

## **No More Stovepipes: Unifying Air Operations Planning Doctrine to Enable Multirole Mission Success**

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*In a future mission planning conference, joint air planners craft a mission package to break into an adversary's robust air defense network, destroy a series of critical capabilities for an amphibious invasion, and escape while preserving enough force to deter a retaliatory strike. Constrained by the requirement to keep many of their traditional assets in a deterrent reserve, planners look to emerging capabilities. To strike the large number of targets, planners request C-130s, each armed with 6 AGM-158 Joint Air-to-Surface Standoff Missiles configured as palletized munitions. However, the C-130s have already been allocated by the Joint Logistics Coordination Board to a resupply flight hundreds of miles from the operation, and cannot be re-missioned without appeal to the combatant commander's J4.<sup>1</sup> The planners turn instead to MQ-9s, each armed with 12 AGM-114 Hellfire missiles, willing to accept the risk of losing the uncrewed aircraft. To their frustration, the MQ-9s were already allocated by the Joint Collection Management Board to support intelligence requirements in another area, and cannot be re-tasked without appeal to the combatant commander's J2.<sup>2</sup> Without the time or processes to appeal the staffing decisions, the air planners decrease the number of planned munitions per target.*

*During mission execution, the first strike package consists of B-21 bombers, Next-Generation Air Dominance fighters, and uncrewed collaborative combat aircraft. The aircraft successfully suppress enemy air defenses, strike their targets, and detect several unknown signals. The signal parameters are sent to the Distributed Common Ground Station (DCGS), but the analysts were not briefed on the plan. With no intelligence, surveillance, and reconnaissance (ISR) aircraft assigned to the strike package, no DCGS analysis and exploitation team was assigned to the mission. After scrambling a team to analyze the signals, DCGS airmen determine that the second set of targets is moving outside of the second strike package's search area. They send the information forward, but they are too late – the second strike package is completing its final air-to-air refueling with KC-135s before starting their ingress, no communications relay aircraft are available, and traditional satellite communications (SATCOM) channels are jammed. Theater KC-46s are equipped with jam-resistant, low earth orbit-based SATCOM, but were tasked to an unrelated mission by air refueling planners unaware of a communications relay requirement.<sup>3</sup> Executing their attack without vital information, the second strike package is unable to find its targets, and the mission ends in failure.*

Over the last fifteen years, Air Force aircraft have become increasingly capable of performing multiple roles, even in the course of a single mission. Current Air Force doctrine segregates planning by type of aircraft (e.g., “strike,” “ISR,” and “mobility”), which supports efficient planning by tactical experts. However, mission-segregated operational doctrine primarily established in AFDP 3-0 (*Operations and Planning*) and AFDP 3-30 (*Command and Control*) creates stovepiped planning, missing opportunities to take advantage of new aircraft capabilities.<sup>4</sup> Increasingly multirole aircraft will change the character of

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<sup>1</sup> United States Air Force, *Air Mobility Operations*, AFDP 3-36 (Washington, DC: United States Air Force, 2019), 25, <https://www.dctrine.af.mil/Doctrine-Publications/AFDP-3-36-Air-Mobility-Ops/>.

<sup>2</sup> United States Air Force, *Global Integrated ISR Operations*, AFDP 2-0 (Washington, DC: United States Air Force, 2015), 17, <https://www.dctrine.af.mil/Doctrine-Publications/AFDP-2-0-Global-Integrated-ISR-Ops/>.

<sup>3</sup> <https://spacenews.com/air-force-enthusiastic-about-commercial-leo-broadband-after-successful-tests/>

<sup>4</sup> United States Air Force, *Command and Control*, AFDP 3-30 (Washington, DC: United States Air Force, 2020), 55, <https://www.dctrine.af.mil/Doctrine-Publications/AFDP-3-30-Command-and-Control/>.

war, and the Air Force must update AFDP 3-0, AFDP 3-30, and related tactical doctrine to organize, train, and equip airmen for missions across multiple roles.

### **Multirole Capabilities: Recent and Future Developments**

Multirole aircraft are not new to military aviation. Eight years after the first Wright brothers flight, the Italian Army used *Taube* light aircraft in both reconnaissance and bombing roles during the Italo-Turkish War.<sup>5</sup> As military aviation matured through World War II and aircraft became more specialized, the US Army Air Force (USAAF) organized its groups by aircraft type. By 1945, the USAAF fielded very heavy, heavy, medium, and light bombardment groups; fighter groups; troop carrier groups; and reconnaissance groups.<sup>6</sup> Over the next 75 years, the division of aircraft types ossified into doctrinal differences in tasking procedures.

