

# Integrated TOC

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The National Training Center at Fort Irwin provides the most realistic and challenging training available to units in the Army, and its lessons are rapidly becoming the cornerstones of emerging warfighting doctrine.

The Chief of Staff of the Army, General Carl E. Vuono, has said that four critical lessons are being learned at the NTC. These lessons can be summed up as follows: To be successful, units must fight as a combined arms team; must integrate their combat power; must keep up with the pace of the battle; and must understand the importance of sustainment and of planning for sustainment.

In an effort to increase their ability to fight as a combined arms team, the 2d Infantry Brigade (Motorized) and the 6th Battalion, 11th Field Artillery (M198 155mm, DS) of the 9th Infantry Division at Fort Lewis recently combined their tactical operations centers (TOCs) during sustained tactical operations.\* The result was a more responsive fire support system, better integration and synchronization of the fire support means available to the maneuver commander, and an improved ability to fight together as a cohesive combined arms team.

The integration of the entire direct support field artillery battalion TOC into the maneuver brigade's TOC—while not a total answer to the chal-

lenges listed by General Vuono—goes a long way toward meeting them. Although this kind of integration may not be practical in all cases, it is clearly an option that every maneuver unit should seriously consider.

This integration effort was prompted by many factors but primarily by the desire to place the field artillery battalion's fire direction officer (FDO), who controlled the artillery fires, next to the people who could best identify the places on the battlefield where those fires needed to be applied.

## BATTALION FDC

Initially, only the artillery battalion fire direction center was placed in the brigade TOC to facilitate independent targeting and engagement decisions by either the brigade fire support officer (FSO) or the artillery FDO. Several automated simulation exercises showed, however, that segmenting the battalion's TOC elements in varying combinations diluted their ability to perform the required combat functions and that the best result would be obtained if all of the battalion's functions could be performed inside the brigade TOC complex. For example, the battalion S-3 needed to clear position areas and track the friendly situation. He also needed real time data on the targets being engaged, the modifications to make to ammunition expenditure rates, and the fire support coordination measures in effect. The artillery battalion S-2 needed current battlefield data and needed to be

able to coordinate his collection efforts with those of the brigade S-2. In short, the entire TOC needed to be integrated.

The effort was made easier by some of the unique capabilities of the equipment available in the 9th Infantry Division Artillery (DIVARTY). The DIVARTY units are equipped with the lightweight tactical fire direction system (LTACFIRE), which is mounted in the back of a HMMWV (high mobility multipurpose wheeled vehicle). This system has the same capabilities as the heavy TACFIRE system but is much smaller and more mobile.

The fire direction center is equipped with two briefcase terminals (BCTs), which together have a six-modem capability. This enables them to "talk" digitally over six radio nets. The operations and intelligence (O&I) section is equipped with one BCT with a four-modem capability. The artillery battalion S-2 works from a HMMWV shelter equipped with FM radio gear and a computer link with the maneuver control system (MCS2).

The three HMMWV shelters (O&I, FDC, and S-2) are joined by means of a tent extension that serves as a briefing area. The brigade FSO works from a HMMWV shelter equipped with a standard four-modem BCT located in the brigade TOC.

The integration of these elements was accomplished by combining the functions of and the data tracked by the artillery operations portion of the O&I HMMWV shelter with those of the brigade FSO and co-locating them in the

*\*The author acknowledges the contribution of Captain Dennis J. Jarosz, Field Artillery, who provided considerable technical input to this article. Since this article was written, the 9th Division has lost its 2d Brigade.*

brigade TOC. This eliminated the need for the second LTACFIRE-equipped shelter. The artillery battalion S-2 co-located with the brigade S-2 and worked with him at his battle station. The artillery fire direction LTACFIRE-equipped HMMWV shelter was joined to the TOC with a tent extension to create additional work space between the fire direction center and the main TOC, and the brigade FSO/O&I shelter was placed directly opposite for ease of control. (See accompanying diagram of the TOC configuration after integration.)

Numerous advantages were immediately realized by the maneuver commander and his S-3 as well as the field artillery commander and his S-3.

- The first advantage was a faster response time for planning. While the maneuver commander's intent was being prepared, the information did not have to be relayed to the artillery battalion TOC because the key individuals were already present to formulate and execute the fire support plan.

