

Air Volcano

In the Light Fighter's Toughest Scenario

MAJOR CHARLES A. JARNOT

The scene was familiar to many 25th Infantry Division soldiers from the 3d Brigade Combat Team (BCT) as they prepared to defend in a scenario that is played out monthly at the Joint Readiness Training Center (JRTC), with light infantry forces pitted against an opposing force (OPFOR) combined arms mechanized assault. This time, how-

ever, the light fighters had a surprise for the OPFOR, with the division's first deployment of the Air Volcano scatterable mine system.

The 3d BCT was organized with three light infantry battalions (one notional and two actual), a light 105mm howitzer battalion, and a robust aviation task force (TF) with attack, assault, and

medium helicopters with a tank and light infantry team attached. The BCT also enjoyed the support of an air defense artillery (ADA) battery, a light engineer company, and a reinforced forward support battalion (FSB). A quick analysis of the combat systems employed reveals the relatively low firepower and mobility associated with

light forces. While light units are excellent in forested and built-up terrain, they need the effects of the combined arms team to gain the edge on the faster moving armored forces. The 3d Brigade commander tapped his aviation TF for mobile firepower from the Cobra attack helicopter and the Black Hawk assault helicopter equipped with the new mine-laying Volcano system.

The Plan

The 3d BCT was deployed in an area defense with three infantry battalions on line and the aviation TF screening forward in the security zone. The concept was to identify the enemy's main attack and concentrate artillery, close air support, and attack helicopters to defeat it. The OPFOR soldiers, of course, were well aware of their strengths and weaknesses and fully realized that speed was essential as they strove to cross 3d BCT's no penetration line and wreak havoc in the division's rear area.

Slowing or delaying the advance of armor was the mission of Air Volcano. The U.S. Army has had scatterable mines in its inventory for more than 20 years. Before Volcano, however, these mines were normally emplaced by hand or delivered by 155mm artillery shells. Each method is fairly time consuming; it may take an artillery battery 15 minutes or more of continuous firing to deliver a single minefield 400 meters square. Artillery survivability is also reduced, due to possible detection by enemy counterbattery radar. Besides the time problem, light force 105mm artillery is not capable of delivering mines, and the light engineers do not normally have the trucks and personnel needed to hand emplace large minefields.

The brigade commander counted on the speed, flexibility, and responsiveness of the division's Volcano mine system to be the decisive factor in delaying the enemy armored attack and facilitating its destruction from artillery, close air support, and attack helicopters.

