

**PLANNING TO FAIL: OPERATIONAL PERSISTENCE THROUGH MISSION
COMMAND**



*Air Controllers at the 607 AOC plan & execute at the Operational Level of War in the shadow of the Kaesong Heights and the world's largest hostile long-range artillery emplacement
(photo TSgt John Linzmeier)*

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As described in AFDP 1-1, the principals of Mission Command should enable a substantial change in the Air Force's planning and execution at the operation level of war: they should enable continued airpower effects if the Air Operations Center (AOC) disappears tomorrow – because it might.

The modern AOC was a marvel of joint air warfare when first used in its current form during the Gulf War¹. This concept, often synonymous with a brick-and-mortar facility, allows a Joint Force Air Component Commander (JFACC), through a unified Air Tasking Order (ATO), the span of control to coordinate and synchronize aerial forces from numerous nations and across broad areas of responsibility. Concurrently, this centralization also affords the same commander the exquisite situational awareness needed to employ and synchronize these forces to maximize effect².

The recognition that the highly efficient AOC of years past is an inherent weakness, a critical center of gravity not only at hazard to long-range munitions and CBRNE agents but also the 21st-century threats of cyber and electronic isolation, has spurred a renewed theoretical interest in mission command at the operational level of war³. Towards this end, the Air Force has invested attention in developing doctrine, concepts, and education to stress the decentralization of tactical control. Some of these efforts, such as the development of Agile Combat

¹ Trey Coleman, 2022, "Air Operations Center Evolution: A Roadmap for Progress", Air University Press, Wild Blue Yonder, <https://www.airuniversity.af.edu/Wild-Blue-Yonder/Article-Display/Article/2963845/air-operations-center-evolution-a-roadmap-for-progress/>

² Joint Chiefs of Staff, *Joint Air Operations*, JP 3-30 (Washington, DC: Joint Chiefs of Staff, 2021), I-3, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_30.pdf

³ James Harvard, 2013, "Airmen and Mission Command", *Air & Space Power Journal*, March-April 2013, 138, https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-27_Issue-2/F-Harvard.pdf

Employment (ACE), have even begun to affect tactical culture and force behavior, though mass adoption remains a point of debate⁴.

Despite these changes in tactical philosophy, the remarkable success of the AOC in the years of the Global War on Terror saw an effective expansion of the AOC's role - and with it, an effective increase in centralized control⁵. While many exercises, of varying degrees of success, sought to employ mission command on a theater scale, the daily operational practice saw air and space forces tasked through centralized, proscriptive orders oriented towards deliberate, synchronized action⁶. By extending the principles of Mission Command as described in AFDP 1-1⁷, many operational functions, such as the allocation of targets to forces and weaponing of effects, could be dispersed from the AOC - at least on an interim basis, should the AOC become non-mission capable. In the likely event that a great power competition engagement finds tactical forces isolated from centralized command elements (and large swaths of each other), the tenets of mission command may be further extended through the principles of mosaic warfare to allow for self-organizing strike forces⁸. This operational persistence would allow the remaining air and space forces to continue furthering the Joint Force Commander's objectives while minimizing the strategic impact of the effective loss of the AOC.

FUNCTIONS LOST WITH THE AOC

⁴ Gene Kamena, 2023, "Before Mission Command", Wild Blue Yonder, April 2023, <https://www.airuniversity.af.edu/Wild-Blue-Yonder/Articles/Article-Display/Article/3368347/before-mission-command/>

⁵ Matthew Quintero, 2019, "Master and Commander in Joint Air Operations: Winning the Air War Through Mission Command", Joint Forces Quarterly, Q1 2019, 91, <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/1738389/master-and-commander-in-joint-air-operations-winning-the-air-war-through-missio/>

⁶ Quintero, 2019, 91,

⁷ United States Air Force, *Mission Command*, AFDP 1-1 (Washington, DC: United States Air Force, 2023), 8, https://www.doctrine.af.mil/Portals/61/documents/AFDP_1-1/AFDP%201-1%20Mission%20Command.pdf

⁸ Justin Grana, Jonathan Lamb, Nicholas O'Donoghue, *Findings on Mosaic Warfare from a Colonel Blotto Game*, RAND report, Santa Monica, CA: RAND, 2021, 2, https://www.rand.org/pubs/research_reports/RR4397.html

