

GAO

Report to the Chairman, Subcommittee
on Oversight and Investigations,
Committee on Energy and Commerce,
House of Representatives

June 1993

OPERATION DESERT STORM

Apache Helicopter Fratricide Incident



Office of Special Investigations

B-252513

June 30, 1993

The Honorable John D. Dingell
Chairman, Subcommittee on Oversight
and Investigations
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

In response to your request and subsequent discussions with your office, this report presents the results of our investigation of a February 17, 1991, "friendly fire"¹ incident during the Persian Gulf War. That incident involved three U.S. Army AH-64 Apache helicopters and two U.S. ground vehicles from the 1st Infantry Division (Mechanized). Two American servicemen were killed and six were wounded by missiles fired by one of the Apache gunners.

As you requested, we are providing a detailed discussion of the incident, including related events and factors that contributed to it (see app. I-II); an analysis of the U.S. Army's investigation of the incident (see app. III); and a response to specific concerns raised in your request letter (see app. IV). Those concerns included (1) whether equipment failure caused the incident, (2) whether the U.S. Army attempted to mislead your Subcommittee about the Apaches' performance in the incident, and (3) whether the 1st Infantry Division improperly released information to the press that identified the Apache gunner. We have also included, as you requested, an integrated transcript of the three Apache gun tapes (see app. V).

Background

On August 2, 1990, Iraqi military forces invaded the emirate of Kuwait. Almost immediately after the invasion, the United States and allied countries deployed troops to the Middle East, implementing Operation Desert Shield. On November 29, 1990, the United Nations Security Council passed Resolution Number 678, condemning the Iraqi invasion of Kuwait and authorizing its member states "to use all necessary means to . . . restore international peace and security in the area" and ensure Iraq's withdrawal from Kuwait. The United Nations' deadline expired at midnight, Eastern Standard Time, January 15, 1991. When Iraqi forces refused to withdraw, U.S. and allied forces implemented Operation Desert

¹"Friendly fire" is the intentional, but mistaken, use of weapons and munitions against friendly personnel or facilities believed to be enemy. Fratricide is friendly fire that results in the death or injury of friendly personnel.

Storm on January 17, 1991, beginning with an extensive air campaign. The ground war began on February 25, 1991, and ended 3 days later when allied commanders declared a cease-fire.

On February 17, 1991, at approximately 1:00 a.m. (Persian Gulf Time),² a U.S. Bradley Fighting Vehicle (Bradley) and an M113 Armored Personnel Carrier (M113) were destroyed by two Hellfire missiles fired from an Apache helicopter. Two U.S. soldiers were killed and six others were wounded in the incident.

The incident occurred after U.S. ground forces, which were deployed along an east-west line 5 kilometers north of the Saudi-Iraqi border, reported several enemy sightings north of their positions. In response, ground commanders called for Apache reconnaissance of the area. A team of three Apaches subsequently found two vehicles, which appeared to be those described by ground forces. These vehicles were, in fact, a Bradley and an M113.

Results in Brief

Our investigation revealed human error to be the primary cause of the February 17, 1991, fratricide incident. The Apache Battalion Commander, who led the team of three Apaches, read the wrong grid coordinate on his navigation system while flying as copilot/gunner. As a result, he misidentified the target vehicles' location as being north of the line of friendly vehicles and in the exact location of one of the reported enemy sightings. Relying on this erroneous information, the Ground Commander authorized the Apaches to engage the targets. The Apache Battalion Commander fired his helicopter's 30-millimeter gun at the targets, but the gun emitted only a few rounds before jamming. He then fired two Hellfire missiles³ at the targets, killing two soldiers, wounding six others, and destroying a U.S. Bradley Fighting Vehicle and an M113 Armored Personnel Carrier.

Following an Army investigation of the incident, the Apache Battalion Commander was relieved of command for failing to exercise command and control over the Apache team by becoming personally engaged in the fighting. We agree with the investigation's overall findings. However, the

²Unless otherwise indicated, the dates and times in this report concerning events in the war theater are based on Persian Gulf Time.

³The laser-guided Hellfire missile is the main armament on the Apache helicopter, designed for the destruction of armor and other hard-point targets.

investigation did not address the issue of the Commander's fatigue, which may have been a factor in the incident.

We found no evidence that equipment failure caused the incident. Some observers have speculated that the failure of the Apache Battalion Commander's 30-millimeter gun significantly contributed to the accident, since it would have caused less damage and therefore could have provided an opportunity for the friendly vehicles to identify themselves. However, the two accompanying Apaches each had a working 30-millimeter gun that could have been used for firing warning shots, had this been the intent of the Apache Battalion Commander. Instead, he fired his Hellfire missiles soon after his gun jammed, opting not to use either of the accompanying Apaches' operational guns. We also found no evidence to indicate that the Apaches' navigation systems were functioning improperly. In addition, although the Apaches' radar warning receivers were known to misidentify signals from U.S. ground radars as enemy signals and may have contributed to the confusion on the night of the incident, this was not a cause of the incident.

We also found no evidence to support allegations that the U.S. Army attempted to mislead the Subcommittee on the Apaches' performance in this incident.

In addition, we reviewed the Army Inspector General's (IG) inquiry into allegations that Army officials had improperly released information to the press by identifying the Apache Battalion Commander as the person who fired the Hellfire missiles. We concur with the IG's finding that there was no evidence of intentional misconduct by Army public affairs officers. We also agree with the IG's conclusion that Army Regulation 360-5, subparagraph 3-21d—which sets forth the duties and responsibilities of public affairs officers—is overbroad and should be clarified. Although the Army IG has determined this was not the Army's intent, on its face, this regulation requires the approval of an office within the Department of the Army's Headquarters before the public release of information on "findings of misconduct by individuals, resulting from official investigations" of accidental casualties involving military personnel. No such prior approval was given before the 1st Infantry Division's Public Affairs Office discussed the incident with a reporter and then distributed a press release. That press release identified the Apache Battalion Commander by position and unit, although not by name, as the individual directly involved in the fratricide. The press release also stated that following an Army

investigation into the incident, the Battalion Commander had been relieved of command for violating command guidance.

Methodology

This report is based on information we obtained from interviews of current and former U.S. Army personnel, including the six crewmen who flew the three Apache helicopters; ground commanders involved in the incident; helicopter maintenance personnel; and public affairs officers. We studied division, brigade, and battalion logs, maintenance records, and other military documents, as well as the three video tapes, or "gun tapes," filmed by the Apache helicopters during the incident. We integrated transcriptions of the three gun tapes, found in appendix V, with the help of two of the Apache pilots involved in the fratricide incident and representatives of the U.S. Army. We also reviewed regulations governing Army investigations, officer evaluations, and public information; policies regarding command and control; and procedures for Apache tactical operations and helicopter gunnery.

We requested representatives of the U.S. Army to review the report's contents to ensure their technical accuracy. However, as agreed with your office, we did not obtain official agency comments on a draft of the report. We are sending copies of this report to other interested congressional committees; the Secretary of Defense; the Secretary of the Army; and the Commander, 1st Infantry Division. We will also send copies to others upon request. If you have questions concerning this report, please call me, or Assistant Director Barbara Cart of my staff, at (202) 512-6722. Major contributors to this report are listed in appendix VI.

Sincerely yours,



Richard C. Stiener
Director

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Abbreviations

1-1 AVN	1st Battalion, 1st Aviation Regiment, 4th Aviation Brigade, 1st Infantry Division (Mechanized), VII Corps
1-4 CAV	1st Squadron, 4th Cavalry, 4th Aviation Brigade, 1st Infantry Division (Mechanized), VII Corps
1-41	1st Battalion, 41st Infantry, 2nd Armored Division (Forward), VII Corps
1st CAV	1st Cavalry Division, VII Corps
2nd ACR	2nd Armored Cavalry Regiment, VII Corps
3-66	3rd Battalion, 66th Regiment, 2nd Armored Division (Forward), VII Corps
AN/APR-39A(V)1	Radar Warning Receiver (Voice Warning)
APC	Armored Personnel Carrier
AR	Army Regulation
FLIR	Forward Looking Infra-Red (thermal optical equipment)
IG	Inspector General
M113	M113 Armored Personnel Carrier
NAV	navigation system
TAA	Tactical Assembly Area
TAC SOP	Tactical Standard Operating Procedures
TADS	Target Acquisition and Designation System
TF	Task Force
TOC	Tactical Operations Center
TOW	Tube-launched, Optically-tracked, Wire-guided missile
kilometer	approximately 3,280.8 feet or 0.62 mile
meter	approximately 3.28 feet
millimeter	approximately 0.039 inch

Background of the February 17, 1991, Incident

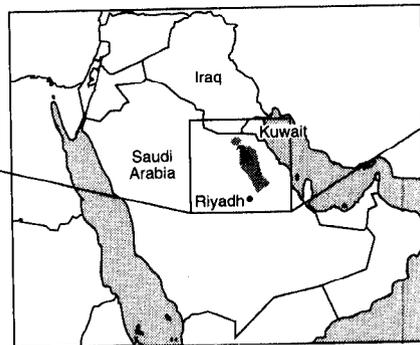
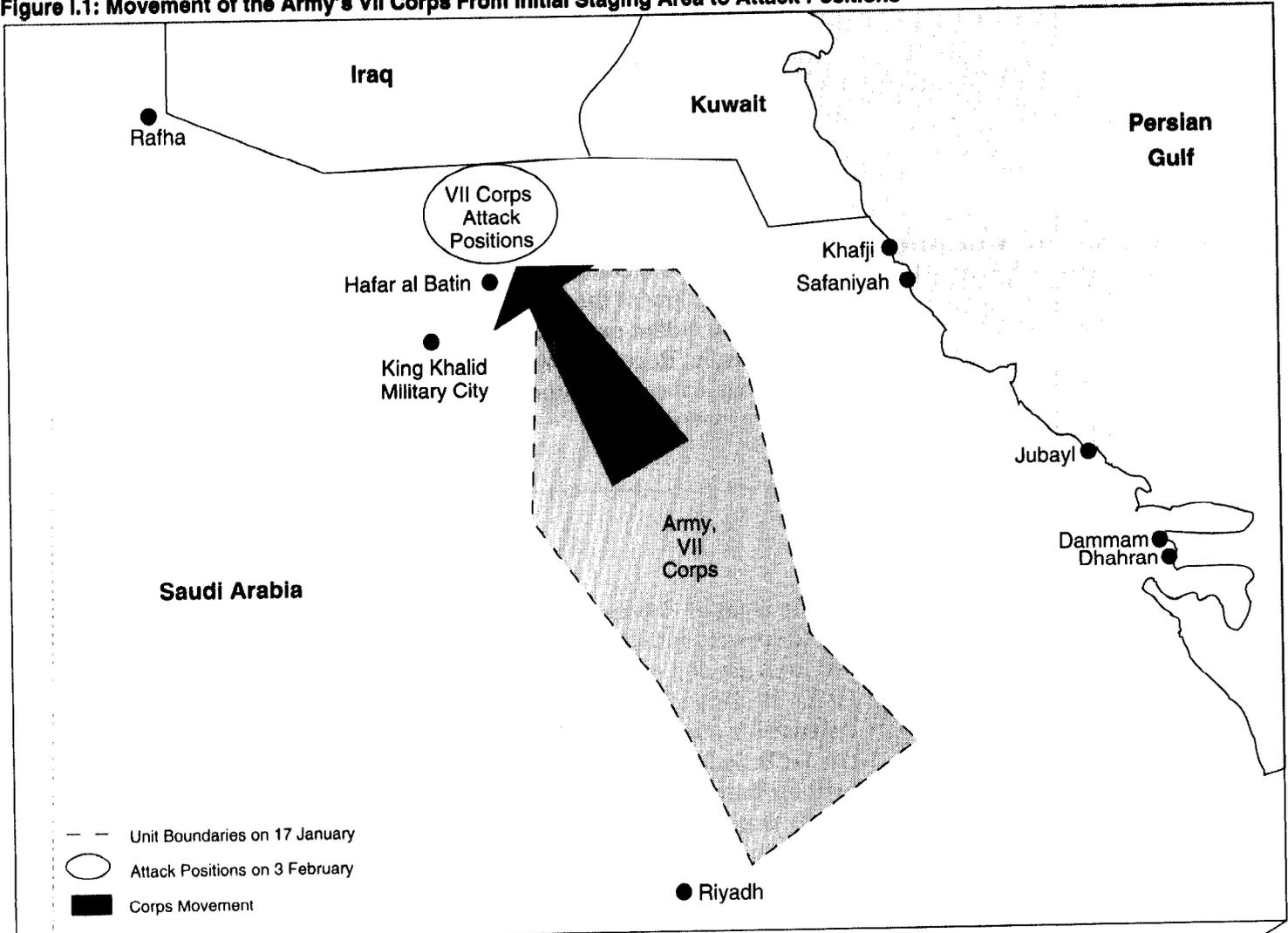
On the basis of numerous interviews with the Apache pilots, ground commanders, helicopter mechanics, and other knowledgeable military personnel, as well as extensive reviews of military logs, tapes, and other relevant documents, we believe the background of the fratricide incident of February 17, 1991, evolved as discussed below. This discussion describes two earlier friendly fire incidents involving Apaches from the same battalion as in the February 17 incident.

Arrival in War Zone

In December 1990, elements of the 1st Infantry Division (Mechanized), assigned to the U.S. Army's VII Corps, began deploying to Saudi Arabia. Exact arrival dates of the units varied according to their individual missions. By January 28, 1991, after the air war had begun, the Division was reunited at a designated attack position located in northern Saudi Arabia. (See fig. I.1.) The Division consisted of four brigades: the 1st and 2nd Infantry Brigades and the 4th Aviation Brigade from Fort Riley, Kansas, and the 2nd Armored Division (Forward)—assigned as the 3rd Infantry Brigade—from Garlstedt, Germany.

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Figure I.1: Movement of the Army's VII Corps From Initial Staging Area to Attack Positions



Source: U.S. Army

While at its designated attack position, known as Tactical Assembly Area (TAA) Roosevelt, the 1st Infantry Division established a breach site and began rehearsing its primary mission—to breach the “berm” (the 2-meter high, 3-meter deep mound of sand that serves as the border between Saudi Arabia and Iraq) before the start of the ground offensive. The Division was then to advance and provide security for other advancing forces. This was to be the main effort of the VII Corps.

Two Previous Friendly Fire Incidents

Two friendly fire incidents—on February 1 and 15, 1991—are relevant to a full understanding of the February 17, 1991, fratricide incident. The February 1 incident exposed problems with the Apaches' AN/APR-39A(V)1 Radar Warning Receivers, while the February 15 incident highlighted the need for special control procedures to avoid fratricide in the desert's featureless terrain.

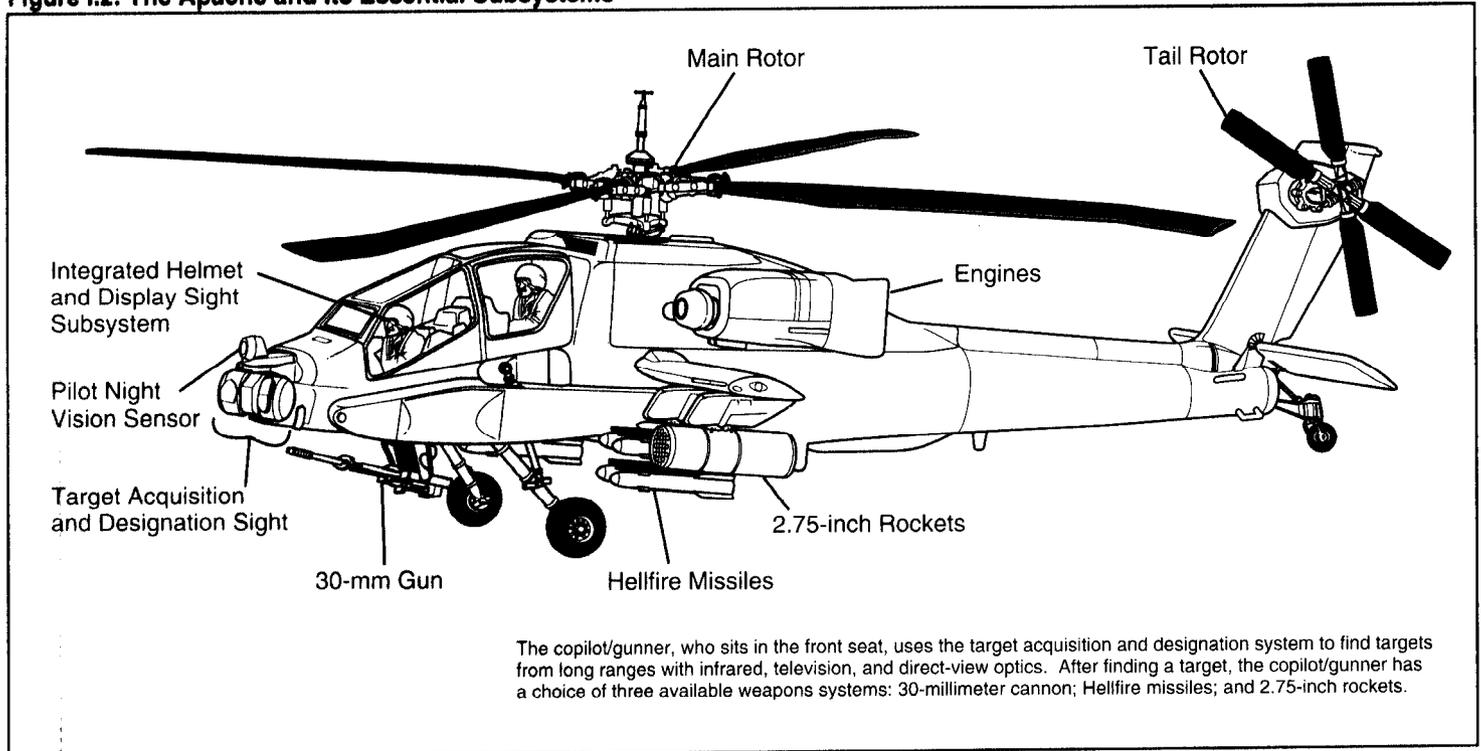
The February 1, 1991, Incident

Apache Battalion's First Mission

On the night of February 1, 1991, 4 days after the Division was reunited at TAA Roosevelt, intelligence sources reported that a possible Iraqi armor unit was moving south toward the 1st Squadron of the 4th Cavalry (1-4 CAV), 4th Brigade, which was positioned along the berm as a thin line of defense for other components of the Division. Apaches (see fig. I.2) from the 1st Battalion of the 1st Aviation Regiment (1-1 AVN), 4th Brigade, led by their Battalion Commander, were launched to identify the targets and, if they were enemy, to stop them. This was the battalion's first combat mission in the Iraqi conflict.

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Figure I.2: The Apache and Its Essential Subsystems



The 1-1 AVN Commander, as copilot/gunner, and his pilot flew ahead in their Apache to conduct a full reconnaissance of the area; the remainder of the designated Apaches were to follow when they became airborne. The lead Apache located U.S. ground units along the berm, flew forward of their position, but found no enemy forces.

While flying back toward U.S. ground units, the lead Apache's newly installed AN/APR-39A(V)1 Radar Warning Receiver (Voice Warning), which informed pilots of radar activity through brief audio messages transmitted through the pilots' headsets, indicated that enemy radar was searching the area. According to the 1-1 AVN Commander, the AN/APR-39A(V)1 then indicated that an emission from an enemy system—which was potentially lethal to helicopters—had “locked onto,” or targeted, the aircraft. The Apache crewmen believed, however, that only friendly forces were in the area.

At this point, another Apache joined the Commander's aircraft and became his wingman. The two Apache crews sighted three vehicles, located about 3,800 meters from their position, from which the radar signal appeared to be emanating. When this information was radioed to the Ground Commander, he advised the Apache crews that the grid coordinates of the vehicles they had spotted were approximately 300 meters from the location of a friendly outpost.

According to the 1-1 AVN Commander, while the Apaches were attempting to identify the vehicles, the vehicles fired on the aircraft, although no damage was sustained. The 1-1 AVN Commander indicated that he did not give the order to return fire upon the ground vehicles because the vehicles appeared to be within the "screen line," or front line of U.S. forces, and the aircraft were unable to positively identify the firing vehicles as enemy. The 1-4 CAV Commander indicated that he had restricted the Apache gunners from firing their weapons because of their close proximity to friendly ground forces. The aircraft were withdrawn until the situation could be clarified, in accordance with the Army's rules of engagement.¹

**Determination That Radar
Warning Receiver Misidentified
Signal**

The 1-4 CAV Commander conducted an informal investigation² into the incident in an attempt to determine if the vehicles that fired on the Apaches were enemy, as the AN/APR-39A(V)1 system had indicated. No enemy vehicles were discovered in the area, yet no U.S. ground forces admitted firing at the aircraft.

Flight tests conducted the following day, February 2, confirmed that the Ground Surveillance Radar, used by friendly ground forces, emitted a signal that the AN/APR-39A(V)1 misidentified as an enemy system. According to the 1-1 AVN Executive Officer, information regarding the February 1 incident was later sent to the Army Aviation Systems Command in St. Louis, Missouri, and to the Aircraft Survivability Unit at Fort Rucker, Alabama, for use in training and to attempt to correct the misidentification problem.

In addition, as a result of this incident, the 1-1 AVN Commander conducted numerous discussions and training exercises with the Apache pilots on

¹Rules of Engagement, as outlined in the Apache training procedures manual, are discussed in app. III.

²The Procedure for Investigating Officers and Boards of Officers, Army Regulation 15-6, paragraph 1-4a, states "[a]n administrative fact-finding procedure under this regulation may be designated an investigation or a board of officers. The proceedings may be informal . . . or formal. . . . Proceedings that involve a single investigating officer using informal procedures are designated investigations. Proceedings that involve more than one investigating officer using formal or informal procedures or a single investigating officer using formal procedures are designated a board of officers."

avoiding friendly fire accidents. Specifically, the pilots were told they should always know where friendly ground forces were located when flying missions to avoid firing on them by mistake. Also, the Apache pilots spent several hours studying a sand table built to scale by the Division Intelligence Staff, which marked map grid lines with tape and string, and elevated model helicopters to give the pilots perspective. The purposes of these exercises were to identify where U.S. vehicles would be positioned, show expected enemy positions, indicate how difficult it was to identify an object from a distance, and identify possible difficulties with the battle plan.

The February 15, 1991, Incident

Task Force Iron and Its Mission Plan

The division remained at TAA Roosevelt until February 14, 1991, when it moved approximately 115 kilometers to the west to a forward assembly area known as TAA Manhattan. The following day, February 15, Task Force Iron³ conducted a counter-reconnaissance mission across the border into Iraq. The task force's mission was to destroy reconnaissance elements of the Iraqi Army, thus limiting the accuracy of Iraqi artillery.

