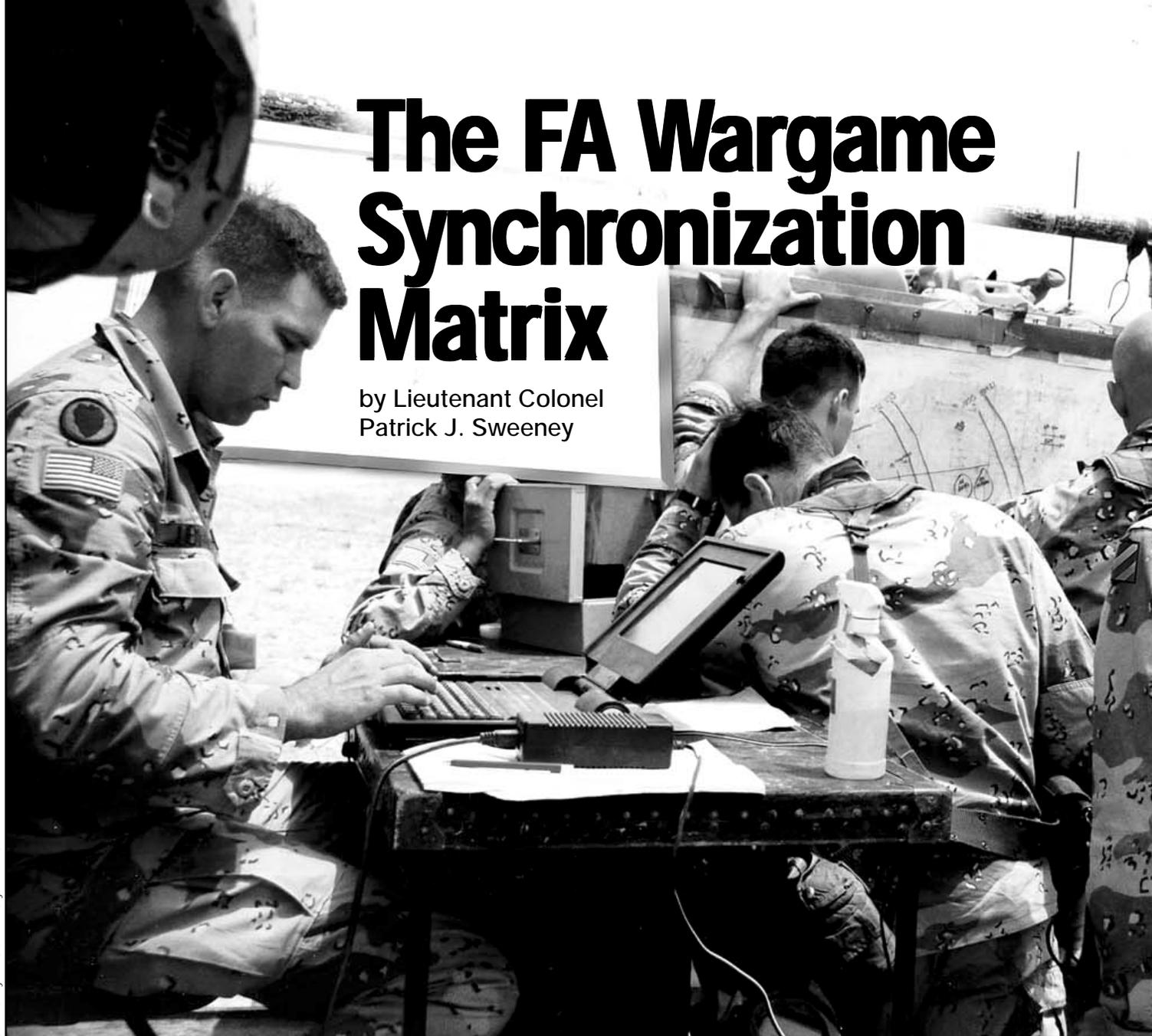


The FA Wargame Synchronization Matrix

by Lieutenant Colonel
Patrick J. Sweeney

3d Infantry Division Artillery in Kuwait



Synchronization of Field Artillery (FA) operations in time, space and purpose is a challenging task. Combat training center (CTC) trends publications have noted that FA battalions have difficulty in fully synchronizing their operations. A key step in the military decision-making process (MDMP) for synchronizing operations is course-of-action (COA) analysis—the heart of which is the wargaming process. However the primary tool for wargaming and recording the results, the standard battlefield operating system (BOS) synchronization matrix, is written from the perspective of the maneuver commander and his staff. This matrix doesn't cover all the functions a direct support (DS) FA battalion must perform to synchronize its operations.

