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UNITED STATES CENTRAL COMMAND
OFFICE OF THE COMMANDER
7115 SOUTH BOUNDARY BOULEVARD
MACDILL AIR FORCE BASE, FLORIDA 33621-5101

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DEC 02 2004

MEMORANDUM FOR

Commander, U.S. Army Forces Central Command, Fort McPherson,
Georgia 30330-5000
Commander, U.S. Naval Forces Central Command, FPO AE 09501-6008
Commander, U.S. Central Command Air Forces, Shaw Air Force Base,
South Carolina 29152-5000
Commander, U.S. Marine Forces Central Command, Camp H.M. Smith,
Hawaii 96861-5001
Commander, Special Operations Command Central, MacDill AFB,
Florida 33621-5101
Commander, Combined Forces Command Afghanistan, Kabul,
Afghanistan, APO AE 09365
Commander, Multi National Forces-Iraq, Baghdad, Iraq
APO AE 09356
Commander, Combined/Joint Task Force Horn of Africa (HOA), APO
AE 09363
Commander, 32d Army Air and Missile Defense Command, APO AE
09889
U.S. Joint Forces Command, ATTN: J85, [REDACTED], 1562 Mitscher
Avenue, Suite 200, Norfolk, VA 23551-2488

SUBJECT: Addendum to the Review of Report of Investigation into
Friendly Fire - PATRIOT Shoot Down of U.S. Navy F/A 18 near
Karbala Gap/An Najaf, Iraq, 2 April 2003

REF: DoD Instruction 6055.7, Accident Investigation, Reporting,
and Record Keeping

1. On 3 September 2003, I approved the subject investigation and forwarded the report to the USCENTCOM Components. While systems and training deficiencies with the Patriot were the primary cause of the incident, I also found that the generalized nature of the pre-flight air operations brief to the pilots on the movement of friendly ADA in the AOR along their pre-planned flight path was one of the contributing factors. This finding was based upon material not available to the original Board and was derived by independent efforts during the review conducted in my Headquarters of all the Patriot related friendly fire incidents. The validity of this finding, however, was

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challenged by the senior leadership of the Air Force and Navy. As a result, on 1 March 2004, I directed that a Panel of Experts be formed to review this issue as well as to conduct a comprehensive analysis of all of the Patriot-related friendly fire incidents from Operation IRAQI FREEDOM.

2. The Panel has completed their review in compliance with my direction. Based upon their input, I have reconsidered the specific finding at issue and I concur with the Panel. I have now determined that the pre-flight brief was not a contributing factor. Accordingly, I am amending those portions of my original review that were based upon that finding. Paragraph 1 shall now read:

1. The subject report of investigation was prepared in general compliance with the reference and is accepted, subject to the corrections and amendments provided herein. The endorsement from the Commander, 32d Army Air and Missile Defense Command is approved subject to the modifications set forth in this review. The ultimate conclusion of the investigation, as amended, is that a PATRIOT Air Defense Artillery (ADA) Battery erroneously identified two F/A-18s when its system failed to properly classify and correlate friendly aircraft and the system operators failed to properly execute their friendly protection responsibilities. A principal failure was a lack of human oversight and knowledge of system capabilities by ADA operators. A contributing factor was the degraded communications between PATRIOT assets and other operational elements on Link 16. Recommendations for corrective actions are acknowledged and forwarded for evaluation and action.

Paragraph 5 shall now read:

5. I also concur in the disapproval of the second Finding and Recommendation but for different reasons than those cited in earlier endorsements. The actions of more than one individual contributed to the death of LT White. Air and ground personnel who lost contact with [REDACTED] and PATRIOT launchers due to degraded communications and the

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PATRIOT operators pre-launch failure to hook and integrate the missile track are to some extent each accountable for the death of LT White. Collectively and individually the consequences of the battlefield exigencies in the operational environment that existed on 2 April 2003 must be considered in mitigation. However, the post-launch failure to hook and integrate, which would have allowed several seconds of track observation when clear non-ballistic characteristics should have been observed, is far less palatable. What should or could have occurred in the 50 plus seconds of the engagement and the last seconds of LT Whites' life is now mere speculation. But it is a fact that it takes only a matter of seconds to hook a track or execute HOLD FIRE. It is also a fact that once HOLD FIRE is pressed a destruct command is sent to any missile assigned to that target.

3. Contemporaneous with this endorsement, I am re-issuing my initial review of the investigation, corrected as provided above. This revised review should be substituted for the original.

4. Joint and combined operations in the modern battle space require military leaders to be cognizant of both the capabilities and the limitations of the weapons systems employed by other services and allies. Sometimes limitations within the systems of one service component are identified in battle and, to compensate, might require an adjustment in the tactics, techniques and procedures of another component. As the ultimate goal of any friendly fire investigation is to recognize the lessons learned and minimize future occurrences, addressees should ensure they have in place a comprehensive process to collectively review all of the Friendly Fire incidents and take appropriate actions to address the lessons learned.

5. There is to be no public release concerning this matter until the required next-of-kin notification has occurred. USCENTCOM will then post an unclassified summary of the report of investigation on the USCENTCOM Home Page. All requests concerning the report made pursuant to the Freedom of

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Information Act and/or Privacy Act should be forwarded to USCENTCOM, attention FOIA Officer.