Consider the AOC, including the JFACC and Commander of Air Force Forces' (COMAFFOR) staffs⁹, as a black box, focusing only on the information it ingests and its products. The principal inputs to this system from the superior Joint Force Commander (JFC) provide intent, objectives, and Rules of Engagement (ROE); lower echelon fielded forces provide feedback from the tactical force consisting of field mission capabilities, tactical observations, and assessments, including reconnaissance and intelligence collection (ISR).¹⁰ The outputs from the AOC black box provide the JFC with a Joint Air Operations Plan, objective and target nomination, and operational assessments (again including ISR).¹¹

Most of the directive inputs provided to the JFACC are inherently in the form of mission-type orders, providing desired objectives and the associated constraints and restraints imposed upon their accomplishment. Those that are more prescriptive, such as Air Support Requirements or the Joint Integrated Prioritized Target List (JIPTL), still allow for broad leeway in JFACC execution. Conversely, the directive outputs provided by the AOC, in line with its core function within the Air Tasking Cycle¹², are a mix of mission-type orders, such as Special Instructions (SPINs) that place the onus of decision making on the tactical echelon commander; and prescriptive orders, with limited leeway for fielded officers to depart from assigned timelines, objectives, or assignments. Chief among these prescriptive products is the daily ATO, whose fundamental task assigns targets to specific units and capabilities under strict timelines and operational triggers.

⁹ For brevity's sake, the term JFACC is used here to refer to any air officer asserting tactical control of forces. For example, though not joint, a COMAFFOR exercising TACON of service retained, organic forces is referred to as a "JFACC"

¹⁰ United States Air Force, *Command & Control*, AFDP 3-30 (Washington, DC: United States Air Force, 2020), 23, <https://www.doctrine.af.mil/Doctrine-Publications/AFDP-3-30-Command-and-Control/>

¹¹ AFDP 3-30, 55

¹² JP 3-30, III-19

While the remainder of this analysis primarily focuses on enabling tactical airpower through surrogates to the Air Tasking Cycle and ATO, through a lens of the air targeting cycle as described in JP 3-60^{13,14}, these same observations can, without loss of generality, map to other areas of AOC-enabled airpower projection, including ISR collection, global air mobility, space operations¹⁵, and cyber activity.

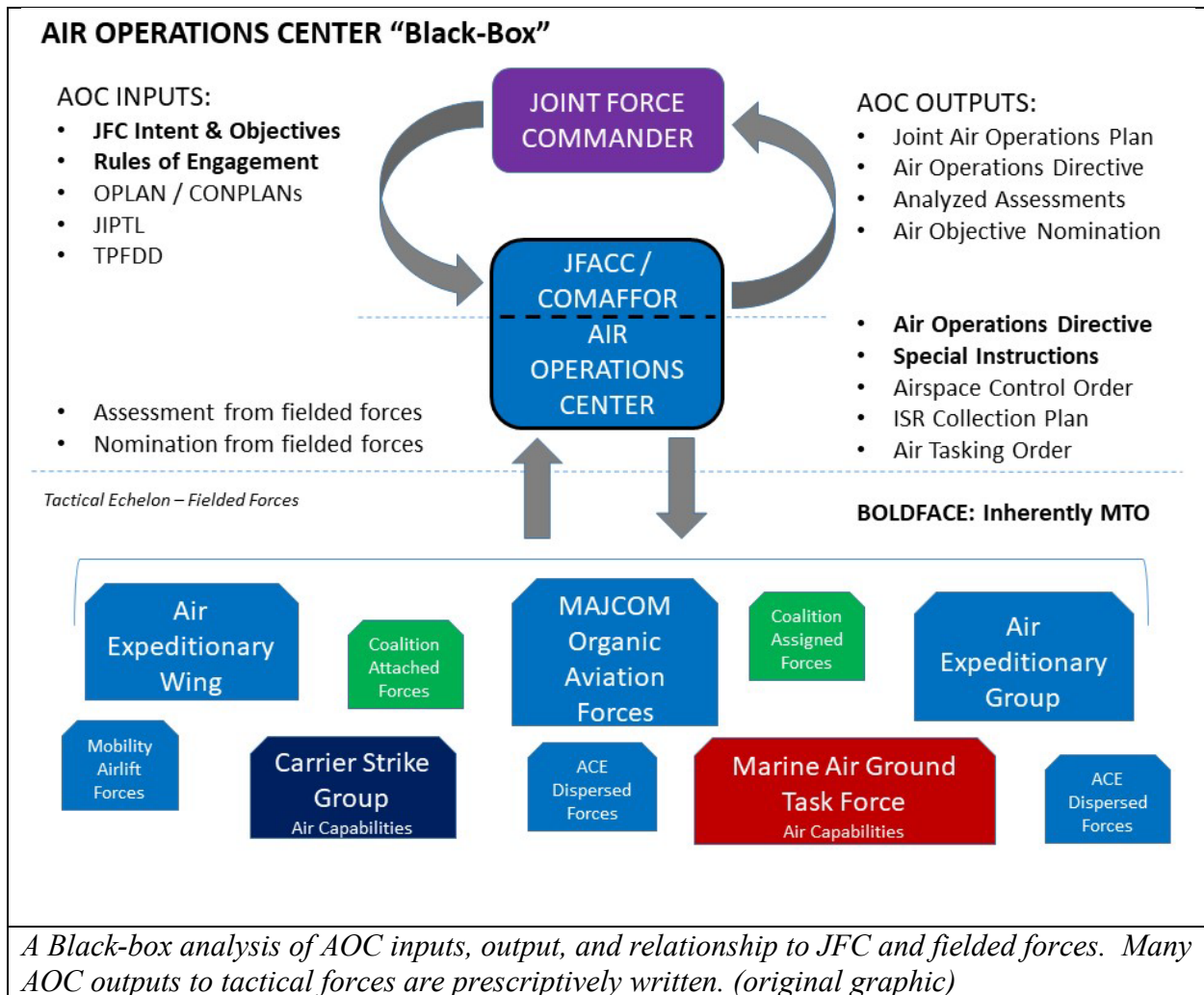
Opening the cover on our black-box AOC, several functions are inherent in the Air Tasking Cycle and production of an ATO. JFC Objectives, as interpreted and expanded by the JFACC through the Joint Planning Process for Air, drive objectives, desired effects, and operational guidance. The Air Strategist develops air operations plans and targets to an executable state and informs operational risk on behalf of the JFACC; the Combat Planners allocate and weaponize tasks to lower echelon forces, as well as synchronize operations, generate the ATO proper, and disseminate to the tactical force – who in turn execute and inform the generation of future ATOs.¹⁶ In a lost AOC scenario, these functions must be replaced to allow similar cyclic tasking and synchronization of remaining tactical forces.

