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Enabling Mission Command of Airpower

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Introduction

In the winter 2010 edition of *Air & Space Power Journal*, then-Lt Gen Mike Hostage wrote an article titled "A Seat at the Table." In the article, he outlined how, as the Air Force Central (AFCENT) and combined force air component commander (CFACC) for United States Central Command (CENTCOM), he had evolved the concept of the Air Component Coordination Element (ACCE). General Hostage established the 9th Air Expeditionary Task Force—Afghanistan (9th AETF-A) as a means to present forces to the joint force commander (JFC). For years, the campaign in Afghanistan had suffered from the lack of a focused and full-throated air perspective, and moving beyond the ACCE and establishing the 9th AETF-A aimed to fix that deficiency.[1] A few years later in early 2014, then-Maj Gen Kenneth S. Wilsbach wrote about the further evolution of the 9th AETF-A. The article described how the role of its commander had grown to encompass a dizzying array of five hats covering the USAF, air component, North Atlantic Treaty Organization, and Joint roles and responsibilities.[2] Since that time, the concept of multihatting the ACCE and AETF commander with a Joint leadership role has continued to provide a credible voice representing the airpower

perspective. This concept has served the Joint force well in Afghanistan. It allowed the senior Airman to synchronize the delivery of airpower with the ground scheme of maneuver, or to envision and develop other air operations in support of campaign objectives, as did then-Maj Gen James B. Hecker with the counter-opioid campaign against the Taliban in 2018.[3]

Almost under the radar, AFCENT established a second AETF to support operations against the Islamic State, commonly known as the Islamic State in Iraq and Syria (ISIS) or Da'esh. AFCENT activated the 9th Air Expeditionary Task Force—Levant (9th AETF-L) in 2015 based on the lessons from Afghanistan. Again, the purpose was to ensure a strong and credible voice for airpower, this time for what became Operation Inherent Resolve (OIR), a combined joint task force (CJTF) under the command of an Army three-star. The 9th AETF-L replicated the success of the Afghanistan model, giving the senior Airman a seat at the table with CJTF leadership. As the operational environment in the fight against ISIS has continued to evolve, so, too, has the AETF. While the core responsibility of articulating and integrating airpower remains central, the 9th AETF-L has also strengthened the connection between air expeditionary wings (AEW), providing combat, intelligence, surveillance, and reconnaissance (ISR), and mobility airpower and the CJTF. It has also adjusted how AFCENT presents air advisors to the CJTF commander to increase responsiveness to CJTF direction and better support the OIR campaign. The 9th AETF-L and AFCENT are also planning and experimenting with operational-level airpower command and control (C2) constructs, with an eye toward developing mission command capability at echelon down to the AEW level. Finally, the 9th AETF-L is taking steps to structure the AETF staff to provide a ready-made joint task force (JTF)-capable headquarters, at the same time serving as the Air Force element of the CJTF-OIR headquarters. Taking these actions will provide the Air Force an organization and structure ready to accept tasking as a headquarters, with augmentation, that could serve as the core for a JTF in the future, including potentially CJTF-OIR itself.

The Seat at the Table

Unlike in the Afghanistan model, in CJTF-OIR, the senior Airman is not only the commander of the AETF-L but also the deputy commander for operations (DCOM-O) for CJTF-OIR. In his or her Air Force hat, the AETF-L commander is responsible to the CFACC for recommending adjustments to allocation and apportionment, and for suggesting effective airpower applications in line with the CJTF commander's intent and scheme of maneuver. As the DCOM responsible for all Joint force operations across the combined joint op-

erational area, the senior Airman also has a strong voice in both the joint planning process and execution across all domains. As such, he or she can direct the CJTF staff and components as needed to ensure operations account for the effective employment of airpower.

These two hats increase multifold the effectiveness of the joint air component coordination element (JACCE), which also is under the operational control (OPCON) of the 9th AETF-L commander. The JACCE serves as the CFACC's representative to the planning and execution processes of not only the CJTF headquarters but the subordinate Task Force (TF)–Iraq and Special Operations Joint Task Force. The authorities that derive from being the 9th AETF-L commander, exercising OPCON of the JACCE, and from serving as deputy commander for the CJTF combined, provide a strong voice for airpower. If necessary, this even includes the ability to compel CJTF staff elements to collaboratively plan with the CFACC to ensure a full Joint perspective is brought to the table in the development of courses of action (COA) or during execution.

The command relationship governing AETF's can be slightly confusing to non-Airmen. In most Joint contexts, leaders at higher echelons of command retain OPCON of forces, offering subordinate or adjacent formations tactical control (TACON) for use in the battlespace. In the case of the 9th AETF-L, this relationship is largely inverted. The AETF maintains OPCON of three wings, but the CFACC retains TACON of the combat, ISR, and mobility power generated by two of them. True to our mantra of centralized control of airpower at the theater level, the CFACC, as is normal, tasks the wings to fight their bases and fly the air tasking order (ATO) under his retained TACON authority. The instrument the CFACC uses to execute this mission command is the Combined Air Operations Center (CAOC), which through the Master Air Attack Plan (MAAP) process, produces special instructions (SPINS) and the daily ATO.

The retention of TACON by the CFACC is wholly consistent with airpower doctrine. No one can execute the C2 of Joint effects at scale and in-depth like the Air Force. By retaining TACON, the CFACC also maintains the capability to provide those Joint effects essentially on-demand and, when required, at scale to the combined force commander (CFC). Furthermore, retained TACON allows the CFACC to rapidly shift forces across multiple area of responsibility (AOR)-wide missions, avoiding the perils of "penny-packeting" airpower. If, for example, the commander in Afghanistan needs additional capability or capacity for a particular operation, the CFACC can manage that need by reallocating capabilities from other missions, including OIR. In May 2019, the CFACC and CENTCOM commander made several such decisions, reallocating ISR and strike resources around the theater in response to specific and credible threats of an imminent

Iranian attack on US forces and interests in Iraq. The role of the 9th AETF-L commander in such cases is to engage both the CFACC and CJTF staff and leadership, articulating the commander's intent and risk assessments across the supported and supporting command lines.

Whether in a crisis situation as in May 2019 or during steady-state operations, the CFACC's retention of TACON has historically focused the 9th AETF-L commander upward, toward the CFACC and CAOC staff. For example, the 9th AETF-L commander might provide advice to planners at the CAOC via the JACCE on desired airpower contributions for ongoing or upcoming operations. Similarly, the commander will have almost-daily touchpoints with the CFACC or deputy CFACC (DCFACC), where they might provide updates on the apportionment of airpower resources across the theater that impact options available to the CJTF commander. In all cases, the AETF commander fills a critical role, maintaining a tight relationship between the CJTF and the air component.

Strengthening the AEW's Links to the Joint Fight

While the upward engagement of the AETF commander toward the CFACC and his staff is necessary, experience suggests it is not sufficient if we are to attain the CSAF's objective of building Joint war fighters. Fundamentally, while such an approach reinforces the Air Force's long proven and doctrinally sound desire to execute centralized control and decentralized execution, it provides an insufficient focus on mission command at echelon within the air component. If CJTF-OIR is to be a true Joint task force, it is just as important for air component Airmen supporting CJTF to understand the commander's intent—meaning the CJTF commander's intent. While CFACC intent is certainly also important, to most effectively execute a supporting relationship to CJTF, the wings and squadrons executing the CJTF-OIR mission require an understanding of CJTF and its subordinate command operations.

This need grows as the complexity in the battlespace increases. During normal combat operations, with relatively static battle positions and no major changes to task, purpose, and intent, the extant battle rhythm established between the CJTF-OIR staff, the OIR JACCE, and CAOC are more than sufficient to ensure the correct application of airpower, whether ISR, mobility, or strike. While some might think that in more dynamic and crisis-driven scenarios, the centralized nature of airpower would prove a strength, it more often manifests instead as a limitation. The main issue that emerges in these situations is the supporting AEW's inability to maintain awareness of the rapidly evolving situation. This inability manifests as curtailed tactical understanding of the CJTF commander's intent, with a corresponding degradation in their ability to support the CJTF.

As an example of this dynamic, the experience of CJTF-OIR following the liberation of the last territory held by ISIS in the Middle Euphrates River Valley (MERV) in March 2019 is instructive. Following the destruction of the physical caliphate, the fight against ISIS continued across northeast Syria. There were no frontlines in this ongoing fight against ISIS, but there *were* frontlines where the coalition exercised air control against other actors, such as the Syrian Regime and Russia. This air control allowed CJTF to maintain and its partner force—the Syrian Democratic Forces—to effectively control all the territory north and east of the Euphrates River in Syria with a small footprint of only about 1,000 personnel on the ground. This achievement was only possible because of airpower.

Despite the complexity of multiple players vying for access to the airspace and the need for continued operations against ISIS, during this time planner interaction between the CJTF staff and the CAOC was more than sufficient to meet the needs of the CJTF commander. With the high turnover rates at both CJTF and within the air component due to rotational cycles, the JACCE proved invaluable in maintaining situational awareness and linkages across planning and execution time horizons. Senior leader dialogue at the two-star level between the 9th AETF-L commander and deputy CFACC supplemented these interactions, ensuring a common understanding between the CJTF and the air component in its supporting role. The CJTF commander's intent for the air component was simple and relatively static: (1) maintain an acceptable level of air control, (2) utilize ISR to develop ISIS targets, and (3) employ Joint fires to strike targets either deliberately or in a dynamic environment as the ground force conducted back-clearance and targeted operations against the enemy.

Since the factors impacting the battlespace were relatively static, it was sufficient during the post-MERV time period for the commander's intent to flow from the CJTF staff to the CAOC either directly or via the JACCE, then down to the executing units from the CFACC. The 9th AETF-L leadership certainly had touchpoints with wing leadership—but most of the dialogue centered on ADCON responsibilities with only limited discussions of the CJTF scheme of maneuver. When operational discussions did occur between the 9th AETF-L and its subordinate wings, it was generally to provide wing leadership with direct feedback in terms of either battle damage assessment or to express the ground force commander's (GFC) appreciation for air contributions to the fight. The idea behind this dialogue at the time was to provide wing commanders the data needed to share with their Airmen the impact their contributions were having in the campaign, which was information the air component did not have readily available. The feedback was used purely as a motivational tool—it was certainly not a required action to meet the CJTF commander's intent.

From late September to early October 2019, the situation began to change rapidly in three ways. First, the amount of airpower in the CENTCOM AOR underwent a number of gyrations, constraining available resources from a supply perspective. Second, Iranian threat network activity increased, particularly in the wake of a series of attacks by the Houthis and the direct Iranian attack against the Saudi Aramco facility. Finally, the dynamics on the ground shifted under CJTF-OIR's feet, with a substantial uptick in fighting near Idlib, in northwestern Syria, and guidance from political leadership to conduct a deliberate withdrawal of ground forces as Turkish forces entered Syria from the north.

As these factors collided in time and space, CJTF-OIR rapidly adjusted its desired outcomes and objectives across the CJOA. Force protection—always important—became the top priority. In Iraq, illegitimate militia groups threatened to attack coalition forces and interests. In Syria, a variety of actors, including the Russian-back Syrian regime, Syrian opposition groups comprised of Islamic extremists, and Iranian-backed militias all maneuvered to gain an advantage on the ground and seize key terrain as the Turkish military incurred from the north. As this happened, the US military began retrograding in Syria from west to east. Accordingly, CJTF-OIR, working with the CFACC and CENTCOM, reprioritized ISR to maintain the required level of battlespace awareness. CJTF also worked with the CFACC and CAOC to increase and configure fighter defensive counterair (DCA) coverage and on-call close air support based on the situation on the ground. This situation evolved rapidly, with shifting locations of friendly and other forces and dynamic schedules for ground movement. The CJTF plan for retrogrades and reinforcements at various forward bases and observation posts changed by the hour.

Through a series of discussions with the DCFACC, the air component reworked the broad CFACC intent and the air scheme of maneuver. The latter included new locations for combat air patrols for both ISR and fires, as well as a surge of mobility assets to move in reinforcements and move out retrograding personnel and materiel. The CFACC also clarified his intent, with substantial input from the JACCE and 9th AETF-L, allowing for a robust defense of forces on the ground should they come under attack by any actor, but also emphasizing the need to avoid inadvertent escalation. Turkish military forces and their proxies, operating in close proximity to US forces and engaging elements of the US's long supported partner force in the fight against ISIS, complicated the situation even further.

In addition to providing input up to the CFACC, the 9th AETF-L also focused down to the wings during this time. AETF leadership repeatedly engaged AEW leadership to ensure the timely and fullest possible understanding of CJTF intent and scheme of maneuver as it evolved. While the CAOC effectively man-

aged the technical aspects of the air domain during this critical time, this direct dialogue between the 9th AETF-L and wing leadership provided additional context and awareness during a rapidly evolving situation. This put a substantial but appropriate operational burden on wing leadership somewhat out of the norm for Air Force commanders. Wing leaders essentially fused the technical inputs from the CAOC, such as sortie rates, weapons load-outs, and the like, with both CFACC intent and 9th AETF-L context.

While the CAOC and 9th AETF-L provided inputs to the AEW, it was leadership at the lower echelons—wing commanders, squadron supervisors, and flight leads—that truly drove mission success. Airmen on the flight line loading weapons, armed with the context for why load-outs kept changing, worked doubly hard to ensure the right aircraft had the right ordnance. Crew chiefs and specialists ensured sortie generation on time for the next flight. Logistics Readiness Squadron and Force Support Squadron Airmen were ready to receive weary forces and equipment returning from the frontlines in Syria as they retrograded. In the air, the stakes were particularly high. When US forces at an observation post near Kobani, Syria, came under fire from a Turkish artillery battery north of the border, the aircrew kept their cool, deescalating rather than escalating the situation, avoiding the need to use force in self-defense. Their precise understanding and application of CFACC and CJTF-OIR commander's intent allowed them to make the right call time and time again as a fluid and multiactor environment evolved around them. Daily conversations with AEW leadership allowed the 9th AETF-L to keep commanders informed of this evolution and the complex mosaic on the ground.

Wing leadership and their Airmen deserve all the credit for their professional execution. The presence of a senior Airman at CJTF-OIR supported these Airmen, not vice versa. The 9th AETF-L was able to shape the ground scheme of maneuver based on the ability of airpower to provide ISR, mobility, and combat power. The OIR JACCE was able to shape CFACC intent through planner-to-planner dialogue regarding the various actors on the ground and the threat there represented. Finally, through down-and-in communications, the 9th AETF-L kept the AEWs informed of CJTF-OIR intent and the situation on the ground, allowing for more comprehensive understanding and thus more synchronized execution between air and land components. The aggregation of these activities during this period represented the first tentative steps in AFCENT toward executing mission command at an echelon below the theater-level air component.

Mission Command at Echelon

Several months before the situation in Syria evolved as described above, the 9th AETF-L and 9th AETF-A, our sister AETF in Afghanistan, began a dialogue

with the CFACC on alternative C2 constructs for airpower across the CENT-COM AOR. In the case of Afghanistan, this was driven by geography and capability. The relatively isolated Afghanistan CJOA was a perfect place to start, as most of the airpower employed emanated from bases within the country, including tanker, fighter, and ISR aircraft. Furthermore, a mature theater air control system (TACS) was in place, providing an extant mission command capability. In November 2019, the CFACC delegated TACON of the air assets in Afghanistan to the 9th AETF-A, and they became largely—although not entirely—self-sufficient. By retaining OPCON, the CFACC retained the ability to reallocate assets throughout CENTCOM, either to provide increased support to forces in Afghanistan or, more rarely, to swing those forces toward other priorities. Most daily flight operations dropped off the ATO, governed instead by locally generated orders under the 9th AETF-A.

While the 9th AETF-A was preparing to move forward with its innovative approach to mission command, the 9th AETF-L directed the OIR JACCE to work with the 332nd AEW and CAOC on alternative C2 constructs for airpower in support of OIR, where a different set of challenges emerged. First, most airpower for OIR is not generated within the CJTF-OIR CJOA, covering Iraq and Syria. While the majority of the daily support for OIR comes from the wings aligned under the 9th AETF-L, those wings operate largely from bases outside the CJOA. Furthermore, the 9th AETF-L's wings also support operations up and down the Persian Gulf, and bases around the Gulf not under the 9th AETF-L provide airpower for OIR. Furthermore, the backbone for tactical C2 of airpower is not in the CJOA. Neither the 9th AETF-L nor the wings underneath it has ready access to the TACS for OIR, which is comprised of disparate elements within and outside the CJOA.

Despite these challenges, 9th AETF-L elected to press ahead and apply intellectual energy to the idea of distributed mission command. The 332nd AEW, which provided the preponderance (but not all) combat airpower for OIR, was uniquely situated to accept mission-type orders. The ideas began with a question: what if we give the 332nd AEW commander an order to maintain air superiority over US forces in Syria, and to strike Da'esh targets in the CJOA when requested by the GFC? The thought was that the wing commander should be able to accept such an order, conduct mission analysis, and develop COAs through a review of the available intelligence and dialogue with the GFC. These COAs would include how many sorties to fly and where, weapons load-outs, tanker plans, and the like. The wing commander could rapidly adjust the flying schedule—effectively a local version of the ATO—in near real-time to meet emerging requirements, seize the

initiative, and exploit opportunities based on the situation on the ground and commander's intent from OIR or the supported GFC.

Implementation of this idea faced several hurdles, each of which would be even more challenging in less permissive environments. Recognizing this fact, 9th AETF-L and the CFACC committed to experimenting to advance the ideas and concepts that would be required for the C2 of airpower in the high-end fight. The experimentation plan acknowledged the CAOC's ability to synchronize Joint effects at a scale and scope well beyond any other mission command capability or C2 node in existence today. Nonetheless, both the Air Superiority 2030 Enterprise Capability Collaboration Team (ECCT) and the Multi-Domain C2 (MDC2) ECCT that followed it identified the need for the Air Force to develop alternatives to this command construct. Both ECCTs envisioned environments where the strengths of the CAOC became vulnerabilities, and where successful operations would depend on the initiative of countless leaders at echelon operating on intent. This approach challenged the C2 construct with which generations of Airmen have now grown up and grown comfortable. While the operational environment of the OIR CJOA did not require an adjustment to mission command, experimentation in a mature theater with a well-understood yet dynamic operational environment seemed likely to yield lessons that could be applied elsewhere.

Putting All Echelons of Command Back in Command and Control

During a tabletop exercise designed to lay the foundation for live-fly experimentation, a combined CAOC, 9th AETF-L, and 332nd AEW planning team identified a host of authorities that currently resided at the CAOC, but which would have to be executed at echelon in a degraded C2 environment. These ranged across a wide arc and included items such as the authority to launch an aircraft, conduct a reattack, or reposition a combat air patrol. As the team examined and discussed the need to execute these authorities elsewhere, they began to ask why the CAOC was making these decisions in the first place. The epiphany then hit: over the course of many years and probably for a variety of good reasons at the time, the C2 construct had slowly removed almost every opportunity for combat decision-making in the air. To fix this, leadership at the CAOC recognized the need for mission-type orders to deal with contingencies such as a degraded C2 environment. Even more importantly, they also realized these same mission-type orders could provide broad guidance and intent that would give commanders and operators the context and authority they needed for combat decision-making at echelons of command or in the cockpit. In other words, mission-type orders need not be seen as only useful when they "can" be used, such as in Afghanistan, or when they "must" be used, such as when communications are degraded. Instead,

Airmen should imagine how they can retool the current air component C2 system and processes to improve war fighting on a daily basis. To do so, commands need to incorporate mission-type orders and the concept of mission command into the MAAP and daily guidance and orders from the CAOC.

At its heart, mission command is about empowerment. When executed well, mission command provides clear guidance and intent that empowers subordinate commanders to execute without having to ask "Mother, may I" from higher headquarters. The outcome is a synchronized initiative among subordinate commanders, where all know the desired outcome and the left and right limits of actions they can take. As mission command permeates echelons, leaders can seize the initiative, innovate, and exploit otherwise fleeting opportunities. They know the overall objective—the "why" behind their actions—and understand the level of risk their higher command is willing to accept. Armed with this knowledge, they surprise us with their ingenuity, increase the speed of the decision cycle, and outpace the enemy, all of which drive mission success.

For the air component, this kind of empowerment must occur in two places. The first of these is in the battlespace itself. Here, those operating the aircraft or delivering effects from other domains can better accomplish the mission if given intent and allowed to execute. For example, consider a two-ship of fighters is returning to base from a DCA mission after their vulnerability time is complete. Today, these fighters are required to go straight home. Indeed, they are most often denied if they try to take the initiative by contacting a joint terminal attack controller to execute a show of force near a base that has been threatened recently, or if they ask to perform additional defensive patrols over exposed ground forces in an area adjacent to their flight path home. If it isn't on the ATO, it isn't allowed without at least deputy CFACC approval.

Yet, each of these tasks—executing a show of force or additional DCA—is exactly what commanders would intend those aircraft do if they have the time and fuel available. Limited air assets across the CENTCOM AOR preclude having the coverage needed to fill every GFC request or to cover every bit of airspace desired to prevent Russian or Syrian Regime incursions. If, however, a mission-type order supplemented the ATO, and if the concept of mission command was adopted up and down the chain of command, Airmen delivering effects could capitalize and exploit opportunities, whether due to having extra gas and extra weapons or due to an enemy misstep. Rather than assume the plan instantiated in the ATO is the perfect solution to a complex problem, Airmen should assume it is merely a starting point from which they can deviate to better meet the intent of the commander. Rather than assume those controlling the execution of the ATO—whether on the CAOC floor or executing TAC C2—have perfect situa-

tional awareness, Airmen should assume the individual in the fight is best positioned to make tactical decisions. Others can supplement their situational awareness to improve their tactical decision-making, but they should not supplant it. This approach has the added benefit of sharpening the contributions of TAC C2 and the CAOC battle captains who, instead of becoming mired in the tactical, can instead focus on operational-level decision making in support of the CFACC.

The second kind of empowerment required to implement the concept of mission command is, appropriately, empowering commanders at echelon. Under the current construct, the TACON of forces is executed directly from the CFACC to the cockpit, skipping the echelons of command in between. While the AETFs and their subordinate wings, groups, and squadrons have OPCON of their forces, once TACON is withheld at the theater level, little beyond administrative control (ADCON) remains. Returning TACON to all echelons of command again allows the ATO to serve as a starting point for subordinate units to meet higher-level intent rather than being viewed as the only vehicle for doing so. Furthermore, it improves the air component's war-fighting effectiveness by leveraging the vast experience and knowledge resident in the chain-of-command. As an example, consider a two-ship of DCA fighters scheduled for a tanker, and assume that tanker is required to get to the Combat Air Patrol location. Under the current construct, if the tanker falls out for some reason, the two-ship of DCA fighters must cancel. If instead, the AETF, AEW, Expeditionary Operations Group, and Expeditionary Fighter Squadron commanders had TACON, they might decide to launch the fighters anyway to cover a nearby location where a known DCA requirement was unfilled. Or, if the fighters were multirole, those same lower-level commanders might send the two-ship to support a nearby GFC who had an unfilled request for air support, or who perhaps had an emerging target that had not been apparent during ATO development. Similarly, a commander might decide based on higher-level intent to add or remove lines from the flying schedule based on the health of the fleet, to meet a more robust sortie generation requirement for a major strike shaping up for the days ahead. Empowered commanders would know this through coordination with adjacent or supported commanders on the ground, or through discussions of higher-level intent passed from the AETF staff colocated with the JTF headquarters.

