National Training Center (NTC)

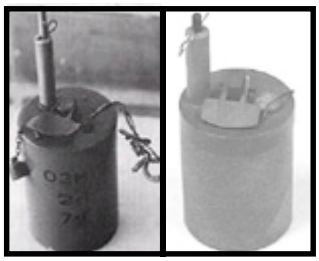
Conventional Threat Antipersonnel (AP) Mines (OZM-3)

By Master Sergeant Mark A. Sankey

As NTC continues to implement the contemporary operational environment (COE), the Opposing Force (OPFOR) will also adjust its inventory of battlefield effects to match worldwide threats and challenge the rotational units. The OZM-3 marks the arrival of the AP mine to NTC. Units should realize that AP mines are a realistic threat and will be replicated during their rotations. Units do not train on or emplace AP mines but must react to their presence on the battlefield.

Capabilities

The OZM-3 can be detonated with a variety of fuses, including trip wires and electrical command. The mine weighs 3.0 kilograms and has a cylindrical cast-iron body that is sent into the air by a small charge at the base of the mine. Triggered by a delayed charge, the body of the mine explodes approximately 1.5 meters off the ground. The fragmentation results in a casualty radius of 25 meters. Because of its metal content, the OZM-3 can be readily detected by demining/detection equipment.



Actual (L) and training aid (R) OZM-3s

OZM-3 Characteristics	
Height	120 millimeters
Diameter	75 millimeters
Mine weight	3 kilograms
Explosive weight	75 grams TNT
Casing material and color	Olive-green cast-iron body
Fuse type	Mechanized utility vehicle (MUV) series,VPF, RO-1, RO-8, and electrical and seismic firing systems NM, MVE-72, and VP-4/12/13)
Sensitivity	As for each fuse
Detectability	Yes

Rules of Engagement (ROE)

There are no ROE changes to explosive- and mechanical-reduction techniques. For manual reduction, proper grappling techniques (according to FM 20-32, *Mine/Countermine Operations*) will result in the AP mines being detonated without casualties. Failure to adhere to this procedure will result in casualty assessment of the grappler. If a grappling hook hits a mine, the mine will be assessed as destroyed along with the grappling hook and a small portion of the grappling hook line. The assessment of the line will be based on the materiel type and how the line is laid near the mine.

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Engineer Support Area (ESA) Live Fire

By Major Gerald O'Connor and Captain Thomas D. Patton

For several years, the brigade support area (BSA) has conducted a defensive training event during the live-fire rotation. Other separate support elements have also had live-fire training events. Though these events have always been important, the asymmetrical threat posed by the COE has demonstrated the necessity of all elements. Throughout the depth of the brigade's area of operations, it is necessary to maintain a high level of protection. Starting this year, Force XXI unit ESAs and units with separate unit maintenance collection points can also take part in a live-fire defensive training scenario.

When reacting to a mounted and dismounted threat within the brigade rear boundary, units must defend their perimeter from a combination of light armored vehicles, dismounted soldiers, and aerial attacks. Units are required to analyze intelligence reports from higher headquarters, raise their readiness posture, and defend their perimeter from prepared fighting positions using individual and crew-served weapons, sector sketches, and fire control measures. As units defend their perimeter, they must evacuate casualties and conduct ammunition redistribution and resupply. This scenario gives soldiers greater confidence in their weapons proficiency and an ability to defend themselves from an attack.

Units wishing to take part in this training must meet the following requirements:

- They must request the ESA live fire in their 180-day letter to the NTC.
- Firing soldiers must have qualified on assigned weapons within 180 days of the live-fire event.
- They must complete the Dragon Team live-fire safety brief.
- Soldiers must be in flak vests and proper field uniforms.
- M2s must be screened according to the ROE, Chapter 3.
- They must complete a minimum of hasty fighting positions to standard for the firing soldiers.
- Fighting positions must have aiming stakes with methods to limit elevated fires over 45 degrees.

