Above, Highway 10 crosses the Euphrates River.

THE FIGHT FOR FALLUJAH

Photo courtesy of DigitalGlobe
TF 2-2 IN FSE AAR: Indirect Fires in the Battle of Fallujah

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Subject: After-Action Review (AAR) for the Battle of Fallujah

1. Background and Mission. The Battle of Fallujah was conducted from 8 to 20 November 2004 with the last fire mission on 17 November. The battle was fought by an Army, Marine and Iraqi force of about 15,000 under the I Marine Expeditionary Force (IMEF), sweeping from north to south. The joint and combined force cordoned the city and searched door-to-door, clearing buildings and engaging insurgents in the streets—reputedly the most fierce urban fighting for Marines since the Battle of Hue City in Vietnam in 1968.

Fallujah is roughly 40 kilometers west of Baghdad on the Euphrates River. Its population before the battle was about 250,000 people; however, TF 2-2 IN encountered few civilians in its attack south.

TF 2-2 IN’s mission initially was to attack south to Phase Line (PL) Fran (Highway 10) from the northeastern edge of the city to protect our eastern flank and destroy the anti-Iraqi Forces (AIF), keeping the lines of communications open. For the attack, the city was sliced north and south into six areas of responsibility (AORs): TF 2-2 IN on the northeastern slice of the city with TF 1-3 Marines on our western flank followed (east to west) by TF 1-8 Marines, TF 2-7 Cav, TF 3-5 Marines and, finally, TF 3-1 Marines in the northeastern AOR along the Euphrates River.

During the attack, many fragmentary orders (FRAGOs) were issued, which pushed TF 2-2 IN south of PL Fran to the southern edge of the city. TF 2-2 IN’s rear tactical operations center (RTOC) and two M109A6 Paladins howitzers were at Camp Fallujah (22 kilometers southwest of Fallujah) from which the Paladins fired during the Battle of Fallujah.

The city is about five kilometers wide and five kilometers deep. It is divided east and west by Highway 10 with residential neighborhoods to the north and the industrial sector in the south. In the most southern sector of the city is a poor neighborhood that was filled with foreign fighters, dubbed the “Martyr’s District.” This was the sector in which we encountered the heaviest resistance.

2. Enemy Forces. In TF 2-2 IN’s AOR, the AIF had emplaced many obstacles and fortified buildings as strongpoints, dug trenches and established fighting positions and bunkers. Additionally, the enemy had rigged buildings and vehicles with explosives. Along the southeastern portion of the city, the AIF emplaced rockets as remotely controlled direct fire weapons against any Coalition Forces that attempted to attack from the south or east of the city. The enemy also emplaced improvised explosive devices (IEDs) and mines along key routes and at intersections to impede and funnel Coalition Forces’ movement. Vast caches of AIF munitions had been positioned throughout the sector for tactical resupply.

3. Friendly Forces. TF 2-2 IN deployed to Camp Fallujah under the operational control (OPCON) of Marine Regimental Combat Team-7 (RCT-7), 1st Marine Division. TF 2-2 IN’s task organization consisted of one mechanized infantry company, one armored company, the brigade reconnaissance troop (BRT), one Iraqi Intervention Forces (IIF) Battalion (-), one engineer platoon, two M109A6 Paladins (positioned on Camp Fallujah), four organic 120-mm mortars and two 81-mm mortars. Four Air Force joint terminal attack controllers (JTACs) were attached from the 3d BCT headquarters and sliced out to the maneuver companies with one BALO and an enlisted driver in the task force tactical command post (TAC).

4. Artillery Fires. As part of TF 2-2 IN, the M109A6 Paladins and a platoon fire direction center (FDC) were attached in direct support (DS) to the TF. For most of the fight, this was their only role. Later, after TF 2-2 IN had reached its limit of advance (LOA) at PL Fran, it also was tasked to support RCT-7.

