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NEWS RELEASE

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IMMEDIATE RELEASE August 13, 1991

MILITARY PROBES FRIENDLY FIRE INCIDENTS

U.S. military investigations have identified 28 incidents during Operation Desert Storm in which U.S. forces mistakenly engaged other American forces, resulting in the deaths of 35 servicemen and the wounding of 72 others. Of the 28 U.S. friendly fire incidents, 16 occurred in ground-to-ground engagements with 24 killed in action and 57 wounded, and 9 occurred in air-to-ground engagements with 11 killed in action and 15 wounded. No casualties resulted from one ship-to-ship, one shore-to-ship, and one ground-to-air engagement.

The Department of Defense had previously announced 6 of the friendly fire incidents which resulted in 11 deaths and 15 injuries.

A combination of featureless desert terrain; large, complex and fast moving formations; fighting in rain, darkness or low visibility; and the ability to engage targets from long distances were contributing factors in the 28 incidents. Of note, these same factors also contributed to our forces achieving their victory more rapidly, thereby keeping coalition casualties to a minimum. Military officials said that all known and suspected instances of friendly fire have been investigated but added that if additional information is developed, they will carefully review it to determine whether the conclusions should be revised.

Most of the friendly fire casualties involved crews of armored vehicles struck by high-velocity, non-explosive tank rounds that rely on the force of impact to destroy the target. Officials concluded that the number of deaths and injuries from these incidents would have been higher had it not been for the built-in safety and survivability features of the Abrams tank and the Bradley Fighting Vehicle, such as fire suppression systems, blowout panels, hardened armor, and protective liners.

The investigations were conducted to determine how the incidents happened so that the likelihood of similar incidents can be reduced in the future, and to provide as much information as possible to the families of the servicemen who were killed. The information concerning the servicemembers who were killed was offered to their next of kin.

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Of the total of 615 U.S. military battle casualties in Operation Desert Storm, 148 service personnel were killed in action, including 35 by friendly fire, and 467 were wounded, including 72 by friendly fire. Non-battle casualties are 143 deaths and 3043 injuries, none of which resulted from friendly fire.

Before the land campaign began on February 24, 15 servicemen were killed and 18 were wounded in nine friendly fire incidents. The remaining 74 friendly fire casualties occurred during the land phase of the campaign, in which 20 servicemen were killed and 54 were wounded in eleven separate friendly fire incidents.

Of the total 21 U.S. Army soldiers killed, one was an M1A1 Abrams tank crewman; 15 were Bradley Fighting Vehicle (BFV) crewmen; one was a crewman of a Fire Support Team Vehicle -- a modified M113 Armored Personnel Carrier; and four were on the ground.

Of the 65 wounded soldiers, 49 were BFV crewmen, seven were tank crewmen and nine were on the ground.

Of the 14 Marines killed, 11 were Light Armored Vehicles (LAV) crewmen and three were on the ground.

Of the 6 Marines wounded, two were LAV crewmen and 4 were on the ground.

One sailor was wounded while serving with a Marine liaison unit.

The Services are working together to develop means to reduce the likelihood of firing upon friendly forces. This comprehensive action encompasses examination of doctrine, training, organizational factors, leadership development, and material measures including technological means to reduce the likelihood of friendly fire incidents.

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Friendly Fire Incidents

Ground-to-Ground

o 29 January - Four Marines were killed when their Light Armored Vehicle (LAV) was struck by a TOW missile which was fired from another LAV west of Kafji, Saudi Arabia.

o 14 February (*) - Three soldiers were wounded in a small arms exchange during urban clearing operations in the town of Arky Amah Al Jadid, Saudi Arabia.

o 24 February - One Marine was killed when the convoy he was in received fire from a tank.

o 26 February - Three soldiers were killed and three wounded when their armored personnel carrier (APC) was hit by machine gun fire from a tank.

o 26 February - One soldier was killed when his vehicle was hit by a premature burst of an artillery round.

o 26 February - Five soldiers were wounded when their Bradley Fighting Vehicle (BFV) was incorrectly identified and hit by a TOW missile.

o 26 February - Two M1A1 Abrams tanks were hit by fire from another M1A1 tank. No casualties occurred.

o 26 February - Two soldiers were killed and six wounded when their Bradley Fighting Vehicle, which was operating in reduced visibility, received fire from a M1A1 Abrams tank.

o 26 February - Two BFVs, while operating at night in reduced visibility, were fired upon by a M1A1 tank. No casualties occurred.

o 27 February - Six soldiers were killed and 25 wounded when five M1A1 tanks and five BFV's engaging enemy forces were incorrectly identified at night in reduced visibility and engaged by other M1A1 tanks.

o 27 February - Two soldiers were killed and nine were wounded when three BFVs were fired upon by a M1A1 tank because of incorrect identification.

(* designates previously announced incidents) August 13, 1991

o 27 February - Three damaged M1A1 tanks were deliberately destroyed by other M1A1 tanks to assure they could not be used by the enemy.

o 27 February - One soldier was killed and one wounded when 2 BFV's were incorrectly identified at night in the rain and fired upon by a M1A1 tank.

o 27 February - One soldier was killed and two were wounded when two BFV's were hit by fire from a M1A1 tank while operating in rain and smoke at night during an attack on a bunker complex.

o 27 February - Two soldiers were killed and two wounded when their BFV was fired upon by a M1A1 tank while operating at night in reduced visibility.

o 27 February - One soldier was killed and one wounded by machine gun fire when they were incorrectly identified as Iraqi forces.

Air-to-Ground

o 23 January - A USAF A-10 Thunderbolt fired on a Marine observation post with no casualties.

o 24 January (*) - One Marine and one sailor were wounded when a USAF A-10 strafed a USMC Hummvee and a five-ton truck about 60 miles west of Kafji, Saudi Arabia.

o 29 January (*) - Seven Marines were killed and two wounded when a USAF A-10 fired a Maverick missile which malfunctioned in flight and hit a Light Armored Vehicle.

o 2 February (*) - One Marine was killed and two were wounded during an air attack by a USMC A-6E using 500-pound bombs after their vehicles were incorrectly identified as Iraqi.

o 2 February - Two soldiers were wounded when a HARM missile fired by a USAF F-4G Wild Weasel did not acquire the original target and locked on to the soldiers' radar. The missile lost its original target in flight and acquired the soldiers' radar.

o 4 February - A HARM missile is suspected to have landed close to the USS Nicholas (FFG-47) resulting in no casualties and only superficial damage to the ship.

o 17 February (*) - Two soldiers were killed when a BFV was struck by a Hellfire missile fired from an AH-64 Apache helicopter. Six soldiers were wounded and a ground surveillance vehicle was also damaged in the incident.

(* designates prevously announced incidents) August 13, 1991

o 23 February (*) - One Marine was killed and one wounded when a HARM missile from an ermined source struck a radar unit.

o 24 February - A HARM missile is suspected to have landed close to the USS Jarrett (FFG-33) with no casualties or damage to the ship.

Ship-to-Ship

o 25 February - USS Jarrett (FFG-33) fired at a chaff rocket launched by USS Missouri (BB-63) resulting in superficial damage to USS Missouri. No casualties occurred.

o 27 March - USS Avenger (MCM-1) received small arms fire while in the vicinity of Ras Al Qalayah. No casualities occurred and the ship moved out of firing range.

Ground-to-Air

o 15 February - A USN A-6E pilot reported he was fired upon by a surface-to-air missile, resulting in no casualties.

(* designates previously announced incidents) August 13, 1991

- END -

NEWS
BRIEFING

Office of the Assistant Secretary of Defense
(Public Affairs)

DoD News Briefing
RE: Friendly Fire Incidents
Tuesday, August 13, 1991 - Noon
Mr. Bob Taylor, PDASD (Public Affairs)

MR. TAYLOR: Good afternoon. This will be a single subject briefing. I have a short statement, and then I'll introduce the briefers.

As you're all aware, the Department, the Joint Staff, and the military services are continuing to review all aspects of Operation Desert Storm. One of the important issues we've been reviewing, and one that's been very closely looked at by the services in particular, is the fact that some American friendly casualties were caused by our own forces.

We've already briefed you on six confirmed incidents, and we've told you we've been looking at other incidents. Last week, Secretary Cheney was briefed on the results of the reviews into those incidents, and he directed that we provide this information to you here today.

We've now identified a total of 28 incidents in which U.S. forces engaged other forces. Most of the new information that we have relates to those incidents which occurred during the ground phase of the operation.

