Red Rain—
Counterfire Operations in Bosnia-Herzegovina

Courtesy of Hughes Ground Systems Group

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"Red rain, red rain!" is the call alerting the Gunner tactical operations center (TOC) that a radar acquisition has occurred and the counterfire clearance-of-fires drill will begin. This process occurred many times daily from December 1995 through January 1996 for the 2d Battalion, 3d Field Artillery (2-3 FA) of the 1st Armored Division Artillery (Div Arty) deployed to Bosnia-Herzegovina. The 1st Armored Division, known as Task Force Eagle, supports NATO's Operation Joint Endeavor. Fortunately, now the number of radar acquisitions has decreased.

The battalion deployed to Bosnia-Herzegovina in December as a miniature Div Arty, called Task Force 2-3 FA. It consists of 2-3 FA, a direct support (DS) 155-mm self-propelled battalion; C Battery, 333 FA, a target acquisition battery (C/333 TAB); and 1st Platoon, A Battery, 94th FA, a multiple-launch rocket system (MLRS) platoon (1/A/94 FA). Task Force 2-3 FA provides DS fires to the 1st Brigade (the Ready First Combat Team), whose large sector includes the crucial Posavina Corridor; the battalion also supports a second brigade, the Nordic-Polish Brigade, a challenging task considering the terrain and mission.

During our pre-deployment training at the Grafenwoehr Training Area and the Combat Maneuver Training Center (CMTC), both in Germany, all simulated acquisitions were treated as hostile mortar or artillery fires. We developed procedures to quickly clear and provide counterfires.

To streamline and simplify procedures for radar acquisitions, the TOC developed a counterfire flowchart (see Figure 1 on Page 34). To illustrate this process, we discuss an actual target acquisition.

Counterfire Mission Processing

One evening, a 2-3 FA firing platoon reported hearing a detonation near its position. At the same time, the C/333 FA processing section in Gunner TOC received an artillery target intelligence coordinate report (ATI:CDR) from one of the five Firefinder radars deployed throughout the 1st Brigade's area of operations (AOR). The impact predict was in the vicinity of the firing platoon, prompting the battle captain to immediately begin the counterfire clearance-of-fires drill.

Acquisition In/Across the Zone of Separation (ZOS). The ATI:CDR is displayed on a remote screen located on the battle captain's table (Figure 2 on Page 35 shows the TOC setup). The assistant counterfire officer pages through the message and plots the acquisition on the counterfire map using color-coded dots. Each color represents a period of time the acquisition occurred. Once plotted, the battle captain determines whether the "round" was fired from within the ZOS or across it. (Either case violates the Dayton Peace Accord.) If it wasn't fired from within the ZOS or across it, the acquisition is checked to see if it affects Implementation Force (IFOR) units in the area.

Conduct Analysis and Determine Credibility. If the acquisition is across the ZOS, the battle captain, the TAB processing cell shift officer and the S2 analyze it to determine if it's "credible." This includes the determination of the suspected firing unit location and the "does it make sense" test; weapon's characteristics analysis, determination of operations in the radar's AOR that could affect operations, confirmation of firing by a maneuver or other unit and the battle captain's judgement call.

- Is the firing location a known or suspected location of belligerent faction artillery or mortars on the S2's map, and does it make sense? For example, Serbian artillery firing on Serbian forces would not make sense while Serbian artillery firing on Croatian or Muslim forces would. The acquisitions also help to confirm weapons' locations declared by the factions; however, caution is required because truck-mounted mortars are not uncommon in our sector.
- Do the weapon characteristics make sense? The Firefinder radar system identifies the type of projectile by the speed it is traveling when it breaks through the radar's search beam. Early in our deployment, we learned that if an AK-47 rifle burst was fired at the correct angle, the radar could identify it as an artillery or a mortar round.

The vast majority of our acquisitions were analyzed to be small-arms fire. This can be explained by the local custom of firing a weapon when celebrating (the most common weapon being the AK-47 rifle). During New Year's Eve 1996, we received in excess of 300 radar acquisitions (200 of them from 0001 to 0030 hours). Obviously, treating every acquisition as a potential hostile incoming round would quickly overwhelm our system.

Also the projected range the projectile traveled helps to clarify the acquisition. Several times we received "artillery' with a range-to-impact of two kilometers, which was not credible.

• Are other factors causing false acquisitions? These include flight operations being conducted in the area and vehicle traffic along roads, which can cause "side lobe" acquisitions.

When hovering, taking off or landing, helicopters can be identified as artillery or mortar rounds. This happens often when Blackhawk and Apache helicopters are taking off quickly from the 1st Brigade helipad. We found the reason for these acquisitions is the side lobe radiation.

The side lobes emit much less energy than the main beam. The returning reflected energy is small enough to confuse the system into thinking it is tracking a hostile projectile.

The radar can acquire targets on roads running along the edge of its 1600-mil coverage fan. This is especially true when there is little or no masking terrain in front of the radar to absorb the side lobes. Often, no masking terrain is available because the radars are positioned with a firing battery to provide it force protection.