This event also requires resources from the brigade rotational ammunition allocation that is equivalent to the amount of Class V supplies currently used by engineers involved in the BSA live fire.

Suggested Ammunition Allocation

Department of Defense Identification Code (DODIC)	Nomenclature	Weapon	Number of Rounds
A557	.50-caliber 4:1 (M2)	M2, .50-caliber	300 rounds per M2
A059 or A064	5.56-millimeter ball 5.56-millimeter 4:1	M16	40 rounds per firing soldier
A062	5.56 4:1 squad automatic weapon (SAW)	SAW	200 rounds per SAW
A131	7.62-millimeter 4:1	240B	200 rounds per 240B

Units should coordinate for the ESA live fire with the Sidewinder Team at Fort Irwin during the leadership training program or in the brigade 180-day letter.

The ESA live fire gives rotational units a tremendous opportunity to focus on total unit protection and provide their soldiers realistic live-fire training.

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Wet-Gap Crossing

By Major Michael W. Rose and Captain James Koeppen

NTC has developed a river-crossing scenario for rotational units. Blue Force (BLUFOR) units may be required to conduct a river-crossing operation in order to deploy into its area of operations. In the scenario, the "Calusan Canal" is the main water source for "Irwin Military City," making it an environmentally and politically sensitive site. The canal is narrow enough to cross with an armored vehicle-launched bridge (AVLB), but in certain areas the water velocity exceeds vehicle-fording capabilities. Vehicles that enter the canal will be assessed as a mobility kill and will require recovery assets. After the brigade crosses the canal, it may request division assets to come forward and establish permanent crossing sites.

So that the scenario does not fall under the category of a true deliberate river crossing, units have at least three options when planning for the mission:

- Use the crossing fundamentals as outlined in FM 90-13, *River-Crossing Operations*.
- Use the breaching tenets covered in FM 3.34.2, *Combined-Arms Breaching Operations*.
- Use a combination of doctrine covered for both river-crossing and breaching operations.

Regardless of the technique used, there are four critical aspects that must be fully developed during the planning process:

Command and Control (C2)

Units must fully develop effective C2 to ensure a deliberate and coordinated effort in establishing river-crossing sites as well as managing traffic control and flow. One technique used recently was to have AVLB commanders report directly to platoon leaders, who acted as crossing site commanders at the call-forward area to control throughput from the call-forward area to the crossing sites.

Traffic Control

Detailed planning for traffic control must include routes used by separate task forces from the release line to holding areas, call-forward areas, and crossing sites. Integration of military police platoons is vital to marking routes and establishing and manning traffic control points. Ultimately, the goal is to enable the brigade combat team to rapidly reroute units if one or more crossing site becomes unavailable.

Communication

A solid communication plan will bring together the C2, traffic control, and throughput of the brigade across the canal. Although this list is not all-inclusive, you should ask yourself the following questions during the planning process:

- Who is controlling traffic from the release line to the staging areas and on what net?
- What net are the traffic control points operating on and to whom are they reporting?
- What nets are the crossing sites and call-forward areas operating on and to whom do they report?
- Who is tracking traffic flow at the task force and brigade combat team levels?

Risk Management

Most brigade combat teams have not crossed an entire team across AVLBs. This makes it essential to conduct proper risk management at all levels. Using AVLBs during rehearsals in the rotational unit bivouac area (RUBA) is one mitigation technique. Inspecting and configuring equipment at the call-forward area, as well as briefing vehicle crews on AVLB crossing procedures, is also a way to mitigate risk during the operation.

Summary

The canal-crossing scenario at NTC provides units an opportunity to plan and execute a realistic gap-crossing operation and develop tactics, techniques, and procedures addressing critical issues that are likely to be encountered in real-world contingencies.

