CTC Notes

Battle Command Training Program (BCTP)

Synchronizing Engineers: Weighting the Main Effort in the Defense

By Lieutenant Colonel Ron Light

"The nature of water is that it avoids heights and hastens to the lowlands. When a dam is broken, the water cascades with irresistible force. Now the shape of an army resembles water. Take advantage of the enemy's unpreparedness; attack him when he does not expect it; avoid his strength and strike his emptiness, and like water, none can oppose you."

Sun Tzu, *The Art of War*

In the offense, doctrine tells us that "commanders attack to avoid the enemy's main strength." It should come as no surprise that the enemy seeks to do the same thing. As Sun Tzu noted, "the enemy flows like water, seeking the path of least resistance." However, sometimes engineers miss this point as they shape the battlefield during the defense. This article briefly reviews what it means to weight engineers in support of the defense.

Before exploring this concept, we must understand an important condition of the battlefield: the enemy is observing our defensive preparations. Wherever we have fought in the past and wherever we will fight in the future, the enemy is watching. During Warfighter exercises conducted by the Battle Command Training Program, the World Class Opposing Force (WCOPFOR) is adept at inserting special-purpose forces (SPF) throughout friendly forces' areas of operation. The WCOPFOR bases much of its plan on the information these SPF teams report.

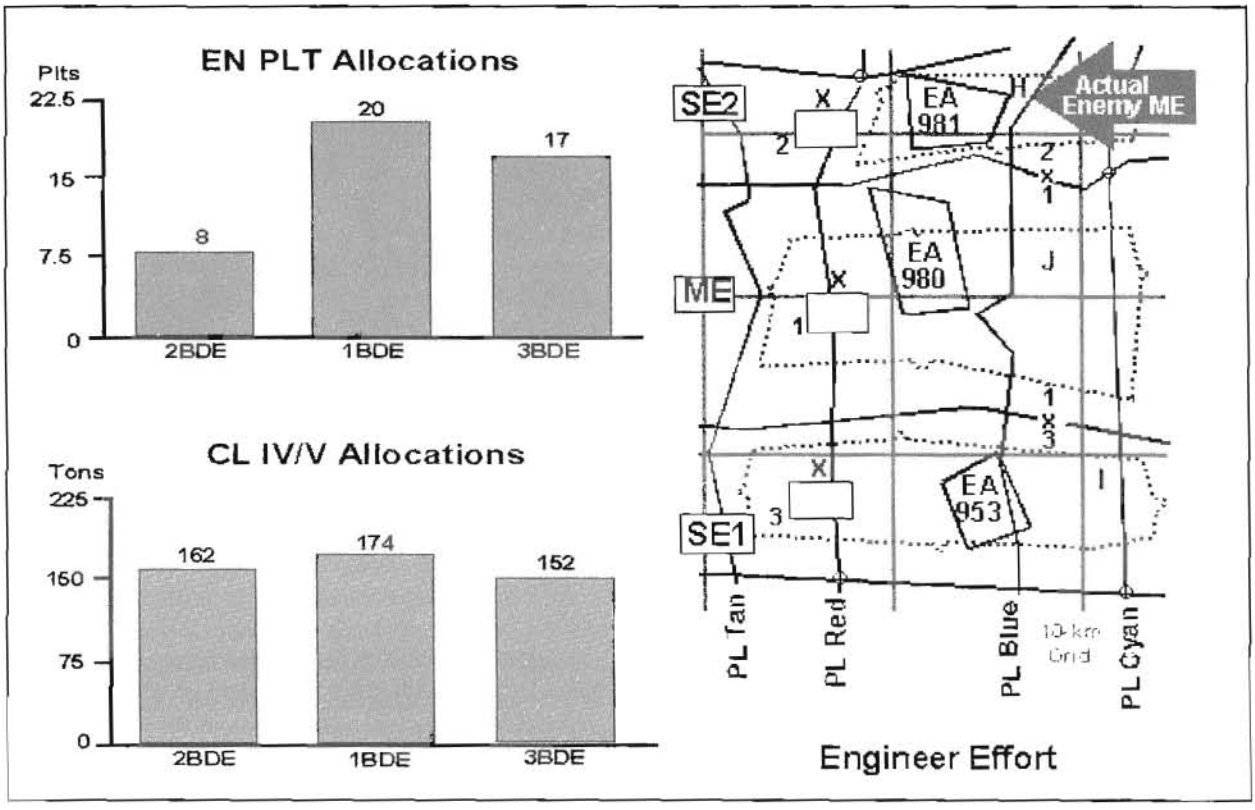
What do the SPF teams report during our preparations for the defense? Just as at the "dirt" combat training centers, the teams look for and report on the activities of friendly engineers. As an engineer once observed during a training rotation at the National Training Center, "Find his bulldozers, and you've found his defense." SPF teams are trained to look for engineers, armored combat earthmovers, and Volcano countermobility systems. With this information, the battlefield calculus to predict where our main defense effort is becomes relatively simple for the WCOPFOR. Simply stated, engineer activity is usually an accurate gauge to predict our main effort.