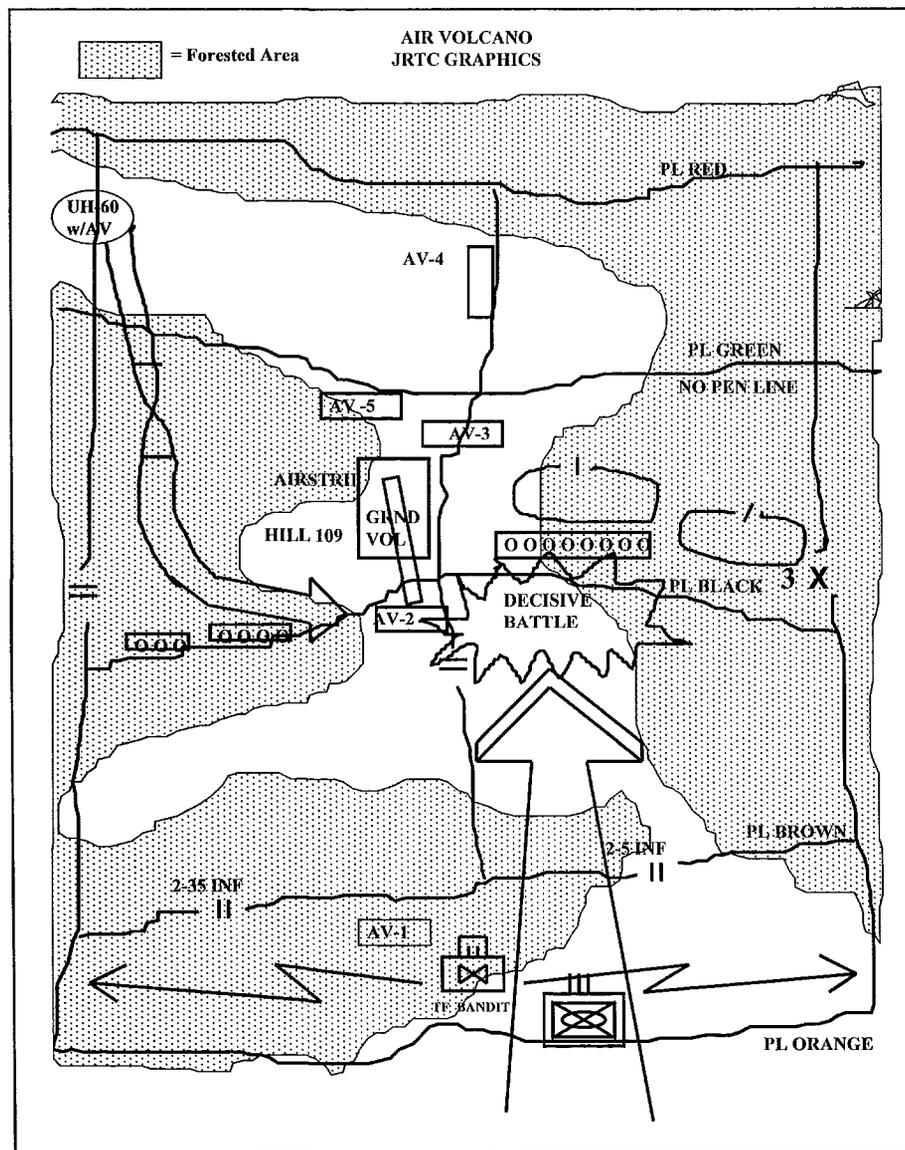
The plan was to equip a UH-60 Black Hawk helicopter with Air Volcano scatterable mines, set for four-hour duration. Several presurveyed mine insertion sites were reconnoitered along

expected avenues of approach. The aircraft was displaced to a remote area and remained on a short alert notice through the secure single-channel ground and airborne radio system (SINCGARS). Once committed, the Volcano Black Hawk would fly at nap-of-the-earth altitudes and quickly seed its long 1,100-meter double-band minefield in seconds. The intended effects would be to turn or delay the enemy armored commander and ultimately disrupt his attack as he suddenly faced a minefield in an area that his reconnaissance elements had earlier reported as clear.

The Battle

The night before the attack, enemy regimental reconnaissance elements

infiltrated the 3d BCT sector. They drove light armored cars and dismounted numerous reconnaissance teams. Their goal was to identify the 3d BCT's defenses and begin to dismantle minefields and obstacles to clear a path for the armored columns. Despite the best security efforts, it was apparent as dawn approached that the enemy reconnaissance had been successful in infiltrating the unit's defenses. The first signs of the enemy armored thrust were detected, and by first light enemy tanks were seen racing at maximum speed toward the 3d BCT's no penetration line. The Volcano-equipped UH-60 crew was alerted and committed to one of the predetermined sites. A few minutes later, the enemy commander faced a significant obstacle that caused him to



shift his drive toward a decisive battle with the center entrenched infantry battalion, instead of splitting the gap between battalions as he had intended.

The Air Volcano System

Air Volcano consists of an aircraft kit that fits only on a UH-60 Black Hawk helicopter, and 160 mine-dispenser canisters, each with six antipersonnel and antitank mines. The M-87 dispenser is identical to the ones used on the truck-mounted Ground Volcano system. An Air Volcano-equipped Black Hawk can insert an 1,100-meter long minefield made up of two bands 35 meters wide. A total of 960 mines make this medium-density minefield a challenge for any armored force.

The aircraft kit requires a crew of eight to mount the side panels and the associated control boxes. We took about six hours mounting and dismounting it, but with practice may come closer to the book estimated time of four hours. Once mounted with the side panels, which block access to the side cargo doors, the aircraft essentially becomes committed to flying the Volcano system. In emergencies, the aircraft could load personnel through the restricted access of the small crew-chief window.