The Paladins were in a position area (PA) in Camp Fallujah adjacent to the Marine Corps and a battery of Paladins from the 1st Cavalry Division, A/3-82 FA, that was attached to the IMEF. This facilitated the FA’s
sharing meteorological (Met) data and survey and relieved the platoon of self-security.

a. Organic to the TF. As an organic part of the TF, the howitzers provided accurate, timely fires throughout the fight, delivering 925 rounds, mostly in danger-close fires. As dedicated assets to the TF, Paladin fires were greatly expedited in a 360-degree fight with fluid targets and a rapidly advancing maneuver force. Fire missions took less than two minutes from the initial call-for-fire (CFF) to rounds down range.

b. Responsibilities of TF FSE. The TF FSE assumed responsibility for coordinating with the TF 2-2 IN S4 for Class V resupply, positioning the platoon and selecting shell-fuze combinations. The TF FSE cleared fires at the TAC along with the TF battle captain or S3. Clearance of fires was executed by demanding accurate company frontline traces and forward observer (FO) locations at regular intervals and battle tracking in detail.

c. Role of the Artillery. The artillery was used in doctrinal roles, such as screening the initial point of penetration, preparatory fires, close fire support and disruptive deep fires, as well as in non-doctrinal roles, such as clearing routes of IEDs and breaching minefields.

Using Paladins directly attached to the TF gave us a tremendous advantage in the fight. Our tactics, techniques and procedures (TTP) were effective and lethal and gave maneuver TFs greater flexibility, firepower and mobility.

The overall performance was outstanding. By using FOs and accurate intelligence-driven targeting, the artillery was a driving force in the TF’s ability to attack through a large city with minimum casualties in six days.

d. Massing Fires. The only drawback was our inability to mass fires on targets due to having only two guns. While we did have general support reinforcing (GSR) assets, they were slow, cumbersome and more difficult to coordinate with than our organic systems. Trust was also an issue as the vast majority of our fires were danger-close, and we did not know the proficiency level of the supporting guns.

While it did not impact our operations overall, at times the physical and psychological effects of massed artillery fires were the preferred effects. We could use our 120-mm mortars when we wanted to mass fires, but additional 155-mm howitzers would have been more effective.

5. Mortars. The Thunder Mortar Platoon that is organic to 2-2 IN proved to be the equal of the artillery in this fight in terms of accuracy and responsiveness and was an integral part of the indirect fires used.

When provided the five requirements for accurate predicted fires, mortars were every bit as accurate and deadly as artillery. The firepower of the 120-mm munitions allowed us to respond quickly with overwhelming firepower when needed. During the course of the battle, mortars fired 942 rounds of timely, accurate fires.

a. Mortar Challenges. Our mortar platoon received two M252 81-mm mortars before deploying to the Fallujah AOR. These were useful indirect fire weapons when close fires were required. The only drawback was they had no sights. To use them, we had to take sights from the 120-mm tubes and use the sights with the 81-mm mortars, taking two 120-mm tubes out of the fight.

The mortars’ high angle of fire was preferable for military operations in urban terrain (MOUT), but there were times when the mortars’ maximum or-
of our team chiefs, a sergeant who was an experienced FO, became the BRT FO. We did not have the manning to deploy full FISTs but compensated by deploying leaders where they were most effective; the FSE platoon was at 50 percent strength.

a. BRT FO Positioning and Reconnoitering. A/2-2 and A/2-63 were deployed in the city for most of the fight with the BRT screening to the east. Due to the BRT’s position outside the city, the BRT FO Sergeant Raymond Sapp had excellent observation from dominant terrain and was decisive in the early fight. He was in position very early before the attack. This was excellent TTP that allowed us to adjust the pre-planned smoke fires for breeching operations and destroy enemy observation posts (OPs).

As any combat training center (CTC) fight tells us, he who wins the reconnaissance fight will do well. Sergeant Sapp could destroy enemy OPs early and refine target locations as well as confirm or deny that targets we had planned were viable, such as AIF targets or buildings that did not appear to have been recently inhabited. His location with the BRT outside the city looking in enabled him to see the entire battlefield and service targets throughout.

