Fire Support in Time and Space

Lessons from the Ivy Division's Joint Air-Ground Integration Center

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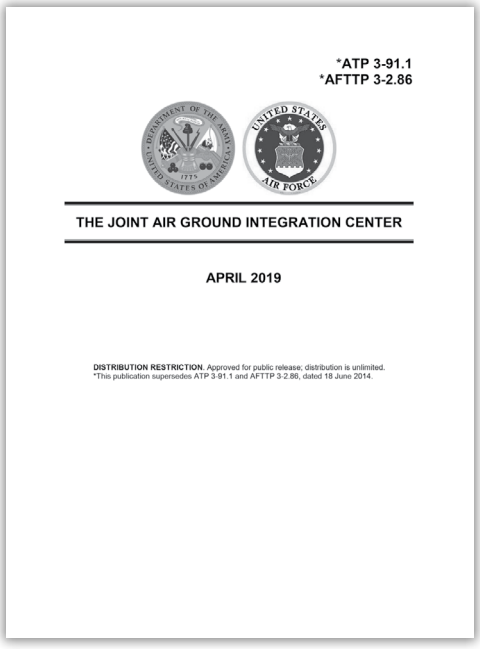
Artwork by Dusty Crosley

Six days after Article 5 was declared by NATO, the conflict remains relentless. The Ivy Division, as the spearhead for III Corps and all NATO forces, rattles the structures of the nearby capital of Lithuania with armored formations. Thousands of helpless allied casualties evacuate toward the rear while remaining forces pass burning hulks of the once mighty armored vehicles. The skies above the Baltic area fill with air forces from foes with terrifyingly powerful modern military equipment. Not since the Gulf War have so many tanks met barrel-to-barrel, and not since the Falklands have so many missiles been released against worthy opponents. Survival and persistence require the successful effort of a joint team capable of orchestrating these weapons in pursuit of total victory.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There was no bloodshed, no loss, no war as this conflict occurred virtually. The simulated event was part of the 4th Infantry Division's (ID) participation in a biennial Warfighter exercise oriented toward enhancing the division staff, division artillery (DIVARTY), and division sustainment brigade through a graded culminating training event. The division, along with III Corps staff from Fort Hood, Texas; the 28th ID from Pennsylvania; and the 29th ID from Virginia executed the second repetition of U.S. Army Forces Command's newest Suwalki Corridor scenario using a large-scale combat operations (LSCO) setting against a near-peer competitor.

A Relevant Integration Center

Ways and means of achieving victory and accomplishment of strategic objectives are paramount as the joint force continues to transition from counterinsurgency to LSCO. This reality necessitates warriors to think and act differently. Since operations occur in a multi-domain environment, "Army formations, operating as part of the Joint Force, [must] penetrate and dis-integrate enemy anti-access and area denial systems; [and] exploit the resulting freedom of maneuver to defeat enemy systems, formations, and objectives and to achieve our own strategic objectives."[1] Only through adherence to this paradigm will we achieve victory as a joint force.

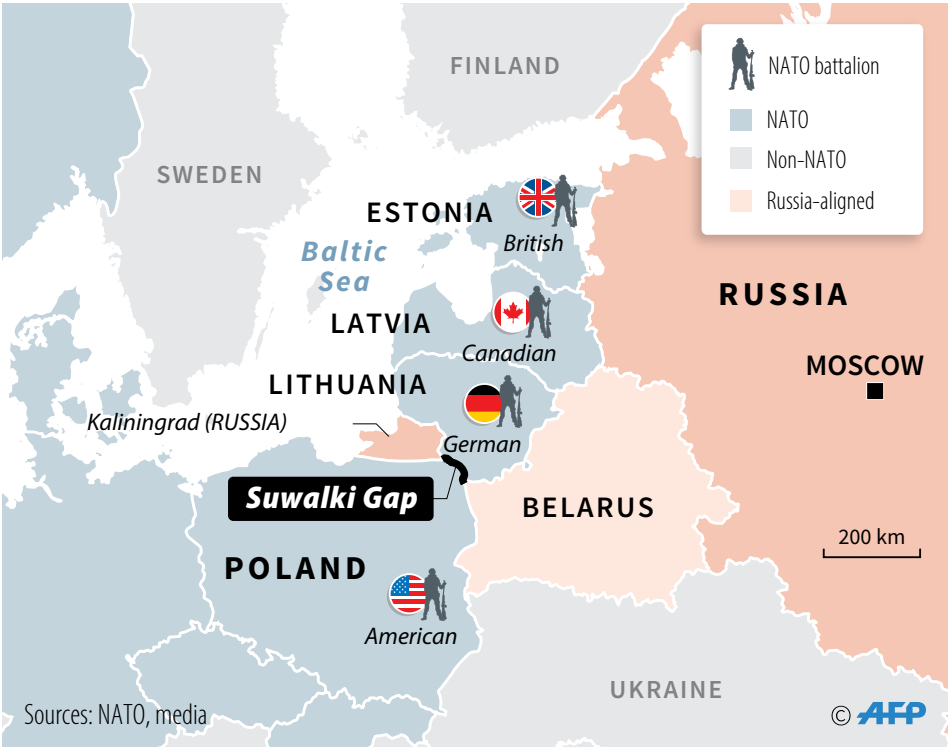
The tactical unit must operate anew, and the joint air-ground integration center (JAGIC) is critical to this revitalization. The JAGIC "provides commanders a technique to coordinate, integrate, and control operations in division-assigned airspace and efficiently collaborate requirements with external airspace elements outside of the division area."[2] The JAGIC functions as a critical tool for the dis-integration of the enemy's area denial systems, and it is indispensable for achieving victory in the joint force's new operating concept.