Commanders empowered to execute TACON, and subject to the baseline requirements of the ATO but with the flexibility to make smart command decisions in line with intent, will be better postured to execute during more complex contingencies. Having been allowed or even required to execute disciplined initiative each day, they will be more ready and more confident to do the same when communications with the CAOC degrades in a contested environment. Combining

this aspect of mission command with the empowerment of those at the tactical edge will be the key to success in high-end combat. By putting all echelons of command back in C2, smart leaders will be able and empowered to make the right decisions when their expertise is needed most.

Task Force–Air

Another significant evolution of how the 9th AETF-L and AFCENT chose to present forces was through the creation of Task Force–Air, a Joint and combined organization focused on the development of the Iraqi Air Enterprise for the purposes of improving its ability to defeat Da'esh. Then-Lt Gen Jeffrey L. Harrigian laid the foundation for TF-Air in 2017 when he directed the creation of the 321st AEW and the Coalition Air Advisory and Training Team (CAATT).

Modeled in many ways on the lessons from air advising in Afghanistan, General Harrigian aimed to centralize the advising effort and make it a more relevant and substantial contributor to OIR's campaign progress. While successful in this regard, the alignment of the 321st AEW under the 9th AETF-L and AFCENT put it in a supporting role to OIR, not under the direction of the CJTF-OIR commander. Furthermore, the CAATT existed only as an AFCENT entity. From the OIR perspective, it appeared as just another staff entity, advocating for capabilities but not contributing to the CJTF scheme of maneuver. In a CJOA where the kill mechanism for the adversary usually was not US or coalition firepower but rather the Iraqi military—advised, supported, and sometimes equipped by the coalition—these attributes limited the positive impact the 321st AEW and CAATT could have on the campaign relative to ground and special operations elements of the Joint force.

In July 2019, the 9th AETF-L took steps to address these limitations. Working with the AFCENT staff, the CFACC agreed to create a new task force comprised of Air Force and a limited number of coalition air advisors. TF-Air, as uncreatively branded, was then offered TACON to CJTF-OIR. Once CJTF-OIR accepted TACON, TF-Air became a subordinate component of the CJTF, coequal with TF-Iraq (the OIR land component providing advice and assistance to the Iraqi Army) and the Special Operations Joint Task Force (SOJTF). While such a rebranding and command relationship adjustment might seem insignificant on its surface, it made all the difference. The day before TF-Air stood up, the 321st AEW commander had a seat at the end of the table in the OIR commanding general's conference room, and he was seldom consulted. A day later, the TF-Air commander had a seat near the head of the table with other commanders. He was called upon for input and opinion as a matter of course, and his staff was called upon to coordinate and comment on CJTF-OIR plans and orders. Thus, while it

remains the smallest of OIR's subordinate commands, TF-Air now has a "seat at the table" as a component working by, with, and through the air elements of the Iraqi Security Forces as they endeavor to achieve the enduring defeat of Da'esh.

The Next Evolution—A Joint Force-Capable Headquarters

The creation of TF-Air brought an Airman's perspective to CJTF-OIR's efforts to enhance partner capacity, which became the main effort following the liberation of the last ISIS-held territory. It also provided an opportunity to reexamine the 9th AETF-L and what it contributed to the CJTF-OIR fight. Rather than persisting merely as an ADCON headquarters over three wings, the question became whether there was a way to reimagine the AETF as an element of mission command for CJTF-OIR. After observing how the US Army deployed into the OIR headquarters, it became clear there was.

In most people's minds, the CJTF-OIR headquarters staff is formed around an Army corps headquarters, supplemented by Joint Individual Augmentees (JIA) and coalition personnel. This view may have been accurate at the beginning of OIR, but it no longer comports with today's reality. Today, the Army corps headquarters assigned to OIR provides the commanding general and command sergeant major but brings with it only about a third of its garrison force, or around 250 soldiers. The CJTF-OIR headquarters, by contrast, comprises of more than 1,000 individuals. Thus, the corps only fills about a quarter of OIR staff positions. JIA members comprise another quarter, with the Air Force alone providing around 120 personnel. Coalition, civilian, and contractor personnel flush out the remaining 50 percent of the staff.

The Army *corps* staff that deploys to OIR thus does not actually provide the *core* of the CJTF. Rather, they plug into the other 75 percent of the OIR staff that is already running and operating at full speed when they arrive. Furthermore, the command team and many of the key officers from the corps still retain many of their garrison responsibilities. While the vast majority of their effort is focused on CJTF-OIR after they arrive, they are required to balance their responsibilities and never fully divest from garrison or nondeployed duties. In this sense, while the Air Force (in theory) suffers from a lack of headquarters unit cohesion in the deployed environment, we gain in deployed effectiveness at the headquarters level as Airmen are relieved of nondeployed duties throughout their time in CENTCOM. Furthermore, the alleged benefit of headquarters cohesion is questionable. While the corps staff may train together and deploy together, their cohesion as a body that makes up only a minority percentage of the staff does not bring substantial advantages. In some cases, their cohesion can create an insularity that is even disruptive to the remainder of the CJTF staff. For

all these reasons, Joint doctrine recommends using a Joint force-capable headquarters only as the initial sourcing solution for a JTF. As the JTF evolves from dealing with the initial crisis and moves further along in the campaign, a purpose-built headquarters is generally preferred.

Taking these observations into account, the 9th AETF-L is moving forward with the next iteration in C2, reimagining how we present Airmen to the CJTF-OIR headquarters. The way forward builds upon the strengths of how Airmen currently deploy. The principal element of this change is to realign the JIA Airmen assigned to the CJTF directly under 9th AETF-L, forming an Air Force element of the CJTF-OIR joint staff. Currently, these Airmen are aligned under a squadron, the 387th AES, responsible for almost 500 Joint Expeditionary Tasking/Individual Augmentee (JET/IA) Airmen around the AOR. Realigning the Airmen on the OIR staff will not only relieve pressure on the 387th AES, but it also puts Air Force leadership on the OIR staff directly in charge of the Airmen working on that staff. This realignment simplifies command relationships, as although the 9th AETF-L commander currently is responsible for these Airmen, it is only through a much longer and less efficient wing, group and squadron command chain.

Realigning the approximately 120 JET/IA Airmen on the OIR staff under the 9th AETF-L also allows the construction of a "shadow" core staff capability that could support future OIR command evolutions. As an example, the OIR staff has approximately 35 Airmen working in the CJ2 directorate. Naming the senior Airmen in CJ2 as the 9th AETF-L A2 and aligning CJ2 Airmen under that 9th AETF-L directorate provides a staff structure the Air Force could leverage for future JTF leadership opportunities. Airmen on the staff already arrive in the CENTCOM theater trained to work in a Joint headquarters. By virtue of their positions, they already exercise joint planning and execution skills every day, working Joint processes, and executing a Joint battle rhythm. While they will be no more an intact headquarters element than the Army's OIR contribution from the corps staff, aligning Airmen in this way structures the 9th AETF-L for rapid re-tasking should the OIR headquarters further evolve, or in the event another crisis requires a mission command element.

Conclusion

While mission-type orders provide tactical guidance to our formation, exquisite communication suites speed our decision-making, and technology advancements enable our capabilities, mission command is ultimately about none of these. It is about enabling Airmen. Ensuring they understand the purpose of their contribution is what enables innovation and motivates mission success. This philosophy is wholly consistent with the tenet of centralized control and decentralized

execution. When Airmen understand their purpose, it allows for the establishment of clear lines of communication and understanding the operational environment. The ability of a commander or senior enlisted leader to explain the ongoing campaign for Airmen and link their contributions to overall effort not only secures awareness but increases morale. Regardless of the architecture of mission command, there is always a requirement to articulate the mission to Airmen that technology will never replace. The more Airmen understand that context, the better they can contribute to the Joint campaign.

In his initial days as the 21st chief of staff of the Air Force, Gen David L. Goldfein identified the concept of Joint war-fighting excellence as one of his big three priorities. This tenant implored leaders to speak in Joint terms, understand and contribute to Joint doctrine, and to seek experience serving in Joint organizations. Theater airpower under the centralized control of the CFACC remains the preferred method for presenting air and space capabilities and providing air and space effects to CJTF-OIR for long-held and validated doctrinal reasons. Nonetheless, by advancing the AETF construct, exploring alternate mission command and distributed C2 opportunities, and reimagining the role of the AETF in the Joint fight, the 9th AETF-L continues to evolve. This evolution is not about dominating conversations in the Joint environment. It is about making the Joint team stronger. Joint operations, after all, are about the synchronization of capabilities across components and domains. From combined naval and ground operations at the Battle of Yorktown that led to the defeat of Cornwallis to the Joint All-Domain Command and Control concepts envisioned today, the Joint team is more effective when everyone has a seat at the table. Through innovative approaches to command relationships, C2, and staff structure, AFCENT and its subordinate AETFs continue to forge new tools and methods for the Air Force to engage in the Joint fight through the crucible of ongoing and persistent combat operations. ✪

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CMSgt Antonio J. Goldstrom, USAF

Chief Master Sergeant Goldstrom (BS, National-Louis University; MBA, Trident University) is the command chief master sergeant, 9th Air Expeditionary Task Force—Levant.

Notes

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More Cowbell: A Case Study in System Dynamics for Information Operations

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MAJ Sean Yarroll, USA

To put it simply, we need to worry a lot less about how to communicate our actions and much more about what our actions communicate.

—Former Chairman, Joint Chiefs of Staff
Adm Michael G. Mullen,
August 2009
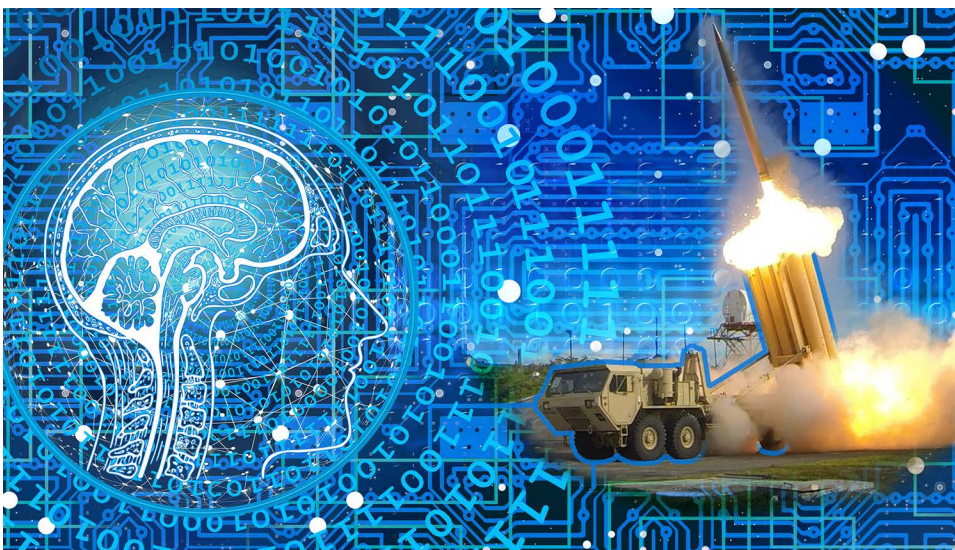
Introduction

In a popular "Saturday Night Live" skit from 2000, despite the cowbell depicted as an afterthought in a fully integrated band, the audience learns a valuable lesson on the importance of "more cowbell."[1] To continue the metaphor, the cowbell has never been and will never be the primary line of effort in the band. But the cowbell permeates throughout the music, often tying the entire performance together. Such is the fate of information operations in a joint environment, often considered a "second-class citizen as a source of nonlethal effects, an afterthought bolt-on to fires, or worse."[2] On the contrary, information operations is often the capability that binds joint operations together to make it successful.

Ultimately, how surrogates of the US government engage and communicate with foreign audiences matters, and the success or failure of most foreign policy decisions is "contingent on the support received from various populations whose perceptions are influenced by both what we do and what we say."[3] This fact is especially relevant, considering American public diplomacy often "wears combat boots."[4] That is, when the military element of national power is used to convey or conduct foreign policy, the support and perceptions of target populations become instrumental to mission success.

Often, military objectives depend in large part on the behavior and attitudes of relevant civilian populations and cannot be achieved solely through the application of force.[5] Even the *Department of Defense Strategic Communication Science and Technology Plan* noted that "a compelling argument can be made today that the public perceptions and implications of military operations might increasingly outweigh the tangible benefits actually achieved from real combat on the battlefield."[6] "Every action, utterance, message, image, and movement of a nation's military forces influences the perceptions and opinions of the populations who witness them—both first hand in the area of operations and second or third hand elsewhere in the world."[7] Quite simply, "Every action that the United States Government takes sends a message."[8] Therefore, this "battle of the narrative" should be understood as "a full-blown battle in the cognitive dimension of the information environment, just as traditional warfare is fought in the physical domains (air, land, sea, space, and cyberspace)."[9] Once recognized as an integral part of a military campaign, strategic communication should be accounted for in the Joint Planning Process.

A recent example of such a foreign policy decision serves as a case study in the ability to account for such factors when weighing particular courses of action (COA). In July 2016, a course of action was implemented to introduce the Terminal High Altitude Area Defense (THAAD) missile defense system to the Korean peninsula, with deployment occurring throughout the first half of 2017. Although not yet fully operational, the deployment of THAAD will likely achieve several tactical objectives defending the Republic of Korea (ROK– South Korea) from ballistic missile attacks from the Democratic People's Republic of Korea (DPRK– North Korea). In taking this action, however, numerous second- and third-order effects were created, each with their challenges. Such challenges must be overcome to achieve national strategic objectives.

The following analysis deconstructs joint doctrine provided to the information operations planner for synchronizing their efforts with the overall Joint Planning Group. The analysis shows that while doctrine often calls for "more cowbell," seldom does it explain *how* to incorporate such measures into the overall plan. To develop an integrated, synchronized information operations plan, this analysis

suggests a four-step process based on systems analysis to achieve unity of effort; gain synergies throughout the joint planning process; and avoid unintended consequences, information fratricide, and strategic surprise. In the words of Admiral Mullen, "we need to worry . . . about what our actions communicate." Therefore, in addition to the proposed recommendations, several areas for further research related to joint planning and the integration of information operations into the planning process are also provided.

Background

Information operations (IO). *Information operations* is an umbrella term that covers the "integrated employment, during military operations, of information-related capabilities in concert with other lines of operation, to influence, disrupt, corrupt, or usurp the decision-making of adversaries and potential adversaries, while protecting [the United States]."[10] This information environment, therefore, is comprised of three main dimensions: the physical, informational, and cognitive dimensions.[11] As an umbrella term, information operations covers a wide range of military activities intended to affect each of these dimensions. For example, aspects of information operations include electronic warfare aimed at physical infrastructure, cyber attacks levied against adversary information stores, and strategic communications intended to alter the cognitive foundation of a target audience, usually with the intent of influencing the target audience's behavior—either through coercion or deterrence. This cognitive dimension of the information environment encompasses the mind of the decision maker and the target audience. In this cognitive dimension, the target audience thinks, perceives, visualizes, and decides on potential courses of action. "Public opinion, perceptions, media, public information, and rumors influence the cognitive dimension, and . . . 'the battle of the narrative' [is] won or lost here."[12] In today's highly interdependent and globalized world, information provides perspective and helps senior decision makers understand an increasingly complex operating environment, such as the one currently found on the Korean peninsula.

THAAD. THAAD is a ballistic missile defense system with the capability of intercepting and destroying ballistic missiles during their final, or terminal, phase of flight.[13] Each THAAD system consists of a highly mobile truck-mounted launcher, eight interceptor missiles, tracking radar, and a fire-control computer. According to a joint statement between the US and ROK, the purpose of THAAD is to act as a "defensive measure to ensure the security of South Korea and its people, and to protect Alliance military forces from North Korea's weapons of mass destruction and ballistic missile threats."[14]

The stated intent of deploying THAAD to ROK is to prevent Pyongyang from being able to engage in coercive diplomacy. However, because THAAD destroys missiles during the terminal phase regardless of where they originate, placing the system in ROK means that China is similarly limited in its ability to use such coercive diplomacy. That is, by placing THAAD in ROK, China is just as constrained as DPRK in its ability to use coercive diplomacy, regardless of American assurances of the defensive nature of THAAD. Such discussions between the United States and China over the offensive or defensive nature of THAAD can only occur, however, when mutual trust exists between the relevant parties.[15] Such trust does not currently exist between the US and China, although targeted information operations could help alleviate this discrepancy.

Since China has never been in favor of such a deployment, the deployment of THAAD to the peninsula indicates a South Korean willingness for closer relations with the United States, though at the expense of a closer relationship with China. When analyzed against an advancing North Korean nuclear threat, the US, ROK, and Japan all believe that THAAD will aid in increasing stability for the region. On the other hand, China has a legitimate concern about having its nuclear deterrent compromised by THAAD, and the United States certainly desires strategic stability with China. Similarly, the US has a legitimate desire to defend against North Korean missiles that can reach Japanese, and South Korean targets and one day soon, the US west coast. North Korea, however, has an equally legitimate objective to strengthen its deterrent in the face of US, Korean, Japanese, and now Chinese pressures. Such competing national interests increase cognitive and physical tensions in an already tense region of the world.

Additionally, pockets of South Korean citizens have publicly protested the deployment, concerned about potential provocations of North Korea and environmental concerns at the deployment location.[16] The topic of THAAD has also become a discriminating factor among the major political parties in South Korea and was fiercely debated between the front-runners for ROK's recently vacated presidency.[17]

As retribution for moving forward with the deployment of THAAD, China has engaged in activities to shut down major South Korean stores in China, banned the import of South Korean goods, prohibited Chinese tourists from visiting South Korea, and proliferated anti-Korean sentiment.[18] Meanwhile, North Korea continues nuclear tests and engages in increasingly aggressive rhetoric.

Analysis

An analysis of the deployment of THAAD to the Korean peninsula illustrates three areas for improvement for IO doctrine provided to joint force planners in the realm of unintended consequences, information fratricide, and strategic surprise.

Unintended Consequences. During the Joint Planning Process, planners utilize various frameworks to analyze the operational environment, taking into account the political, military, economic, social, infrastructure, and informational (PMESII) factors that may affect potential courses of action. All of these actors, factors, and forces combine to create an exceedingly complex cognitive environment in which strategic communications must operate. Usually conducted as a part of Joint Intelligence Preparation of the Operational Environment development, too often, this is where the analysis ends. Ending the analysis at this point opens the planner up to missing complex interactions between various PMESII nodes. That is, without a more complete picture of the operating environment, potential COAs cannot be adequately analyzed, and second- and third-order effects may be missed. Similarly, since "all actions send a message," decision makers need the means to relate seemingly disparate actions, to determine what second- and third-order effects there might be. Chinese economic repercussions against the ROK are an example of such unintended consequences. Though these actions may not have been avoidable, planners and decision makers need a way to understand (and plan for) the relationships between seemingly disparate nodes of the operating environment.

To help alleviate this problem, the Joint Interagency Coordination Group (JIACG) should be fully engaged in planning efforts with the Joint Planning Group. The JIACG consists of representatives from throughout the interagency community and would have the added benefit of providing feedback to the JPG on nonmilitary actions, such as those taken by China in response to the deployment of THAAD.

Information Fratricide. When information operations fail to align and synchronize, several challenges can arise. Often, specific IO actions might need to be taken to mitigate the actions of another agency or military headquarters. For example, one of the United States' largest peninsula exercises, Ulchi Freedom Guardian, has been described as "purely defensive in nature" by both US and ROK leadership.[19] However, the exercise occurs amid statements by the then-Secretary of State that "all military options are on the table,"[20] and those by the current US Ambassador to the United Nations Nikki Haley, that the US is "not ruling out anything, and we're considering every option."[21] Such statements increase tensions in the region and could constitute "information fratricide," where

one element of the government makes a statement that contradicts or undermines messages from elsewhere in the government.[22] As such, highly developed techniques must be established to ensure that planners and decision makers can identify those nodes most susceptible to information operations and to ensure that such efforts are integrated and synchronized within the overall operation.

Strategic Surprise. Without appropriate messaging and signaling, friendly courses of action that might seem to be "common sense" can often take allies and adversaries by surprise. When attempting to maintain regional stability in a complex, interdependent operating environment, strategic surprise can cause additional unintended consequences, which makes forecasting adversary actions more difficult. All actions should be unambiguously communicated and should be signaled to the maximum extent possible. Such deliberate and overt signaling allows both adversary and ally alike to forecast the actions of the United States and helps to build trust. Instead, the announcement to deploy THAAD (in July 2016) did not come immediately following a North Korean provocation, nor was it unambiguously signaled. As a result, the announcement surprised many in the region— not necessarily because the decision was made, but because it was made at that particular time.

It is important to note here that there is a marked difference between diplomacy and public diplomacy. That is, while public statements may have illustrated surprise or have intended to convey a certain meaning, private communications between the nations in the region may very well have communicated a different message or served another purpose. While such flexibility in messaging is desirable, it should be noted that any difference in public and private communications simply increases the complexity of the IO operation, and provides the opportunity for mixed messages, information fratricide, and ambiguous intentions. The decision to have conflicting public and private communications should simply be weighed against the intended benefits of such a course of action, and unintended consequences should be planned for.

In complex operating environments such as East Asia, unintended consequences, information fratricide, and strategic surprise are three factors that significantly complicate planning efforts and can lead to catastrophic consequences. These factors can be readily mitigated, however, with a systems approach to information operations.

Systems Approach to Information Operations

According to Joint Publication 5-0, planning for information operations should be conducted in parallel with campaign and contingency planning.[23] Such support efforts are likely to be conducted by the Information Operations Cell (IO

Cell), which is primarily responsible to the joint force commander to integrate informational capabilities into the overall plan. The IO cell also operates in coordination with the rest of the Joint Planning Group, which is synchronized with the prevailing desired objectives. These operational-level planning groups "align and synchronize information-related capabilities to achieve effects beneficial to mission objectives and strategic guidance."[24] This responsibility is no small feat, however, as current doctrine requires members of the IO Cell to conduct such planning, but does not explain *how* to conduct such efforts. The analysis of the deployment of THAAD to the Korean peninsula suggests a four-step process that may prove to address this gap in doctrine, providing IO planners a process for producing an integrated, synchronized information operations plan. It should be noted that this four-step process assists in the execution of several steps currently described in joint doctrine, including the IO Estimate, Center of Gravity Analysis, COA Development, and IO Task Development, with differing levels of detail provided in doctrine for each.

Step 1—Conduct a System Analysis of the Operational Environment

Given the complex, interdependent environment often encountered during campaign and contingency planning, PMESII analyses should be taken one step further, by graphically representing the operational environment by means of systems thinking and a resulting systems map.

Conceptualized by Massachusetts Institute of Technology professor Jay Forrester, systems thinking is essentially the opposite of the traditional analyses taught throughout professional military education. Joint doctrine currently employs "systematic" thinking, which emphasizes separating the individual pieces of what is being studied into manageable parts.[25] This emphasis is why PMESII frameworks are so widely utilized throughout military planning. By contrast, systems thinking (or systemic thinking) focuses on the interaction between the various nodes being studied. Instead of breaking the system down into smaller chunks, it expands to include all actors, factors, and forces working upon a system. For this reason, systems thinking is often more effective in solving the most difficult problems—complex issues involving numerous, interdependent variables.[26] That is, systems thinking is vital in understanding foreign policy implications like the deployment of THAAD to the Korean peninsula.