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Joint Readiness Training Center (JRTC)

Engineer Participation in the Targeting Process

By Captain Mark C. Quander

Today, we face a more asymmetric threat than in the past. The enemy does not look like a conventional force and has become more unpredictable and more lethal. As we adapt, commanders at all levels will have greater challenges in focusing combat power effectively against these forces. Failure to do so can be perilous. However, a process already exists to assist the commanders and staff in focusing combat power to win decisively—the targeting meeting. A successful targeting meeting requires active participation from all members of the Battlefield Operating System. The following paragraphs describe how engineers take an active role in targeting:

Why Targeting?

FM 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process*, states—

"The targeting process supports the commander's decisions. It helps the targeting team decide which targets must be acquired and attacked. It helps in the decision of which attack option to use to engage the targets. Options can be lethal or nonlethal and/or organic or supporting. For example, they can be maneuver, electronic attack, psychological operations (PSYOP), attack helicopters, surface-to-surface fires, or a combination of these. In addition, the process helps in the decision of who will engage the target at the prescribed time. It also helps targeting teams determine requirements for combat assessment to assess targeting and attack effectiveness."

Targeting Methodology

The targeting process is formed from the model of *decide*, *detect*, *deliver*, and *assess* (D3A). The targeting methodology can be used to describe how engineers can provide input into the process. In *deciding* which targets to attack, engineers must provide input to develop the high-payoff target list (HPTL). A high-payoff target (HPT) is something that friendly forces perceive to be necessary for enemy forces to accomplish their mission. Some HPTs that engineers could recommend are enemy scatterable munition systems, tactical minefields, and enemy breaching assets. However, you must be specific. Usually, not all HPTs will be targeted because the unit may not have assets available to target them all. If you want to target enemy breaching assets, list the type of breaching asset you want targeted (such as the KMT-4). If you want minefields listed as HPTs, then nominate the ones that will affect future operations (such as minefield B01). The templated minefields will be used to continue describing the process. See Figure 1 for examples of assets that can be used during various stages of the targeting process.

To *detect*, nominate the templated minefields that impact future operations as named areas of interest (NAIs). NAIs are used to help confirm or deny a particular enemy course of action. During the targeting meeting, the D3A model is captured on the target synchronization matrix (TSM) (see Figure 2). The templated minefield located at WQ01654015 on the TSM will be used to describe the process. The staff recommended this minefield as NAI 43 on the TSM. If practical, have multiple assets (primary and alternate) target the NAI at various times. Ensure that the collectors have time windows in which to collect on the NAI, because you don't want all the collectors at the NAI at the same time. Also, the assets you are targeting must report back in a timely fashion. Give them a time for the latest time of intelligence value (LTOIV). Be cognizant of the other minefields, but the targeting process should focus on what has a bearing on future operations. In this instance, the unit has chosen to use OH-58D scout reconnaissance helicopters as the primary detector and B/1-187 Infantry as the secondary collector on the NAI. Again, the detection windows must be at different times. If the NAI is denied, then the assets to *deliver* or *assess* are free for other missions.