How does the JAGIC integrate into the division and facilitate effective, responsive, and lethal fires to defeat near-peer adversaries in complex, multi-domain operations? To discuss the successful aspects of the JAGIC, we must examine the layout of the JAGIC in the command post, its relationship with the staff, its tactical implementation, and a description of its systems and processes. This article relates the Ivy Division's experiences and focuses on the unique lessons learned during Warfighter Exercise 21-2. This is a lesson from which other units can create future success in similar situations.

A Near-Perfect Layout

Throughout the 4th ID's Warfighter training, the JAGIC experimented with multiple layouts to identify the best locations for key players vital to the JAGIC's success in maintaining situational awareness and responsive fire support. The JAGIC layout provided in doctrine lacked proximity between the JAGIC and the G-2 (division intelligence) collection and single-source analysts capable of providing dynamic targets to the JAGIC (see figure 1, page 58).[3]

The 4th ID JAGIC quickly identified a layout that enabled proximity to both the collection analysts' efforts and other enabler teams, facilitating rapid communication and decision-making. This new arrangement resulted in the expedited engagement of unforeseen, variable targets and a shared understanding of efforts between warfighting functions. By separating the division main command post in half and giving authority to the JAGIC to manage one of the halves, the division chief of staff enabled the JAGIC chief to change seating arrangements to create an environment that facilitated information efficiency and dialogue (see figure 2, page 60).



(Map by Jonathan Jacobsen, Agence France-Presse)

The Suwalki Gap: A Nightmare for NATO

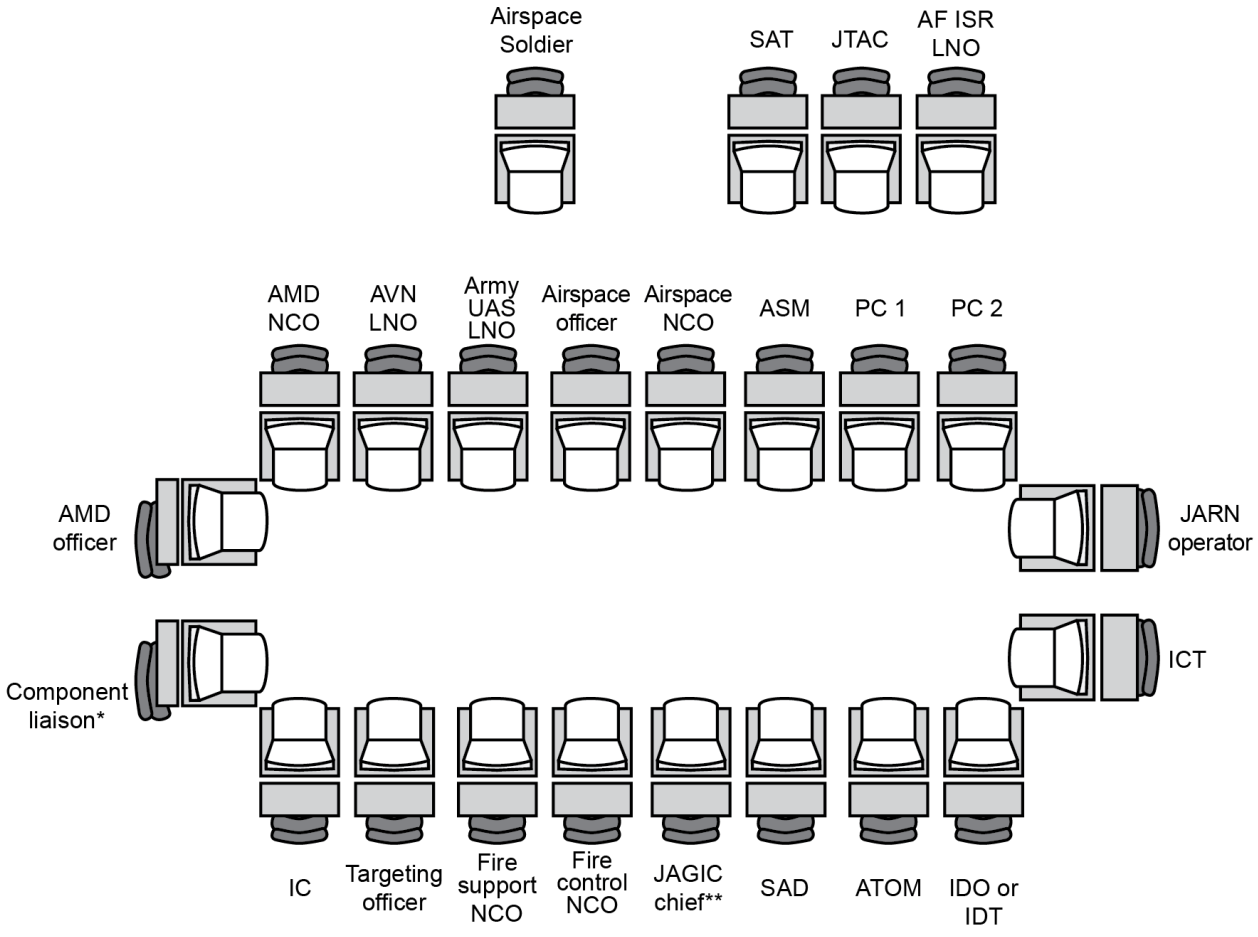
Map of Eastern Europe showing the Suwalki Gap in Poland—the eighty-kilometer border between NATO members Poland and Lithuania—which is squeezed between Russian territory and Russia-allied Belarus.