For this case study, such a systems analysis might look like figure 1.[27] Each actor, factor, or force that provides input to the Korean operational environment is mapped, including each node's relationship with other nodes in the system.

Meanwhile, all of the nodes and interactions are depicted in relation to the likelihood of development for the best- and worst-case outcomes, which is identified as the denuclearization of the peninsula and World War III, respectively. Red arrows throughout the map indicate an inverse, negative relationship, whereas green arrows indicate a direct, positive relationship between two nodes. Black arrows indicate variable relationships that are actor dependent. For example, on the far left of the systems map, the deployment of THAAD to the peninsula negatively affects the security perceptions of North Korea, while positively influencing the security perceptions of ROK. The systems map also highlights those events that have already occurred, which are annotated by a gold outline. Once all relevant actors, factors, and forces are mapped, planners can more fully analyze the complexity and interdependencies of the operating environment.
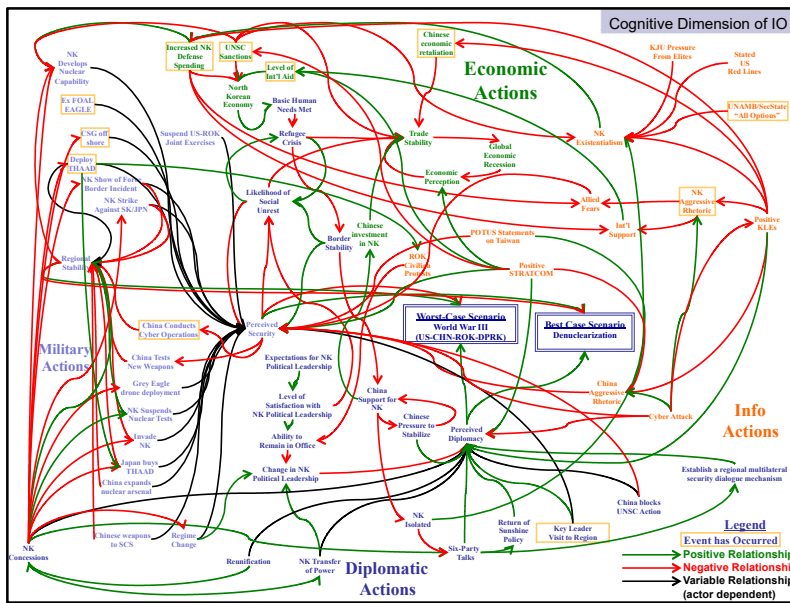
Figure 1. Systems map of North Korean operating environment

Developing such a process map acknowledges that "actions communicate,"[28] and that unrelated actions often matter at least as much, if not more, than the actions purposely taken within the realm of a particular course of action. The left-hand side of figure 1 shows how military actions have subsequent effects on seemingly unrelated diplomatic efforts, the so-called "diplomacy of deeds," as evidenced by the negative tensions introduced by large-scale military exercises such as Foal Eagle and Ulchi Freedom Guardian. While these exercises might be meant as a deterrent, they also have a negative influence on North Korean security perceptions, which hinders the development of our best-case outcome.

Such a representation also allows for the means to coordinate policies, actions, and other sources of messages and signals to achieve desired objectives.[29] It also gives a representation for which elements of national power might be used to affect a particular node without necessarily resorting to military action. Such efforts, therefore, create synergistic multipliers for applying other forms of national power.[30]

When military planners utilize traditional thinking and use PMESII to break down the operational environment, they often overlook how each factor interacts with each other, causing changes in the perception of the target population. Systems mapping specifically eliminates these gaps and ensures these perceptions are not only accounted for but illustrates which nodes affect such perceptions. By specifically visualizing these perceptions, planners can identify which nodes are susceptible to information operations.

The systems map identified in figure 1 suggests several courses of action that might initiate a chain of events leading to our best- and worst-case outcomes. Planning staffs should attempt to capture all of the potential COAs (and their nodal relationships) within the overall systems map. Doing this will necessarily require an iterative process, as current doctrine requires that the operational environment is analyzed before COA development. By iteratively including potential COAs within the systems map, a more thorough COA analysis can be performed in subsequent Joint Planning Process steps.

Step 2—Forecast the Best and Worst-Case Scenario Within the Systems Map

Once the systems map has been developed and includes several potential courses of action, planners should forecast the best- and worst-case scenarios within the process map. Considered against the Joint Planning Process, forecasting potential COAs within the systems map helps to identify positive and negative tensions, those actors, factors, and forces acting for or against the desired outcome.

Using the THAAD case study, planners should highlight particular paths that the deployment of THAAD might assume, en route to either the best- or worst-case outcome (see fig. 2). For example, the deployment of THAAD has a variable relationship with perceived security, based on the particular actor. The ROK obviously feels more secure with THAAD on the peninsula, whereas North Korea and China both feel less secure. These tensions can then lead to Chinese repercussions and have a direct relationship with regional and economic security considerations.

More importantly, there are two negatively reinforcing loops associated with the perceived security and economic situation in the region. These negatively re-

inforcing loops act as significant drivers toward the worst-case scenario, and potential courses of action must attempt to disrupt these loops or offset them with similar positively reinforcing loops.
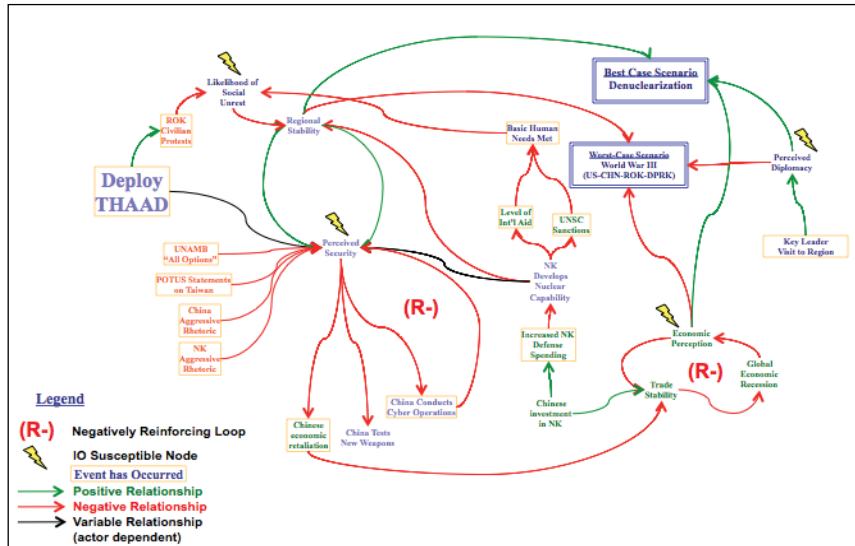
Figure 2. Course of action forecast

Step 3—Identify Key Nodes for Information Operations

Using the mapped COA, planners should then identify which nodes are most susceptible to information operations, either in support of the best-case scenario or in opposition to the worst-case scenario. These nodes are necessarily those that are most susceptible to information operations, such as public opinion and the perceptions of a target audience. Identifying these nodes ensures that the proposed IO campaign is integrated and synchronized with the overall COA. The COA forecast in figure 2 annotates these susceptible nodes with yellow lightning bolts. This technique can also help to determine those COAs in which IO could not be effectively utilized, thus creating a level of risk in the overall plan. The potential effects of IO can then be taken into account during COA Analysis and Wargaming and identified to the decision maker as a potential source of risk. Keep in mind that while certain COAs may be executed without IO support, this circumstance is exceedingly rare in today's complex operating environments.

Step 4—Develop Specific IO Actions

Once the IO-susceptible nodes have been identified, specific IO actions should be developed to affect that particular node. *The Commander's Handbook on Strategic*

Communications provides guidance as to which aspects of IO are best suited to affect various target audiences.[31] For example, public diplomacy might work best against allies and foreign publics, whereas key leader engagements might work best against specific governors or shuras. These specific actions would then be incorporated into the actual COA itself and analyzed/war-gamed in accordance with current guidance.

Here again, the integration of the JIACG is instrumental as the interagency representatives can help to prevent such information fratricide. Just as the planning group identifies nodes where IO could help or hinder certain outcomes, the JIACG could provide input about what other interagency actions outside the purview of the JPG might affect the operating environment, such as statements being made by the Department of State. The full integration of the JIACG would help to alleviate such fratricide, which could detract from mission effectiveness and desired outcomes.

Once determined and coordinated within the United States government, these specific IO actions should then be communicated and signaled to both the target nation and allies in the region. To reduce surprise and prevent uncertainty in a volatile environment, IO efforts should clearly communicate that certain reactions will occur as a consequence of continued undesired behavior. Additionally, key players in the region should be notified of such planned consequences and consideration given for their potential reservations. For example, following North Korea's nuclear test in February 2013, the United States should have issued unambiguous strategic communication to North Korea and all regional actors that the consequence of another such breach of conduct would lead to the deployment of THAAD. When such a breach occurred, as it did in January 2016, the immediate announcement of the deployment of THAAD would have been seen as a natural consequence of North Korean action and would likely have taken no one by surprise.

Once communicated that THAAD is en route due to North Korean provocation, strategic communication should continue, explaining that while the system is en route and being set up for operations, particular actions may be taken by North Korea to reverse this sequence of events. Then, the US should have told North Korea that if no such corrective measures were taken, THAAD would be operational by a particular date. Again, this ensures that when the United States and ROK announce that THAAD is fully operational, it takes no one by surprise, while offering China a clear timeline during which that they must pressure North Korea to make concessions before THAAD comes online.

While China is never likely to appreciate the deployment of THAAD, clear signaling and warning presented in a logical timeline may lead to better under-

standing and reduced reactionary resistance, which builds trust between the United States and China. Additionally, by communicating each step of the deployment in terms of what China can do to assist with altering the course of events, China is further encouraged to levy pressure on North Korea to concede, rather than the US being seen as a unilateral actor in the region. In other words, before executing a potentially controversial action, conditions must be set utilizing a whole of government approach with a carefully sequenced plan of action.

This four-step process, and the techniques offered within each step, provide a means for IO chiefs and planning cells to construct an integrated and synchronized IO plan, meeting the requirements of current joint doctrine. This analysis, however, revealed several other areas worthy of further research.

Areas for Further Research

Although this analysis of the deployment of THAAD to the Korean peninsula illustrates how systems thinking can be used to mitigate a significant gap in military planning doctrine, utilizing systems analysis within the Joint Planning Process is not necessarily a new idea. Joint Publication 5-0 gives passing reference to developing solutions based on a systems perspective, where "it is critical to consider the relationship between all of the aspects of the system."[32] However, throughout joint planning guidance, planners are instructed on *what* to do (e.g., systems thinking) without techniques or procedures on *how* to do it.

To address these doctrinal gaps, additional guidance is scattered throughout a series of ad hoc commander's handbooks, best practice papers, and focus papers, Still, nowhere is this information consolidated for ease of dissemination and access.[33] In addition to disjointed references, some of this additional guidance was published by organizations that no longer exist (Joint Forces Command), and therefore must be absorbed by other organizations in order to be retained or updated. Further research may be warranted to determine if joint doctrine is in need of a publications restructuring, providing for a particular publication to list potential tactics and techniques for accomplishing the various requirements levied in joint doctrine. That is, while doctrine and procedural regulations might tell a planner what they should do, another publication series would provide the techniques required to actually perform this requirement. This publication series would be akin to multi-service or service-specific tactics, techniques, and procedures (TTP) manuals, which consolidate TTPs into a single document that provides a means to accomplish requirements levied in other publication series.

In some cases, these TTPs have yet to be determined, especially those concerning how the joint force commander should synchronize information operations and public affairs in support of higher-level objectives.[34] Similarly, "subject matter

experts in the field have indicated that a 'Center of Excellence' type organization for [strategic communication] may be useful in developing. . . doctrine, tactics, techniques, procedures, concepts, [and] capturing lessons learned."[35] Such a center of excellence could certainly consolidate these TTPs, and will need a means to codify the results. This analysis attempts to mitigate one such gap in doctrinal guidance, though several others remain.

Similarly, this four-step process provides a means to conduct several steps throughout the planning process, to include developing an IO estimate, conducting a center of gravity analysis, conducting COA development and analysis, and the development of IO tasks. Additional research should analyze how systemic thinking might streamline and otherwise synchronize joint planning efforts.

Another area that may warrant additional research concerns the assessment of forecasted scenarios. Ideally, once susceptible inflection points are identified for information operations, planners should be able to inform decision makers of the risks incurred if appropriate information operations are *not* conducted (or not conducted effectively). By using a Bayesian approach,[36] planners could tell the decision maker that the overall outcome has a certain likelihood according to each inflection point. Over time, the Bayesian-informed systems model, and the probabilities applied to each inflection point, can be honed. Eventually, joint planners may be able to generate rules of thumb regarding the effectiveness of certain IO actions, when compared to other courses of action.

Conclusion

The authors recognize that utilizing systems mapping necessarily creates an additional layer of work within the planning cell, especially as planners would need to visually depict the PMESII analysis they likely have already completed during JIPOE development. It should be noted that this systemic thinking process is not one that is accomplished solely by the IO cell, but by the entire JPG, in coordination with each other. Despite the additional work, such systemic thinking reduces unintended consequences, lessens information fratricide, and diminishes strategic surprise while also providing several secondary benefits, which save the planning cell work in later steps.

First, since the operating environment and potential COAs are depicted in terms of their nodal relationships, commander's critical information requirements (CCIR) can more easily be determined by analyzing the COA forecast. For example, to determine which outcome the deployment of THAAD is leading toward, CCIRs would be developed that correspond to the nodes along the path to the best- and worst-case outcome. Once developed, this extensive list of information requirements then helps to determine an allocation plan for scarce intelli-

gence, surveillance, and reconnaissance assets, provides commanders with a means to analyze the entire operational environment, and a method to integrate branch and sequel plans into the overall campaign plan, as the CCIRs indicate which outcomes are becoming more and less likely to materialize.[37] Similar increases in effectiveness can be achieved by using the systems map to evaluate centers of gravity and courses of action during other portions of the planning process.

Second, utilizing this method allows for a level of assessment against current IO efforts. That is, if an IO action is expected to affect a certain node within the process map, and this effect does not take place, planners have received an important piece of information.[38] Either, the IO effort was ineffective, or the process map may be missing a node, which provides additional input the planners had not accounted for. Over time, both the process map and IO efforts can be honed to achieve the desired objectives.

To achieve these objectives, doctrine needs to do a better job of providing a means for *how* planners are expected to perform the requirements levied upon them. This analysis has provided a simple four-step plan to systemically generate an integrated, synchronized information operations plan while offering several areas for further research to continue incorporating "more cowbell" into the Joint Planning Cell. Changing such deeply ingrained behavior is hard and may take a generation, but such changes cannot take root until doctrine changes first.

Despite more than a decade of emphasis, information operations remain the "cowbell" of joint operations. Often ignored, or hastily included as an afterthought, information operations have yet to achieve the level of parity as offensive, kinetic operations. Despite these limitations, "success in military operations can often be achieved or lost based on how regional, international, and domestic audiences perceive our words and actions. Gaining the support of these audiences and the defeat of the adversary's message is often the critical battle—the one in which we must be engaged and the one that has to be won for any lasting success."[39] ✪

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Notes

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24. Deployable Training Division, *Communication Strategy and Synchronization*, 1st ed., *Insights and Best Practices Paper* (Suffolk, VA: Joint Staff J7, May 2016), 1.

25. "In fact, the word *analysis* comes from the root meaning "to break into constituent parts." Therefore, while PMESII is a widely used analysis framework, it fails to relate each node to each other, nor to show how they interrelate. See Daniel Aronson, "Overview of Systems Thinking," *Thinking Page*, 1998, https://www.thinking.net, 1.

26. Aronson, "Overview of Systems Thinking," 1.

27. For guidance on producing systems maps, see Daniel McCauley, *The Practitioner's Guide to Strategic Foresight* (Norfolk, VA: Joint Forces Staff College, 2016); or Colleen Lannon, ed., *A Beginner's Guide to Systems Thinking* (Westford, MA: Pegasus Communications, 2008).

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31. US Joint Forces Command, *Commander's Handbook for Strategic Communication and Communication Strategy* (Suffolk, VA: Joint Warfighting Center, 24 June 2010), IV-17.

32. JCS, *Joint Operation Planning*, III-10–III-11.

33. See US Joint Forces Command, *Commander's Handbook;* and Deployable Training Division, *Communication Strategy and Synchronization* (Washington, DC: Joint Staff J7, May 2016).

34. US Joint Forces Command, *Commander's Handbook*, xviii.

35. US Joint Forces Command, *Commander's Handbook*, xix.

36. Bayesian methods allow for subjective probabilities, which in our case are informed by expert military judgment and experience. "When performing a Bayesian analysis, you begin with a prior belief regarding the probability distribution of an unknown parameter. After learning information from observed data, you change or update your belief about the unknown parameter and obtain a posterior distribution." In essence, the probability is honed through past and future predictions. See SAS, "Bayesian Analysis," accessed 10 May 2017, https://support.sas.com/.

37. Will Atkins, "Theory and Practice: Developing CCIRs Through Alternative Analysis," *American Intelligence Journal* 32, no. 2 (1 July 2016): 116, https://cdn.ymaws.com/.

38. CCIRs can be specifically developed to determine the outcome of IO efforts within the course of action.

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Personality and Leadership

The Potential Impact to Future Strategic Thinking

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Leadership gurus James M. Kouzes and Barry Z. Posner insisted that "leadership is a relationship."[1] That relationship depends on trust in the form of credibility. A foundational requirement for leaders to develop credibility and trust is for them to first know and understand themselves.[2] This self-awareness allows a leader to make a better sense of the world around them. Such self-awareness includes the way they take in and process information and why they might have positive interactions with certain people and more negatively perceive their interactions with others.

The Myers-Briggs Type Indicator (MBTI) has been used for decades by the military to help officers understand better who they are.[3] One limitation of the MBTI is that it measures only type and not trait characteristics for each of the eight preferences. This limitation means that a respondent taking the MBTI will be provided with a four-letter preference type and a probability index on the consistency of answers along the lines of their type. However, the instrument does not measure the magnitude of each preference (i.e., how extroverted versus introverted they are). To reap the benefits of both typology and trait measurement, the USAF Squadron Officer School and Air Command and Staff College (ACSC)

use the NERIS Type Explorer that uses the MBTI theoretical framework but also measures trait magnitude.

The problem explored in this study is the knowledge gap regarding USAF officer personality typology demographics. The Naval War College published the most recent similar study in 2005.[4] This study examines the same variables using a more recent military sample of field grade officers and covers the generations of leaders who are moving from middle management to senior leadership over the next decade. Therefore, the purpose of this quantitative descriptive nonexperimental study was to understand better the impact and importance of personality on military officers and their ability to lead effectively.

Personality Preferences/Aspects

Four dichotomies form the foundation of an individual's personality. Each dichotomy contains two opposite preference pairs. The various combinations of these preference pairs make up the 16 personality types. The NERIS Type Explorer refers to each preference as a personality aspect and includes a fifth aspect—an *identity* pair that measures *turbulence* and *assertiveness*.[5]

Extroversion (E) vs. Introversion (I): The **Mind** *Aspect*

The preference for extroversion or introversion refers to how a person orients their energy. One who prefers extraversion directs their energy toward the outer world, while one who prefers introversion directs their energy toward the inner world. Someone with an extroversion preference typically directs energy toward and draws energy from interaction with other people, objects, and activities. In contrast, someone with an introverted preference draws energy and directs energy toward their thoughts, ideas, and impressions. As individuals direct and draw energy, their next action is to process what they perceive from their interaction with the external or internal world.[6]

Sensing (S) vs. Intuition (N): The **Energy** *Aspect*

As people process what they perceive from the outside or inside world, they tend to prefer processing information based on the details or the big picture. People who prefer sensing process information that they can perceive with their five senses—facts, data, and past events. When people prefer intuition, they tend to focus less on the details and more on the interconnectedness and patterns of the information.[7]

When asked about a deployment experience, an officer who prefers sensing might describe the experience in terms of time away, location, temperature, ac-

tivities, and people. An officer who prefers intuition might refer to the same deployment in terms of how rewarding it was (or was not) and the impact it had. Regardless of how one processes information, one must judge the information that they perceive.

Thinking (T) vs. Feeling (F): The Nature Aspect

According to Jung Theory, there are two ways that people judge the information that they perceive and process—thinking and feeling. When people prefer thinking, they use objective and logical criteria to judge a situation. Someone who prefers feeling uses a more subjective, values-based reasoning when judging a situation. For example, during the reorganization of a squadron, a commander who prefers thinking might consider objectively realigning manpower positions, operations efficiency, long-term unit sustainability, and cost. A commander who prefers feeling would consider seeking harmony by distributing resources fairly (not necessarily evenly), adjusting implementation timelines to allow personnel to adapt, and focusing on how the change impacts the people in the unit. Neither is better or worse, but leaders who prefer thinking often see feeling as soft while leaders who prefer feeling can see thinking as cold. Once energy is directed and drawn, and information is processed and judged, an individual must then take an approach on what to do with that processed information.[8]

Judging (J) vs. Perceiving (P): The Tactics Aspect

How one approaches the outside world is either one of judging or perceiving. Because the names of these preferences seem to be the most misleading, one can more easily understand them as *structured* (J) and *flexible* (P). People who prefer judging typically have a more structured approach to the world. Calendars, schedules, daily to-do lists, milestones to deadlines, and daily planners are all things that may bring comfort to officers who prefer judging. On the other hand, the aforementioned items bring stress to those who prefer perceiving as they are less structured, are not driven by closure, still meet deadlines but may work at the last minute or in unscheduled spurts, and like flexibility in their schedules.[9]

Assertive (-A) vs. Turbulent (-T): The Identity Aspect

As noted, an added benefit to adopting the NERIS Type Explorer was the ability to assess an officer's *assertiveness* (-A) and *turbulence* (-T). Officers who measure higher in assertiveness are predicted to exhibit a greater degree of temperance under stress and be more self-assured. Those who measure higher in turbulence are predicted to have a greater degree of responsiveness to stress, exhibit a wider range of emotions, and be more success-driven.[10] The identity aspect (or

preference) is used in conjunction with the extrovert/introvert preference pair (or mind aspect) to determine an individual's *strategy*.

The strategy layer of personality combines the *mind* and *identity* aspects to help understand better individuals' strategy as they direct and draw energy. For example, turbulent introverts might seek continuous self-improvement while assertive introverts may have confidence in their skills and be less likely to seek such improvement. While all extroverts are likely to seek social interactions, *assertive extroverts* are less likely to care what others think of them than *turbulent extroverts* would.[11]

Flexing

Understanding the preference pairs (or aspects) is critical to examine the impact of personality on an officer's ability to lead. It is also important to understand that no personality type or preference is better than another. Each type has its strengths and limitations, depending on the environment. Officers with a preference for introversion may need to be extroverted at times to interact with subordinates, engage at a social function, or to present a brief. This process of acting out of preference is called *flexing,* and everyone does it to some degree. The trait measurement values provided by the NERIS Type Explorer help show officers how much stress they might endure when flexing out of their preference.

For example, an officer who has a preference/trait combination of thinking (75 percent) over feeling (25 percent) might still be excellent at empathizing with subordinates. Still, an interaction requiring such empathy can be increasingly exhausting to that officer. Officers with a preference/trait combination of feeling (75 percent) over thinking (25 percent) would find great comfort in a situation where they had to empathize with a subordinate. In both situations, the subordinate would perceive empathy from their leader.