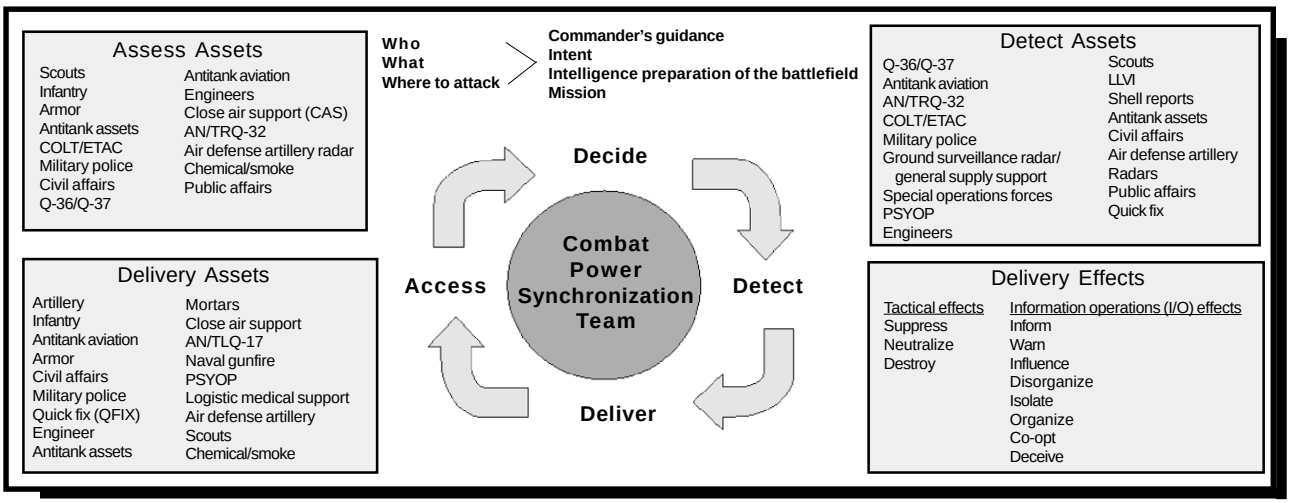

Figure 1. Targeting the Rakkasan Way (Based on a figure in CALL Newsletter No. 02-3 Feb 02)

Target Synchronization Matrix (Phase/Event: III – Expand the Lodgement) H-Hour is 052200MAR03							As of: 031200ZMAR03 to 041159ZMAR03	
Decide		**Detect**			**Deliver**		**Assess**	
HPT	Location	NAI	Agency	Assets	Agency	Assets	Agency	Assets
DShK	WQ02404210	1	Division	LRS	Division	NGF/CAS	Division B/311 MI Bn	LRS QFIX
			B/311 MI Bn	QFIX	3-320 FA	105 mm		
			B/311 MI Bn	QFIX	3-320 FA	105 mm		
SA-18	WQ00654372	6	Division	LRS	Division	NGF/CAS/ J-SEAD	B/311 MI Bn	QFIX
			B/311 MI Bn	QFIX	3-320 FA	105/155 mm		
Minefield	WQ01654015	43	2-17 Cav Rgt	OH-58D	Team Heavy	MICLIC	Team Heavy	Mine roller
						Mine plow		
			B/1-187 Inf Rgt	Mine detectors	Team Clear	Explosive		
					C/326 Engr Bn			
	WQ01563567	23	2-17 Cav Rgt	OH-58D	Team Heavy	MICLIC	Team Heavy	Mine roller
						Mine plow		
					Team Clear	Explosive		
			C/1-187 Inf Rgt	Mine detectors	C/326 Engr Bn			

Legend:

DShK = [12.7mm Krupnocalibernyj Pulemet Degtyareva-Shpagina, DShK] A heavy machine gun used as an antiaircraft weapon and also as a heavy infantry support gun.

JSEAD = joint suppression of enemy air defense

LRS = long-range surveillance

NGF = Naval gun fire

SA-18 = A Russian manportable surface-to-air missile

Figure 2

If the NAI is confirmed, the *deliver* assets committed will bring effects against the target.

Deliver against the target by destroying, neutralizing, or suppressing it. In this case, we would neutralize the minefield by breaching a lane or by clearing. In choosing the deliver asset, don't just think about what assets engineers bring to the fight, but rather what assets the unit brings to the fight—plows, rollers, mine-clearing line charges (MICLICs), Antipersonnel Obstacle-Breaching Systems (APOBs) (for AP minefields and wire), etc. For NAI 43, the staff used Team Heavy, the armor company team, as the primary unit to *deliver* effects against the minefield with primary means of the MICLIC, then the plow. It is a planned operation, so the unit should have time to prepare and rehearse before execution.

