

C2 Case Study: The FSCL in Desert Storm

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Overview

Research in the general literature on the Persian Gulf War reveals problems coordinating the placement of the Fire Support Coordination Line (FSCL). The FSCL is a line established as the boundary between the area in which all air support missions have to be coordinated with an on-scene controller, and the area in which airstrike missions can be conducted without such coordination. During Desert Storm – particularly during the last 14 hours of the ground campaign – coordination broke down between ground commanders and those responsible for tasking the Coalition’s airstrike assets, resulting in missed opportunities to destroy more Iraqi military equipment.

Several narrative accounts of the ground campaign were used to establish a timeline of events related to changes in the placement of the FSCL and destruction of Iraqi equipment. Data was collected on Close Air Support (CAS) and Interdiction sorties, and on Iraqi military equipment reported destroyed by daily preliminary Bomb Damage Assessment (BDA) reports. Instances of accidental attacks by Coalition aircraft against Coalition ground vehicles (known as “fratricide”) were also included in the timeline to document the possible basis for Central Command (CENTCOM) commander General Norman Schwarzkopf’s decision to move the FSCL into the Persian Gulf on the fourth day.

The study explores these factors and suggests how many air interdiction “attrition hours” were lost due to command and control problems with the FSCL.

Background

The ground campaign of the Persian Gulf War began on February 24, 1991. Already largely de-fanged, demoralized, and decapitated by 38 days of air bombardment, most Iraqi units broke after putting up only token resistance. By the second day, convoys were observed streaming north out of Kuwait City. General Schwarzkopf realized his forces were advancing on an army intent on escape. His apparent priority became cutting off that escape and destroying as much of Iraq’s warmaking capability as possible.

The Coalition’s heavy armored divisions, starting west of the main Iraqi defenses, first drove north, then turned east, aligning their combat strength as a “fist” to strike the Republican Guard divisions in southern Iraq. On February 26 and 27, they attacked east, destroying everything in their path with overwhelming firepower. Ahead of their advance, Coalition aircraft destroyed tanks, personnel carriers, and guns not directly in contact with ground forces.

A cease-fire declared by President Bush took effect at 8 a.m. on February 28. Iraqi forces had been driven out of Kuwait and stripped of thousands of pieces of military equipment. In the view of most of the world, the Coalition had won a great victory and humiliated the

megalomaniacal Saddam Hussein. Still, more equipment could have been destroyed had placement of the FSCL been better managed.

The FSCL

Inside the FSCL, delivery of fire support from artillery (tube and MLRS), rotary-wing aircraft (Apache and Cobra attack helicopters), and fixed-wing aircraft performing in a CAS role had to be coordinated to maximize its effectiveness and minimize the risk of hitting friendly forces by mistake. Beyond the FSCL, CENTAF (the air operations staff headed by General Charles Horner, who reported directly to General Schwarzkopf) was free to locate and destroy targets without coordinating these sorties with the ground commanders.

During Desert Storm, most artillery and rotary-wing aircraft were under the direct control of corps commanders and restricted to operating inside the FSCL. Fixed-wing aircraft were “pushed” to them by CENTAF and directed to targets by more than 2,000 air liaison officers and forward air controllers (FACs). In fact, so many aircraft were available (more than 1,200 CAS sorties a day) that ground commanders often would pass aircraft on to other areas or to interdiction targets beyond the FSCL (Clancy, 347; Jamieson, 157).

FSCL and Military Doctrine

According to military doctrine, location of the FSCL was to be determined by ground commanders, an authority usually exercised at the corps level. The lines were to follow well-defined terrain features: the Euphrates River, for example, made an excellent boundary line. As units advanced and ground commanders moved the FSCL, they were to coordinate its changes with CENTAF. Aircrews (including those already airborne) needed adequate notice of these changes. CENTCOM set as policy that *location of a new line had to be communicated at least three hours before a change took effect*. In at least one instance (on G-Day, involving XVIII Airborne Corps, described in the timeline below) this advance notification policy broke down (Gordon, 411; and Jamieson, 180, emphasis added).