¹³ Joint Chiefs of Staff, *Joint Targeting*, JP 3-60 (Washington, DC: Joint Chiefs of Staff, 2018), II-1, https://jdeis.js.mil/jdeis/new_pubs/jp3_60.pdf

¹⁴ Further clarified in JP 3-30, AFDP 3-60 and AFDP 3-30

¹⁵ John Raymond, 2020, *Chief of Space Operations' Planning Guidance* (Washington, DC: United States Space Force, 2020), 5, <https://media.defense.gov/2020/Nov/09/2002531998/-1/-1/0/CSO%2520PLANNING%2520GUIDANCE.PDF>

¹⁶ AFDP 3-30, 57



ROBUSTING THE AIR TASKING CYCLE THROUGH MISSION COMMAND

JP 3-30 allows for planned and unplanned transition of JFACC responsibilities to another commander and distribution of ATO planning. Inherent in the JP 3-30 process is an assumption of continued positive control of forces under the JFC, which does not easily allow for continued employment of a dispersed, potentially isolated force.¹⁷ Within this framework, the JFACC and JFC may provide additional Mission Type Order (MTO) products as additions to an ATO, that

¹⁷ JP 3-30, II-4

the JFACC might preserve both the efficiency and synchronization of the air campaign on a given day and provide a mechanism to preserve campaign execution in the AOC's absence.¹⁸ Leveraging the Integrated Tasking Order concept, the Air Operations Directive (AOD) may be expanded to include expected JFACC intent, including yet-to-be-allocated JIPTL targets that are assessed to be desirable for air effects (an "Air Effectible JIPTL"), desired near and medium-term air objectives as well as minimum expected air objectives.¹⁹ This guidance, along with applicable clarifying SPINs, allows for the immediate establishment of the JFACC commander's intent regarding operational objectives, desired effects, and constraints on execution in the immediate aftermath of AOC loss.

While these products enable the continuation of operations hours to days beyond the conclusion of the last received ATO, a mechanism should exist to enable further and potentially indefinite post-AOC air operations; until an AOC can be reestablished, or the fielded force disbands due to cessation of hostilities, or attrition of fielded forces to the point of ineffectiveness. One of several possible solutions includes providing dedicated, frequently revisited SPINs that establish a JFACC's desired scheme of structure and maneuver should the AOC be unable to task, synchronize, or deconflict air effects.²⁰ If carefully written, these products and their conditions-based authorities, best thought of as the JFACC's "last will and testament," can allow for self-organizing forces that can operate indefinitely within a JFACC's final intent.