He used the BRT’s long-range advanced scout surveillance system (LRAS³), an excellent piece of equipment that allowed him to accurately locate targets, day or night, with 10-digit grids. LRAS³ is superior to the ground/vehicular laser locator designator (G/VLLD) in both optics and target location, has night-vision optics and can be mounted on vehicles. If scout and BRT elements have this equipment, fire supporters also should have it.

b. City FOs Kept Moving. The other observers were not as fortunate during the early phases of the fight because they were down in the city and could not readily occupy OPs on dominant terrain. The platoons that included FOs could not afford the time or manpower to establish an OP while they were conducting the attack.

However, during halts or while the platoons occupied strongpoints, the observers established OPs and destroyed targets. The platoon FOs came into play mainly before the task force crossed the line of departure (LD) when they could occupy OPs on rooftops and adjust preparatory fires. Sergeant Randall Laird was very effective at adjusting rounds onto specific houses and destroying them before we crossed the LD.

c. FO Vehicles. The FOs had to ride in the back of Bradley fighting vehicles (BFVs) or M113s to move around the battlefield, degrading both their communications and ability to observe fires. The TF FSO chose not to bring our two FIST vehicles (FISTVs) to the fight for the following reasons: they are mechanically unreliable; we could not man them, given our personnel strength; and they cannot stay abreast of maneuver forces in Bradleys.

Instead we had M1114 up-armored high-mobility multipurpose wheeled vehicles (HMMWVs) with all related equipment in them although they often were left in the combat trains with the FSO’s riding in the company commander’s Bradley.

We could have used the new Bradley fire support team vehicles (BFISTVs) with the personnel to man them.

d. Attached Companies with No FISTs. One of the biggest issues for FOs and manning was attached companies from other battalions that did not bring their FIST personnel. A/2-63 AR brought only one second lieutenant for fire support—no other FISTers. This severely degraded its ability to use fires during the battle, especially when its FSO was wounded in action (WIA).

A company attached as part of a TF must bring its entire FIST, particularly in a MOUT fight. If not, the ability to support that company with fires is extremely difficult.

8. Other Equipment. Before deploying to Fallujah, we made deliberate choices about what equipment to bring and what to leave behind, and there was equipment we should have had but did not have.

a. Fire Support Gear. The FOs had single-channel ground and airborne radio systems (SINCGARS) manpacks, binos, a compass, Viper-2 night-vision goggles and precision lightweight global positioning system receivers (PLGRs). Communications were adequate. They were degraded when moving, but once OPs were established, they worked well.

The Viper-2 is an excellent tool for FOs. In conjunction with the PLGR, it reliably provided accurate target location.

The Blue Force Tracker was a good tool to use at the TF FSE. It provided a good picture of forces on the battlefield, but could not give friendly unit locations consistently enough to clear fires. It is useful for targeting when imagery is loaded.

The flash, immediate, priority and routing (FIPR) messaging function of Blue Force Tracker was a good tool we did not use fully. It could have been very effective in communicating and passing fire support products from TOC to TAC and vise-versa.

b. Joint Surveillance and Target Attack Radar System (JSTARS). We used JSTARS as a targeting tool. The assistant FSO and S2 collected JSTARS data at the TOC and passed it to us as targeting data to be serviced with indirect fires.

c. Advanced FA Tactical Data System (AFATDS). We did not have AFATDS
in the FSE, although 2/A/1-6 FA’s platoon operations center (POC) did. The battalion-level FSE has only one AFATDS, and it was at FOB Normandy to support counterstrike operations.

We needed two AFATDS at the task force level. Twice we had to execute split operations and leave the AFATDS behind (Najaf, April 2004).

Fires were controlled at the TAC. With the vehicle available, we could not have used AFATDS, although with a BFIST, we would have been able to.

We did not use the lightweight forward entry device (LFED); it was too time-consuming to input targets of opportunity, and there was no AFATDS at the battalion FSE.