The JAGIC was at the center of the command post with the JAGIC chief and assistant JAGIC chief at the head of the table, accessible to the senior air director and the fire support noncommissioned officer. To the right of the JAGIC chief's table were the various collection analysts, single-source analysts, and the field artillery intelligence officer (FAIO), who was responsible for vetting and validating targets. To the left of the JAGIC chief was the division staff judge advocate, the special operation forces liaison, and a representative of the cyber-electromagnetic activity. With this specific layout, the G-2 collection analysis efforts were able to provide potential targets to the FAIO for vetting. If the FAIO had a valid target, it immediately passed that target to either the division joint terminal attack controller or the combat aviation brigade liaison to direct joint fires on the target. Simultaneously, the special operations forces and cyber-electromagnetic activity collection efforts could transfer targets to the JAGIC chief for corps target nominations. This specific arrangement of personnel enabled the optimal decision-making and target engagement necessary for Warfighter success.

An Integrated Asset, Not a Disconnected Liability

The JAGIC must be integrated and synchronized into the main command post with representatives from the other warfighting functions. The JAGIC does not solely represent the fires warfighting function because the command post possesses protection, intelligence, and maneuver tenants as well. However, the JAGIC is clearly the primary fires representative during the current operations fight and manages this warfighting function for the commander. A good working relationship with key members of the division staff is vital for fires to function properly.

The chief must detach from the procedures of the JAGIC and work with the other warfighting function



***** Component liaison seating can include the mobility Air Force weapons officer, air mobility officer, special operations fires, information operations officer, and staff judge advocate.

****** The JAGIC chief is primarily filled by a fire support officer, formerly referred to as the assistant fire support coordinator (AFSCOORD).

Additional duty positions as required:

Information collection manager, UAS technician, electronic warfare manager and space liaison officer, and staff judge advocate. Other positions may be added based on the division commander's direction and personnel availability.

AF–Air Force
AMD–Air and missile defense
ASM–Airspace manager
ATOM–Air tasking order manager
AVN–Aviation
IC–Interdiction coordinator
ICT–Interface control technician
IDO–Intelligence duty officer
IDT–Intelligence duty technician
ISR–Intelligence, surveillance, and reconnaissance
JAGIC–Joint air ground integration center
JARN–Joint air request net
JTAC–Joint terminal attack controller
LNO–Liaison officer
NCO–Noncommissioned officer
PC–Procedural controller
SAD–Senior air director
SAT–Senior air technician
UAS–Unmanned aircraft system

(Figure from ATP 3-91.1, *The Joint Air Ground Integration Center*, 1-7)

Figure 1. Doctrinal Joint Air-Ground Integration Center Seating Arrangement

cells to provide the best guidance and direction to the team. The assistant JAGIC chief is the driver of the key functions of the JAGIC. The JAGIC chief must trust and empower the assistant chief to clear fires, make decisions, and shift assets to accomplish the commander's guidance for JAGIC operations. If the JAGIC chief

is fixed on critical tasks necessary for the JAGIC to function, then the chief is not able to integrate into the division's fight holistically. As an analogy, if the JAGIC was a vehicle, the distinct sections would be the mechanical components, the assistant JAGIC chief would be the driver, and the JAGIC chief would be the truck commander trying to keep the vehicle in the right formation with the rest of the convoy.

