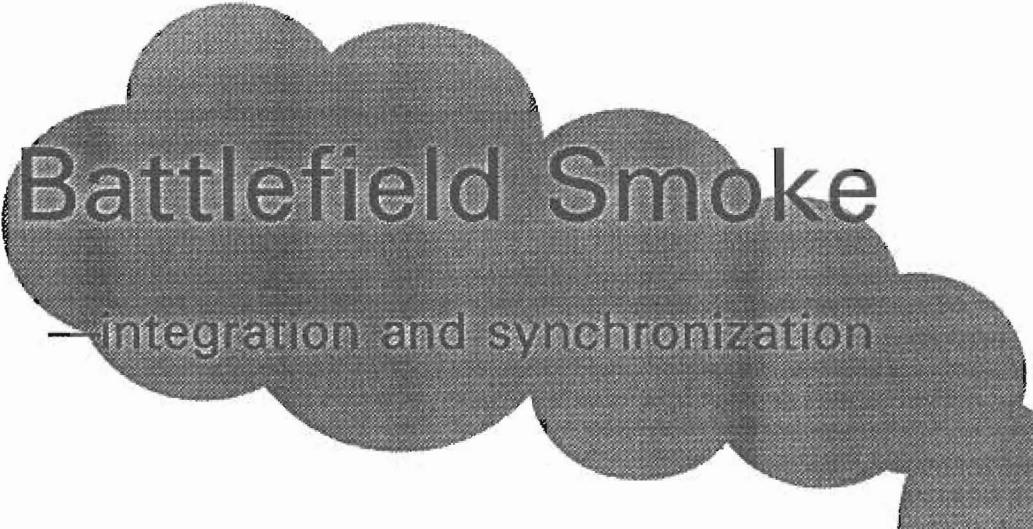




3rd Place



Battlefield Smoke

— integration and synchronization

By CPT Mark Frahm

On the modern battlefield the integration and synchronization of smoke systems is an essential combat multiplier.¹ When used properly smoke is highly effective and capable of changing the outcome of battles. Military forces have become dependent on electro-optical systems and weapons which can be defeated by smoke. This includes night-vision devices, near infrared weapons and systems, laser designated weapons, and other systems. In the future there will be more electro-optical systems in use on the battlefield and they will be more effective. However, new improvements in smoke technology will enable it to defeat the new as well as the old systems.

To effectively employ smoke, commanders must realize the limitations and capabilities of this combat multiplier. They must integrate smoke into the tactical plan, using various systems, to do the job it is designed to do. The systems that deliver smoke include, but are not limited to, artillery, mortars, smoke generators, and smoke pots.

The Arab-Israeli War in 1973 introduced the first effective use of smoke and obscurants against electro-optical systems. The Egyptians used

smoke to cover their crossing of the Suez Canal and the Israelis used smoke to protect against Arab electro-optical systems. In both instances smoke increased the force's survival on the battlefield. This caused the United States military to renew its interest in smoke and obscurants.²

The overall goal of the military during war is the destruction of the enemy's forces. This is achieved through the successful application of the tenets of Army doctrine. The military must use initiative to the maximum, exercise agility in operations, fight in depth, synchronize their efforts, and use versatility in conducting operations. During military operations the enemy will attempt to use many lethal systems against us. We must be able to destroy or degrade these systems to the maximum extent possible.

To better understand the effective integration and employment of smoke and smoke systems, we will examine two examples of smoke employment at the National Training Center at Fort Irwin, California. I will focus my discussion in the following examples on the way smoke was employed and whether it was effective.