Research Questions

Q1: What potential impacts can officers' personality types and traits have on their ability to lead in the military?

Q2: Are gender differences in personality present among military officers as they are in the general US population?

Hypothesis

H_0: There is no significant difference in personality type when comparing male and female officers.

H$_a$: There is a significant difference in personality type when comparing male and female officers.

Methodology

Pursuant to our goals of examining the presence of gender differences and the potential impact of personality diversity on an officer's ability to lead, we decided upon a quantitative descriptive nonexperimental method and design for the study. The foregoing allowed us to combine our professional credentials and related literature surrounding the topic with the information extracted from our survey participants. The most effective tool for determining type and trait information was the NERIS Type Explorer—which we ultimately used for this study.

Populational and Sampling

Adult male and female officers from around the world were used for this study; however, most of the officers surveyed were US officers—most of which were US Air Force-affiliated. All participants were ACSC class of 2020 students. Our sample of 424 represented the USAF officer demographic with a 95 percent confidence level and a 5 percent confidence interval (or margin of error). Table 1 depicts the demographics of the officers sampled.

Table 1. Descriptive statistics of population sample (n)

Service	Frequency	Percent	Valid Percent	Cumulative Percent
Int'l officer	72	17.0	17.0	17.0
Other	7	1.7	1.7	18.6
USA	40	9.4	9.4	28.1
USAF	282	66.5	66.5	94.6
USCG	1	0.2	0.2	94.8
USMC	11	2.6	2.6	97.4
USN	11	2.6	2.6	100.0
Total	424	100.0	100.0	

Data Collection Instrument

We selected the NERIS Type Explorer for data collection because it combines the typology characteristics of the Myers-Briggs Type Indicator and trait measurement capability unique to the NERIS Type Explorer. This feature means that we were able to type our participants (INTP, ESFJ, etc.), as well as to measure the magnitude (or trait) of each scale (e.g., 53 percent introvert, 47 percent extrovert).

Having type and trait information allowed us to understand better how officers might *flex* outside of their preferred type more or less effectively than others.

Validity and Reliability

The NERIS Type Explorer was chosen because it is a proven instrument—this means that it is both valid and reliable. The NERIS Type Explorer was subjected to a discriminant validity analysis and two reliability tests: a Cronbach's Alpha and test-retest. In both cases, the values were within acceptable ranges to highlight that the five personality scales did not overlap and that both reliability tests for each scale were between the 0.70 and 0.90 range.[12]

Results

We used a combination of descriptive analysis and independent-samples t-tests to examine the research questions and test the research hypothesis. Tables 2–5 display the results of both examinations.

Table 2. Descriptive statistics of sample type distribution

Type	US Population	Class AY20	US AY20	Int'l AY20
ENFJ	3%	11%	10%	12%
ENFP	8%	5%	6%	0%
ENTJ	2%	2%	1%	4%
ENTP	3%	2%	2%	0%
ESFJ	12%	13%	11%	22%
ESFP	9%	2%	1%	3%
ESTJ	9%	6%	7%	3%
ESTP	4%	1%	1%	0%
INFJ	2%	11%	11%	14%
INFP	4%	2%	3%	0%
INTJ	2%	8%	8%	7%
INTP	3%	2%	2%	3%
ISFJ	14%	17%	16%	21%
ISFP	9%	3%	3%	1%
ISTJ	12%	13%	14%	10%
ISTP	5%	2%	2%	0%

Table 3. Descriptive statistics of sample trait distribution

Service	*n*	*Type*	*E*	*I*	*N*	*S*	*T*	*F*	*J*	*P*	*-A*	*-T*
USAF	282	ISFJ-A	47.4	52.6	47.0	53.0	44.4	55.6	62.3	37.7	50.8	49.2
USA	39	ISFJ-A	46.7	53.4	46.5	53.5	45.9	54.1	61.5	38.5	56.9	43.1
USN	11	ISFJ-T	32.5	67.5	41.1	58.9	44.0	56.0	54.5	45.5	49.5	50.5
USMC	11	ESFJ-T	52.9	47.1	42.9	57.1	49.4	50.6	65.2	34.8	45.9	54.1
USCG	1	**	**	**	**	**	**	**	**	**	**	**
Int'l	72	ISFJ-A	49.3	50.7	47.2	53.3	43.3	57.5	67.3	31.9	60.4	39.1
Class AY20	416	ISFJ-A	45.8	54.2	45.0	55.2	45.4	54.8	62.2	37.7	52.7	47.2

** = The sample was too small to include the participant's data anonymously.

We conducted a series of independent samples t-tests to evaluate the hypothesis that there will be a significant difference in personality type when comparing male and female officers. The independent variable was the respondent's gender, and the dependent variables were the five dichotomies used to determine a personality type (i.e., E/I, S/N, T/F, P/J, -A/-T). The group statistics are depicted in table 4, and the results of the test are depicted in table 5. We used the Bonferroni approach to control for Type I statistical errors due to conducting five tests at one time. We required a *p*-value of less than 0.01 (0.05/5 = 0.01 or 99 percent CL) for significant results.

Table 4. Independent-samples t-test group statistics for gender differences

Personality Type	Sex	Sample	Mean	Std. Deviation	Std. Error Mean
N	Male	349	48.40	16.084	0.861
	Female	75	38.07	18.409	2.126
S	Male	349	51.71	16.215	0.868
	Female	75	61.93	18.409	2.126
T	Male	349	45.46	14.036	0.751
	Female	75	39.95	14.898	1.720
F	Male	349	54.71	13.792	0.738
	Female	75	60.05	14.898	1.720

Table 5. Independent samples t-test results for gender differences

Personality Type	Significance (p)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference—Lower	95% Confidence Interval of the Difference—Upper
N	0.001	10.337	2.102	6.206	14.469
S	0.001	-10.223	2.115	-14.381	-6.065
T	0.002	5.518	1.806	1.967	9.068
F	0.003	-5.346	1.781	-8.846	-1.845

Discussion

The Judging and Perceiving Preference Pairs

> The preponderance of J-preferences among the ACSC student body raise significant questions about the military's ability to adapt to complexity or uncertainty—typically a P-preference function. What actions are being taken by the military to ensure officers can flex their P-preference when required? How does this impact joint planning versus execution?

The first finding of significance is the departure of the data from sampling studies on the US population as a whole regarding the J to P dimension. Most studies place the proportion of those with the J preference to P among samples of the general US population at 55 percent for J and 45 percent for P. In contrast, AY20 student body results of the US military population revealed 81 percent of those with the J preference to 19 percent for P. ACSC's numbers are quite close to the results of other studies using US military populations, indicating a fair amount of consistency in personality type and trait between ACSC students and the US military as a whole. However, the results also show that representative of the broader US military, our students also demonstrate an aggressive "J" considered in the aggregate. This finding contains intriguing implications both at the aggregate level (e.g., across all the J or P groups) and between the various types and traits.

First, we will look at the level of J-P. That the military's reliance on structure, hierarchy, predictability, and clear guidance would appeal to those with the J preference at the recruiting stage and carry over into the higher retention of J compared to P might surprise no one. Nor would anyone with knowledge of military culture find it shocking that those with the J preference relative to P would prefer to remain in service, or that those in J might experience a higher rate of promotion. Additionally, for some student categories, selection to ACSC is highly competitive, proposing the idea that pressures to prefer or conform to J increase with

advancement. However, the proximity of current percentages on all J types and traits between ACSC students and the general US military reinforces the conclusion that the ACSC population is very representative of the US military as a whole. Instead, our significance relates to the implications to be derived from the preponderance of J members (26 percentage points higher than the general US population) in terms of learning, decision-making, and leadership behaviors, and secondly, to the divergence from a previous study of US military populations.[13]

For the military profession, from the PME environment to the field, multiple sources have suggested a certain narrowness of mind persists in these contexts, despite the function of PME to broaden inquiry among its graduates and the increasing diversity of challenges and threats the US military faces.[14] What adds complexity to this judgment is the amount of evidence indicating that those with the J-preference incline toward a certain degree of intellectual inflexibility, such that a preponderance of J exponentially raises the possibility of convergent thinking. While the inference researchers must make is that a J-preference for structure extends from the physical to the cognitive, the psychometric data have tended to support such an inference. This inference would help to explain the observation that in PME environments, there is a tendency to place a high value on practical experience, not as an absolute value only, but relative to a disparagement of theory and academic research.[15]

From the civil-military relations field, a description of the "military mind" proposes first that there is uniqueness particular to military professionals via recruitment, training, and professional practice, and second, reflects the following qualities: "the military mind is disciplined, rigid, logical, and scientific; it is not flexible, tolerant, intuitive, and emotional."[16] This cast of mind is by no means entirely problematic. The same source is quick to point out the professional desirability of certain related cognitive preferences: "The military mind. . . consists of the values, attitudes, and perspectives that inhere in the performance of the professional military function and that are deducible from the nature of that function."[17] In short, successful military leaders must internalize and practice resoluteness in the face of doubt, risk, uncertainty, and loss, and receive assistance from these same cognitive preferences.[18] However, might there not also be significant potential drawbacks to this degree of singularity in the cognitive preferences of US military populations, if this singularity affects the quality of organizational decision-making, leadership behaviors, and responses to ambiguity or uncertainty? Identifying these drawbacks with some specificity would go a long way toward the development of mitigating strategies, including strategies beyond those the institution may have already recently attempted. While the investigation of effects from a preponderance of J

members is warranted and no doubt fruitful, researchers and military leaders can gain even more insight at the level of specific types and traits.

Type Distribution

> Based on the more prevalent SJ-types, qualities in danger of being too scarce to have influence, especially in the group dynamics of problem solving, include iconoclastic, divergent, or innovative thinking, a preference for debate, openness to reality, and conformity to truth rather than conformity based on loyalty to the group.

Now, we will consider some suggestions from the evidence at the level of individual types and traits. The evidence is highly suggestive of a significant finding on one point—30 percent of the ACSC AY20 student body scored as ISFJ (17) and ESFJ (13), registering a difference between them of only one letter. While ISTJs in the student body tied ESFJs at 13 percent, completing our identification of the top three types and traits, historical research suggests a significant change has taken place. With a somewhat similar military population surveyed 16 years ago, ISTJs held pride of place at 30 percent, with ISFJs and ESFJs together accounting for only 2 percent each![19] The conclusion section will more directly address the possible implications of such a historical shift. For now, we will just note that the high concentration of identical preferences among this 30 percent amounts to certain other qualities being less widely shared and offer related implications.

Given such an outcome to the research, cognitive preferences particular to a range of J types and traits will be prevalent, while preferences across N-T-P and F-P types and traits combinations will be in shorter supply. Desirable qualities most likely to flourish under this J-concentration include decisiveness, unit loyalty, a bias for action, and moral strength, as in readiness and faithfulness to act on conviction. Qualities in danger of being too scarce to have influence, especially in the group dynamics of problem solving, include iconoclastic, divergent, or innovative thinking, a preference for debate, openness to reality, and conformity to truth rather than conformity based on loyalty to the group.

Two research areas of tremendous significance to the US military related to these observations are: (1) improving the quality of strategic thinking as leaders rise in rank; and (2) reducing the prevalence of convergent thinking in instances when that type of thinking harms unit health and performance, mission accomplishment, and faithfulness to the military's ultimate purposes—in short, its reason to exist in the first place. Scholars have previously demonstrated, related to these two research areas, (1), that personality affects the quality of a leader's ability

to think strategically and (2), that instilling the practice of divergent thinking corrects groupthink and improves the quality of decision outcomes.[20] As these are research areas, the military simply cannot afford to ignore, studies such as this should be encouraged and rate higher-level attention. Particularly relevant is research investigating the mix of personalities at typical staffs and commands to understand the effects of various concentrations of personalities on outcomes in an operational setting.

In his classic text from 1972, *Victims of Groupthink*, psychologist Irving L. Janis investigated the quality of foreign policy decisions, such as two decisions of the Kennedy administration—the 1961 Bay of Pigs invasion of Cuba and the Cuban Missile Crisis of 1962. His research agenda was to determine likely explanations for why groups of highly intelligent people often make suboptimal decisions; for example, decisions based on needs for group cohesion, feelings of accomplishment, and other goals that on rational terms were not the best decisions to fit the problem. Among problematic group characteristics, homogeneity unsurprisingly surfaced as a major indicator of groupthink tendencies. Military units, commands, and career fields, the foreign policy community, and multiple other types of organizations are clearly vulnerable to this problem. Symptoms of groups practicing groupthink notably included a rigid moral certitude, rejection of balanced debate, and the use of particular group members to punish divergence and reward compliance while maintaining a veneer of unified consensus. Obviously, remedies to groupthink would include planned diversity of thought and experience. Still, more to the purposes of this research, military organizations in danger of groupthink need to instill and protect the practice of reasoned analysis and self-questioning at the group and individual level (why do I/we believe what I/we believe? What other information might I/we be missing or avoiding? Are my/our beliefs about reality consistent with the full reality, with things as they really are? Have I lopped off the part of reality I/we like and bloated it into a false substitute for reality? Finally, what are the best practices for questioning or re-examining my/our beliefs?).

Closely related to Janis and the research on the difficulties of protecting organizations from groupthink is Chris Argyris's important work on the high value and scarcity in most organizations of double-loop learning.[21] From decades of studying the quality of organizational decision-making, Argyris repeatedly saw that self-protection practices led to denying reality when that reality included bad news and to the repackaging of facts such that glaring errors persisted yet remained hidden from all levels of leadership. Using the metaphor of a thermostat, Argyris explained that an organization responding as a thermostat normally does, responding to changes in ambient temperature by turning on or removing heat to return the temperature to an established standard, say 68 degrees, is an organiza-

tion using single-loop learning. By contrast, an organization using double-loop learning would have in place an established norm of questioning whether 68 degrees was the right standard in the first place, and questioning, what else, the right standard, whether 68 degrees or not, called upon the organization to consider and accomplish. The immediate danger indicated here is that organizations too often rely on implicit norms (e.g., no bad news to the boss, truth, and promotions don't mix) to avoid double-loop learning expressly. The more general concern regarding groupthink and the avoidance of double-loop learning is whether certain personality types and traits or imbalances across the frequency of types and traits make groups especially insular, as in resistant to reasoned analysis or double-loop learning. Undesirable potential organizational outcomes from such insularity include rigid conformism, antipathy to innovation, and a loss of objectivity. Conversely, researchers should consider the implications of severely underrepresented types and traits for these same organizational outcomes. For example, from 1989–2004, on average, 38 percent of the general US population were combined ISTPs, ESTPs, ISFPs, and ESFPs. These groups were often claimed as the four most innovative types and traits (often dubbed "SPs" and the "Explorers"), compared with just 11 percent among Naval War College student bodies during the same timeframe. In 2019, the general US population included 27 percent SPs while the ACSC AY20 student body included just 8 percent SPs. Elsewhere, researchers have described SPs as "contingency"-type leaders, indicating their ability to see clearly in a crisis and respond quickly and effectively to the unexpected, and have noted that organizations favoring other types and traits retaining SP's is very difficult.[22] Surely, the status and retention of SPs are relevant to the US military's demand for leaders comfortable in ambiguous, uncertain contexts.

The Nature and Tactics Relationship

> The preponderance of FJs means that officers may tend less toward constructing chains of logic based on impersonal data (e.g., thing-related, concept-related) and are less inclined to keep open pathways for new data, especially in a crisis or as deadlines approach.

In addition to our review of the implications of a preponderance of Js and the under-representation of types and traits such as the SP "Explorers," another fruitful research finding resulted from a comparative analysis of the last two letters. The dimensions for these letters indicate cognitive preferences while working out decisions (T-F) and responding to the information that one gathers (P-J) from mental reflection or sense perception.[23] When we combined results of the frequency of the

four types and traits ending in FJ (INFJ/ISFJ/ENFJ/ESFJ), we found they comprised 31 percent of the general US population *but 52 percent of the ACSC AY20 student body*. Even starker differences appeared when we compared the frequency of FJs to all other types in the ACSC student body with different two-letter ending combinations. The four TJ types and traits accounted for 29 percent of the class, with the other two combinations registering way less than this—FP's totaled 12 percent of the class and TPs just 7 percent. To briefly characterize this finding's significance, FJs making decisions tend to construct chains of logic based on experiential and relational data (e.g., personal, interpersonal, people-oriented) and react to information processing by setting limits to inputs (e.g., emphasizing scheduling, imposing structure, driving to closure).[24] Not only is there nothing inherently wrong with these cognitive preferences, but as indicated earlier, these preferences provide numerous benefits such as timeliness, decisiveness, and loyalty. Some research suggests FJs tend to be more likely to display high emotional intelligence, particularly outwardly, by recognizing, tapping into, and shaping the emotional resonance of the group toward goals. Researchers investigating leaders in the business sector concluded that FJs placed higher value than other type and trait combinations on the "core" emotional intelligence leader attributes of adaptability, self-awareness, and empathy.[25] However, there is utility in identifying what an FJ cognitive style tends to de-emphasize, that TJs, FP, and TPs would more likely contribute. Specifically, FJs tend less toward constructing chains of logic based on impersonal data (e.g., thing-related, concept-related) and are less inclined to keep open pathways for new data,[26] especially in a crisis or as deadlines approach. While these distinctions resulting from analysis of the SFJ versus NTP clusters are helpful, we have two other pairings from our results that can add texture to the implications we've addressed so far, SJ and SF.

The Energy and Tactics Relationship

> SJs in the ACSC AY20 class far outpaced the frequency of the other three clusters at 49 percent of the student body, compared to 29 percent NFs, 14 percent NTs, and just 8 percent SPs. The foregoing means that many officers may lack providing optimal solutions to unexpected crises, theory-making, objectivity, analytical acumen, and complex problem solving.

Following up on the work of Isabel Briggs Myers and Peter B. Myers, in 1978, David Keirsey developed his theory of the four temperaments based on the four possible two-letter pairings derived from the dimensions of data gathering preferences (S-N) and preferences in reactions to data processing (J-P). Keirsey pro-

posed these temperaments and argued that they explain the consistency we see in a person's words and actions over time: SJ "Guardians," SP "Artisans," NF "Idealists," and NT "Rationalists."[27] Other researchers have continued this work of extending the original typology of Briggs Myers and Myers into the study of temperaments, following in Keirsey's footsteps. For example, in 1995, Demarest used the same four clusters to identify four managerial styles: SJ "scientific managers," SP "contingency managers," NF "social managers," and NT "strategic managers."[28] Synthesizing some of this research on temperament, we find that the principal motives that drive SJ Guardian/scientific managers are order, service, and progress. These motives lead SJ temperaments to strive for excellence in engaged supervision, organized planning, and process improvement. SJ's value efficiency, protecting others and clarity, but struggle in contexts suited to flexibility, reflection, and objectivity. For the three other temperaments, what they provide centers on these three SJ vulnerabilities. SPs crave freedom of action and lack of restraint and strive to excel at providing optimal solutions to unexpected crises. NFs crave growth and purpose-finding and strive to excel at visioning, interpreting tasks, especially meaning-making. NTs crave theory making, objectivity, and succeeding, and strive to excel at analysis, resource management, and solving complex problems. Notably, SJs in the ACSC AY20 class far outpaced the frequency of the other three clusters at 49 percent of the student body, compared to 29 percent NFs, 14 percent NTs, and just 8 percent SPs.

The Energy and Nature Relationship: The Cognitive Functions

> Most current officers (SFs) are likely to focus on a combination of facts from the sensible world (versus possibilities) and personal connection (versus "thing-orientation") and are less likely to focus on different combinations of facts, possibilities, or things that are logically oriented.

The SF versus ST, NF, and NT clusters, advanced by Briggs Myers and Myers, is yet another way to analyze distinctions across personalities.[29] The key differences revealed by this comparison are that SFs focus on a combination of facts from the sensible world (versus possibilities) and personal connection (versus "thing-orientation"). In contrast, the other clusters focus on different combinations of either facts, possibilities, personal connection, or a thing-orientation. Implications from these differences include the proposal that SF's most desired output is a life of practical, sacrificial service. The other clusters might very well share this goal but moderated by different behavioral outputs, namely STs and technical expertise, and NFs and shared meaning-making. At the same time, NTs

favor achieving and applying theoretical expertise. This analysis of the comparative meaning of the SJ and SF pairings suggests important conclusions in the areas of group dynamics as well as the quality of strategic thinking. Another finding is speculative but interesting. What if the FJ pairing contains a specialized tension, one we could roughly describe as a "people-structure" tension, and what if this tension is problematic but, identified and mitigated, can turn to a strength? As a cluster causing internal tension, one way to characterize this is that regard for interpersonal connections by nature is an open-ended project. Humans are ends as well as means, and their meaning persists past the mission. Their social nature resists certain mechanisms of control, and wise leaders realize that persuasion and trust, versus control, are crucial leadership tools, especially as the leader's scope of responsibility increases. Yet, the inclination to impose structure can fight against the realities and demands of this interpersonal dimension. This dimension is just one example of a cluster likely to produce an inner tension. We propose that a type and trait with such a tension can learn to stretch *because of* the inner tension, basically that the tension is itself a gateway to increased self-and-other awareness that allows a leader to maximize his or her performance. This proposal is not meant to say that anyone has a perfect type and trait, but that we can each learn to flex to our weaker inclinations when the context calls for that. Specifically, for FJs, as noted earlier, perhaps the tension is what predisposes these types and traits to potentially excel in emotionally intelligent leadership behaviors.

Gender Differences

> What does it mean for a military that has seen a significant increase in female accessions and may have experienced a notable shift from T- to F-types over the last 16 years?

Regarding differences between males and females from the ACSC AY20 student body, the most significant statistical findings related to the S-N and T-F dimensions (see tables 4–5). First, in support of the above statistical results, both men and women were more than 50 percent SF, and less than 50 percent NT. However, men were nearly evenly split on the S-N dimension (51.7–48.4), while women showed a much bigger disparity of 61.9 S members to 38.1 in the N group. A similar finding appeared based on an analysis of the T-F dimension. Men showed a bigger difference compared to their S-N results (54.7/F to 45.5/T). Still, the disparity among women was again significantly larger, with 60 percent female F members compared to 40 percent in the T group. If female military leaders are statistically significantly more likely to be SFs than males, what does

this mean for military organizations? What does this mean for a military that, over time, may have experienced a notable shift from T- to F-types and traits? According to researchers in 2005, Naval War College student bodies from 1989–2004 (n=7180), on average, were 90 percent T members and 10 percent in the F group. The ACSC AY20 student body, admittedly with different rank, demographics, and experiences, was very different on this statistic, with 36 percent T members and 64 percent in the F group!

Conclusion

The first conclusion from the above statistical results and discussion relates to the topic of conformism. Many recognize the value and desirability of conformism in multiple dimensions of military service. Still, one would hardly wish to see this tendency in the areas of analysis, decision-making, and strategic formulation. In short, intellectual conformism is likely to have major drawbacks, even without consideration of the complex, uncertain, and ambiguous operational and strategic environments found today in every geographic command. While any military these days is at risk for losing its effective edge, the dimension of human personality is yet another way to affect this edge, if researchers can capture the significance of personality and its relationship to unit and organizational effectiveness. The US military has capitalized on the study of personality for decades, but has it optimized this effort? The applicability of personality analysis to military leader self-awareness and personal growth is important, but the point here is that studying personality in the aggregate has significant potential as well. We may ask whether team and unit composition bears on the optimal distribution of personality types and traits, but what about the force as a whole? The preponderance of those with a J preference is just one way to examine this, in particular that the J preference for imposing structure on responses to the processing of information has tremendous planning advantages but potential strategizing drawbacks. This is not a call for a massive recruitment effort of P types and traits; it is a signal that both preferences need to stretch their willingness to remain open to new and/or conflictual data when the context requires it. Another concern related to the lack of P types and traits is the potential for discouragement of innovation. This is a multitiered problem, as P type and trait subordinates need bosses who are at least prepared to stretch their behaviors to accommodate the risk and openness that innovation requires.