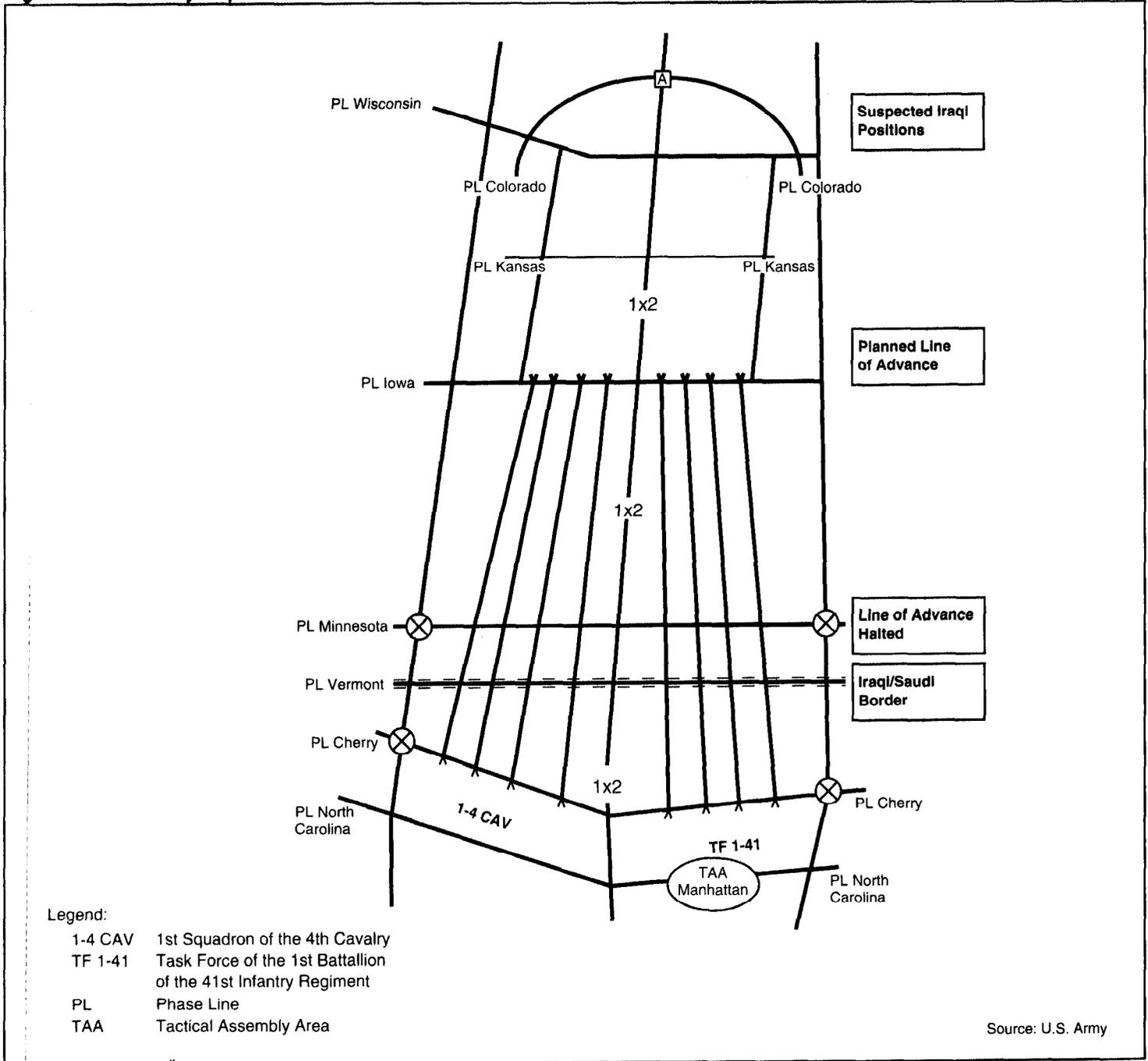
U.S. ground forces had discovered Iraqi roving patrols and bunkers, and intelligence information had confirmed vehicle sightings suggesting that the Iraqi front line element was located near Phase Line Wisconsin.⁴ (See fig. I.3.) Task Force Iron was to operate from Phase Line Vermont—the Saudi-Iraqi border—northward, while the remainder of the 3rd Brigade stayed below the berm at Phase Line Cherry. The 1st and 2nd Brigades were to remain at TAA Manhattan.

³Task Force Iron consisted of the 3rd Brigade (Headquarters), the 1-4 CAV, a task force element from the 1st Battalion of the 41st Infantry Regiment (TF 1-41), supporting artillery, and other elements formed under the command of the 3rd Brigade Commander.

⁴"Phase line" is a term used to identify a designated boundary during planned tactical movements.

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Figure 1.3: U.S. Army Map of Task Force Iron's Counter-Reconnaissance Mission



The original mission plan called for Task Force Iron to cut 20 holes in the border berm and secure the area. Task Force Iron would then move north from Phase Line Vermont 10-12 kilometers into Iraq and clear Phase Line Iowa. Artillery was to be brought forward; and other elements, which would be used in the main thrust against the Iraqi defense, were to replace Task Force Iron. The division commanders speculated that the task force would encounter major opposition in this effort and projected U.S. casualties of 40-50 percent.

Apache Misidentified Target

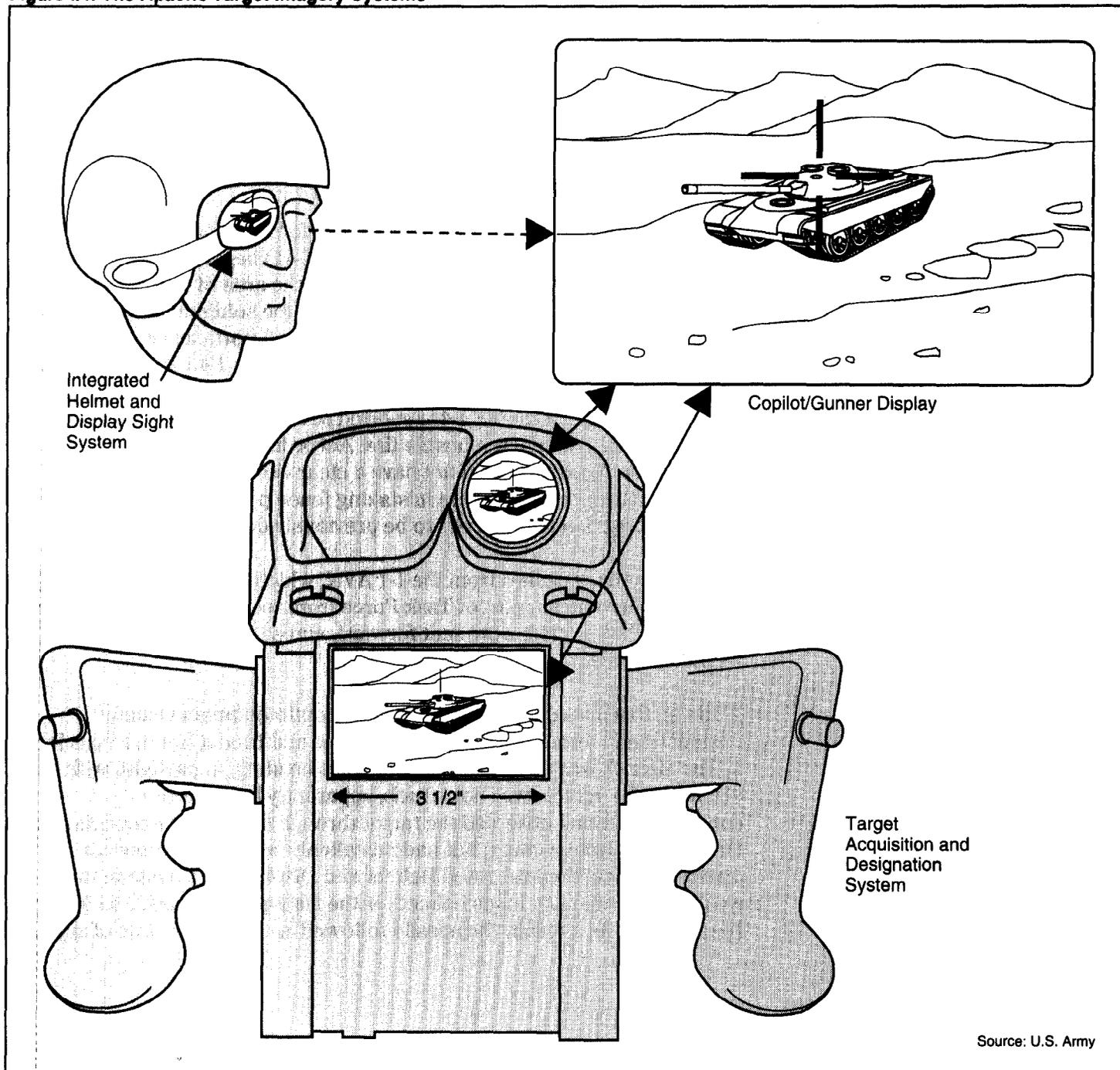
On the morning of February 15, 1991, a task force element from the first Battalion of the 41st Infantry Regiment (TF 1-41) began breaching the berm. Army construction equipment cleared the area of mines and punched holes in the berm, creating lanes for the soldiers and their equipment. The battalion-sized force then moved north across the border into Iraq and established an initial front to allow the 1-4 CAV, which was to the west of TF 1-41, to move forward. While waiting for the 1-4 CAV to move through the berm, TF 1-41 reported several sightings of enemy vehicles but did not engage hostile fire. According to the TF 1-41 Commander, his gunners did not have a clear view of what was moving, and he was unsure if they were mistaking fence posts for targets. In fact, some sightings later turned out to be previously destroyed pickup trucks.

That afternoon, Apaches from the 1-1 AVN, which had been deployed below the berm in support of Task Force Iron, received reports of enemy sightings. Two aircraft were sent forward, across the berm, for reconnaissance.

While on this mission, one of the Apache copilot/gunners visually misidentified a Bradley as an enemy vehicle and fired a Hellfire missile at it. The aircraft was on a northeast compass heading, in daylight, with clear visibility. The vehicle was not struck, apparently because the copilot/gunner had observed the target through the Target Acquisition and Designation System (TADS) but had mistakenly selected an alternate tracking choice, the Integrated Helmet and Display Sight System, that used a sighting mechanism in his helmet for the laser-guided missile to follow. (See fig. I.4.) As a result, the missile followed an inaccurate line of sight.

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Figure I.4: The Apache Target Imagery Systems



Upon their return that evening to the Apache staging area, the 1-1 AVN Commander grounded the crew of the firing Apache until they could be given more training, which began immediately. The following morning, the 1-1 AVN Commander advised the 4th Brigade Commander of the incident. An informal investigation confirmed that the incident had resulted from the copilot/gunner's error in misidentifying the Bradley, not from equipment problems.

**Need for Improved Procedures
Discussed**

The 4th Brigade Commander recalled that when the 1-1 AVN Commander advised him of the incident, they discussed the need for improved prefire-check procedures when the Apaches were flying reconnaissance missions near friendly forces. Specifically, he recalled that they discussed the procedure of having the gunner's wingman "slave" the TADS to the gunner's laser spot—allowing the wingman's sighting mechanism to automatically focus on the gunner's selected target—to ensure that the Apaches on the mission were identifying the same target.

The 4th Brigade Commander also recalled that they discussed the target approach to be used by aircraft when flying near friendly troops. Since the enemy troops were positioned to the north and the allied forces were positioned to the south, each along east-west boundaries, the procedure discussed was for the aircraft to fly perpendicular to the screen line, always approaching the enemy targets from south to north.⁵ This approach would provide perspective and allow the crews to more clearly identify the location of friendly forces in relation to enemy targets in the stark desert environment. This so-called "south-to-north" approach was also designed to complement the grid line navigation system used by the Apache pilots, which was based on known north-south and east-west coordinates.

The 1-1 AVN Commander recalled this discussion but told us that the south-to-north procedure was discussed only in reference to a specific mission planned for the night of February 16, which was subsequently postponed. He recalled no discussion at that time in which the 4th Brigade Commander ordered, or otherwise required, all Apache missions to use this approach.

The 1-1 AVN Commander also recalled that, at a meeting on the evening of February 16, the 4th Brigade Commander stated that he had decided to keep the previous day's incident within the brigade and did not want the incident discussed with the Assistant Division Commander. However, the

⁵Previously, some Apache pilots had used the perpendicular approach to identify the screen line, but they did not necessarily use this approach to identify individual targets.

Brigade Commander maintained, and the Assistant Division Commander confirmed, that earlier on February 16, the Brigade Commander had personally advised the Assistant Division Commander of the incident. For undetermined reasons, the Division Commander was not advised of the February 15 incident until after the fratricide incident on February 17.

Factors Contributing to the February 17, 1991, Incident

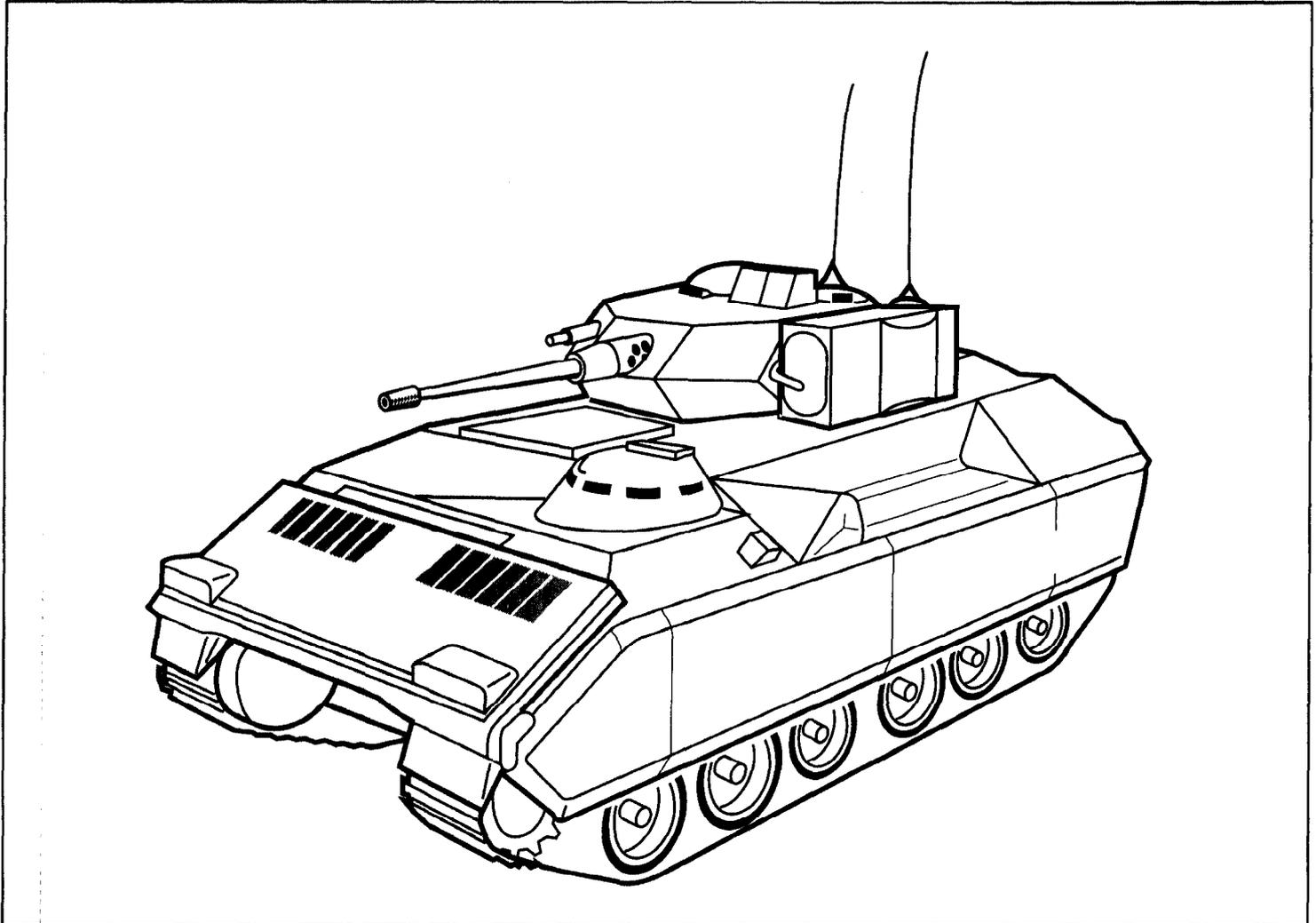
A number of factors contributed to the February 17, 1991, incident, including the deployment of the task force's expansive screen line; an unusual boundary on the right flank; the decision not to include the Apaches in the counter-reconnaissance mission rehearsals; and difficulties encountered by the ground troops in tracking and identifying numerous reported enemy sightings.

Deployment of the Task Force Screen Line

Task Force Iron crossed the berm on February 15, 1991, on its counter-reconnaissance mission and pushed north into Iraq. The task force's forward line of advance was halted at Phase Line Minnesota (the 25 east-west grid line), about 5 kilometers north of the berm, because of concern that this forward element would be cut off from reinforcements in the event of an Iraqi attack.

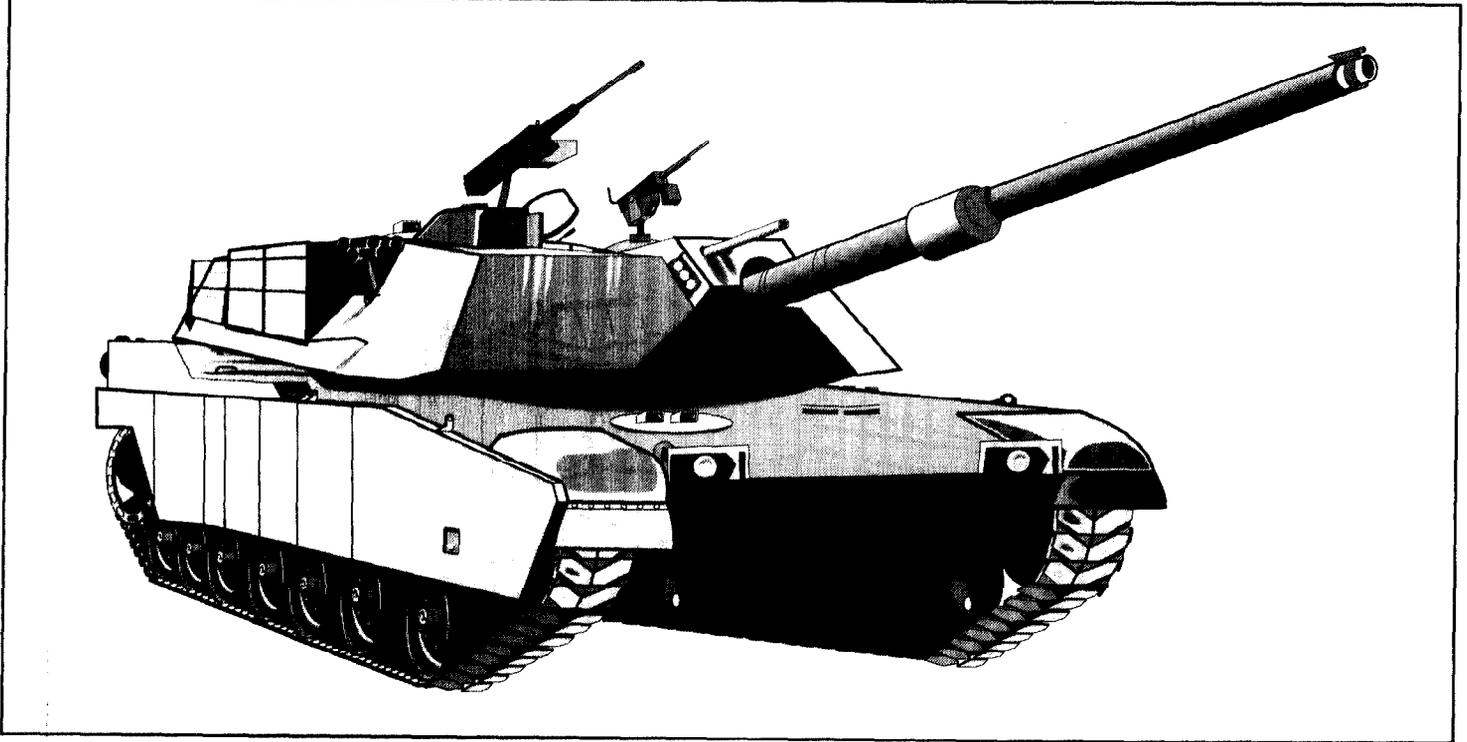
To cover the expansive terrain—approximately 50 kilometers wide—and in anticipation of moving even further forward, the task force deployed Bradleys (see fig. I.5) and M1A1 Abrams Main Battle Tanks (see fig. I.6) along Phase Line Minnesota, forming a screen line facing north. Vehicles from the 1-4 CAV were deployed approximately 20 kilometers along the screen line to the west, while vehicles from the TF 1-41 were deployed approximately 30 kilometers along the screen line to the east—twice the normal frontage assigned to a force this size. (See fig. I.7.)