The larger C2 problem regarding the FSCL, from the perspective of CENTAF, was that Army commanders tended to want to move the line out past where they could effectively impact the battlespace in a timely manner. In several instances this resulted in missed opportunities, lost “attrition hours” during which Air Force and Navy aircraft could have been destroying Iraqi equipment that instead was off-limits to them because of the FSCL. Colonel Michael Reavy, who worked in the CENTAF operations center, recalled:

[A]t one point...the safest place for an Iraqi to be was just behind the FSCL because we couldn't hit it...By the time that we realized how bad off we were regarding the Army working on the FSCL stuff, the war was over (Gordon, 512, note 13 for Chapter 19).

On the other hand, each of the ground corps commanders would have preferred to have had his own air force. Each ground commander's concern was his sector, the “lane” of ground directly in front of him. He naturally wanted to command and control the

application of fire as deeply as possible into that lane. General Fred Franks, the VII Corps commander, expressed his frustration as follows:

[C]oordination with CENTAF of the deep attack *beyond* CAS did continue to bother me. Now that we were in our attack maneuver to destroy the RGFC, I wanted to use air to help me isolate the battlefield, to build a wall of fire that would keep the RGFC from organizing a withdrawal. As we turned east, I wanted a death zone in front of the VII Corps that extended from the forward tanks in our sector all the way to the Persian Gulf, and I wanted to synchronize the sorties with our own attacks. But CENTAF still controlled the sorties beyond the FSCL, and as a consequence, I had very little influence on the choice of targets in my sector, and the same was true for Gary Luck [XVIII Airborne Corps commander] and John Yeosock [Army commander]...I had given the divisions a front about thirty to forty kilometers wide. They didn't have much room to maneuver laterally, but lots of depth...That is why the problems of coordinating our deep attacks with CENTAF were so frustrating. Given control of all the air attacks in our sector from [Phase Line] Smash to the Gulf, we could have created a 150-kilometer-deep "death zone" (Clancy, 340-341, 344).

General Schwarzkopf had his own views on how air power should be used to prepare the battlefield, and decided to keep control of all fixed-wing assets (with the exception of the short-range USMC AV-8 Harrier "Jump Jets") out of the hands of the ground commanders, delegating responsibility for all air tasking to CENTAF.

General Horner recounted...a meeting held shortly before opening of the ground campaign, when the MARCENT [Marine Corps] commander and the ARCENT [Army] corps commanders had contended they needed air forces under their own control. The CENTAF commander recalled that General Schwarzkopf had "summarized [the issue] by saying, 'Guys, it's *all mine*, and I will put it where it needs to be put'" (Jamieson, 159).

The Army, General Horner observed after the war, was "designed around the corps." Army doctrine told the corps commander he was "supposed to be the guy to run this war." This conflicted with the philosophy of the Air Force, which is characterized as follows in Jamieson's manuscript:

Reavy...went on to contrast this philosophy with that of the Air Force: "We don't care if you have one corps or five corps. You are all going to get a little piece of the [air] action. If there are five, you are going to get a little less than if there were two corps." Tensions between CENTAF planners and the corps commanders inevitably followed from these contrasting points of view (Jamieson, 157-158).

Fratricide

Coalition commanders were greatly concerned about minimizing fratricide, or “friendly fire,” incidents.* They were well aware that the very factors that gave them operational and tactical advantage over the Iraqis (open terrain, long-range weapons and targeting systems, and a doctrine that stressed speed and establishment of a fluid, non-linear battlefield) also increased the likelihood of fratricide (Atkinson, 315-316).

As it turned out, fratricide did account for a much higher percentage of Coalition casualties in the Gulf War than it had for armies in most previous wars. A 1982 study of four modern wars for the U.S. Army’s Combat Studies Institute estimated that friendly fire accounted for less than 2 percent of all battlefield casualties. In the Gulf War, 24 percent (35 of 146) of the Americans killed in action and 15 percent (72 of 467) of those wounded fell victim to fratricide (Atkinson, 315; Gordon, 457).

Even though M1A1 tank actions during the 100 hours of the ground campaign were responsible for more than 60 percent of friendly-fire casualties, “aircraft got most of the attention in friendly-fire incidents because the majority of the air-to-ground errors occurred before the ground war began, when not much news was available and friendly fire quickly became a hot item” (Dunnigan, 379).