The two most important warfighting functions the JAGIC interacts with are intelligence and maneuver.[4] Using another analogy, If the G-2 is the eyes of the division, the G-3 (operations) the brain, and the JAGIC the muscles, then it is irrelevant how strong those muscles are unless the body is used holistically. A JAGIC chief must understand the inputs necessary for the JAGIC to thrive. Placing the FAIO in the intelligence section provides a liaison the JAGIC chief can use to assist with redirecting intelligence assets to aid the JAGIC's identification and ultimate engagement of high-payoff targets. This location allows the chief to lobby for proper assets necessary to accomplish the commander's guidance for the deep fight. Furthermore, the JAGIC chief must work constantly with the chief of current operations to stay abreast of the current maneuver situation. The JAGIC chief is in the best position to provide updates to the division commander during commander and battle update briefs to facilitate shared understanding of the current situation related to fires and to best visualize the operational environment.

How to Adequately Shape the Deep Area

Layout, training, and cohesion are important to the functionality of the JAGIC, but the essence of the center is to defeat the enemy in the division's deep area. To achieve this, one must discuss various tactics that were effective or ineffective against the world-class opposing force (OPFOR) during simulated LSCO. Early on, the JAGIC discovered the importance of the mantra *intelligence drives fires, fires drive maneuver*. This philosophy, as outlined in the 4th ID commander's intent, built the framework for how the JAGIC ought to defeat the enemy. Thus, the quality of *fires* is nested within the quality, timeliness, and accuracy of *intelligence*. The quality of *maneuver* is nested within the permissiveness and responsiveness of *fires* in the deep area.

During both the mid-exercise and end-of-exercise after action reviews, the OPFOR commander provided feedback. For WFX 21-2, he noted that the Ivy Division was particularly effective at destroying the OPFOR Integrated Fires Command assets by layering effects using fixed wing, rotary wing, and rocket fires. As the unit expected, the OPFOR commander attempted to use cross-boundary fires coupled with his range advantage using his Integrated Fires Command. This reality poses a formidable threat to friendly forces, but there are ways to penetrate and dis-integrate the OPFOR's advantages. If the JAGIC has fixed-wing assets available, this is where the chain begins (see figure 3, page 61). Fixed-wing aircraft should seek out and destroy the enemy's long-range fires assets, primarily rockets in its support area at the corps level; this engagement allows friendly artillery to get closer to the enemy. These closer friendly rocket assets focus on destroying enemy air defense assets to allow attack aviation freedom of maneuver within the enemy's battle zone. After attack aviation is within the enemy's battle zone, it seeks and destroys as many enemy assets as possible, prioritizing enemy maneuver forces capable of destroying friendly armored forces and remaining air defense threats. These engagements create space that friendly maneuver forces can quickly fill and seize ground. Then, since friendly maneuver forces now hold the ground, friendly rocket artillery can advance to occupy forward territory and destroy more enemy air defense that is now in range, and the process repeats. This "kill chain" facilitates the division's tempo with a feasible method to shape the deep area.

To accomplish these actions, the link between the targeting team and

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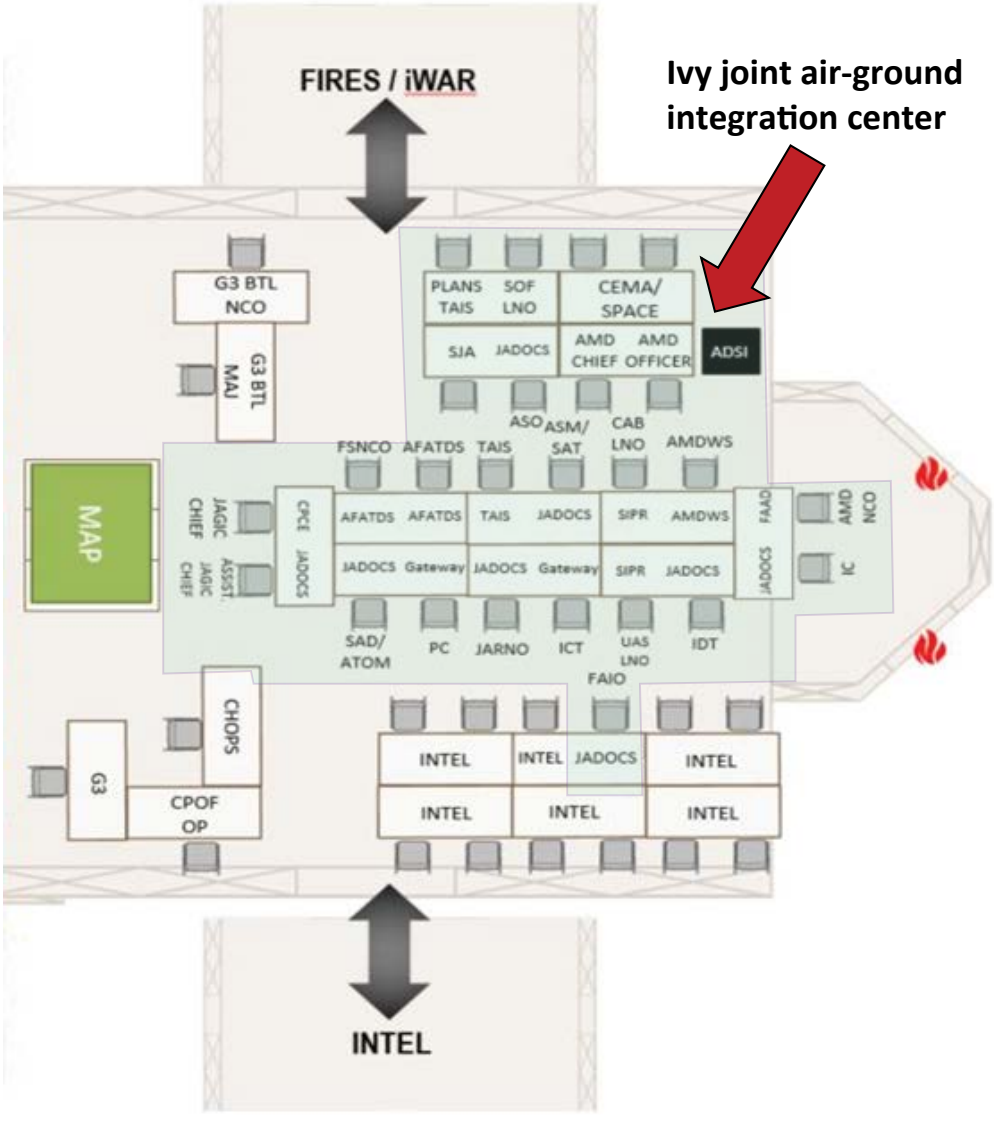