Figure I.5: The Bradley Fighting Vehicle



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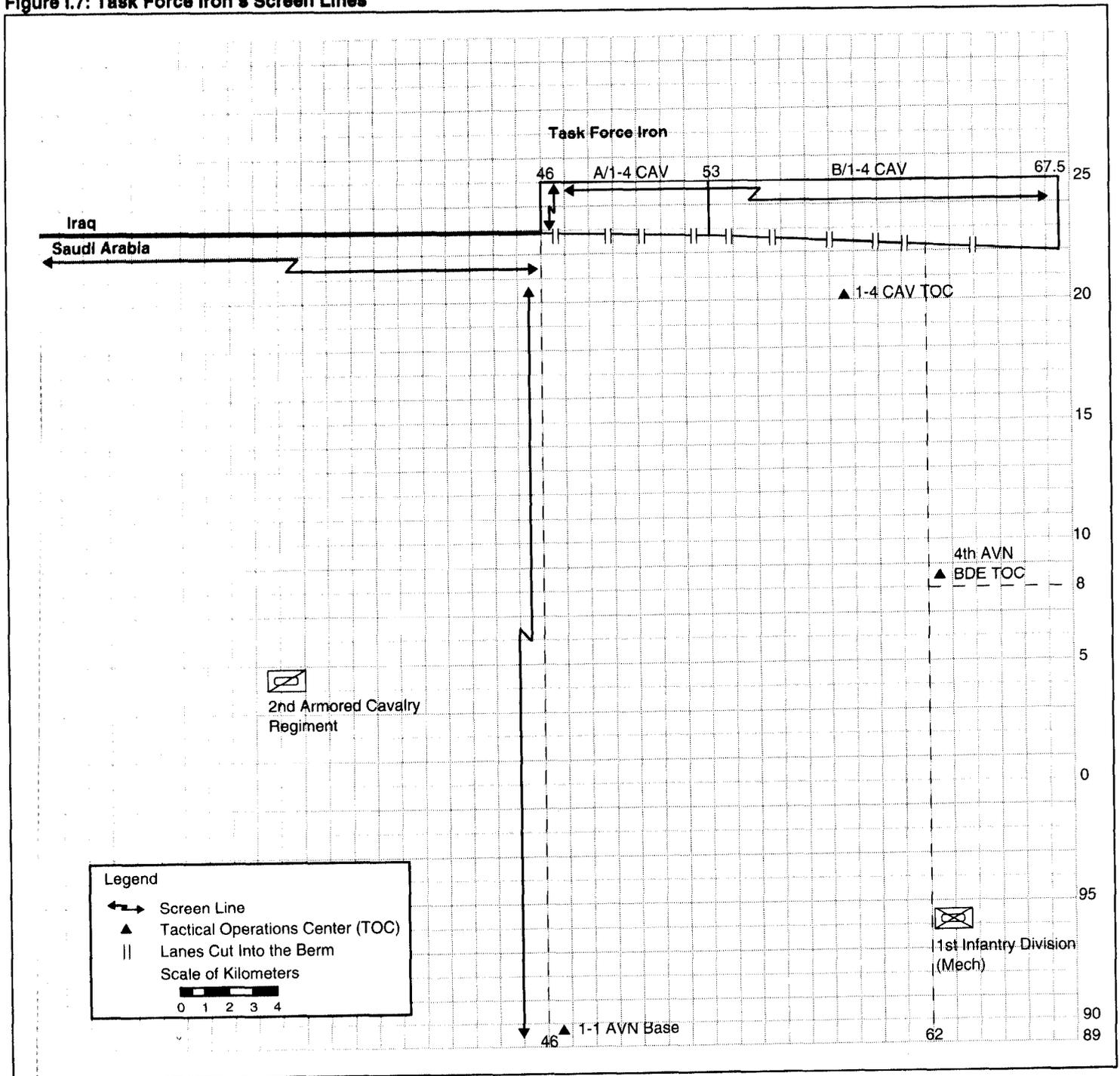
Figure I.6: The M1A1 Abrams Main Battle Tank



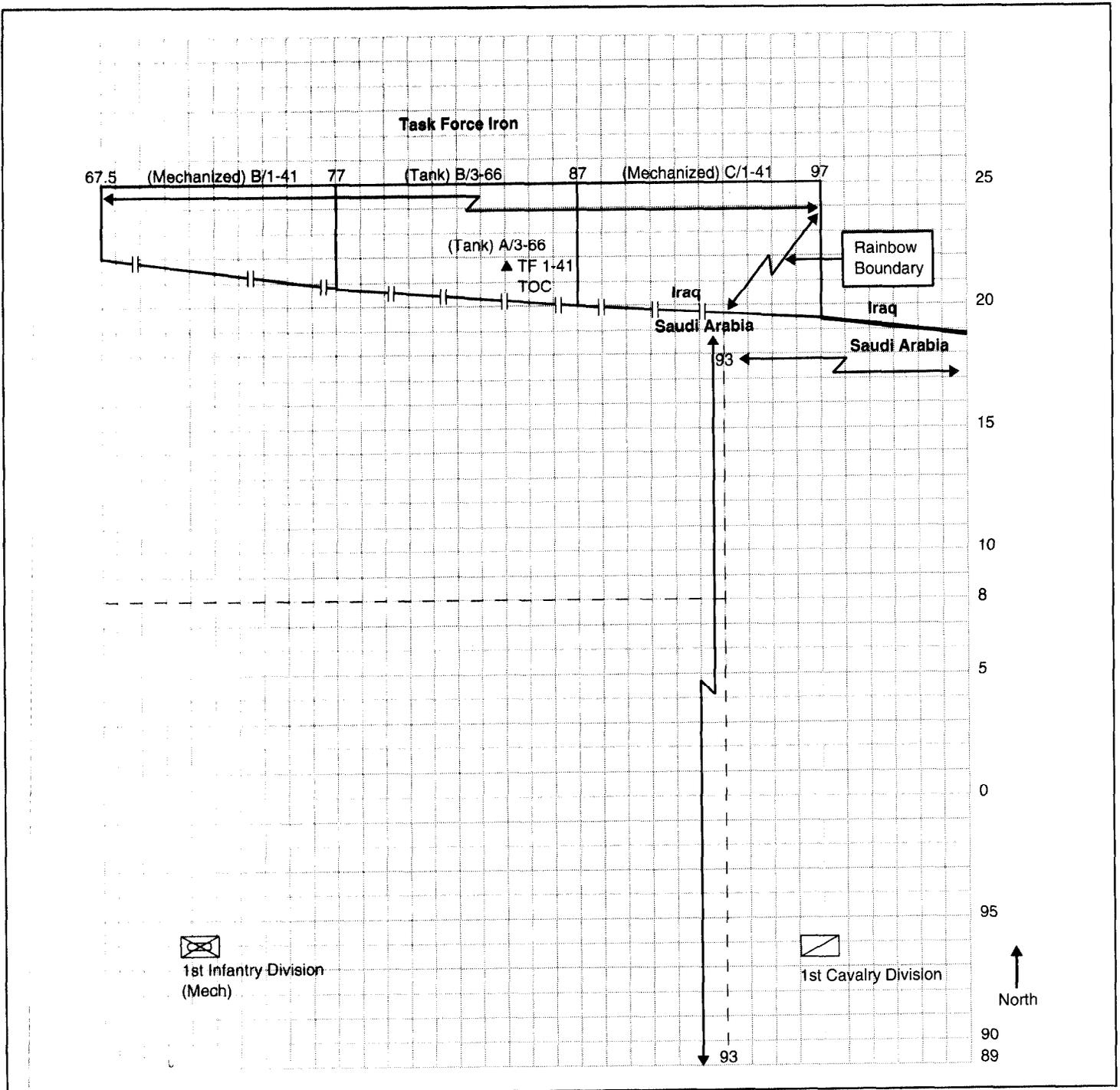
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Figure I.7: Task Force Iron's Screen Lines



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TF 1-41's sector was further divided into thirds—each about 10 kilometers wide—with three companies forward. To the west was a mechanized (armored personnel carriers and Bradleys) company from the 1st Battalion, 41st Infantry (B/1-41); to the center was a tank company from the 3rd Battalion of the 66th Regiment (B/3-66); and to the east was a mechanized company (C/1-41). The fourth company, a tank company (A/3-66), remained near the center of the sector, somewhat to the east.

The remainder of the 1st Infantry Division was positioned to the south of Task Force Iron, below the berm, with the 1st Cavalry Division (1st CAV) to the east and the 2nd Armored Cavalry Regiment (2nd ACR) to the west. Task Force Iron established screen lines running north to south to link with U.S. forces deployed below the berm. The screen lines served to link the task force to the 1st CAV and 2nd ACR, while protecting its left (western) and right (eastern) flanks.

The Right Flank's Rainbow Boundary

According to the TF 1-41 Commander, Bravo Company's (B/1-41) sector to the west was compartmented by wadis—streambed-like depressions—while Charlie Company's (C/1-41) sector to the east was open terrain. The more open the terrain, the more uniformly the vehicles were spread. Charlie Company had 13 Bradleys, with 9 arrayed along the screen line and 4 behind them for control purposes. The Bradleys were positioned with about 1 kilometer between each vehicle, although some were as close as 500 meters.

The TF 1-41 Commander protected the right flank by taking advantage of the terrain, creating a "rainbow boundary" that formed an arc of scout vehicles from north to south. He estimated that the vehicle in the northeast corner of his boundary was about 4 kilometers further east than the vehicle in the southeast corner, closest to the berm.

The scout platoon leader, who commanded the scout vehicles along the task force's right flank, estimated that more than 2 kilometers were between his vehicle in the northeast corner of the boundary and the C/1-41 vehicles along Phase Line Minnesota at the 25 east-west grid line. He further estimated that his first platoon vehicle was located 1 kilometer north of the border berm and that each of the five remaining scout vehicles—Bradleys—was positioned along the right flank facing northeast. The vehicles were positioned about 700 meters north and 200 meters east of each other, forming the rainbow boundary that linked TF 1-41's right flank with the left flank of the 1st CAV. This would mean that the scout

vehicle in the northeast corner of the boundary was only about 1.5 kilometers further east than the scout vehicle in the southeast corner, rather than 4 kilometers, as originally anticipated by the TF 1-41 Commander. (Compare the planned arc of the rainbow boundary shown on fig. I.7 and the actual boundary shown on fig. II.1.)

Preparation for the Counter-Reconnaissance Mission

The TF 1-41 Commander stated that he, his Operations Officer, and the Brigade Operations Officer had concluded that the vehicles in the northeast corner of the boundary were at risk of being fired upon by the 1st CAV positioned below the berm. As a result, they had discussed their concerns with the Charlie Company Commander, whose troops were at greatest risk. In addition, TF 1-41 ground forces rehearsed the counter-reconnaissance mission at least five times while at TAA Roosevelt, with every tank commander walking through the sand table exercise.

The Apache pilots/copilot gunners were not included in the mission rehearsals at TAA Roosevelt because TF 1-41, which was a part of the 3rd Brigade based in Germany, had had no Apaches attached to it. In addition, the Apaches, from the 4th Brigade based in Kansas, were not expected to be part of the task force's counter-reconnaissance mission. However, about a week before the mission, while Task Force Iron was still positioned at TAA Roosevelt, the Task Force Commander, the 4th Brigade Commander, the TF 1-41 Commander, and the 1-1 AVN Commander met at the Brigade Tactical Operations Center to discuss the possible utilization of Apaches. This was the only time the TF 1-41 and 1-1 AVN Commanders met prior to the fratricide incident.

During the meeting, the TF 1-41 Commander laid out his concept of the operation using a map board, while the 4th Brigade Commander and the 1-1 AVN Commander speculated as how to best deploy the Apaches in such situations. According to the TF 1-41 Commander, the plan was to bring the Apaches up and behind the screen line. Once the aircraft identified the line of friendly vehicles, the Apaches would search forward and, if enemy targets were identified, fire. The officers also discussed ways to mark the ground vehicles for identification by friendly aircraft.

According to the TF 1-41 Commander, the 1-1 AVN Commander did not object to flying counter-reconnaissance missions or to using Apaches for counter-reconnaissance purposes. However, the 1-1 AVN Commander did express his need to understand how the ground troops were to be positioned, because he did not want the Apaches and the ground forces to

shoot at each other by mistake. It was agreed that the 1-1 AVN Apaches would fly around the TAA Roosevelt area so that the pilots could view the tanks and Bradleys through their sights, while the ground gunners viewed the aircraft through their own sights. The TF 1-41 Commander arranged this exercise and suggested that it also be done by other units.

The TF 1-41 Commander maintained that the rainbow boundary on the right flank was a significant factor in the February 17 fratricide incident. He admitted that he did not discuss his concerns with the 1-1 AVN Commander at their meeting, because the task force had not planned to use the Apaches in the counter-reconnaissance mission. However, he maintains that the 1-1 AVN Commander was given a copy of TF 1-41's map graphics at that time, which showed the rainbow boundary. The 1-1 AVN Commander recalled only that the Division was concerned about the right flank because "there was a gap between us and the 1st CAV Division," which was deployed south of the berm.

**February 16, 1991,
Sightings**

Throughout the day on February 16, 1991, Task Force Iron received reports of movement by suspected enemy vehicles north of where the task force's line of advance had halted on Phase Line Minnesota. This raised concerns that the Iraqis were possibly reconnoitering the area penetrated by U.S. forces. According to the TF 1-41 Commander, TF 1-41 saw flares along the trace, or outline, of the Iraqi main defense line at about 7:30-8:30 p.m. Each of the three forward companies reported sightings; and gunners, using thermal sights, reported seeing "hot spots," or targets, in front of their positions at ranges in excess of 5 kilometers. The TF 1-41 Commander noted that the thermal imaging systems used on the Bradleys and the tanks were capable of acquiring "hot spots" in excess of 4 kilometers, depending upon the polarity setting, but the resolution was only a blip of light and the systems could not distinguish shape or outline.

When the gunners—using a Ground Laser Locator Designator—began detecting targets at a range of about 3 kilometers, the TF 1-41 Commander and the Task Force Commander began discussing what appeared to be clusters of Iraqi vehicles. The vehicles appeared to be separating into smaller groups and hiding in the folds of the terrain. It appeared that the enemy vehicles were working their way from west to east, which was consistent with what the U.S. forces expected.

The TF 1-41 Commander became convinced that these sightings were something more than camels or 50-gallon barrels, which had earlier caused

**Appendix I
Background of the February 17, 1991,
Incident**

similar false target "sightings." When three vehicles were sighted, he and the Task Force Commander discussed firing artillery at the targets. The TF 1-41 Commander then received a call on his communications network from the Operations Officer of the 1st CAV, who reported having lost two vehicles. The vehicles had been sent forward of the berm to do reconnaissance and were thought to have strayed into TF 1-41's sector. Their last known position was a kilometer or so forward of the 25 east-west grid line. Unable to positively identify the sighted vehicles and concerned that they were the 1st CAV's lost vehicles, the TF 1-41 Commander decided not to engage the targets.

Later that evening, the 1st CAV Operations Officer advised the TF 1-41 Commander that he had regained control of all his vehicles, and all were behind the berm. It was at this point that one of the forward companies, Charlie Company, reported spotting three vehicles—one large and two small armored ones—to the north of the screen line. According to the TF 1-41 Commander, all of the TF 1-41 vehicles were positioned south of Phase Line Minnesota; any vehicles to the north had to be enemy.

The Charlie Company Commander requested permission to engage and subsequently fired at the targets with a tow (Tube-launched, Optically-tracked, Wire-guided) missile, which has a maximum range of about 3,750 meters. No secondary explosions were reported, and it was not clear if the targets were hit—or that they existed. TF 1-41 then lost sight of the targets, and the Task Force Commander requested assistance from the Apaches in relocating them.

The February 17, 1991, Incident

Shortly after midnight on February 17, 1991, following suspected enemy sightings by ground troops, three Apaches from the 1-1 AVN were launched on a reconnaissance mission to locate and destroy the suspected enemy targets. At approximately 1 a.m. on February 17, an Apache copilot/gunner—the 1-1 AVN Commander—fired Hellfire missiles that destroyed two friendly vehicles, killing two U.S. soldiers and wounding six others. The Apache copilot/gunner fired, believing that the vehicles were enemy, because he had mistakenly read and reported the vehicles' position as that of an earlier enemy sighting. An Army investigation immediately following the fratricide incident concluded that Hellfire missiles from the Apache had struck the friendly vehicles.

The February 17, 1991, Incident

The Apache Reconnaissance Mission

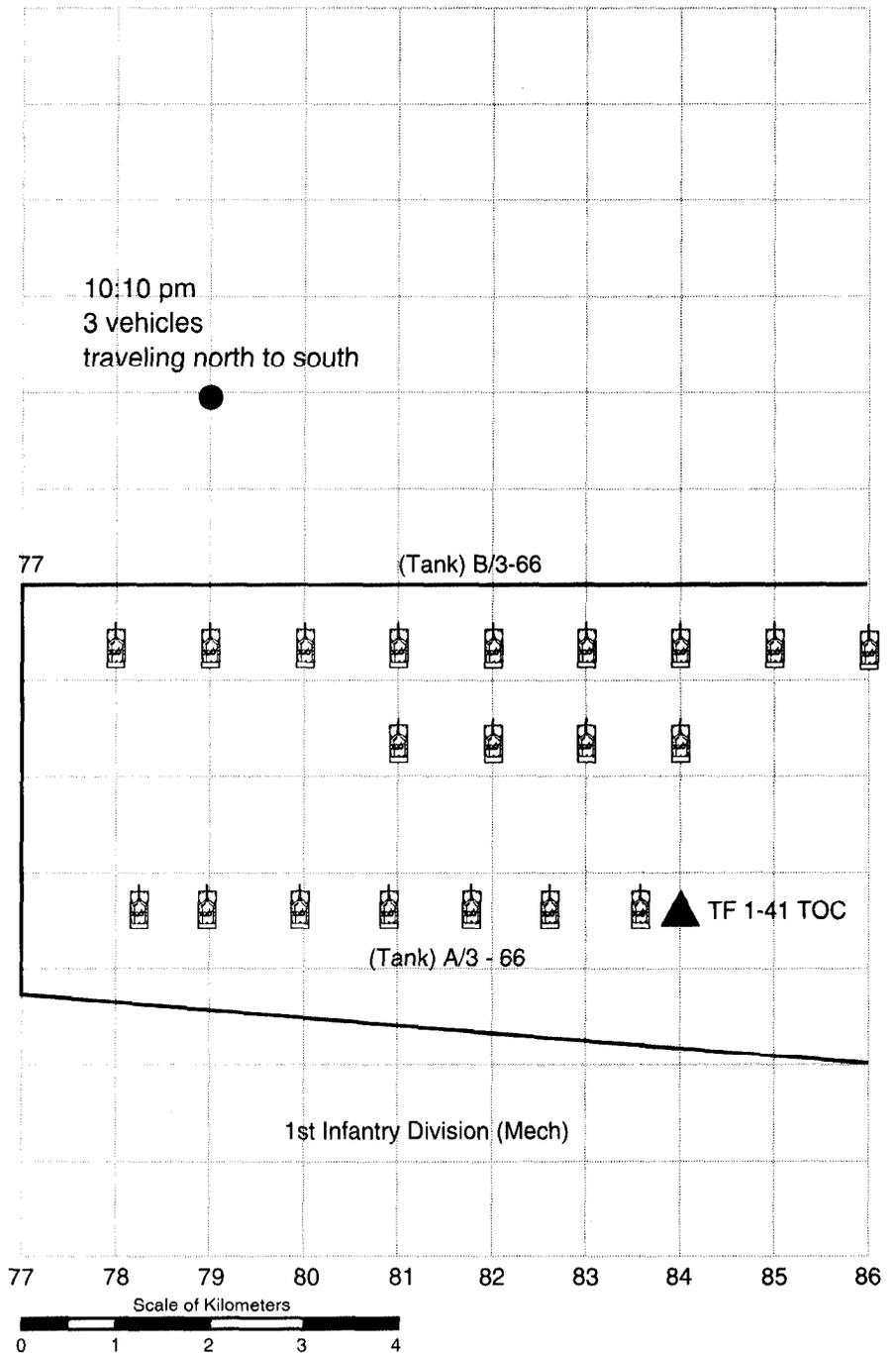
On the evening of February 16, 1991, Apaches from the 1-1 AVN planned to conduct an attack mission against Iraqi targets north of Phase Line Minnesota—utilizing the south-to-north approach procedure. However, Army logs reveal that at approximately 8:00 p.m., the 4th Brigade Commander advised the 1-1 AVN Commander that the attack mission for that night had been canceled.

At approximately 9:42 p.m., TF 1-41 reported sighting six vehicles traveling south in the vicinity of grid coordinate NT877273.¹ (See fig. II.1.) At approximately 10:10 p.m., TF 1-41 spotted another group of three vehicles moving north to south in the vicinity of NT790270. The 1-1 AVN log notes that at 11:00 PM, the 4th Brigade considered launching Apaches to destroy the targets. At approximately 11:25 p.m., the Brigade Commander issued the launch order.

¹Grid coordinates identify geographical areas where north-south and east-west lines intersect. For example, the grid coordinate NT877273 indicates the geographical area (NT), the north-south grid line (877), and the east-west grid line (273). Coordinates may be written with varying specificity, i.e., 8727, 877273, and 87702730 represent the same coordinate.

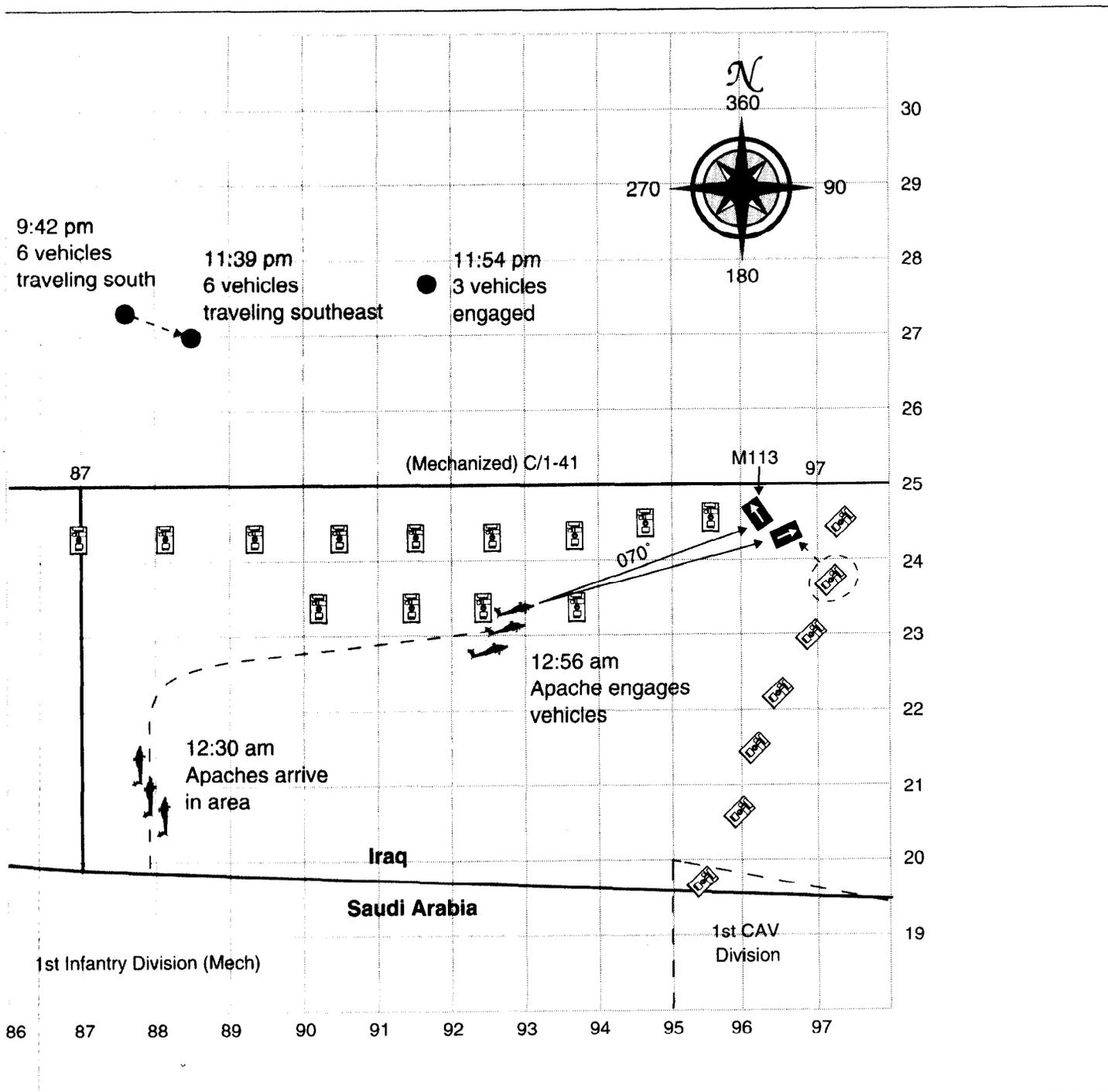
Appendix II
The February 17, 1991, Incident

Figure II.1: Reported Sightings and Flight Path of the Apaches



Note: GAO calculated the vehicle and aircraft positions on the basis of the Global Positioning System's location of the destroyed vehicles and information derived from interviews and the Apache gun tapes. Vehicles and aircraft are not drawn to scale.

Appendix II
The February 17, 1991, Incident



The 1-1 AVN Commander told us that prior to receiving the launch order, the 1-1 AVN Operations Officer telephoned, advising him that suspected enemy vehicles had been located in front of the screen line and that the Apaches would probably be ordered to fly in support of the ground troops. The 1-1 AVN Commander recalled that he was concerned about launching the aircraft because of the severe weather conditions, which included winds in excess of 30 knots and blowing sand; the lack of moonlight; and the close proximity to friendly forces. Also, he questioned the use of the Apaches, since the M1A1 tanks on the screen line could engage enemy vehicles at the reported range.²

The 1-1 AVN Commander expressed his concerns to the Operations Officer and requested that they be relayed to the 4th Brigade Commander. At 11:39 PM, the 1-1 AVN log notes, "Bn Cdr [Battalion Commander] concerned w/ friendlys [sic] close to enemy targets - Primary targets 6 veh. NT885270." According to the 1-1 AVN Commander, the Brigade Commander responded to his concerns by telling the 1-1 AVN Operations Officer to get the Apaches airborne and advising him that they would deal with the problem "up there." The Brigade Commander confirmed that the 1-1 AVN Commander had indicated that he did not want to go on the mission and that he did not want any of his pilots to go, because he was concerned about the proximity of the targets to friendly forces. The Brigade Commander said he told the 1-1 AVN Commander that the mission had to be attempted and to "launch the aircraft." The Brigade Commander advised us that if wind conditions had proved to be too severe for the Apaches to fly, the mission could have been canceled and the aircraft returned to base.