During the Global War on Terror, counterinsurgency campaigns forced a tighter link between mission sets. Fleeting targets and widely dispersed ground forces both demanded aircraft capable of speeding up the targeting cycle known as the killchain. Before the attacks on September 11<sup>th</sup>, 2001, an unarmed reconnaissance RQ-1 Predator likely observed Osama bin Laden at a compound, but the joint force's only ability to strike was from submarine-launched Tomahawk missiles. The delays from target passage and the missiles' long time of flight prevented mission success, and the newly-redesignated multi-mission MQ-1 was armed with Hellfire missiles to avoid similar failures.<sup>7</sup> As the wars in Iraq and Afghanistan continued, the multi-mission aircraft caused doctrinal tension between intelligence and operations planning. When the more heavily armed MQ-9 Reaper entered service in 2007, it was initially tasked for close air support missions. After several months of effective close air support, concerns over the aircraft's idle time between supporting ground parties caused the Combined Air Operations Center to shift MQ-9 taskings to ISR processes, ending preplanned close air support missions.<sup>8</sup>

Developing technologies will expose further gaps in existing doctrine, especially between the mobility and operations community. The Air Force Research Laboratory (AFRL) Rapid Dragon program aims to weaponize aircraft traditionally used for airlift, including the C-130 and the C-17. The program's endstate will allow C-130s to carry up to six munitions, while C-17s carry up nine.<sup>9</sup> Air refueling aircraft are also picking up capabilities outside their traditional roles. In 2019, AFRL announced that it would include the KC-135 tanker in its Global Lightning program, testing the use of low earth orbit-based SATCOM gateways to build robust communications networks.<sup>10</sup> Even as traditionally non-kinetic aircraft pick up strike and communications relay missions, strike aircraft are also expanding their missions. In December 2022, Air Force Vice Chief of Staff General David Allvin described the B-21's expanded mission sets: "The B-21

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<sup>5</sup> Alan Johnston, "Libya 1911: How an Italian pilot began the air war era," *BBC News*, May 10, 2011, <https://www.bbc.com/news/world-europe-13294524>.

<sup>6</sup> Wesley Frank Craven and James Lea Cate, *The Army Air Forces in World War II* (Washington, DC: U.S. Government Printing Office, 1955), 32, [https://media.defense.gov/2010/Nov/05/2001329891/-1/-1/0/aaf\\_wwii-v6-2.pdf](https://media.defense.gov/2010/Nov/05/2001329891/-1/-1/0/aaf_wwii-v6-2.pdf).

<sup>7</sup> Walter J. Boyne, "How the Predator Grew Teeth," *Air and Space Forces Magazine*, July 1, 2009, <https://www.airandspaceforces.com/article/0709predator/>.

<sup>8</sup> Discussions with multiple MQ-9 aircrew that flew initial missions, 2017-2023.

<sup>9</sup> Air Force Research Laboratory, "Rapid Dragon," accessed April 25, 2023, <https://afresearchlab.com/technology/rapid-dragon>.

<sup>10</sup> Rachel S. Cohen, "'Global Lightning' SATCOM Project Expanding to AC-130, KC-135," *Air and Space Forces Magazine*, November 5, 2019, <https://www.airandspaceforces.com/global-lightning-satcom-project-expanding-to-ac-130-kc-135/>.

could be the delivery platform or there could be other roles that it could play, whether it be sensor, or...things [that] may not fall into the traditional 'Put bombs in the bomb bay, go as deep as you can, and drop bombs' [playbook]."<sup>11</sup> The expanding and overlapping mission sets of new multirole aircraft are a generation beyond those of the MQ-1 and MQ-9, and they will cause even greater doctrinal challenges in their employment.