A second consideration is the possible deeper meanings behind a high concentration of S-F-Js in military populations. Many of the cognitive and leadership behaviors associated with this cluster resonate in military cultures, particularly SJ Guardian tendencies of a bias toward action, sense of duty, instinct to protect and preserve,

and unyielding attention to demands and deadlines. The inclusion of F, noted as a possible increasing tendency among high-performing officers, adds what we will call "moral strength," a strong sense of conviction, or a motivation to see through on responsibilities. Such a passionate dedication to duty accounts for many of the positive experiences with students that faculty at ACSC anecdotally have provided over the years. We personally have yet to find a student body we have worked with more committed to increasing their technical expertise and professional growth. Taking this line of investigation a step further, we should not forget the other type and trait clusters and what they offer. In the cognitive realms of strategic thinking and core purpose (why organizations or institutions exist at all, what is my purpose as person/officer/leader), conviction is important but perhaps not enough. This is not to say a leader cannot successfully practice or present behaviors in all three realms, but simply that no one leader, however magnetic or commanding, can *make* a small unit or large organization *do anything*. Many of the members and their unique contributions are required to fuel achievement and mission accomplishment. The best leaders tap into their strengths and the strengths of others to complete the task of providing purpose, motivation, and strategic guidance.

To build on the above proposed connection between personality and the acts of strategic thinking and strategy formulation, Bullis' work has significant implications for military organizations. His claim that this kind of work demands the practice of N-F-P preferences in cognitive and leadership behaviors is both controversial and very promising, if accurate. His article makes clear that he is not advocating hiring and promotion practices to mandate INFP and ENFP personalities, but rather his argument calls for *stretching* among senior leaders and soon-to-be senior leaders to accommodate the benefits of the preferences related to N-F-P types and traits. What this means in relation to our study is that, with a high proportion of S-F-J in our population, what preferences inherently exist when needing to think strategically, and what types of cognitive and leader behaviors would require stretching one's more inherent inclinations? The Bullis piece argues that strategic thinkers need to "discover underlying interdependent or reciprocal relationships (N)," "place primacy on the interpersonal component of their interactions (F)," and "apply patient decision-making techniques (P)." Is he right?

The statistical results on the differences between males and females did not demonstrate significant departures from studies on similar populations. However, it is important to consider the implications of these results when considering group dynamics and leader-follower dyadic relationships and interactions, as many researchers have done before. The prevalence of the F group across men and women bode well for subordinates, as the behaviors associated with this preference have often translated into successful leader-follower relationships, according

to the bulk of research. If the above data accurately signal an en masse movement of T to F in the wider US military, this has very significant implications for leadership and command issues and development.

Recommendations

Although many recommendations for future research are possible from this study, we will only name a few. First, it would be valuable to explain why the preponderance of SFJs occurred and what happened to account for the apparent movement toward a majority of the F group in contrast to the Buckwalter study and other studies of military populations. Also, the demographic-specific results provide numerous follow-on research paths. The differences in males and females have implications regarding leader-follower dyadic relationships, group dynamics, and teambuilding. Additionally, we need to acknowledge the results among our international officers, who although quite a bit smaller in number (n=72), demonstrated some interesting differences from the US military population. ISFJs and ESFJs accounted for 43 percent of all international officers, an even greater preponderance than among US students. If we add INFJs and ENFJs, we arrive at 70 percent of all international officers across only four of the 16 types or traits! As a final research proposal, we return to Huntington's treatment of the "military mind." His descriptors such as "realizing himself in groups. . . corporative in spirit. . . anti-individualistic. . . (believing he learns) only from experience. . ." share some conceptual space with the higher frequency types and traits seen in this study.[30] However, Huntington also addresses his claim of a prevalent pessimism in the military mind. We do not see this in the results, nor do we notice it in our hallways! So, what is the military mind today? ✪

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Aiming for Squadron Success

The Tailored Command Philosophy

John Blumentritt, PhD

Introduction

Philosophies matter. Philosophies guide people through events, hone personas, and prompt development. Deliberateness matters. Deliberately choosing behaviors encourages the selection of practical paths that lead toward the guiding light provided by a philosophy. Emerging leaders tend to bring their time-tested personal leadership philosophy with them into squadron command, which is essential but not enough. Command complexity today and in the future requires advanced and innovative squadron command preparation versus more-of-the-same leadership behavior. A tailored command philosophy is an advanced and innovative method of preparation. Budding squadron commanders aiming for success should deliberately convert their personal leadership philosophy into a tailored command philosophy.[1]

The Need

Something is wrong. A look back at news reports from the past few years reveals far too many ousted commanders. Even a cursory review of social media postings can infer the perceptions of underwhelming military leaders. Finally, a routine academic assignment involving two squadron command-centric courses conducted from 2018–19 at Air University highlights this irregularity. Instructors asked students attending these courses to share experiences from two perspectives. First, they asked students to discuss the best squadron commander they have known and then share variables that led to their choice. Second, students put forward examples of negative leadership they have witnessed in the context of squadron command. Student responses to the "best squadron commander" question were mostly reassuring. However, hundreds of students shared stories of former commanders whose practice of management, leadership, power, and adaptation fell below their expectations.[2]

All this provides evidence of an oddity. Officers hone and demonstrate leadership acumen for years before squadron command opportunities surface. During this formative time, promising leaders transition from tactical to operational perspectives. They mature in character and ethical development. They improve communication skills.[3] Senior leaders identify, retain, groom, and then select promis-

ing leaders for squadron command. However, some candidates who demonstrate a propensity for executive leadership along the way struggle. Some transform into poor commanders. Some fail.

Viewpoints fluctuate when diagnosing issues and prescribing remedies aimed to preempt command failure. This fluctuation is because command failure is hard to define, predict, generalize, and sometimes even notice. Graduated commanders may sport a successful legacy when, in fact, timing, obscurity, luck, and even deceit may have masked gaffes that should have halted their climb to greater authority and responsibility. Disappointing cases suggest that demonstration of leadership in the early years may not be wholly adequate to predict command potential. Perhaps unsuccessful commanders misconstrue their propensity for command. Possibly, they fail to comprehend or leverage command-unique facets of management, leadership, and power. Maybe unsuccessful commanders come to be incapable of adjusting to, adapting for, and acclimating into a squadron with a distinctive organizational structure, mission, climate, culture, and degree of health.

Commanding an element of national power, amid the changing character of war in a disruptive environment, is an exclusive leadership challenge.[4] Consequently, the Air Force needs to pursue advanced and innovative squadron command preparation versus more-of-the-same leadership behavior because failure in command is unacceptable. A tailored command philosophy is an advanced and innovative method of preparation.

Untidiness—Leadership and Command Philosophies

Commanders scanning literature while tailoring a command philosophy may become frustrated. This frustration is because scholars and practitioners put forward differing ideas, concepts, opinions, and thoughts on the subject, but this should not distract. Untidiness is common in academic literature and real-world workplaces.

Fortunately, brilliance emerges through the seemingly untidy diversity of perspectives. Different figures, approaching the topic as scholar-practitioners from the Air Force, Navy, and Army, and as career scholars, highlight different aspects. Broadly, these topics include using a focus on the mission to translate leadership into command, embodying command through appearance and expertise, emphasizing tough and challenging performance to express command, and using pragmatism at the operational level of war to orient command.[5]

Such perspectives suggest valuable principles and prescriptive lessons, but they do not standardize the jargon. The challenge of untidiness regarding a personal philosophy of leadership, and a tailored command philosophy remains.

Tidying up—Leadership and Tailored Command Philosophies

Researchers manage untidiness by developing and using conceptual definitions. Conceptual definitions are neither true nor false but are instead symbols to permit communication. According to social sciences researchers Chava Frankfort-Nachmias and David Nachmias: "Put simply, the definition is what the definer says it is."[6] Accepting and using conceptual definitions, defined by a definer and recognized by colleagues as communication tools, brings about order, coherence, and efficiency.

One can conceptually define a personal leadership philosophy as the foundation of how one aspires to lead based on their past. Previous experiences shape beliefs, values, principles, personalities, deficiencies, and other individual factors. A personal leadership philosophy informs and guides personal development and behaviors. Most leaders reflect on years of training, education, and experience as they develop and refine their leadership philosophy. A leadership philosophy is a fine starting place for emerging leaders to reflect upon as they prepare for and then enter squadron command.

A tailored command philosophy, conceptually defined and consistent with the aforementioned examples, is a pragmatic philosophy of how one plans to lead within a specific military command opportunity. This philosophy helps commanders complement personal leadership aspirations with command-unique facets of management, leadership, and power. The tailored command philosophy goes on to inform and guide squadron commanders as they adjust to, adapt for, and acclimate into a squadron with a distinctive organizational structure, mission, climate, culture, and degree of health.

Commanding—Management, Leadership, and Power

Emerging leaders bring capabilities formed earlier into command. However, and most likely for the first time in their careers, squadron commanders discover command-unique facets of management, leadership, and power. Air Force Instruction (AFI) 1-2, *Commander's Responsibilities*, charges commanders to leverage these command-unique facets toward specific duties and responsibilities.[7]

For example, commanders shape management processes within their particular squadron. Commanders are duty-bound to serve as creative and entrusted stewards of scarce people, funds, and time as they shepherd their squadrons toward innovation and mission success.[8] Scores of midlevel professionals manage people, funds, and time nobly as consumers and stabilizers. They focus on "managing things right." Commanders certainly "manage things right." However, they retain considerable autonomy that allows them to choose many of the "right things to manage."[9]

AFI 1-2 also charges commanders to "lead by personal example and pay judicious attention to the welfare and morale of their subordinates."[10] Midlevel professionals may certainly lead within organizations. However, commanders should leverage their prominent position and conspicuous visibility to enhance their status, influence, and ability to carry out assigned duties and responsibilities.[11]

Finally, commanders exercise power through rules such as the Uniform Code of Military Justice to "engage in the lives of subordinates [and] establish a healthy command climate which fosters good order and discipline."[12] Commanders penalize, demote, fire, and even jail people. Their disciplinary power affects troublesome subordinates as well as the spouses, children, extended family members, and even survivors of those punished.[13] "The power of the chief executive officer of General Motors does not approximate the wide breadth of responsibility or depth of power of the military commander."[14]

Commanding—The Squadron Matters

Squadrons are quirky. They may seem similar at first blush, but all are peculiar. Down-reaching peculiarities root below the obvious. Midlevel professionals destined to command within a familiar institution, and certainly those who will command outside their area of expertise, should deeply assess their organization. Perceptive squadron commanders reflect on this assessment as they adjust to, adapt for, and acclimate into a squadron with a distinctive organizational structure, mission, climate, culture, and degree of health.

Traditional organizations share a foundational principle that affects structure. Organizations are social institutions that justify their existence by their overall contribution to society.[15] Rationale architects of civilian organizations satisfy this foundational principle by organizing work arrangements to carry out socially acceptable functions. They may combine top management, middle management, technical support, administrative support, and a core of people who do the basic work. Air Force squadron architects also satisfy this foundational principle. National security contributes to society. Squadrons similarly pattern functional work arrangements. Squadron commanders carry out directed missions that enhance national security with an organized collection of staff, technicians, and professionals.

Organizations also differ. Raymond Miles and Charles Snow introduce a framework that categorizes organizations into four types.[16] Defenders seek stability and maximum efficiency through standardized rules, established processes, and division of work. Prospectors embrace flexibility as they try new things in dynamic and uncertain environments. Analyzers, by either design or ambivalence, tightly control some activities while permitting some risky ideas and undertakings. Mindful analyzers deliberately accommodate both stable and dynamic op-

erations.[17] Happenstance analyzers who drive risky innovation while advocating for efficiency and reliability may appear vacillating and unsure of themselves.[18] Finally, and most troubling, are reactors. Reactors lack consistent response mechanisms to pop-up ideas and issues.[19] Squadrons fit into one or more of these types. A squadron focused on flight testing might favor a prospector frame. A squadron that exists as part of a larger bureaucratic organization with strict parameters, such as an acquisition unit, may favor a defender frame. Any squadron may inadvertently transform into a happenstance analyzer or unstable reactor.

Organizations also exhibit climates. Climate normally is a visible artifact of culture.[20] One can easily observe artifacts such as uniforms, plaques, and rituals throughout an organization. This observation should not surprise Air Force professionals. Culture enhancing accouterments such as awards, decorations, and patches commonly display heritage and pride. Insiders cherish artifacts. Outsiders, including an unversed commander new to the job, might find some artifacts incomprehensible.

This incomprehensibility may occur because symbols exist as a manifestation of culture shared by insiders.[21] Again, this should not surprise Air Force professionals. Most quickly learn to recognize the aforementioned accouterments as they assimilate into Air Force culture. However, squadrons also strengthen preferred culture by way of their symbols. Like-minded people within a squadron may also assimilate into niche-like subcultures and display conforming symbols. These may include risk-taking sports and hobby enthusiasts.[22] Partisan political cliques and home-based business entrepreneurs may inculcate and then solicit within a squadron. Gang affiliates, drug users, criminals, and malcontents may insidiously form harmful yet still detectable countercultures within a squadron. Commanders oblivious to artifacts, cultures, subcultures, and countercultures within their squadron may fail to manage a preferred culture. They may instead find cultures, subcultures, and countercultures managing them.[23]

Finally, organizations reflect a degree of health. The Organizational Health Diagnostic & Development Corporation (OHDDC) defines *organizational health* as the "ability to function effectively, to cope adequately, to change appropriately, and to grow from within."[24] OHDDC consultants focus on dimensions such as optimal power equalization, cohesiveness, and morale. Air Force Equal Opportunity offices, similar to OHDDC consultants, help commanders measure squadron health by way of unit climate assessments (UCA). Lt Col Jeffry Smith, USAF, author of *Commanding an Air Force Squadron in the Twenty-First Century,* advocates for UCAs but warns these are only snapshots in time.[25] Clever commanders constantly complement formal assessments, diagnose, and then reinforce

those things that contribute to squadron healthiness, restore ailing squadrons, and tailor their strategy toward command success.

Squadron commanders who accurately self-assess their propensity for command and figure out command-unique facets of management, leadership, and power may indeed succeed. Yet some still struggle as they make their way through command. It would be ideal for commanders to further develop and prepare by genuinely assessing and molding the organization to which they will command.

Four Steps to a Tailored Command Philosophy

Emerging leaders aiming for squadron command success should deliberately develop a pragmatic philosophy tailored to their specific command opportunity. This tailored command philosophy should complement personal leadership aspirations with command-unique facets of management, leadership, and power. It should go on to address distinctive squadron elements related to organizational structure, mission, climate, culture, and degree of health. A tailored command philosophy comes about via a four-step approach.

The first of four steps midlevel professionals approaching squadron command should accomplish is to revisit, revise, or even rewrite their leadership philosophy. Life happens. Desires toward advancement change. Burdens accumulate. Strengths may build over time. New opportunities surface. Marci Martin explores personal strengths, weaknesses, opportunities, and threats (SWOT) in her article titled, "Conducting a Personal SWOT Analysis for your Career."[26] A personal SWOT analysis provides valuable insight. Genuinely self-assessing propensity for command by way of a midcareer introspection with a personal SWOT analysis, and then documenting perspectives in a fresh personal leadership philosophy, is a helpful first step when contemplating a squadron command opportunity.

Second, promising commanders should quickly discover, comprehend, and be able to leverage command-unique facets of management, leadership, and power in pursuit of duties and responsibilities that go with squadron command. Preparation is key. AFI 1-2 is a must-have instruction that "establishes broad responsibilities and expectations of commanders in the Air Force."[27] AU-2, *Guidelines for Command*, is a nonregulatory handbook with articles and tips for Air Force squadron commanders."[28] *Commanding an Air Force Squadron in the Twenty–First Century* provides practical tips and techniques for squadron commanders.[29] Gen David L. Goldfein, the 21st USAF chief of staff, published *Sharing Success–Owning Failure: Preparing to Command in the Twenty-First Century Air Force* when he was a colonel in 2001. This book provides timeless counsel for officers selected for command as well as young officers aspiring to someday command.[30] Finally, *The Military Commander and the Law* is a helpful reference that provides

general guidance, helps clarify issues, and identifies potential problem areas.[31] Complementing these readings are Air Force education, training, and orientation courses that focus on management, leadership, and power. Commanders should seek out and seize learning opportunities.

Third, commanders should assess their squadron's organizational structure, mission, climate, culture, and degree of health. They should learn organizational nuances and business practices. Commanders should watch for curious symbols and cryptic artifacts that might reveal squadron climate, culture, subcultures, and countercultures. They should gauge squadron health by perceiving general ambiance like the hinting of fatigue or positive energy in the air. Finally, they should gain insight on internal strengths and weaknesses while identifying external opportunities and threats. Researchers introduced the idea of a business-centric SWOT analysis in 1965 through their book titled *Business Policy: Text and Cases*.[32] Today, SWOT references and applications populate organizational leadership literature.[33] Commanders should learn and then use SWOT-centric concepts and models to assess their particular squadron. In fact, commanders should use all tools available to detect and then mindfully assess conditions within their squadron that affect organizational structure, mission, climate, culture, and degree of health.

Finally, after completing the above three steps, squadron commanders should convert their personal leadership philosophy into a tailored command philosophy. Tim Berry explains how business strategists convert SWOT analyses into doable strategies by way of a TOWS analysis.[34] TOWS is an acronym that demonstrates the mirroring of SWOT and refers to threats, opportunities, weaknesses, and strengths. These strategists overlap organizational strengths, weaknesses, opportunities, and threats to maximize positive influences while minimizing the negative. They may maximize an external opportunity by leveraging a company's internal strength. They may minimize a company's weakness by matching that deficiency to an external opportunity. A TOWS analysis provides four offsetting strategy combinations, and including strength-opportunity, strength-threat, weakness-opportunity, and weakness-threat. Business strategists advance ideal strategies after completing a TOWS analysis.

Squadron command, however, goes beyond strategy selection. Commanders mindfully choose actions based on personal leadership aspirations, the authority of command, and the uniqueness of a squadron. This mindset is why converting a personal leadership philosophy into a tailored command philosophy is more complex than a TOWS analysis. In fact, while a TOWS analysis produces four offsetting strategy combinations, a comprehensive personal leadership-to-command philosophy conversion, by way of the tailored command philosophy worksheet in the table, produces 16 actionable combinations.

Table. Tailored Command Philosophy Worksheet

	Command-Unique Facets • Management • Leadership • Power	Organizational SWOT			
		Internal Strengths "My squadron is good at…"	**Internal Weaknesses** "My squadron struggles with…"	**External Opportunities** "My squadron benefits from…"	**External Threats** "My squadron is limited by…"
Personal SWOT	**Internal Strengths** "I'm good at…"	Combine both strengths.	Offset weakness with strength.	Combine opportunity and strength.	Offset threat with strength.
	Internal Weaknesses "I struggle with…"	Offset weakness with strength.	Manage or reduce weaknesses.	Offset weakness with opportunity.	Manage or reduce weakness and threat.
	External Opportunities "I benefit from…"	Combine strength and opportunity.	Offset weakness with opportunity.	Combine both opportunities.	Offset threat with opportunity.
	External Threats "I'm limited by…"	Offset threat with strength.	Manage or reduce threat and weakness.	Offset threat with opportunity.	Manage or reduce threats.

Commanders converting their leadership philosophy into a tailored command philosophy begin by synthesizing their freshly revised personal leadership philosophy. Leadership philosophies might integrate personality, goals, gifts, vision, flaws, faith, family, values, and external influences. Commanders then translate personal issues they feel are significant into internal strengths, internal weaknesses, external opportunities, or external threats and then list them in the vertical SWOT column of the tailored command philosophy worksheet (table).

Next, commanders synthesize their squadron organizational assessment. Distinctive elements related to organizational structure, mission, climate, culture, and degree of health might include perception of commander, inspection results, mission performance, facilities, awards, promotion rates, morale, and squadron ambiance.[35] Commanders then translate organizational issues they feel are significant into internal strengths, internal weaknesses, external opportunities, or external threats and then list them in the horizontal SWOT row of the tailored command philosophy worksheet (table).

Completing this worksheet reveals to commanders how personal strengths, weaknesses, opportunities, and threats extracted from their leadership philosophy

overlap with strengths, weaknesses, opportunities, and threats discovered from assessing their particular squadron. Suggestions in overlapping areas such as "leverage both strengths" and "offset threat with opportunity" illustrate how commanders can maximize positive influences while minimizing the negative through overlaps, offsets, and counterbalancing. The note at the top-left of the table reminds commanders to consider command-unique facets of management, leadership, and power as they select and carry out actions to influence desired outcomes. Creative commanders can go beyond SWOT categories and match other commander-squadron dynamics at play, such as office behavior, teambuilding endeavors, and off-duty activities.

Finally, and unlike a business-centric TOWS analysis that focuses primarily on organizational inadequacies and capabilities, the tailored command philosophy worksheet captures the personal leadership aspirations of the commander, the authority of command, and the uniqueness of a squadron. A thoughtfully completed worksheet provides ample visualization to support the conversion of a personal leadership philosophy into a tailored command philosophy.

Commanding with a Tailored Command Philosophy

General Goldfein shared that his book on command preparation does not provide "how to command" answers.[36] Lieutenant Colonel Smith straightforwardly explains that his book on squadron command is not "full of checklists [with] simple cookbook approaches to problems."[37] Lt Col Mike Hower, USAF, retired, shares that the Commanders Connection Team, who published AU-2, never intended it to be a prescription for command.[38] Similarly, a tailored command philosophy is not a lone recipe for squadron command success. Instead, it joins other resources aimed to help emerging leaders develop habits of mind that will move them toward squadron command success.

Commanders armed with a tailored command philosophy learn to approach issues both deductively and inductively. Deductively, commanders reason that outcomes will follow established patterns. They integrate leadership acumen developed along the way, traditional culture, rules, command-unique facets of management, leadership, power, and other time-tested premises into their command philosophy and then project command "top-down." Inductively, the brightest also reason that squadron quirkiness tends to disrupt predictable patterns. These commanders certainly benefit from acumen, tradition, rules, and positional power. However, they also invest considerable time observing and comprehending squadron events, trends, processes, and problems. In so doing, these "bottom-up" leaders notice conditions deep within their particular squadron and then mindfully diagnose issues in context.

Then, from means available, and including drawing from their tailored command philosophy, they select actions that best influence desired outcomes.

Colonel DeMarco suggests in his integration piece that a leadership philosophy is the North Star for a leader. This suggestion is certainly true. A thoughtfully crafted leadership philosophy provides direction and vision. "Like a compass," Colonel DeMarco says, "it helps keep you, the leader, on course."[39] Aviators benefit from compasses. Leaders benefit from philosophies. Fortunately, advanced and innovative methods help aviators and leaders find their way through challenging conditions. The crucible of squadron command presents such a challenge. A tailored command philosophy is an advanced and innovative method. Commanders who command with a tailored command philosophy will best appreciate the compass analogy. A tailored command philosophy increases the probability of success for those navigating a squadron command journey.