When the launch order was received, the 1-1 AVN Commander informed his pilot that the Apaches had been ordered to fly a reconnaissance mission. He indicated that he was sending the Blue Team, which consisted of two of his more experienced Apache crews, but that he intended to lead the mission because of the bad flying conditions that night and his concern over the two previous friendly fire incidents. According to the 1-1 AVN Commander and his pilot, they had difficulty locating their aircraft because of the blowing sand and lack of moonlight, and one of the three Apaches almost crashed on takeoff because of the high winds.³

²The M1A1's 120-millimeter gun is capable of firing at targets up to 3,650 meters away.

³OH-58C Kiowa light observation helicopters were attached to the 1-1 AVN but were not deployed during this mission because of the high winds.

Shortly after midnight, at approximately 12:10 a.m., on February 17, 1991, the three Apache helicopters became airborne en route to the designated enemy area. The lead aircraft was flown by the 1-1 AVN Commander, a Lieutenant Colonel, acting as copilot/gunner, and a Chief Warrant Officer 3, as pilot, under the radio call sign "Gunfighter 6." The second aircraft, the Blue Team leader, was flown by a Captain, as copilot/gunner, and a Warrant Officer 1, as pilot, under the radio call sign "Blue 6." The third helicopter was flown by a Chief Warrant Officer 2, as copilot/gunner, and a Warrant Officer 1, as pilot, under the call sign "Blue 5."

Apache crew members generally received detailed premission briefings regarding their assignments, which included a thorough discussion of such topics as intelligence summaries, weather, battle plan, and status of radios. That was not the case on the February 16-17 mission, since it was launched in direct response to reports of enemy vehicles in the area and time did not allow a detailed premission briefing. Consequently, the Apache crew members had only a basic knowledge of the enemy vehicles' reported position and had to develop the mission on the basis of those reports.

The Flight Path of the Apaches

Before takeoff, the Apache pilots had been provided the primary target grids reported by the ground units. Each copilot/gunner manually entered the data into his respective Fire Control Computer using a Data Entry Keyboard. While en route, the TF 1-41 Executive Officer (radio call sign "Stalwart 5"), located in TF 1-41's Tactical Operations Center (TOC), gave them an operations briefing over the radio, while guiding the Apaches into the area. The pilots were advised that two enemy vehicles were apparently moving from west to east in the vicinity of grid coordinate NT915270 and that one of the vehicles was thought to have been hit by a row missile. The copilot/gunners also manually entered this target grid into their Fire Control Computers.

At approximately 12:30 a.m. on February 17, the Gunfighter 6 copilot/gunner (Gunfighter 6) reported that the aircraft were in the area, "behind" the U.S. ground vehicles. The three Apaches had apparently crossed the berm and were approaching the screen line from south to north, along the 88 north-south grid line. (See fig. II.1.)

As the aircraft approached the area, they observed friendly vehicles facing north, deployed along an east-west line, which they identified as the screen line. According to the 1-1 AVN Commander, the Apaches observed

no targets at the NT885270 grid coordinate. The aircraft then began moving east toward the 91 north-south grid line, while scanning with their Forward Looking Infra-Red (FLIR) thermal optical equipment, in an attempt to locate the reported enemy vehicles at the NT915270 grid coordinate. They flew at a northeast heading toward the new search coordinate; they did not move due east and reapproach the targets from the south—the procedure discussed between the 1-1 AVN Commander and the 4th Brigade Commander on the previous day.

At this point, the Blue 6 copilot/gunner (Blue 6) activated his aircraft's gun tape recorder (video and audio). This recorded what was seen in the TADS and what was heard over all radios in the aircraft, including FM secure communications with ground forces, VHF/UHF communications between aircraft, intercom communications between the copilot/gunner and the pilot, and repeated warnings of possible enemy presence by the AN/APR-39A(V)1 Radar Warning Receiver (Voice Warning). Blue 5's copilot/gunner (Blue 5) and Gunfighter 6 subsequently activated their recorders. (See app. V for our integrated transcription of the tapes.)

While flying toward the new target, Gunfighter 6 reported sighting vehicles around the 29 east-west grid. The Task Force Commander (radio call sign "Iron Deuce 6") confirmed that these were the vehicles the Apaches were to identify. Gunfighter 6 commented that the line of friendly vehicles appeared to be on the 22 or 23 east-west grid line and advised Blue 6 that they could "shoot anything north of the 25" grid line.

Sighting the Targets

Blue 6, flying northeast on a 050-degree compass heading, spotted six vehicles that Gunfighter 6 advised were "friendly Bradleys oriented north." Turning to a 068-degree compass heading, Blue 6 continued to "screen," or survey, the area toward the northeast, and spotted two targets "about 6,000 meters off my nose," which he estimated to be on the 29 east-west grid. Iron Deuce 6, who overheard part of the Apache communications, advised the TF 1-41 Executive Officer (call sign "Stalwart 5"), "Looks like they are getting ready to engage. It looks like around 9229 grid square." Apparently, none of those listening to the radio traffic realized Blue 6's miscalculation, namely, that if the Apaches were positioned on the 9123 grid lines at a 068-degree compass heading, targets 6,000 meters directly in front of them would be at approximately the 25 east-west grid—not the 29 east-west grid.

Gunfighter 6 then attempted to orient the Apaches. With the aircraft on a 040-degree compass heading, he identified friendly vehicles "in front of us—out to about two-and-a-half kilometers." Blue 6 advised Gunfighter 6 to turn to a compass heading of 070-degrees—almost due east—and to look out 6,000 meters. Gunfighter 6 apparently spotted the vehicles; and using the TADS, he lased and stored the coordinates of the targets.

The TADS identified the target locations by measuring their distance from the aircraft with a laser beam. This information was then stored in the Fire Control Computer, which computed the target locations by comparing their distance and heading with the Apache's location. The computer stored up to 9 grid coordinates (numbered 0-8) that the copilot/gunner could recall and view on a 3.5-inch screen. (See fig. I.4 for depiction of the screen.) The screen displayed three positions at a time, but the data could be scrolled to view any of the grids stored in the computer.

The Gunfighter 6 gun tape indicates that Gunfighter 6 recalled the first three grid coordinates in the system. He observed the following readout:

0 38R NT 95592445 A+1060⁴
1 38R NT 91502700 A+1024
2 38R NT 91302910 A+1101

He thought he was reading the grid coordinates for the vehicles he was seeing 6,000 meters away on the 070 heading, which were stored in position 0. Instead, he read the search coordinates given to him at the beginning of the mission, which he had manually input and stored in position 1. The display screen does not distinguish between search coordinates that are input manually and those of actual targets that are lased and stored automatically.

Gunfighter 6 advised the Ground Commander, Iron Deuce 6, that he had located "two big APC [Armored Personnel Carrier] sort of vehicles, grid coordinate NT915270" that did not appear to be part of the screen line. (The 1-1 AVN Commander later confirmed that, in this instance, the physical proximity of the vehicles had become his primary focus, while the grid coordinates had become secondary.) Not realizing that Gunfighter 6 had misread the target coordinates, Iron Deuce 6 confirmed that the

⁴The first number (0) indicates the location of the grid coordinate in the Fire Control Computer. The second set of numbers (38R NT) identifies the geographical area. The next set of contiguous numbers (95592445) is the grid coordinate, which identifies the area where the north-south (9559) and east-west grid lines (2445) intersect. The "A+," followed by a set of numbers, indicates the altitude above mean sea level of the grid coordinate.

coordinates were “exactly where we shot the last vehicle. Looks like we killed one of them. Those are enemy. Go ahead and take them out.”

Gunfighter 6 then checked the system and again misread the coordinates, saying, “915270. Looks like one vehicle is pulled up to another one there. They may be transloading people.” This information was consistent with the scenario presented by ground commanders in which one of the two vehicles had been struck by a tow missile. Again, Iron Deuce 6 authorized the Apaches to “take them out.”

Although the Apaches had been authorized by the Ground Commander to fire at the targets, Gunfighter 6 asked Blue 6 to verify the target’s position. Blue 6 then asked Blue 5 if he could verify the target, commenting, “My target NAV’s [navigation system] not working right.” Blue 6 advised Gunfighter 6, “when I NAV and store it, I get it greater than 9524 vicinity. It doesn’t—it’s not coming out right.” Gunfighter 6 commented, “Yeah, and it’s over behind the right of this Bradley right here. They may have shot themselves.”

In the meantime, Blue 5 lased and stored the target and advised Blue 6 that the targets appeared to be on the 25 east-west grid line. Although Blue 5’s transmission is recorded on the Gunfighter 6 gun tape, when interviewed the 1-1 AVN Commander—Gunfighter 6—advised us that he had not heard Blue 5’s communication on the night of the incident. He commented that the audio tape is much clearer, when reviewed, than when the same communications are heard through a helmet headset.

At this point, Gunfighter 6, which was approximately 4,750 meters from the target, moved ahead of the other two aircraft, and stopped 3,437 meters from the targets. Gunfighter 6 then radioed the Ground Commander, Iron Deuce 6, saying, “You have a Bradley at 946245 and he’s oriented north on the screen line. He’s got an APC [Armored Personnel Carrier] near him also. Then, off to his right [emphasis added] are these two vehicles that I see, and those are the vehicles at 915270”—again misreading the coordinates displayed on his screen.

Iron Deuce 6 asked, “Can you still engage those two vehicles at the 270 grid line?” Gunfighter 6 said he could, and Iron Deuce 6 again told him, “Take ‘em out.” Clearly, the ground commanders did not realize that the crews were viewing targets to the east—not to the north—of the vehicles on the screen line, despite the contradictory information provided by Gunfighter 6.

The Attack

The Blue 6 and Blue 5 aircraft, which had remained behind while Gunfighter 6 flew forward, then began to move toward the lead aircraft. At this point, the TF 1-41 Commander (call sign "Stalwart 6") came on the communications network and, relying on the description and location of the targets provided by Gunfighter 6, confirmed that they were "consistent with the type that was fired [upon] earlier." He told Gunfighter 6 to "go ahead and shoot those" and then to move to another location farther west to search for a vehicle that appeared to be hiding in low ground.

Gunfighter 6 commented that his aircraft was "at the 233 [grid] and we're heading 070 [degrees]. Okay. Firing gun." He then said that his 30-millimeter gun had "jammed," and his pilot suggested that he "Go missiles." Instead, Gunfighter 6 responded to a call from the Ground Commander, Iron Deuce 6, again describing the vehicles he saw in his TADS. He answered, "It appears one of them is, in fact, killed; and I'm going to go ahead and shoot the other one now." Iron Deuce 6 responded, "Roger. I say, go ahead. Take 'em out."

Gunfighter 6 rechecked the coordinates but again mistakenly read the search coordinates that he had input en route to the area instead of the coordinates of the target he was viewing. Blue 6 confirmed that he saw "two vehicles. One's pointed toward us, the other's about 90 degrees perpendicular to him." Gunfighter 6 lined his sights on the target and fired a Hellfire missile, striking one of the vehicles. He advised the Ground Commander that the first target was "completely destroyed." He then lined his sights on the second target and fired another Hellfire missile, destroying the second vehicle. Although the 1-1 AVN Commander believed he had attacked two Iraqi vehicles north of the screen line, he had actually attacked two U.S. vehicles positioned along the northeast corner of the screen line.

Stalwart 6 gave the Apaches a new search coordinate and attempted to move them away from the area to allow his artillery to "pick up any dismounts." However, Gunfighter 6 spotted personnel walking away from the targets "on a heading of east." Actually, the Apache gun tapes reveal that the aircraft was on a 070-degree compass heading, meaning that the personnel were walking south, toward friendly forces.

Since Gunfighter 6's 30-millimeter gun was jammed, he instructed Blue 6 and Blue 5 to engage the targets with their guns. Almost immediately, Stalwart 6 reported that "friendly vehicles may have been hit" in the

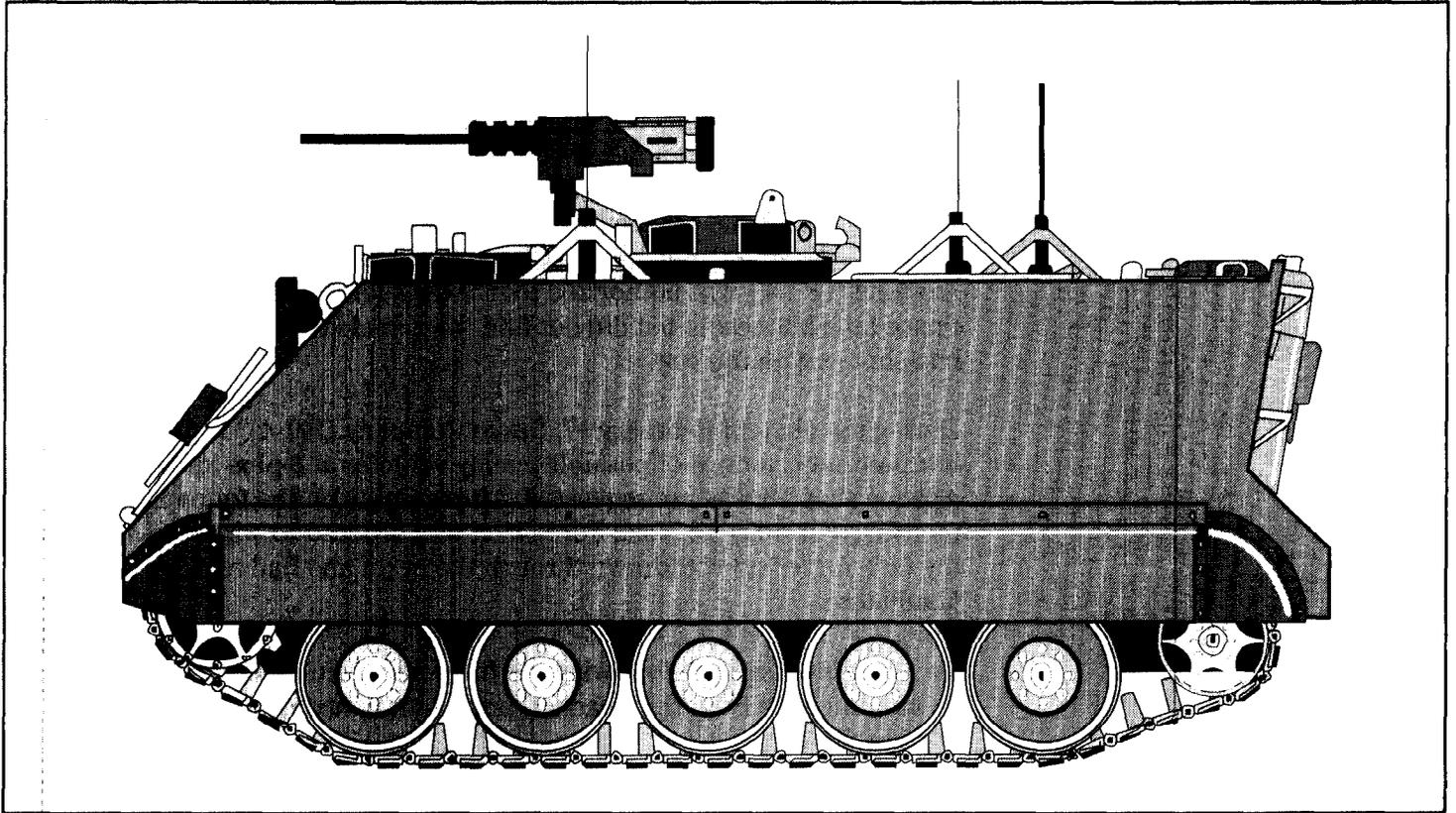
NT965247 vicinity "from the rear"; and a cease-fire was ordered. The time was approximately 12:56 a.m. on February 17.

Initially, ground commanders feared their vehicles had been fired upon by enemy forces that had penetrated their screen line. They also speculated that the 1st CAV, which was below the berm, had fired at the friendly forces. While they were attempting to determine what had happened, the commanders called for medical evacuation helicopters to attend to the wounded and moved the Apaches out of the area to search for additional targets. When the Apaches completed their search, the 4th Brigade Commander ordered Gunfighter 6 to fly over the TF 1-41 Tactical Operations Center, where it was confirmed that the aircraft's navigation system was functioning. The Task Force Iron Commander then released the Apaches, and they returned to their base below the berm. (See fig. I.7)

The Two Friendly Vehicles

On the evening of February 16, 1991, an M113 Armored Personnel Carrier (see fig. II.2) assigned to the scout platoon was to watch the northeast area because the battalion had an exposed right flank. M113s were usually attached to the scout platoons for the purpose of transporting the Ground Surveillance Radar. Since the radar had to be taken out of the vehicle and set on the ground, there was no reason for the M113, which was facing northwest, to face a specific direction. By comparison, Bradleys and tanks along the east-west screen line faced north, while scout vehicles along the right flank faced northeast.

Figure II.2: The M113 Armored Personnel Carrier



When the Commander of Task Force Iron advised TF 1-41 that the Apaches had been called to identify the suspected enemy targets, the scout platoon leader attempted, but was unable, to communicate this information to his M113 by radio. (It was determined later that the M113's radio was inoperable.) He then sent his squad leader, who was in his Bradley on the right flank about 200 meters from the M113 to provide security for that vehicle, to inform the M113's crew of the Apache mission.

The squad leader, a sergeant, pulled his Bradley out of position and drove over to the M113. He got out of his vehicle and walked over to the M113 to speak to the soldiers. He then walked back to his Bradley, which was facing northeast, and climbed inside just before the Apache attacked the vehicle. Five men were inside the Bradley when the Hellfire missile hit it: two were killed, three were injured. The three men in the M113, who had

stepped out of their vehicle, were injured by the blast of the second Hellfire missile when it struck their vehicle.

Events Immediately Following the Incident

TF 1-41 continued to have sporadic contact with suspected Iraqi vehicles throughout the early hours of February 17, 1991. When the activity ceased, the TF 1-41 Commander moved some of his vehicles to the site of the destroyed M113 and Bradley and confirmed their exact location—NT965247—using the Global Positioning System. Later that morning, TF 1-41 was authorized to make a 2-kilometer sweep north of Phase Line Minnesota but did not find the vehicle that Charlie Company had shot at with the tow.

During the night of February 17, Bravo Company (B/1-41) reported intermittent sightings of possible enemy vehicles at 3-plus kilometers; but Apache support was not requested. After sunrise on the following morning, February 18, Task Force Iron was ordered to withdraw. By noon, the task force had withdrawn through the berm and had relocated at TAA Manhattan.

An Army investigation following the fratricide incident concluded that Hellfire missiles from the Apache, Gunfighter 6, had destroyed the two friendly vehicles.

Analysis of the Army Regulation 15-6 Investigation of the February 17, 1991, Incident

Following the February 17, 1991, incident, the Army conducted a formal investigation into the cause of the two deaths and six injuries. The investigation concluded, among other points, that the vehicles had apparently been struck by Hellfire missiles fired from the Apache designated as Gunfighter 6. On February 20, 1991, the Division Commander relieved the 1-1 AVN Commander of his command for failing to follow the Commanding General's guidance on appropriate command and control procedures by acting as the firing platform while in command of the combat mission.

We agree with the Army's overall investigative findings. Our investigation found insufficient evidence to contradict the Army's conclusions regarding the Army's standard operating procedures or the Division Commander's guidance concerning field commanders' use of command and control procedures. However, we determined that the Army Regulation (AR) 15-6 investigation for suspected misconduct by an officer did not address the issue of fatigue, which may have been a factor in this incident.

The Army Investigation

On February 18, 1991, the Division Commander appointed the Assistant Division Commander as the Investigating Officer to investigate the deaths of the two soldiers who were apparent victims of fratricide. This action was taken under AR 15-6, which provides guidance for conducting official Army investigations.

The Investigating Officer was directed to determine "all the facts surrounding this incident and, ultimately, determine the cause of the deaths." He was specifically directed to (1) determine the procedures in effect to prevent fratricide and to engage targets that could not be positively identified, (2) determine whether those procedures were followed, (3) clarify the guidance given the 1-1 AVN Commander regarding command and control procedures to be employed during combat operations, and (4) evaluate whether the 1-1 AVN Commander followed the command and control guidance. The Investigating Officer was authorized to conduct informal procedures but was to take sworn statements and give warnings of Article 31(b) rights before questioning soldiers suspected of violating the Uniform Code of Military Justice.

The Investigating Officer's Findings and Recommendations

The Investigating Officer provided his findings and recommendations to the Division Commander on February 19, 1991. In summary, he determined that the vehicles "were destroyed from the rear by a large caliber chemical energy warhead"—apparently Hellfire missiles fired from

an Apache—and that “the proximate cause of engaging friendly forces was a breakdown in proper application of SOPs [standard operating procedures] and pre-fire check procedures.” The report stated that a procedure had been established to approach friendly screen lines from south to north. Although the three Apaches initially followed the procedure, they departed from it when a target was identified on a 070-degree compass heading, failing to backtrack and reapproach the new target position from the south.

The Investigating Officer also determined that the 1-1 AVN Commander had mistakenly read a grid coordinate previously entered into the Fire Control Computer as the target grid. The report noted, “It appears the firing AH-64 [Apache] did not lase and store the target vehicle location to ensure the correct grid had been determined . . . or, if the target was lased and stored, the grid called up was NT910270. The Ground Commander was correct to direct engagement as he was continually told 910270, well forward of his screen.”

Finally, the Investigating Officer determined that the 1-1 AVN Commander “would have been better able to control the engagement had he stayed with his policy of supervision/synchronization as opposed to being the firing platform.”

On the basis of his findings, the Investigating Officer concluded that (1) the incident was caused by violating procedures; (2) “the Commanding General’s [Division Commander] policy of leaders staying where they can control as opposed to fighting was known”; and (3) “Apache missions in close proximity to friendly troops are difficult when there is a clear enemy presence. When the situation is such that the AH-64 is looking for 1 or 2 elusive vehicles, the mission is extremely dangerous with a concomitant risk of fratricide.”

He recommended that standard operating procedures be continually reinforced and rehearsed and that “commanders need to stay detached from the immediate engagement so they are in a position to effectively lead and control subordinates’ actions.” He also recommended that Apaches be used against “clearly identified and massed enemy formations/targets that simplify target acquisition and engagement” and that the 1-1 AVN Commander receive a letter of reprimand from the Division Commander.

Decision to Remove 1-1 AVN Commander

The Division Commander related to us that he had read the Army investigation report and recommendations of the Assistant Division Commander and had reviewed the gun tapes several times before reaching his decision to remove the 1-1 AVN Commander from command. He explained that the 1-1 AVN Commander, as the Apache Battalion Commander, had the responsibility to coordinate, synchronize, and direct his forces in the engagement. He also noted that when the 1-1 AVN Commander's 30-millimeter gun had jammed, he had the opportunity to remove himself from the gunner position, resume command and control, and direct the other two Apache aircraft in the attack. In the Division Commander's view, the 1-1 AVN Commander had failed to exercise command and control over his forces and had chosen to become personally engaged in the attack.

On the basis of his review of the tapes, the Division Commander determined that the 1-1 AVN Commander—who commented as he was firing the first missile, "I hope they're not friendlies"—was uncertain that his target was enemy before he fired the missiles. The Division Commander stated that the 1-1 AVN Commander was not required to engage the enemy if he was in doubt concerning the identity of the targets. He commented that the 1-1 AVN Commander's "severe leadership failure" resulted in the deaths of the two U.S. soldiers. Consequently, he decided to relieve the 1-1 AVN Commander of his command. The VII Corps Commander reviewed and concurred with the Division Commander's decision.