These air-to-ground incidents surely entered into the thinking of those responsible for the location of the FSCL as they prepared for the ground war. Once the land attack was underway, destruction of the Iraqi C2 system, the ineffectiveness of Iraqi weapons, and the unwillingness of many Iraqi soldiers to fight for Saddam’s cause kept the overall Coalition death toll low, thereby inflating the percentage of casualties due to fratricide. Coalition commanders naturally became even more concerned about preventing such casualties as the ground offensive developed into a rout.

** “Spurred by the Marine deaths...during the battle of Khafji, the Joint Chiefs ordered a review of on-the-shelf technologies in hopes of finding a device that would enable gunners and pilots to distinguish friend from foe. On February 6 the Defense Advanced Research Projects Agency (DARPA) began to evaluate sixty proposals sorted into five categories: thermal imagery, infrared imagery, lasers, special radio frequencies, and visual devices. At the Yuma Proving Ground in Arizona on February 15, only six days before the scheduled ground offensive, DARPA started testing the most promising techniques. The crash effort was belated and futile, attempting in a week’s time to solve a mystery that had plagued warriors for thousands of years....DARPA scientists...cobbled together a battery-powered beacon that could be seen through night-vision goggles five miles away....A few ‘DARPA lights’ arrived in the theater on February 26, by which time the friendly fire toll had tripled (Atkinson, 314-317).”*

Unexpected Pace

The speed with which the ground forces advanced was such that they outpaced the decision-cycle established to coordinate movement of the FSCL. Ground forces moved the FSCL “so rapidly that nearly every target had to be ‘deconflicted’ with ARCENT or MARCENT units” (Jamieson, 180).

Until G-Day, General Schwarzkopf and his CENTCOM subordinates continued to base their plans on “worst-case” assumptions. Enormous quantities of ammunition and supplies (enough for 60 days of combat) had been pre-positioned near the jumping-off points (Jamieson, 161).

On the morning of G-Day, Brigadier General Steven Arnold, ARCENT commander General John Yeosock’s chief operations deputy, “explained to the battle staff that the Army campaign to destroy the Republican Guard would take seven to ten days” (Gordon, 376).

During the first three days of the ground campaign, the FSCL frequently limited what “organic Army aviation” (attack helicopters) could accomplish. Ground commanders found that in-close support by helicopters did not work due to sand clutter, so they started sending the Apaches (and CAS aircraft “pushed” their way) deeper in front, 20 to 40 km deep. They wanted to send helicopters even deeper, but were restricted by the FSCL. On at least one occasion, a ground commander (General Franks) concluded that CENTAF could not process a request to move the FSCL quickly enough for him to take advantage of a tactical opportunity to make a deep attack with AH-64s:

The FSCL got in the way of our deep attack – it had been drawn just east of the aviation attack objective of Minden. My air coordination cell informed me F-111s would be attacking the escaping Iraqi forces to the east of the FSCL and along Highway 8. It would have resulted in more damage to Iraqi forces, and fewer Iraqi forces would ultimately have escaped, if we could have adjusted the FSCL, changed that air tasking to move the F-111s to another target, and attacked along Highway 8 with our own Apaches. *But making those changes was not possible in the time we had....* Our Apaches had much more staying power in an engagement area, especially at night, than the fixed-wing air, which would drop a single bomb per pass over the target, then have to leave the target area. My main CP had strongly recommended that we send the second strike east, but when I asked them to try to get it coordinated with Third Army and CENTAF by moving the FSCL east and letting us have Highway 8, the answer was that *we couldn’t get it done in time. Since none of the decision makers in Riyadh was available at that hour, to request it, and then get it approved and disseminated, would have taken all night and we’d be out of the night attack window* (Gen. Franks, in Clancy, 381-383, emphasis added).

Shrinking Battlespace

As the VII and XVIII corps completed the left hook and pushed east, the area containing operational Iraqi targets shrank dramatically: “Our problem was not how much air we had,” recalled Colonel Reavy. “Our problem started to become how much airspace we had and wedging what we had into that piece of airspace” (Gordon, 411).

Timeline of events

This timeline places instances of fratricide, requests for movement of the FSCL, data on sorties and preliminary BDA estimates, and other related events, in context.

29 January

Fratricide

During the battle for Khafji, a Marine Corps LAV is destroyed by a Maverick missile from an A-10, killing seven and wounding two (Gordon, 274).