More often than not, friendly engineers make it far too easy for the WCOPFOR to identify the main effort. In the defense, engineer staffs weight the division's or corps's main effort (the force which will do most of the killing on the battlefield) with engineers. The main effort ends up in a strongpoint defense, and supporting efforts are relatively much weaker. As noted above, two things happen when this occurs. First, WCOPFOR SPF teams see this asset allocation, and they report accordingly. Second, the commander of the WCOPFOR uses this information to plan his attack against our weakness. More often than not, the WCOPFOR correctly reads where the friendly main effort is by identifying where the preponderance of friendly engineers are arrayed on the battlefield—and he attacks elsewhere. The enemy flows like water.

The figure on page 19 illustrates this point. The enemy was known to be attacking from the east. The division designated that 1st Brigade (in the center) was the main effort. This is where the division commander wanted the enemy to go and where he wanted to kill the enemy. In the north, 2d Brigade was a supporting effort, as was the 3d Brigade in the south. Notice, however, where engineers were arrayed on the battlefield. The bar chart in the figure shows that 1st Brigade received most of the engineer assets available: 20 engineer platoons. Moreover, 1st Brigade also received the largest allocation of Class IV/V (obstacle) barrier material: 174 short tons.

Recalling that the enemy is adept at reporting on our defense preparations, where do you suppose he attacked? Seeking to avoid friendly strength (easily read as 1st Brigade), and noting a relative weakness between the two supporting efforts, the enemy attacked into 2d Brigade in the north. The ensuing fight was quick and brutal.

By now it is probably obvious that *weighting engineers in the defense does not usually mean weighting the main effort with engineers.* The enemy will avoid our strength. One of the



primary ways he gauges our strength is by observing where we array engineer forces. We can deceive or mislead the enemy as to where our main effort is by weighting engineers to our supporting efforts.

Of course, we must allocate some countermobility assets to the main effort. Remember, however, that *doctrine urges commanders to mass effects, not necessarily assets.* We can allocate close air support and air Volcano missions to the main effort. These assets allow us to mass countermobility effects in a very short time. Moreover, with planning we can use these assets relatively late during our defensive preparations, when the enemy has less time to react. This technique was used effectively by a unit during a recent Warfighter exercise.

So what does it mean to "weight engineers in support of the defense?" Usually it does not mean making the main effort an impregnable force with all of the division's allocation of mines, wire, and pickets. What it does mean is creating a condition on the battlefield that confuses the enemy and causes him to commit his forces not against what he perceives to be our weakness but against our strength.