GAO's Review of the Investigation

Our review of the Army's AR 15-6 investigation focused on the antifratricide standard operating procedures in effect at the time of the February 17, 1991, incident. These included written and verbal procedures on the proper approach to suspected enemy targets, prefire-check procedures, and rules of engagement. We also examined the 1-1 AVN Commander's concerns regarding the use of attack Apache helicopters as reconnaissance aircraft and the Division Commander's decision not to request an aviation safety investigation.

Standard Operating Procedures

South-to-North Approach

According to the 4th Brigade Commander, the February 1 and 15 incidents and general perspective problems encountered in the stark desert

environment indicated the need for special control procedures to avoid fratricide. The Brigade Commander advised us that he had discussed these problems with the 1-1 AVN Commander on February 16, 1991, and that they had agreed that aircraft should fly south to north, perpendicular to the screen line, whenever approaching their targets.

The Brigade Commander additionally advised us that prior to the February 17, 1991, incident, he had no indication that the 1-1 AVN Commander had failed to brief the soldiers under his command about the new procedure. He added that he now believes that the 1-1 AVN Commander did not brief his subordinates on this issue.

During our investigation, we learned that some Apache pilots flew perpendicular to the screen line as a means of orienting their aircraft in the featureless desert terrain. However, none of the 1-1 AVN pilots we interviewed were aware—prior to the February 17 incident—that this was the procedure they were to use whenever approaching suspected targets.

The 1-1 AVN Commander recalled having the conversation with the Brigade Commander regarding the south-to-north approach on the evening of February 16, 1991. However, he further recalled that the special procedure was to be used on a planned mission to attack the Iraqi trench line. He stated that the mission was postponed later that evening because the Air Force had reserved the air space to make bombing runs. According to the 1-1 AVN Commander, the south-to-north approach was to be implemented “to obtain maximum standoff” from known Iraqi targets that had been located and identified by prior reconnaissance.

The 1-1 AVN Commander maintained that the south-to-north approach procedure was not a standard operating procedure and was not required on all Apache missions. However, he and the other Apache crews initially followed the procedure on the February 17 mission and approached the screen line from south to north to establish the position of the U.S. screen line. They found no enemy targets at the first reported location but spotted possible targets to the northeast. The aircraft then approached the targets on an east-northeast compass heading of 070 degrees, instead of flying due east and approaching the new targets from the south. The 1-1 AVN Commander contended that, once the Apaches had identified the screen line of friendly vehicles, nothing required them to exit a target site, move laterally, and then reapproach the targets from south to north. He stated that the Apaches were flying directly above friendly ground units, which

he believed were a part of Task Force Iron's screen line, and he saw no need to reapproach the new targets from south to north.

Prefire-Check Procedures

The 4th Brigade Commander, during the Army's AR 15-6 investigation, identified the following prefire-check procedures as being in effect at the time of the February 17, 1991, incident. In summary, the copilot/gunner visually acquired the target through the TADS, lased the target, and stored the information in the target navigation system. The copilot/gunner then viewed the target coordinates and provided them to the Ground Commander for verification. Once the copilot/gunner received clearance to fire, he checked his equipment to ensure that he had used the correct line of sight to lase the target. If the gunner ensured that all of his systems were correct, he attempted to acquire the target. If the systems did not work, the gunner did not fire.

Our investigation confirmed that the 1-1 AVN Commander, while acting as the firing platform, had lased and stored the target grid coordinate in the Fire Control Computer and that he had previously stored the search coordinate, provided to the Apaches by the ground troops. However, in viewing the first three coordinates, he confused their order; misread the search coordinate as the target coordinate; and as a result, gave the Ground Commander erroneous information regarding the location of the target. In short, he gave back to the Ground Commander the same grid coordinate that the Ground Commander had given him. This error was repeated at least three times prior to the attack.

Rules of Engagement

The Division Commander indicated that his decision to relieve the Apache Battalion Commander was based in part upon the 1-1 AVN Commander's decision to fire upon the targets even though he had some doubt that the target was enemy, as evidenced by his comments on the gun tape.

When interviewed, the 1-1 AVN Commander commented that the urgency to fire emanated from the Ground Commander. He referred to the "complete flow of information," commenting that he had been told that two enemy vehicles had been spotted, they had been engaged, and one was believed to have been hit. When he saw the two target vehicles parked side by side, what he observed fit the target description. While the 1-1 AVN Commander admitted that "the responsibility to fire always rests with the firing person," he commented that "I would have never fired on my own, and did not fire on my own, but fired at the urging and pestering of a ground commander senior to me who I was working for." He added that

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the Ground Commander told him three times to “go ahead and take them out,” which he considered to be a “lawful order.”

During our investigation, we reviewed the Apache Training Brigade Tactical Standard Operating Procedures (TAC SOP) manual, used for training when the 1-1 AVN attended the Apache Training Course at Fort Hood, Texas, in 1990. The TAC SOP “applies to all commands assigned, attached, or under the operational control of the Apache Training Brigade” and is the “base document for the Unit Training Program field operations which incorporates evaluation standards, lessons learned, and standard operating procedures from fielded units.”

The Apache TAC SOP outlines engagement priorities as (1) immediate threat to self, (2) immediate threat to team members, (3) immediate threat to ground forces, and (4) other targets in priority. The rules of engagement state,

“[C]riteria for determining clearance to fire will be disseminated through the chain of command. In situations where air crews are uncertain as to the identification of the target, or doubt exists that the target is hostile, the following criteria will be used: a. If the target commits a hostile act, it will be immediately engaged. b. If the target cannot be visually identified as hostile, it will not be engaged until confirmed as hostile by at least one report from US or Allied Forces in relation to the target’s position and orientation on the battlefield.”

The Apache gun tapes clearly show that no hostile action had been taken by the target vehicles. Although the AN/APR-39A(V)1 Radar Warning Receiver (Voice Warning) repeatedly warned of possible enemy presence, the immediate nature of the threat is arguable. Since the target could not be visually identified as hostile and was not committing hostile acts, the 1-1 AVN Commander’s decision to confirm the target coordinate with ground commanders was consistent with the TAC SOP. Unfortunately, however, the 1-1 AVN Commander provided incorrect information to the ground commanders, who were dependent upon him for information regarding the target’s position.

**Command and
Control—the Division
Commander’s Guidance to
Commanders**

None of the commanding officers we interviewed questioned the 1-1 AVN Commander’s decision to go on the February 17 mission, especially in view of the weather conditions that evening. The issue they consistently raised, however, was his decision to act as the firing platform, placing his subordinate officers in the awkward position of having to challenge him

on grid verification. In fact, although Blue 6 advised the 1-1 AVN Commander that his instrumentation system showed a different grid coordinate—information that was supported by the third aircraft and that placed the vehicles below the screen line of friendly vehicles—the subordinate officer questioned his equipment rather than the judgment of his commanding officer.¹ Unfortunately, the 1-1 AVN Commander failed to resolve the perceived navigation equipment problem reported by Blue 6 before firing.

The 1-1 AVN Commander told us that he was aware of the Division Commander's guidance about controlling subordinate forces. He added that the Division Commander had wanted commanders to control the units from where they could see the battlefield but not to be so far forward that they became personally engaged in the battle. However, the 1-1 AVN Commander commented that it was his impression that the guidance was not a prohibition, because he believed that the Division Commander, at a meeting, stated that he had fired his tank at unoccupied houses located near the Saudi-Iraqi border.

The 1-1 AVN Commander also told us that, in his opinion, the Division Commander's actions clarified his previous guidance, in that there was no prohibition for commanders to fire, based upon their experience and judgment. When we interviewed the Division Commander, the Assistant Division Commander, and another Lieutenant Colonel, who attended the meeting, they each recalled the meeting but noted that the Division Commander did not state that he had personally fired his tank. The Assistant Division Commander recalled a related conversation but stated that the Division Commander was merely commenting on what he had seen, not what he had done.

Use of Apaches as Reconnaissance Aircraft

We learned that when the 1-1 AVN attended the Apache Training Course at Fort Hood, Texas, in April 1990, the training concentrated primarily on attack missions that involved clearly identified targets behind enemy lines—not reconnaissance missions in close proximity to friendly forces. We also learned that Apache fratricide-avoidance procedures were just being developed.

The 1-1 AVN Commander advised us that he had voiced concerns to his superior officers about the use of Apaches for surveillance missions close

¹The 1-1 AVN Commander had been criticized in the April 1990 after-action report, issued following the battalion's training at Fort Hood, Texas, for exerting "centralized control" and "allowing little initiative or freedom of action for subordinate commanders."

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to the screen line of friendly vehicles prior to the February 17, 1991, incident. He contended that the Apache was designed to attack and destroy large numbers of clearly identifiable enemy tanks, not to conduct reconnaissance missions. He explained that the target-viewing screen used by the copilot/gunner is only 3.5 inches wide, limiting the copilot/gunner's ability to distinguish between friendly and enemy vehicles. (See fig. I.4.)

In addition, according to the 1-1 AVN Commander, between February 1 and 16, 1991, the 1-1 AVN Apaches flew numerous armed reconnaissance missions in search of reported enemy vehicles; but enemy vehicles were never found. He attributed this to false readings by the ground radars or misidentification of images by ground forces unfamiliar with the use of radar in the flat desert terrain. He noted that there was a growing pressure on the Apache pilots to locate hostile targets.

The Division Commander informed us that he ordered the Apaches launched on the night of February 16, 1991, to respond to reports of suspected enemy vehicles. He stated that the Apaches, which were equipped with the Forward Looking Infra-Red (FLIR) targeting and sighting system, were the appropriate choice for the mission because of their ability to view the "depth of the battlefield." He explained that the Apache could fly to the screen line and, using the FLIR optic system, could "see" further than the ground vehicles, which lacked the more sophisticated night vision system. Additionally, he commented that the Apaches, using the Hellfire missiles, were capable of firing on the enemy at greater distances than tanks. He summarized that because of the strong wind conditions and lack of moonlight, the Apache was the appropriate choice for the mission because it had the night vision capability and lethality to deal with the enemy.

**Fatigue Was Not
Addressed**

Fatigue was not addressed in the AR 15-6 investigation, although it may have been a contributing factor. We learned that the 1-1 AVN Commander kept the Apache battalion operational 24 hours a day, dividing the aircraft and pilots into one day company and two night companies. He placed his Operations Officer in charge of the day company, while he remained in charge of the night companies.

When interviewed, the 1-1 AVN Commander stated that he had deployed with his Apaches when they moved closer to the berm in support of Task Force Iron on February 15. Because of the cold weather and concern with that night's mission, he had less than 3 hours sleep; and battalion and

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brigade logs confirm that he was active throughout the day on February 16. The 1-1 AVN Commander advised us that after the night mission on February 16 was canceled, he was preparing to sleep when the Ground Commander requested air support and the Apaches were launched.

The AR 15-6 investigation, which is conducted when misconduct on the part of an individual officer is suspected, was the only investigation of the February 17 incident conducted by the Army. An aviation accident investigation—which is generally conducted when soldiers are killed or injured and/or damage is sustained to aircraft as a possible result of equipment failure—was not conducted at the time of the incident, apparently because combat was imminent and an initial review of the gun tapes indicated that the incident had not resulted from equipment failure. We were advised that an aviation safety investigation often takes a broad view as to the cause of an accident, including factors such as pilot fatigue.

According to the Division Commander, representatives from the Army Aviation Safety Board at Fort Rucker, Alabama, expressed interest in the incident and requested a copy of the gun tapes at the end of the war. He recalled that the tapes were not released because they were considered “incidental evidence” to the official AR 15-6 report.

Apache Equipment/Performance and Press Release

Although we identified several equipment problems that occurred during the incident, we do not believe equipment failure was a cause of the incident. We also found nothing to suggest that the Army misled the Subcommittee. Although we found no impropriety on the part of the 1st Infantry Division Public Affairs Office in the release of information to the press, we believe the current Army regulation outlining the duties and responsibilities of the Public Affairs Office is overbroad and should be clarified.

Equipment Failure Not a Cause of the Incident

We reviewed three problems with Apache equipment: the apparent failure of a 30-millimeter gun; a perceived problem with one Apache's navigation system; and the possible misidentification by the AN/APR-39A(V)1 radar warning receivers during the February 17, 1991, incident. We determined that the 1-1 AVN Commander's 30-millimeter gun jammed but the Blue 6 navigation system was working appropriately. We were unable to confirm whether the AN/APR-39A(V)1 systems were detecting friendly or enemy radar emissions. However, equipment failure was not a cause of the fratricide incident.

The 30-Millimeter Gun

The Apache's 30-millimeter M230A-1 Chain Gun is a single-barrel cannon capable of carrying 1,200 rounds of ammunition. It is considered to be an area-suppression weapon and can be set to emit bursts of 10, 20, 50, 100, or ALL rounds. Its maximum range is 4,000 meters.¹ The gun is controlled by a Fire Control Computer, which automatically stops, or "LIMITS," the gun from firing if the angle of the gun would cause the trajectory of the rounds to hit the helicopter's nose. (See fig. I.2.)

Our review of the Gunfighter 6 gun tape revealed that when the copilot/gunner identified the targets, he attempted to fire his 30-millimeter gun. The tape confirms that the gun, which was set to fire 10-round bursts, fired only 3 shots before going into "LIMITS" and terminating firing. When the copilot/gunner attempted to fire his gun again, he discovered that it had jammed.

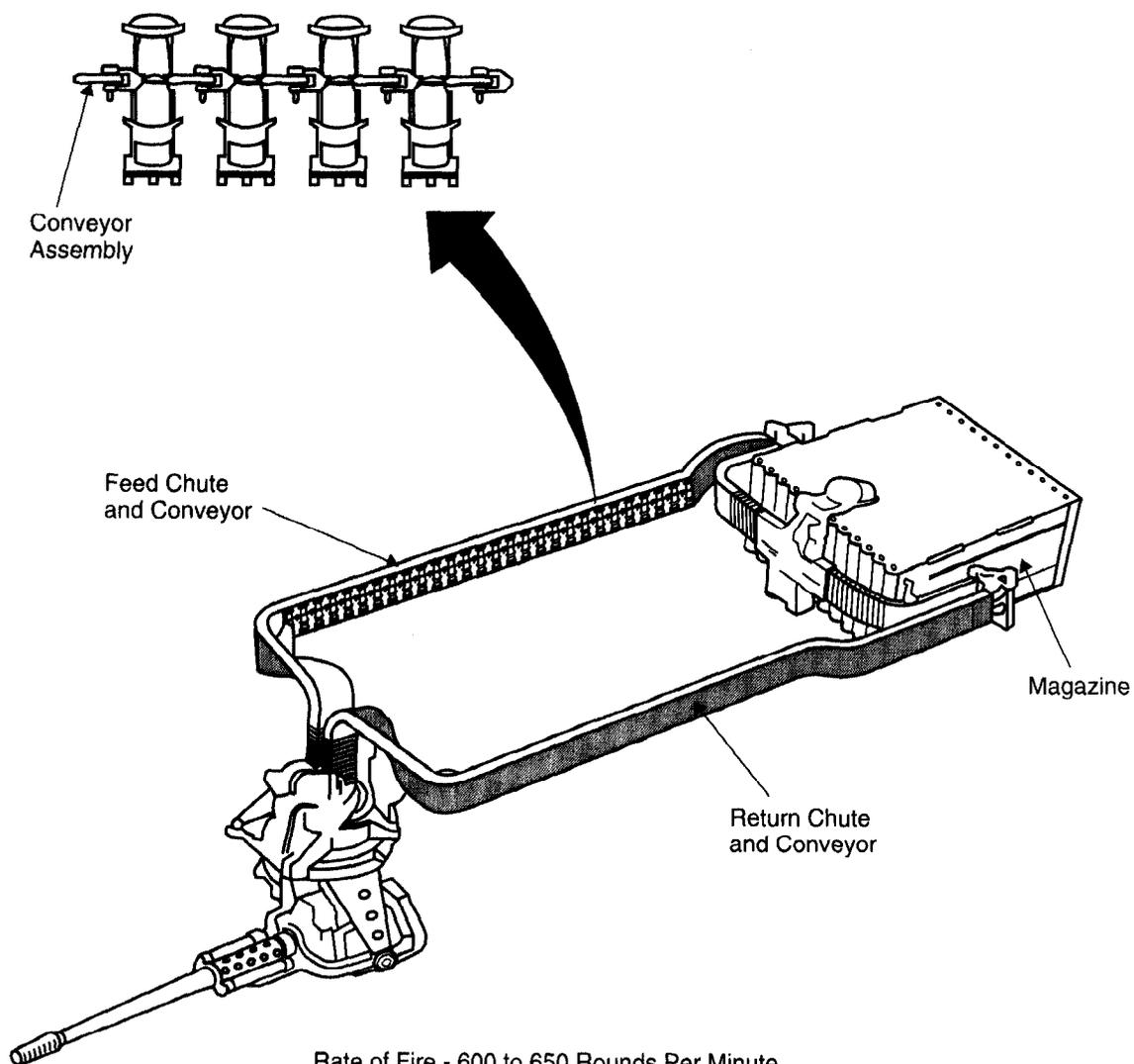
Cause and Repair of the Gun Failure

We interviewed available maintenance personnel and reviewed copies of maintenance records on repair work performed on the 1-1 AVN Commander's 30-millimeter gun. We found that the repair was

¹GAO previously reported on malfunctions of 30-millimeter gun systems in Operation Desert Storm: Apache Helicopter Was Considered Effective in Combat, but Reliability Problems Persist (GAO/NSIAD-92-146, Apr. 20, 1992).

accomplished by replacing a "carrier" link of the conveyor assembly in the ammunition belt system. (See fig. IV.1.)

Figure IV.1: Conveyor Assembly of the Apache Helicopter's 30-Millimeter Gun



Rate of Fire - 600 to 650 Rounds Per Minute.
Maximum Range - 4,000 Meters; Fire Control Computer Solution 4,500 Meters.
Muzzle Velocity - 2,640 Feet Per Second.

Source: U.S. Army

An Army Quality Control Supervisor, who was assigned to inspect the 1-1 AVN Apaches after maintenance was performed, recalled seeing the "Dash 13" form, reflecting that the gun had jammed on the 1-1 AVN Commander's Apache during the February 17, 1991, fratricide incident. He explained that the Dash 13 form was kept with the flight log book for the aircraft and that upon returning from a mission, the pilot, who maintained the log, completed and submitted the form for any maintenance problems encountered during the mission. When the repair work was completed, the repair was logged and the maintenance records submitted for review. Maintenance records were maintained for 6 months and then routinely destroyed.

The supervisor recalled that the maintenance forms had been completed and that the Quality Inspector had inspected and approved the repair of the gun. He recalled that the cause of the gun failure was a broken link in the ammunition belt system.

Jamming of the 30-Millimeter Gun Not a Cause of the Incident

The gun tapes reveal that Gunfighter 6 was approximately 3,800 meters—maximum range is 4,000 meters—from the targets when he fired the 30-millimeter gun. We were advised that the maximum effective killing range of the 30-millimeter gun is about 2,500-to-3,500 meters when used against APCs, although damage can be sustained when fired at greater distances.

According to the 1-1 AVN Commander, he intended to saturate the area with a couple of hundred rounds, thinking that the enemy would probably surrender. When asked why he then chose to fire the Hellfire missiles instead of ordering his wingmen to fire their fully functional guns at the target, he replied that (1) he was leading the mission; (2) he had confidence that they were engaging the enemy; (3) he was receiving encouragement from the Ground Commander to fire; and (4) he felt "it was time to get on with it."

We confirmed that the 30-millimeter guns on the two accompanying Apaches were functional and could have been fired for reconnaissance purposes. Although the 1-1 AVN Commander had moved his aircraft ahead of the other two Apaches when he was preparing to fire his 30-millimeter, the wingmen had apparently moved closer to him at the time he fired the gun and would have been in position to fire additional rounds when his gun jammed. As a result, we disagree with assertions that the gun's failure indirectly caused the accident by preventing the 1-1 AVN Commander from firing warning shots.

Navigation System

The Apache pilots used two methods of navigation: comparison of terrain to a map and use of the lightweight doppler navigation system. The recommended procedure was to use a map with the doppler as backup, but this procedure was difficult in unlit cockpits during nighttime operations.

The 1-1 AVN Commander characterized the doppler system as "a ball park navigator" and related that in his aircraft, in a 2-hour flight in the immediate area, the system would "drift" about 300 to 500 meters. We were told that because of the desert's featureless terrain, the Apaches were assigned designated landing pads that had been surveyed using a Global Positioning System. Before launching Apaches, the aircraft's present position was keyed into the Data Entry Keyboard and compared with the position determined by the doppler navigation system. If the two reflected the same location, the system was ready. If not, the doppler was reset.

Gunfighter 6's Navigation System

On the afternoon of February 16, 1991, the 1-1 AVN Commander and his pilot flew to the Division Tactical Area Command. Upon their return, they did not land on their designated landing pad. The 1-1 AVN Commander advised us that when the Apaches were launched in support of Task Force Iron that evening, he did not have the opportunity to update his aircraft's position. However, the Blue 6 aircraft was launched from its designated pad and its position would have been updated for the mission.

After the fratricide incident, the 4th Brigade Commander instructed the 1-1 AVN Commander to fly his aircraft over the TF 1-41 Tactical Operations Center. Although it was confirmed that the Apache's navigation system was functioning, the gun tapes indicated that the 1-1 AVN Commander reported "there's been some drift of the navigation package" when the aircraft returned to the 1-1 AVN landing area.

The following day, ground troops using a Global Positioning System, determined the exact location of the vehicles as NT965247. By comparison, the Gunfighter 6 navigation system had recorded the coordinates as NT955244, while the Blue 6 navigation system had recorded the coordinates as NT959245. Although the navigation systems recorded different coordinates, all three Apache navigation systems appear to have been functional; and the coordinates recorded by the Apaches identified the targets as being below the screen line of friendly vehicles.

Blue 6's Navigation System

On the February 16-17, 1991, mission, the Blue Team Leader, Blue 6, lased the targets, receiving a grid coordinate of NT95922454. He then advised Gunfighter 6 that "when I NAV and store it, I get it greater than 9524 vicinity. It doesn't—it's not coming out right," raising the issue of whether his navigation system was functioning properly.

When asked why he had questioned his system rather than Gunfighter 6, he told us that by that time, Gunfighter 6 had confirmed the targets on the 27 east-west grid line and the Ground Commander had confirmed the description of the targets as those he had earlier engaged. In addition, Blue 6 perceived a distinct screen line with two vehicles clearly at least 1,000 meters in front of the screen line; and the Ground Commander had stated he had no friendly vehicles in front of his screen line. All of this, reinforced Blue 6's belief that his coordinate NT95922454 may have been incorrect.

AN/APR-39A(V)1 Radar
Warning Receiver

The AN/APR-39A(V)1 Radar Warning Receiver (Voice Warning) had been installed on the Apaches a few weeks before the aircraft were deployed to the Persian Gulf. The new system used an electronic voice, instead of a tone, to warn crew members of enemy radar and gun tracking of their aircraft. Only after the Apaches were deployed on missions in the Persian Gulf War was it learned that the AN/APR-39A(V)1 misinterpreted signals from U.S. Army Ground Surveillance Radars as enemy signals.

