Chapter 1

Obstacles and the Combined Arms Team

Obstacles are any characteristics of the terrain that impede the mobility of a force. Some obstacles, such as mountains, rivers, railway embankments, and urban areas, exist before the onset of military operations. Military forces create other obstacles to support their operations. Commanders use these obstacles to support their scheme of maneuver. When integrated with maneuver and fires, obstacles can create a decisive battlefield effect. Obstacle plans must mature as the commanders' plans mature.

HISTORICAL USE OF OBSTACLES

History shows that obstacles rarely have a significant effect on the enemy if units do not integrate them with friendly fires. The following historical vignette from World War II is an example of obstacles that were not integrated with fires.

In February 1942, an engineer lieutenant with two noncommissioned officers (NCOs) received orders to supervise the installation of a minefield to support the defense of an American infantry battalion near the Kasserine Pass in Tunisia. The lieutenant set off at 1930 hours with a truckload of mines, to link up with one of the infantry battalion's companies. The company was to provide him with a work detail to install the mines and, more importantly, provide the location of the minefield.

At 2330 hours, he arrived at the infantry company command post (CP), but no one at the CP could tell him the whereabouts of the work detail. Nor could anyone tell him where the minefield should go or what role the minefield was to play in the defense. The company executive officer (XO) told the engineer to go down the road in the direction of the enemy. He assured the lieutenant that somewhere along the road he would meet someone who undoubtedly was waiting for him.

At 0130 hours, the lieutenant returned to the CP after searching along the road and finding no one. He insisted on speaking with the infantry company commander who was sleeping. The infantry company commander told the lieutenant that he would provide him with a forty-man detail, led by an infantry lieutenant who would show the engineer where to install the minefield.

At 0330 hours, the infantry lieutenant showed up with a twelve-man detail. Apologizing for the small number of men, the infantry lieutenant also told the engineer

that he had no idea where the mines were to go. The engineer lieutenant moved out with the detail to choose a site for the minefield himself. Unfortunately, he had never seen the site in daylight and was unable to ensure that the obstacle was covered by fire (it was not). Additionally, the lieutenant had a small, untrained work crew, without the tools to bury the mines.

When the first Germans arrived at the minefield, they found mines hastily strewn across the road, from a hill on one side to the road embankment on the other (about 100 meters). Most mines were not even partially buried. German engineers quickly removed the mines from the road, and the German force continued forward, unmolested by American fires. The minefield was virtually useless.

Despite all of the problems that the lieutenant encountered, his efforts would not have been for nothing if the minefield had been integrated with fires. Small arms and artillery might have wreaked havoc on the dismounted German engineers, while a single antitank (AT) weapon might have done the same to the German tanks halted behind the minefield.

The following historical vignette from the Korean War illustrates the possibilities when a unit integrates fires and obstacles.

In August of 1950, an American infantry regiment was defending along a stretch of the Taegu-Sangju Road known as the "Bowling Alley" in the Republic of Korea. The regiment had artillery and a few tanks in support.

The attacking North Koreans had the advantage of superior numbers of armored vehicles. However, as part of their defense, the Americans laid AT minefield close to their infantry positions so that they could cover the minefield with small-arms fire. They also preregistered artillery and mortar fires on the minefield.

When the North Koreans attacked, they would invariably halt their tanks and send dismounted infantry forward to breach the minefield. When the infantry reached the minefield, the Americans would open up with machine-gun fire and pound the enemy with artillery and mortar fire. Simultaneously, the American tanks and AT weapons would start firing at the North Korean armored vehicles.

In one night engagement, the Americans destroyed eighteen North Korean tanks, four self-propelled guns, and many trucks and personnel carriers, while taking only light casualties. Although the obstacles alone did not defeat the enemy, friendly fires combined with the effects of the obstacles inflicted heavy losses on the enemy and halted their attack.

CHARACTERISTICS OF OBSTACLES

Some obstacles, such as antitank ditches (ADs), wire, road craters (RCs), and many types of roadblocks, have virtually remained the same since World War II. They rely on a physical object to impede vehicles or dismounted soldiers. Normally, they do not damage or destroy equipment, nor do they injure or kill soldiers. One exception is a booby-trapped obstacle that, when it is moved, triggers an explosive device; therefore, these obstacles are passive in nature.

Mine warfare, however, has changed significantly. Mines, with different fuze types and explosive effects, are different from the mines of the World War II era (which required physical contact and relied on blast effect). Today's mines are triggered by pressure, seismic, magnetic, or other advanced fuzes. Mines that self-destruct (SD) at preset times give commanders influence over how long they remain an obstacle. The invention of programmable mines that can recognize and attack specific types of vehicles within an area brings another dimension to the battlefield. Mine warfare

technology continues to outpace countermine technology.

Commanders at every echelon consider obstacles and their role in multiplying the effects of combat power to integrate obstacles into all combined arms operations. Obstacles that are not properly integrated with the scheme of maneuver are a hindrance and may be detrimental to the friendly scheme of maneuver by restricting future maneuver options. They will inhibit maneuver until they are breached or bypassed and ultimately cleared. The technology used to create obstacles may continue to become more complex; however, the basic concepts that affect the integration of obstacles into the commander's plan will remain the same.

DYNAMICS OF COMBAT POWER AND OBSTACLE INTEGRATION

Commanders combine four primary elements (the dynamics of combat power as described in *FM 100-5)* to create combat power. They are—

- Maneuver.
- Firepower.
- Protection.
- Leadership.