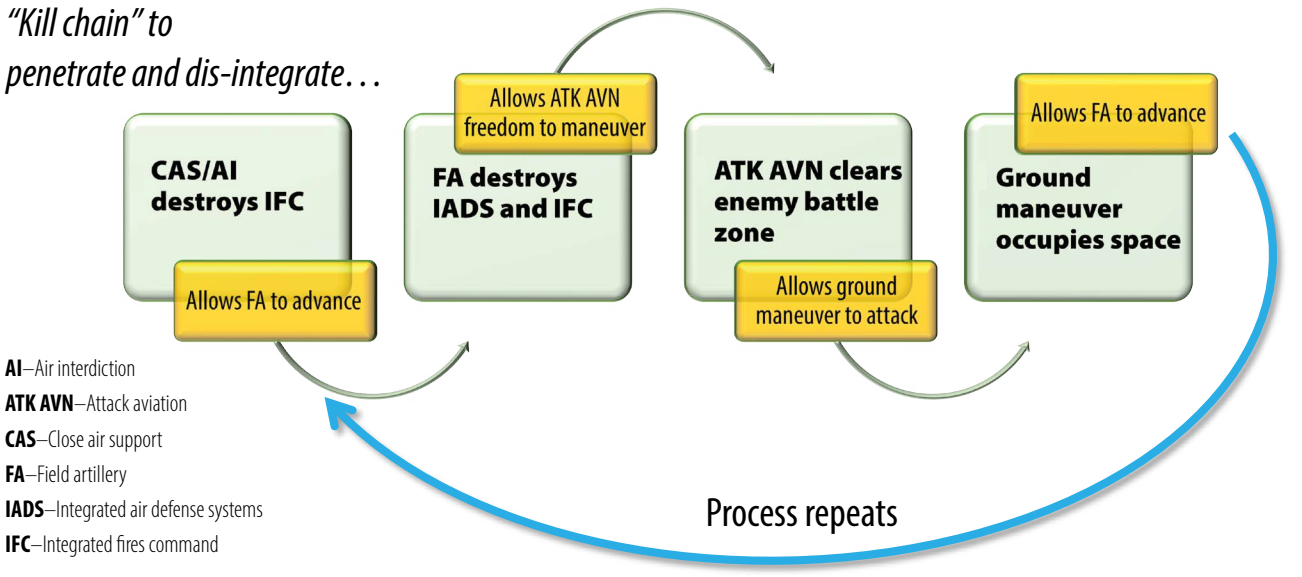
ADSI–Air defense systems integrator
AFATDS–Advanced field artillery tactical data system
AMD–Air and missile defense
AMDWS–Air and missile defense workstation system
ASM–Airspace manager
ASO–Airspace officer
ATOM–Air tasking order manager
BTL–Battle
CAB–Combat aviation brigade
CEMA–Cyberelectromagnetic activities
CHOPS–Chief of operations
CPCE–Command post computing environment
CPOF–Command post of the future
FAAD–Forward area air defense command and control
FAIO–Field artillery intelligence officer
FSNCO–Fire support noncommissioned officer
G3–Operations officer
IC–Interdiction coordinator
ICT–Interface control technician
IDT–Intelligence duty officer/technician
INTEL–Intelligence section
JADOCS–Joint automated deep operations coordination system
JAGIC–Joint air and ground integration center
JARNO–Joint air request net operator
LNO–Liaison officer
MAJ–Major
NCO–Noncommissioned officer
OP–Operator
PC–Procedural controller
SAD–Senior air director
SAT–Senior air technician
SIPR–Secret internet protocol router
SJA–Staff judge advocate
SOF–Special operations forces
TAIS–Tactical airspace integration system
UAS–Unmanned aircraft system