### **Doctrinal Barriers to Effective Multirole Employment**

Today, operational air planning is a shared responsibility between the combatant commander, usually designated the Joint Force Commander (JFC), and their air component commander, normally designated the Joint Forces Air Component Commander (JFACC).<sup>12</sup> On both JFC and JFACC staffs, stovepiped planning processes inhibit multirole utilization. On the JFC staff, most high-demand aircraft are allocated to different operational priorities through general officer-chaired boards. For ISR aircraft, the JFC J2 leads the joint collection management board to produce the joint integrated prioritized collection list (JIPCL). The board also assigns certain collection requirements to the JFACC, which allocates aircraft against the requirements.<sup>13</sup> Mobility aircraft go through a similar process, with the JFC J4 chairing a joint logistics coordination board.<sup>14</sup> Finally, strike aircraft tasking typically starts with the JFC J3-chaired joint targeting coordination board, which produces a joint integrated prioritized target list (JIPTL).<sup>15</sup> Three discrete processes produce three different prioritized objective lists. Without a unified priority list, there is no mechanism for planners to determine when a collection requirement outweighs a strike priority, or when a strike priority outweighs a logistics priority. Lacking a way to prioritize amongst lists, and with significant staffing barriers to re-adjudicating general officer-approved board decisions, planners default to using aircraft only in their traditional roles – ISR aircraft service the JIPCL, mobility aircraft service logistics requirements, and strike aircraft service the JIPTL.

Aircraft allocation decisions are typically made by the JFACC's air operations center (AOC). The structure and doctrinal responsibilities of the AOC help explain why planners default to using aircraft in only their traditional mission set. In the AOC, the ISR operations branch of the intelligence, surveillance, and reconnaissance division is responsible for tasking ISR aircraft to JIPCL requirements.<sup>16</sup> Mobility aircraft are allocated to missions by the air mobility division, which is further divided into the air mobility control team and the air refueling control team.<sup>17</sup> Finally, strike mission allocation is shared between the strategy division and the combat plans division's targeting effects teams and master air attack plan teams.<sup>18</sup> By dividing ISR, mobility, and operations planning, air operational doctrine reinforces joint doctrine's stovepipes. Further, there is no formal mechanism for requesting assets from another division in

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<sup>11</sup> Tobias Naegele, "Air Force Vice Chief: B-21 Not Just a Bomber, Will Mesh with JADC2, NGAD," *Air and Space Forces Magazine*, December 16, 2022, <https://www.airandspaceforces.com/air-force-vice-chief-b-21-very-unique-things-not-just-dropping-bombs/>.

<sup>12</sup> While terminological distinctions are important in clarifying planning, legal, and administrative responsibilities, this paper will use the term JFC to refer to combatant commander and their staff and JFACC to refer to both COMAFFOR and air component responsibilities.

<sup>13</sup> United States Air Force, *Global Integrated ISR Operations*, 17.

<sup>14</sup> United States Air Force, *Air Mobility Operations*, 25.

<sup>15</sup> United States Air Force, *Operations and Planning*, AFDP 3-0 (Washington, DC: United States Air Force, 2016), 122, <https://www.doctrine.af.mil/Doctrine-Publications/AFDP-3-0-Operations-and-Planning/>.

<sup>16</sup> United States Air Force, *Global Integrated ISR Operations*, 17-18.

<sup>17</sup> United States Air Force, *Air Mobility Operations*, 22-23.

<sup>18</sup> United States Air Force, *Operations and Planning*, 124-125.

response to operational requirements. Future doctrine must create unified prioritization and planning processes, then ensure that these processes are robust enough to survive distributed operations.

### **Joining the Stovepipes: Future Operational Doctrine**

To employ advanced multirole aircraft to their full capability, doctrine must adjust both the joint and air component planning processes. At the joint level, prioritization must be integrated between mission sets. While combatant commanders may retain collection, logistics, or targeting boards, they must establish an overarching joint effects management board (JEMB). The JEMB would have several key responsibilities. First, it would receive requests for specific effects from its components. For example, the air component might require a characterization of an enemy's air defense system, while the maritime component might require an expanded supply system allowing it to operate without its primary ports. Second, it would determine the key enablers and linkages between the required effects. For example, a strike task may carry an associated collection requirement (finding the target), logistics requirement (moving munitions to the appropriate airfield), and communications requirement (creating the airborne infrastructure for networked weapons). With the linkages established, it would group effects to define all enablers for each overarching requirement. Finally, the JEMB would prioritize the grouped effects and enablers to produce a joint integrated prioritized effects list (JIPEL). The JIPEL would serve to both adjudicate priorities between different mission types and to ensure that no priority mismatches would prevent a key enabler for higher-priority missions, such as pulling a tanker from a key communications role for an air refueling mission.