17 February

Fratricide

A Bradley and an M-113, elements of a task force pushing a few miles into Iraq to establish a screen line in front of the U.S. 1st Infantry Division, are destroyed by Hellfire missiles from an Apache, killing two and wounding six (Atkinson, 318-319).

23 February

Fratricide

Task Force Grizzly from the 1st Marine Division infiltrates past Iraqi fortifications to “grease the way for the main division attack.” A Humvee carrying a radar to pinpoint Iraqi artillery is destroyed by a HARM fired by “a Marine plane,” killing one Marine (Gordon, 346-348).

24 February (Sunday, G-Day)

Ground Attack Situation

The 1st and 2nd Marine Corps Divisions and Arab Coalition partners attack into Kuwait, making good progress as resistance by front line Iraqi troops crumbles. Units of the XVIII Airborne Corps surge north through the Iraqi western desert against light resistance. The 101st Airborne Division establishes a logistics base at Objective Cobra and airlifts a detachment to block Highway 8 just south of the Euphrates River. General Schwarzkopf orders the VII Corps to move up its attack by 15 hours so as not to lose the opportunity to flank the Iraqi forces in the area.

FSCL

CENTAF operations officers do not learn about a new FSCL for the XVIII Airborne Corps until *three hours after it has been in effect* (Jamieson, 180).

Late in the afternoon, General Glosson emphasized to the aircrews that the unexpectedly rapid progress of the Coalition troops “meant increased potential for dropping on friendlies, if all air players don’t keep up with FSCL changes or fail to get target and friendly location updates from controlling agencies” (Jamieson, 171-172).

Sorties / Bomb Damage Assessment (BDA) Estimates

Coalition aircrews fly more than 1,200 combat sorties over the theater. Preliminary BDA tallies an estimated 180 tanks, 100 APCs, 200 artillery pieces or MRLs, and 200 trucks and other vehicles (Jamieson, 171).

Interdiction Sorties (beyond FSCL):	917
Close Air Support (CAS) Sorties:	521
(GWAPS 1993, 241)	

25 February (Monday, G + 1)

Ground Attack Situation

Coalition forces advance on all fronts. Units of the XVIII Airborne Corps push northeast toward the Euphrates River valley. The 2nd Armored Cavalry Regiment makes contact with the Tawakalna Republican Guard (RG) Mechanized Division, one of three RG divisions the VII Corps is tasked to destroy.

Electronic images from a JSTARS aircraft reveal an exodus of hundreds of vehicles north from Kuwait City. Sorties are directed to the “Highway of Death” throughout the night and into the following morning.

Sorties / BDA Estimates

Coalition aircrews fly more combat sorties than on the first day. An estimated 75 tanks, 60 APCs, 245 vehicles, 130 artillery pieces or MRLs, 50 structures, and some SAM and AAA guns are destroyed (Jamieson, 173).

Interdiction Sorties:	813
CAS Sorties:	577
(GWAPS 1993, 241)	

26 February (Tuesday, G + 2)

Fratricide

Two British Warriors (APCs) are destroyed by A-10 Maverick missiles, killing nine and wounding eleven (Atkinson, 464).

Ground Attack Situation

The Marine and Arab Coalition forces approach Kuwait City. The XVIII Airborne Corps' heavy units reach the Euphrates River valley, blocking Highway 8, and turn east toward Basra. The VII Corps attacks through and destroys the Tawakalna Division. The Medina RG Armored Division takes up the blocking assignment and the Hammurabi RG Armored Division packs up to leave.

FSCL

By late evening, the 101st Airborne Division has moved in front of the XVIII Airborne Corps' FSCL. CENTAF has to alert F-15Es working the kill box over the area to the location of the [division] (Jamieson, 180-181).

Perhaps the sharpest FSCL controversy develops during the night and into the next morning, while CENTAF aircraft are making their second night of attacks on Iraqi convoys retreating out of Kuwait to the north.* Having advanced rapidly, the XVIII Airborne Corps proposes moving its FSCL far north of the Euphrates River [so that its helicopters can attack the causeway and the roads north of Basra (Gordon, 412)]. The CENTAF night-operations officer objects, pointing out that such a move would end F-15E and F-16L attacks against enemy vehicles fleeing Kuwait. After the corps liaison officer indicates that corps Apaches will begin operating against these convoys the next morning, they agree to wait to move the FSCL until 0700, when Army helicopters can assume the efforts of the CENTAF fighters (Jamieson, 181).