Obstacles, when properly planned and integrated into the scheme of maneuver, contribute to combat power.

MANEUVER

Maneuver is the movement of combat forces to gain positional advantage, usually to deliver—or threaten delivery of—direct and indirect fires. The effects of maneuver also may be achieved by allowing the enemy to move into a disadvantageous position. Effective maneuver demands air and ground mobility, knowledge of the enemy and terrain, effective command and control (C2), flexible plans, sound organizations, and logistical support.

Effective obstacle integration enhances the force's ability to gain, retain, or secure the positional advantage. The commander and staff use obstacle integration to develop an obstacle plan as they develop the maneuver plan. They use obstacle control to preserve and protect friendly maneuver and shape enemy maneuver. They use obstacles to put the enemy into a positional disadvantage relative to the friendly force.

FIREPOWER

Firepower provides the destructive force to defeat the enemy's ability and will to fight. It facilitates maneuver by suppressing the enemy's fires and disrupting the movement of his forces.

Obstacle integration multiplies the effects and capabilities of firepower. Obstacle integration establishes a direct link between fires, fire-control measures, and obstacle effects. The combination of firepower and obstacles causes the enemy to conform to the friendly scheme of maneuver. Obstacles magnify the effects of firepower by—

- Increasing target acquisition time.
- Creating target-rich environments.
- Creating vulnerabilities to exploit.

PROTECTION

Protection is the conservation of the fighting potential of a force so that commanders can apply it at the decisive time and place. Protection has the following components:

- Maintaining operations security (OPSEC) and deception.
- Keeping soldiers healthy.
- Maintaining soldiers' fighting morale and safety.
- Avoiding fratricide.

Friendly forces use OPSEC to deny the enemy information about friendly force obstacles to inhibit the enemy's breaching or bypassing efforts. They use phony obstacles to deceive the enemy about locations of actual obstacles and friendly positions. They use obstacles to prevent enemy entry into friendly positions and installations to help protect soldiers from enemy assaults. Friendly forces record, report, and disseminate obstacle information and take other actions to protect soldiers from friendly obstacle impacts. These impacts range from injuries or damage to equipment, resulting from unexpected encounters with barbed wire obstacles, to fratricide caused by hitting mines installed by friendly units.

LEADERSHIP

The essential element of combat power is competent and confident leadership. Leadership provides purpose, direction, and motivation in combat. It is the leader who combines the elements of combat power and brings them to bear against the enemy. The competent leader must know and understand soldiers and the tools of war to be successful in combat.

Obstacle integration is a leader task. Obstacle integration ensures that obstacles have the right priority and that units construct them in the right place and at the right time and cover them with fire. Successful obstacle integration allows leaders to—

- Establish a clear link between force allocation, direct-and indirect-fire plans, maneuver, and the obstacle plan.
- Ensure that weapons capabilities and obstacle effects are compatible.
- Provide obstacle control.
- nsure that obstacles are designed to achieve the desired effect.

Obstacle integration cuts across all functional areas of the combined arms force. Intelligence and obstacle integration provide the commander with the means to maximize obstacle effects and affect both enemy and friendly maneuver. The maneuver commander uses obstacles integrated with fires and maneuver to create vulnerabilities and ensure the enemy's defeat. Combat service support (CSS) units anticipate and transport obstacle material to support the obstacle effort. Effective C2 provides the unity of effort that drives obstacle integration throughout all echelons of the force.

OTHER OBSTACLE CONSIDERATIONS

The overriding consideration in planning obstacles is accomplishment of the mission; however, there are two considerations that may not be apparent in terms of the current military mission. They are—

- Obstacle clearing at the cessation of hostilities.
- Obstacle effects on noncombatants and their environment.

The Army's keystone warfighting doctrine, *FM 100-5*, states that "even in war, the desired strategic goal remains directed at concluding hostilities on terms favorable to the US and its allies and returning to peacetime as quickly as possible." Once US forces have accomplished their mission, obstacles in the theater of operations (TO) must be cleared. Many of these obstacles will include mines, booby traps, and unexploded ordnance (UXO) that pose a threat to persons attempting to clear the obstacles.

OBSTACLE CLEARING

Obstacle-clearing operations continued for years in Kuwait following the end of the 1990-1991 Persian Gulf War, largely due to a lack of accurate minefield records by the defending Iraqi forces. The minefield continued to threaten civilians long after hostilities were concluded and caused numerous casualties to military and civilian personnel.

Appendix B addresses the procedures that the Army uses to report, record, and track obstacles of the friendly force and of the enemy. Accurate reporting, recording, and tracking not only will prevent fratricide but will expedite clearing operations when peace is restored.

EFFECTS ON NONCOMBATANTS

Commanders also consider the effects of obstacles on noncombatants and their environment. Obstacles frequently modify terrain through demolition, excavation, and other means. Some obstacle actions, such as destroying levees, setting fires, felling trees in forested areas, or demolishing bridges, may have immediate impacts on noncombatants and often will have long-term effects on them and their environment.

Commanders minimize the effects of obstacles on noncombatants and the environment if militarily possible. For example, if the enemy can be prevented from using a bridge by means other than demolishing it, commanders choose the less damaging course of action (COA). Commanders avoid unnecessary destruction of farmland or forests or pollution of water sources when creating obstacles. Care exercised by commanders will alleviate long-term negative effects on noncombatants and the environment.

Obstacle integration occurs because of the deliberate actions of commanders and staffs. The remainder of this manual focuses on providing the doctrine and the TTP that commanders and staffs use to ensure that obstacle integration is successful.