The Apache gun tapes indicate that the AN/APR-39A(V)1 repeatedly warned the Apache crew members that their helicopters were being "painted," or tracked, by enemy radar. Although a number of suspected enemy sightings had been reported just prior to the Apaches' launching on the mission, the Apaches' crew also knew that the AN/APR-39A(V)1 had previously misread U.S. ground radar emissions as enemy signals.

The six Apache crew members differed as to the level of concern generated by the repeated activation of the AN/APR-39A(V)1. One, who had been fired upon previously, expressed concern. Another dismissed the system's warning as an erroneous signal, commenting that the aircraft was out of range of the two suspected enemy vehicles and it was possible that the signal was being emitted by a friendly vehicle. However, the 1-1 AVN Commander believed that the radar signals were emanating from enemy radars. He told us that in a possible radar environment, the standard procedure is for one aircraft to provide "overwatch," while the second aircraft moves forward to make a positive identification. He elected not to

send an Apache crew forward, because he was concerned they could be destroyed by enemy anti-aircraft fire.

The Congress Not Misled

We found no attempt by the Army to mislead the Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, about the jamming of the 30-millimeter gun on the 1-1 AVN Commander's aircraft during the February 17, 1991, mission.

During a GAO review of the Apaches' performance in Desert Storm, conducted in July 1991, the 4th Brigade Commander advised GAO that the systems on the Apaches involved in the February 17, 1991, fratricide incident were functional. In that same interview, he acknowledged that the 30-millimeter gun had jammed on the 1-1 AVN Commander's aircraft but apparently did not clarify that the gun had jammed before the Hellfire missiles had been fired.

In a subsequent interview with GAO, the Brigade Commander acknowledged that the gun had jammed prior to the firing of the missiles. However, he noted that he did not see the matter as relevant to the overall investigation since the other two Apaches had working guns. Also, while the Army's AR 15-6 investigation report did not mention the jamming of the 30-millimeter gun, this information was contained in the statements attached as exhibits to the report.

Regulation Regarding Public Release of Information Subject to Misinterpretation

On February 21, 1991, a newspaper reporter accompanying the 1st Infantry Division submitted, to the Division's Public Affairs Office in Saudi Arabia, a draft of a story he intended to file on the February 17, 1991, fratricide incident. For security reasons, all news media stories during Operation Desert Storm had to be cleared by the Public Affairs Office before they could be released for publication. The Public Affairs Office approved the story submitted by the reporter.

The story identified the 1-1 AVN Commander and reflected the reasons for his relief from command. The reporter advised us that he had learned from more than one source, all of whom were outside the Division's command structure, that the 1-1 AVN Commander had fired on the friendly targets. He also said that he had spoken with the Division's Public Affairs Officer about the incident, but he could not recall whether the officer had advised him of the Commander's relief from command or whether the officer had merely confirmed the information.

The next day, February 22, 1991, in anticipation of the story's release, the Division's Public Affairs Office issued a press release. It stated that following an Army investigation of the February 17, 1991, fratricide incident, the 1-1 AVN Commander had been relieved of his command for failure to follow command guidance. The press release also identified the Commander, by position and unit, as the soldier who had fired on friendly vehicles in the incident. Several news articles regarding the incident, naming the 1-1 AVN Commander, subsequently appeared in U.S. newspapers.

In October 1991, the 1-1 AVN Commander submitted a complaint to the U.S. Army Inspector General (IG) and requested an inquiry into his allegation that Army public affairs officials had improperly released information concerning the findings of the official investigation of the incident to the press corps without approval from the Department of the Army's Headquarters staff, as required by Army Regulation (AR) 360-5 paragraph 3-21. The IG responded to the 1-1 AVN Commander's complaint in a letter dated January 23, 1992, saying that the Commander's "allegation was unsubstantiated."

The IG's letter discussed AR 360-5, paragraph 3-21, which outlines restrictions on the public release of information on "accidental casualties involving military personnel or equipment." The letter specifically cited subparagraph 3-21d, which provides as follows:

"Information on line-of-duty status or findings of misconduct by individuals, resulting from official investigations, will not be released to the public except with the approval of The Adjutant General, HQDA [Headquarters, Department of the Army] for Reserve or retired Army members, or HQDA (DAPC-PED) for Active Army members."

According to the IG's letter, DAPC-PED "is the office, in The Deputy Chief of Staff for Personnel, designated by The Adjutant General to execute DA [Department of the Army] policy pertaining to line-of-duty (LOD) determinations regarding soldiers killed or injured on active duty." The IG went on to state that the information contained in the 1st Infantry Division press release concerning the 1-1 AVN Commander "was unrelated to LOD status or any other matter over which DAPC-PED exercises proponentcy. Accordingly, the press release in question was outside the scope of paragraph 3-21d, and no prior approval by DAPC-PED was required."

The IG found no "impropriety" on the part of the 1st Infantry Division Public Affairs Office in releasing the information, noting "[p]ersonnel on

the spot were responding as best they could under the circumstances to information the press had already discovered." The IG acknowledged, however, that the language of subparagraph 3-21d was "very broad" in scope and subject to possible misinterpretation. As a result, the IG indicated that he had requested the Army Office of Public Affairs, the proponent of AR 360-5, to "review the regulation and clarify this paragraph as appropriate."²

We learned that the IG's interpretation of subparagraph 3-21d was based upon a memorandum written to the IG by the Assistant Judge Advocate General for Military Law and Operations, dated December 23, 1991. The memorandum also acknowledged the "overbroad language" used in subparagraph 3-21d, "which appears to a person unfamiliar with the policy therein expressed and the role of DAPC-PED to apply to a broad spectrum of information unrelated to line-of-duty determinations."

We were told that DAPC-PED is the office designation for the Memorial and Administrative Affairs Branch of the Casualty and Memorial Affairs Operations Center. The role of DAPC-PED, in part, is to review press releases on accidents involving military casualties to ensure that the information released does not reflect negatively on the Army, does not contain a basis for liability against the Army, contains actual facts, and contains no adverse information that would be unsettling to the family—such as naming casualties before the next of kin have been notified. DAPC-PED does not usually review press releases involving battle deaths or injuries.

We found no evidence of misconduct by Army public affairs officers in preparing and distributing the press release or in speaking with the reporter. However, as currently written, AR 360-5 does not define or limit the role of DAPC-PED. Instead, the regulation requires that when accidental casualties involve military personnel or equipment, "[i]nformation on line-of-duty status or findings of misconduct by individuals, resulting from official investigations, will not be released to the public except with the approval of . . . HQDA (DAPC-PED) . . ." [Emphasis added.] As a result, the regulation appears to confer on this office a responsibility beyond the review of line-of-duty status.

²As of June 2, 1993, the Army Office of Public Affairs had indicated its intent to revise AR 360-5, subparagraph 3-21d, to address the "overbroad language." Changes had been recommended, and the office was considering them for inclusion when it updates the regulation.

If the Army does not intend to confer oversight responsibility with HQDA (DAPC-PED) on fratricide incidents, then we believe that the language of AR 360-5 is overbroad and should be clarified.

Transcription of Gun Tapes Recorded During February 17, 1991, Incident

The following transcript is a compilation derived from the three Apache gun tapes that recorded the February 17, 1991, incident. The Army's chain of custody of the tapes was broken, apparently in Saudi Arabia. Months later, a news agency returned the purported tapes to the Army. During OSI's investigation, the six Apache crewmen indicated that the returned tapes appeared to contain accurate recordings of the actual incident and the events that led to the incident; but they could not agree upon the completeness of the taped conversations.

Extensive efforts have been made to produce an accurate transcript of the three tapes. The Army provided an initial draft, which OSI staff revised and edited with assistance from two of the Apache crew members.

The tapes include the intercom conversations inside the aircraft between each pilot and copilot/gunner team. They also include the conversations transmitted by each aircraft's three radios, which had several different frequencies. Radio 1 was secure voice FM, which was normally tuned to the ground or air commander's frequency. Radio 2 was UHF only and was used for air-to-air communications; it was the primary radio for command and control while in the air. Ground units could not transmit or receive on this band. Radio 3 was a VHF/FM radio. In the FM mode, it had no secure capability and was rarely used for command-and-control purposes. In the VHF mode, it was used for air-to-air communications. Ground units could not transmit or receive on this band. The AN/APR-39A(V)1, which can also be heard on the tapes, was the Voice Radar Warning Receiver that gave a computer-voice warning of air defense radar systems tracking or targeting the aircraft.

Identification of Speakers

Blue 5 (Cpg)	Copilot/gunner
Blue 5 (P)	Pilot
Blue 6 (Cpg)	Copilot/gunner
Blue 6 (P)	Pilot
Dragon 6	4th Aviation Brigade Commander
Gunfighter 6 (Cpg)	1-1 AVN Commander, Copilot/gunner

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

Gunfighter 6 (P)	Pilot
Handler Oscar	Medical Evacuation Tactical Operations Center
Iron Horse 3	1st Cavalry Division Operations Officer
Iron Deuce 6	Task Force Iron Commander
Iron Deuce Oscar	Task Force Iron Tactical Operations Center
Stalwart 5	TF 1-41 Executive Officer
Stalwart 6	TF 1-41 Commander
Stalwart Oscar	TF 1-41 Tactical Operations Center

Abbreviations

ALOC	Administrative and Logistics Operations Center
A&L	Administrative and Logistics Communications Network
Alt	altitude
APC	Armored Personnel Carrier
CAV	1st Cavalry Division
CPG	Copilot/gunner
DEK	Data Entry Keyboard
DTAC	Division Tactical Area Command
DUST-OFF	Medical Evacuation Helicopter
557	M-557 Command Armored Personnel Carrier
Freq	frequency
FSCL	Fire Support Coordination Line

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

GPS	Global Positioning System
GSR	Ground Surveillance Radar
Gun 6 Lima	Gunfighter 6
LZ	landing zone
MAN-STAB	manual stabilizer
NAV	navigation system
Net	communications network
PPOS	present position
VT	Variable Timed Fuse for artillery shells
WAS	Weapons Action Switch

Legend of Transmissions

1	Gunfighter 6 Gun Tape
2	Blue 6 Gun Tape
3	Blue 5 Gun Tape
IC	Intercom; radio communications between pilot and copilot/gunner
VHF/UHF	Radio communications between aircraft
FM	Secure radio communications between ground forces and between ground forces and aircraft
S	Information displayed on monitor screen in aircraft
AN/APR-39A(V)1	Voice Radar Warning Receiver

Combined Transcripts

1-Gunfighter 6 CPG (IC): It is the—

1-Gunfighter 6 Pilot (IC): I don't have a message back here.

1-Gunfighter 6 CPG (IC): Okay. Stay. I got it up here. Today's date is the 16th. It's 17—there's the time—24 in the afternoon, present position,

1-Gunfighter 6 CPG (S):
Time 17 24 22
PPOS 3 BR NS 4663 8937
Alt +1111 HG 30 06 IN

And we're departing now for—

1-Gunfighter 6 Pilot (IC): Iraq?

1-Gunfighter 6 CPG (IC): No, not really. We're departing for the DTAC. There's present position right there.

1-Gunfighter 6 CPG (S):
Time 12 24 37
PPOS 3 BR NS 4601 8908
Alt +1109 HG 30 06 IN

1-Gunfighter 6 CPG (IC): Stand by.

* * * * *

1-Gunfighter 6 CPG (IC): [Inaudible]. . . here. Get the recorder here. Okay. Recorder is working. Okay. Night mission of 16—

1-Gunfighter 6 Pilot (IC): 17.

1-Gunfighter 6 CPG (IC): Yeah, 17 February.

* * * * *

2-Gunfighter 6 CPG (FM): And north-south grid line is 29er. Looks like they're driving away from you on the 29.

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Transcription of Gun Tapes Recorded
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2-Iron Deuce 6 (FM): Go after 'em. That's your target.

2-Blue 6 (AN/APR-39A(V)1): Guns at 8 o'clock.

2-Gunfighter 6 CPG (FM): Roger. Right behind you.

2-Gunfighter 6 CPG (VHF/UHF): Go ahead and identify the target and give me a heading.

2-Blue 6 CPG (VHF/UHF): Roger. Stand by. [Inaudible]. . . I've got to pull [Blue 5 Pilot] out 'cause I can't—

3-Blue 5 CPG (IC): What happened?

3-Blue 5 Pilot (IC): What'd he say? Two minutes?

3-Blue 6 Pilot (VHF/UHF): I'm going to be stopping in here, [Blue 5 Pilot].

3-Blue 5 Pilot (VHF/UHF): Roger. Right behind you.

3-Blue 6 CPG (VHF/UHF): Roger. Stand-by.

3-Blue 5 Pilot (IC): I'm MAN-STAB.

2/3-Blue 6 CPG (VHF/UHF): Gun 6, Blue 6. What is their front line trace, east-west grid line?

2/3-Gunfighter 6 CPG (VHF/UHF): Roger. They're on the 22, 23 grid line. So, you can shoot anything north of the 25.

2-Blue 6 (AN/APR-39A(V)1): [Inaudible]

2/3-Blue 6 CPG (VHF/UHF): Okay. I've got them on the—I've got targets out to my front. I'm looking out 040. I've got one, two, three, four—I've got about six vehicles out there, anywhere from about—[inaudible] . . . 3,000 meters out to about 7,000 meters out.

2-Stalwart Oscar (FM): Stalwart 5. We're going to do a repeat on that last target we flew. If they go forward, they need to stay to the east of the—91 grid.

2/3-Gunfighter 6 CPG (VHF/UHF): Give me a heading for the target.

2-Stalwart Oscar (FM): To the 91 grid line.

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2/3-Gunfighter 6 CPG (VHF/UHF): Blue 6, give me your heading to the target.

2/3-Blue 6 CPG (VHF/UHF): Heading to the target is 050. How do you hear me?

2/3-Gunfighter 6 CPG (VHF/UHF): Roger. 050 is friendly Bradleys oriented north.

2-Blue 6 (AN/APR-39A(V)1): Guns 8 o'clock. Now 6 o'clock.

2/3-Blue 6 CPG (VHF/UHF): Okay. If you look out there, there's a string of vehicles that go out almost, oh, 5,000 meters from my position, out to about 270 grid line.

2/3-Gunfighter 6 CPG (VHF/UHF): They're 3,000 meters from me. Now, you're saying you see something in there between them?

2/3-Blue 6 CPG (VHF/UHF): Negative. What I see is—I got a screen line, ah, about on the 22—

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. 8 o'clock tracking. Now lock broken.

2/3-Blue 6 CPG (VHF/UHF): —24, 25 east-west line, and there's vehicles further out than them I can see. If you orient about 070, I've got two targets out about on the 27, 28 grid line.

2-Blue 6 CPG (IC): I lost them. There they are.

3-Blue 5 Pilot (IC): Sliding right, [Blue 5 CPG], looks like they're moving . . . [inaudible].

2/3-Gunfighter 6 CPG (VHF/UHF): Roger. It looks to me like he's got a GSR track out in front of him out there. We're going to fly heading 070 and move into—move into these friendlies.

2/3-Blue 6 CPG (VHF/UHF): This is Blue 6, Roger. That—he's about 6,000 meters off my nose. That'll put it at the 290 east-west grid line, the two vehicles I see, heading 0—about 068 from me.

2-Blue 6 Pilot (IC): Do they follow?

2-Blue 6 CPG (IC): Yeah.

2/3-Blue 6 CPG (VHF/UHF): Now, the screen line, that's out about 050, I can see—

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2-Stalwart 5 (FM): Iron Deuce Oscar, Stalwart 5.

2/3-Blue 6 CPG (VHF/UHF): —about five vehicles right in front of you.

2-Iron Deuce 6 (FM): Iron Deuce 6, go ahead.

2/3-Blue 6 CPG (VHF/UHF): —and then—two vehicles beyond them.

2-Stalwart 5 (FM): Roger. The Apaches drop to an internal freq? Over.

3-Blue 5 Pilot (IC): It's a [expletive deleted] to fly.

2-Iron Deuce 6 (FM): Roger. He's talking to his team now. They have targets engaged. Looks like they are getting ready to engage. It looks like around 9229 grid square.

2-Stalwart 5 (FM): Roger. Understand, 92 grid line. [Pause.]

2/3-Gunfighter 6 CPG (VHF/UHF): Okay. You on—where are you off on me right now. Come up on my right wing.

2/3-Blue 6 CPG (VHF/UHF): Roger. I'm off—

2-Blue 6 (AN/APR-39A(V)1): Guns 8 o'clock. Now 6 o'clock.

2/3-Blue 6 CPG (VHF/UHF): —about your 4 o'clock now.

2/3-Gunfighter 6 CPG (VHF/UHF): Okay. These are all friendlies in front of us—out to about two-and-a-half kilometers in front of me.¹ These are all Bradleys.

2/3-Blue 6 CPG (VHF/UHF): Roger. Turn in the direction about 070, 068, 070, and look out about 6,000 meters. I got two hot spots right next to each other. [Pause.]

2/3-Gunfighter 6 CPG (VHF/UHF): Those are big APC kind of vehicles.

2/3-Blue 6 CPG (VHF/UHF): Roger. It looks almost like a 557.

2/3-Gunfighter 6 CPG (VHF/UHF): See nothing else, right?

¹The Blue 6 gun tape indicates that the aircraft was on a 040-degree compass heading.

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2/3-Blue 6 CPG (VHF/UHF): Roger, and I got those out there about 5,000 meters from my position. That puts it out about the 28, 29 grid line.

3-Blue 5 Pilot (IC): Do you see what he sees? You need to talk to them, because I haven't looked at anything of what you're seeing. I'm too busy flying.

2/3-Blue 6 CPG (VHF/UHF): You want to check my spot?

3-Blue 5 CPG (IC): I've seen the things that he's seen.

2/3-Blue 6 CPG (VHF/UHF): I'll put a spot out there. I'm on a delta.

2/3-Gunfighter 6 CPG (VHF/UHF): Stand-by one.

2-Blue 6 CPG (VHF/UHF): Anybody want—another lonely vehicle right there.

2/3-Blue 5 CPG (VHF/UHF): 6, this is 5.

2/3-Blue 6 Pilot (VHF/UHF): 6.

2/3-Blue 5 CPG (VHF/UHF): What's the range on those targets you're looking at?

2/3-Blue 6 Pilot (VHF/UHF): 5,000—about 5,000 meters.

2/3-Blue 5 CPG (VHF/UHF): Roger. I got 'em.

2-Iron Deuce 6 (FM): Gunfighter 6, Iron 6.

2-Gunfighter 6 CPG (FM): Gunfighter 6 has two big APC sort of vehicles, grid coordinate 915270. They do not appear to be a part of—

2-Gunfighter 6 (AN/APR-39A(V)1): Guns, guns, 6 o'clock tracking.

2-Gunfighter 6 CPG (FM): —your screen line. They're stationary. Let me look at them a little bit here.

2-Iron Deuce 6 (FM): Roger. That's exactly where we shot the last vehicle. Looks like we killed one of them. Those are enemy. Go ahead and take them out. For your information, I've also check fired the artillery. They will not fire as long as you're in the area.

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2-Gunfighter 6 CPG (FM): Roger. I'm going to do it again one more time. 915270. Looks like one vehicle is pulled up to another one there. They may be transloading people.

2-Iron Deuce 6 (FM): Roger. Go ahead and take them out. One of them should be dead already.

3-Blue 5 Pilot (IC): Fuel transfer.

2-Gunfighter 6 CPG (FM): Roger.

2/3-Blue 5 CPG (VHF/UHF): 6, this is 5. A little bit to the right of those vehicles on heading 070 from me. There's another single hot spot.

2-Blue 6 CPG (S):
0 3BR NT79002700 A+1001
1 3BR NT87702730 A+1033
2 3BR NT65009400 A+1001

3 3BR NT91802700 A+1001
4 3BR NT88502700 A+1001
5 3BR NT95892456 A+1053

2-Blue 6 CPG (VHF/UHF): I know it. I know.

2/3-Blue 6 Pilot (VHF/UHF): Roger. We got contact with them.

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. 7 o'clock tracking. Now lock broken.

2-Dragon 6 (FM): Gun 6, Dragon 6.

1/2-Dragon 6 (FM): You know, you probably have the capability to close in close. Over.

1/2-Gunfighter 6 CPG (FM): Gun 6, Roger. I'm at 4,800.

1-Gunfighter 6 CPG (S):
0 3BR NT95592445 A+1060
1 3BR NT91502700 A+1024
2 3BR NT91302910 A+1101

2-Blue 6 Pilot (IC): This is close enough. It's moving.

1/2-Gunfighter 6 CPG (FM): Blue 6, Gun 6 on Brigade Command. What do you see those two vehicles as? You think—

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1-Gunfighter 6 CPG (S): Laser 4750

1/2/3-Blue 6 CPG (FM): Stand by. Let me get a—

2-Blue 6 Pilot (IC): You're not on his freq.

2-Blue 6 CPG (IC): I know.

3-Blue 5 Pilot (IC): [Expletive deleted], this is hard to fly.

2-Blue 6 Pilot (VHF/UHF): [Pause.] Can you guys make those out at all?

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. 8 o'clock tracking. Now lock broken.

1/2/3-Blue 5 CPG (VHF/UHF): Negative. They're hot spots.

2-Blue 6 CPG (S):
0 3BR NT79002700 A+1001
1 3BR NT87702730 A+1033
2 3BR NT65009400 A+1001

3 3BR NT91802700 A+1001
4 3BR NT88502700 A+1001
5 3BR NT95922454 A+1070

2-Blue 6 CPG (IC): My target NAV's not working right.

1/2/3-Blue 6 CPG (VHF/UHF): Hey, Gun 6, this is Blue 6. I tell you, I'm getting a range about 4,000 meters—

3-Blue 5 CPG (S):
0 38R NT94232557 A+1239
1 38R NT79002700 A+1102
2 38R NT87702730 A+1102

1/2/3-Blue 6 CPG (VHF/UHF): —but when I NAV and store it, I get it greater than 9524 vicinity. It doesn't—it's not coming out right.

1/2/3-Gunfighter 6 CPG (VHF/UHF): Yeah, and it's over behind the right of this Bradley right here. Right. They may have shot themselves here. We'd better go take a look. Do you think so?

1/2/3-Blue 6 CPG (VHF/UHF): Roger.

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1/2/3-Gunfighter 6 CPG (VHF/UHF): Roger. I'll be sliding up.

2-Blue 6 CPG (IC): How come the NAV's not working?

2-Blue 6 Pilot (IC): Why don't we check with our wingman, see what he comes up with.

2/3-Blue 6 Pilot (VHF/UHF): What are you guys coming with a range, after you lase and store?

3-Blue 5 CPG (VHF/UHF): Blue 6. Are you talking to me?

3-Blue 6 Pilot (VHF/UHF): Yeah.

2/3-Blue 5 CPG (VHF/UHF): 6, this is 5. Say again.

2/3-Blue 6 CPG (VHF/UHF): What kind of a range are you coming up with on that one?

1-Gunfighter 6 Pilot (IC): Heading?

1-Gunfighter 6 CPG (IC): Okay. Let's do it like that. I want to go about 2 kilometers, heading 070.

1-Gunfighter 6 Pilot (IC): Roger.

1-Gunfighter 6 CPG (IC): Nice and easy. Nice and easy.

1-Gunfighter 6 (AN/APR-39A(V)1): Radar searching.

1-Gunfighter 6 CPG (VHF/UHF): That's a Bradley [inaudible] in.

1-Blue 5 CPG (VHF/UHF): 6, this is 5. Say again.

1-Gunfighter 6 Pilot (IC): Yes, that is. Doesn't look like no—

1/2/3-Blue 5 CPG (VHF/UHF): On the single hot spot, I'm getting 4,794. [Pause.]