(Figure by authors)

Figure 2. 4th Infantry Division Joint Air-Ground Integration Center Layout

the JAGIC is essential. A member of the targeting team would provide insight into the commander and fire support coordinator's thought processes and guidance for fires during working groups and decision boards. The key product used in this endeavor was the combined high-payoff target list/attack guidance matrix/target selection standards, or HAT for short. The HAT provided the necessary translation from these meetings for the JAGIC to prioritize and engage various targets in the division deep area. This product was paramount in the decision-making cycle of the JAGIC. However, the HAT is not absolutely prescriptive. As the fight progresses and the OPFOR commander adapts to the friendly forces fighting style, the HAT must be adaptable.

First, the JAGIC must consult the plan; how is the operation supposed to commence? After the plan becomes unsustainable, the JAGIC must consult the priorities; what does the commander want to focus on? Then, after the priorities are no longer



(Figure by authors)

Figure 3. "Kill Chain" to Penetrate and Dis-Integrate Enemy Advantages

relevant, the JAGIC is left only with the commander's intent; what is the purpose and outcome the commander wants to achieve? Though the commander's intent is built into the plan and priorities, it is the last piece of direction remaining when all else is absent. This divergence must be understood, rehearsed, and delegated to the JAGIC team for fires to be responsive and permissive. If the JAGIC chief is inflexible and strictly adheres to the HAT or seeks external decisions for every outlier scenario, then the JAGIC will be slow and ineffective.

This concept is most apparent in the dynamic redirection of fixed-wing air support. The JAGIC must be very flexible with regard to the allocations annotated in the air tasking order. Air support requests are made using understanding several hours old, and the OPFOR usually does not comply with friendly forces' plans. It is said that *the enemy gets a vote*. The statement is true, but the enemy *does not* get a vote on what is flying or the wheels-up time as prescribed in the air tasking order.[5] The JAGIC chief must use critical thinking and redirect appropriately to achieve the purpose and the priorities of the current fight. The enemy will not be able to sustain their desire to control friendly actions. The enemy will rather be focused on retaining as much combat power as possible because the JAGIC has delivered multiple dilemmas to the enemy force.

Systems Integration and Processes

The JAGIC used many methods to manage the current operations common operating picture (COP) during the Warfighter exercise, but Command Post Computing Environment was best. This method triumphed because it integrated multiple systems within the JAGIC, showcased other layers from external warfighting functions, and automatically updated with the other systems. By creating a smart layer that integrated necessary overlays from Advanced Field Artillery Tactical Data System (AFATDS), Tactical Airspace Integration System (TAIS), and Air and Missile Defense Workstation System, the JAGIC chief was able to create a picture with which to clearly see the most relevant information necessary to make decisions and deliver effective fires. AFATDS pushed all fire support coordination measures (FSCM), but only oversight of the coordinated fire line (CFL), the fire support coordination line (FSCL), no fire areas, and restricted fire areas past the CFL are essential to execute fires in the deep area.

The JAGIC can be oversaturated with information. Just because one can collect all the information from the respective JAGIC systems does not mean there is value in doing so. How many FSCMs exist in the division? What is the scale of their relevancy? Does anyone really need

Members of the 1st Battalion, 12th Infantry Regiment, 2nd Infantry Brigade Combat Team, 4th Infantry Division, work inside their mobile tactical operations center at the Joint Readiness Training Center, Fort Polk, Louisiana. (Photo courtesy of the Association of the United States Army)

to see close area and consolidation area FSCMs if other command posts need to clear their fires anyway? These tough questions must be asked to produce a useful COP that brings value to timely decision-making and does not delay the process. The table (on page 63) showcases which smart layers the JAGIC built and what content they portrayed. By organizing in this manner, a JAGIC chief can quickly toggle certain layers and streamline information to make the best decision possible. Command Post Computing Environment should be used tactically, not for the clearance of fires. AFATDS, TAIS, and Theater Battle Management Core Systems are the primary systems used to clear all targeted areas to facilitate safe fires.