9. Munitions. The munitions we brought to this fight were 155-mm high-explosive (HE) M107 (short-range) and M795 (long-range) rounds, illumination and white phosphorous (WP, M110 and M825), with point-detonating (PD), delay, time and variable-time (VT) fuzes. For the 120-mm mortars, we had HE, illumination and WP with PD, delay and proximity fuzes. We also carried 81-mm HE with the same fuzes.

a. Range of Munitions. The munitions at our disposal gave us excellent flexibility. The 81-mm munitions allowed us to deliver extremely close fires to friendly forces while we used larger caliber munitions to engage and destroy heavily fortified houses and bunkers. The standard table of organization and equipment (TOE) for a mechanized battalion does not include 81-mm mortars, something the Army should examine and correct.

b. White Phosphorous. WP proved to be an effective and versatile munition. We used it for screening missions at two breaches and, later in the fight, as a potent psychological weapon against the insurgents in trench lines and spider holes when we could not get effects on them with HE. We fired “shake and bake” missions at the insurgents, using WP to flush them out and HE to take them out.

c. Hexachloroethane Zinc (HC) Smoke and Precision-Guided Munitions. We could have used these munitions. We used improved WP for screening missions when HC smoke would have been more effective and saved our WP for lethal missions.

We had several important targets, often reinforced houses that FOs had eyes on, that would have been more effectively engaged with a precision-guided munition, such as Copperhead with its shaped charge or the developmental Excalibur Unitary round that is concrete piercing (to be fielded in 2006). Barring the use of such precision-guided munitions, concrete-piercing (CP) fuzes would have been more effective than delay and PD fuzes were, but the latter were satisfactory.

d. Ammo Resupply. The biggest challenge we had was ammunition resupply. The amount of munitions expended was surprising, and we had to struggle to keep our cannons and tubes supplied. The targeting officer at the TOC and the S4 did a fantastic job of obtaining ammunition, but in the future, it would be easier to over-anticipate ammunition needs before the fight and stockpile it.

The Marines gave us what they had, and the location of the Paladin platoon on FOB Fallujah helped greatly. The fact that the Paladin platoon brought a palletized loading system (PLS) was a huge plus. It allowed the S4 to coordinate for ammunition and the Paladin platoon to pick it up.

In the final analysis, it all worked, but I recommend we not put ourselves in that position again. We never ran out of ammunition, but we came close several times.

10. CAS. We used CAS well in this fight, dropping more than 15 guided-bomb unit-12s (GBU-12s), which are laser-guided 500-pound bombs; four 2,000-pound joint direct attack munition (JDAMs) penetrators; and one Maverick. We also had more than six hours of AC-130 Specter gunship support.

a. CAS Effectiveness. We had problems with the GBU-12s. At least five duds were dropped, all from F/A-18s. The AC-130 was an awesome weapon, operating at night and prepping our deep battlespace with outstanding accuracy. The four JDAM penetrators were dropped on a bunker complex with excellent results. The bunker and more than 20 AIF were destroyed.

Initially, we had difficulty working with Marine air. However, once our JTACs learned the system, it worked rather well. An air liaison officer (ALO) from the Marines at the TOC would have helped in the early stages and facilitated the use of more Marine CAS.

b. Pulling Timely Air Assets. While the Air Force JTACs were useful on the ground, they had limited success pulling timely air assets. A TOC ALO is a must for two reasons: first, a Marine ALO with direct access to higher will pull air assets more quickly and be able to disseminate their fires faster than an Air Force JTAC on the ground. Second, you need an officer who understands the Marine system attached to the FSE for better coordination.

Air assets are requested through a different system than indirect lethal fires. An ALO with two radios tied in to higher and the battalion is a must and will cut air request times in half. Although air was planned, it often was difficult for the battalion JTAC to talk to the RCT-7 ALO and get air when needed.

c. CAS and Other Indirect Fires. A big lesson is that CAS was not a substitute for responsive artillery and mortars. CAS was most effective in the deep fight, particularly when used on intelligence-driven targets.