We have with us today Colonel Roger Brown from the Army Staff to brief you on the Army's aspect of the ground phase of the operation. We also have with us Lieutenant General Martin Brandtner, the Director of Operations for the Joint Staff; Colonel John Shotwell from the Marine Corps; Colonel Robert Jenkins from the Air Force; and Captain Phil Voss from the Navy, who can answer any particular questions involving their services.

Colonel Brown's briefing will focus on the incidents that the Army experienced. Once he's briefed and answered the questions, then if you have any questions pertaining to the other services, we'd be glad to take them.

COLONEL BROWN: This briefing provides additional information regarding U.S. Army casualties due to friendly fire in Operation Desert Storm. Since the ceasefire in Southwest Asia, we have conducted intensive and thorough reviews of our casualties and battle damage to vehicles to ensure we knew the circumstances that surrounded our losses.

It's important that I make note at this time that the U.S. Army suffered a total of 452 battle casualties. This number includes 98 soldiers killed and 354 soldiers wounded. Battle casualties include casualties which were caused by friendly fire.

(Chart)

This chart portrays the Army's efforts to make determinations on casualties caused by friendly fire. Beginning with initial casualty reports and commanders' investigations in February, and concluding earlier this month, the Army has found that a total of 21 soldiers were killed and 65 wounded based on friendly fire.

The Army conducted extensive and thorough reviews to make this determination. The reviews included not only analysis of the commanders' reports and investigations, assessments of battle damaged vehicles, and in addition, we related weapon systems information.

Significant to these reviews is the fact that U.S. Army Abrams main battle tanks fired kinetic energy penetrating rounds which were made from depleted uranium or DU. DU rounds, when fired, leave behind a measurable, telltale radioactive residue signature on the targets they strike. Iraqi forces did not possess these high-technology capabilities that you find with a DU penetrator. Assessment of all U.S. Army battle-damaged vehicles included radiological examinations of the vehicles which would confirm definitely any of those vehicles which had been struck by DU penetrators.

I might also point out that nowhere in previous American history has there been a war with a telltale signature such as the DU for confirming friendly fire incidents. Therefore, the casualties reported here are very much independent of other information you see in history, because we have those definite capabilities.

(Chart)

This chart provides a perspective of our troops on the ground during the campaign. It may not be well known, but this was the largest armored battle in history, with over 10,000 armored vehicles on both sides combined. The Battle of Kursk, probably the next largest, only had less than 8,000 armored vehicles. The Battle of El Alamaigne in 1942 had around 2,000 armored vehicles -- sizeable differences. The Battle of El Alamaigne was done in nine days. The battle for Desert Storm on the ground was done in 100 hours.

To the soldiers that were there, the terrain was almost featureless, tabletop desert, easy to get lost in, in spite of some modern advances which we had. Our soldiers usually fought in periods of very reduced visibility and poor weather: sandstorms, heavy rain, heavy smoke, and at night. The offensive operations which we conducted were essentially fast-paced and continuous, carried out 24 hours a day, non-stop. An example is that most of our units, in less than four days, fought and traveled distances equal to that from Richmond, Virginia, to Philadelphia. That's a significant battle maneuver.

Our soldiers found that their tanks over-matched the Iraqi capabilities in both lethality and in range. By that, I mean we could out-range the Iraqis. Another significant factor is that we could out-range them in our ability to detect their targets. In many cases, we detected, acquired, and destroyed the enemy vehicles before we were within their range capability to see us. We have prisoner information that also details those incidents. Our thermal sights, of course, allowed this to happen, even in the worst of weather.

(Chart)

This chart lays out a perspective of the armored vehicles which we had on the battlefield and shows the significant damage that was inflicted upon that fleet. Please note, over 3500 armored vehicles, that's tanks and Bradleys alone, in the U.S. Army, the damage suffered, and I call it significant damage meaning that the unit could not repair it with its own assets, 35 vehicles. Of that 35, about two-thirds suffered their damage from tank-fired penetrators, a key point which I'll come back to. Regrettably, 27 of the 35 vehicles that were damaged or destroyed were done so through acts of friendly fire.

Q: No APC's?
A: No sir.

I'd also point out that in addition to the 35, there were three tanks which we deliberately destroyed after the crews were forced to evacuate the vehicles during combat to prevent them from falling into enemy hands; and we had seven other tanks and Bradleys that suffered minor mine damage with no casualties.

I would also point out that in all these cases, what we found was that the vehicles performed as designed.

(Chart)

These next two charts in the series detail the incidents of battle engagements and battle damage where casualties due to friendly fire occurred, and in two incidents, friendly fire with no casualties. The information which you received in your handouts is included in this ground incident, and two air-to-ground incidents.

First, let me bring your attention to a couple of common things we found during our review. When you look at the environment and the weather, what you'll find is that predominantly the weather was bad and the visibility was poor: sandstorms and smoke, heavy rain. I would also point out that even the incidents where it says it was clear daylight, if you ever see tanks move on the desert floor, they are surrounded by dust -- not a clear vision picture, even in the clear daylight.

Second, the type of action. In almost all cases the type of action which surrounded friendly fire were actions of offensive combat operations -- either attacking enemy positions or movement to contacts where we were seeking out the enemy to engage them.

Historically, those two factors -- limited visibility and offensive operations -- are prevalent in our history of acts of friendly fire.

I'd also point out, because many of these say misidentification, that clearly, one of our problems was being able to do positive identification of enemy versus friendly vehicles. Often, we found through our review, that the vehicles which had been struck had, in fact, conducted attacks of Iraqi positions and entered those positions, and other units had then recognized those vehicles in their thermal sights and fired on them mistakenly.

(Chart)

The next chart details five incidents that have been summarized in the last line here, which did not relate to Bradleys or tanks. Included in this is one of our air-to-ground incidents with two soldiers wounded from a radar-seeking missile initially launched against an Iraqi radar, lost lock, and then sought out the next radar it could find, which happened to be in a ground radar. Common again, through these incidents, is the fact that most of them were done during periods of limited visibility.

You can see different types of incidents on this chart, but nevertheless, most of them come down to the same common factors. Those being lack of positive identification. And we believe that's one of the things we have to solve in the future.

(Chart)

In conclusion, let me say that some of the key advantages that our ground forces enjoyed during the war, the ability to out-acquire the enemy through the use of thermal sights and other things, often led to some of our friendly fire incidents. But having said that, let me make it very clear, that those advantages allowed us to have fewer casualties due to enemy action. Our armored fleet was very survivable, and therefore, it prevented a lot of casualties.

I'd also point out that, based upon our review, we found significant efforts had been made prior to the war to assure that the commanders had done everything they could to prevent incidents of friendly fire. Many of you will recall seeing pictures of our armored vehicles with inverted V's painted on the flanks and rear of the vehicle. Those vehicles also had thermal tape making those same V's. In a complex coalition operation, those kinds of things were necessary to determine friend from foe. Unfortunately, even with additions of VS-17 panels and in some cases, even IR beacons, this was not sufficient to prevent the friendly fire casualties.

Lack of positive identification of these ground vehicles is the most often found cause of these incidents of friendly fire. The results of the Army's review, coupled with the lessons learned from the command, will be the basis to find solutions to prevent future incidents of friendly fire and future conflicts.

The Army's Training and Doctrine Command has been appointed as the Army's lead agent to work with the other services to develop solutions in doctrine, training, leader development, organization, material, and technology; that will help us in the future to prevent incidents of friendly fire.

The Army has recently provided information to the next of kin of those soldiers who died as a result of friendly fire as to the circumstances of their deaths. We regret these incidents of friendly fire and the delay in completing our review. Nevertheless, we recognized our responsibility to ensure the accuracy of our determinations.

That completes the briefing.

Q: So this is the Army's final accounting of these incidents, and you've closed the book on all KIA?

A: That's correct, sir, pending receipt of any new information.

Q: All families have been told now, in each case?

A: That's correct.

Q: By a personal...

A: Through casualty assistance officers who had made the original notification of the battle casualty.

MR. TAYLOR: I don't think they've all been told.

COL BROWN: Well, we have two that we have attempted to tell. They were on vacation. But they were originally notified, and we have attempted to contact them in the last 24 hours.

Q: Colonel, considering the number, generally speaking, how do you characterize the number in the conditions we faced there? Was it alarming? Was it to be expected?

A: We have found casualties due to friendly fire in all of our previous wars. And as I pointed out, in this particular conflict, because of the short duration, our ability to gather information very rapidly and analyze it, and then the additional factor of the telltale from DU penetrators, we believe we have been able to do a very accurate and complete analysis. In previous wars, we're not convinced that that was possible.