The final part—*assess*—can be done again by engineers or any number of assets to report battle damage. In this case, the minefield was proofed by Team Heavy. The unit used a roller to assess the minefield and ensure that no mines were present in the area they breached or cleared. However, battle damage is usually very difficult to assess. When a unit thinks about preassault fires on an objective to attrit enemy forces before an attack, how do we confirm that the forces have been attrited sufficiently? *Assess* is generally the hardest part of the process. At the completion of the targeting meeting, the information from the TSM will be used to build a fragmentary order (FRAGO). Brigade-level targeting should focus future operations 48 to 72 hours out and battalion-level operations 24 to 48 hours out.

Preparing for the Targeting Meeting

The same level of detail that goes into preparing for the military decision-making process (MDMP) should be applied to the targeting meeting. Targeting should be built into the MDMP timeline as well as a unit's battle rhythm. Generally, products used in the targeting meeting are refinements to already-existing products. As part of course-of-action analysis and comparison, the staff generally starts the targeting process with a targeting conference. Using the results of staff wargaming and intelligence preparation of the battlefield (IPB) as a guide, the planning staff focuses assets to assist with the collection process. Engineers should do the following before the targeting meeting begins:

- Update the assets-available list.
- Refine the obstacle template (from initial entry).
- Prepare the obstacle-tracker overlay.
- Collaborate with the S2 to ensure that enemy engineers are portrayed on the situation and event templates.

During the Targeting Meeting

During the targeting meeting, the engineer should consult with other staff officers. Engineers must talk in maneuver terms in order to get mobility/survivability/countermobility targets that support the commander's plan serviced. During the targeting meeting, the following coordination should take place:

With the S2:

- Confirm the template.
- Perform predictive analysis—nominate NAIs.
- Assist in developing the situation and event templates with probable enemy employment of engineer assets and obstacle emplacements.
- Describe the effects of terrain and weather on maneuvers.
- Participate in the selection of decision points, NAIs, and targeted areas of interest (TAIs) for obstacles.
- Identify enemy engineers supporting the reconnaissance effort.
- Confirm HPT (bridging assets, breaching assets, and scatterable mine delivery systems).

With the S3:

- Assist in developing the high-value target list (HVTL) and nominating high-value targets (HVTs) to the HPTL.
- Advise on the employment of scatterable munitions to attach targets and the selection of TAIs to support the employment.
- Review the minefield report.
- Prioritize the clearance of routes.
- Draft tasks to subordinate units.
- Recommend task organization changes.

With the S4:

- Synchronize the logistics package resupply with the brigade combat team route clearance package.

With the medical officer:

- Synchronize the route clearance package with casualty evacuation routes.

Conclusion

The targeting process enables the staff to direct all the elements of combat power against enemy forces to win decisively. Conducted daily, the targeting meeting should provide subordinate units sufficient time to prepare for future operations. The end product of targeting should be an updated TSM, reconnaissance and surveillance plan, HPTL, and FRAGO with appropriate task organization changes. Engineer participation in targeting is critical and, in doing so, they ensure that engineers are out front, providing the commander mobility on the ground.

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Combat Maneuver Training Center (CMTC)

Synchronizing the Brigade Combat Team Breach —"SOSRA in Effect"

By Major John Horstmann and Sergeant First Class Danny Petersen

"Obstacle breaching is the employment of a combination of tactics and techniques to project combat power to the far side of an obstacle. Breaching is a synchronized combined-arms operation under the control of a maneuver commander."

—FM 3-90.3, *The Mounted Brigade Combat Team*

All too often, maneuver forces come to a stalemate at the breach, leading to mission failure immediately thereafter. CMTC discovered that one of the causes of this is the failure to synchronize the breach during brigade combat team (BCT) planning and rehearsals. Typically, units happen into breaching operations before doctrinal conditions are set. Although FM 3-34.2, *Combined-Arms Breaching Operations*, serves as the capstone breaching manual, many maneuver commanders focus primarily on FM 3-90.3. It discusses combined arms breaching operations in Chapter 12, where Table 12-4 (see Table 1 below) provides a basic framework. However, it does not specify who has direct responsibilities for each decision or event. As a result, these decisions are routinely delegated to very low levels within the BCT.

