

The Marine BOC on the Mechanized Battlefield

by Captain Robert J. Terselic, USMC

Although Field Artillery doctrine on the missions of the battery operations center (BOC) is generally sufficient, descriptions of tactical employment are scarce and firing batteries struggle with doctrine's practical application. Yet, an effective BOC increases the battery's capabilities and flexibility on the battlefield—especially important during fast-paced operations on the mechanized battlefield. Unfortunately, many battery commanders either don't recognize the BOC's potential and allow asset or manpower restrictions to prevent its viability or fail to experiment with the BOC to determine its optimum employment.

BOC missions found in our doctrinal manuals (see Figure 1) are limited and provide few details on the BOC's equipment and manning. The new commander with little BOC experience could assume the BOC doubles as the executive officer's (XO's) vehicle, his own vehicle or the wire vehicle. Personnel and vehicle constraints may even convince him that he can survive without a BOC. Until the commander sees the value of a BOC in operations, it often is relegated to the "next time we go to the field."

This article suggests revised missions for the BOC and discusses how a Marine BOC can organize and operate in a mechanized environment. Although I focus on the BOC in mechanized operations, the information generally applies to BOCs in any environment.

BOC Mission Revised. The BOC has a threefold mission: advance party operations, tactical and technical fire direction and miscellaneous tasks.

Advance Party Operations. This mission is executed using one of two approaches. The BOC either leads and conducts advance party operations independently or links up with the battery commander to conduct advance party operations. The battery commander determines which approach to use based on the tactical situation and operations tempo.

In mechanized operations, the battery commander must be able to roam the battlefield from his battalion's fire direction center (FDC) to the supported



battalion's combat operations center (COC) to his forward observers. For him to stay in the battery's firing position is a waste of a skilled professional.

In addition, the XO and fire direction officer (FDO) are fully capable of controlling the battery's fires. As such, the BOC, lead by the assistant XO, needs to be in or near the firing position ready to push out to the next position or prepare an alternate position at a moment's notice.

Tactical and Technical Fire Direction. The BOC tracks the battle and can control the battery's fires. It has a situation map, communications assets and a means of computing technical firing data. Because the battery has two lightweight computer units (LCUs) with battery computer system (BCS) soft-

ware, it can compute and communicate technical firing data. The backup computer system (BUCS) is a secondary means of computing the firing data and is required for hasty survey. A chart with graphic firing tables (GFTs) provides a manual backup. Two radios and two OE-254 antennas provide voice and digital capabilities (see Figure 2).

With voice and digital communications, the FDC can transfer all targets, schedules and control measures in effect or added while the BOC is on the road. While staged in the firing position and during occupation and displacement, the BOC exchanges data continuously with the FDC.

Miscellaneous Tasks. These BOC tasks facilitate battery operations and provide the battalion tactical and technical fire direction redundancy.

- The BOC conducts hasty survey and has aiming circles, communications equipment and a precision lightweight global positioning system receiver (PLGR). This equipment helps the battery transfer directional control, conduct simultaneous observation and prepare an alternate position.

- The BOC conducts hasty decontamination. The battery must maintain centralized command and control of the decontamination site, follow standard procedures and maintain continuous communications with higher headquarters, all while continuing to fire. The assistant XO, who is the gun's platoon commander and the battery's nuclear, biological, chemical (NBC) officer, is trained to conduct hasty decontamination.

FM 6-50 The Field Artillery Cannon Battery

- Facilitate command and control of the firing battery.
- Serve as the focal point for operations, such as movement orders from the S3, logistics and nuclear, biological and chemical (NBC).
- Backup the fire direction capability with the backup computer system (BUCS).

FMFM 6-9 Marine Artillery Support

- Serve as an alternate fire direction center (FDC) and (or) assist the FDC.
- Serve as the battery command post (CP) for command and control.
- Control local security.
- Participate in advance party operations.

Joint Regimental Order P3000.1 Standing Operational Procedures for Tactical Operations (or "Combat SOP")

- Control battery operations/local security and serve as a backup FDC.
- Be assigned to the battery executive officer's pit.
- Participate in advance party operations.
- Establish a technical firing capability forward.

Figure 1: Battery Operation Center (BOC) Missions Listed in Doctrinal Publications

To minimize the reduction in firing capability, the battery moves in two-gun platoon echelons through the decontamination site to the next firing point, ideally, with two platoons firing while the third is undergoing decontamination.

