



# RS<sup>2</sup> ■ Radar Survivability and Synchronization for the 82d Airborne Division BCTP

by Warrant Officer One John A. Robinson

**T**his article discusses radar force protection in the 82d Airborne Division's and 18th Field Artillery Brigade's (Airborne) Battle Command Training Program (BCTP). Specifically, I recount our counterbattery and countermortar radar protection plan and the tactics, techniques and procedures (TTP) that resulted. Given the critical role of Firefinders on the modern battlefield and our successes in protecting them, this information is valuable to all who execute the counterfire fight as a matter of business.

The 82d Airborne Division, Fort Bragg, North Carolina, conducts one of the most vigorous BCTP train-up programs in the Army today. Its Giant Step Exercise series trains brigade-level and higher staffs and corps battle simulation (CBS) operators, as well. (In terms of the latter, training and practice on operating CBS programs to most accurately portray the execution of carefully laid out plans should not be an afterthought.)

The 18th FA Brigade, also at Fort Bragg, assumed the reinforcing mission for the 82d, as it frequently does. As part of this mission, the brigade was the force coun-

terfire headquarters. In large part, this was due to the enhanced capabilities and ranges of the brigade's M198 towed howitzers and multiple-launch rocket systems (MLRS) as compared to the 82d Division Artillery's M119 howitzers. In addition, the brigade brings the counterbattery assets of the 1st Field Artillery Detachment (Airborne), which has the modern AN/TPQ-37(V)8 Firefinder radars.

In its role as counterfire headquarters, the 18th FA Brigade controls its two Q-37 and the division's three Q-36 radars. In close consultation with their Div Arty counterparts, the brigade counterfire officers coordinate battlefield coverage of the radars, based on the threat, commander's intent and his weighted efforts.

## Protect the Force—RS<sup>2</sup>

Capitalizing on the lessons learned from ours and other BCTPs, the brigade counterfire team devised a force protection package and refined its TTP during the series of Warfighter train-ups. (For example, see "A Force Protection Pack-

age for Friendly Artillery Forward" by Lieutenant Colonel Stuart G. McLennan II, October 1995, and "Deadly Thunder: 25th Div Arty BCTP Campaign Plan" by Colonel Reginald G. Clemmons, April 1994.) As a result, our TTP now includes an action plan for radar survivability and synchronization—dubbed "RS<sup>2</sup>."

**Survivability—Dedication of Supporting Assets.** The 82d Division commander identified Firefinder radars as priority assets requiring dedicated force protection. To that end, the counterfire team identified several ways to protect those radars.

First, to accomplish 24-hour continuous radar operations, the counterfire team had to reduce the site reconnaissance and perimeter security burden on the radar crews. The division provided two infantry platoons equipped with tube-launched, optically tracked, wire-guided missiles (TOWs). The two platoons were divided into sections for a total of four sections. Three sections were task organized to protect the three Q-36 systems. The fourth section was subdivided into two teams, one for each Q-37.

Second, the division commander emphasized engineer support, where applicable. The Q-36s usually remained with their parent direct support (DS) battalion and, therefore, had access to the engineer assets dedicated to their respective maneuver brigades. When unusual engineer support was required for the radars, including the Q-37s, the FA brigade counterfire officer, who coordinated closely with the engineer liaison officer (LNO), quickly relayed the request to an engineer unit working nearby. If Firefinder required engineer support, assets were either immediately diverted to the job or the delay was short enough to minimize the danger to the radars.

The engineers' priority support of radars did not happen on the first train-up—or even the second. However, by the end of the final train-up, the counterfire and engineer officers were working together like a well oiled machine.

As we increased the survivability of the radars, we had to address logistical details. Radar resupply is ordinarily not a problem for a brigade or Div Arty S4. But our configuration created some unique requirements of the CBS system.

Because all radars were centralized under one CBS computer terminal for ease of command and control, cross-leveling supplies became a concern. We sought to duplicate the actual process, meaning whatever we accomplished via CBS had to replicate real-world logistical coordination to the observer/controller's (O/C's) satisfaction. We developed a two-tiered approach.

The first tier dealt with routine resupply of the radars and their supporting infantry. We discovered that as long as the radar and its infantry listed their higher headquarters as the nearby DS FA battalion, we could cross-level resupply—if the FA battalion was no more than five kilometers away. The controller of the radar station, who represented the officer in charge (OIC), could pass a requisition to either the FA brigade or Div Arty S4 in the workstation cell. The O/Cs allowed this procedure as it followed the radar section leader's procedures in the field.