This article outlines the FA wargame synchronization matrix recently adopted for use in the White Paper "Fire Support for Brigade and Below" written by the Fire Support and Combined Arms Operations Department of the Field Artillery School. (The White Paper is summarized in an article by the same title in this edition written by Major David A. Lee; the entire White Paper is available at the Center for Army Lessons Learned (CALL) web page in "CALL Products, Special Products" at <http://call-army.mil>.) This article also outlines procedures for wargaming an FA COA. These artillery-oriented modifications to the COA Analysis step of the MDMP help artillerymen wargame more thoroughly, thus leading to greater synchronization of FA operations. Although the matrix

and wargaming procedures are the result of expertise in the 4th Battalion, 11th Field Artillery (4-11 FA), an M119 light howitzer battalion at Fort Wainwright in Alaska, they apply to all FA units.

Wargaming Process. According to *FM 101-5 Staff Operations and Organizations*, the fourth step of the MDMP is COA Analysis with wargaming the primary technique for the analyses. Wargaming allows the staff to visualize the operation at critical points to ensure all assets are synchronized to accomplish the mission and meet the commander's intent. Wargaming is essential to develop a synchronized COA; thus, the executive officer (XO) must allocate sufficient time to do a thorough wargame (at least one hour per COA).



A successful wargame depends on good preparation. (See Figure 1.) First, the operations NCO or plans officer gathers the products from the Mission Analysis and COA Development steps of the MDMP. They post the COA sketch, lists of specified and implied tasks, facts and critical assumptions, requests for information (RFIs) and assets available plus the synchronization matrix. In addition, they set up the planning cell with seats oriented to the COA sketch and the synchronization matrix so all posted materials can be seen easily.

As the plans area is being set up, the XO and S3 determine the critical events to wargame and COA selection criteria, if wargaming more than one COA. Choosing selection criteria before starting the wargame helps reduce biases in

the COA comparison. The XO determines the wargame method based on the time available and scope of the operation. When the plans area is set up, the operations NCO assembles the staff.

Before wargaming, the S3 briefly reviews the COA for staff members not present during COA development and to refresh the staff's memory when working multiple COAs. Also, the S3 ensures a staff member is responsible for providing expertise on each BOS listed on the wargame synchronization matrix. The XO establishes the rules and sets the time limit. While the S3 runs the wargame, the XO supervises the process. If time is short, the S3 starts the wargaming process at the most critical event.

The plans officer posts the critical events at the top of the synchronization matrix. The friendly-action/enemy-re-

action/friendly-counteraction drill is used for each critical event. The S2 plays a freethinking, aggressive enemy fighting the COA the commander requested in his guidance. The S3 introduces the critical event and the friendly action. The S2 then describes in detail the enemy reaction to the friendly action, focusing on how the reaction will impact the artillery battalion's units. The S3 discusses the friendly counteraction, again focusing on what the battalion's elements will do.

The FA wargame synchronization matrix drives the wargame and is used to record the results. The XO provides direction to the wargame by ensuring each component of the synchronization matrix is considered for each critical event and that all staff members actively participate in the wargame.

1. Gather tools.

- Post sketch of the course of action (COA) to wargame.
- Post map board with current graphics.
- Prepare and post FA wargame synchronization matrix.
- Post facts, assumptions and requests for information (RFI) lists.
- Post specified and implied task lists and restated mission.
- Post situation template (SITEMP) with time-phase lines to map board.
- Set up areas to encourage participation.
- Assemble participants.

2. List friendly forces available: organic, attached or under operational control (OPCON).

3. List critical assumptions.

- List the assumptions necessary to continue planning.
- Ensure all RFIs have been requested to limit the assumptions necessary.

