC: Department of Defense, 2019)