¹⁸ Sandeep Mulgund, 2021, "Evolving the Command and Control of Airpower", Wild Blue Yonder, April 2021, <https://www.airuniversity.af.edu/Wild-Blue-Yonder/Article-Display/Article/2575321/evolving-the-command-and-control-of-airpower>

¹⁹ Allen Moore, *Chennault Event #4, Joint All Domain Operations: Integrated Tasking Order Design and Execution After Action Report*, Montgomery, AL: Curtis LeMay Center for Doctrine Development and Education, 2021, 15, <https://www.doctrine.af.mil/Portals/61/documents/Chennault/Chennault%20Event%204%20AAR.pdf>

²⁰ Moore, 2021, 3

For rhetorical convenience and to borrow the language and concepts of AFDP 3-30,²¹ self-organized post-AOC composite forces will be referred to as Interim Air Expeditionary Task Forces (IAETF). This designation reflects the intended temporary nature of these organizations, the JFACC-like responsibilities their commanders assume, and their relationship with the JFC, if able to communicate with her. This echelon will assume the Theater Air Control System (TACS) role, though the execution assumptions and mechanisms of TACS may likely be inappropriate in a post-AOC environment²². The terminology “fielded force” will generally refer to the Air Wing echelon or sister service equivalent, such as a Carrier Strike Group or Marine Air Ground Task Force. Finally, “tactical units” refer to Squadron-equivalent elements.

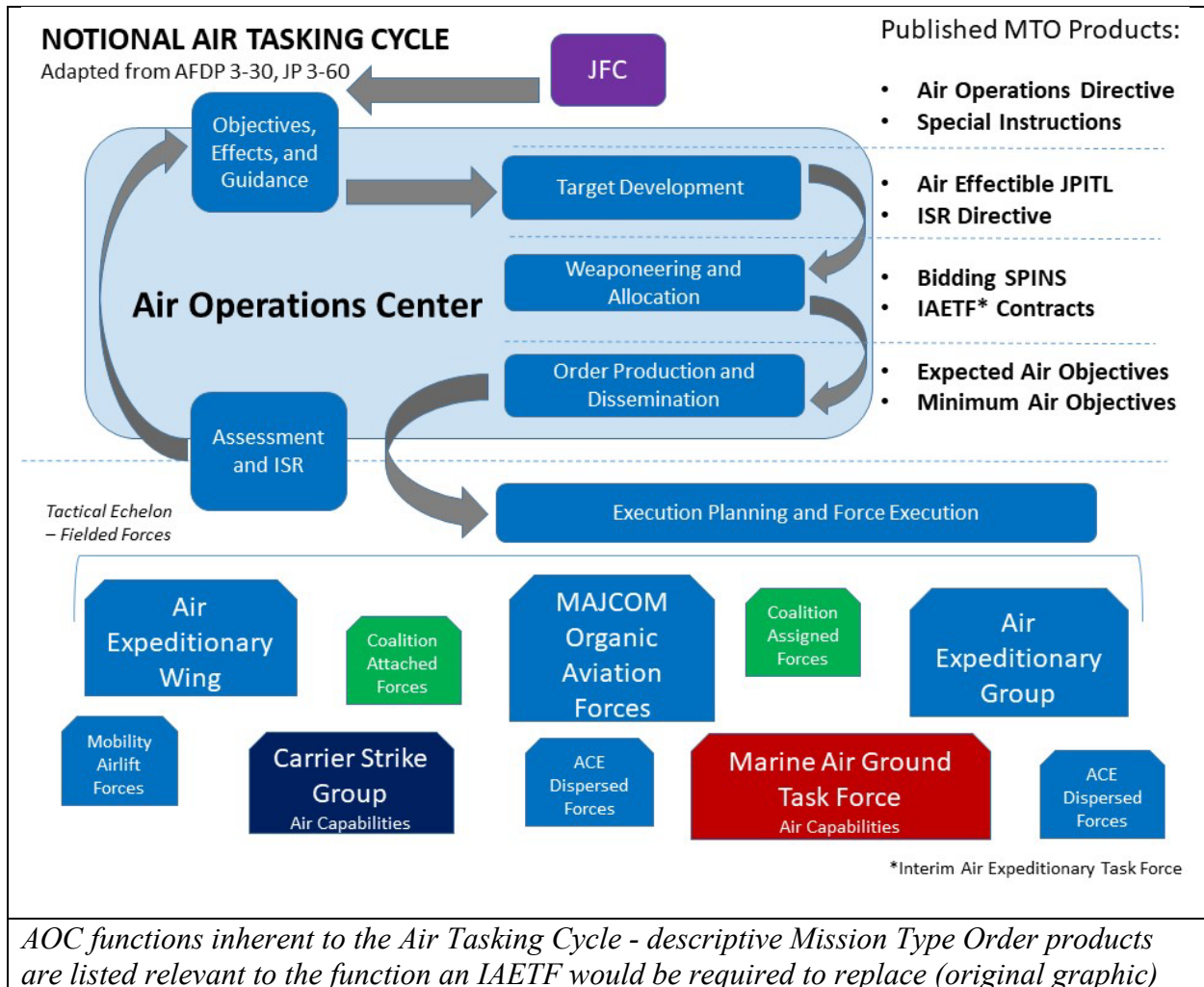
Through the expression of an expected tasking process through SPINs and standing contracts, established IAETFs could predictably task airpower and generate sorties over an indefinite period. In an environment where limited or no communication capabilities between IAETFs or higher echelon command limits knowledge of sister IAETF status or action, these pre-communicated rules for effect generation and air operations provide predictability and a mechanism for deconfliction when situational awareness is severely limited.²³ Similarly, knowledge of these expectations by the JFC would allow for some predictability of isolated force behavior, allowing the JFC to optimize objectives and guidance presented to those IAETF forces over which the JFC had intact communications and, by extension, positive control. This last