Sorties / BDA Estimates

There are approximately 1,550 sorties over the Kuwaiti Theater of Operations, the largest number of any day during the war. An estimated 75 tanks, 65 APCs, 150 vehicles, 100 artillery pieces and MRLs, 60 structures, and 8 SAM or AAA sites are destroyed (Jamieson, 179-180).

Interdiction Sorties: 1,012
CAS Sorties: 581
(GWAPS 1993, 241)

** U.S. air attacks against fleeing Iraqi forces...resulted in nearly 600 destroyed and abandoned vehicles along the northbound approaches to the [Hawr al Hammar] causeway, effectively closing it to vehicles fleeing the theater ("Operation Desert Storm: A Snapshot of the Battlefield," 1993).*

27 February (Wednesday, G + 3)

Ground Attack Situation

Kuwait City is liberated. The XVIII Corps moves east, stopping just west of the Hammar Causeway to regroup for a coordinated attack planned for the next morning. The VII Corps continues to attack through remnants of the Tawakalna Division and into the Medina Division, stopping just west of Highway 8. At 2100L, Schwarzkopf delivers his “mother of all briefings,” essentially declaring victory and inaccurately asserting that “the gates are closed” for escape of Iraqi military equipment from the Kuwaiti Theater of Operations.

FSCL

During early morning hours, F-111s take out a Euphrates River crossing, backing up Iraqi vehicles for miles, well behind the XVIII Corps’ FSCL. Shortly after 0500, the Army unit’s battlefield coordination element (BCE) offers CENTAF permission to attack this traffic jam, but a CENTAF duty officer declines, suggesting instead that the corps move its FSCL back five to six miles. The BCE rejects this idea, indicating that ARCENT assets will deal with the convoy (Jamieson, 181).

The arrangement [to move the XVIII Airborne Corps’ FSCL north of the Euphrates River] breaks down when no Apaches arrive on the scene. At the CENTAF 0900 briefing, General Horner directs the Army BCE to get the FSCL moved back to the line of the Euphrates and Hawr al Hammar, the large lake south of the river. General Schwarzkopf agrees, and the boundary is moved (Jamieson, 181).

By mid-afternoon, only a handful of Apache attacks had been carried out, and moving the line had prevented the Air Force from launching strikes against the Iraqi forces that were escaping across the Euphrates. *Iraqi forces had been traveling down a major road north of the river that connected An Nasiriyah and Basra for eight hours virtually unmolested.* General Horner decided that the line should be shifted south to the Euphrates (Gordon, 412, emphasis added)

To avoid tangling with Air Force and Navy aircraft, Army pilots are prohibited from flying beyond the 20 Eastling, parallel to and roughly fifteen miles west of the Basrah-Kuwait City highway. [Gen.] Franks urges ARCENT headquarters to have CENTCOM adjust this limit of advance in order to unleash the Apache fleet on the fleeing enemy. But ARCENT, CENTCOM, and the Air Force staff officers in Riyadh fail to agree on the necessary modifications, and the issue is never taken to Schwarzkopf. As the hours tick by, more and more Iraqi forces reach the safety of the Basra pocket (Atkinson, 462).

Probably the number one mistake of the ground campaign occurred [when] Seventh Corps pushed the FSCL 50 miles beyond their position covering the escape of the Hammurabi and Medina Republican Guard divisions headed north.

Both General Horner and General Glosson attempted to get General Schwarzkopf to move the FSCL south toward the Kuwaiti border, but General...Franks talked him out of it. As a result, the two divisions escaped (Lewis, 14-15).