11. Unmanned Aerial Vehicles
(UAVs) and Tactical UAVs (TUAVs). UAVs were an integral part of this fight and should be included in any future planning. The UAVs in this fight—the Predator, Shadow, Hunter and Pioneer—were very effective for precision, intelligence-driven targeting. Their targets often were built-up strongpoints being fortified or occupied before our attack.

a. Targets in the Deep Fight. The UAVs gave us a great advantage in the deep fight, usually beyond the coordinated fire line (CFL). We engaged what the AIF considered safe areas well in advance of the forward line of troops (FLOT), destroying the AIF’s command, control and communications (C3) nodes and denying them any respite from the fight, a tremendous psychological advantage.

Except for the Raven TUAV, the UAVs provided 10-digit grids and accurate target descriptions, allowing us to choose the most appropriate weapon for the targets. The Raven also did not have enough loiter time to obtain the information we needed.

b. Targets of Opportunity. We attempted to initiate and adjust fire missions against targets of opportunity using UAVs as observation platforms and were unable to do so in a timely and accurate fashion. It was difficult to coordinate with the platform operators who were great distances away (some stateside) to give us the viewing angles needed for adjustments.

The TF TOC used UAVs for targeting and as observers for fire missions several times. But unless the UAVs were looking straight down, the grid received usually was off by several hundred meters. When adjusting from the Predator, the delay on the feed is about 20 to 30 seconds. The Shadow or Scan Eagle is a better platform for battlefield indirect fires as they are more responsive and more easily adjusted.

We displayed the UAV feed in the TOC on a projector so the FSE could coordinate and call for fires. The easiest way to call for fires is to create a fictitious observer and adjust through cardinal directions (the operators flying the UAVs are not trained in calling for fires). We need to develop TTP for adjusting fires with UAVs.

The way to use a UAV is for the TF FSE to have this asset under its control. It was an almost insurmountable task to coordinate for and adjust fires accurately using UAVs because the controlling element had to describe the rounds’ impact.

12. Personnel Manning. Big problems in this fight were lack of fire support personnel with concurrent operations in two separate geographical locations. The TF 2-2 IN FSE had 14 of 30 authorized personnel before the tactical road march to Fallujah.

a. Fire Support Personnel. TF 2-2 IN forward deployed with a 10-man FSE, including FIST personnel, leaving four personnel behind as part of the S5 and operations sections.

Even when the TF fire support NCO was able to join the FSE, the shortage of personnel stretched the FSE. At the TOC, the targeting officer and RTO literally slept next to the radios. Until the TFFSNO arrived, the TF FSO was forced to maintain 24-hour operations for three days.

The company FSO for A/2-63 AR was WIA on Day +3, leaving that company with no organic FSE to facilitate fires, effectively taking them out of the indirect fire fight.

b. Manning Effects on the Fight. The shortage of fire support personnel put unnecessary strain on maneuver elements and damaged our ability to detect, engage and destroy targets. In future combat deployments, it is imperative for the Army to ensure fire support personnel are at or near 100 percent strength to avoid the problems we faced in this fight.

13. Training. The training that platoon, company and battalion personnel received at the various CTCs paid off richly. Our fire supporters could handle any mission presented to them.

TF 2-2 IN FSE conducted danger-close training several times in Iraq that paid huge dividends in the Battle of Fallujah.

a. Confidence in Fires for the Force. FOs were confident in their ability to call for and adjust close fires and often did so. Training with our organic mortar platoon facilitated our fire missions in Fallujah. We often worked with them, knew their capabilities and were supremely confident in them.

Although we had not worked with 2/A/1-6 FA before deploying to Fallujah, the battery’s performance early in the fight quickly won our confidence.

b. Importance of Danger-Close Live-Fire Training. In our time in the Army, we have had limited live-fire training for danger-close missions until last summer in Iraq. The typical training of initiating and adjusting rounds on targets at great distances is vastly different from training for danger-close fires. The results of our missions clearly indicate this type of training must be implemented across the board for fire support personnel.

c. Training for MOUT. We also learned that corrections in MOUT are much smaller, often smaller than the doctrinal minimum of add/drop 50 and left/right 30 that we are trained on. We often found it necessary to make adjustments smaller than these values to get rounds on target, particularly when engaging fighting positions, fortified houses, trench lines and spider holes. The artillery and mortars showed outstanding flexibility in applying these corrections.