²¹ AFDP 3-30, 28

²² Gerrit Dalman, Daniel Kopp, Gary Redman, 2014, “The Imperative to Integrate Air Force Command and Control Systems into Maritime Plans”, *Air & Space Power Journal*, July-August 2014, 105, https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-28_Issue-4/F-Dalman_Kopp_Redman.pdf

²³ Trent Carpenter, 2016, “Command and Control of Joint Air Operations through Mission Command”, *Air & Space Power Journal*, Summer 2016, 55, https://www.airuniversity.af.edu/Portals/10/ASPJ_Spanish/Journals/Volume-29_Issue-1/2017_1_06_carpenter_s_eng.pdf

retains the JFC's prerogatives of adaptability, synchronization, and deconfliction while leveraging to maximum impact the effects provided by isolated forces.



ORGANIZING POST-AOC FORCES

The first action in a post-AOC environment is the organization of remaining fielded forces. Ensuring continuity of control, arguably more than any other action, allows for continuing the ability to provide air effects coherently. To ensure this continuity, a mechanism must be established to organize a fragmented and potentially communications-isolated tactical force

dynamically. As proposed, these “IEATF” organizations would compile from and provide positive control over a subset of the forces previously under the AOC’s tactical control.

Transition to IAETFs could be triggered under explicit direction from the JFACC or JFC, most likely in a scenario where indicators and warnings of imminent AOC loss are available. In this case, the desired organization may be directed from the ordering higher echelon commander.

However, an unexpected loss of AOC functionality would potentially trigger the need to reorganize the remaining fielded force without the active participation of higher echelon command, in which case the remaining forces would need to self-organize. Predicting this eventuality, a JFACC could provide guidance through established contracts and procedures that enable a fielded force commander to perform the following actions:

- 1) Assess capability and limitations of own forces and units, and execute last received ATO as able
- 2) Pursue communications with adjacent fielded forces, as defined by JFACC SPINs
- 3) Establish IAETF CDR from those adjacent fielded forces in positive communication
- 4) If the IAETF CDR, direct immediate air objectives in support of standing JFACC guidance
- 5) Support IAETF planning for continuing airpower effects per minimum and desired air objectives
- 6) Provide airpower effects indefinitely until AOC is reestablished or forces disbanded