Essential to the success of the JAGIC during the Warfighter exercise were analog products. The JAGIC chief possessed two analog backups: a 3'x3' map board and an 18"x12" tri-folding board. Each board had matching maps, overlays, and information. These analog measures proved highly effective because they were transportable within the main command post. These products could be taken to other command nodes easier and updated quicker instead of large and outdated PowerPoint slides. Analog measures were particularly useful in updating executive decision-makers by showing them an easily digestible COP to scale. The division lost upper tactical internet once or twice a day, which immediately showed the importance of analog products. If the JAGIC is reliant on the chief of current operations large board, then it will add to mission processing time and not showcase the specific, fires-relatable content. This reality makes it essential to have an analog board.

Transferring the JAGIC to another command post is an essential yet hard-to-accomplish event. The Ivy Division decided to transfer the functions, systems, and personnel of the JAGIC to the DIVARTY command post rather than the division tactical command post. This method facilitates a closer proximity between the fires and intelligence warfighting cells rather than with maneuver. Since DIVARTY, along with the combat aviation

brigade, conducts the division's deep area fight, and the division tactical command post directs the division's close area fight, this transfer is logically sound. Mechanics of this transfer must be rehearsed and understood by the whole staff. The JAGIC has enough systems to provide redundancy that makes achieving continuity when transferring these systems straightforward. Simply move all the redundant systems with the opposite shift personnel to the DIVARTY Headquarters, achieve connectivity, and inform the previous command post. To transfer authority back, reverse the process. By executing the transfer of JAGIC functionality this way, it will simplify and streamline a frustrating and unforgiving event.

Table. Smart Layers and Content

Command post computing environment (CPCE) smart layer	Content	Originator or layer
☐ Boundaries and phase lines	Applicable restrictive measures	Chief of operations (CHOPs) CPCE
☐ Friendly forces	All blue forces (friendly forces) icons	CHOPs CPCE
☐ Significant activities (SIGACTS)	Current enemy positions and activity	Intelligence section (G2) CPCE SIGACTS
☐ Targets	Active targets from Advanced Field Artillery Tactical Data System (AFATDS)	AFATDS
☐ Fire support coordination measures (FSCM)	Coordinated fire lines (CFLs) and fire support coordination line (FSCLs)	AFATDS
☐ No fire areas (NFAs)/restricted fire areas (RFAs)	Active FSCMs from AFATDS	AFATDS
☐ Position areas for artillery (PAAs)	Planned PAAs from division artillery (DIVARTY)	AFATDS
☐ Named areas of interest (NAIs)/ Targeted areas of interest (TAIs)	Current locations where the division interdiction coordinator is focused	Distributed Common Ground System (DCGS)
☐ Airspace control measures (ACM)	Current airspace control authorities (ACAs) from airspace control order (ACO)	Tactical Airspace Integration System (TAIS)
☐ Air tracks	All aircraft tracked by friendly radar	Air and Missile Defense Workstation System (AMDWS)

(Table by authors)

Getting Comfortable Firing Outside of a Boundary

There will be no shortage of cross-boundary, cross-international border, or cross-FSCL scenarios for a JAGIC in LSCO. During at least three days of the eight-day operation, extra-boundary fire missions were the norm, not the exception. The OPFOR quickly discovered the boundary lines between divisions and tried to exploit the additional time necessary to provide responsive fires. Because the OPFOR commander sought to exploit the cross-boundary fires, he naturally had to move his long-range fires assets closer to friendly forces, thus reducing his range advantage. This "crisscross" pattern was both obvious and exploitable. The exploitation was simple: use FSCMs as they were intended, to be either permissive or restrictive.

Prior coordination and agreement with the 28th ID and the 29th ID (sister units subordinate to III Corps during this exercise) allowed each to use the other's permissive FSCMs. Why let a good permissive FSCM go to waste? All units had access to each other's airspace control measures (ACM) in effect because the airspace measures are published daily in the airspace coordination order (ACO). Each unit also had a separate TransVerse window to facilitate communication of cross-boundary fires.[6] These three elements—known FSCMs, known ACMs, and positive communications—reduced the time required for each

Members of Battle Group Poland stage their vehicles upon arriving at Suwalki, Poland, 17 June 2017 during a two-day tactical road march to Lithuania as part of Saber Strike 17. (Photo by Capt. John W. Strickland, U.S. Army)

unit to coordinate when munitions were delivered into another unit's area of operations. For example, if the 4th ID located a target in the 28th ID's area of operations, the target was beyond the 28th ID's CFL, it did not violate any active ACMs, and the JAGIC retained positive communication with the 28th ID, only then did the 4th ID engage that target *without* direct coordination.[7] Firing into another area of operations without coordination makes a field artilleryman anxious, but it is not only possible, it can be essential. Though this procedure only describes division-to-division fires, cross-FSCL joint fires were just as efficient following a different approach and procedure.