4. List critical events to wargame and decision points.

5. Determine evaluation criteria for COA:

- Commander's Intent and Guidance
- Essential Field Artillery Tasks (EFATs)
- Army Tenets
- Principles of War
- Supportability for Combat Service Support (CSS)
- Flexibility

6. Select wargaming approach:

- Belt (sequential belts wargamed working backwards from objective)
- Avenue in Depth (good for offense operations)
- Box (focuses on a critical event or decisive point)
- Combination (used to cover a critical event or decisive point in greater detail)

7. Select recording technique for results (synchronization matrix or narrative sketch).

8. Wargame the COA.

- Executive officer (XO) covers rules to encourage participation.
- XO sets a time limit.
- Process starts with the most critical event.
- The friendly-action/enemy-action/friendly-counteraction drill is used.
- Synchronization matrix provides direction for the wargame.
- Plans officer records the results.
- XO ensures everyone participates.
- Wargame includes risk assessment.

Figure 1: Steps in the Wargaming Process

	Critical Event or Time	Setting the Defense																																												
	Friendly Action	Move firing batteries and prepare defense.																																												
	Enemy Action	Interdict MSRs, direct action against batteries and mortar and sniper attacks.																																												
	Friendly Counteraction	Maneuver clears MSR prior to moves, establishes TCPs, requests radar coverage from Div Arty and digs in.																																												
	Essential Fire Support Task(s)	Destroy enemy reconnaissance elements.																																												
	Decision Points																																													
Intel	NAI	12 and 15																																												
	TAI																																													
	Collection	Advance Parties																																												
Essential FA Task(s)	Task	Destroy enemy reconnaissance.																																												
	Purpose	Destroy enemy reconnaissance to allow unobserved movement of all Bde units.																																												
	Method: • Priority	<i>Priority of Fires:</i> 2-1 INF, 1-17 INF, TF 1-10 <i>Priority of Targets:</i> A Btry AB7005, B Btry AB3015																																												
	• Allocation	<i>Btry Tasks:</i> A- establish TCP, position and operate dummy radar, escort Blade TM to TOC, set up LZ for CLIV and V, collect NAI 15. B- protect radar, occupy with priority to radar, establish TCP, escort Blade TM to A, set up LZ for CLIV and V, collect NAI 12. <i>Move:</i> A Btry and deception radar SP221700Sept to PA 3 VQ919450 AOF 3000 B Btry and radar SP221400Sept to PA 4 VQ911450 AOF 3200 <i>Survey:</i> TM 1 move with A Btry TM 2 move with B Btry <i>Priority:</i> Radar, B, A, 2-1 Mort, 1-17 Mort <i>Radar:</i> Primary Search AZ - 3100, Alt AZ-1800 <i>Metro:</i> Sched: 221000, 222100, 23060Sept.																																												
	• Restrictions	<i>Munitions:</i> Bde Cdr will clear use of illumination. <i>FSCM:</i> CFL is PL Blue.																																												
Effects	<i>Effect on Enemy:</i> All recon elements destroyed. <i>Location of Batteries at end of EFAT:</i> A Btry and deception radar in PA 3, AOF 3000 B Btry and radar in PA 4, AOF 3200																																													