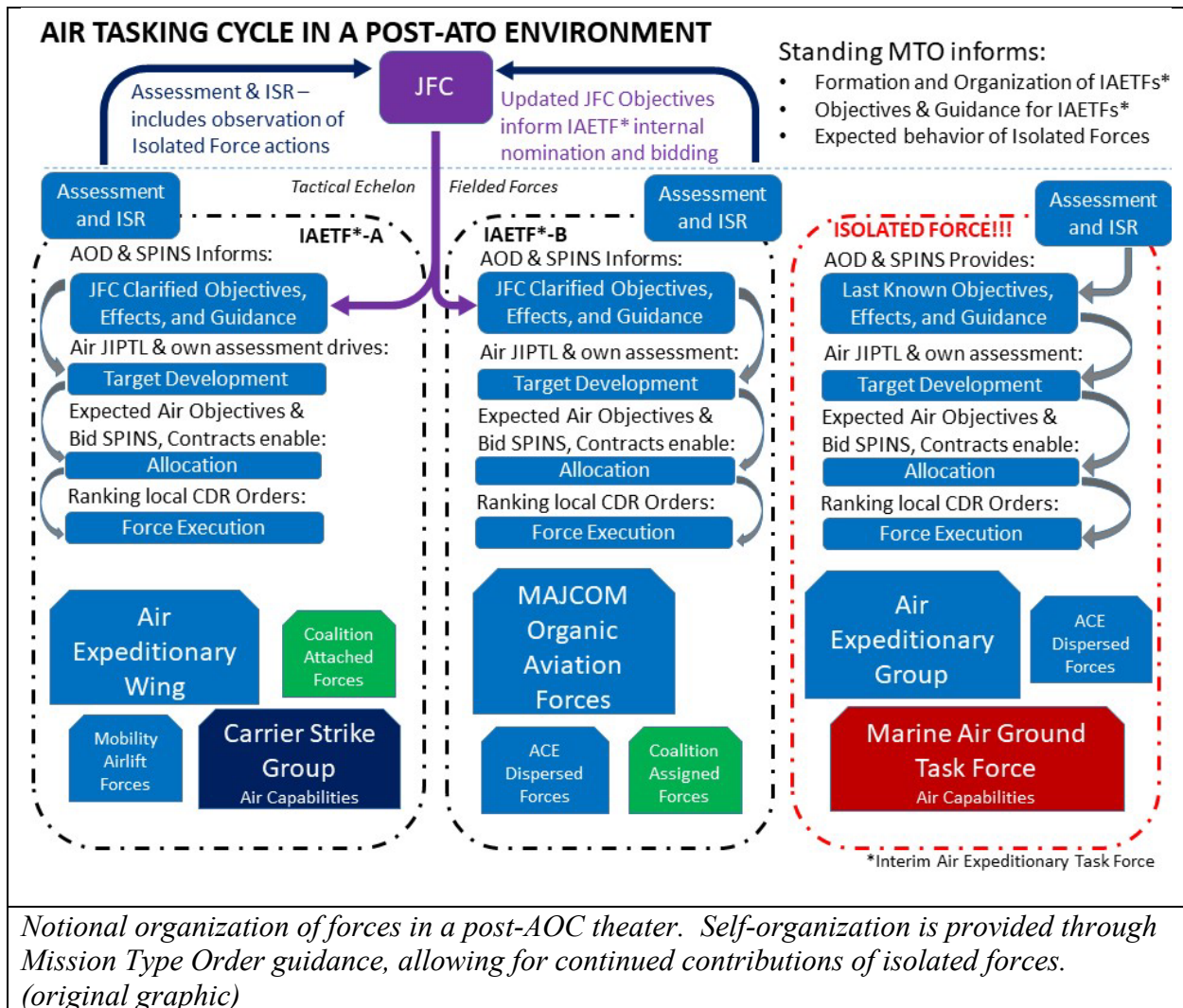
Assessment of forces and continued order execution is familiar to any tactical commander and need not be belabored here. However, pursuing communication with adjacent forces forms the core of IAETF self-organization. Key to this concept are two propositions: that synchronized and

thoughtfully applied airpower is much more effective than an uncoordinated force²⁴, and the corollary that given the mobile and global nature of air power, a force 500km away that can provide coordinated effects is more useful than a force 50km that cannot. To this end, the “roll-call” step of establishing initial, lateral communications defines a network of fielded forces from which an IAETF may be composed along logical networks of shared situational awareness rather than geographical proximity, as the former provides the ability to coordinate effects. By establishing an IAETF based on communications span and coordination of forces, AOC-like efficiency may be obtained on a smaller scale. It’s noteworthy that this same proposed self-organization technique could be applied recursively and likely would be if further fragmentation of forces were experienced.