Cross-FSCL fires were just as effective for the Ivy Division because of a common understanding of how to administer these unique engagements. A more generous classification of the FSCL was agreed upon by all units. The FSCL is defined as "a [permissive] fire support coordination measure established by the land or amphibious force commander to support common objectives within an area of operation, beyond which all fires must be coordinated with affected commanders prior to engagement."[8] It is unclear what "coordination" really implies. Is it permission required? Is it awareness? Is it silence is consent? These questions must be explored and answered prior to operations. The 4th ID perceived it as *keep higher headquarters informed rather than to seek permission*.

There is risk in a liberal interpretation of the FSCL. Target duplication, improper shaping, or unnecessary ammunition expenditure can be hazards when using a more permissive FSCL. The JAGIC discovered that responsive fires outweighed these hazards each time, resulting in more destroyed assets than a strict adherence to the rules. After all, the purpose of the FSCL is to allow permissive fires.[9] This tolerance was only possible with prior discussion, coordination, and constant communication throughout the operation.

Critical to this efficiency and lethality of fires was a codified delegation of authority to empower the JAGIC throughout execution. This document took form in

the decision authority matrix and was cocreated by the G-3, the fire support coordinator, and the staff judge advocate. It was critical in identifying who could dynamically redirect field artillery battalions, rotary-wing assets, and fixed-wing aircraft, and it codified who was the approval authority for striking different no-strike entities and the release of family of scatterable mines (FASCAM). What made this document useful was the commander's willingness to delegate approval authority down to lowest possible levels to enable rapid decision-making.

Almost all fires-related tasking authority was pushed down to the assistant JAGIC chief except for directly striking targets that might result in collateral damage and the release of FASCAM. The JAGIC chief was granted the approval authority of indirectly damaging no-strike entities but not striking them directly, provided they consulted the staff judge advocate. By widely distributing this document to all maneuver commanders and every member of the fires enterprise, the product created a shared understanding amongst the division regarding authorities that rested with the JAGIC. This authority expedited fire mission processing times for dynamic targets that could potentially damage no-strike entities. By creating sustainable staff products related to dynamic targeting, the decision authority matrix, the high-payoff target list, and the target synchronization matrix, the JAGIC executed fire missions rapidly within the commander's guidance and utilized all appropriate assets afforded to the division.

Recommendations and Conclusion

The 4th ID JAGIC team makes the following recommendations for units to administer to facilitate responsive, permissive, and effective fire support during future Warfighter exercises and LSCO scenarios:

- Build relationships early with adjacent units and higher headquarters. Discuss ways to achieve permissive fires.
- Continually refine the JAGIC layout. Gather input, take charge, and codify for common understanding.
- Be comfortable delivering fires cross-boundary and cross-border. Rehearse constantly and use permissive measures as intended.
- Develop a close partnership with the G-2, operations officer, and chief of current operations. These sections are the brain-trust for the division's current fight.
- Understand purpose, priorities, and plans, in that order. Be flexible and make quick decisions within your delegated authorities.

The success of the division is directly correlated to the success of the JAGIC during LSCO. If the goal of the division is to put the enemy into an unfair fight with the subordinate brigades, the best tool to accomplish this feat is a well-trained, well-rehearsed, and integrated JAGIC. The JAGIC layout, team cohesion, tactical implementation, and extra-unit activities are paramount in setting necessary conditions to defeat the enemy. Though these techniques are unique to the 4th Infantry Division, its higher headquarters, and its adjacent units, the methods discussed can be adapted by others for any operational environment. ■

Notes

1. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Fort Eustis, VA: TRADOC, 2018), iii, accessed 12 February 2021, https://adminpubs.tradoc.army.mil/pamphlets/TP525-3-1.pdf.

2. Army Techniques Publication 3-91.1, *The Joint Air Ground Integration Center* (Washington, DC: U.S. Government Publishing Office [GPO], 17 April 2019), 1-1, accessed 24 February 2021, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN16449_ATP%203-91x1%20FINAL%20WEB.pdf.

3. Ibid., 1-7.

4. Field Manual (FM) 3-04, *Army Aviation* (Washington, DC: U.S. GPO, April 2020), 1-1. For the purposes of this discussion, the authors view Army aviation as both a maneuver and fires entity.

5. Further explanation may be found in Joint Publication (JP) 3-09.3, *Close Air Support* (Washington, DC: U.S. GPO, November 2014). This assertion excludes adaptable U.S. Air Force assets such as ground and alert close air support.

6. TransVerse is a Defense Collaboration Services instant messaging tool to facilitate tactical communication. More information can be found at https://www.disa.mil.

7. "Positive communication" implies connectivity of all joint air-ground integration center systems including TransVerse, Advanced Field Artillery Tactical Data System, Air and Missile Defense Workstation System, and Tactical Airspace Integration System.

8. FM 3-09, *Fire Support and Field Artillery Operations* (Washington, DC: U.S. GPO, April 2020), B-2; see also JP 3-09, *Joint Fire Support* (Washington, DC: U.S. GPO, April 2019), A-2. Both manuals list the fire support coordination line under the category of "permissive fire support coordination measures."

9. Ibid.