Q: I understand you're proud that we're able to close the book on them, but what about the number? Is the number an alarming number considering the circumstances?

A: The number, 21 killed and 65 wounded, is too much, sir, and we're trying to find solutions that will prevent this in the future. However, at this time we have no complete solution to the problem of positive identification.

Q: What percentage of friendly fire casualties were involved in the ground war, say from the 24th to the 28th? It looks like most of the casualties we took were friendly fire. What was the baseline on ground war casualties?

A: I believe for the Army, about five of the 21 happened prior to the ground war, and then the other 16 during the ground war. And then those incidents primarily on the 26th and 27th of February, the last half of the war.

Q: So most of the casualties during the ground war were friendly fire?

A: No sir, the total number of casualties, as I pointed out, as far as killed was, battle casualties was 98. Of that number, 21 total were from friendly fire.

Q: Was that during the ground war?

A: Once the air war had begun and we did some cross-border patrolling, etcetera, we had a total, I believe, of five casualties before G-Day when the ground war began, and then 16 more due to friendly fire after the ground war was initiated.

Q: Colonel, all of these casualties are Army friendly fire to Army troops. I'm assuming that's what you're saying. Were there other casualties...

A: Included in these numbers, sir, to answer that question, we had one incident that I pointed out which was air-to-ground with two wounded, which was from an aircraft, not the Army's.

Q: That was the only incident of air-to-ground?
A: The only one involving Army casualties, yes sir.

Q: I wonder if someone could give us an overall picture of all of the casualties of friendly fire, in addition the Marines, and what you might suspect. Are the Marines going to be any higher? Is this at a stage where a few weeks from now the Marine figure might jump up higher? Can someone give us an overall picture of these figures?

GEN BRANDTNER: Overall, it's covered in the press release that you've already received. I can address a little bit on the Marine Corps picture.

Q: Well, what I would like is someone to actually tell us, overall, what the figures are overall, as well as to give us the feeling of whether these are outrageously higher than previous wars, overall.

A: I'll go to the overall. First of all, the term outrageous is not applicable. I think we have to put this in perspective. There were a total of 615 U.S. military battle casualties -- 148 were killed in action, of which 35 were killed by friendly fire; there were 467 wounded, of which 72 were by friendly fire. If you would track down on the next paragraph of your press release, it will tell you how that breaks out between before the ground campaign and following it. Twenty servicemen were killed and 54 were wounded in friendly fire, 11 incidents, following the onset of the ground campaign. Prior to that, before February 24th, 15 were killed and 18 were wounded in nine friendly fire incidents. I would say that the relationship of those casualties to the total casualties is a concern. I think the term outrageous is not applicable.

I would like to characterize this, first of all, because people have a tendency to forget in the aftermath, this battle occurred over the space of 100 hours. There were 10,000 armored vehicles on both sides. During the onset of the war, we were maneuvering in one direction; in the middle of this at high speed, we manuevered two corps 90 degrees into the face of the enemy. These incidents did not occur cross-division boundary. They did not occur cross-brigade boundary. They were inside a very small area of operations where there was intense fire.

I would point out to you, for example, from the 24th on, over 2,000 enemy tanks were destroyed -- 2,000. There were over 500 armored personnel carriers destroyed, and some 1500 artillery pieces during that space of the 100 hours, in addition to those that were destroyed during the air campaign. I don't think I need to portray for you how intense, if you consider the numbers of vehicles, the numbers of contacts that were ongoing to create this kind of intense environment. The fact that we had these number of incidents I think is remarkable.

We were able to determine a lot of these, unlike in other wars, because we did have the telltale. We also had grave concern, went in immediately, and began to look into these things. I would say also, that we are looking at the first 100 hours of a violent campaign. Previous wars, in terms of relationships, the investigations occurred after periods of five years. So I can't, in my mind, say how you can relate the two of them in terms of our ability now to investigate these kinds of incidents.

Q: General, in terms of the low number of casualties from the Iraqi side, is this an acceptable outcome?

A: In terms of the low number of casualties from the Iraqi side, I'm not sure I know what you mean.

Q: You conducted the war in such a way and with the equipment that enabled you to inflict a fairly rapid defeat of the enemy while not taking many casualties ourselves.

A: Oh, yes. I would submit, in answer to that, that if we had plodded along, methodically, conservatively, and hadn't gone after them in the highly aggressive manner that we did, the casualty rate would have been significantly higher. So the very means by which we won the victory did cause, to some extent, the battlefield situation that resulted in some of these incidents. Many of these engagements were at extremely close range. Many of them were way out.

If you look at a thermal image on a tank sight, which will range out to 3500 meters, a TOW missile will range out to 3750, it is far beyond visual capability. You put that at night, under conditions of haze, rain, high winds, flowing sand, the fact that we had this few incidents I think is remarkable.

Q: In previous wars, World War II, Korea, and Vietnam, a large percentage of friendly fire casualties were indirect fire -- either air-to-ground or artillery fire misdirected. These are almost all direct fire incidents. Is the incidence of night fighting and low visibility, or the increased range of your weapons attributable?

A: That's partly it. You also have to look, in the context of Vietnam, there was no armored war, per se. It was a jungle environment. There were some engagements with armored forces, but by and large you're dealing with moderate size units moving in close quarters, and being supported by artillery in very dense terrain. Here, it's flat, featureless, wide open, vehicles moving at very high speed, engaging at the maximum capability of the system. We were so far superior to the Iraqis in our ability to engage targets that we ranged them beyond our visual acuity and ,in frankness, the types of devices we had, the inverted V, other types of thermal imagery or beacons and those kind of things, were not as effective as we had hoped because of the weather, because of the distance, because of the thermal sight -- its inability to distinguish fine points of the target, which you can identify the target, but we didn't have a clear means of identifying what the target was in terms of friendly or enemy. We are working that problem to develop a thermal responder that will show us, without any doubt, that we have identified an enemy target.

Q: Is there any evidence or indications that any of the crews that did fire on American crews, that did fire on other Americans, performed improperly, carelessly, or are there any investigations of those crews or anything of that nature?

A: There have been investigations. I don't know the precise number. In the case of the Marine Corps, they have told me they have investigated each one individually. The Army has also done the same. There have been no instances of disciplinary action at this juncture. I will say this, that as far as misconduct, absolutely not. I just cannot think of any single incident that resulted through the intentional fault of an individual.

If you look at the way the vehicles are located on a battlefield, they may know through GPS where they are. They may know where they should be relative to that, and can identify that they are in the right place. Now you have the orientation of the weapon, too. If you're in a high-speed

maneuver area, targets are constantly maneuvering. You are going to have an intensely dangerous area. There are instances, annecdotal, where a round was fired at a target, it hit the enemy, went through the enemy, and injured U.S. forces or hit U.S. equipment. Those kinds of things.

Q: General, once it became clear that the Iraqis were no longer going to fly their air force -- in other words, their eyes were gone from the air -- what, if any, steps did you take as far as the markings? Did you change anything at that point? Did you do anything to enhance the identification of the vehicles?

A: All the vehicles had panels on the overhead. They also, in many cases, had beacons. The problem was not an air-to-ground identification problem after that particular problem. Most of the events were ground-to-ground.

Q: But you didn't do anything once it became clear they'd lost their air capability? Nothing had changed in your planning?

A: We did not have an air threat that necessitated taking steps to counter the Iraqis coming at us that way.

Q: General, of all these deaths caused by friendly fire, what percentage are you willing to say were caused by human error?

A: If you want to come down to the bottom line, any friendly fire incident is an error. So I'm going to let you draw your own conclusions. I'm simply going to say that, in the heat of battle, if you start picking on individual humans and saying they made a mistake, as opposed to someone actually shooting at a target that he was convinced was an enemy, and that had every indication of being an enemy. A good example is the Colonel's point about U.S. units actually in the assault, having cleared an Iraqi position, now are in among them. And there's a shot fired at an Iraqi tank and it hits an American tank. That is not human error, in my judgment.

Q: You've said there was no misconduct, which you defined as intentional fault, and you're reluctant to talk about what's human error. But it seems to me, we could use some guidance here on to what extent you attribute a friendly fire incident to inherent problems with the nature of the battlefield and the technology available, and to what extent it happened as a result of communication miscues, people not following guidance, people making human errors rather than machine errors, or rather than living within the constraints of their equipment.