In the second tier, we developed a simple fill-in-the-blank form to facilitate the request process. We included items not organic to a radar section, such as TOWs or 40-mm ammunition, for our infantry elements that also used the form.

**Synchronization—Coordinating the Coverage.** As the counterfire headquarters, the brigade's counterfire cell con-

Available Systems	Coverage
3 Q-36s, 2 Q-37s	No Failure, no change from original coverage plan.
2 Q-36s, 1 Q-37	Center Q-37, reorient radars for maximum overlap and reposition shooter to support the main effort, if necessary.
1 Q-36, 1 Q-37	Center Q-36 and Q-37, extend Q-37 coverage to support the main effort and centralize shooters.
1 Q-36, 2 Q-37s	Center Q-36 and offset Q-37s left and right for maximum width of coverage.
1 Radar	Weight main effort and centralize shooters.

**Firefinder Failure Mode Analysis.** Because Firefinder has periodic down times for maintenance, this chart was developed to help the counterfire officer synchronize radar coverage with the battlefield situation.

solidated responsibility for planning and implementing the radar coverage of the entire battlefield. This consolidation "briefs well," as we like to say, but can be complicated in the implementation stage, primarily in the orders process.

The Q-37s assigned to areas in the vicinities of the FA brigade and Div Arty tactical operations centers (TOCs) moved infrequently and received radar deployment order (RDO) guidance based on their positions, the battlefield coverage requirements and the need to complement other radar areas of search. Their moves were so infrequent that cueing and coverage guidance rarely changed. However, zones such as critical friendly zones (CFZs) and call-for-fire zones (CFFZs) did change somewhat as the battlefield evolved with intelligence updates of enemy capabilities and positions.

The Q-36s required more constant attention. Because their DS battalions rarely stayed in place for extended periods, they, too, displaced frequently.

The counterfire officer has two primary responsibilities for every Q-36 move. First, he must ensure the area left uncovered by the displaced radar is blanketed by other systems, possibly requiring a shift in azimuth, often by one of the Q-37s. Second, he must devise a new plan for the displaced Q-36 once it arrives at its location. This plan must include applicable zones, azimuth, left and right limits and a fresh look at survivability. The plan is not difficult to devise, providing his target production section has continuously updated his situation map with the locations of radars on the battlefield.

The final piece to help synchronize radars on the battlefield comes in the form of the failure mode analysis used for some time in the 18th FA Brigade (see the figure). Because Firefinder has periodic down time for maintenance and because the radar is a high-payoff

target for the enemy, the brigade developed this analysis for the counterfire officer to synchronize the employment or redeployment of his radars with the battlefield scenario. The chart proved to be a handy little reference during train-up exercises.

## Fighting the Battle

Here are a few tips on fighting to win with radars (with an emphasis on staying alive).

1. Consolidate all radars being controlled during the battle under one station. Make the OIC a targeting technician and the supporting cast Firefinder crewmembers (13R) with at least one exceptional NCO on each shift. It's too much to ask those controlling FA battalion workstations to control radars too.

2. Ensure radars *always* occupy a prepared defensive position. The radars must start in a prepared position as the battle begins and never move without establishing a prepared defensive position at their proposed follow-on site. We learned the hard way that, as in the real world, it's dangerous enough to move with a soft-skinned Q-36 without the additional hazard of waiting at the new site for the defensive position to be constructed.

If the DS battalion insists on moving and a prepared defensive position isn't waiting at the new site, *ask to stay put*. Order a defensive position to be prepared through the counterfire officer and move only after it has been established. Thus, while moving from position to position, you will keep survivability to a maximum and lost coverage time to a minimum.

3. Don't merge the radar and infantry elements into one unit for ease of command and control. We tried it both ways. The bottom line is there are things you'd like to do with the infantry element that are autonomous of the radar element.

To replicate the real battlefield conditions, the elements should act semiautonomously.

4. Don't bother to create a prepared defensive position for the infantry element. If you're using it correctly, the soldiers are moving too much to make good use of one.

5. Create prepared defensive position templates for Q-36 and Q-37 sections and transmit those plan names to the engineer LNO through your counterfire officer.