With clear, prioritized guidance, AOC doctrine would need to reorganize the air planning process. Like the JFC's staff, the AOC would retain its ISR and mobility divisions for their responsibilities other than allocating aircraft to missions. However, the AOC should move all aircraft allocation decisions to the strategy division, which established overarching apportionment for a campaign, and the combat plans division, which assigns specific aircraft to each effect. The combat plans division would be empowered allocate any aircraft against any requirement, guided by the JIPEL for prioritization. This new operating model would require adjustments to authorities for the air mobility and ISR divisions under AFDP 3-36 and 2-0, new authorities for the combat plans division in AFDP 3-0, and clarified command and control responsibilities within AFDP 3-30. The Air Force would also need to update specific planning processes for AOC staff in AFTTP 3-3.AOC, the tactical-level doctrine for AOCs.<sup>19</sup> If delegated authorities allow, AOCs should also move cyber, space, and ground-based EW assets into the same process. With access to all available JFACC assets, AOC planners could make the best use of all inherently multi-role platforms.

While the proposed planning doctrine is structurally simple, there are significant challenges to implementation. Though the Department of the Air Force is able to adjust its own doctrine, creating the JIPEL would require Joint Staff acceptance. Joint doctrine, including but not limited to JP 2-0, JP 5-0, and JP 3-36, would need to be updated to take full advantage of new doctrine. Additionally, AOCs would need to manage talent carefully to take full advantage of multirole planning. The current doctrinal structure generally allows subject matter experts to control allocation; for example, C-130 pilots in air mobility divisions are well-equipped to plan airlift operations. An empowered combat plans division would need well-rounded operational planners, knowledgeable about all asset capabilities and able to

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<sup>19</sup> United States Air Force, *Combat Fundamentals – AOC*, AFTTP 3-3.AOC (Washington, DC: United States Air Force, 2020), 4-46, 6-3, 7-5, <https://intelshare.intelink.gov/sites/561jts/afttp/aoc/SitePages/Home.aspx>.

reach out to experts when needed. Fortunately, this process is well-established at the tactical level through large force exercises such as RED FLAG. AOC staffs simply need to apply tactical corporate knowledge to operational planning. Finally, the process of determining, grouping, and finding linkages between effects-based missions will be a new joint process that will take time and practice to implement effectively at the JFC level.

Finally, future doctrine will need to establish operational command and control that is more flexible and less directive. In joint planning, a prioritized effects list would allow the JFC staff to move away from a series of slow-moving, highly-structured management boards towards a continually-updated assessment of enablers to meet established intent. At the air component level, operational planning should move away from generating a detailed air tasking order, with a three-star general approving each sortie. Instead, air planners should issue mission-type orders articulating the priority effects required and the key enablers required from the air component and expected from the rest of the joint force. Not only would this model allow for faster and more effective routine planning, it would be well-suited to the contested and degraded operations inherent to potential conflict with peer adversaries. With intermittent communications between deployed wings, clearly setting intent and enablers before the start of hostilities will establish a shared mental model that will survive the friction of conflict.

## **Conclusion**

Rapidly changing technology is producing multirole aircraft with more flexibility and capability than we have ever seen in warfare. This change in the character of war is making our current doctrine – reliant on mission-specific, isolated planning – insufficient to fully take advantage of new capabilities. Integrating joint prioritization by effect, not mission, and allocating from a common pool of all assets will allow airmen to integrate multirole aircraft into operational planning from the start. Codifying effects-based aircraft allocation in AFDP 3-0, AFDP 3-30, and related doctrine will organize, train, and equip air operations centers to make these decisions even in contested, degraded, and isolated circumstances. The Air Force must accelerate its doctrinal transformation, or it risks going to war with fleets of aircraft operating at a fraction of their capability.

*In an alternate future mission, B-21 bombers conduct an ISR mission the night before hostilities begin. Advanced sensors characterize the enemy order of battle, which is passed back to the joint force by their KC-135 tanker on a combined air refueling and communications relay mission. The next night, next-generation air dominance fighters and B-21 bombers establish localized air superiority by destroying strategic enemy air defenses located the night before. Five minutes later, 24 JASSM cruise missiles dropped by four C-130s clean up lingering adversary air defense systems identified by the first wave. Ten minutes after the attacks begin, four MQ-9s find and destroy 48 amphibious invasion enablers, including POL storage, roll-on/roll-off vessels, and floating harbors. The strike package returns to base without losses, ready to pick up any ISR, communications, strike, and mobility missions the JFC will need in the weeks ahead.*

## **Author's Biography**

Major James Schmitt is an MQ-9 weapons officer and currently serves on the Headquarters Air Force staff. He recently returned from a deployment as the AFCENT Chief of Weapons and Tactics.