A: I'm prepared to tell you that there were mistakes made. There were units that were in areas they weren't supposed to be, perhaps because they didn't know where they were or they had gotten lost relative to the battle changing, and they had actually come inside the maneuver area of the combatant units. There were instances where a supply train actually got into the area where the attacking forces thought they were enemy, just because the way the battle progressed. You have to understand, it's highly fluid. As a consequence, you could say yes, they made a mistake because they were outside of a preset boundary area. I'm going to tell you, they did not know that, or they wouldn't have been there. That's the point I was trying to make.

Q: General, some families have complained that the Pentagon has been slow to notify them that their loved ones were involved in friendly fire incidents. If you had the capability to determine friendly fire, what has been the delay?

A: I'm going to say that there was no delay intended. There are many aspects of this problem in terms of identifying what, in fact, is the truth. Speaking for the services as a whole, I

think you have to understand that before you make a determination of this nature, you have to be absolutely certain that you know, in fact, that that is the case. There are a number of investigative procedures that are required to occur in order for many of these events to go forward to the point where someone in authority is going to decide yes, this indeed was a bonafide friendly fire incident. The fact that the Army discovered that they could go back and conduct analysis based on radiological emissions that determined that there had been a shot by a depleted uranium round was something we discovered as a result of this. These kind of things, all plus the need to be absolutely certain, so that you don't misinform the public or misinform the parents concerned, I think is critical.

I can say that where we knew ahead of time, in the case of the Army and the Marine Corps, those parents were, in fact, told immediately that their children were a result of those kinds of circumstances.

Q: General Brandtner, there's been some history on this friendly fire issue, as you probably know. The NTC experienced this, a lot of the units that went out to Saudi Arabia were well aware of the challenges that they faced in a desert environment. There's been a small group of people who have been warning about this challenge to the services for some time. Do you think some of this could have been foreseen and something could have been done in advance of Desert Storm that was somehow overlooked, or not financed, or not undertaken that might have prevented some of this?

A: I would say that, first of all, there is an acute awareness in all services that engage in ground combat, and the air, these are routine training concerns, in terms of just staying alive in the training environment. Both the Army and the Marine Corps operate in live fire environments at Irwin, 29 Palms. We train very hard to preclude that, obviously, because we're not going to operate unless we can assure the safety of our troops. So the answer to your question is everybody knew very well what the risks were.

I would submit to you that many of the things that were done, the inverted V, other kinds of tape that were put on, ways to indicate friendly vehicles -- and you have to understand, this was an enormous undertaking -- I think reflected the concern on the part of the commanders and the troops to make sure they had the best available means.

We discovered, as you obviously have seen, that this didn't work every time. In many cases, it was due to the lack of clear definition on the battlefield and to the ranges in which we undertook that. We are looking now very hard at the technological means to overcome that. I am confident that we will develop those and have an ability to actually do an IFF kind of thing.

Q: General, are you saying that technology doesn't exist for preventing such incidents in future conflicts?

A: I did not say that. I said we are looking at means to technologically put systems on our weapons, in our tanks and so on, to offset that problem.

Q: But such technology exists?

A: I am not a scientist. I can't tell you whether or not there is something right now that exists. I can tell you that we're looking at ways to do that. There were things taken out there, beacons and other types of indicators that we attempted to use that did, in some cases work, and in others did not because of the way the battlefield occurs.

Q: You mentioned that before. Why didn't even beacons work?

A: A lot of them are outside of visual range. Some of you experts can correct me if I'm wrong, some did not show up on the thermal range on certain sights. They just weren't visible in the IR spectrum that the sight was, and we're working on those kinds of things.

Q: Do you have any wide friendly fire figures for the alliance as a whole?

A: I'm going to refer you to alliance countries for those kinds of figures.

Q: Is there any kind of way that these friendly fire casualties will be identified by unit or name?

A: The parents of the individuals are being notified.

Q: What are some of the ideas that you have for trying to solve this problem? You mentioned beacons. What are some others?

A: We are reviewing, for example, battlefield control measures, boundary lines, and so on, which by and large work. But we have to recognize and improve our ability to clearly establish boundaries during a highly fluid battle. That's very, very difficult to do. We're looking at things like that. Other doctrinal types of things. The colonel mentioned discipline and leadership. I must say, however, that I can assure you, and I speak from talking to people like Butch Funk who had the 3rd Armored Division, as they move forward, constant chatter on the radio -- and I don't mean the term chatter in a descriptive way of being negative -- constant reassurance, keep weapons, hold, be careful, watch out. There's this intense mindset. And again, I would refer you back to the raw numbers of this equation, and not let you walk away from this perspective that we had a disaster. We had a problem, but we won this war, we did it very quickly, and we did it very well.

Q: You had experience in Vietnam, you know that troops tend to settle down after they've been [bloody] awhile. Is the shortness of the battle and the fact that most of these troops were not combat experienced, is that an attributable factor?

A: First of all, that's a very good question. Instinctively, my reaction is yes, that is. That's my opinion. I speak for no one but myself. I think you can say that if you looked at a curve, the amount of time we spent out there, the fact that these troops were first time in combat, I'm not saying this in a critical way. But in each case, as the events began to unfold, you became more comfortable on the battlefield, if there's a way to become that way, and I think you know what I mean. Those things start to go away, absolutely.

Q: General, our U.S.' ability to attack at long ranges has really outstripped its ability to identify a target at close range. What does that say about the level of priority given to combat identification technologies over the long haul on behalf of the Pentagon?

A: I think there's an acute awareness of the fact that we have to improve our ability to engage targets at long range. I think that we were probably, and I'm again talking my own opinion, surprised that we were able to engage targets at that range before we were discovered. I think there was an expectation that we were going to be in closer combat. But we, in effect, maneuvered so quickly, that we were able to range the Iraqi targets at the maximum capability of our systems without having been engaged ourselves. So as a consequence, we now understand that capability, the fact that we have that vis-a-vis those systems. We are now looking at ways to make that absolutely positive.

Q: What's been the priority level in this building on combat identification technologies, over the long haul?

A: I really don't know how to answer that question.

Q: Can you give us the rationale for not releasing the names of the people who were killed by friendly fire?

A: I'm going to refer that to the Assistant Secretary's office here.

MR. TAYLOR: Let me explain briefly how we do this. When the services get information involving the circumstances in which an individual was killed, they offer that information to the next of kin. In many cases, the next of kin ask that they not be told. However, if they change their minds later, they can be. That's what's happened here. Several of the next of kin have asked that they not be told the circumstances surrounding the death of their loved ones. Out of respect for them, respect for their privacy, we do not release the information. We haven't in the past, and we're going to continue to not do that.

Q: Are you saying that they don't want you to tell the public?

A: They don't want to know themselves. In many cases, some who have been told, have thanked us, and then asked that we not tell the public.

Q: Can you tell us how many of these families...

A: No, I don't have that information.

Q: General, could you give us, how much higher are these figures likely to go? Are there any figures that you expect in the future? Do you expect these figures to go higher? And if so, how much?

GEN BRANDTNER: First of all, I am at this point confident that the services have investigated every incident that so far has been brought to light and that they are, at this juncture, assured to a high degree, and the Army in particular has gone through an exhaustive study; the Marine Corps has a couple of investigations which we have reported here that are still ongoing, which they have concluded will result in friendly fire, so we have included them here.

My point is, there are Judge Advocate General level investigations which are ongoing that have to finally be resolved. They will not change the numbers as we see them here. It's certainly possible that some incident may emerge at some future time, but I have a high level of assurance that we have uncovered all and have reported everything we know.

Q: Is there any particular survivor benefit that the family gets because of these incidents that others don't get in combat?

A: I don't know, but I'll find out. My sensing is no.

Q: In that connection, are they precluded from legal action?

A: I don't know the answer to that either, but we'll find out.

Q: Can you tell me, in the immediate wake of the war, a lot of us were told that it would be possible to install transponders that do penetrate bad weather, visibility, of the sort that aircraft use, that it would be possible to use these on ground equipment, but frankly, that it just was too

expensive, that it was impossibly expensive. Is this a matter of technological obstacles that are going to be difficult to break, or is it just a matter of spending money?

A: I don't think, in terms of saving lives, that money is a factor. I think that if it's technologically feasible -- now I'm not talking about systems that are outrageous. I'm talking about things we can do, and we can, and we are pursuing those right now. I did not ever see any instance during the war that we did not go all out to provide a means to do this, and you all may recall that at one point we were going through a number of methods and ways to improve this capability because we anticipated this problem. As a consequence, I would say that things were done very, very quickly to try to resolve this. As you saw, we made some progress, and we obviously had some problems.