Conclusion

Mindful commanders self-assess their propensity for command and then confidently thunder forward with a fresh leadership philosophy. These commanders learn and then leverage command-unique facets of management, leadership, and power. The brightest continue to aim for success with advanced and innovative command preparation. These commanders continually develop and prepare by genuinely assessing and molding the organization to which they will command. In so doing, they smartly adjust to, adapt for, and acclimate into a squadron with a distinctive organizational structure, mission, climate, culture, and degree of health. Their tailored command philosophy balances their leadership aspirations, the authority of command, and the uniqueness of their squadron. Squadron commanders should deliberately develop a tailored command philosophy. ✪

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Notes

1. Commanders and executive directors at all levels of leadership should develop a tailored command philosophy. This article pragmatically binds the discussion to commanders of USAF squadrons.

2. A two-year look back (not a scientific study) at 842 student responses. The first batch came from the Air Command and Staff College (ACSC) Online Master's Program, LC-5510 *Practice of Command* course from January–December 2018 with 28 sections and 394 students. The second

batch came from the combined ACSC and Air War College/LDR 845A *Squadron Command* course from March–December 2018 with nine sections and 104 students. The final batch came from the LC-5510 *Practice of Command* course from January–December 2019 with 30 sections and 344 students.

3. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 1800.01E, *Officer Professional Military Education Policy*, 29 May 2015, A-A-4. CJCSI 1800.01E proposes the expected broadening of skills and perspectives through military ranks in the context of professional military education (PME).

4. Minutes of meeting with Secretary of Defense and Military Education Coordination Council Working Group on PME, 10 October 2018. From these minutes: "Understanding the changing character of war in a disruptive environment appears to be a key concept for the target of JPME."

5. These scholars and practitioners are: Col William J. DeMarco, USAF, retired; Capt G. Mark Hardy, Navy Reserve; Lt Col Danny R. McKnight, Army, retired; and Scott Bowden and Bill Ward. DeMarco, in a 2013 faculty paper at Air University, synthesized several arguments to emphasize vision setting, empowering, defining of mission and tempo, and the leveraging of authority as ways to translate personal leadership into command. Hardy noted the utility of maintaining an impeccable appearance, knowing the job, and recognizing outstanding effort via well-written evaluations. McKnight emphasized tough and challenging performance-oriented training, maintenance, and accountability of equipment, especially in harsh conditions, and insistence on the proper use versus abuse of soldiers. Bowden and Ward viewed Confederate Gen Robert E. Lee's command philosophy as a philosophy of war or generalship that maximized the strategic impact of his numerically inferior forces in a way that prolonged Confederate efforts despite the eventual defeat. See Col William J. DeMarco, *Leadership Philosophy 101: Who Are You?* (Maxwell AFB, AL: ACSC, 2013); Capt G. Mark Hardy, "Template for a Command Philosophy," *Naval Reserve Association News* (June 2003): 24; Lt Col Danny R. McKnight, "Command Philosophy," http://www.dannymcknight.com/; and Scott Bowden and Bill Ward, *Last Chance for Victory* (Boston: Da Capo Press, 2001): 78.

6. Chava Frankfort-Nachmias and David Nachmias, *Research Methods in the Social Sciences* (New York: Worth Publishers, 6th ed., 2000), 27.

7. Air Force Instruction (AFI) 1-2, *Commander's Responsibilities,* 8 May 2014, 2.

8. AFI 1-2, 3.

9. Warren Bennis and Burt Nanus, *Leaders: Strategies for Taking Charge* (New York: HarperBusiness Essentials, 2003), 20. Emphasis italicized in original: "*Managers are people who do thing right and leaders are people who do the right thing.*"

10. AFI 1-2, 2.

11. AFI 1-2, 3.

12. AFI 1-2, 3.

13. Col John W. Blumentritt: "It's not just about you. Injuries or death from misconduct can result in lost benefits for family members," *Torch* 16, no. 2 (March–April 2009): 4.

14. Col Timothy T., Timmons, USAF, retired, introduction to *Commanding an Air Force Squadron in the Twenty-First Century* by Lt Col Jeffry F. Smith (Maxwell AFB, AL: Air University Press, 2003), xv.

15. Professors Henry Mintzberg, Robert Simons, and Kunal Basu, quoted in Arthur A. Thompson Jr., A. J. Strickland III, and John E. Gamble, *Crafting & Executing Strategy: Text and Readings, 15th ed.* (New York: McGraw-Hill/Irwin, 2007), 316.

16. Synopsized in John Parnell, *Strategic Management in Theory and Practice*, 3rd ed. (Mason, OH: Cengage Learning, 2008), 160–62.

17. Raymond E. Miles and Charles C. Snow, *Organizational Strategy, Structure, and Process* (Stanford, CA: Stanford University Press, 2003), 74.

18. Donald C. Hambrick, forward to *Organizational Strategy, Structure, and Process*, xi.

19. Miles and Snow, *Organizational Strategy, Structure, and Process*, 81.

20. Edgar H. Schine, *Organizational Culture and Leadership*, 4th ed. (San Francisco, CA: Jossey-Bass, 2010), 24.

21. Schine, *Organizational Culture and Leadership*, 24.

22. AFI 91-202, *The US Air Force Mishap Prevention Program*, 29 April 2019, 167, https://static.e-publishing.af.mil/. Directs commanders to identify and engage with subordinates who participate in off-duty high-risk activities such as skydiving and scuba diving.

23. Schine, *Organizational Culture and Leadership*, 22.

24. Organizational Health Diagnostic & Development Corporation, accessed 24 April 2019, http://www.organizationalhealth.com/.

25. Smith, *Commanding an Air Force Squadron*, 31.

26. Marci Martin, "Conducting a Personal SWOT Analysis for your Career," *Business News Daily*, 15 November 2015, http://www.businessnewsdaily.com/.

27. AFI 1-2, *Commander's Responsibilities*, 1.

28. Air Command and Staff College, AU-2, *Guidelines for Command*, 2nd ed. (Maxwell AFB, AL: Air University Press, 2015), vii.

29. Smith, *Commanding an Air Force Squadron*, i.

30. Maj Gen Charles D. Link, USAF, retired, in forward to *Sharing Success–Owning Failure: Preparing to Command in the Twenty–First Century Air Force* by Col David L. Goldfein (Maxwell AFB, AL: Air University Press, 2001), v.

31. Judge Advocate General's School, *The Military Commander and the Law* (Maxwell AFB, AL: Air University Press, 15th ed., 2019), I, https://www.airuniversity.af.edu/.

32. Martin, "Conducting a Personal SWOT Analysis," 2. Martin shares the 1965 genesis of SWOT as a business tool while introducing her advocacy for a personal SWOT analysis.

33. Tim Berry, "What is a SWOT Analysis?," Bplans, accessed 24 April 2019, https://articles.bplans.com/. Mr. Berry provides a comprehensive discussion of SWOT-centric tools.

34. Tim Berry, "What is a SWOT Analysis?"

35. Lt Col Matthew Atkinson, LDR 845A *Squadron Command Course*, Notional Unit Analysis assignment. Lieutenant Colonel Atkinson selected these eight elements to sort squadrons into three ordinal categories (i.e., low-down, middle-of-the-road, and high-flight), curriculum development circa 2017.

36. Goldfein, *Sharing Success–Owning Failure*, ix.

37. Smith, *Commanding an Air Force Squadron*, xiii.

38. Lt Col Mike Hower, (former Commanders Connection program manager and editor of AU-2, 2nd ed.), interview by the author, 3 May 2019.

39. DeMarco, "Leadership Philosophy 101," 3.

Developing and Mentoring "In Extremis" Leaders

Lessons Learned from Special Operations

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As you maneuver your team, the sudden crack of bullets whipping past and the puffs of dirt indicate that enemy rounds are landing near you, heightening your fear and your adrenaline.

Exhausted as you near the end of a marathon, an improvised bomb explodes, and there is utter chaos as fellow runners cry out in agony for help, others lay seemingly lifeless, and you try to direct the few able-bodied folks around you to safety, not knowing if there are other bombs in the area.

You cannot see or breathe as smoke fills the building after an airplane has crashed into it, and for some reason your office mates look to you to decide which stairwell to take because you have a habit of making good decisions.

A viral pandemic affecting the entire globe cripples your workforce as sickness, new work schedules, and layoffs that were not forecasted in the department you manage grind business to a halt, but you still somehow must meet the needs of your clientele.

In all of these situations, ranging from armed conflict to health catastrophe, one's ability to lead in an emergency must be forged well before the emergency is at hand. As Hospital Corporation of America chief executive officer Jack Bovender said during Hurricane Katrina, "you cannot change yourself in 30 minutes into something you have not been for 30 years."[1]

Regardless of what side of the "born leaders versus made leaders" debate people may find themselves on, many would agree that leadership is not an easy undertaking and for some is a crucible. Context matters, however, as leadership lies on a spectrum of difficulty regarding the circumstances within which leaders find themselves. Leadership effectiveness is mainly dependent upon the environment.[2] For example, leading large, unwieldy, or geographically spread groups, leading others through organizational change, or leading in dangerous or high-stress environments is undoubtedly, highly arduous. Leading in high-stress or dangerous settings is fundamentally the same, yet qualitatively different, even from leading in other difficult contexts. These situations are known as *in extremis*, defined by

Thomas Kolditz as situations where leaders and followers are in physical danger or where followers believe that leader behavior will influence their well-being.[3] *In extremis leadership* is defined by this work as leading when life, limb, eyesight, or livelihood is on the line. Outcomes mean more than success or failure, pride, or embarrassment—they can mean being hurt or healthy, dead, or alive.[4] The purpose of this article is (1) to expand upon the background and developmental needs of in extremis leaders; (2) to provide a theoretically-based model meant for developing these types of leaders; and (3) to deliver examples of what could work for applicable organizations.

While complexity has certainly been discussed in leadership literature, empirical verifications of complex phenomena are challenging.[5] As such, in extremis situations, and the leaders therein, remain one of the least researched areas in the leadership field.[6] Additionally, Bass concluded that the prior research on leadership and groups operating in extreme circumstances has tended to treat such situations as homogenous.[7] This conclusion is partly due to an underdeveloped sense of the definition and the experience of leaders and followers in these uniquely contextualized and arduous settings. Across the literature, in extremis conditions are different than a crisis scenario (i.e., Wall Street collapse, insurance company hacking, identity theft). The life, health, livelihood, and safety of multiple individuals is inherently at risk *now or very soon*, where the threat is of intolerable magnitude within an imminent timeline. Decision-making, then, becomes of the utmost importance in the circumstances requiring "supererogatory" action—acts "done beyond the call of duty."[8]

Aside from the accident, disaster, or mission itself that leads to in extremis conditions, studies show that the second major source of negative outcomes derives from errors from leader reaction during and in the direct aftermath of said event.[9] After years of study, Kolditz introduced the in extremis leadership concept in a 2007 book appropriately titled *In Extremis Leadership: Leading As If Your Life Depended On It*. Therein, Kolditz found that successful in extremis leaders (1) possess an inherent motivation for the task, (2) share risk with their followers, (3) embrace continuous learning, (4) adopt a lifestyle in common with their followers, and (5) are highly competent and inspire trust and loyalty in others.[10] In extremis leaders understand that human judgment deteriorates under pressure and they, in turn, anticipate critical intervention points where their action (or potential inaction) determines performance and potential for positive outcomes.

Examples of in extremis leaders abound in the military, but others include emergency technicians, first responders, law enforcement, members of fire departments, and even those in certain industrial settings. In extremis conditions include, but are not limited to, combat situations, natural disasters (i.e., floods, hur-

ricanes, tsunamis, earthquakes), major accidents involving human life (i.e., traffic collisions, arsons/fires, mine collapses) and terrorism (i.e., indiscriminate public bombings, school shootings, coordinated random acts of violence). They also include many other organizational circumstances regardless of whether the people involved operate in what would be considered regular in extremis. Sean Hannah et al., further defined these conditions as "discrete episodes or occurrences that may result in an extensive and intolerable magnitude of physical, psychological, or material consequences to—or in close physical or psycho-social proximity to—organization members."[11]

In extremis leaders today find themselves combatting more networks than natural disasters, be it technology or pockets of people. Developing the capacity to mentor leaders who will operate, fight, and survive during in extremis circumstances can appear to be a riddle inside an enigma. However, a tailored and holistic developmental approach, which is presented here, will often be the answer for mentors, their dyadic relationships, and the learning organizations and learning environments they create for in extremis leaders. Designing, executing, and evaluating complex leader developmental systems that build leaders who cannot only contest high-risk threats but highly perform in various high-stress conditions will produce more professional forces at the individual and collective participant levels (e.g., *in situ*), and at the observer/controller level (i.e., the trainer, instructor, mentor, etc.).

Building high-performing leaders begins with crafting a learning environment that fosters the development of agile thinking, decision-making, and deliberate focus under duress. Taking this into account, *learning* should be differentiated from *development*. *Learning* is an increase or change in knowledge or skill as the result of a process. In contrast, *development* is an ongoing, longer-term change or evolution that occurs during many learning experiences.[12] Furthermore, *leader development* focuses on individual knowledge, skills, abilities, and other competencies, whereas *leadership development* focuses on collective social capacities, roles, and processes.[13] Leader and leadership development are both misunderstood as processes even at the highest levels of the armed forces, as each includes more than just training and operational experiences.[14] Furthermore, whereas experience and training have long been analyzed to discover their relationship to higher performance, different types of experience and training certainly have differing effects on outcomes.[15] Undoubtedly, mentors who understand developmental processes beyond solely training scenarios, for both leaders and their leadership capability, can craft crucible experiences to fill these gaps and greatly impact performance. As such, coaching, teaching, and mentoring in extremis leaders necessitates specialized approaches and systems for developmental experiences.

Constructing developmental experiences for those who will endure dangerous or in extremis settings requires a skillful understanding of individual, leader, group, and organizational development. In addition, the in extremis leader himself must also become an educator in developing team-level competencies, taking it beyond the mentorship dyad; and team dynamics change as high-performance teams mature and develop new competencies and trainers. Mentors or instructors simply will not be on the battlefield, objective, or at the dangerous site.[16] These competencies are both task-related and process-related types that build toward a *meta-competency* of team building. The ability to adroitly build teams imbues leaders with an ability to adjusts task- and process-related competencies *on the fly* to quickly identify how to fine-tune, develop, and solve problems regarding improving and sustaining team performance.[17] One of the keys to both individual and unit growth at the team level comes from explicitly operating together under combat-like or high-stress conditions, through realistic and evaluative, but semi-controllable environments.[18] To develop the competencies and the abilities required for both realistic training and actual conditions, mentors must use a specific developmental *approach* with an associative developmental *model*.

Like an in-extremis scenario, a developmental model for in extremis is certainly complex, but at its core is the developmental experience. The Center for Creative Leadership states that a *developmental experience* is comprised of three key elements: *assessment, challenge,* and *support*.[19] A variety of these experiences couple with other leader(ship) developmental aspects and a fostered ability to learn within an organizational or environmental context to create a developmental process. To be clear, development is a process and not a sole event or circumstance; very rarely will a single developmental event be enough to create lasting change regarding leadership.[20] Additionally, the individual cannot be stricken from their environment. Vice versa; there is a bidirectional relationship between the individual and their environment developmentally, within and across further social, cultural, ecological, and historical modifiers.[21] Linking developmental experiences together should also not be seen from a linear perspective or sequence but should be seen through a lens of interrelated psychological capacities at both these previously mentioned individual and contextual levels, consisting of various skills and traits. As seen in the figure, five psychological capacities in particular—self-awareness, self-regulation, agency/motivation, social awareness, and worldview—should be viewed from a systems-based perspective due to the inherent interconnectedness of the individual, group and organizational level.[22] These capacities make up the core of the *In Extremis Mentorship Development Model* to be offered here.
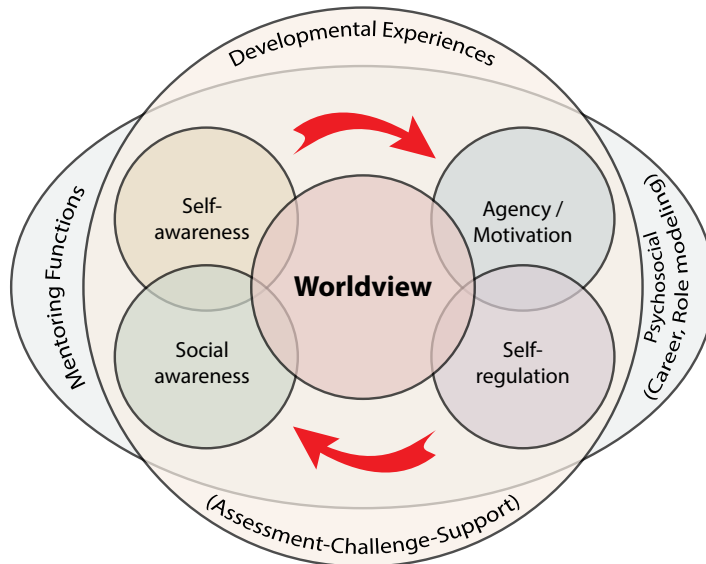
Figure. In Extremis Mentorship Developmental Model

The components of the model are a combination and synthesis of three separate but related theories.[23] The five psychological capacities are chosen from research into the unique demands required to build higher trustworthiness, more psychological hardiness, tighter cohesion, and stronger leader-follower partnerships in comparison to leaders of nondangerous settings.[24] One may notice that there are some similarities with Daniel Goleman's famed Emotional Intelligence Model (EIM), specifically regarding self-awareness and self-regulation. A few distinctions should be noted therein. Regarding EIM, identifying one's own emotions or the emotional expressions of others is the primary focus, whether it is to facilitate good personal decisions or to resolve conflicts. Whereas these outcomes surely help the in extremis leader, it falls short of what an in extremis leader needs as EIM does not offer perspectives about high stakes or high-stress management or leadership contexts.[25] A second key distinction is our emphasis on including mentoring perspectives and crafted developmental perspectives not only in addition to but *in support of* building one's psychological capacities. Crafting developmental experiences and involving mentors is not specifically discussed as a part of EIM; in particular, Goleman mainly focuses on reflection and coaching techniques.[26]

To further understand the components of figure 1, some definitions are due. Worldview is seen as foundational to all the others, encompassing one's core values and beliefs, identity, and character. It includes how one finds truth, vision, and meaning, as well as the lens through which leaders observe, interpret, and make sense of the environment. Self-awareness is understanding one's perspectives,

identity, role(s), and purpose introspectively and reflectively. Self-awareness is also about managing the stress of intense situations through an understanding of the capabilities one brings to bear. Social awareness is related to self-awareness but focuses more on connectedness with others and how these relationships make meaning and provide feedback to oneself. Additionally, social awareness is about transcending self-interests to not only cooperate with others, but to maximize the bonds of trust critical to social resilience. Self-regulation is the ability to not only monitor and control one's emotions, but also one's behaviors, thoughts, and foci. This regulatory function expressly deals with effective decision making and a sense of control during in extremis scenarios. Finally, agency and motivation is associated with self-regulation but concerns the desire, drive, and self-efficacy for action. Being agentic and motivated here specifically concerns the will to survive and the associative trust in fellow comrades necessary to endure high-stakes environments.

The five capacities are fluid, interactive, and are embedded within the previously discussed concept of developmental experiences. They are also embedded in the three mentoring functions (e.g., career, psychosocial, and role modeling) as defined by long-term workplace mentorship scholar Kathy Kram, *tying it back directly to the mentor's role in facilitating the developmental of these core attributes*.[27] The career mentoring function deals with duty, challenge, and job skills, the psychosocial deals with personal competency, identity, interpersonal skills, and mental well-being, and role modeling involves observational learning and example setting.[28] The career mentoring function deals with duty, challenge, and job skills; the psychosocial deals with personal competency, identity, interpersonal skills, and mental well-being; and role modeling involves observational learning and example setting.[29] As displayed, there will be some mentorship that happens outside of the context of an associative specific developmental experience (i.e., discussions about family). Also, some developmental experiences will happen that do not directly involve mentorship (i.e., unit-based training) that are still relevant to the five psychological capacities.

Unlike other mentorship situations, mentoring for in extremis leaders must never separate the team or unit context. At a basic social and organizational level, Wendell French (2001) tells us that most people desire to be accepted and wish to "interact cooperatively with at least one small reference group," and "one of the most psychologically relevant reference groups for most people is the work group, including peers and the superior."[30] He goes on to say that "most people are capable of greatly increasing their effectiveness in helping their reference group solve problems."[31] In extremis conditions are the ultimate leadership problem to be solved by a cooperative and highly effective reference group. As shown in the model the psychological capacity for social awareness, the significant influence

that membership in a variety of social conditions, be it unit, team, profession, and so forth, have on the developmental experiences of leaders and followers is accounted for, as is the interconnectedness within the process.

At this juncture, the importance of mentorship for in extremis leaders should be stressed, and it deals mostly with the high-stress situations and their inherent psychological effects. There are three phases in the temporal progression of dangerous settings: (1) anticipatory, (2) in situ, and (3) post hoc.[32] Mentorship is a significant matter within the context of in extremis leader(ship) development because of a mentor's role in two of the phases, namely the *anticipatory* and *post hoc* portions. Of the three mentoring functions described earlier, the anticipatory and post hoc phases require the psychosocial function the most. This particular function and its components help develop the behavioral skills and interpersonal abilities needed to reflect, understand, and process the complexity of in extremis events with someone who cares and is invested.[33] Leaders in dangerous environments have the greatest need for support networks to assist in the management of stress and making meaning of their experiences.[34] *Care* is one of the three unique psychological demands (alongside *character* and *competence*) that facilitates both effective performance *during and after* high-stakes contexts.[35] It should still be emphasized, however, that a leader's adaptability across *all* temporal phases allows for the preparation for, functioning during, and recovery from in extremis contexts. Whereas conventional wisdom might assume that extremity will be highest during an actual extreme event, Herman Leonard and Arnold Howitt suggest that what constitutes effective leadership will vary over the stages of preparation, response, and recovery from an extreme event.[36] All told, mentors help mentally ready and recuperate in extremis leaders—the psychosocial function is displayed separately in figure 1 to acknowledge this importance.

Mentorship has largely been excluded from the conversation surrounding in extremis leaders and their associative dynamic situations. Having leaders who have been in high-stress or high-impact situations pair with and develop relationships with those who will do so is the golden standard for any set of developmental experiences. To enact the model offered here, a formalized and programmatic methodology, when done correctly, is the optimal approach. A few things must be considered to create a program that allows for the use of the model offered here. First, pinpoint the right type of organizational design required, create calendar space for enactment, and advertise the program's occurrence. Build interest by showing the program's importance, the science behind it, and how its implementation will be custom-tailored. Second, provide mentorship training for mentees and mentors that explains the model but also lays out your organizational expectations going forward. This should be more than one meeting—understanding

the theoretical underpinnings, discussing the way forward, and then engaging in a few opportunities to habituate toward the practices involved should all be separate engagements. Ensure the folks involved are planning out possible developmental experiences. Third, take a "top-involved" but "bottom-driven" approach to program action. In other words, organizational leaders should be a part of every phase of the program, including getting involved in mentoring and the use of the model, while mentees and followers in the organization provide feedback as to what is working, what is not, and where to possibly take the program. Finally, track progress using objective outcome measures, hold personnel accountable, report the findings, and adjust as necessary. Activity must be correlated to impact rather than good intentions, and progression is only possible through data acquisition, reflection, and refinement.