Once this initial roll-call process reveals fielded forces from which an IAETF may be composed, an IAETF Commander should be established, nominally drawn from the senior air officer in the IAETF force. As described in the last received ATO and associated products, future minimum objectives provide a basis for the newly established IAETF to project air power and allow for interim air operations as the IAETF establishes (potentially dispersed) staff functions. The JFACC may wish to shape both IAETF structure and command and may do so in her post-AOC absence through SPINs. Some logical restraints may be limiting IAETF formation to a geographic boundary, providing guidance that evenly distributes enabling assets such as airlift, ISR sensors, or specialized capabilities (e.g. contingency response teams, ground surgical capability, or RED HORSE), and excluding strategic capabilities from IAETF participation.

²⁴ Sherrill Lingel, Jeff Hagen, Eric Hastings, Mary Lee, Matthew Sargent, Matthew Walsh, Li Ang Zhang, David Blancett, *Joint All-Domain Command and Control for Modern Warfare*, RAND Report. Santa Monica, CA: RAND, 2020, 1, https://www.rand.org/pubs/research_reports/RR4408z1.html

Any event substantial enough to negate an AOC, whether kinetic attack or cyber isolation, would plausibly result in degradations across the fielded forces. Beyond reduced mission capability, limited communications could result in fielded forces effectively isolated from any higher echelon or sister IAETF force. In this event, IAETF self-organization could still allow isolated forces to provide coordinated airpower effects.



EMPLOYING POST-AOC FORCES

Once established, the IAETFs will continue to provide air effects indefinitely until the AOC can be reestablished or the fielded forces are disbanded. To this end, the IAETF can provide

coordinated effects through an abbreviated, distributed Air Tasking Cycle. If communication with a higher echelon command is available, the JFC's intent informs and shapes the IAETF commander's objectives.²⁵ In all cases, operational assessments and ISR derived from their forces and situational awareness afforded through remaining communications modes shape the IAETF CDR's objectives, both adversary activity (informing target nomination) and blue force observation²⁶. This last is important, as by allowing for expected isolated force activity per JFACC SPINs and observation of actual isolated force effects, a JFC and sister IAETFs can still make maximal use of isolated forces, tailoring selected objectives for maximal effect in concert with expected isolated force actions.

As IAETF guidance and objectives are established, the IAETF's internal JIPTL can be updated and reprioritized to incorporate and ideally prioritize external (JFACC legacy or JFC directed) objectives as well as internally driven effects, such as self-nominated targets or own-force protection interests.²⁷ Once published, the burden of weaponeering and allocation of targets may be pushed to tactical forces through a Mosaic-like bidding process.²⁸

In a simplified bidding concept, tactical commanders assess the availability of forces and capability, leveraging their ideal situational awareness of local limitations – for example, reduced combat range due to a lack of air refueling or take-off weight limitations due to shortened