Q: But hadn't sometime in the '70s, '80s, when much of this ground equipment was being built, hadn't there been a decision, in effect, that putting transponders that would penetrate bad weather and the like is just too expensive?

A: I don't know. I wasn't involved in the acquisition process. I can't answer that.

Q: You're the man with the overview, looking at the overall picture. This war was divided into phases. We're talking, a lot of these casualties came from the armored battle that began generally on the 24th. I know the Marines were in there early on the 22nd. What percentage of the ground war casualties were friendly fire?

A: Well, I can tell you right here that there were 615 U.S. military casualties.

Q: In the ground war?

A: In the entire operation Desert Storm.

Q: I'm talking about the ground war.

Q: On page two of the release, it says that the remaining 74 friendly fire casualties during the land phase of the campaign, so the question really is, that's 74 of how many?

A: We had a total of 35 killed by friendly fire. We had a total of 72 wounded. Of that, there were 15 servicemen killed before the 24th, and 18 wounded. There were 20 servicemen killed after the start of the ground campaign and 54 wounded. So you've got essentially a little more than half occurred after, in terms of the killed in action, and a fairly significant number of the wounded.

Q: The question then is, how many of the overall casualties took place during the ground battle?

A: You can with a pen divide that number into 615.

Q: You may be misunderstanding my question.

A: I may be. I'm sorry.

Q: We know overall 615 casualties in the war as a whole, but how many of those 615 altogether were in the four days of the ground war?

A: There were a total of 20 servicemen killed and 54 wounded.

Q: Right, and that's the friendly fire total. The question is what are the overall totals due to friendly and enemy fire in that same period?

A: Okay, I understand. I don't have the numbers in front of me, but we'll get those for you.

Q: That's a significant number, isn't it? This is a real measure of how effective these weapons were in the ground war, isn't it? Isn't that one of the first questions you would have asked? How many people did we lose to friendly fire in a ground war?

A: You're asking the question and we're answering it right now.

Q: What's the answer?

A: The numbers are right out here. I'll talk to you later. In debating these here, I've got the numbers here, and the formatting of how they're broken out is such that they're the way they are here.

Q: Just one question on the quality of the investigation. On 26 February, this is in the other friendly fire casualties. 26 February, machine gun fire. Three killed in action, three wounded. It says an M-113 APC lost. I don't see this M-113 APC listed in the lost vehicles. My question is, how many APC's were lost as well as tanks and Bradley fighting vehicles?

And two, I'm pretty sure, this is the 2nd Armored Cavalry Regiment incident, and I talked to one of the staff sergeants involved who survived. On Thursday, and he said this was friendly fire from the outset, his family was told that he was injured in a minefield, these other guys were killed in a minefield. As of last Thursday, no one in the Army had contacted him about this friendly fire incident. It was not just three killed, there were two APC's lost in this incident, two members of his platoon were killed on the ground by machine gun fire, the driver of the one APC was killed, the driver of the other APC was killed. So I question the quality of this report. This would be a combat engineer unit. I wonder if any of the Army people can comment on the specifics of this.

GEN BRANDTNER: He's the one that investigated that, so I'll let him...

COL BROWN: Yes, I can. That was investigated, and in fact the numbers you see there are those which were determined to be as of friendly fire. There were other casualties, obviously, that happened in many of these incidents where, in fact, the enemy was involved. Please do not get the impression that these were very clinically done, the friendly fire being somewhat segregated from the enemy. In almost every case, the enemy were involved. It was a difficult job to determine which of those were friendly fires, and which of those were enemy. In the case you talk about where vehicles had gone forward and were returning, they happened to have Iraqi vehicles in with them, and a firefight ensued. The particular 113 you talked about was hit. People dismounted. In fact, in that particular incident, soldiers tried to signal our tanks by shooting their weapons, which at night gives the impression of enemy fire, and that's one of the reasons they were fired upon, it was because they identified themselves by firing their weapons. But I would tell you that the investigation on that was quite thorough, and complete.

Q: He was the staff sergeant in charge of the platoon that was machine gunned. He was never interviewed. I don't get it.

A: There were statements taken by the commanders in all the incidents, and those reports were provided up through the chain of command, and the Army did evaluate all of those.

Q: The biggest one seems to be the 27th of February, six KIA, 20 wounded in action. Where did that happen, and what units were involved in that? Can you give us a better idea? That's pretty substantial.

A: The circumstances that surrounded that incident happened in Iraq. In fact we had essentially a division, in fact, passage of lines through forward elements of another division. They

then went into a movement to contact. The units which involved those particular vehicles attacked into to different successive Iraqi positions. In fact, both of those positions were conquered. But in the midst of the attack into those two positions, there were incidents where a couple of the Bradleys on one particular Iraqi position were fired upon, and five tanks on another Iraqi position were fired upon, and two Bradleys, which crossed a unit boundary and put themselves in front of another unit's movement to contact where they were misidentified and fired upon. But eight of the ten vehicles shown on that particular incident were actually fired upon inside of Iraqi positions that were attacked into and through.

Q: What units?
A: The units have not been identified, sir.

Q: You don't know what unit it is?
A: We know what the units are, but we have not provided that information.

Q: Why can't we know what unit it is?
A: That was a decision, our policy was not to provide the unit information.

Q: Colonel Brown? Are you saying that American vehicles hit by U.S. fire and Iraqi fire are not included in this list?
A: No sir, that's not true. I didn't say that. What I said was that we examined vehicles to determine which ones were friendly fire. We have several vehicles that were hit by both Iraqi and U.S. fire. In many cases, that's where a lot of the time was taken to do a thorough analysis.

Q: I'm lost on the APC number, because for example, the Apache attack hit a Bradley and an APC, and only the Bradley is listed on the sheet.
A: The sheet was designed to show the attacks on Bradleys and Abrams tanks only. We did not prepare charts to show all vehicles that suffered any kind of damage, because predominantly these vehicles, except in the cases where we provided in the additional incidents chart, the vehicles that resulted from friendly fire were shown.

Q: Can you tell us how many additional vehicles, APC,s HUMMRs, and others might have been hit by friendly fire?
A: I don't have data on HUMMRS or other vehicles in totality. Again, only those that had casualties were looked at from the standpoint of the friendly fire determinations for 113's.

Q: So there are other incidents out there in which friendly fire took place and vehicles were damaged?
A: No sir, not to my knowledge.

Q: That were not Bradleys and not tanks.
A: They're only not captured in that way on the charts, sir. We have covered all the vehicles that we know that suffered friendly fire.

Q: There were no APC's with uranium depleted rounds?
A: Not that I'm aware of, sir.

Q: Can we get the overall numbers for all types of vehicles hit by American fire during Operation Desert Storm?

A: We can provide tanks and Bradleys, sir. I do not have numbers on the overall 113 losses.

Q: Why not? I don't understand.

A: I just don't have the information, sir.

Q: In these instances in which, for instance, a Bradley fighting vehicle was hit by both Iraqi fire and American fire, are they listed here, or have you separated out those where the final kill was done by an Iraqi? Have you made distinctions among...

A: We analyzed all the vehicles and determined which ones, for instance, had U.S. fire that penetrated the vehicle, and maybe was also hit, but the enemy fire did not penetrate the vehicle. We have no incidents, as an example, of any perforations of our tank by Iraqi fire. Just as an example. But we do have incidents of many Iraqi explosive rounds, etecetera, hitting our tanks, but they didn't penetrate. So again, I don't want you to get the impression that that's the only damage to the tanks or the Bradleys, is what's suffered by friendly fire. In some cases, many of the vehicles were shot four and five times. We have cases where three rounds from friendly fire can be absolutely identified, and then rounds which didn't penetrate were clearly from the enemy.

Q: But in no cases, did you preclude putting it on this list because you decided...

A: No. Where we confirmed friendly fire, it's provided.

Q: Can we get Colonel Shotwell and Captain Voss to give us a quick rundown on the Navy incidents? There are a couple of (inaudible). Particularly the ship-on-ship which we had not heard about, and also the question of the Harm missiles that were tracking our own people.

CAPT VOSS: Yes sir. I believe you're referring to the incident on the 25th of February concerning the USS Missouri?

Q: Yes.