Decisions	Criteria
Decide the point of penetration and reduction site.	- Reconnaissance force identifies obstacles and enemy positions related to priority intelligence requirements (PIR).
Commence suppression and obscuration fires.	- Observers are in position. - Support force crosses designated phase line (PL).
Occupy support-by-fire (SBF) position (support force).	- Critical friendly zone (CFZ) is in place over the positions. - Obscuration is in place to screen support force movement. - Designated essential fire support tasks (EFSTs) are completed. - Support force maintains more than 70 percent of its combat power.
Commit the breach force.	- Suppression and obscuration is adjusted and effective. - CFZ is in place over reduction site. - Engineer preparations are completed. - Fire control measures are in effect.
Commit the assault force.	- Lane is created, proofed, and marked. - Far-side security is in position.

Table 1. Establishing criteria (Based on Table 12-4 from FM 3-90.3)

Fundamental to achieving synchronization are detailed reverse-breach planning, clear subunit instructions, well-rehearsed forces, and effective command and control. Without proper breach synchronization, the conditions for executing the breach will not be established when necessary, generally resulting in the rapid destruction of breaching assets.

The assistant brigade engineer (ABE), as the staff officer primarily responsible for setting the plans groundwork, has many tools available to assist him during the planning process. FM 3-34.2, Chapter 1, paragraph 1-44, provides a detailed explanation of how to synchronize breaching planning and operations. Table 2, (which is Table 1-2 in FM 3-34.2) is a breaching complexity chart, which shows successful synchronization of breaching operations and provides an example of the complexity of the operation. It is also a good tool to use as a template during planning or rehearsing or when explaining the complexity of breaching operations to maneuver brethren. This same chart is also a template to effectively build an execution matrix of the breaching operation. This chart, like Table 12-4 from FM 3-90.3, does not designate responsibility for decision making.

A good relationship between the ABE and other BCT planners, especially the fire support and chemical officers, enables the ABE to create a framework for the breach that best fits the brigade commander's intent. Using the reverse-breach planning process, the ABE must ensure that the commander's intent—as it relates to mobility, countermobility, and survivability operations—is understood. The ABE also recommends changes to support that intent, based on the capabilities and limitations of engineer assets under brigade control. But more importantly, the ABE must convey to the brigade staff the conditions that must be set before attempting the breach in order to synchronize these conditions throughout planning and war gaming. If the reverse-breach planning process is followed, and the staff members have synchronized their efforts, the stage is set for a fluid breach at the combined-arms rehearsal (CAR) and in combat.

Far too often the breach force commander commits assets only to have them killed by direct and indirect fires as they reach the obstacle. As engineers, we must communicate to the brigade commander that the conditions must be set before moving breaching assets forward to the obstacle. Disaster awaits if units attempt to breach before setting these basic conditions. This level of synchronization begins with the planning process, is reinforced at the CAR, and continues through the beginning of operations. At the CAR, all too often the term "SOSRA [suppress, obscure, secure, reduce, assault] in effect" is heard from senior leaders when addressing breaching operations, and the rehearsal continues with the assault force conveniently placed on the other side of the breach. Such a simple wave of the hand does not work on the battlefield. Leaders need to demand specifics during the rehearsal, with each step addressed individually. Following is an example of such a rehearsal:

- *Suppress*. Who is suppressing? With what systems and ammunition? Who is being suppressed and where?
- *Obscure*. Who is obscuring and for how long? With what system and ammunition? Who is the obscuration being directed against and where? What is the required duration of the obscuration? Who determines whether the