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Joint Readiness Training Center (JRTC)

The Engineer Survivability Execution Matrix

By Sergeant First Class Isaac N. Horton and Sergeant First Class Thomas V. Murray

We have observed a trend at the Joint Readiness Training Center concerning the engineer survivability execution matrix and how it impacts force-protection operations here and ultimately on the modern battlefield. The trend is that units employ the age-old blocked-time survivability execution matrix. This means that rather than conducting a detailed mission analysis, each unit with an established priority is allocated the same amount of time and engineer assets. The result is that the final product we observe routinely fails to adequately address

force-protection requirements, link time and the resources available, and command and control engineer resources that execute force protection in support of the brigade.

The unit encounters many unnecessary challenges in executing these types of matrices and in protecting the force according to the commander's intent. Force-protection levels are not linked to enemy attack probabilities through the engineer battlefield assessment (EBA), and the unit's critical systems do not get the required level of protection. Ultimately, units suffer irreplaceable losses of mission-critical equipment and resources from enemy direct action that could have been prevented.

To be successful on the current lethal battlefield, units must protect critical systems, equipment, and supplies from enemy observation and attack. Units rotating through the JRTC struggle with planning and executing force-protection and survivability operations. This is due to incomplete EBAs and a lack of clearly defined doctrinal procedures for planning these types of operations at brigade level. Engineer company commanders and brigade engineers are doctrinally required to prepare detailed plans for survivability operations and include these plans in the brigade operations order (OPORD).

Technique

A brigade-level technique that engineer units can use to help improve their current system for calculating survivability requirements and preparing a survivability execution matrix consists of the following three steps:

Step 1: Identify key assets within the brigade.

Although time consuming, this is a simple process that must take place at home station. List battalion-level organizations and major company assets in matrix form. Figure 1 depicts a random selection of command- and-control nodes, weapon systems, and equipment in a typical light infantry brigade against the current task organization or the unit. The requirement matrix is a sample product that units must develop and implement at battalion level and use as the primary tool in calculating survivability requirements.

The construction times shown are not standard across the Army. The time required to construct protective positions varies from unit to unit. This is primarily due to the mission and the type of assets organic to that unit (such as D7 dozers, D5 dozers, deployable universal combat earthmovers [DEUCEs], loaders, small emplacement excavators [SEEs], or armored combat earthmovers [ACEs]) as well as the soil composition. The times should be established by timing—from start to finish, day and night—actual construction of the positions by two or more operators to get an average-time-required planning factor. We suggest that the times be established by using a single blade or single bucket rather than a blade team. Our example uses 15-blade work hours per day as a planning factor.

	Bde C2	Bn C2	Co C2	M998	5T/TPU	5T/SER	HEMTT	Inf Plt	105mm How	Q36/Q37	Sig C2	MTRS	FARP	VOLCANO	ATLS	ATP	M1A1	M3A3	M88	AVLM	FISTV	155mm How	AVENGER	30KW Gen	5K Tanker	Avn HELO	M113A3	Aid Sta	FIST/FO	Stinger	Dragon	DM/TOW	ATD	P/Berm	Misc	Misc
Time in Minutes	150	120	60	45	60	60	90	120	90	90	120	45	150	90	60	120	150	90	90	90	45	150	30	15	120	90	30	30	15	15	15	45	60 MH	70 MH		
Bde																																				
2-35 Inf																																				
4-4 Inf																																				
1-82 Inf																																				
1-21 Cav																																				
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B 1-4 FA																																				
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C 2-45 AR																																				
C 19 Sig																																				
A 22 En																																				
1/A 237 En																																				
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Figure 1