The Volcano system with mines mounted weighs 6,400 pounds, which is approximately the maximum practical payload for a UH-60A helicopter. The Lima model Black Hawk payload would be slightly higher. Unfortunately, the aircraft loses about 25 percent of its range due to the extra drag caused by the externally mounted canisters. Since the external wings must be removed and there is no excess payload available for internal fuel tanks, the Volcano-equipped Black Hawk has a combat radius of about 150 kilometers. But this still greatly exceeds the range associated with artillery or missile delivered mines.

Employment Considerations

At first glance, the employment of air volcano seems straightforward, but the 3d BCT experienced a tough challenge in synchronizing this new combat multiplier. The system pairs two members

of the combat arms that have not worked together much, the combat engineers and Army aviation. Aviation is the delivery method in the case of Air Volcano just as artillery is for the family of scatterable mines (FASCAM). The engineers remain the key players in determining the location and design of a minefield that supports the commander's intent. In addition, the engineers work with the aircrews to mount the ordnance on the aircraft, much the same as they do to assist in mounting the Ground Volcano system on five-ton trucks.

The method we adopted was to form an Air Volcano team (AVT) and assign the mission to the assault helicopter

Several presurveyed mine insertion sites were reconnoitered along expected avenues of approach.

company commander, the team leader charged with executing the pre-planned Air Volcano sites. The 3d BCT engineer designed the minefields to support the commander's intent of delaying the enemy advance and channeling him toward the more open areas. We discovered that a 24-hour time line worked best in planning the execution of Air Volcano. While the actual insertion of the minefield takes only minutes, numerous time-consuming actions must be accomplished before execution.

The Aviation TF commander designates the AVT, which will normally draw upon assets of the assault helicopter company. Specific aircraft and crews are identified, trained, and removed from the mission flow of aerial resupply and air assaults to ensure their availability. An engineer element works with the team to help load the ordnance and plan the minefields themselves. This coordination is necessary to preclude a minefield that may look desirable on the ground but may not be practical for Air Volcano execution because of trees, power lines, and enemy ADA threat. Multiple crews may

be designated to achieve 24-hour capability. The aviation TF staff plans the AVT staging location and works with the brigade staff to refine Air Volcano decision points on the decision support template (DST). The goal is to emplace the minefield where it will influence the enemy avenues of approach and be timed so that it is not so early that it will be detected by enemy reconnaissance.

Air Volcano Checklist

The following checklist lays out responsibilities:

The Brigade's Aviation Liaison Officer (AVLNO). Sends planning information to the aviation TF outlining the brigade commander's intended use of Air Volcano. Provides an initial planning time line and, as a member of the Army Airspace Command and Control cell, assists in the deconfliction of airspace with artillery and air defense assets during execution.

Aviation TF Staff. Issues a warning order that activates the Air Volcano Team, designates the staging area, synchronizes the engineer and assault aircraft linkup, develops courses of action (COAs) for delivery, establishes a time line, and coordinates for airspace use with supporting fires, electronic warfare, and suppression of enemy air defense for ingress and egress routes. Coordinates with the brigade staff for decision points embedded within the brigade's DST that ensure timely execution of the minefields.

Assault Company Commander. Designates aircraft for Volcano mounting, designates aircrews, and coordinates external support to assist in mounting the Volcano kits.

Brigade Engineer Officer. Nominates Air Volcano areas and conducts detailed site surveys that support the commander's obstacle plan. Provides detailed dimensions of the Air Volcano targets with start and release points for the minefields. Coordinates with the assault helicopter commanders to provide expertise and assistance in mounting the ordnance.

Aircrews. Perform pre-combat checks, pre-flight inspections, and detailed air mission planning that analyze the effects that temperature, wind, visi-

bility, and pressure altitude will have on the mission.

The Air Volcano truly gives the light fighter a responsive and long ranging combat multiplier against enemy armored forces. It further demonstrates the versatility of Army aviation and its modern workhorse, the UH-60 Black

Hawk helicopter. Air Volcano now adds another role to the aircraft's missions of air assault, C3I (command, control, communications, and intelligence), medical evacuation, and electronic warfare, and makes available to the commander yet another combat multiplier.

Major Charles A. Jarnot, when he wrote this article, was S-3 of the 1st Battalion, 25th Aviation Regiment (Attack) at Wheeler Army Airfield in Hawaii. He is now contingency plans officer for U.S. Army Pacific. He is a 1980 graduate of Western Michigan University and holds a master's degree from Embry Riddle Aeronautical University.