Actions	Element	Time (Minutes)	Controlled By
Develop the situation (verify the boundary of the enemy obstacle system).	Force in contact	M to 2	S3
Maneuver the support force into the overwatch position.	Support	M + 2 to 15	Support commander
Maneuver the assault force into the covered assault position.	Assault	M + 2 to 15	Assault commander
Call for artillery.	Direct support (DS) artillery	M + 2 to 15	Fire support officer (FSO)
Build smoke.	Mortars	M + 5 to 10	FSO
Suppress the enemy with direct fires.	Support	M + 15 to 29	Support commander
Suppress the enemy with artillery fires.	DS artillery	M + 10 to 29	FSO
Maintain smoke.	DS artillery mortars	M + 10 to 30	FSO
Maneuver the breach force to the breach location.	Breach	M + 20 to23	Reduction commander
Reduce the obstacle and prepare two lanes.	Breach	M + 23 to 30	Engineer leader
Place smoke pots.	Breach	M + 23 to EOM	Reduction commander
Shift direct fires off the objective.	Support	M + 29 to 30	Assault commander
Shift indirect fires beyond the objective.	DS artillery	M + 29 to 30	Assault commander
Assault to destroy the enemy on the far-side of the obstacle.	Assault	M + 30 to 45	Assault commander
Reorganize to continue the mission.	Task force	M + 45 to EOM	S3
NOTE: M = Contact with the obstacle			

Table 2. Breaching complexity (Table 1-2 from FM 3-34.2)

Breach Fundamental	Decision	Criteria	Decision Maker
Suppress	Initiate suppression	- Position of support force - Reconnaissance of enemy position	Support force commander
	Shift suppressive fires	- Position of breach and assault forces	Support force commander
Obscure	Initiate obscuration	- Position of breach, support, and assault forces - Observers in position	Task force commander
	Adjust obscuration	- Wind direction - Terrain - Ammunition remaining	Breach force commander
Secure	Initiate near-side security	- Position of security force - Templated position of overwatching force	Task force commander
	Initiate CFZ/ADA coverage	- Position of breach force	Task force commander
Reduce	Determine breach area	- Engineer battlefield assessment (EBA) and intelligence preparation of the battlefield (IPB) - Forces available - Reconnaissance results	Brigade commander
	Initiate breach	- Successful obscuration - Successful suppression - Nearside security established - Position of breach force	Breach force commander
	Breach lane complete	- Position of breach force - Initial marking complete	Breach force commander
Assault	Initiate assault force	- Position of breach force - Far-side security established - Lane marking complete	Breach force commander
	Shift fires	- Position of breach, suppression, and assault forces	Assault force commander

Table 3. Assigning responsibility for key decisions

obscuration is successful or not? Who is the primary/secondary observer?

- *Secure*. Who is securing and where? And with what systems? What fire control measures are in effect? What air defense artillery (ADA) coverage is there, and who provides it? Where is the CFZ, and who controls its initiation and termination?
- *Reduce*. Where are the breaching assets, and who controls them? What are the primary and alternate means? How many lanes are there, and where are they located? What is the separation between the lanes? Where is the breach force located before commitment? Who commits the breach force? What is the lane-marking technique?
- *Assault*. What fire control measures are in effect, and who controls the transition of firing from the breach to the assault force? Are there protective obstacles between the breach and the objective? Who is responsible for breaching these and with what systems? Who assumes traffic control through the breach?

These questions need to be answered with clarity and rehearsed at the CAR for SOSRA to be synchronized, while setting up successful breaching operations during the battle.

However, even in answering these questions, the process is not complete. A fundamental of successful synchronization is effective command and control. As previously mentioned, current doctrine does not discuss a crucial aspect of command and control—determining who is responsible for key decisions. As part of the planning process, the brigade staff must identify those responsible for critical decisions and make sure they are addressed in the decision matrix and at the CAR. Table 3 is a guide to assigning responsibility for key decisions of breaching operations.

The bottom line is that engineers are the doctrinal experts regarding breach planning, rehearsals, and operations. If we plan and rehearse according to our published doctrine, and help the maneuver commanders understand this doctrine, we will be more successful at the breach. The "proof in the pudding" is our ability to discuss SOSRA in detail at the CAR in order for SOSRA to indeed be "in effect."

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