As [Seventh Corps] moved forward, Franks and [Colonel Stan] Cherrie were worried that the divisions were about to break through the Iraqi defenders and rush the coast, where the Air Force was attacking the Iraqis freely. To avoid a possible friendly fire incident, Cherrie directed Major David Rhodes, an Air Force officer assigned to VII Corps, to inform the air-war commanders in Riyadh that the boundary was to be shifted east of the coastal highway leading north from Kuwait City [Highway 8]. That meant that allied warplanes could not bomb Iraqi troops as they streamed up the coastal road. After directing that the line be shifted, the VII Corps staff discovered that Franks' attack had bogged down again. Rhodes called Horner's operations center and said it might be necessary to shift the line back to the west so that the Air Force could resume its strikes. But Rhodes was told that CENTCOM had decided to leave the boundary where it was. No official reasons were given. But one of the center's officers suggested to Rhodes that the politics of creating another "turkey shoot" in addition to the "Highway of Death" were getting too hot to handle (Gordon, 412).

By now [1100L on 27 Feb], the FSCL was being more tightly controlled by CENTCOM, and was out of our hands. Previously, after quick coordination with Third Army when all decision-makers had been available, we had been able to move it at our order; now CENTCOM said they would control it for the rest of the war. (Clancy, 417)

I was informed after the war that the CINC had moved the FSCL out into the Persian Gulf in our sector, and north of Basra and the Euphrates in the XVIII Corps sector. That action took CENTAF out of the isolation attack, since inside the FSCL, CENTAF needed eyes on target to prevent fratricide. However, there were no eyes to be had on the causeways over the Euphrates in the XVIII Corps sector. Brigadier General Steve Arnold and Air Force Brigadier General Buster Glosson had agreed to hit those bridges every four hours to keep them down. When he learned of the FSCL shift, Buster asked the CINC about it, and Schwarzkopf told him he would get back to him. He never did. The result was that theater air was no longer used north of Basra or on the Euphrates bridges. Theater air could not have been used in our sector anyway, as we were out of deep room. But it was in the XVIII Corps and Third Army sector that there was a problem of escaping RGFC units. (General Franks in Clancy, note, 417)

At 7 PM CENTCOM clarified the boundaries. The FSCL would run along the Kuwait coastline, up the Euphrates River, and then out to the west (Gordon, 412).

General Schwarzkopf personally moves Fire Support Coordination Line into the Gulf and north of the Euphrates (Clancy, 341, note).

Sorties/BDA Estimates

Sorties decreased only slightly from the record-setting number flown on 26 February. Working with helicopter- or ground-based FACs, CENTAF aircrews flew more than 500 CAS sorties. They destroyed an estimated 170 tanks, 60 APCs, 155 trucks and other vehicles, 100 artillery pieces and MRLs, and 2 SAM or AAA sites (Jamieson, 182).

Interdiction Sorties: 867
CAS Sorties: 402
(GWAPS 1993, 241)

28 February (Thursday, G + 4)

Ground Attack Situation

Plans for a coordinated attack to envelop and destroy the remaining Iraqi military equipment in the area south of the Euphrates are short-circuited by the cease-fire. Commanders first are told the shooting must stop by 0500. Then, at 0300 they are told the cease-fire is not until 0800 and that they should do all they can until then to inflict damage on the enemy. The units cannot gear up again to attack so soon after being told to gear down, and artillery and helicopter attacks are the most any can muster.

Sorties/BDA Estimates

Coalition strike aircraft continued to score heavily against tanks, APCs, artillery, and vehicles until the end of the war (Jamieson, 183-184).

Interdiction Sorties: 93
CAS Sorties: 26
(GWAPS 1993, 241)

Missed Opportunities

Only after the war, when spy plane and spy satellite imagery were fully analyzed, would it become clear that *half the Republican Guard equipment had not been destroyed and that the vast majority of the fleeing Iraqi army was still south of Basra in the path of the Army's planned advance when the war ended...*[S]ubstantial numbers of Iraqis with their equipment were continuing to escape. With the FSCLs moved north to the Euphrates and east to the coast, and with *the Army still forty miles from the outskirts of Basra*, Iraqi tanks were rolling over pontoon bridges and the causeway (Gordon, 424-425, emphasis added).

On March 1, after the cease-fire, the American surveillance photos showed that 842 Iraqi tanks, a quarter of Iraq's tanks in southern Iraq and Kuwait, and 1,412 Iraqi armored personnel carriers and other armored vehicles, half of all its APCs in the theater, had escaped....According to the CIA analysis of the photos, at least 365 of the tanks that escaped were T-72s that belonged to Saddam Hussein's Republican Guard. By the CIA's count, the RG divisions had begun the war with 786 tanks. That meant *half of the RG armor got away*. Since the Tawakalna and Medina divisions sought to hold off the Americans, Pentagon intelligence analysts later concluded that *the Hammurabi Division escaped largely intact*. According to intelligence estimates by the DIA, 70 percent of its troops managed to make their way north of the marshes. Other RG and Army units escaped a company or a battalion at a time (Gordon, 429, emphasis added).