To conclude, although individuals in business or those not in combat, fighting fires, or delivering a high-risk warrant may not be facing death, they often find themselves in stressful situations that could mean the death of their enterprise, their organizational culture, or other negative impacts that affect the livelihood of their employees and teammates. The current global pandemic regarding COVID-19 is a relevant example of this fact. Synthesizing lessons learned after one is in an in extremis circumstance is critical to development, but it is tantamount to deliberate and holistic developmental approaches before the onset of danger or chaos—the key is to develop leaders and their leadership *beforehand*, given that the stakes are so high. While it may not be easy, as shown here through background, theory, and example, the development of high-stress or high-impact leadership is not unfeasible, nor is it reserved solely for elite teams with unique missions or roles. Given the threat, risk, and the potential traumatic circumstances that can arise, a tailored, innovative, and robust mentorship approach like the one presented can be just the competitive edge that any organization needs to build and maintain in extremis leaders who grow while practicing, achieve victory under pressure, and show resilience beyond. ✪

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Addressing Counterspace Doctrine through Naval Composite Warfare

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Introduction

The declaration of space as a war-fighting domain and the growth of the threat within the domain has brought about an increase in attention and action driving thought toward how the United States might respond. Unfortunately, this evolution has been without a commensurate development of supporting military doctrine. The growth of intelligence on space threats and the desire to prepare and respond has driven changes across all space forces to refocus and adjust priorities directed previously on terrestrial force support and force enhancement. The space doctrine, however, has lagged in this growth, failing to provide sufficient guidance for space force employment and the organization for protection and defense. At the tactical and operational level, the defense of space assets and the method by which we organize forces is currently an afterthought with assumed-away, nonexistent solutions. To recover from this deficit, it is necessary to build off of organizational similarities found in the maritime domain and its guiding doctrine.

This article describes how Air Force Doctrine Document (AFDD) Annex 3-14, *Counterspace Operations*, lacks the employment and organizational guidance necessary for space forces to compete with current threats and how the Navy approaches a similar problem using Navy Warfare Publication (NWP) 3-56, *Composite Warfare: Maritime Operations at the Tactical Level of War*. Finally, the article will provide recommended additions to current counterspace doctrine based on the maritime example to organize tactical and operational space forces for space superiority.

Air Force Doctrine Annex 3-14 Analysis

The foundational element that guides Air Force understanding and employment of force is its doctrine. Specific to space, AFDD Annex 3-14, *Counterspace Operations*, addresses threat descriptions, mission area descriptions, high-level organizational descriptions, force enhancement command and control, and initial space planning guidance. While the information is valuable, several areas exist

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that clearly fall short of meeting the expectation to provide an effective foundation. To address space as a war-fighting domain, the doctrine must mature ahead of the technology, something that has not happened in the past, to guide the organization and preparation of space forces for a war-fighting domain.[1]

The current Air Force doctrinal language found within AFDD Annex 3-14, *Counterspace Operations*, is very specific and limiting with respect to national space assets and threat response. It states:

> "The 2017 National Security Strategy recognizes the benefits space provides and the potential threats to US space capabilities by stating: The United States considers unfettered access to and freedom to operate in space to be a vital interest. Any harmful interference with or attack upon critical components of our space architecture directly affecting this vital US interest will be met with a deliberate response at a time, place, manner, and domain of our choosing."[2]

In this declaration, the doctrine specifically identifies vital interests and critical components of our space architecture as the capabilities that, when interfered with or attacked, will trigger a response. This doctrine leaves open to interpretation the status or identification of a system that elicits a response to a threat or interference. While, in some cases, this may be valuable providing both decision space and ambiguity, it also introduces the opportunity for gray-zone conflict muddying the waters of proportional response and the declaration of hostilities. This doubt, paired with the limitations imposed by the second portion of the statement, make responding to threats with justified actions difficult. The implication found in just the word *response*, is that we will take the first hit and then make a decision on when and where to respond. This is troublesome as it abdicates the initiative to the attacking force. Losing the initiative, especially in the space domain, may very well also lose us any chance at victory. If the enemy can coordinate a set of actions against multiple, limited, and critical space assets, the resulting position may be one that does not require a response, as we have already lost our ability to provide an asymmetric advantage to our forces.

AFDD Annex 3-14, *Counterspace Operations*, does provide a workable definition of *space superiority*, identifying it as the objective and goal of counterspace operations and the provision for sufficient freedom of action to create desired effects.[3] Therefore, commanders should determine the appropriate level of space control required to accomplish their mission and assign a commensurate level of effort to achieve it.[4] This determination is also effective if the desired intent is to maintain the status quo. What this strategy does suggest, however, is the level of effort applied may be less than that required for a dominant victory. In the same way that force ratios in other domains are dictated by the threat and the environ-

ment, this same type of barometer should be applied within the space domain to ensure victory is assured and not contested in the pursuit of national security interests. To even make these sort of apportionment decisions however, the doctrine needs to address the command and control of space forces.

The command and control framework, outlined in AFDD Annex 3-14, *Counterspace Operations*, is focused on how space effects are provided in support of combatant commanders. It describes relationships like the space coordinating authority and the director of space forces, both elements of supporting a combatant commander with space effects.[5] AFDD Annex 3-14, *Counterspace Operations*, goes on to provide a description of different command and control centers that play a role in the use and management of space power and space systems.[6] Some of the descriptions are relevant to the counterspace mission and provide a good capture of the organizations relevant to space command and control. These descriptions, however, do not account for the organization of forces in a contested domain with multiple types of threats. The guidance can be improved by including a framework for forces to utilize in response to threats that adequately shares protection tasks and functions.

The driving question born from the current limitations found in counterspace doctrine becomes: What additions to current space doctrine must be made to address the war-fighting domain? While space is a unique domain, the concepts and methods by which forces organize to address threats are not. Responses and organization can be adapted and applied from other domains to address the growing threats in space. In particular, the way the US Navy addresses composite force warfare at the tactical level of war with NWP 3-56 has clear parallels to leverage as an initial building block for the tactical organization of space forces.

Composite Warfare:
Maritime Operations at the Tactical Level of War Analysis

The primary purpose of NWP 3-56 is to provide guidance for the organization of US Navy tactical forces and a framework to decentralize execution at the tactical level of war. It also provides options for planners and commanders to consider in organizing and employing forces for operations in any domain.[7] The portions of NWP 3-56 with the most interest and applicability for space forces can be organized into three categories: composite warfare organization, command guidance, and mission application.

The basic component of the naval approach to composite force warfare is the way forces are organized at the tactical level. This way of organizing forces allows for offensive and defensive combat operations against multiple targets and threats

simultaneously.[8] NWP 3-56 describes three tiered levels (see fig. 1), which are differentiated by focus, command function, and responsibility. At the top of the structure is one commander who is given the title of composite warfare commander. This commander then designates command tasks, usually associated with a mission area or function. In the case of the next tier, the warfare commander's responsibility is assigned when a duty involves the control of weapons deployment or sensor system employment across the entire force. Examples of these commanders are the air and missile defense, surface, information operations, strike, and sector warfare commanders.[9]

Functional group commanders, the tier below the warfare commanders, conduct a specific activity supporting the overall mission using a subset of the force within the operations area. An example of a functional group commander is the screen group commander. According to NWP 3-56, the screen commander commands "an arrangement of ships and aircraft to protect a main body or convoy. Typically, screen ships provide protection by placing themselves between the adversary and the high-value asset (HVA). The screening group is an organization of escort platforms, typically multimission ships. Warfare commanders may have authority delegated to them to detach ships from the screening group."[10] The functional group commanders and this method of organization is an effective way to organize forces, specifically for the tactical defense and protection of assets. Both the warfare commanders and functional group commanders have the support of coordinators, the execution tier of the construct.
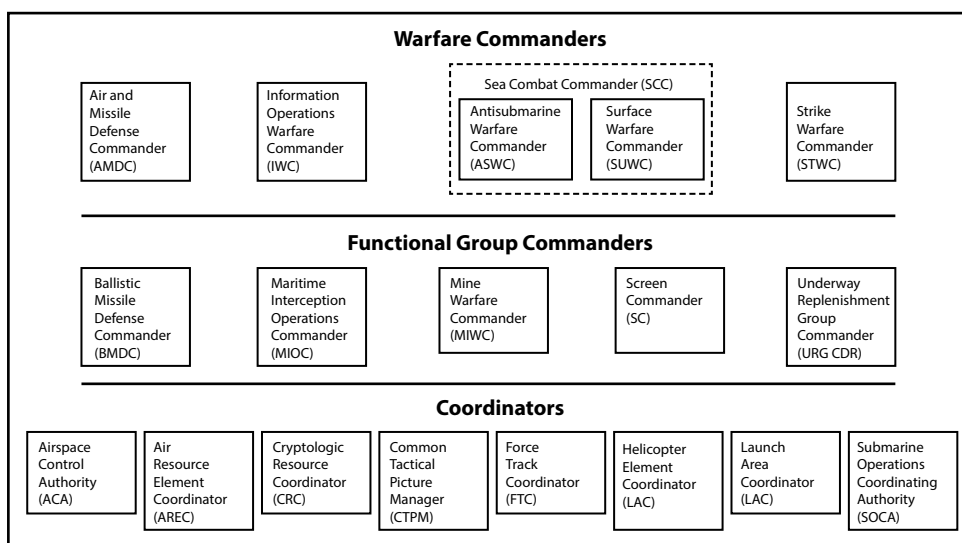

Figure 1. Naval tiered composite force structure
Source: NWP 3-56, *Composite Warfare*, 5–16

"Coordinators are asset and resource managers. They carry out the policies of the overall commander and respond to the specific tasking of either warfare commanders or functional group commanders," according to NWP 3-56.[11] Supporting assets for the Navy include the positions like the common tactical picture manager, air space control authority, and force track coordinator. All of these resources are critical to the execution of the primary mission and enable all or some components of the functional groups and warfare commanders. This organizational construct allows the maritime forces to organize and operate in support of the assigned mission and commander's intent.

Using the composite warfare organizational model allows for the force to then execute operations with command by negation type orders, executing preplanned responses, with the shared use of capabilities. Command by negation refers to:

> ". . .the tactical commander retaining the option to command force action, particularly weapons employment, through command by negation. In many aspects of maritime warfare, it is necessary to preplan the actions of a force to an assessed threat and to assign some command functions to a subordinate. Once such functions are assigned, the subordinate is to take the required action without delay, keeping the commander informed of the situation with the expectation that silence is consent. The commander retains the power to negate or modify any particular action, but will do so actively."[12]

This type of order and execution provides the tactical commander the freedom to execute his preplanned actions and orders, not dependent on direction from leadership or having to seek additional approvals. The approval to execute is implicit in the preplanned response actions and orders that enable leadership the ability to negate or modify if required by circumstances dictated within the situation, rules of engagement, and so forth. One of the keys to the success of command by negation is the development of preplanned responses.

Preplanned responses are valuable for composite warfare for several reasons. They not only provide direction for subordinate commanders, but they allow all members of the composite force to have a basic understanding and shared idea of how other components will act in certain situations. NWP 3-56 describes this concept and provides the following description of preplanned responses:

> . . . preplanned responses provide subordinate commanders and subordinate forces with the commander's desired response in the event of certain enemy or other force actions. Preplanned responses, therefore, establish criteria for commanders to initiate autonomous action when circumstances warrant such action. Preplanned responses must be clearly crafted to avoid confusion and include clear definitions of the preconditions that may trigger a response. Because preplanned responses provide clear understanding of the commander's intent, they

facilitate common understanding, reduce the possibility of confusion, and increase the effectiveness of operations, even when operating in potentially denied or degraded environments."[13]

The documentation of this approach to command is especially useful as it provides guidance and methods to the force for developing actions with a shared understanding and levels of responsibility. It also addresses the communication challenges faced by the tactical units and provides guidance for operations taking place in a contested and potentially degraded environment. When paired with the guidance on shared resources, this becomes a powerful enabler for the composite force.

The sharing and use of resources among members of the composite force is where the real power of composite force warfare comes from, allowing capabilities from multiple platforms to be leveraged against problem sets based on the needs of the warfare commander or functional group commander in need of support. NWP 3-56 notes this guidance several times providing the reminder: "composite warfare organization enables multiple warfare and/or functional group commanders to share weapons and sensors on a single platform."[14] This flexibility and fluid organization between the different assets allows for a more system-of-systems approach to applying force and executing the assigned mission. The application of these concepts is best exemplified with the example of HVA protection described in NWP 3-56, chapter 7.

This section describes *high-value asset* (*HVA*) *defense* as a primary focus for every composite warfare commander is protecting his HVAs (see fig. 2). HVAs are classified as friendly critical assets requiring protection. They may be any forces, facilities, area, or so forth, the friendly commander requires for the successful completion of the mission. Maritime high-value assets may include aircraft carriers, maritime prepositioning ships, combat logistics force ships, and amphibious warfare ships conducting amphibious assaults and landings. Maritime high-value airborne assets may include E-2, EP-3, and P-8 aircraft; depending on the defensive situation, other special mission aircraft may be considered. Active protection normally is provided by maritime air and missile defense-capable systems (e.g., fleet air defense assets); however, they may be supplemented by other functional component forces and capabilities if needed. Surveillance area (SA): classification, identification, and engagement area (CIEA); and vital areas (VA) are established to provide a buffer around the HVA. Each of the areas within figure 2 are defined within NWP 3-56 to provide direction and guidance for the mission and activities taking place within their bounds. The definition of each is provided below as an example of what defines and sets the conditions for the composite force to execute the HVA protection mission set:
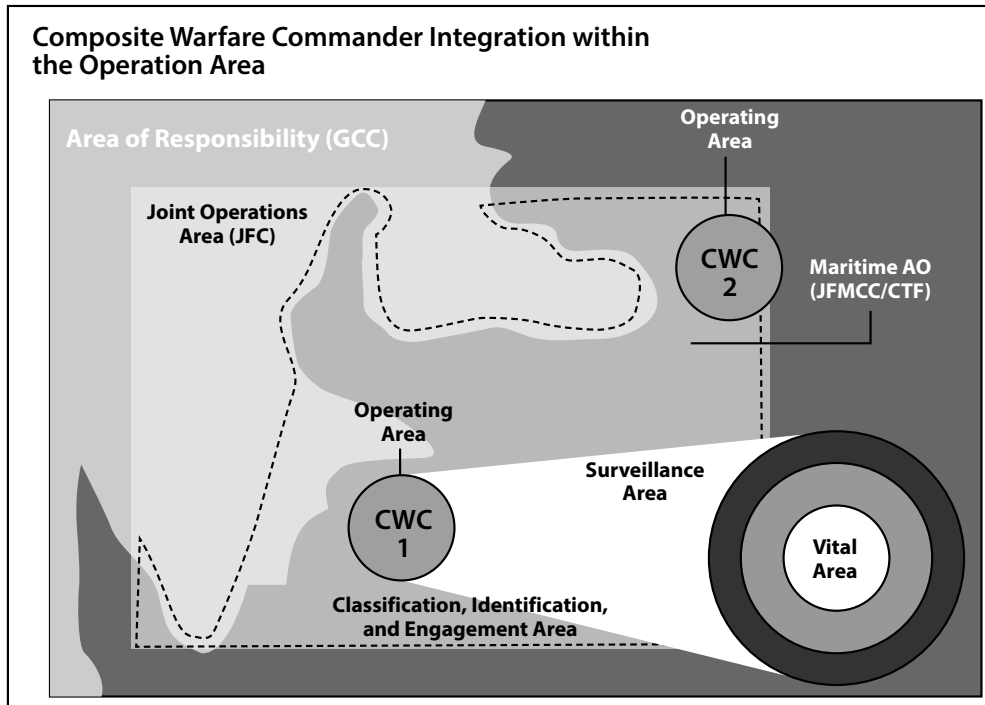
Figure 2. Buffer areas surrounding a high-value asset
Source: AFDD Annex 3-14, *Counterspace Operations*, 7-6

Surveillance area: In surface warfare, the area in the operational environment that equals the force's ability to conduct a systematic observation of a surface area using all available and practical means to detect any vessel of possible military concern. The dimensions of the surveillance area are a function of strike group surveillance capabilities, indications and warnings sensors, and available theater and national assets.

Classification, identification, and engagement area: In maritime operations, the area within the surveillance area and surrounding the VA(s) in which all objects detected must be classified, identified, and monitored; and the capability maintained to escort, cover, or engage. The goal is not to destroy all contacts in the CIEA, but rather to make decisions about actions necessary to mitigate the risk that the contact poses. The CIEA typically extends from the outer edge of the VA to the outer edge of where surface warfare forces effectively monitor the operational environment. It is a function of friendly force assets/capabilities and reaction time, threat speed, the warfare commander's desired decision time, and the size of the VA.

Vital area: A designated area or installation to be defended by air defense units. The VA typically extends from the center of a defended asset to a distance equal to or greater than the expected threat's weapons release range. The intent is to engage legitimate threats prior to them breaching the perimeter of the VA. The size of the VA is strictly a function of the anticipated threat. In some operating environments, such as the littorals, engaging threats before their breaching the VA is not possible because operations are required within the weapons release range of potential threats. Preplanned responses should include measures for when contacts are initially detected within the VA.

Recommendations

The background and reference information presented provide a sight picture for the environment necessitating an update to AFDD Annex 3-14, *Counterspace Operations*. Senior leaders have, at length, discussed the importance of treating space as a war-fighting domain and developing the force in such a way that we maintain the advantage in the space domain. The brief examination of AFDD Annex 3-14 and NWP 3-56 provides a snapshot of the current status of Air Force counterspace doctrine and how the Navy, in the maritime domain, addresses similar operating environments. The time to adjust and update our doctrine is now, ahead of the need and at a time when it can serve as a foundation for much of the development and reorganization taking place within the military space community. The following recommendations are a huge step in acknowledging the issues facing our forces and provide guidance to address existing gaps in our thinking as we look at the threat environment.

Space Composite Warfare Construct

The basic construct by which the maritime forces organize is the composite force warfare organization. This concept can be applied to the space domain fairly easily. The framework provided below in figure 3 is an initial starting point to address the threat while utilizing the Air Force Space Command war-fighting functions as a preliminary framework for the functional warfare commanders.[15] This alignment matches responsibilities with expectation and training while using doctrine as a guiding foundation for the organization of forces at the tactical level. To accomplish this, the five major provisions of composite warfare tiered structure, responsibility, subordination, planning and reporting, and preplanned responses, as well as a tiered organizational structure, described below, can be adapted for space forces from NWP 3-56.
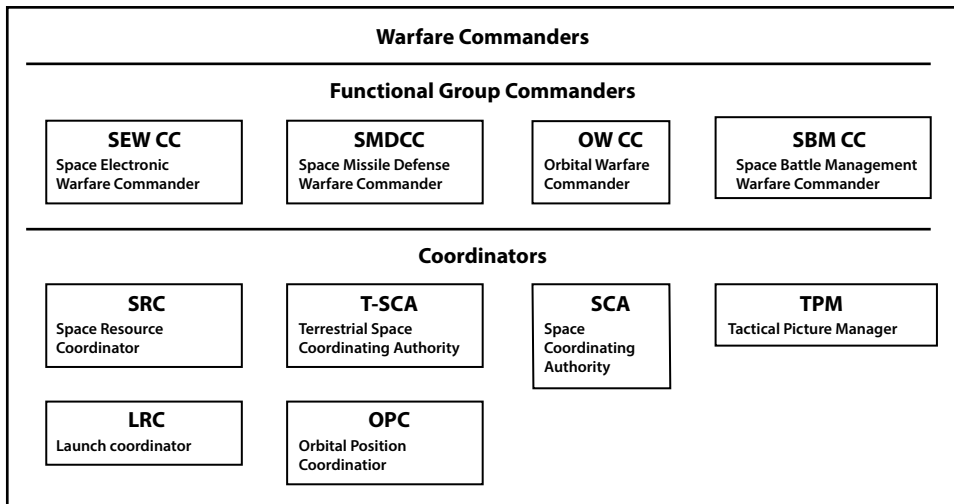
Warfare Commanders			
Functional Group Commanders			
SEW CC Space Electronic Warfare Commander	**SMDCC** Space Missile Defense Warfare Commander	**OW CC** Orbital Warfare Commander	**SBM CC** Space Battle Management Warfare Commander
Coordinators			
SRC Space Resource Coordinator	**T-SCA** Terrestrial Space Coordinating Authority	**SCA** Space Coordinating Authority	**TPM** Tactical Picture Manager
LRC Launch coordinator	**OPC** Orbital Position Coordinatior		

Figure 3. Space Composite Force Warfare Construct

Warfare commander. The warfare commander is an officer who has been delegated authority to conduct some or all of the offensive and defensive functions of the force. This individual provides guidelines for operational conduct and uses mission-type orders and command by negation to control the mission and the functional warfare commanders. The warfare commander also controls the composite warfare organization by ensuring transfers between primary and alternate commanders are correctly and efficiently accomplished.

Functional warfare commanders. Functional groups conduct a specific activity to support the warfare commander's overall mission with a subset of the warfare commander's force within the specified area of operations. The establishing authority determines the command authority and functions of the functional group commander. Typically, these commanders exercise tactical control (TACON) of both assigned and attached spacecraft. When the functional group is operating near the vital area of an HVA or other spacecraft assigned to the warfare commander, the weapons and sensors of platforms assigned and attached to the functional group commander are monitored and controlled by the HVA's warfare commander or functional warfare commander.

When the functional group is operating away from the vital area and other spacecraft assigned to the warfare commander, typically the functional warfare commander is assigned all command functions associated with warfare tasks. These commanders are subject to command by negation from the warfare commander. The warfare commander may have all functional warfare commanders assigned or may be required to execute the responsibilities without additional staffing. In such

cases, the warfare commander may designate these responsibilities as necessary to best accomplish the assigned mission. This construct and organization are scalable from the individual spacecraft crew level to large force execution.

Warfare Commander Descriptions

Space Electronic Warfare Commander Threat:
Electronic Warfare/Defensive Electronic Warfare

Space electronic warfare is all attack or action through the electromagnetic spectrum (EMS). This definition includes electronic protection, electronic warfare support, and link management to defeat threats to space effects by protecting critical electromagnetic spectrum links. The space electronic warfare commander will manage all activities that disrupt, deny, degrade, destroy, and deceive adversary access to space effects through the EMS. Also, they will manage the protection and defense of all warfare commander-assigned assets from DEW.

Space Missile Defense Warfare Commander Threat:
Direct Ascent-Anti-Satellite (ASAT)

Space missile defense (SMD) consists of all active and passive measures designed to detect, identify, track, and defeat attacking missiles (and entities) during any portion of their flight trajectory or to nullify or reduce the effectiveness of such attack. SMD includes those measures taken to defend assets on the defended asset list missile attack. The space missile defense warfare commander (SMDWC) should be an experienced commander, supported by adequate C2 systems and planning tools capable of providing sufficient tactical awareness to manage SMD for the force. The SMDWC should normally be assigned on the most capable SMD asset to account for this level of support. Because of the broad scope of the SMDWC's responsibilities and the amount of communications and intelligence, surveillance, and reconnaissance system support the SMDWC requires, an alternate SMDWC is not normally designated.