The radar's 6400-mill coverage is critical to maximize force protection in a base camp configuration. But in base camp, it's difficult to position a radar to see 6400 mils. In the past during training exercises, we built a berm to elevate the radar above soldier head level. But in Bosnia-Herzegovina, we discovered, this practice only increases the number of false acquisitions because there's little or no masking terrain in front of the radar to absorb the side lobes.

• Is the acquisition confirmed by other elements (i.e., did someone hear a detonation or see an impact at the predicted impact location)? Fire support teams (FISTs) traveling with their company teams provide the battalion eyes and ears throughout the brigade sector. The TOC calls the brigade to determine whether or not a detonation occurred in its vicinity.

• The final decision on the acquisition's credibility lies with the battle captain. If he determines it's credible based on his experience and the other factors, then he contacts the brigade TOC (Ready Main) and requests verification of the target.

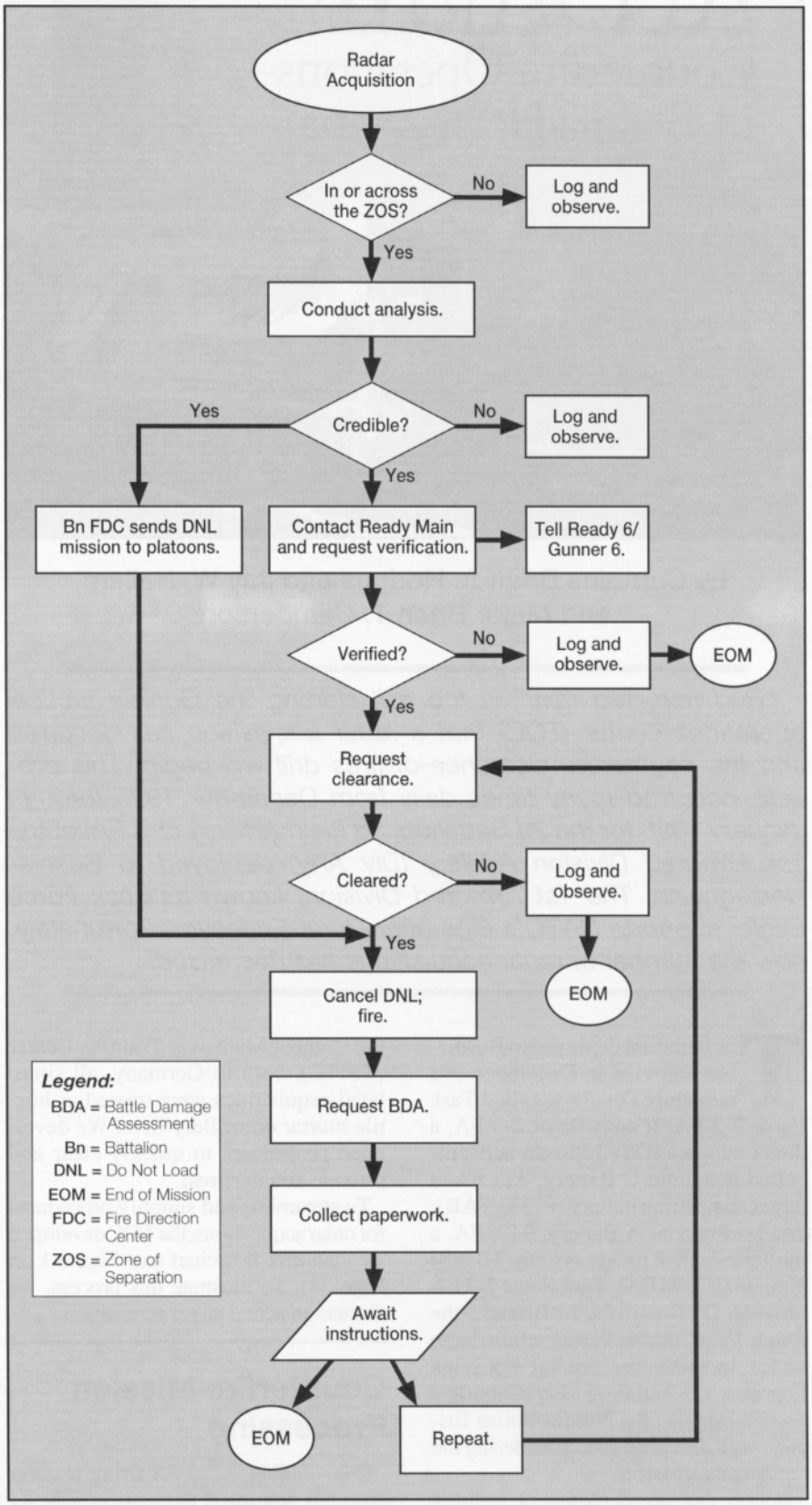

Figure 1: Counterfire Mission Processing

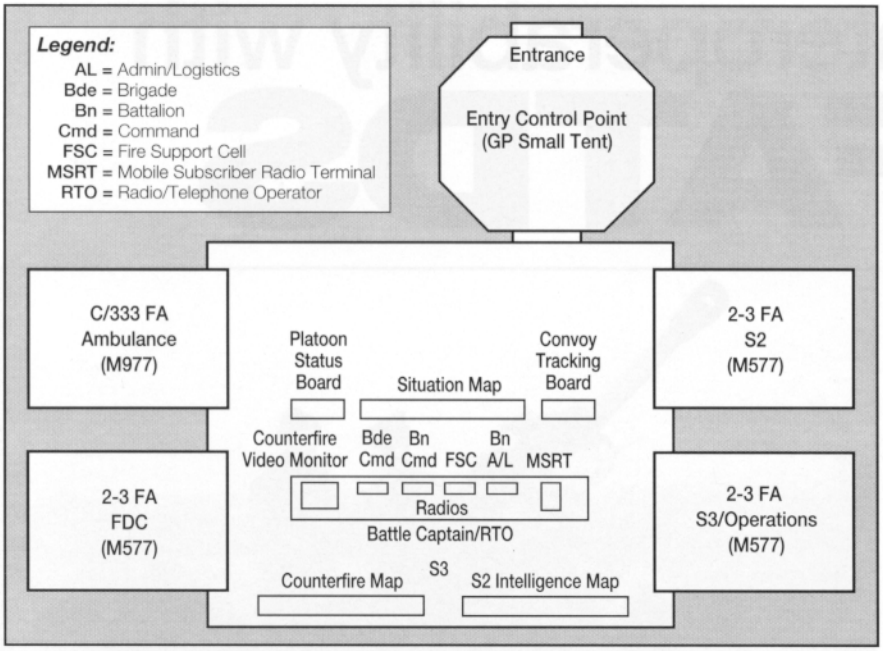

Figure 2: Task Force 2-3 FA Tactical Operation Center

If he determines the acquisition is not credible, it is logged as what it was analyzed to be (i.e.: helicopters, small arms, etc.).

Verification and Request for Clearance. In our example, the firing platoon was located on one side of the ZOS and the weapon's location was on the other. This a violation of the Dayton Peace Accord. The firing platoon heard an impact that confirmed the radar acquisition. The battle captain declared the acquisition "credible" and requested verification of the weapon's location from the brigade.

Verification occurs in different forms. It can range from an aerial observer in a OH-58D to a Bradley dismounted platoon going to the suspected firing weapon's location. The potential target normally will be confirmed visually before fires are processed. The 1st Brigade (Ready 6) and Task Force 2-3 FA (Gunner 6) commanders are notified simultaneously of the pending mission.

If the target is verified and an observer is in place, formal approval to fire is requested from the commander of NATO's Allied Rapid Reaction Corps (ARRC). During this time, the battalion fire direction center (FDC) selects a platoon to fire and sends a "do-not-load" (DNL) fire mission.