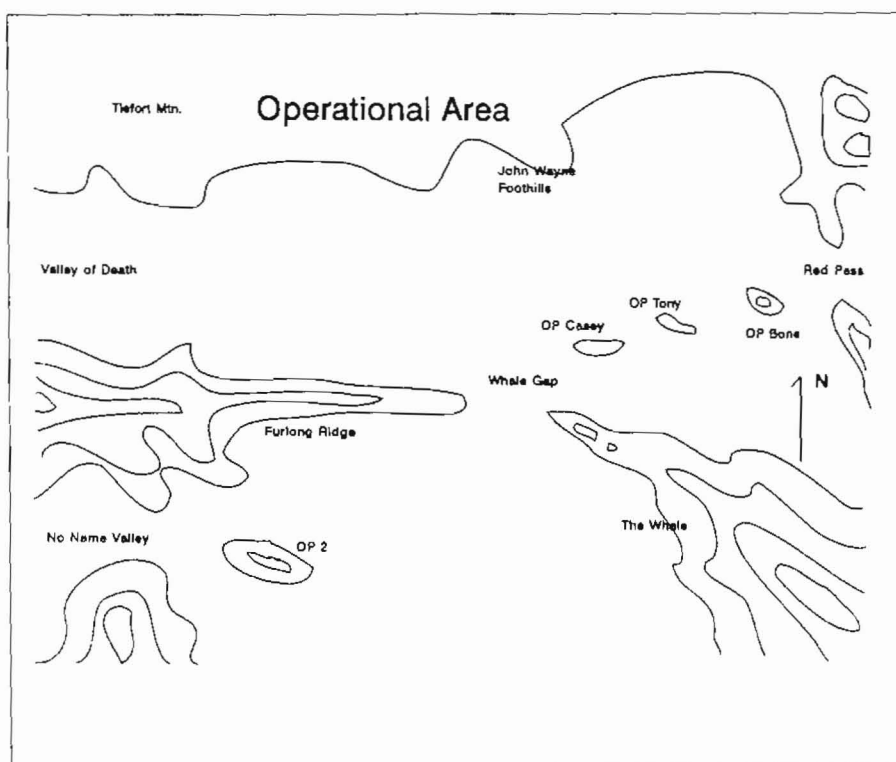
Mission 1

The first example occurred during a rotation I was on with the 1st Cavalry Division at the National Training Center. The mission of the brigade was to breach an enemy obstacle system in stride, attack the enemy defensive positions, and drive on to subsequent objectives in the enemy's rear. The brigade's task forces (TFs) attacked west to east through the Whale Gap to enemy defensive positions in Red Pass (see figure next page). An armored TF had the mission of breaching in stride with a mechanized TF exploiting the success of the breach. The two TFs would then push through the enemy defenses and on to the rear.

The enemy obstacle system was about 800 meters wide, made up of wire, mines, and dug-in positions. The enemy had two observation posts in place. The first was on OP Tony and the second, a well covered and concealed position, on OP Bone (see figure next page).

Task Organization

The brigade was organized with one heavy armored TF and one heavy mechanized TF. It consisted of a field artillery battalion in direct support,



one engineer company, an ADA battery, and a mechanized smoke platoon. The usual CS and CSS units were in support of the brigade.

Concept of the Operation

The brigade commander organized his force into two groups: the support/breach force and the assault force. The support/breach force would move under the cover of mechanized and artillery smoke with the assault force following behind it. The support/breach force would breach the enemy obstacles in stride and move on to assault the enemy defensive positions. The assault force would then exploit the support/ breach force's success and move to the enemy rear and follow-on objectives.

As the two TFs prepared in the assembly area, in the vicinity of No Name Valley and Furlong Ridge, a fire support team and the smoke platoon moved into place. The fire support team occupied a position on the Whale where they could call in fires up to Red Pass. The smoke

platoon moved through the Whale Gap to a position on the north face of the Whale. The smoke platoon was just forward of OP Casey along the north face of the Whale. The smoke platoon and the fire support team were in place around 0430.

At 0500 the TFs began to move out from the assembly area toward the Whale Gap. Artillery smoke rounds began to land on the objective and the smoke platoon began producing a smoke blanket. Initially the winds were blowing from the southwest; this was excellent for the artillery smoke, but not for the mechanized smoke.

As the TFs moved through Whale Gap the wind direction began to shift to the northwest. This shift caused the mechanized smoke to move, creating a blanket from south of OP Tony to the edge of the John Wayne Foothills. Unfortunately the artillery smoke began to dissipate and blow off the objective. The enemy elements on OP Tony had been destroyed during the counter-recon fight, but OP Bone still had a recon team on it.

Between 0545 and 0600 the initial elements of the brigade began to exit the smoke blanket and were silhouetted. The objective still had a light smoke haze on it, but OP Bone was totally clear. The enemy elements on the Bone were able to call artillery fires on the TF as it emerged from the smoke. They were also able to let the defensive positions know when and where the TFs would hit the obstacle system.

As the support/breach force hit the obstacle belt they began to take more losses, but were able to clear lanes through the obstacle. The assault and breach forces moved forward and attacked the enemy main defenses. After considerable losses on both sides, the battle ended as a draw.

Why was this mission unsuccessful?

Some leaders feel that a draw at the National Training Center is as good as a win. That is not the case in this battle. Proper smoke integration coordination, and synchronization could have made this attack an overwhelming success. During the planning process and execution phase, the brigade chemical officer and fire support officer never communicated with each other. They both created separate smoke plans which were never integrated or properly synchronized. Also, the mortars had very few smoke rounds with them and were never effectively integrated into the plan to use their smoke.