After the war, it became clear that the positioning of the [FSCL] boundary was one of the most important miscalculations in the final hours of the war. Moving the line east and north was correct if the Army followed through on the ground. But [when] the Army attack was delayed, the line should have been moved back so that the allied warplanes could concentrate their firepower on the fleeing forces. CENTCOM did neither. As a result much of the Iraqi army was shielded from the sort of punishing bombing raids it endured during Khafji and its retreat from Kuwait City. A doctrinal technicality and inertia took precedence over common sense. The Army and the Air Force had trumpeted their ability to coordinate the "air-land" battle. *In the final fourteen chaotic hours of the war, however, the FSCL had been pushed back and forth as the two services sought maximum flexibility for their own forces*. After the war, Schwarzkopf said he knew little about the debate. It was another example of how joint warfare fell short and how the services' ability to work together suffered from Schwarzkopf's inattention (Gordon, 412-413, emphasis added).

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C2 Analysis of FSCL Illustrations

Analysis of VII Corps efforts to move FSCL east of Highway 8

Environment (February 26, 2000)

VII Corps commander Franks, whose Apache helicopters are to attack Objective Minden at 2100, wanted to move the FSCL farther east to give helicopters the opportunity to attack Iraqi equipment fleeing up Highway 8.

Monitor, Understanding, Alternatives & Assessment, Decision, and Directive

VII Corps staff points out it will take at least several hours, and possibly all night, to get a decision from CENTAF, and that by then, they will likely be “out of the night attack window.”

Environment (February 27, 0200)

A second Apache attack is launched at Minden, but helicopters do not attempt to interdict vehicles on Highway 8. Failure to move the FSCL means VII Corps helicopters are prevented from maximizing destruction of Iraqi equipment during the four hour duration of the two attacks.

Analysis of XVIII Airborne Corps movement of FSCL north of Euphrates River

Environment (February 26 late evening)

XVIII Airborne Corps requests that CENTAF authorize movement of FSCL north of the Euphrates River to free corps helicopters to attack Iraqi armored vehicles crossing and moving north of the river. CENTAF night operations officer gets corps liaison officer to agree to delay movement of the line until the next morning.

Monitor (February 27 early morning)

FSCL is moved at 0700, but XVIII Airborne Corps sends no attack helicopters to the expanded area before the 0900 CENTAF briefing.

Understanding, Alternatives & Assessment, and Decision (0900-1000)

CENTAF commander Horner learns of situation and decides the FSCL must be moved back.

Directive (approx. 1100)

Horner, with Schwarzkopf's agreement, directs that the FSCL be moved back to the line of the Euphrates and the Hawr al Hammar. The directive goes out and units are notified of the change, which takes effect sometime after 1400.

Environment (approx. 1500)

FSCL is returned to Euphrates River, about eight hours after it was moved – eight hours during which time Iraqi military convoys moved virtually unmolested along a road north of the river connecting Basra with An Nasiriyah.

Analysis of ARCENT (Army, Central Command) efforts to move FSCL south of Basra

Environment (February 27, afternoon)

With XVIII Corps having stopped west of the Hammar Causeway to refuel and regroup for a coordinated attack east planned for the next morning, Iraqi equipment continues to escape toward Basra and over the Hawr al Hammar to roads north of the Euphrates River. Third Army suggests moving the FSCL so that CENTAF can resume attacking the columns of fleeing vehicles.

Monitor, Understanding, Alternatives & Assessment, Decision, and Directive

CENTCOM, which assumed control of the FSCL late on February 26, declines to move the line again. At least one observer speculates that concern over the politics of creating another “Highway of Death” is at the heart of the decision.

Environment

The FSCL stays fixed on a line of the Euphrates River to the Persian Gulf. CENTAF forfeits fourteen hours during which Air Force and Navy aircraft could have destroyed more Iraqi equipment in the area between the causeway, Basra, and Highway 8 south to Safwan.