Support Operations	M/CM/S	Blade TM 2 OPCON to B 221500 to 222300Sept OPCON to A 222315 to 230900Sept OPCON to TOC 230930 to 231500Sept Priority to Survivability, CM- Priority of Spt: B, A, TOC																																												
	NBC																																													
	ADA	Stinger TM 3 OPCON to B Btry 221800																																												
	CSS (CLI(W), III, IV, V, Maint, Medic)	B: 6 A-22 bags of wire and pickets and 220 rounds of HE/RAP air delivery 221800Sep A: 4 A-22 bags of wire and pickets and 180 rounds of HE/RAP air delivery 221900Sep Ground LOGPAC on 231000Sep for CL I																																												
	C ²	Spt Plt Ldr PZ control for CL IV&V																																												
	Risk	Ambushes on MSRs; mortar attacks before defense is set																																												
	External Coordination	Bde for maneuver force to clear MSR and Div Arty for radar coverage																																												
	Notes and Planning Factors																																													
<p>Legend:</p> <table border="0"> <tr> <td>ADA = Air Defense Artillery</td> <td>Div Arty = Division Artillery</td> <td>LZ = Landing Zone</td> <td>PL = Phase Line</td> </tr> <tr> <td>AOF = Azimuth of Fire</td> <td>EFAT = Essential FA Task</td> <td>M/CM/S = Mobility/Counter-</td> <td>PZ = Pickup Zone</td> </tr> <tr> <td>AZ = Azimuth</td> <td>EFSTs = Essential Fire Support</td> <td> mobility Survivability</td> <td>Spt Plt Ldr = Support Platoon</td> </tr> <tr> <td>Bde = Brigade</td> <td> Tasks</td> <td>Metro = Meteorological</td> <td> Leader</td> </tr> <tr> <td>Btry = Battery</td> <td>FSCM = Fire Support</td> <td>Mort = Mortar</td> <td>TAI = Target Area of</td> </tr> <tr> <td>C² = Command and Control</td> <td> Coordination Measures</td> <td>MSRs = Main Supply Routes</td> <td> Interest</td> </tr> <tr> <td>Cdr = Commander</td> <td>HE/RAP = High-Explosive/Rocket-</td> <td>NAI = Named Area of Interest</td> <td>TCPs = Traffic Control Points</td> </tr> <tr> <td>CFL = Coordinated Fire Line</td> <td> Assisted Projectile</td> <td>NBC = Nuclear, Biological and</td> <td>TF = Task Force</td> </tr> <tr> <td>CL = Class</td> <td>INF = Infantry</td> <td> Chemical</td> <td>TM = Team</td> </tr> <tr> <td>CSS = Combat Service Support</td> <td>LOGPAC = Logistics Personnel and</td> <td>OPCON = Operational Control</td> <td>TOC = Tactical Operations</td> </tr> <tr> <td></td> <td> Administration Center</td> <td>PA = Position Area</td> <td> Center</td> </tr> </table>			ADA = Air Defense Artillery	Div Arty = Division Artillery	LZ = Landing Zone	PL = Phase Line	AOF = Azimuth of Fire	EFAT = Essential FA Task	M/CM/S = Mobility/Counter-	PZ = Pickup Zone	AZ = Azimuth	EFSTs = Essential Fire Support	mobility Survivability	Spt Plt Ldr = Support Platoon	Bde = Brigade	Tasks	Metro = Meteorological	Leader	Btry = Battery	FSCM = Fire Support	Mort = Mortar	TAI = Target Area of	C ² = Command and Control	Coordination Measures	MSRs = Main Supply Routes	Interest	Cdr = Commander	HE/RAP = High-Explosive/Rocket-	NAI = Named Area of Interest	TCPs = Traffic Control Points	CFL = Coordinated Fire Line	Assisted Projectile	NBC = Nuclear, Biological and	TF = Task Force	CL = Class	INF = Infantry	Chemical	TM = Team	CSS = Combat Service Support	LOGPAC = Logistics Personnel and	OPCON = Operational Control	TOC = Tactical Operations		Administration Center	PA = Position Area	Center
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Figure 2: FA Wargame Synchronization Matrix