• The BOC must be capable of assuming control of the battalion—a Marine Corps combat readiness evaluation standard. Continuing to deliver timely, accurate fires while assuming control of the battalion is, obviously, a challenge for any battery. The BOC enables the battery's FDC to assume control of the battalion while the BOC assumes responsibility for computing the battery's technical fire direction.

Challenging Tradition. Doctrine lists two missions that are inappropriate, even in a defensive posture: providing local security and serving as a battery COC.

The BOC should not provide local security because, when the advance party

(BOC) launches forward with the local security chief, the battery's security plan must remain intact. When the BOC is in a firing position, it has to monitor the tactical situation and assist the FDC, which means it's either rotating Marines for rest or helping to compute technical firing data. The XO should manage local security.

The BOC doesn't need to serve as a battery COC because, on the constantly changing mechanized battlefield, the battery commander has little use for a designated COC—he's rarely in the firing position. If he is in the firing position, the FDC, XO's pit or BOC suits his requirements for situational awareness and command and control.

Manning. At a minimum, the BOC includes the assistant XO and two fire direction controlmen (0844/13C). One FDC man helps the assistant XO at the orienting station while the other (the driver) stages and sets up the BOC. A digitally proficient radio operator with elementary BCS skills can replace the driver if the battery is short an FDC man.

The FDO initially may think that using one of his FDC men in the BOC is a "painful" loss. But once he recognizes how to fall in on the BOC upon arrival and rotate BOC Marines through the FDC, he too will become a believer.

Operational Example. For purposes of the following scenario, the BOC's designated approach is to lead and conduct advance party operations.

The battery commander is forward with the supported maneuver battalion. The BOC is in a firing position monitoring the battle on the situation map, maintaining some method of backup technical fire direction. When the movement order is issued, the assistant XO musters and briefs the advance party and launches for the next firing position within 15 minutes of notification.

At the firing position, the local security chief secures the area and the assistant XO selects the orienting station, lays and safes the aiming circles and positions wire communications. Simultaneously, the BOC ties off its wire at the junction box and drives to its position, usually about 150 meters behind the junction box. The assistant XO verifies the location of the orienting station, orients the lay circle, verifies the safety circle and determines the distance, direction and vertical angle to each gun.

Meanwhile, the BOC driver sets up the upper three masts of the OE-254 on the trailer's antenna mast for the digital

net and switches the vehicle's radio(s) to the voice conduct of fire net. He then confirms wire communications with the lay circle and gun positions and establishes digital and voice communications with the main, battalion, liaison section and forward observers. The BCS/LCU is updated with orienting station and gun data except final lay deflection. (In times of conflict, initial lay deflection could be input into the computer to expedite firing when the battery arrives.)

With communications established, the FDC then forwards any updates to target lists, schedules, control measures, etc., that have occurred since the BOC displaced.

As the battery occupies the firing position, the FDC occupies a position within 20 meters of the BOC (negating a need for a ground guide). The FDO then assumes control of the BOC and commences operations while the FDC sets up. When the FDC is fully operational, all changes to the situation are transferred to the FDC and the FDO returns to the FDC to fight the battle. The BOC then breaks down, displaces to its position 75 meters from the FDC and prepares alternate firing positions or mounts up for the next displacement.

Conclusion. As the basis for this article, we experimented with BOC operations during two major field exercises: the February 1997 Advanced Warfighting Experiment Hunter-Warrior and the spring 1997 Desert Firing Exercise (DESFIREX), both at the Marine Corps Air Ground Combat Center (MCAGCC) at Twentynine Palms, California. We found that the BOC offers flexibility, survivability and expanded firing capability for a six-gun battery. We truly did more with less.



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1 High-Back HMMWV

1 M101 Trailer with Mounted Antenna Mast*

Two SINCGARS Radios: MRC 145, VRC 92, VRC 88 or PRC 1Manpack

3 H200s or 3 ANGRA-39s

2 ANGRA-39s**

1 BCS/LCU

1 BUCS

1 PLGR

2 Aiming Circles

1 Situation Map, Mounted

2 OE-254 Antennas

1 Firing Chart and 1 GFT Set

*A OE-254 mast section for digital communications is mounted on the side of the trailer with exhaust clamps.

**Used for H200 wire link to the operating system and voice net.

Legend:

BCS = Battery Computer System

BUCS = Backup Computer System

GFT = Graphic Firing Table

HMMWV = High-Mobility Multipurpose Wheeled Vehicle

LCU = Lightweight Computer Unit

PLGR = Precision Lightweight Global Positioning System Receiver

SINCGARS = Single-Channel Ground and Airborne Radio System

Figure 2: BOC Communications Equipment