The TF chemical officer did not take part in the planning process for the use of the TFs chemical assets. Consequently, the smoke platoon leader had to do all the planning and coordination with the TF S-3.

The brigade and TF commander never really understood the need for an integrated smoke plan. This led to poor guidance and intent being given to the chemical officer, fire support officer, and smoke platoon leader. There were no control measures specified nor plans made for adjusting the mechanized or artillery smoke.

Additionally, there were never any plans for follow-on smoke missions should they become necessary. The maneuver plan never adequately addressed the fundamentals of breaching operations—suppress, obscure, secure, and reduce.

There was never any properly synchronized execution of artillery, mortar, or mechanized smoke. The smoke delivery systems were never properly controlled or integrated to achieve mission success. Units and commanders must remember that uncoordinated, misplaced, and insufficient smoke can cause the loss of friendly forces and mission failure.

Mission 2

The second example is taken from a paper written on a reserve unit rotation during the preparation for *Operation Desert Shield/Operation Desert Storm*. The mission of the brigade was to breach a complex system of enemy obstacles and attack the defensive positions. The brigade

was to attack from east to west, between Crash Hill and the Granite Mountains, toward the objective vicinity of Hill 542 (see figure below). An armored TF had the mission to conduct a deliberate breach with a mechanized TF to exploit and seize the objective. The armored TF was supported by a mechanized smoke platoon. The obstacle system was about 1,200 meters wide with mines, wire, and an antitank ditch. The obstacle system was overwatched by a dug-in infantry battalion.

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Task Organization

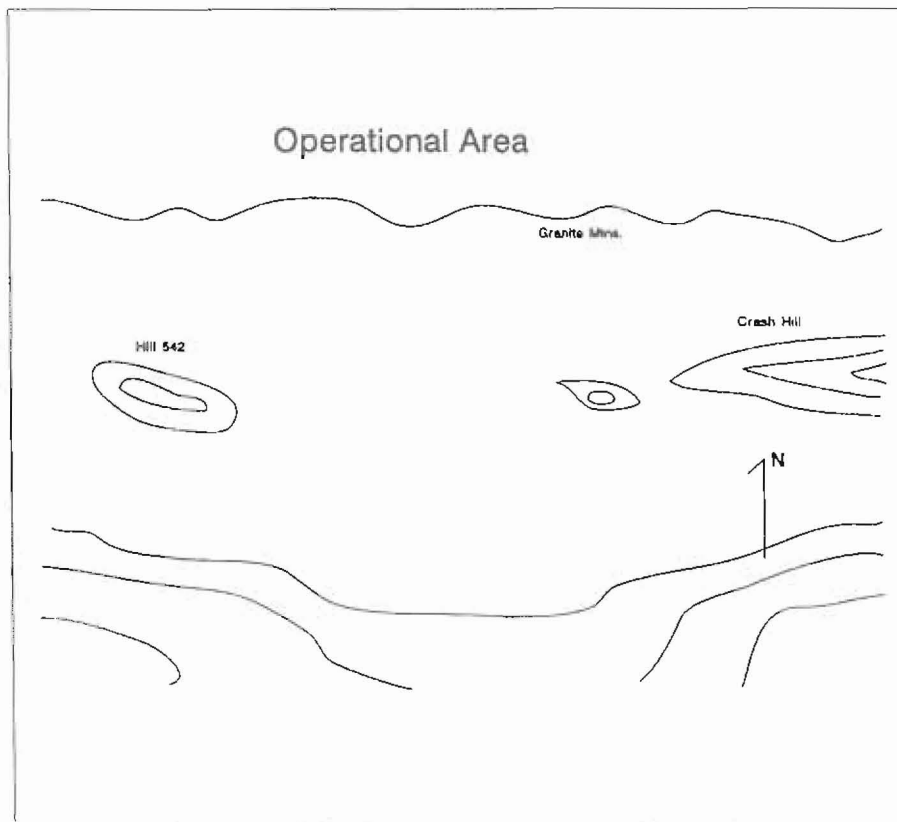
The brigade was organized with a heavy armored TF and a heavy mechanized TF. It also consisted of a field artillery battalion in direct support, two engineer companies, an ADA battery, and a mechanized smoke platoon. The usual CS and CSS units were in support of the brigade.