The 4-11 FA staff modified the standard BOS synchronization matrix to make it more useful in wargaming COA for artillery battalions, which has been revised slightly for compatibility with the terms used in the White Paper “Brigade and Below.” This modified matrix is the FA wargame synchronization matrix (see Figure 2). It includes all the BOS on the standard matrix; however, it has merged maneuver and fire support into one section called “Essential Field Artillery Tasks” (EFATs)—that basically equates to FA operations. The sub-components of an EFAT are the task, purpose, method (priority of fires, priority targets, battery tasks, movement, survey, radar deployment, meteorological schedule, and munitions and fire support coordination measure restrictions) and effects. These are most of the elements necessary to synchronize an FA battalion’s COA. The matrix is a tool to help ensure the battalion’s assets are focused on each critical event.

The matrix also has a section for risk analysis to ensure the staff identifies high-risk hazards associated with critical events and assigns reduction measures to subordinate units or even modifies the COA, as necessary. Conducting the risk analysis up front saves time and effort. If the staff analyzes the risks after wargaming and decides to modify a COA to reduce the risks, it then must go back and wargame the changes made to that COA.

Our 4-11 FA staff blew up and mounted several copies of the matrix on poster board and laminated them as guides for the artillery COA wargaming process during its Joint Readiness Training Center (JRTC) rotations at Fort Polk, Louisiana.

The contents of the matrix in Figure 2 reflect the JRTC critical event of “setting up the defense.” During this phase of the operation, both firing batteries and the radar are to move to new positions. The radar is to move and collocate with B Battery. The deception radar is to move and collocate with A Battery. The battalion has an engineer “Blade Team” to help the batteries dig in and prepare their defenses.

Each firing battery will move with a survey team to establish survey in the new primary and alternate positions. In addition, the support platoon will move Class IV and V by air to the new battery positions. The meteorological section will adjust its flight schedule during the firing battery moves.

- Synchronization Matrix
- Concept of the Operation and Coordinating Instructions
- Task to Subordinate Units
- Combat Service Support (CSS) Concept of Support
- Information to Develop Initial CSS Synchronization Matrix
- Initial Casualty Evacuation (CASEVAC) Plan
- Updated Operational and CSS Graphics
- Information to Produce the Decision Support Template (DST) or Matrix (DSM)
- Refined Reconnaissance and Surveillance (R&S) Plan
- Meteorological Support Plan
- Engineer Support Plan
- Air Defense Artillery (ADA) Support Plan
- Internal Fire Support Plan to Protect Batteries and Convoys
- Refined Commander’s Critical Information Requirements (CCIR)
- Survey Plan
- Radar Deployment Order (RDO)
- Updated Requests for Information (RFI) List
- Contingency Operations to Consider
- Fourth Warning Order

Figure 3: Products of Wargaming

In reaction to the battery movements, the enemy will increase his interdiction of ground main supply routes (MSRs). He also will initiate more direct action by members of his Leesville Urban Group (LUG) and increase his Cortina Liberation Front (CLF) sniper and mortar attacks on the battery positions to disrupt their abilities to set up defenses.

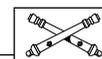
The battalion’s counteractions to the enemy’s reactions are to ask brigade to provide a maneuver force to clear the MSRs before the firing batteries move, increase soldier alertness to civilians and civilian automobiles around battery areas or the convoys, establish traffic control points (TCPs) around battery positions, dig the batteries in with overhead cover and request radar coverage from division artillery (Div Arty) while the radar moves. As illustrated by this example, the FA wargame synchronization matrix clearly and succinctly prompts and captures all the functions an artillery battalion must perform to set the defense.

After wargaming a COA, the plans officer posts all external coordination requirements to the RFI list and assigns a staff agency to answer each RFI. If the staff has only one COA to wargame, then it begins preparing the FA support plan (FASP). If the staff must wargame other COAs, then it uses another FA wargame synchronization matrix and starts the process again. Figure 3 is a checklist of the products that are a result of each COA wargaming process.

If time is short, the commander outlines a single COA during mission analy-

sis and the wargame may start with the most critical event to cover it in detail. The XO’s supervision of the wargame led by the S3 allows him to use his expertise and raise questions, resolve issues and ensure proper procedures are followed.

The FA wargame synchronization matrix fills a gap in the Field Artillery community’s tactics, techniques and procedures (TTP), providing procedures not addressed in official courses or publications. The intent is for the wargaming process to help the FA battalion fully synchronize its operations to execute the FA tasks essential for achieving the commander’s intent.



Lieutenant Colonel Patrick J. Sweeney is the Executive Officer of the 101st Airborne Division (Air Assault) Artillery at Fort Campbell, Kentucky. In his previous assignment, he served as the Executive Officer of the 4th Battalion, 11th Field Artillery (4-11 FA) of the 1st Brigade of the 6th Infantry Division at Fort Wainwright, Alaska. Also in the 6th Infantry Division, he commanded A Battery and served as Plans Officer in the 5th Battalion, 11th Field Artillery. He holds master’s degrees in Social Psychology from the University of North Carolina at Chapel Hill and in Military Art and Science from the Command and General Staff College at Fort Leavenworth, Kansas. The author wishes to acknowledge the contributions of the commander and staff of 4-11 FA to the development of the FA Wargame Synchronization Matrix— in particular, Captain Kevin Grant, First Lieutenant Chad Brown and Major Thomas Powell.