- The integrated TOC was more responsive to change and the fire support element could react more quickly to the demands of the maneuver force.

- Better targeting and intelligence information was passed through the maneuver brigade S-2 and the battalion S-2 working together at the same battle map, combining the information available

through the maneuver force's assets as well as through the field artillery assets.

- The artillery battalion commander, free to focus on his duties as the fire support coordinator, was now in a position to help the brigade commander and S-3 in the brigade TOC more readily than he could by traveling back and forth between two separate TOCs.

- With the artillery battalion's TOC co-located with all the brigade fire support assets (the air and intelligence liaison officers, Air Defense officers, Engineers, NBC, FSO, attack helicopters), fire support planning and execution could be integrated and synchronized as never before.

- The information flow to the supporting artillery batteries was increased because of the vastly improved body of knowledge at the artillery battalion TOC.

- Less radio communication was required. The two TOCs were able to share existing radio nets and to eliminate certain battalion to brigade nets that were no longer needed.

- The staff members could coordinate face to face instead of over a radio net, and with no delay.

In February 1988, the integration of the two TOCs was fully tested during a brigade force-on-force exercise at Yakima Firing Center in Washington. During the four-day exercise, all brigade systems and assets were used in an effort to assess

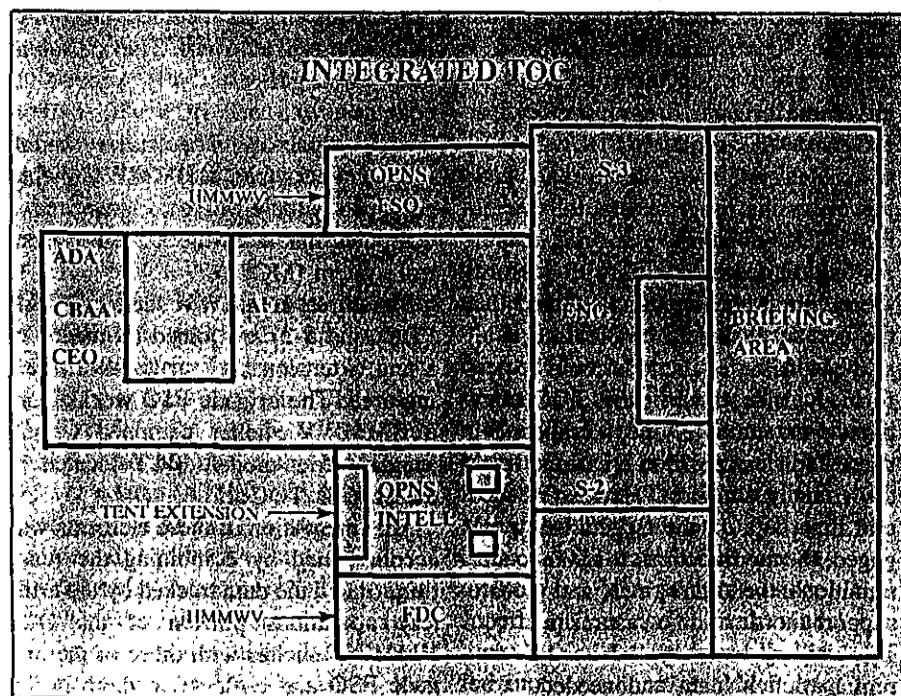
the efficiency of the integrated TOC's operations. Fire support coordination measures were put into effect in real time. As the FEBA changed, the coordinated fire line was also changed and "pushed" to the appropriate level instantaneously.

When friendly air support was available, ACAs (airlift clearance authorities) were brought into effect without shutting down firing units. The artillery battalion S-2, working with the brigade S-2, was able to develop a more accurate picture of the battlefield. This information later proved invaluable in developing a thorough intelligence preparation of the battlefield and accurate targeting data for the engagement of counterfire targets. Some 78 percent of the missions fired during the defensive phase of the operation and 56 percent of those fired during the offensive phase were generated by the TOC. This was more than twice the number of missions generated by the TOC in similar scenarios before the integration.

The S-2 was also able to accomplish near realtime cueing of the AN/TPQ-36 radar in the counterfire battle and was able to query the division artillery's target intelligence files. The artillery battalion S-3 was able to clear position areas and orchestrate the movement of the firing batteries while watching the maneuver battle map and talking face to face with the brigade S-3 and the fire support coordinator. Methods of engagement, ammunition constraints, and the like could be changed or modified as the situation required. Fire support coordination measures were ordered and emplaced in record time.