2/3-Blue 6 Pilot (VHF/UHF): And the double?

1/2/3-Blue 6 CPG (VHF/UHF): Go ahead, lase and store it and see what kind of grid you get.

3-Blue 5 Pilot (VHF/UHF): Lase and store it and see what NAV range you get, [Blue 5 CPG].

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1-Gunfighter 6 CPG (IC): Go ahead and stop right here please. Go ahead and start slowing down and stopping.

1/2/3-Blue 5 CPG (VHF/UHF): NAV range is 4.8, and that puts it on the—showing on the 25 grid line.

3-Blue 5 (CPG) (S):
0 38R NT94232557 A+1239
1 38R NT79002700 A+1102
2 38R NT87702730 A+1102

2-Blue 6 (AN/APR-39A(V)1): Fixed wing. Fixed wing. 8 o'clock tracking. Now lock broken.

1/2-Gunfighter 6 CPG (FM): Iron Deuce 6, Gunfighter 6.

1/2-Iron Deuce 6 (FM): Iron Deuce 6.

1/2-Gunfighter 6 CPG (FM): Roger. What has happened here is that you have a—you have a Bradley, and let me give you the grid of this Bradley. [Pause.]

1-Gunfighter 6 CPG (S):
Time 21 44 18
PPOS 3BR NT 9158 2318
Alt +1119 HG 30 06 IN

0 3BR NT95592445 A+1060
1 3BR NT91502700 A+1024
2 3BR NT94682455 A+1015

1/2-Gunfighter 6 CPG (FM): Okay. You have a Bradley at 946245 and he's oriented north on the screen line. He's got an APC near him also. Then, off to his right are these two vehicles that I see, and those are the vehicles at 915270. Your Bradley is not even looking anywhere near them. Over.

1/2-Iron Deuce 6 (FM): Roger. I ain't worried about that. Can you still engage those two vehicles at the 270 grid line?

1/2-Gunfighter 6 CPG (FM): Roger. I can shoot those easy, right.

1-Gunfighter 6 CPG (S): Laser 3437

1/2-Iron Deuce 6 (FM): I say, go ahead. Take 'em out.

2-Blue 6 CPG (IC): They don't look like they are doing a [expletive deleted] thing.

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2-Stalwart 5 (FM): Iron Deuce Oscar, Stalwart 5. Once he takes those victors out, if you'll move off to the side, we'd like to refire and take care of any dismounts that might get away. Over.

1/2-Iron Deuce 6 (FM): Roger. The other thing I'd like to do is orient 'em over, after we get done with the engagement—

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. [Inaudible] . . . o'clock tracking. Now lock broken.

1/2-Iron Deuce 6 (FM): —if he has no more vehicles to the north, over to the west where you reported the other vehicles moving. Over.

2-Blue 6 CPG (IC): Let's move up closer to him.

1/2-Stalwart 5 (FM): Roger. I'll get with Stalwart 6. I know he's got some priority of targets based on those earlier sightings. Over.

2/3-Blue 6 CPG (VHF/UHF): Okay 5, this is 6. We're going to move up towards him.

1/2-Iron Deuce 6 (FM): Roger. Go ahead. Let Stalwart 6 . . . [inaudible].

1/3-Blue 5 Pilot (VHF/UHF): Roger.

1/2-Iron Deuce 6 (FM): —in my push.

1-Gunfighter 6 CPG (IC): And move forward at these vehicles.

1-Gunfighter 6 Pilot (IC): Move forward.

3-Blue 5 Pilot (IC): There's a 30-knot . . . [expletive deleted] tail wind. Keep an eye on them. For some reason, I get the idea that these are supposed to be bad guys—something—'cause of the way he said, "I think they're shooting at each other"—something.

1/2-Stalwart 6 (FM): This is Stalwart 6.

1-Gunfighter 6 Pilot (IC): How far are they?

1-Gunfighter 6 CPG (IC): 4 kilometers.

1/2-Stalwart 6 (FM): The two box-like vehicles, a box APC-type vehicles [sic], are consistent with the type that was fired earlier. Break. I have no forces forward of the

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25 grid line. Let's go ahead and shoot those, get out of the way of those, and look over grid 790270. I had vehicle movement there—

1-Gunfighter 6 CPG (IC): You can stop here.

1/2-Stalwart 6 (FM): —and it went down into a—into low ground. It did not come back out, so it may still be over there.

1-Gunfighter 6 CPG (IC): You can stop here. We're at the 233 and we're heading 070. Okay. Firing gun.

1/2-Stalwart 6 (FM): Gunfighter, Stalwart.

1-Gunfighter 6 (AN/APR-39A(V)1): Radar searching.

1-Gunfighter 6 CPG (IC): [Expletive deleted] . . . gun jammed.

1-Gunfighter 6 Pilot (IC): Roger.

1-Gunfighter 6 CPG (IC): [Expletive deleted].

1/2-Stalwart 6 (FM): Iron Deuce 6, Stalwart 6. Radio check.

1-Gunfighter 6 Pilot (IC): All right. Go missiles.

1/2-Iron Deuce 6 (FM): This is Iron Deuce 6. Roger. I'm trying to get Gunfighter up so he can talk to you. Over.

1/2-Gunfighter 6 CPG (FM): Gunfighter 6 is on the net. Have the two vehicles in sight. It appears one of them is, in fact, killed and I'm going to go ahead and shoot the other one now.

1/2-Iron Deuce 6 (FM): Roger. I say, go ahead. Take 'em out.

1-Gunfighter 6 Pilot (IC): De-WAS gun. [Pause.]

1/2/3-Blue 6 CPG (VHF/UHF): Let me know when you shoot.

1/2/3-Gunfighter 6 CPG (VHF/UHF): Boy, I'm going to tell you, it's hard to pull this trigger. Back me up a little bit here. Tell me—I'm firing heading 070 3,800 meters. So my current grid is—let me pull up the current grid.

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3-Blue 5 Pilot (IC): [Blue 5 CPG]. Check it with the Colonel.

3-Blue 5 CPG (S):
0 3BR NT94232557 A+1239
1 3BR NT79002700 A+1102
2 3BR NT87702730 A+1102

1-Gunfighter 6 CPG (S):
Time 21 47 26
PPOS 3BR NT 9212 2344
Alt +1143 HG 30 06 IN

1/2/3-Gunfighter 6 CPG
(VHF/UHF): Grid is 9223.

3-Blue 5 Pilot (IC): He's getting ready to shoot. So, we've got to make sure—

1-Gunfighter 6 CPG (VHF/UHF): And the grid of the target—

1-Gunfighter 6 CPG (S):
0 3BR NT95592445 A+1060
1 3BR NT91502700 A+1024
2 3BR NT94682455 A+1015

2-Blue 6 CPG (S):
0 3BR NT79002700 A+1001
1 3BR NT87702730 A+1033
2 3BR NT65009400 A+1001

3 3BR NT91802700 A+1001
4 3BR NT88502700 A+1001
5 3BR NT95902459 A+1038

1/2-Blue 6 CPG (VHF/UHF): Roger. 9223, I've got it out at 3,800 meters.

1-Gunfighter 6 Pilot (IC): Ready in the back.

3-Blue 5 CPG (IC): What is he shooting at?

1/2/3-Blue 6 CPG (VHF/UHF): I've got two vehicles. One's pointed toward us, the other's about 90 degrees perpendicular to him.

2 Blue 6 (AN/APR-39A(V)1): Guns. Guns. 8 o'clock tracking. Now lock broken.

1-Gunfighter 6 Pilot (IC): Roger. That's what I got, too.

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1-Gunfighter 6 CPG (IC): Won't track.

1-Gunfighter 6 Pilot (IC): Switch to black hot. There you go. Now, do the . . . [expletive deleted].

3-Blue 5 Pilot (IC): Do you see the targets?

3-Blue 5 CPG (IC): Yeah. I got 'em right there.

1/2/3-Gunfighter 6 CPG (VHF/UHF): Okay. I'll be firing in about 10 seconds.

1/2/3-Blue 6 CPG (VHF/UHF): Roger.

1/3-Blue 5 Pilot (VHF/UHF): 5. [Pause.]

1-Gunfighter 6 CPG (IC): Okay. 070, ready.

1-Gunfighter 6 Pilot (IC): Ready in the back. Do him.

1-Gunfighter 6 CPG (IC): Recorder is on.

1-Gunfighter 6 Pilot (IC): Check.

1-Gunfighter 6 CPG (IC): Roger.

1/2-Stalwart 6 (FM): This is Stalwart, over.

1-Gunfighter 6 CPG (IC): We're ready. Lined up.

1-Gunfighter 6 Pilot (IC): We're ready. Do him.

1-Gunfighter 6 CPG (IC): Missile is—

1/2/3-Blue 6 CPG (VHF/UHF): Blue 5, I want you to—don't look at the target. I want you to orient, clear our flank, provide a little flight security there for us.

3-Blue 5 Pilot (VHF/UHF): Roger.

2-Blue 6 CPG (IC): There it goes.

1-Gunfighter 6 Pilot (IC): Nice and steady.

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1-Gunfighter 6 CPG (IC): I hope it's enemy—

1-Gunfighter 6 Pilot (IC): That's all right. Just stay on them.

1-Gunfighter 6 CPG (IC): —'cause here it comes. [MISSILE IMPACT]

1-Gunfighter 6 Pilot (IC): That's one.

3-Blue 5 Pilot (IC): Look around to the right over there and to the left.

1/2/3-Blue 6 CPG (VHF/UHF): I guess you could say that hit it.

3-Blue 5 Pilot (IC): God, yes. Look to the left and the right of our battle position here, [Blue 5 CPG]. Make sure nobody . . . [expletive deleted] sneaks up on us.

3-Blue 5 CPG (IC): There's another—wait a minute.

3-Blue 5 Pilot (IC): Don't panic if you see them.

3-Blue 5 CPG (S):
0 38R NT94232557 A+1239
1 38R NT79002700 A+1102
2 38R NT87702730 A+1102

1-Gunfighter 6 Pilot (IC): All right. Now, let's take a look at the second one.

1/2-Gunfighter 6 CPG (FM): Gunfighter 6. Completely destroyed the first target with the first bullet.

1-Gunfighter 6 Pilot (IC): Let's pick up the second one. Let's go. [Pause.] You got the second one.

1/2-Stalwart 6 (FM): Gunfighter 6, Stalwart 6.

1/2-Gunfighter 6 CPG (FM): Gunfighter 6.

1/2-Stalwart 6 (FM): This is Stalwart 6. When you get done there, I have another grid for you.

1/2-Gunfighter 6 CPG (FM): Roger. I'm going to go ahead and shoot the second vehicle. It's still intact, but it's fixing to go away.

2-Blue 6 (AN/APR-39A(V)1): Guns 8 o'clock. Now 6 o'clock.

1-Gunfighter 6 Pilot (IC): Ready in the back.

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1-Gunfighter 6 CPG (IC): Are you lined up on it?

1-Gunfighter 6 Pilot (IC): Yep. Ready in the back. Let's do him.

1/2/3-Blue 5 Pilot (VHF/UHF): 6, this is 5. You've got a hot spot right underneath you there.

1/2/3-Blue 6 CPG (VHF/UHF): Roger, that's the screen line.

1/2/3-Blue 5 CPG (VHF/UHF): Okay. Thank you.

1-Gunfighter 6 Pilot (IC): On him. Looking good. This Bud's for you.

1-Gunfighter 6 CPG (IC): Uh-oh. [MISSILE IMPACT]

1-Gunfighter 6 Pilot (IC): That's all right. He's dead too.

1/2/3-Blue 5 Pilot (VHF/UHF): Blue 6, this is 5. I've got another target heading 120 range, 3,100 meters.

1/2-Stalwart 6 (FM): Roger. New grid, 790270.

2/3-Blue 6 Pilot (VHF/UHF): Hold on. Roger. 120. 3,100.

3-Blue 5 CPG (S):
0 3BR NT93562313 A+1212
1 3BR NT79002700 A+1102
2 3BR NT87702730 A+1102

1/2/3-Blue 5 CPG (VHF/UHF): Roger. Grid showing 9323. [Pause.] Probably is one of ours.

3-Blue 5 Pilot (IC): Roger. Fuel transfer is complete.

1/2-Stalwart 6 (FM): That did not come out. It could not have gotten—it couldn't be the same one that went—

2-Blue 6 CPG (IC): It's looking backward.

1/2-Stalwart 6 (FM): —west 'cause there's too much flat ground. Break—east, 'cause there's too much flat ground. 790270. When you're set and out of the way, I need for you to tell me whether or not I can shoot—

1-Gunfighter 6 Pilot (IC): Recorder still on?

1-Gunfighter 6 CPG (IC): Yeah.

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1/2-Stalwart 6 (FM): —VT in on top of what you just killed to pick up any dismounts that were around it.

2-Blue 6 CPG (VHF/UHF): I don't think you have to worry about—

1/2-Gunfighter 6 CPG (FM): Roger. Trust me when I say that anything that was around those two vehicles is dead. There are no hot targets—oops. Got two personnel walking away from the targets.

1/2-Stalwart 6 (FM): Roger. You got guns?

1/2-Gunfighter 6 CPG (FM): My gun is jammed. They're walking on a heading of east.

3-Blue 5 CPG (S):
0 3BR NT93562313 A+1217
1 3BR NT79002700 A+1102
2 3BR NT87702730 A+1102

3-Blue 5 Pilot (IC): I don't know what he was shooting at, but both missiles were in the same area there.

1/2/3-Blue 6 CPG (VHF/UHF): Roger. Got 'em.

3-Blue 5 Pilot (IC): Man. I can't hear the Colonel talking.

1/2-Gunfighter 6 CPG (FM): Roger. We've got 'em here. They're walking 090 here. Break. Blue 6, can you engage with guns?

1/2/3-Blue 6 CPG (VHF/UHF): Roger. Engaging with guns.

2-Stalwart 6 (FM): This is Stalwart—

1/2/3-Blue 5 Pilot (VHF/UHF): 6, this is 5. What can we engage with a gun? [Pause.]

2/3-Blue 6 CPG (VHF/UHF): What are we engaging? There's two people walking away from the engaged vehicle.

2-Blue 6 Pilot (IC): Did our gun jam or something?²

3-Blue 5 Pilot (IC): Okay. Check on that vehicle. See—

3-Blue 5 CPG (IC): I'm looking.

²The Blue 6 gun tape indicates that the 30-millimeter cannon went into "LIMITS."

**Appendix V
Transcription of Gun Tapes Recorded
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3-Blue 5 Pilot (IC): Okay. Shoot some 30 out there beyond the vicinity of the captain over there, out to the left.

3-Blue 5 CPG (IC): I'm getting a "LIMITS" message.

3-Blue 5 Pilot (VHF/UHF): [Expletive deleted.]

3-Blue 5 CPG (IC): Okay. I'm firing.

1/2-Gunfighter 6 CPG (FM): Okay. Stalwart, 790270. I'll be right back with you.

2-Blue 6 CPG (IC): No.

1-Gunfighter 6 CPG (IC): Ooo-wee, did we hit those targets.

1-Gunfighter 6 Pilot (IC): All right. You got the personnel walking—

1-Gunfighter 6 CPG (IC): Yeah.

1-Gunfighter 6 Pilot (IC): —on the recorder?

1-Gunfighter 6 CPG (IC): Yeah, I've got them walking on the recorder. They won't be there for long.

2-Blue 6 CPG (IC): Got it. Got it right in there. Did you see that?

2-Blue 6 Pilot (IC): No, I didn't.

1/2-Stalwart 6 (FM): Iron Deuce, Stalwart reporting that maybe friendly vehicles may have been hit. Over.

1-Gunfighter 6 Pilot (IC): What?

2-Blue 6 CPG (VHF/UHF): Don't you dare say that.

1/2-Gunfighter 6 CPG (VHF/UHF): Roger. I was afraid of that. I was really afraid of that.

1/2/3-Blue 5 Pilot (VHF/UHF): Blue 5 is engaging the target with 30 . . .

1/2/3-Gunfighter 6 Pilot (VHF/UHF): Cease fire, cease fire.

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1/2/3-Gunfighter 6 CPG (VHF/UHF):	Cease fire.
2-Blue 6 (AN/APR-39A(V)1):	[Inaudible] . . . o'clock tracking. Now lock broken.
1/2/3-Gunfighter 6 Pilot (VHF/UHF):	Acknowledge cease fire.
1/2-Blue 6 Pilot (VHF/UHF):	Roger. Cease fire.
1-Gunfighter 6 (AN/APR-39A(V)1):	Radar searching.
3-Blue 5 Pilot (VHF/UHF):	5. Roger. [Pause.] De-WAS the gun, [Blue 5 CPG].
1-Gunfighter 6 CPG (VHF/UHF):	Okay. [Pause.]
3-Blue 5 Pilot (IC):	[Expletive deleted.]
2-Stalwart 6 (FM):	Two victors hit, 965247. Break.
2-Iron Deuce 6 (FM):	Okay.
2-Stalwart 6 (FM):	The other vehicle, 965295.
2-Blue 6 CPG (VHF/UHF):	I don't believe it. [Pause.]
2-Stalwart 6 (FM):	They were shot from the rear. Nothing from the front. Over.
1/2-Gunfighter 6 CPG (FM):	I hope it's not friendlies I just blew up because they're all dead.
1/2-Gunfighter 6 CPG (FM):	Give me your new grid, please, 790270. [Pause.]
1/2-Stalwart 6 (FM):	Those scouts are well east of where we were just firing. We're working Iron Horse 3. He had a patrol out.
1/2-Gunfighter 6 CPG (FM):	Roger. What kind of vehicles were they in? This was not a Bradley. This was not an M-1 tank.
1/2-Stalwart 6 (FM):	Iron 6, Stalwart 6. The scouts are well west of where we just engaged with Apache. We're sorting it out over here now. Those were taken from—those two vehicles were taken from the rear.

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1/2-Iron Deuce 6 (FM): This is Iron Deuce 6. Say again. Over.

2-Blue 6 Pilot (IC): De-WAS here.

3-Blue 5 Pilot (IC): Have you heard the Colonel transmit?

3-Blue 5 CPG (IC): No. I heard [Gunfighter 6 Pilot].

3-Blue 5 Pilot (IC): Fuel transfer, again.

1/2/3-Blue 5 Pilot (VHF/UHF): Blue 6, Blue 5.

2-Blue 6 CPG (IC): Tell them to stand-by.

1/2/3-Blue 6 Pilot (VHF/UHF): Stand-by. [Inaudible] . . .

1/2-Iron Deuce 6 (FM): Stalwart 5, this is Iron Deuce 6.

2-Blue 6 Pilot (IC): Why don't you pull your 2 switch and I'll talk to [Blue 5 Pilot].

1/2-Iron Deuce 6 (FM): Roger. Tell me what's going on.

1-Gunfighter 6
(AN/APR-39A(V)1): Radar searching.

2-Blue 6 CPG (IC): Which one?

2-Blue 6 Pilot (IC): Pull your number 2 and I'll talk to [Blue 5 Pilot].

2-Stalwart 6 (FM): Two scouts have been hit vicinity 965247. Break. Right now, we're trying to determine where they were hit from. It appears they were hit from the rear. Break.

2-Blue 6 CPG (S): Time 04 54 54
PPOS 3 BR NT 9238 2338
Alt +1138 HG 30 12 IN

0 3BR NT79002700 A+1001
1 3BR NT87702730 A+1033
2 3BR NT65009400 A+1001

**Appendix V
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3-Blue 5 Pilot (IC): There goes the secondary. Something's going on up there.

2/3-Blue 5 CPG (VHF/UHF): Blue 6. This is Blue 5.

2/3-Blue 6 Pilot (VHF/UHF): Blue 5 on 2.

2/3-Blue 5 CPG (VHF/UHF): Roger. That target I'm looking at about a 075, it looks like there's an individual to the left of it walking toward the north.

2/3-Blue 6 Pilot (VHF/UHF): Roger.

2-Iron Deuce 6 (FM): Roger. Is anyone clear—like over in the CAV sector—shooting?

2-Stalwart 6 (FM): Just contacted the CAV sector. They say they have not engaged anybody.

2-Blue 6 (AN/APR-39A(V)1): [Inaudible] . . . tracking. Now lock broken.

2/3-Blue 5 Pilot (VHF/UHF): Blue 6. This is Blue 5. Be advised I haven't heard Gun 6 transmissions lately.

2/3-Blue 6 Pilot (VHF/UHF): Okay. Apparently, we shot some friendlies.

3-Blue 5 Pilot (IC): [Expletive deleted.]

3-Blue 5 CPG (IC): Everything's blowing up.

3-Blue 5 Pilot (IC): God.

3-Blue 5 CPG (IC): Be cool.

3-Blue 5 Pilot (IC): It's all right. It's not all right, but—turn the recorder off.

2-Gunfighter 6 CPG (FM): Iron Deuce 6. Gunfighter 6. What's the status?

2-Iron Deuce 6 (FM): This is Iron Deuce 6. The report is that 2 vehicles on the right flank at grid 965247 were in fact engaged. One was a GSR, which was a 113 type vehicle, and the other would have been a platoon sergeant, which would have been a Bradley. Over.

1-Gunfighter 6 CPG (IC): I'll bet I killed friendly people.

1-Gunfighter 6 Pilot (IC): Is that recorder on or off?

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1-Gunfighter 6 CPG (IC): It's on. They're blowing up like—

1/2-Gunfighter 6 CPG (FM): I—I am sure that—I'm sure they were forward the grid lines you gave me.

2-Blue 6 (AN/APR-39A(V)1): [Inaudible]

1-Gunfighter 6 CPG (FM): We sat here and confirmed where we were and where we shot. But, I'm pretty sure, like I told you, that those are the vehicles I hit. Now, they're at—I got them recorded at the grid I gave you. 915270 is where they were sitting. Those were the vehicles I shot. [Pause.] They're just blowing up like mad out there. [Pause.]

1-Gunfighter 6 Pilot (IC): I want you to talk to me.

1-Dragon 6 (FM): Iron Deuce 6, Dragon 6.

1-Gunfighter 6 CPG (FM): Dragon 6, Gunfighter 6. I destroyed two vehicles at 917—correction, 915270, and they were both friendly vehicles. Over.

1-Dragon 6 (FM): Roger. You continue to work for Iron Deuce. He's got other targets for you. Over.

1-Gunfighter 6 CPG (FM): Roger. Request permission to break station and go home.

1-Dragon 6 (FM): Negative. Remain on station. Those things are going to happen. Over.

1-Gunfighter 6 CPG (FM): Roger. We don't see any vehicles. Like we—every night we come out here, and we don't see any other vehicles.

1-Stalwart 6 (FM): Gunfighter, this is Stalwart 6.

1-Gunfighter 6 CPG (FM): Go ahead, Stalwart.

1-Stalwart 6 (FM): This is Stalwart 6. Roger. I need for you to move to the east—break, to the west and look on the 790270, look at the grid square 7927. Over.

1-Gunfighter 6 CPG (FM): Roger. 7927. Roger. [Pause.]

1-Gunfighter 6 CPG (IC): Okay. Fly heading at 270.

1-Gunfighter 6 Pilot (IC): 270.

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During February 17, 1991, Incident**

1-Gunfighter 6 CPG (IC): Right. Flying 270.

1-Gunfighter 6 Pilot (VHF/UHF): And Gunfighter elements be advised that Gun 6 Lima—

1-Gunfighter 6 CPG (IC): Left turn.

1-Gunfighter 6 Pilot (VHF/UHF): —is going to be coming out of a left turn and we're going to be going 270.