Soldiers attached to A/2-2 IN clear a house in Fallujah during Operation Al Fajr on 13 November 2004.
The bottom line is that before engaging in offensive operations in a MOUT environment, it is imperative that all fire support personnel are highly trained on call-for-fire and adjustment procedures and their equipment. The MOUT environment is extremely fast-moving, and there is no time to waste. Fires must be initiated, adjusted and brought to the FFE phase rapidly.

Paladins and mortars are an integral part of this process, and must move as rapidly as the observers. Combined live-fire training for observers, the FDC and the guns is the answer.

14. Conclusion. The contributions of indirect fires were a decisive part of the Battle of Fallujah and contributed tremendously to the outcome of the fight. They allowed the maneuver forces to rapidly move through the city with minimum casualties and demonstrated what a joint and combined arms team can do.

The effects were physically and psychologically devastating. Not only did indirect fires destroy AIF personnel, but they also destroyed their will to stand and fight. Indirect fires also positively influenced our forces by demonstrating to commanders on the ground that overwhelming firepower was at their disposal.

The Paladin platoon greatly increased the TF’s firepower, timeliness and flexibility, allowing us to move at an unprecedented pace through a fortified city.

We learned to use indirect fires early and often in large volumes. During the course of the battle, more than 2,000 artillery and mortar rounds were fired and more than 10 tons of precision Air Force munitions were dropped.

However, as successful as we were, had the battle lasted longer it would have been difficult to sustain fire support operations. We must learn from this fight to prepare for the future.

At the end of the fight we thought back on some of the things we were the proudest of. What jumped to the forefront was infantry and tank platoon sergeants, platoon leaders and company commanders telling us that the artillery and mortars were awesome. At the end of the day, that is what it is all about: our maneuver brethren recognizing why we are called the “King of Battle.”

Redleg CPT Jason Bender Selected Aviation Center Officer Instructor of FY04

Captain Jason M. Bender, Senior Fire Support Instructor, was named the Officer Instructor of FY04 at the Aviation Warfighting Center, Fort Rucker, Alabama. He received a plaque for his performance from the Commanding General of the Aviation Center and Fort Rucker, Brigadier General E.J. Sinclair, in ceremonies at the Museum of Army Aviation in December 2004. He also received a statue from the Army Aviation Association of America (AAAA).

Captain Bender is the Chief of the Fires Branch at the Aviation Center and has been a Fire Support Instructor at the Center since December 2002. In his previous assignment, he was a Task Force Fire Support Officer assigned to the 1st Battalion, 10th Field Artillery, part of the 3d Infantry Division (Mechanized) at Fort Benning, Georgia. During his career, he has deployed to Operation Allied Force as part of Task Force Hawk in Albania and Operation Desert Spring in Kuwait.

Captain James T. (Tom) Cobb has been assigned to 1st Battalion, 6th Field Artillery (1-6 FA), 1st Infantry Division, and served as the Fire Support Officer (FSO) for Task Force 2d Battalion, 2d Infantry, (TF 2-2 IN) in Operation Iraqi Freedom (OIF) II, including during the Battle of Fallujah. He also deployed with Kosovo Force (KFOR) 4B.

First Lieutenant Christopher A. LaCour, assigned to 1-6 FA, has been the Targeting Officer for TF 2-2 IN in OIF II, including during the Battle of Fallujah. Also in OIF II, he was a Platoon Leader for 2/C/1-6 FA and, previously, a Fire Direction Officer in the same battery.

Sergeant First Class William H. Hight, also assigned to 1-6 FA, has been TF 2-2 IN’s Fire Support NCO since September 2003, deploying in OIF II and fighting in the Battle of Fallujah. He also deployed to Bosnia as part of the Implementation Force (IFOR) and to Kosovo as part of KFOR 4B.