A: If you recall, that was the day of the Iraqi Silkworm attack which was reported in the press, where Silkworms were fired from Iraqi shores to an area in the northern Persian Gulf where Missouri, Jarrett, and several other coalition ships were working together. When the Silkworm approached, all the ships went to general quarters. The Her Majesty's Ship Gloucester actually engaged the Silkworm and shot it down. At the same time, Missouri fired four chaffe rockets and several other decoys. A close-in weapon system which is a high speed gun on board the Jarrett, locked on to one of the chaffe rounds, which had an early bloom, in the chaffe cloud, and actually fired several rounds into the Missouri which were discovered these were uranium depleted rounds, one of which was found on board the ship. No one was injured.

Q: Was the Sea Whiz on automatic setting?

A: Yes sir, it was on automatic setting at the time.

Q: What's the one where the Avenger was fired on from the beach?

A: This was well after the war. In the close proximity of this island there were several small arms fire rounds fired in the wake of the Avenger when it was close aboard the beach. There were several individuals seen running from trucks. There were enemy forces as well as coalition and

friendly forces on board the shore. It is still undetermined exactly who fired the rounds. But simply because it's undetermined and it could possibly be friendly fire, is the reason why it's listed here.

Q: You don't know that that was our people firing on it?
A: No sir we don't, but it is a potential friendly fire situation. That's the reason it's listed.

Q: There's also one with the HARMs. Have we not done anything in the past to determine that the HARMs are going to hone in on our own shipboard radars?
A: The HARM is a missile that I guess I could say loves tracking on radar gun direction type of radars, as well as a lot of other types of devices. In this particular case, in both of these instances, the ships were working within 15 miles off the coast of Kuwait, there was a lot of air-to-ground action going on at the same time as these two missiles went out in the direction of the ships, so we have not been able to determine exactly what was the launch platform of the HARM. All of the U.S. aircraft operating in the area from all the services carry HARM, but it is probable that both of the missiles that impacted near the Jarrett and near the Nicholas were HARMs, based on shrapnel that landed on the deck of the ship that was sent to laboratories back in the States for evaluation.

Q: In either the case of the Jarrett or the Nicholas, did the ships' radars detect them coming in?
A: I am not aware that the ships actually detected the HARMs coming in.

Q: Can you tell me when the Jarrett incident took place? What time of the day it was? I know the Nicholas was at 4:00 o'clock in the morning.
A: I don't have that information, but I can get it for you.

Q: Has the Navy's policy towards using HARMs, is it a policy to not use them that close to friendly units?
A: There's no evidence that they were being used that close to friendly units. There's also no evidence that these were Navy HARMs. These could have been fired from, as a matter of fact, it's most likely that they were fired from aircraft operating over the beach at the site, in suppression of enemy air defenses along the coastal batteries.

Q: Twenty-five of the 28 instances that are indentified here involve Army incidents, but we're not getting the picture of the total number of friendly fire incidents in the Army in which there were vehicles shot by American weaponry that did not include American casualties. This list is essentially limited to incidents in which American casualties were suffered.
COL BROWN: There are two cases already shown here, an example, where there were no casualties. All the friendly fire incidents have been displayed on these two charts, sir, that we are aware of.

Q: But we don't have numbers for APC's or HUMMR's or other ground-to-air, ground-to-ground surveillance?
A: We have no indication of any friendly fire on any HUMMR's and we only know of the two 113's. The 113 in this incident, and a 113 which also was related to the air-to-ground incident here. Those are the only two 113's we know that have friendly fire related.

Q: What about supply vehicles?
A: We don't know of any friendly fire relationship to that.

Q: You're not defining friendly fire to include casualties there?
A: I'm showing all friendly fire incidents that we have, sir.

Q: Talking to a number of these families involved, a lot of them were told that their sons and their husbands had been killed in minefields and other Iraqi oriented weapons. How many of these new friendly fires were the families told that they died because of minefields or Iraqi hostilities? How many were told the wrong information?

A: All the friendly fire casualties were included in battle casualties previously reported. So all the names have been reported to the next of kin before, and in those cases where we knew they were friendly fire, that information was provided. In those cases where that information has been determined through our review, that has been just recently accomplished.

Q: On that recent notification, does that represent a change of policy? The reason I ask is because at a previous briefing some weeks ago, Pete Williams said that he doubted, or wasn't sure that families would be notified after the fact about friendly fire. He said many don't wish to be contacted and we can't guess which ones will want to be contacted, so he said, I believe, that he doubted there would be subsequent notifications given. What came along to change that?

A: I don't know what Mr. Williams said. All I can tell you is the Army's policy was that it was a departmental decision that was also discussed with OSD that we would take this information and offer it to the next of kin of those soldiers who were involved.

Q: When did (inaudible)?
A: Earlier this month, sir.

Q: General Brown, were any of the M1-A1's hit carrying the additional heavy armor package added to the tanks?
A: I don't understand what your question is.

Q: There was an M1-A1-HA, I believe is the designation. Were any of the M1-A1's hit, those type?
A: As I recall, two of the M1-A1's hit were heavy armor tanks.

Q: Can you tell me where the rounds penetrated? Did they penetrate in the turret frontal (inaudible) with depleted uranium?

A: To my knowledge, we had some attacks, but I'd have to go back and check heavy armor versus normal M1-A1's, but I know at least a couple of the tanks were hit on the frontal armor by friendly fire.

Q: And with casualties resulting?
A: In one case a vehicle had a penetration of the frontal armor without any casualties.

Q: In the other there were casualties?

A: Again, I would have to check those individual incidents. I've tried to report, at least by engagements, how that occurred. As you notice on these charts, we've indicated the source of the round that did it, whether it was kinetic energy or some other kind of chemical.

Q: Is it possible to get a breakdown then, of the tank incidents, and what sort of penetrator was used...

A: We have that summary data, and it can be provided.

Q: I'd like to address a question about the policy on releasing unit and individual names attached to these incidents. In this briefing room, during and after the war, there were extensive, especially after the war, there were extensive discussions of enemy action and the results of enemy action by unit, in some cases with individual names attached. If the officially-sanctioned disclosures by individual commanders and units go to the similar greater detail, why is it only on the question of friendly fire you're withholding the names of the units and the names of the casualties?

A: I think we addressed the reason for withholding the names of the casualties before. That was out of respect for the families. Many families asked us not to divulge that information. Secondly, as far as the units, that was a policy decision. We'll take your question on that.

Q: (Inaudible) and a desire for us not to find out more about the incidents?

A: No. We'll take your question. I'll get back to you with an answer.

Q: All during the war, all these friendly fire incidents that were announced in Riyadh identified the units involved. I don't know why you're covering it up at this point. It's kind of silly.

A: I don't have that presently, but let me take the question.

Q:Whose decision is that? Is that the Army's, or is that Cheney's?

A: The decision to go down to, we've never gone down, to my knowledge, to the small unit level. We may have gone down to corps or divisional level. Like I said, let me take your question.

Q: For that matter, if you're going to take the question, why not find out why we're not able to see the commanders' investigative reports? If there's classified information in them...

A: I don't think those reports are even concluded yet. I think the reports in all the services are still under their Judge Advocate General review. Until that's been completed, I don't think they're available for anyone to look at. They're still in the services.

Q: On that Judge Advocate review, are these Article 32's? You gave the impression there were no Article 32's resulting from these friendly fires. Is that the case? There's no wrongdoing, or they haven't concluded on these issues?

A: I don't know if they're Article 32's. Each service has its own procedures, its own set procedures for conducting such reviews or investigations. I'm sure that each one calls them something different, and I just don't know what it is by service. We'll take the question and get back to you.

Q: Can I get General Brandtner to address this question? There is a feeling I know among many families of people who are killed by friendly fire that somehow their deaths or their having been wounded has been lessened, it was not as heroic a death, it was not the same kind of death as someone who was killed by enemy fire. Can you just give us your reaction to that?

GEN BRANDTNER: My reaction is that a serviceman or woman who fights for their country and loses their life, the circumstances of that sacrifice are not diminished. It makes it more unfortunate and more tragic, but I would certainly say that anyone who felt that that sacrifice was not as significant as that of another circumstances of enemy fire is wrong.

Q: Would you expect the IFF or the revnew of IFF systems that's going on to result in a new air-to-ground IFF system? And if so, what sort of system might it be?

A: I honestly don't know the answer to the question, because I'm not technically capable, but I will find out. If there are things like that that will answer that, we'll do that.

Q: General, were there any cases of friendly fire action -- I would be particularly interested in the air-to-ground friendly fire, and maybe Colonel Jenkins would address the question -- but were there any cases of friendly fire, air-to-ground friendly fire casualties, that were directly linked to or at least in part caused by glitches in the automated mission planning systems?