1-Blue 6 CPG (VHF/UHF): 6, Roger.

1-Gunfighter 6 CPG (VHF/UHF): That's—[Blue 6 CPG], what do you think? Do you think we got—those guys, or do you think I screwed up on that one?

1-Blue 6 CPG (VHF/UHF): No, I don't think you screwed up. I'd rather talk about it when we get back.

1-Gunfighter 6 CPG (VHF/UHF): Roger. Do you think I hit the right—do you think I hit 9127?

1-Blue 6 CPG (VHF/UHF): The—

1-Stalwart 6 (FM): Iron Deuce 6, Stalwart 6.

1-Gunfighter 6 Pilot (IC): Do me a favor now? Quit talking and—

1-Gunfighter 6 CPG (IC): Roger.

1-Gunfighter 6 Pilot (IC): —and tell me 270, how far—

1-Iron Deuce 6 (FM): —at 915270. Is there a possibility that in fact we have people out there?

1-Gunfighter 6 Pilot (IC): I mean, Mr. Doppler is not being real cooperative.

1-Stalwart 6 (FM): —6. Negative. We don't have people out there. I think that the possibility is that I have some enemy vehicles over on that flank—

1-Gunfighter 6 Pilot (IC): Colonel?

1-Stalwart 6 (FM): I've got some people looking—401.

1-Gunfighter 6 CPG (IC): What? What? What?

1-Gunfighter 6 Pilot (IC): Give me a Doppler, would you?

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1-Stalwart 6 (FM): 915270 is middle of my sector and north. That—they came up and identified 25 grid line, vehicles on screen, and then identified WUPS [ph] targets, 29er—just short of 29er. I think that—we'll see. I still think there's a possibility that the two vehicles reported moving to the west from the east by 1st CAV got over on to my screen line.

1-Iron Deuce 6 (FM): Roger. That's a possibility. Did you see the Gunfighter shoot?

1-Stalwart 6 (FM): This is Stalwart. Say it again.

1-Iron Deuce 6 (FM): I say again. Did you see Gunfighter shoot? Over.

1-Stalwart 6 (FM): This is Stalwart. I'm in the belly of my Bradley.

1-Gunfighter 6 Pilot (IC): Do we have a problem?

1-Stalwart 6 (FM): We're trying to confirm shots by the folks up on the line.

1-Gunfighter 6 Pilot (VHF/UHF): Gun 6 Lima is going to be slowing back.

1-Blue 6 CPG (VHF/UHF): Blue 6. Roger.

1-Iron Deuce 6 (FM): They may be separate and distinct targets. Let them go ahead to work that target to the left. We have good positive ID—

1-Gunfighter 6 CPG (IC): Fly heading 230, 240.

1-Iron Deuce 6 (FM): —see what we can find out. You got somebody moving over to the other position now? Over.

1-Gunfighter 6 CPG (IC): 240.

1-Stalwart 6 (FM): Roger. I have that in—

1-Gunfighter 6 Pilot (IC): Roger, coming—

1-Stalwart 6 (FM): —back system is working it. It's being worked on by A&L net.

1-Gunfighter 6 CPG (IC): 240.

1-Gunfighter 6 Pilot (IC): I'm coming around.

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1-Stalwart 6 (FM): The scouts—it's a little confused over there right now. I'll sort it out.

1-Iron Deuce 6 (FM): Roger. Give me—

1-Gunfighter 6 CPG (IC): 230.

1-Gunfighter 6 Pilot (IC): Coming around 230.

1-Gunfighter 6 CPG (IC): Okay. 210.

1-Gunfighter 6 Pilot (IC): Coming around 210. [Pause.] 210.

1-Gunfighter 6 CPG (IC): All right.

1-Gunfighter 6 Pilot (IC): How far?

1-Gunfighter 6 CPG (IC): Okay. Turn right now to 24.

1-Gunfighter 6 Pilot (IC): Turning right to 24. [Pause.] 24.

1-Gunfighter 6 CPG (IC): [Inaudible.]

1-Gunfighter 6 Pilot (IC): Pardon?

1-Gunfighter 6 CPG (IC): Stop—no, continue moving. 240.

1-Gunfighter 6 Pilot (IC): Roger. [Pause.]

1-Stalwart 6 (FM): Gunfighter, this is Stalwart. Over.

1-Gunfighter 6 CPG (FM): Gunfighter 6.

1-Stalwart 6 (FM): This is Stalwart. Let me know when you're set over there behind my screen line. Let me know where you're at so that I can identify my screen line to you.

1-Gunfighter 6 CPG (FM): Roger. I'm flying right down your screen line right now. I've got it identified, and I'm flying right down your screen line.

1-Blue 5 CPG (VHF/UHF): 6, this is 5.

1-Blue 6 CPG (VHF/UHF): 6.

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Transcription of Gun Tapes Recorded
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1-Blue 5 CPG (VHF/UHF): Roger. I've got a few targets together. Looks like they're moving—

1-Gunfighter 6 CPG (IC): Come left.

1-Blue 5 CPG (VHF/UHF): —27 by 275, 5.6 kilometers.

1-Gunfighter 6 CPG (IC): Left. There's the screen line. We're flying right down the screen line now.

1-Gunfighter 6 Pilot (IC): How much more left?

1-Gunfighter 6 CPG (IC): I don't know—

1-Gunfighter 6
(AN/APR-39A(V)1): Radar searching.

1-Gunfighter 6 CPG (IC): —very hard for me to concentrate right now.

1-Gunfighter 6 Pilot (IC): I know it.

1-Blue 5 CPG (VHF/UHF): Double check—looks like they are.

1-Gunfighter 6 CPG (IC): I just killed a bunch of people, you know?

1-Gunfighter 6 Pilot (IC): Yeah, but we don't know which ones they are.

1-Gunfighter 6 CPG (IC): They were friendlies. They were U.S. people. Okay. Heading 24.

1-Gunfighter 6 Pilot (IC): 24.

1-Gunfighter 6 CPG (IC): That's good. [Pause.]

1/2-Gunfighter 6 CPG
(VHF/UHF): Blue 6, I'm going to go over to the 79 grid line and stop and then look north. I'm on the 81 right now.

1/2-Blue 6 CPG (VHF/UHF): This is Blue 6. Roger. I'm right behind you. [Pause.]

1-Gunfighter 6 Pilot (IC): Okay. What do I got in front of me here? I got two targets in front of me—

1-Gunfighter 6 CPG (IC): Slow down and stop. Those are friendlies. That's the screen line.

1-Gunfighter 6 Pilot (IC): Keep going or stop?

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1-Gunfighter 6 CPG (IC): Stop.

1/2-Gunfighter 6 Pilot (VHF/UHF): 6 Lima—is slowing down to a stop.

1/2-Blue 6 CPG (VHF/UHF): Roger.

1-Gunfighter 6 CPG (IC): Orient 360.

1-Gunfighter 6 Pilot (IC): All right, let me get—360. Roger.

1-Gunfighter 6 CPG (IC): You need to hold position. You go just in front of the screen, you get shot. So you need to come left now. Come left. More left to get behind the screen line—

1-Gunfighter 6 (AN/APR-39A(V)1): Radar searching.

1/2-Stalwart 5 (FM): Stalwart Oscar—Stal . . . correction, Iron Deuce Oscar, Stalwart 5.

1/2-Iron Deuce 6 (FM): Iron Deuce 6.

1/2-Stalwart 5 (FM): Your Stalwart 6's just talked to Charlie Commander.

1-Gunfighter 6 CPG (IC): Come left.

1/2-Stalwart 5 (FM): He is moving folks down along with medics—

1-Gunfighter 6 Pilot (IC): Now what?

1/2-Stalwart 5 (FM): —to assist scouts. Break. On our admin log net we've made contact with—

1-Gunfighter 6 Pilot (VHF/UHF): —and I'll be turning left.

1/2-Iron Deuce 6 (FM): Stalwart 5, Iron Deuce 6. Say again. Over.

1-Gunfighter 6 CPG (IC): Straight ahead.

1/2-Stalwart 5 (FM): They in turn are getting in touch with DUST-OFF to move them to the grid location of 965247—

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. 8 o'clock. Now lock broken.

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1/2-Stalwart 5 (FM): —for casualty evac. Over.

1/2-Iron Deuce 6 (FM): Roger. Say again. I missed the first part of it.

1-Gunfighter 6 CPG (IC): Turn right.

1/2-Stalwart 5 (FM): Roger. Stalwart 6 has directed Charlie Team to move his band-aids—

1-Gunfighter 6
(AN/APR-39A(V)1): Radar searching.

1/2-Stalwart 5 (FM): —and assist in the evacuation of the casualties. Break. Admin log frequency is in the process of calling for DUST-OFF and has given them location for LZ of 965242. Over.

1-Gunfighter 6 CPG (IC): There's the Bradleys. You can just—stop here now. Stop.

1/2-Iron Deuce 6 (FM): Roger. Do you have any idea what kind of casualties you got?

1-Gunfighter 6 Pilot (IC): I'm trying, I'm trying.

1/2-Stalwart 5 (FM): Negative. Still working on that right now. Over.

2-Blue 6 (AN/APR-39A(V)1): Guns. 8 o'clock. Now, 6 o'clock.

1/2-Iron Deuce 6 (FM): Roger. Is there any contact in that area?

1/2-Stalwart 5 (FM): Negative. No contact at this moment, although every—ah—the rest of the scouts are—

1-Gunfighter 6 CPG (IC): Stop.

2-Stalwart 5 (FM): —still screening, looking for dismounts.

1-Stalwart 5 (FM): Over.

1/2-Iron Deuce 6 (FM): Dragon 6, wait. Break. Stalwart 5, go ahead.

2-Stalwart 5 (FM): Roger. Scouts report negative contact in their zone of action at the moment. Over.

**Appendix V
Transcription of Gun Tapes Recorded
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2-Iron Deuce 6 (FM): Roger. Go ahead and give me a report as fast as you can. Let me know what's going on. I've already alerted the DUST-OFF down in the FSCL with Handler. They ought to be flying as soon as you call the mission.

2-Stalwart 6 (FM): Stalwart, Roger. Break.

1-Stalwart 5 (FM): From the west, by missiles fired from the ground. Over.

1-Gunfighter 6 CPG (IC): There's the screen line.

1-Iron Deuce 6 (FM): Any idea who might have—

1-Gunfighter 6 CPG (IC): There's the screen line.

1-Iron Deuce 6 (FM): Are those vehicles—

1-Gunfighter 6 CPG (IC): And there's the vehicles way out in front.

1-Iron Deuce 6 (FM): —same description that Gunfighter gave you?

1-Gunfighter 6 CPG (IC): There's the screen line I saw.

1-Stalwart 6 (FM): Stalwart 6. That—stand by.

1-Gunfighter 6 CPG (IC): There's the screen line, and there's the vehicles out in front of the screen line. The vehicles were in front of the screen line.

1-Gunfighter 6 Pilot (IC): Affirmative. That is correct. We were butted up right behind the screen line.

1-Gunfighter 6 CPG (IC): Right. We went in right behind the screen line.

1-Gunfighter 6 Pilot (IC): That's right.

1-Gunfighter 6 CPG (IC): And those vehicles were way out front there.

1-Gunfighter 6 Pilot (IC): Like I said, let's let them work through it. Doesn't seem to me like they know what the . . . [expletive deleted] going on.

1-Gunfighter 6 CPG (IC): Hold on here. Okay. We're headed 090 right now—

1-Gunfighter 6 Pilot (IC): Yeah, and we'll—

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1-Gunfighter 6 CPG (IC): —and the screen line running—is back to the southwest like it's supposed—southeast, like it's supposed to. We got in these, identified those vehicles, and then, way out front of them was that vehicle right there, those two vehicles out there. And we called and says, yeah, they're out there, and they says, yeah, shoot 'em up.

1-Gunfighter 6 Pilot (IC): Right.

1-Gunfighter 6 CPG (IC): There they are. They are shot up.

1-Gunfighter 6 Pilot (IC): Okay. Are the other birds in line?

1-Gunfighter 6 CPG (IC): I have no idea.

1-Gunfighter 6 Pilot (IC): All right. Let's take care of our flight.

1-Gunfighter 6 CPG (IC): Roger.

1-Gunfighter 6
(AN/APR-39A(V)1): Radar searching.

1-Gunfighter 6 CPG (VHF/UHF): Blue 6, Gun 6. Those vehicles are 2 kilometers in front of the screen line, aren't they?

1-Blue 6 CPG (VHF/UHF): I'd have to go back. My target NAV indexer says it's on the—it was 9524 is where those targets were.

1-Gunfighter 6 CPG (VHF/UHF): 9524?

1-Blue 6 CPG (VHF/UHF): I have to go back and check. [Pause.] Roger. 9524.

1-Gunfighter 6 CPG (IC): We lost them now. Where's the burners?

1-Gunfighter 6 Pilot (IC): Ah, [expletive deleted.]

1-Gunfighter 6 CPG (IC): Way out there.

1-Gunfighter 6 Pilot (IC): I don't know, but what do we—

1-Blue 5 CPG (VHF/UHF): My target NAV had them on 24 grid line also.

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1-Gunfighter CPG (S): 0 3BR NT95592445 A+1060
1 3BR NT91502700 A+1024
2 3BR NT94682455 A+1015

3 3BR NT69001900 A+1175
4 3BR NT62951316 A+0809
5 3BR NT88702495 A+1170

1-Gunfighter 6
(AN/APR-39A(V)1): Radar searching. [Pause.]

1-Iron Deuce 6 (FM): Stalwart 5, Iron Deuce 6.

1-Gunfighter 6 CPG (IC): There was this line right here—

1-Stalwart 5 (FM): Stalwart 5. Over.

1-Gunfighter 6 CPG (IC): There's the—out in front.

1-Unidentified: Is that working now?

1-Gunfighter 6 Pilot (IC): All right. I see the targets burning.

1-Gunfighter 6 CPG (IC): Yeah.

1-Stalwart 6 (FM): My ALOC reports that he cannot raise Medevac. However, conversations with Handler over this freq here—it appears that they have lifted a bird off the ground and they were given the coordinates. Over.

1/3-Iron Deuce 6 (FM): Roger. Let me check. Break.

1/2/3-Iron Deuce 6 (FM): Handler Oscar, Iron Deuce 6.

1/2/3-Handler Oscar (FM): Iron Deuce 6, this is Handler Oscar. Over.

3-Iron Deuce 6 (FM): Handler. That'll be fine.

3-Stalwart 6 (FM): Stalwart. Roger.

2/3-Iron Deuce 6 (FM): Roger. Have your DUST-OFF pilots received the call yet?

2-Blue 6 (AN/APR-39A(V)1): Guns. Guns. 8 o'clock tracking. Now lock broken.

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2/3-Handler Oscar (FM): There's not been a call on 39.15. I have them on stand-by waiting. Over.

2/3-Iron Deuce 6 (FM): Roger. Are you on admin log and are you contacting Stalwart's casualty evacuation folks?

2/3-Handler Oscar (FM): I've just tuned to their A&L net and am in the process of doing that at this time.

2/3-Iron Deuce 6 (FM): Go ahead and contact them at this time. Get those birds up.

2/3-Stalwart 6 (FM): Gunfighter 6, Stalwart 6.

2/3-Gunfighter 6 CPG (FM): Gunfighter 6.

2/3-Stalwart 6 (FM): Roger. Come to my frequency 38.85.

2/3-Gunfighter 6 CPG (FM): Roger.

2-Blue 6 Pilot (IC): Want me to switch?

2-Blue 6 CPG (IC): Ah, no. [Pause] I don't see anything out there.

3-Blue 5 Pilot (IC): I can't get this . . . [expletive deleted] to hover. [Pause.] [Expletive deleted.]

3-Handler Oscar (FM): Iron Deuce 6, this is Handler Oscar.

3-Blue 5 Pilot (IC): I can't . . . [expletive deleted]—I can't get this velocity vector to go to zero.

3-Handler Oscar (FM): I need your . . . [inaudible]. I'm monitoring the transmission, but they're not reading mine. Go ahead and send their traffic. Over.

3-Iron Deuce 6 (FM): Roger. Stalwart 5, do you monitor?

3-Stalwart 6 (FM): We're in the process of trying to send that. They obviously can't hear it. We need a Medevac at 965247. Over.

3-Gunfighter 6 CPG (FM): Iron Deuce 6, Gunfighter 6. I'm in the middle of your sector, looking at the 77 grid line, north, and there are no targets in front of your screen line center sector.

3-Iron Deuce 6 (FM): Roger. You're talking to Stalwart 6, also? Over.

**Appendix V
Transcription of Gun Tapes Recorded
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3-Gunfighter 6 CPG (FM): Affirmative.

3-Iron Deuce 6 (FM): Roger. Keep looking. We'll keep . . . [inaudible] . . . on the other side. Don't worry about it.

3-Dragon 6 (FM): Iron Deuce 6, Dragon 6.

3-Iron Deuce 6 (FM): Iron Deuce 6.

3-Dragon 6 (FM): Roger. Have Gun 6 do a check of his coordinates over somebody who's got a GPS.

3-Iron Deuce 6 (FM): Roger. We can do that. Break. Stalwart 6, Iron Deuce 6.

3-Stalwart 6 (FM): This is Stalwart 6. Over.

3-Iron Deuce 6 (FM): Did you monitor Dragon 6?

3-Stalwart 6 (FM): This is Stalwart. Roger.

3-Iron Deuce 6 (FM): Why don't you get him over to your position. You got a GPS?

3-Stalwart 6 (FM): This is Stalwart. Roger. [Inaudible] . . .

3-Iron Deuce 6 (FM): I say, go ahead. [Pause] Handler Oscar, Iron Deuce 6.

3-Blue 5 Pilot (IC): I got it.

3-Stalwart 5 (FM): Iron Deuce 6, Stalwart 5. Believe our admin log is talking with Handlers right now. Over.

3-Iron Deuce 6 (FM): [Inaudible] . . . Stalwart X-ray's grid location to Gunfighter—

3-Stalwart 5 (FM): Roger. Gunfighter 6, Stalwart 5.

3-Gunfighter 6 CPG (FM): This is Gunfighter 6.

3-Stalwart 5 (FM): Roger. Stalwart X-ray's position is as follows—840217. Over.

3-Blue 5 Pilot (IC): Take a look around out there, [Blue 5 CPG].

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

3-Stalwart 5 (FM): Stalwart 5. Did you monitor? Over. Gunfighter 6, Stalwart 5. Did you monitor?

3-Gunfighter 6 CPG (FM): Gunfighter 6. Roger. Do you want me to fly over there?

3-Stalwart 5 (FM): Gunfighter, this is Stalwart 5. Did Stalwart 6 ask you to move over to his location to scan this area? Over.

3-Gunfighter 6 CPG (FM): Gunfighter 6. Roger.

3-Stalwart 5 (FM): Roger. The location I gave you is my current location. Break. There was other enemy sightings vicinity 835260. Over.

3-Gunfighter 6 CPG (FM): 835260. Over.

3-Blue 6 CPG (FM): Roger. 835260.

3-Blue 5 Pilot (IC): 835260. Put that in your DEK, [Blue 5 CPG]. [Inaudible] . . . Did you hear that?

3-Blue 5 CPG (IC): Yup.

3-Blue 5 CPG (S):
0 3BR NT93832425 A+1248
1 3BR NT79002000 A+1102
2 3BR NT87702730 A+1102

3-Stalwart 6 (FM): Iron Deuce 6, Stalwart 6.

3-Blue 5 CPG (S):
0 3BR NT93832425 A+1248
1 3BR NT83502650 A+1102
2 3BR NT87702730 A+1102

3-Iron Deuce 6 (FM): Stalwart . . . [inaudible].

3-Stalwart 6 (FM): It appears that the scouts were attacked from dismounted positions. We're confirming that now, but it looks like they were . . . [inaudible] . . . dismounted fire.

3-Iron Deuce Oscar (FM): Oscar. Roger.

3-Blue 5 Pilot (VHF/UHF): Blue 6, this is Blue 5. Be advised I'm right out your right.

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

3-Blue 6 Pilot (VHF/UHF): Roger.

3-Gunfighter 6 CPG (FM): Iron Deuce 6. Gunfighter 6 has no targets in front of your sector. Your screen line is intact other than the burning vehicles on the right flank, and those are in front of your screen line, by the way.

3-Iron Deuce 6 (FM): That's affirmative. They're screening our right flank. Did you monitor Stalwart 6's conversation with Iron Deuce Oscar?

3-Gunfighter 6 CPG (FM): That's affirmative. Go ahead.

3-Iron Deuce 6 (FM): It appears that those two victors were taken under fire by ground weapons systems. We're still trying to confirm it. But appears now it may have been ground weapons systems.

3-Gunfighter 6 CPG (FM): I got two vehicles on fire over there, where there's—that I hit. They're burning and the ammunition on board is blowing up.

3-Blue 5 Pilot (IC): Do you see anything out there?

3-Blue 5 CPG (IC): Nope.

3-Gunfighter 6 CPG (FM): We're going to go back over there and take a look. Then I need to leave the sector here.

3-Iron Deuce 6 (FM): Roger. Give us a call when you're preparing to leave. Over.

3-Gunfighter 6 CPG (FM): Roger.

3-Gunfighter 6 CPG (VHF/UHF): Gunfighter 6 calling Blue 6 and Blue 5. Follow me back.

3-Dragon 6 (FM): Iron Deuce 6, Dragon 6. Is Gunfighter 6 . . .

3-Blue 6 CPG (VHF/UHF): Blue 6. Roger.

3-Blue 5 Pilot (VHF/UHF): Blue 5. Roger.

* * * * *

1-Iron Deuce 6 (FM): Roger. Are your Medevacs in-bound right now?

1-Handler Oscar (FM): Iron Deuce 6. Right now they are shackling that grid coordinate. Break.

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

1-Gunfighter 6 Pilot (IC): That target is way the [expletive deleted] out there.

1-Handler Oscar (FM): —I understand you want them there or to the rear that—at a secure pick-up site. Over.

1-Gunfighter 6 Pilot (IC): Yeah, I also got more targets—

1-Iron Deuce 6 (FM): —right now 965—

1-Gunfighter 6 Pilot (IC): —12 o'clock—

1-Iron Deuce 6 (FM): —247. Now. Release them.

1-Handler Oscar (FM): DUST-OFF will be on their way. Over.

1-Iron Deuce 6 (FM): This is Iron Deuce 6, out.

1-Gunfighter 6 Pilot (IC): Are you up there?

1-Gunfighter 6 CPG (IC): I'm just—I'm ruined.

1-Gunfighter 6 Pilot (IC): I know it, but listen to me.

1-Gunfighter 6 CPG (IC): I killed some people here.

1-Gunfighter 6 Pilot (IC): I know it. We don't know that yet. The . . . [expletive deleted] thing is burning—

1-Unidentified: —here.

1-Gunfighter 6 Pilot (IC): —way the [expletive deleted] out there.

1-Unidentified: And then I'll be right back with you. 840217. I'm in-bound.

1-Unidentified: Roger—

1-Gunfighter 6 CPG (IC): —back in about the same spot we took off from and—

1-Gunfighter 6 CPG (S):
Time 22 53 32
PPOS 3 BR NS 4536 8965
Alt +1140 HG 30 06 IN

**Appendix V
Transcription of Gun Tapes Recorded
During February 17, 1991, Incident**

1-Gunfighter 6 CPG (IC):

—there's been some drift of the navigation package—from Charlie Company about the same place. That's it. Just a minute. There's the landing position.

Tapes ended.

* * * * *

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