²⁵ AFDP 3-30, p 44

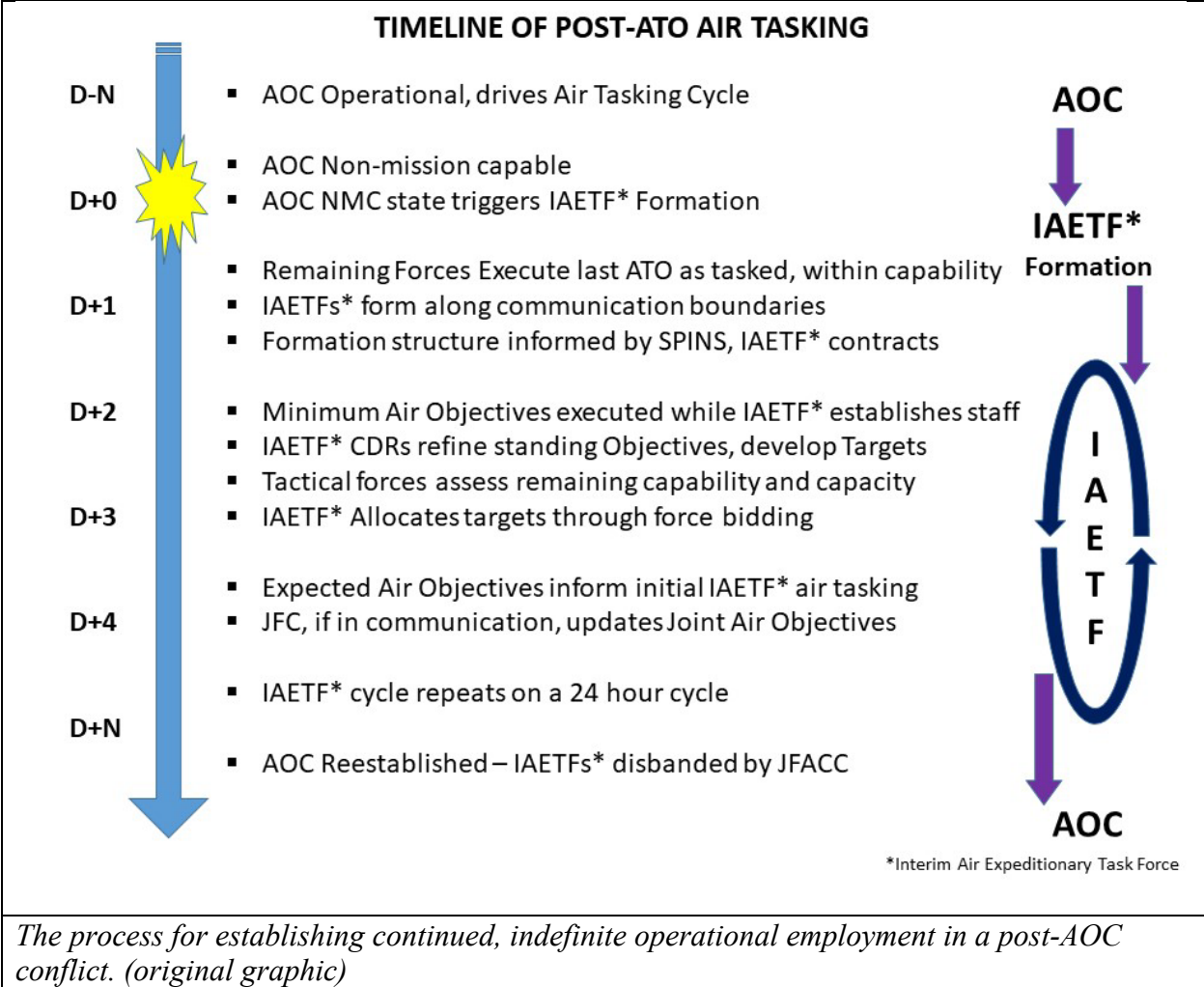
²⁶ Alan Doucauer, 2014, "Peeling the Onion: Why Centralized Control / Decentralized Execution Works", Air & Space Power Journal, March-April 2014, 26, https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-28_Issue-2/F-Doucauer.pdf

²⁷ David Brumbaugh, 2004, "The Parallel Air Tasking Order: Reducing the Size of the Air Operation Center", 2004 Command and Control Research and Technology Symposium, 11, http://www.dodccrp.org/events/2004_CCRTS/CD/papers/131.pdf

²⁸ Brian Clark, Dan Patt, Harrison Schramm, *Mosaic Warfare: Exploiting Artificial Intelligence and Autonomous Systems to Implement Decision-Centric Operations*, Washington D.C., Center for Strategic and Budgetary Assessments, 2020, 45, https://csbaonline.org/uploads/documents/Mosaic_Warfare_Web.pdf

runways. They then rank order internal JIPTL targets within their capabilities from 1 to N (the assessed limit of available capability), in decreasing order of the tactical commander's perceived appropriateness to her available forces. This step effectively provides the IAETF CDR with an inherently pre-weaponeered tasking solution, as every bided objective implies both an assignable capability and feedback on unit-by-unit suitability. Perhaps most valuable, tactical echelon weaponeering opens the aperture to more cogent feedback, both in capturing limitations ("Squadron X can engage bid #1 or #2, but not both") as well as synergies: an F-16 two-ship formation could interdict a bridge, capture electro-optical observation, and deliver a case of classified hard drives to an outstation - potentially all in the same sortie.

Once the IAETF CDR has received field input, she can quickly collapse the tactical force bids and caveats into an actionable list of specifically tasked objectives. At her prerogative, she may either issue an ATO-type prescriptive order, coordinating and synchronizing the forces under her command, or provide mission-type orders that capitalize on field insights and observations to continue delivering airpower effects successfully. This process continues cyclically and indefinitely until the AOC is reestablished or fielded forces disbanded.



CONCLUSION

The fantastic efficiency and span delivered by a centralized AOC enable a rapidity of decision-making and span of control that is difficult to achieve by other means. This same centralization inherently creates a center of gravity and presents a target desirable to an adversary. By utilizing Mission Command principles of providing mission-type order objectives to fielded forces, establishing guidance on force organization in a post-AOC environment, and creating rule sets that allow continued sortie generation within the JFACC’s broader objectives until tactical

control can be re-established, air effects can continue to further JFC goals with minimized interruption in an AOC denied conflict.