Once approved the "do-not-load" status is canceled and the mission fired. If the fire mission is not approved, "end-of-mission" (EOM) is given to the selected firing platoons and the suspected target is logged and observed.

Battle Damage Assessment (BDA). BDA is requested for each mission fired. Depending on the BDA received, approval may be requested to fire again or the mission ended.

Documentation. After each fired mission, all observer, FDC and gunline computer printouts and records are collected and consolidated into a "target file" by target number. The target file's information is based on the five principles of accurate predicted fire: accurate target location, accurate weapon location, meteorological data, accurate weapon and ammunition characteristics and correct firing data computations. The intent is to have a package available to document the procedures followed to fire each mission. The target files are kept by the battalion FDC.

Conclusion

For the example acquisition, the brigade sent an OH-58D from 1st Squadron, 1st Cavalry to observe the potential target. At the same time, the brigade fire support officer (FSO) requested an AC-130 Spectre Gunship from Aviano Air Force Base, Italy, to attack the suspected firing unit, as necessary. During the C-130's travel time to the area from Italy (approximately 30 minutes), the OH-58D scanned the area with its night-vision devices for hostile weapons. When the AC-130 arrived on station, it also scanned the area for weapons. Neither aircraft identified a potential target. They did identify a farmer driving up and down a farm road. We believe the farmer may have set off a mine in the area while clearing the field.

In this instance, the "do-not-load" fire mission was prepared by the battalion FDC but not transmitted to a platoon. Once the aircraft were released from the target area, the fire mission was purged from the data base.

All acquisitions are processed using this flowchart in a calm, deliberate manner. As illustrated in our example, the requirement for "eyes on" the target prevents unwanted civilian causalities.

The tactics, techniques and procedures (TTP) developed by the Gunner Battalion during its pre-deployment training for counterfire operations at Grafenwoehr and the CMTC have proven successful. As Operation Joint Endeavor continues, we will refine the TTP to ensure the best fire support is provided to Task Force Eagle. *Gunners.*

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