6. Have the workstation OIC handle logistical matters and coordination with higher headquarters, and let the NCOs and troops handle the acquisitions and operations side of the house. This is a good, realistic division of duties.

7. The OIC must develop a working relationship with those who'll process his local logistical requests (S4s). The counterfire officer must, likewise, establish a close relationship with the higher logistical element that will re-supply or repair lost or damaged Firefinder systems. For us, this element was 1st Corps Support Command (COSCOM). Don't become complacent in thinking that a request for a replacement radar from COSCOM is just another routine requisition. Replacing a radar is not routine for the COSCOM.

8. Recognize that the infantry brings with it a few unique problems. Ours were so far from their parent unit (of

course) that the parent units virtually disowned them. This was not a major problem because the radar section leader "calls the shots" on infantry operations. The only real snag was that certain logistical needs, such as infantry personnel and some ammunition, aren't readily available through FA logistical channels. FA brigade and Div Arty S1s and S4s must plan ahead to coordinate for infantry logistical requirements—especially personnel.

9. Finally, the best defense of the systems turned out to be a good offense. We aggressively attacked nearby enemy scouts with the infantry elements attached to each section. Not only did we invariably enjoy the element of surprise, but we were remarkably successful in destroying the enemy. After all, most enemy scouts snooping in the vicinity of the radars (usually in a fairly secure zone for the most part) were about the same size as the radars' attached infantry elements.

If a radar is destroyed, its infantry element can be task organized and attached to another radar section in a critical safety area. (The element always can be unattached later and attached to the reconstituted or replacement radar section.)

10. When in doubt, cell OICs should consult with their counterfire officers at higher headquarters for advice on moving both organic and attached troops.

## Encouraging Results

Initially, our RS<sup>2</sup> plan was modestly successful. But after working out the bugs through four Giant Step train-ups, we approached the Warfighter with confidence in our force protection plan.

The result? Only one radar (a Q-36) was lost but was resupplied within 12 hours. At the end of the exercise, all our Firefinders were intact and fighting. But most importantly, the battlefield commander had a 98 percent counterfire return rate.



**Warrant Officer One John A. Robinson is an FA Targeting Technician for the newly activated 234th Field Artillery Detachment (Airborne), 18th Field Artillery Brigade (Airborne) of the XVIII Airborne Corps Artillery, Fort Bragg, North Carolina. His previous assignments were as Brigade Counterfire Officer in the 18th Field Artillery Brigade and Radar Technician for the 1st Field Artillery Detachment (Airborne), also in the 18th Field Artillery Brigade. As an NCO, he served in many fire support leadership positions, including Company and Battalion Fire Support NCO and Aerial Fire Support Observer. He holds a bachelor's degree from the University of Maine and a master's degree from Troy State University of Alabama.**

## Redlegs Needed for ARNG Paladin NETT

**T**he Army National Guard (ARNG) is seeking applicants for Paladin New Equipment Training Team (NETT) members to field the Paladin weapon system to 14 FA ARNG battalions. The fielding will begin in FY 98 and extend through FY 00—perhaps beyond. Fielding team members will serve in Title 10 Active Guard Reserve (AGR) status for the duration of the fielding. Home station will be Fort Sill, Oklahoma, with 60 to 75 percent of the members' time spent TDY to support the mission.

Individuals must agree to be appointed/enlisted in the ARNG before applying. Effective date of appointment/enlistment may be after the acceptance date of the application. ARNG, US Army Reserve and Active

Component (RA) personnel may apply. Applications will be accepted until all positions are filled.

The following grades/skills are required: one lieutenant colonel 13A; one major 13A; one captain 13A; one sergeant first class 13C; five (plus or minus) sergeants first class 13B; five staff sergeants 13E; and 16 staff sergeants 13B. All personnel will serve as instructor-writers and also may be supervisors. All personnel will be required to travel.

If interested, please contact Lieutenant Colonel Jim Scott, Major Tim Keasling or Sergeant Major R.J.



Moulton of the Tour Management Office at the Army National Guard Readiness Center in Arlington, Virginia, at DSN 327-9790 or commercial (703) 607-9790. Email is [scott@arngrc-emh2.army.mil](mailto:scott@arngrc-emh2.army.mil) and the fax is 7189, which works with the DSN or commercial prefixes.