A: My answer is that I don't think so. In every case I'm aware of that I have looked at here that was reported, it was misidentification. The unit on the ground was not correctly identified. It was in an area that the pilot thought was in an enemy area. A number of those kinds of confusion factors. So I don't think there was any systemic failure at this point, except there was one missile, I understand, launched at a radar site that may have been a system failure on the part of the missile. The rest were clearly shots fired at a vehicle that was presumed to be an enemy vehicle that resulted in being a friendly vehicle.

Q: The reason I asked the question is that the Air Force basically, and the Navy I suspect too, upgraded, if you will, their automated mission systems which were basically unit-level mission planning systems to be theater-wide for Desert Storm. This was done in a relatively short period, almost overnight, if you will, and done basically by what amounts to literally a handful of people. It just seems to me under that kind of pressure and that very short timeframe, the possibility for some sort of failure in the automated system seems like it would have been great. There were particularly, a number of A-10 attacks, not only on U.S. forces, but on coalition forces as well. Some of these A-10's, I'm told, a number of them were, in fact, equipped with MSS2's. That's why I raise the question.

A: The A-10 incidents of which we have reported and I am aware, and I defer to my Air Force colleague, but as far as I know were strictly misidentification and not a system problem.

Q: During the planning stages of the operation, was there ever any prognostication made about the numbers of friendly fire casualties? What I'm asking is, you knew there to be poor visibility, you knew much of the operation would be done at night, you knew there were problems with identifying vehicles. Was there a guess made as to the amount of friendly fire casualties that could result?

A: Not that I'm aware of. I never heard that discussed.

Q: It was never discused at all?

A: No prognostication. I mean the possibility that this would occur and the things we were doing to prevent it, yes indeed. But as far as somebody coming up with a number of possibilities, no.

Q: General, I think this came up and I might have missed it. I got about 17 percent, that might be wrong, of friendly fire casualties. Isn't that far higher than in any previous wars?

may not always have immediate air supremacy. There are factors in this conflict that would have been favorable to reducing friendly fire casualties.

A: I think that if you look at the overall numbers, considering the circumstances, they were inside of a region that I consider, that we could look at it and say that we did the best we could under the circumstances, and it could have been a heck of a lot worse, if we had not taken the steps we had to try to reduce it in the beginning.

Q: General, can you provide any videotapes or still photography made during the course of your investigation of the damaged equipment?

A: I will have to refer to the services to that, but let me take the question and I'll get back to you.

Q: General, did you identify most of the gunners as people who feel very bad because of these incidents, responsible for these incidents? And two, were any friendly fires uncovered because of complaints by families, survivors (inaudible)

A: That kind of a question would not come to me. It would come to the services.

COL BROWN: In the Army's case, sir, I'm not aware of any, in the latter part of your question, of any of this happening based upon information received from any of the next of kin. This was all done through normal investigative techniques which I explained at the outset. As far as the...

Q: Identifying the people responsible for the rounds fired or...

A: In many cases, that was not possible. The information only showed that it came from other vehicles. We could tell the type of munitions, and we could tell in many cases the shot lines because of the way it struck the vehicles. But all that gave us was general locations. We didn't conclude, in a lot of the cases, even what the ranges were fired because it was very difficult to do that. So we only had, in many cases, general locations of units, not individuals or individual systems.

Q: So unlike the individual pilots involved, a lot of these guys won't really know that their rounds actually did it?

A: That's right.

Q: We went from 606 total to 615 total in casualties. Where did those additional casualties come from?

MR. TAYLOR: I think the additional casualties, our numbers up to this point, 606, had not included the folks who were counted as prisoners of war, POW's, and they were later factored into that because they did receive treatment when they returned to us.

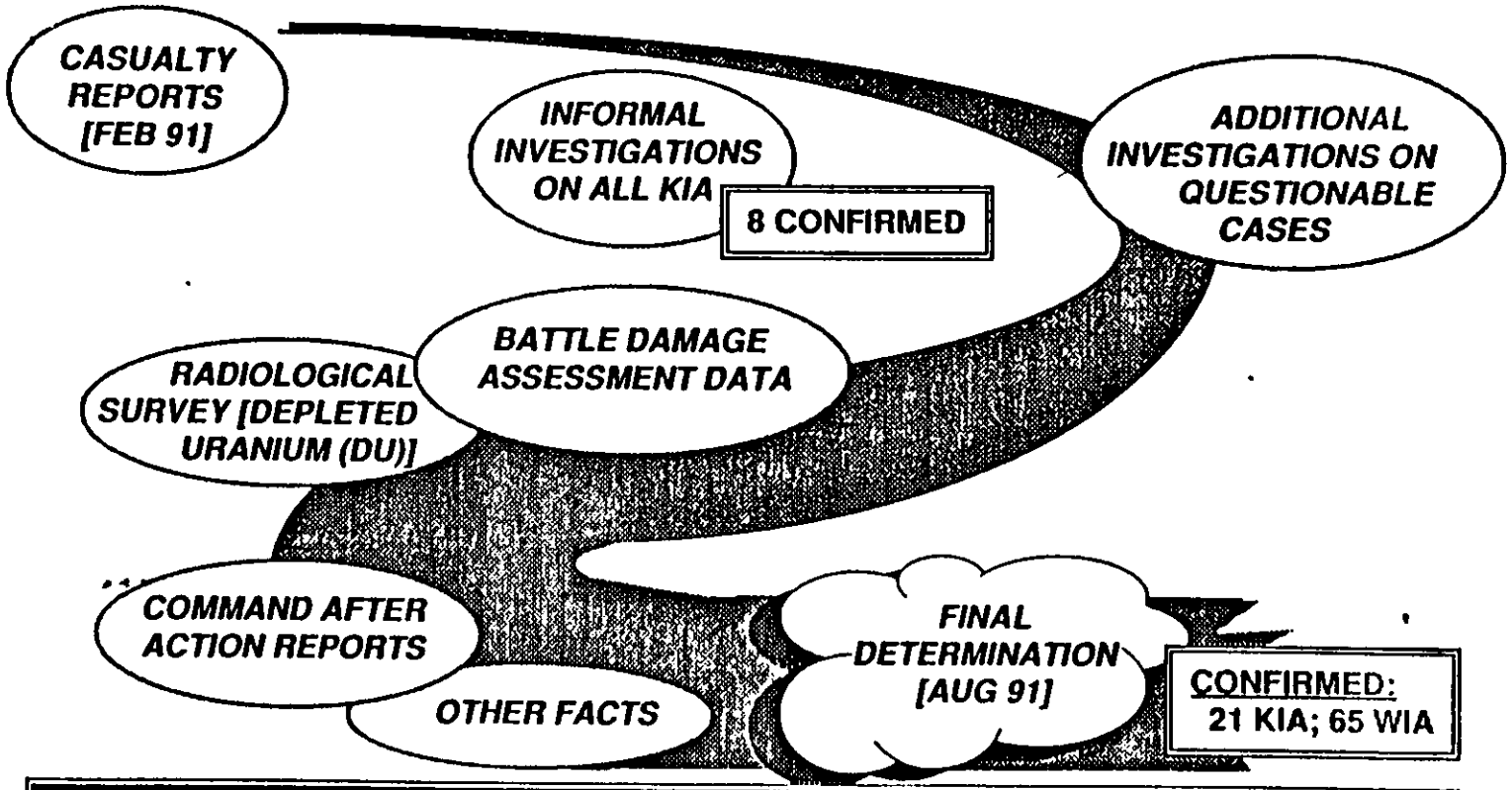
Q: So the nine are POW's that were wounded in action?

A: Yes.

Thank you very much.