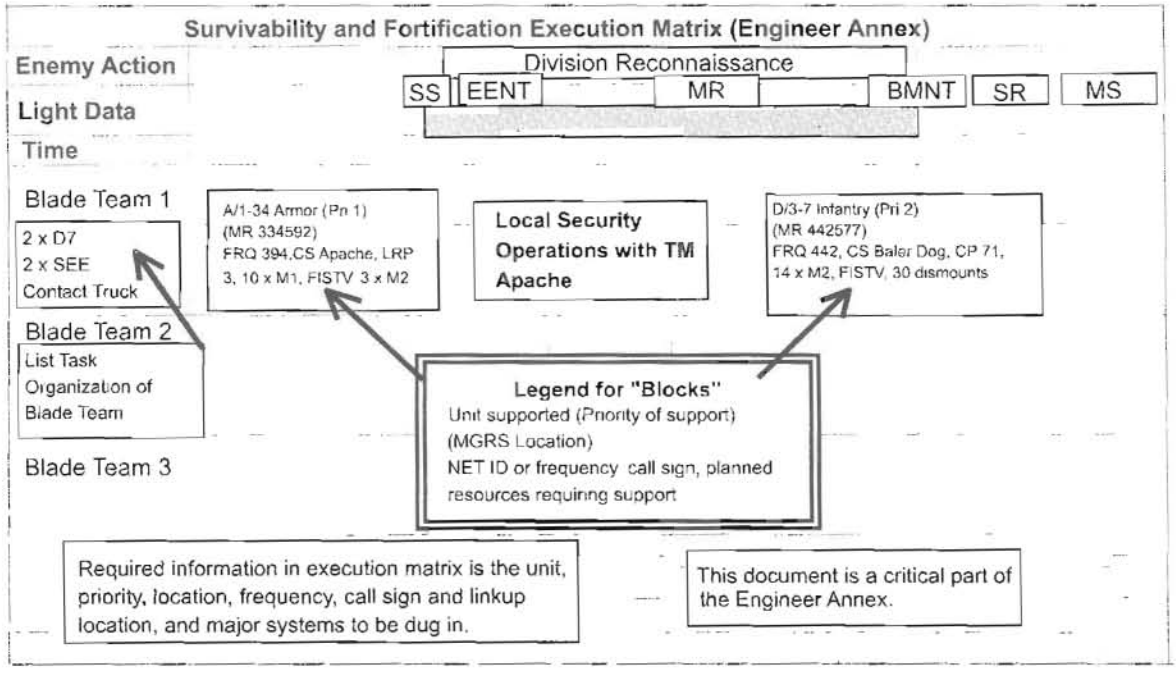

Figure 2

Step 2: Prepare an engineer work estimate.

Record the time available, the number of dozers or SEEs available, and the brigade commander's priority for survivability effort. FM 5-103, *Survivability*, states that maneuver commanders should set survivability priorities based on the engineer's input and recommendation (which is based on an updated and accurate EBA) and mission analysis with the brigade staff. It is at this point that the blocked-time matrix is normally developed. This can be avoided if units have a system for accomplishing the detailed planning necessary for preparing a brigade-level survivability timeline.

Step 3: Prepare the survivability execution timeline.

This timeline (better known as the "missing link") must be a collective effort of the engineer commander, the assistant brigade engineer, and the equipment platoon leader. The document, which is paramount to the engineer annex in the brigade OPORD, is often omitted. This may cause the brigade's force-protection levels to be substandard. Figure 2 depicts the 80 percent solution for a detailed survivability execution timeline. At a minimum, the information in the matrix should include the supported unit, priority, location, frequency and call sign, and work estimate. As stated earlier, the timeline *must* be included in the maneuver brigade and battalion base orders. When properly planned and included in the base order, conflicts can be avoided during execution of the engineer's survivability timeline.

Conclusion

By conducting a comprehensive EBA and implementing this three-step technique, engineer survivability planners communicate the critical path for executing the commander's priorities of force protection. The execution timeline provides the means to command and control survivability operations through time and space based on identification of key assets and the engineer work estimate process. The end result is that blade utilization is maximized in a prioritized and efficient manner. By protecting critical weapon and sustainment systems, the ability to deliver combat power and achieve mission success is dramatically increased. *No idle blades.*

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