Concept of the Operation

The brigade commander organized the force into three groups: the support force, the breach force, and the assault force. The support force set up an attack by fire position to isolate the breach and set up and suppress enemy elements. The breach force then set up breach lanes in the obstacles, and the assault force crossed the obstacle to destroy the enemy forces.

As the support force approached the obstacle, the fire support team triggered the initial artillery smoke rounds. The support force would use the artillery smoke screen to hide from the enemy and allow it to get into position. The artillery smoke would cease once the support force was in position. Then the smoke platoon would come up and create a smoke curtain to isolate the breach area. The support and the artillery forces would then suppress the enemy with fires.

The breach force came forward and the mortar platoon began to deliver smoke on the far side of the breach. This further degraded the enemy acquisition systems and allowed the



breach force to create lanes in the obstacle belts. The assault force then moved forward, cleared the enemy defensive positions, and drove on to seize the objective.

Why was this mission successful?

This brigade's ability to integrate its smoke-producing assets in a planned and logical sequence directly contributed to its success on the battlefield. First, the brigade used the fundamentals of breach operations when creating its plan. They suppressed the enemy, obscured their force from the enemy, secured the position, and reduced. This example shows that smoke is a key ingredient in maneuver operations. The operation proved that "obscuration hampers enemy observation and target acquisition and conceals friendly activities and movements."³

The chemical officers and fire support officers were an active and integrated part of the planning process. Mechanized and indirect smoke were combined into a single plan which supported the entire operation. The smoke platoon leader was also an active and integrated part of the planning process. He assisted overall successful planning and execution by providing his knowledge of smoke, the prevailing weather conditions, and proper troop-leading procedures.

The brigade commander recognized and understood the need for smoke to support the scheme of maneuver. He gave clear and concise guidance and intent for using obscurants. He not only ensured smoke was integrated during the planning and execution phases, but during a key phase of the operation: the rehearsal.

In this example we see proper synchronization and execution of artillery, mortar, and mechanized smoke. The smoke systems were controlled and adjusted to ensure overall success of the mission.

Recommendations and Conclusion

Proper smoke coverage is essential to mission success. When units integrate and use smoke assets properly they become an effective combat multiplier. When units do not use them properly they can cause mission failure. "Smoke complicates an attack, but confusion favors the bold if confusion is equally present on both sides."⁴ Units that use smoke in their operations must remember that it is a "two-edge" sword. They must plan for how this will impact on their operations.

Commanders must give planners clear and concise guidance. They need to ensure the staff understands the intent for the mission and for the use of smoke in the operation. Then the smoke experts, chemical officers, fire support officers, and smoke platoon leaders can develop an effective plan. The experts must work together to use their assets for overall mission success. The previous examples demonstrate that all available smoke assets must be integrated on the battlefield to provide support for tactical operations.

In many instances Army commanders and units are underestimating the impact of smoke operations on the modern battlefield. Simulations have shown a reduction in the loss of combat power by 30 percent, a force survival increase of 70 percent, and a reduction of advance rates when smoke is properly employed.⁵ This could eliminate a portion of the direct

fire battle. If the Army does not improve the integration and planning of smoke and smoke systems, we will not be prepared on the next battlefield.

Notes

1. Jordan, Larry R., LTC, "Battalion Commanders View on the Use of Smoke," *Proceedings of the Smoke/Obscurants Symposium X*, Aberdeen, MD, 22-24 April 1986, pg. 507.
2. Thornton, Robert E., LTC, "Smoke Integration Concept," *Proceedings of the Smoke/Obscurants Symposium IX*, Aberdeen, MD, 23-25 April 1985, pg. 465.
3. Neuman, Robert C., MAJ, "Into the Breach-Smoke During Breaching Operations," Unpublished report, Directorate of Training Developments, U.S. Chemical Center and School, Ft. McClellan, Alabama, pg. 2.
4. McDonough, James R., *The Defense of Hill 781*, Presidio Press, 1988, pg. 138.
5. Army Science Board, *Ad Hoc Group on the Army Smoke and Obscurants Program*, Washington, D.C., December 1983, pg. 6.

At the time this article was written CPT Mark Frahm was attending the Chemical Officer Advance Course at the US Army Chemical School. After leaving here he will be assigned as a brigade chemical officer to the 25th Infantry Division, Schofield Barracks, HI. CPT Frahm graduated Clarkson University in New York in 1989 with a bachelor of science degree in chemical engineering. Some of his past assignments include the Chemical Officer Basic Course; battalion chemical officer 3rd Battalion 82nd Field Artillery, 1st Cavalry Division; and smoke platoon leader and company executive officer 68th Chemical Company, 1st Cavalry Division.