(END)

FRIENDLY FIRE DETERMINATION



MAJOR EFFORT TO ASSURE ACCURATE DETERMINATION

U. S. ARMY

CAMPAIGN PERSPECTIVE

- ✔ DESERT STORM- LARGEST ARMORED BATTLE IN HISTORY
- ✔ VAST DISTANCE- FEATURELESS TERRAIN
- ✔ VISIBILITY OFTEN REDUCED- SANDSTORM; SMOKE; RAIN; NIGHT
- ✔ FAST PACED- CONTINUOUS OFFENSIVE OPERATIONS
- ✔ HIGHLY LETHAL- U. S. CAPABILITY OVERMATCH
- ✔ MANY ENGAGEMENTS AT EXTENDED RANGES
- ✔ U. S. TARGET ACQUISITION ADVANTAGE

GROUND BATTLEFIELD PERSPECTIVE

VEHICLE	NUMBER IN UNITS	SIGNIFICANT COMBAT DAMAGE (ALL SOURCES)	DAMAGE FROM FRIENDLY FIRE
ABRAMS TANKS	1847	10	7
BRADLEY FIGHTING VEHICLES	1682	25	20
TOTAL	3529	35	27

- ✔ ONLY 1% OF U.S. ARMORED VEHICLES SUFFERED SIGNIFICANT BATTLE DAMAGE
- ✔ 66% OF BATTLE DAMAGED DUE TO TANK CANNON FIRE
- ✔ 77% OF BATTLE DAMAGED VEHICLES DUE TO FRIENDLY FIRE

(* DOES NOT INCLUDE 3 TANKS DELIBERATELY DESTROYED AND 7 OTHER VEHICLES DAMAGED FROM MINES [NO CASUALTIES])

TOTAL U.S. ARMY FRIENDLY FIRE ENGAGEMENTS

INCIDENT	ENVIRONMENT/ WEATHER	ACTION	RESULT & CAUSE
27 FEB 5 M1A1 5 BFV	NIGHT, HVY RAIN, LOW VISIBILITY	MOVEMENT TO CONTACT; ATTACKING IRAQI POSITIONS; MISIDENTIFICATION THERMAL SIGHTS	6 KIA, 25 WIA (KE)
26 FEB 2 M1A1	NIGHT, HVY RAIN, LOW VISIBILITY	ATTACK FORTIFIED POSITION; MISIDENTIFICATION	NO CASUALTIES (KE,CE)
26 FEB 3 BFV	BLOWING SAND LOW VISIBILITY	MOVEMENT TO CONTACT; ENGAGING ENEMY [THERMAL SIGHTS ONLY]	2 KIA, 6 WIA (KE, CE)
27 FEB 3 BFV	CLEAR DAYLIGHT	MISORIENTED UNIT; ATTACKING FORTIFIED POSITION; MISIDENTIFICATION 2000-2500M	2 KIA, 9 WIA (KE)
26 FEB 2 BFV	DARK NIGHT HAZY	MOVEMENT TO CONTACT; ENGAGING ENEMY; MISIDENTIFICATION	NO CASUALTIES (KE, CE, SML KE)
27 FEB 2 BFV	NIGHT, RAIN, LOW VISIBILITY	ATTACKING IRAQI POSITION; MISIDENTIFICATION	1 KIA, 1 WIA (KE,SML KE)
27 FEB 2 BFV	RAIN,SMOKE	ATTACK ON BUNKER COMPLEX; MISIDENTIFICATION	1 KIA, 2 WIA (KE)
17 FEB 1 BFV	NIGHT,LOW VISIBILITY	AIR-GROUND MISIDENTIFIED; APACHE USING NIGHT SIGHTS	2 KIA, 6 WIA (CE)
27 FEB 1 BFV	NIGHT,OVERCAST, SMOKE &DUST	SCOUTS SCREENING FLANK; MEETING ENGAGEMENT WITH ENEMY; MISIDENTIFICATION	2 KIA, 2 WIA (SML KE)
26 FEB 1 BFV	NIGHT, CLEAR	MOVEMENT TO CONTACT; ENGAGING ENEMY FORCES; MISIDENTIFICATION	0 KIA, 5 WIA (CE)
5 OTHER GROUND FRIENDLY FIRE INCIDENTS	OFTEN LIMITED VISIBILITY CONDITIONS	MOST MISIDENTIFICATION DURING CONTACT WITH ENEMY	5 KIA, 9 WIA (VARIOUS)
7 M1A1 20 BFV	TOTALS		21 KIA 65 WIA

✔ MAJORITY WERE OFFENSIVE UNIT ACTIONS IN REDUCED VISIBILITY

U. S. ARMY

OTHER FRIENDLY FIRE CASUALTIES

DATE	INCIDENT	ACTION/DESCRIPTION	KIA	WIA
26 FEB	MACHINE GUN FIRE FROM M1A1- MOSTLY DISMOUNTED TROOPS	M113 APC LOST FORWARD OF FRIENDLY LINES MISIDENTIFIED AS ENEMY WHILE FOLLOWING AN IRAQI TANK	3	3
26 FEB	PREMATURE AIRBURST OF ARTILLERY FIRE	DPICM SUBMUNITIONS	1	0
14 FEB	GRENADE AND RIFLE FIRE IN BUILDINGS	CLEARING VILLAGE OF SUSPECTED ENEMY	0	3
27 FEB	MACHINE GUN FIRE	UNIT MISIDENTIFICATION; LACK OF COORD. BETWEEN UNITS	1	1
2 FEB	RADAR SEEKING MISSILE	AIR LAUNCHED MISSILE LOCK ON SECONDARY TARGET	0	2
		TOTAL	5	9

✔ MISIDENTIFICATION DURING REDUCED VISIBILITY PRIMARY CAUSE OF OTHER CASUALTIES

CONCLUSIONS

- → U.S. ARMOR OVERMATCHED IRAQI CAPABILITIES RESULTING IN FEW CASUALTIES AND LIGHT DAMAGE DUE TO ENEMY ACTION.
- → U.S. ARMORED VEHICLE DESIGN ENHANCED SURVIVABILITY.
- → SIGNIFICANT EFFORTS WERE MADE DURING PREWAR PREPARATIONS TO PREVENT FRIENDLY FIRE
- → LACK OF POSITIVE IDENTIFICATION PRIMARY CAUSE OF FRIENDLY FIRE.
- → LESSONS LEARNED WILL ENABLE DEVELOPMENT OF TACTICS, TECHNIQUES, PROCEDURES AND TECHNOLOGY SOLUTIONS TO GROUND COMBAT POSITIVE IDENTIFICATION.

A: The answer to that is probably yes, but I think I mentioned at the outset, as did my colleague from the Army, that the manner in which we investigated this so rapidly after the conclusion of the conflict, the means that we had to clearly identify through the use of radiological detection of the depleted uranium round, I think make our statistics far more accurate. I'm not going to sit and evaluate the ability to do this in World War II, Korea, Vietnam, whatever, because the methods and the timing and all were far different. I just would say to you that the conclusions you draw from that, whatever they may be, I would say that our figures here are accurate, and I just think it's probably not a valid comparison with the others.

Q: You talked about the confused nature of some of these engagements and where people would (inaudible) forces. In any of these instances, were there other casualties from the same crews that were attributed to enemy fire?

A: I think the Army mentioned that one time there were some dual hits, but whether they were able to determine, I'd have to defer to the Colonel.

COL BROWN: As far as I know, sir, all the determinations made for individual vehicles were whether the vehicle was penetrated by enemy or friendly fire. Once penetrated, then the casualties were determined accordingly. In those cases where we have penetrations by the enemy, rounds were fairly certain that they were in fact enemy casualties due to enemy action. In the cases where we had penetrations, we, obviously, took that as our task to determine that as friendly fire.

Q: But there weren't cases where you divided the crew...

A: No sir. The Marine Corps, in my discussions with them, would maintain the same thing. They were clearly friendly.

Q: You've offered, I guess, two broad kinds of contexts for the reason that friendly fire casualties appear to be a larger percentage in this conflict than in previous ones. One is that we may be better at counting them, and the other is that it's a more lethal environment, low visibility, long range. Does that mean that the results in this case are more or less the kind of things we can expect and maybe it's the nature of warfare that's evolved such that in future conflicts we're going to have similarly large numbers of friendly fire casualties?

GEN BRANDTNER: I think it's a concern that we have to very carefully address and come up with means to prevent that. The assessment that yes, the battlefield of the future is going to be highly intense, great numbers of forces moving very rapidly, is situation dependent. I think there are some circumstances where you'd find that you were back to a circumstance where you weren't in an area or a kind of environment that would result in this kind of thing. The answer is that we have to look to the future to devise systems and improve the procedures we already have to ensure that we reduce this to the maximum extent we have.

Q: The desert environment is more, not less, favorable to visibility than most environments.

A: That's not necessarily true. If you talk to any commander, any soldier or Marine or airman out there, that battlefiield was probably some of the worst visibilty they'd ever seen. Winds blowing, it was raining, the night time operations, even during the day, outside of a few hundred meters, in many cases you couldn't see in front of you.

Q: I'm not saying it was clear, I'm saying that given the weather, you'd rather be in the desert than in woodlands for visibility. Range isn't getting any shorter on your thermal sights, you