Some potential disadvantages of the integration also had to be examined during the planning stage—the increase in the communications signature, the physical size of the TOC, and the fact that the integration of the two TOCs created a more lucrative target.

To reduce the communications signature problem, radios were remoted approximately one kilometer outside the position and redundant or unneeded nets were eliminated. Before TOC integration, the brigade and the artillery battalion used a total of 17 nets, including the MCS2. After integration, only 13



nets were needed, and the MCS2 terminal was shared, saving four radio nets overall.

By using the lightweight TACFIRE system and combining digital functions to eliminate one HMMWV, the integration did not substantially increase the TOC's size—only one HMMWV was added, joined to the TOC by a tent extension.

The problem of presenting a more lucrative target could not be overcome,

but this concern was far outweighed by the numerous advantages integration brought about.

In sum, integrating the direct support artillery TOC into the maneuver brigade TOC makes the coordination and synchronization of fire support simpler and easier and serves to build a cohesive combined arms team that is capable of truly synergistic action in warfighting.

As a result of this integration effort,

the other combat brigades in the 9th Infantry Division are now experimenting with the integration of their tactical operations centers.

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# The One-Night TOC-EX

CAPTAIN STEVEN C. SIFERS

The personnel in a light infantry battalion tactical operations center (TOC) need to be trained to act as a close-knit and cohesive group. They must also be as well trained in the tactics and techniques of patrolling as any rifle squad. Becoming proficient in those tactics and techniques, of course, takes practice—lots of practice by everyone involved in the operation of the TOC.

Although it is not expected that TOC personnel will have to do the actual fighting on an objective that a rifle squad will have to do, an entire operation may hinge on their proficiency in the skills of movement, navigation, noise and light discipline, and camouflage, as well as the staff functions of planning and controlling.

There are many difficulties with training a light infantry TOC during the daily operations of a battalion, but I have found that three concerns are the most prominent—getting the “key players” (battalion commander, XO, S-3, command sergeant major, and others) to the training; keeping them away from their usual jobs for the shortest possible time; and sustaining the training.

At first glance it might appear that an ideal time to train TOC personnel would

be during a battalion field training exercise (FTX), with all the companies in the field. But this is often not the case—again because the key players need to be elsewhere doing other tasks. During an FTX, for example, the battalion commander, S-3, and XO need to evaluate the rifle company actions on the objective; the command sergeant major needs to be where he can inspire and motivate the soldiers; the S-2 is usually busy controlling the opposing force; the communications-electronics officer (CEO) is making sure the retransmission site is functioning; and the fire support officer and air liaison officer are conducting final coordinations for close air support.

To help solve these problems, the 2d Battalion, 75th Ranger Regiment at Fort Lewis uses three keys to TOC training: Stabilize TOC personnel, build them into a cohesive team, and train them during one-night TOC exercises (TOC-EXs).

In the past, the tendency has been to fill the TOC roster at the last moment with anyone who might be available. The battalion made the decision to fill by name the slots not assigned by specific duty position. These positions are mostly the radio-telephone operator (RTO)

positions, and an RTO now remains in that position until he is promoted out of it or leaves the battalion.

The 2d Battalion uses two TOCs in the field (designated simply TOC 1 and TOC 2). The headquarters company commander maintains the roster of personnel for TOC 1, and the battalion S-5 maintains the roster for TOC 2.

Another form of stabilization is in the configuration of the TOC for movement and patrol base occupation. The TOC is divided into three fire teams. Fire Teams A and B are the security elements, and Team C contains the command and control element. Team A moves in the lead with Team B in trail, and Team C moves in the middle (Figure 1).

In a perimeter grouping, Team A always has the 12 o'clock and 3 o'clock positions while Team B has the 6 o'clock and 9 o'clock positions. Team C occupies the middle of the perimeter (Figure 2).

The S-3 Air is the leader of Team A, the CEO is the leader of Team B, and the operations sergeant is the leader of Team C. Personnel positions within each team remain constant whether in a perimeter or moving in a wedge, in file, or on a road march. This makes it easier to