Orbital Warfare Commander Threat: Co-Orbital-ASAT

The orbital warfare commander is responsible for maintaining and setting conditions for all spacecraft health and safety during contested operations. This includes planning, executing and assessing the employment of on-board and off-board resiliency capabilities as well as orbital engagement maneuvers. This planning and execution is especially critical for actions and measures taken to ensure the safety of all HVA assigned as part of the warfare commander's responsibility.

Space Battle Management Warfare Commander

The space battle management warfare commander directs the operation of surveillance and identification sensors to maintain threat custody, direct sensors, data links, and communication systems to prioritize tactical and operational tasks, information, and communication flow for battle space situational awareness. They are responsible for the execution, supervision, coordination, and direction of dynamic adjustments to operations which may include, maintaining force accountability, force package development and real time targeting.

Coordinators. Coordinators are asset and resource managers. Coordinators allow the warfare commander and staff to focus on the primary mission of the force, without the distractions of resource appropriation and allocation and/or service maintenance. They carry out the policies of the warfare commander and respond to the specific tasking of either warfare commanders or functional group commanders. Coordinators differ from warfare commanders and functional warfare commanders in that coordinators execute tasks or missions but do not initiate autonomous actions, nor do they normally exercise TACON over assigned forces. The warfare commander may designate or request additional coordinators as required to accomplish the assigned mission.

Coordinator Descriptions

Space Resource Coordinator

Individual or agency responsible for maintaining ready access to all spacecraft and ensuring the appropriate resources are available to maintain continuous operations and communication for the warfare commander.

Terrestrial Space Coordinating Authority

This is the combatant command's representative who ensures the space effects necessary for execution of the terrestrial mission are appropriately tasked and coordinated.

Space Coordinating Authority

The space coordinating authority ensures all space effects necessary for execution of the mission in the space domain are appropriately tasked and coordinated.

Tactical Picture Manager

Maintaining the tactical picture and ensuring all tracks are updated and part of the common operating picture is the primary responsibility of the tactical picture

manager. They will ensure the proper communication is in place to support the warfare commander and will make any adjustments or additions real-time to the common operating picture in support of warfare commander or functional warfare commander requests.

Launch Coordinator

The launch coordinator will monitor, update, track, and inform the warfare and functional commanders of any launches that will change the operating environment or insert any objects into orbit or re-enter the atmosphere in the vicinity of any supported or supporting terrestrial or space assets.

Orbital Position Coordinator

The orbital position coordinator will monitor, track, and inform the warfare and functional commanders of any changes or updates in orbital positions not previously reported or part of the common operating picture.

Fundamental Provisions for the Space Composite Warfare Construct

To implement this construct, several fundamental provisions need to be documented, trained, and embodied within doctrine. These provisions allow for the successful execution of the Space Composite Warfare Construct and set the initial conditions for forces to operate under this structure.

1. **Responsibility.** The warfare commander retains responsibility for missions and forces assigned. This fundamental responsibility shall not be delegated to subordinates, even though the warfare commander may assign command functions to conduct offensive and defensive operations.

2. **Subordination.** Although the warfare commander may retain a functional warfare commander duty, the warfare commander and functional warfare commanders are always separate and distinct, even when the same commander fills both roles. The functional warfare commander is a command duty subordinate to the warfare commander.

3. **Planning and reporting.** Skillful, dynamic, and aggressive commanders and coordinators whose judgment and actions earn the warfare commander's confidence are central to the composite warfare construct. The warfare commander and coordinators assist the functional warfare commanders with planning, and they keep the warfare commander apprised by communicating near-real-time, evaluated information.

4. **Preplanned responses (PPR).** Critical to successful operations in a composite warfare structure is the development of PPRs for use by the force. PPRs provide subordinate commanders and subordinate forces with the commander's desired response in the event of certain enemy or other force actions. PPRs, therefore, establish criteria for commanders to initiate autonomous action when circumstances warrant. Because PPRs provide clear understanding of the commander's intent, they facilitate common understanding, reduce the possibility of confusion, and increase the effectiveness of operations, even when operating in potentially denied or degraded environments.

A Concept for Space HVA Protection

The final recommended addition is a section necessitating the importance of protecting HVAs. Every system on-orbit is extremely expensive, threatened by multiple different countries and means, and critical to our nation's military and way of life. This reasoning justifies the recognition of the difficulty in protecting these systems and requires a basic framework and acknowledgement in the updates to current counterspace doctrine.

Conclusion

The current dilemma faced by space forces is twofold. First, our senior leaders are directing the force to prepare and act in a manner consistent with a common understanding that space is a war-fighting domain. This strategy is challenging as the preponderance of guidance is written to guide the employment of space forces supporting the terrestrial fight in a benign environment. At the same time, our enemies are presenting a threat picture that not only challenges our ability to provide this support but also draws into question how our forces will organize and address this contested environment. The concept that strategy and doctrine provide the conceptual link between action and effect and are the bond between instrument and objective.[16] Because of this link, it is necessary that we address the deficiencies and update our current counterspace doctrine.

Making the updates identified above to the existing counterspace doctrine will go a long way toward making our counterspace doctrine useful and relevant. With our senior leaders commenting frequently on space as a war-fighting domain, the military needs to show some effort toward addressing the necessary changes and maturing the thinking and guidance to make us effective against our adversaries. The threats faced in space represent a clear benchmark that at the basic level, our doctrine fails to meet. China and Russia are both reorganizing forces, developing capability, and documenting doctrine and strategy that places us in a position of

disadvantage.[17] Our current attempts to address this with a limiting, definitions-based counterspace annex, buried within Air Force doctrine is not enough. The first step toward addressing these deficiencies needs to be one that capitalizes on our strength of thought in the maritime domain and the implementation of the proposed additions to AFDD Annex 3-14. This implementation will place us on a trajectory to elevate our guidance and strategy above that of our adversaries in the space domain. ✪

Maj Mathew Beck, USAF

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Air War over North Vietnam: Operation Rolling Thunder, 1965–1968 (Cold War 1945–1991) by Stephen Emerson. Pen and Sword Books, 2018, 128 pp.

Stephen Emerson does an outstanding job of outlining the complicated flashpoint of Vietnam that lasted for more than 30 years and culminated with the height of the Vietnam War. In 1965, the US sent 3,500 Marines ashore at Da Nang, South Vietnam, which would be the tipping point for US involvement—an involvement we tried to tiptoe around for many years. Ultimately, the US would be in Vietnam for the next 10 years, escalating involvement and testing American airpower.

At the time, Operation Rolling Thunder was the longest and largest sustained air campaign the US had ever been challenged with, and I commend Mr. Emerson for focusing on the critical details to ensure the full story is told within the limits of his book. He stays neutral while painting the picture of how initially Rolling Thunder was credited by experts as having a slow start launching off on 2 March 1965 (six days before the 3,500 Marines waded ashore at Da Nang). Although the targets were of minimal significance, the opening attacks of the air campaign were impressive and incorporated multiple airframes. The author also aptly describes the political climate, which was pivotal in many decisions and policies the US made throughout the war.

This book includes multiple historic photos of Airmen and aircraft from the era, giving the reader a feel for the times and a better understanding of the terrain with multiple maps of the area of interest in Vietnam and surrounding countries and waters. It's difficult to understand the many no-fly zones that Operation Rolling Thunder had to traverse (some as small as 4 nautical miles (nm) and some as large as 30 nm), but they were constantly changing through the ebbs and flows of the war. This book does a great job helping the reader understand these challenges especially for the younger generations.

The entire Vietnam War cannot be told in just one book but through 128 pages, *Air War over North Vietnam* remains well-written and articulates to history buffs and novices alike by remaining focused on Operation Rolling Thunder and the fight for air supremacy. The readers gain a great understanding of the complications that came with such an unpopular war and see how the Washington brass struggled to keep victory in its sights while trying to minimize the loss of American life.

President Lyndon B. Johnson finally ordered the ceasing of all air strikes on North Vietnam, and Operation Rolling Thunder—the largest sustained bombing campaign ever conducted—came to an end with mixed results. Overall, this book gives readers an amazingly documented and detailed look at one of America's most turbulent times. The facts speak for themselves, and the pictures make the book experience more intimate. Operation Rolling Thunder was used as a learning experience and was the cheat sheet for the success of future operations such as Operations Linebacker I and II in the mid-70s. The men and woman who fought were professionals to the very end. They followed orders, executed missions, and left a lasting legacy for generations to follow.

MSgt Joseph Pesantes, USAF

Strategic Challenges in the Baltic Sea Region: Russia, Deterrence, and Reassurance edited by Ann-Sofie Dahl. Georgetown University Press, 2018, 181 pp.

Released in the last year, *Strategic Challenges in the Baltic Sea Region: Russia, Deterrence, and Reassurance*, edited by Ann-Sofie Dahl, offers a recent and multiperspective analysis on the current state of security around the Baltic Sea. This work is one of a few (e.g., *Borders in the Baltic Sea Region: Suturing the Ruptures*, edited by Andrey Makarychev and Alexandra Yatsyk) to speak on the recent developments in Baltic Sea security since Russia's illegal annexation of Crimea in 2014, from increased Baltic air policing to Trumpian foreign policy. Each of the book's three parts examine Baltic Sea security through a different lens: the West and Russia, the North Atlantic Treaty

Organization's (NATO) allies, and NATO's Nordic partners. Using essays from a dozen expert academics and practitioners, the editor emphasizes the Russian threat to European security and the critical role NATO plays in preventing and responding to Russian aggression. The list of contributors Dahl assembled for this work provides a diversity of thought and experience that gives this book its standout credibility.

"Part I: The West, Russia, and Baltic Sea Security" highlights the Russian threat in the Baltic Sea and the indispensable role the West, specifically the US, plays in response. The contributors to this section are Robert Lieber, PhD, a professor of government and international affairs at Georgetown University; Gudrun Persson, PhD, an associate professor at the Slavic Department of Stockholm University; Jamie Shea, PhD, the NATO deputy assistant secretary-general for emerging security challenges; and Christopher Coker, PhD, a professor of international relations at the London School of Economics.

"Part II: NATO Allies and Baltic Sea Security" outlines the roles that Estonia, Latvia, Lithuania, Poland, Germany, and Norway play in Baltic Sea security. The perspectives on enhancing the security environment come from authors from several countries: Andres Kasekamp, PhD, a professor at the Munk School of Global Affairs and chair of Estonian studies at the University of Toronto; Mikkel Rasmussen, PhD, a professor of political science at the University of Copenhagen; Justyna Gotkowska, coordinator of the Security and Defence in the Northern Europe project at the Warsaw-based Center for Eastern Studies; Claudia Major, PhD, senior associate in the International Security Division at the German Institute for International and Security Affairs—Berlin; Alicia von Voss, coordinator for a research project on northern security issues at the German Council on Foreign Relations in Berlin; and Håkon Saxi, PhD, a senior fellow with the Norwegian Defence University College and the Norwegian Institute for Defence Studies.

"Part III: NATO's Nordic Partners" debates whether Sweden and Finland should join NATO or remain partners. The following authors contribute their expertise: Johan Raeder, a defense adviser at the Embassy of Sweden in Washington, DC; Dahl, PhD, an associate professor of international relations and nonresident fellow at the Atlantic Council; and Karoliina Honkanen, a ministerial adviser in the Finnish Ministry of Defense.

Three key arguments made in *Strategic Challenges in the Baltic Sea Region* are the necessity of the US's commitment to Article 5 of the Washington Treaty, the responsibility of European states for their own security, and increased cooperation (even an alliance) among NATO and their Nordic partners. While some are quicker to make recommendations than others, each contributor walks the reader through their argument by taking a careful look at the strengths and weaknesses of each option on the table. Is NATO relevant today, or is it not? Does positioning more NATO troops in Eastern Europe enhance security by deterring Russian military adventurism, or undermine it by provoking a Russian response?

Dahl's own chapter on Sweden and Finland represents the depth of analysis found throughout the book. She argues that the biggest advancement NATO's Nordic partners can make in Baltic security is to join NATO as full members, a hotly debated stance that has become more accepted in both Sweden and Finland since the annexation of Crimea. Dahl begins by describing the relationship between Sweden, Finland, and NATO in the past two decades and continues by furnishing a few reasons for and against the two partners joining NATO. Reasons for denying Russia include the ability to use Swedish or Finnish land and sea for antiaccess/area denial in future conflict, as well as enhancing NATO deterrence measures in the Baltic, such as participation in the NATO Enhanced Forward Presence and the Very High Readiness Joint Task Force. Dahl plainly states the risk involved with poking the Russian bear, which has made threats against Sweden and Finland, even conducting exercises simulating nuclear strikes against their capitals, to bully them away from NATO. Each contributing author provides a satisfying amount of background and debate on his or her topic, and pages of endnotes after each chapter support further research.

While this book provides a clear description of the Baltic security environment with well thought-out recommendations, a revanchist Russia that strives for unpredictability and employs hybrid warfare limits those recommendations' future relevancy. In arguing for increased responsibility from European states in their own security, Dahl curiously does not caveat the Baltic States' role to conventional weapons. Given the weight NATO's nuclear umbrella carries in Russian deterrence, the reader could be led to believe that Dahl's argument encompasses proliferation of nuclear weapons to NATO allies, a stance that NATO strongly opposes. The product of *Strategic Challenges in the Baltic Sea Region* is not a list of sure-fire ways to find peace with Russia in Europe, but is instead an analysis of the Baltic situation that would benefit any reader. Written clearly and for a wide audience, Dahl's work would be of interest to anyone looking to expand his or her knowledge of the new strategic front line between the West and Russia.

2nd Lt Nathaniel J. Lewis, USAF

Strategy, Evolution, and War: From Apes to Artificial Intelligence by Kenneth Payne. Georgetown University Press, 2018, 269 pp.

Strategy, Evolution, and War is an ambitious work that outlines a broad history of strategic warfare and how it's changed throughout human history, then uses that history to predict how artificial intelligence (AI) will change it further in the near future. Dr. Kenneth Payne, whose past work links evolutionary psychology with modern war fighting, claims that AI's potential to make decisions based on a distinctly nonhuman psychology could change warfare more radically than anything since the development of the social human brain. He leverages the work of a strong cadre of scholars in history, behavioral economics, psychology, and international relations to provide the theoretical bases for his arguments. Payne then illustrates the advantages and dangers of AI and its effects on warfare, acknowledging its dramatic potential without succumbing to science-fiction-like exaggerations.

Payne's central thesis is that there have only been two instances in history that truly revolutionized strategic decision-making despite the frequent use of *revolution* when discussing military strategy. The first revolutionary event was about 100,000 years ago when the human brain fully developed its capacity for social interaction, theory of mind, elaborate deception, and cooperation. The second event is occurring today and will be fully realized when AI is charged with making strategic decisions or autonomously carrying out strategy.

The author begins by setting necessary boundaries to his work. He first limits his discussion to the strategy of warfare. A discussion of AI's potential impact on strategy in other realms would be interesting, and the author occasionally references the other instruments of power, but such a limit is necessary to keep this already ambitious work focused on its intended topic. He also discusses the definition of *autonomy* in both human and AI decision-making. He questions whether an AI could ever be truly, completely autonomous, and further asks if human beings, with our unconscious heuristics and chemically-driven mental processes, are fully autonomous ourselves. Additionally, he sets a high bar for the definition of a *revolutionary development* as something that changes the very foundation of warfare psychology. Finally, he discusses the psychological underpinnings of human strategy and how they developed from an evolutionary standpoint. This section is essentially a literature review that cites other scholars in evolutionary psychology and behavioral economics, as well as the development of cultures, political systems, and wartime strategy. The competing viewpoints Payne references result in a brief yet complete overview that underpins the rest of his arguments.

From here, the work moves quickly through several major developments in warfare, from hoplite tactics in Greece, to Clausewitz's theories of war, to airpower, and eventually, nuclear weapons and the Cold War. Payne states all of these changed how wars were discussed, planned,

and executed, but argues that none of these changed the foundations of strategy that result from our human decision-making processes. He argues the creation of writing systems came close by externalizing and recording strategic thinking for future examination, but this still did not change our evolved psychology. Similarly, nuclear weapons, the most dramatic change in weapons technology in history, did not change the way we make decisions. Their destructive power simply accentuated certain heuristics and biases, like loss aversion, that were already present in our psyche.

This segment may leave a student of history wanting more. Payne admits skipping large portions of human history, including many dramatic changes in tactics and technologies. However, this does not detract from the discussion but allows Payne to demonstrate his point without getting bogged down in a deeper examination of the history of human conflict. Additionally, Payne's extensive references provide curious readers plenty of material to examine further if they desire.

In the third and final section of the book, Payne examines AI. He accurately characterizes today's AI as more of a decision-making aid rather than a decision maker and posits potential futures for AI development. Most notably, he emphasizes how AI decision-making at the tactical, operational, and strategic levels will be driven by distinctly nonhuman decision-making processes. It will not be constrained by the heuristics and biases of human psychology. It is this, and not a sci-fi-inspired rogue AI, that would cause strategic warfare to deviate sharply from our plans and expectations, and the strategic decision-making that has guided us in conflict for all of human history.

Further, Payne notes that goals can change during conflict, and nations often shift their objectives. The use of a strategic AI would severely limit this flexibility. If two AI-supported nations were in conflict, the speed at which the AIs could operate means the nation that takes time to adjust its AI's goals would be at a distinct disadvantage. During the time it takes to adjust, the opposing AI could cycle through its observe, orient, decide, and act, or OODA, loop thousands or millions of times, exponentially building its decision advantage.

This book offers an outstanding synopsis of the evolution of strategy in war and a great jumping-off point for discussions on the future of AI. It is impressively complete for its brevity, but readers with an established knowledge in history or AI will likely want more depth from the discussion. Indeed, a longer version of this work on how AI relates to and deviates from our evolutionary psychology would be beneficial to the overall thought catalog that feeds the AI discussion. Nevertheless, the thorough citations offer plenty of opportunity to explore those topics deeper, and the book's brevity allows readers of all knowledge levels to develop a baseline or stimulate thoughts and conversations on AI's implications for strategy. I highly recommend it to anyone interested in the history and future of strategy and how AI fits into that future.

Capt Brian Hill, USAF

Neglected Skies: The Demise of British Naval Power in the Far East, 1922–42 by Angus Britts. Naval Institute Press, 2017, 184 pp.

Given how much has been written on both of the world wars, it is rare to identify an entirely new angle and shed light on a subject that has truly never been detailed before. This unique freshness is what makes Angus Britts' *Neglected Skies: The Demise of British Naval Power in the Far East, 1922–42* such a worthwhile read. *Neglected Skies* covers a wide period of history, as noted by the title, that takes the British Navy from the heights of its might to the point of near decay when the world needed them most to succeed. Well-researched and clearly written with a passion for both naval and aviation history, *Neglected Skies* does a service to the ever-growing trove of world war accounts.

In his opening, Britts takes readers into the thick of a murky World War II naval battle in the style of Midway or Coral Reef. In the heat of his description, it becomes clear that the British Navy is disorganized, and while they carry an advantage in numbers, they are clearly unprepared for attack and being outmaneuvered by the Imperial Japanese Navy. The battle that Britts paints is what became known as the Easter Sunday Raid, a part of the larger Indian Ocean Raid that effectively drove the English from Southeast Asia.

The whole of *Neglected Skies*, after outlining the miserable defeat of the English South Pacific Fleet, is dedicated to telling the story how the most powerful navy in the world arrived at this catastrophic point. As Britts makes clear, the devastating loss that came as a surprise was in reality an inevitability that was years in the making.

The full story of the decline of the British Navy stretches back to the end of the First World War. World War I introduced a fierce new force in war fighting: aircraft. While aircraft lacked overall sophistication during the span of the war itself, the successes of the new German Luftwaffe and the bloody battles of French skies that made the likes of the Red Baron and Eddie Rickenbacker, it was clear to the Triple Entente and Axis powers alike that aviation would be a critical new forefront in modern conflict. The decision to fully integrate airpower into the British Armed Forces was wrought with frustration and rivalry among the top leaders in the British state. In Britt's analysis, he spends multiple chapters covering what he dubbed the *Policy Era*, namely most of the early 1920s and 1930s in Britain. As opposed to other war testimonies that stay within the realm of conflict alone, Britt's inclusion of the power and funding struggles between the leaders of the British Navy, the leaders of the newly-founded Royal Air Force (RAF), and various figures within the British government added a vital depth to his overall account of the navy's eventual degradation. As Britts points out, poor spending decisions, including the planning and then scrapping of a new carrier program to replace their already aging fleets, and political power struggles, including the fierce competition over jurisdiction and the division of responsibility regarding military aviation between the RAF and the Royal Navy, were critical in sending the navy to its ultimate point of failure.

In addition to a thorough examination of policy decisions that affected the Royal Navy, *Neglected Skies* also takes special care to place Britain's navy in context by outlining the simultaneous growth of the Imperial Japanese Navy. While the Royal Navy was struggling to integrate aviation and win valuable resources on the domestic front, Japan was rapidly developing every branch of its armed forces with a special emphasis on naval power. As an island nation, the importance of the seas was not lost on the new, offensively imperial Japan. Ironically, much of the Japanese naval strength was a direct result of supporting the Triple Entente against German submarine warfare during World War I. The emphasis placed on naval aviation was directly derived from the British as the Japanese looked to British expertise, the most advanced in the world at the time. The previous ties between Britain and Japan in the early interwar years is one of the points that Britts makes with a particular salience, not only to highlight the similarities that gave way to such sharp divergences in doctrine as well as development of each nation's navy, but also ultimately to illustrate just how shocking the Japanese betrayal was, however inevitable in retrospect.

The Royal British Navy is undeniably the focus of *Neglected Skies*. However, Britts arrives at perhaps his largest point of the text in the final chapters. While Britain did wake up in time to save its navy and contribute mightily to the Allied victory in the Pacific, the real winner of naval supremacy was, in fact, the US. At the beginning of the Second World War, the US was barely recovered from economic depression and severely lagged behind Britain in both naval development and the recognition of the air as the new domain de jure. After Pearl Harbor, the US changed its tune on production and innovative war and fought at breakneck speed, and was undeniably the only true, carrier-based, blue-water navy in the world when the war finally ended.

In 184 pages, Britts takes readers from the moment that Britain's grip on the world's seas began to slip to the point when its failure cost the free world access to almost the whole of East Asia. While history allowed Britain to redeem herself, and Britts is kind enough to let that show, the author ultimately gives history fans and naval enthusiasts alike a reason to ask themselves how one of the most powerful empires in history failed to notice decline happening so quickly, especially in an essential arena that once won them the world.

1st Lt Ashley Marty, USAF

Call for Articles

INFORMATION WARFARE

Air & Space Power Journal (ASPJ) is soliciting journal articles that focus on information warfare (IW). IW is defined as "the employment of military capabilities in and through the information environment to deliberately affect adversary human and system behavior and to preserve friendly freedom of action during cooperation, competition, and conflict."

While any capability can be used to create an informational effect, the principal Air Force capabilities integrated and applied to achieve desired effects in the informational environment are cyberspace operations (CO); electronic warfare (EW); information operations (IO); and intelligence, surveillance, and reconnaissance (ISR). The focus of submissions should be on advancements within these communities or the synchronization, integration, and convergence of these four disciplines to generate outcomes for the Joint Force and combatant commands. Length may vary from journal feature articles (5,000–6,000 words), views (3,000–5,000 words), and commentaries (1,500–2,500 words) to book reviews (1,000 words).

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