6. All other inquiries concerning this investigation should be directed to COL [REDACTED] USCENTCOM Staff Judge Advocate,
[REDACTED]


JOHN P. ABIZAID
General, USA

Enclosure

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MEMORANDUM FOR

Commander, U.S. Army Forces Central Command, Fort McPherson,
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Commander, U.S. Naval Forces Central Command, FPO AE 09501-6008
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Commander, Combined/Joint Task Force Horn of Africa (HOA), APO
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Commander, 32d Army Air and Missile Defense Command, APO AE
09889
U.S. Joint Forces Command, ATTN: J85, [REDACTED], 1562 Mitscher
Avenue, Suite 200, Norfolk, VA 23551-2488

SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot Down of U.S. Navy F/A 18 near Karbala Gap/An
Najaf, Iraq, 2 April 2003 [REVISED]

REF: DoD Instruction 6055.7, Accident Investigation, Reporting,
and Record Keeping

1. The subject report of investigation was prepared in general compliance with the reference and is accepted, subject to the corrections and amendments provided herein. The endorsement from the Commander, 32d Army Air and Missile Defense Command is approved subject to the modifications set forth in this review. The ultimate conclusion of the investigation, as amended, is that a PATRIOT Air Defense Artillery (ADA) Battery erroneously identified two F/A-18s when its system failed to properly classify and correlate friendly aircraft and the system operators failed to properly execute their friendly protection responsibilities. A principal failure was a lack of human oversight and knowledge of system capabilities by ADA operators.

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Patriot Shoot Down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003 [REVISED]

A contributing factor was the degraded communications between Patriot assets and other operational elements on Link 16. Recommendations for corrective actions are acknowledged and forwarded for evaluation and action.

2. The complexity of the modern battle space is a new dynamic in joint operations and building our joint operations team is an ongoing and elastic process. This investigation establishes that we have not yet completed this process and have significant work to do. Active mitigation of the risk of mistakes must recognize that some human error is inevitable and that active mitigation of risk is not accomplished by completely removing the human element from our processes.

3. The results of this investigation raise issues similar to those observed in an earlier Operation Iraqi Freedom friendly fire incident. This earlier incident was the shoot down of a British Tornado causing the deaths of 2 British aviators. The same ADA Battalion, 5-52 fired the Patriot missiles in each incident indicating an urgent need to address tactics, techniques and procedures (TTP). The Patriot weapons targeting system can act automatically, but should not operate without active human oversight. At a minimum, two humans and two systems are independently involved in processing and relaying data. Reduction of human input and the resort to automated processing often occurs at the time of highest stress, where troops are in contact with multiple sources, and are executing self-protection while in harm's way. While seeking to reduce human error through automation, the execution of proper procedures for weapons release must be complied with to ensure our own forces are protected and hostile targets prosecuted. Deviations from those procedures come at great risk to our aviation and ground personnel.

4. Opinions differ on the reasonableness of failing to thoroughly interrogate and determine the characteristics of the inbound track, i.e., "hook" the missile track, prior to launch in self-defense on 2 April 2003. However, on this point I agree with the 15 June 2003, 32d Army Air and Missile Defense Command endorsement approving the first, third and fourth Findings and Recommendations, along with the additions they noted and those

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SUBJECT: Review of Report of Investigation into Friendly Fire -
Patriot Shoot Down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003 [REVISED]

added by this review.

5. I also concur in the disapproval of the second Finding and Recommendation but for different reasons than those cited in earlier endorsements. The actions of more than one individual contributed to the death of LT White. Air and ground personnel who lost contact with [REDACTED] and Patriot launchers due to degraded communications and the Patriot operators pre-launch failure to hook and integrate the missile track are to some extent each accountable for the death of LT White. Collectively and individually the consequences of the battlefield exigencies in the operational environment that existed on 2 April 2003 must be considered in mitigation. However, the post-launch failure to hook and integrate, which would have allowed several seconds of track observation when clear non-ballistic characteristics should have been observed, is far less palatable. What should or could have occurred in the 50 plus seconds of the engagement and the last seconds of LT Whites' life is now mere speculation. But it is a fact that it takes only a matter of seconds to hook a track or execute HOLD FIRE. It is also a fact that once HOLD FIRE is pressed a destruct command is sent to any missile assigned to that target.

6. Given these facts, I remain particularly troubled by this violation of launch protocols. Under these or any circumstances, loss of life due to friendly fire is unacceptable. It is significant that a Patriot PAC 3 missile can be deactivated by initiating a "HOLD FIRE" command. HOLD FIRE execution will destroy the missile in flight. The execution of a HOLD FIRE involves the operator's push of a button and a normal weapons response of [REDACTED] sec. Having failed to do so pre-launch, the Patriot operators had a post-launch window of opportunity to hook and integrate this suspected hostile track in the manner required pre-launch, but did not thoroughly do so. On 2 April 2003, even during the exigency of the moment, joint interaction and track integration were necessary steps that LT White deserved -- we failed him and ourselves in this respect.

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SUBJECT: Review of Report of Investigation into Friendly Fire -
Patriot Shoot Down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003 [REVISED]

7. The report is forwarded to the addressees for actions as indicated below.

a. Commander, ARCENT, shall coordinate with all addressees to conduct a joint review of ADA procedures, particularly as they apply to friendly protection, to the use of the Patriot missiles in forward and independent battery configurations, the inability of coalition ground and air elements in the operational theater to communicate and the inability of multiple elements to classify and correlate the same airborne objects thus ensuring common understanding and agreement between air and ground forces. Additionally, ensure that processes are established in theater so that all appropriate personnel understand these procedures and the requirement to comply with them. Commander, ARCENT shall also consider and comment on the Commander, 32d Army Air and Missile Defense Command's message, dated 18 Jun 03 (Enclosure 3) and Commander, U.S. Naval Forces Central Command's memorandum, dated 22 Aug 2003 (Enclosure 4) and its enclosure regarding this incident. An Engagement Diagram (Enclosure 5) and an excerpt from FM 3-01.87, Patriot Tactics, Techniques, and Procedures (Enclosure 6) are provided to assist in this review. Commander, ARCENT shall report to the Deputy Commander, U.S. Central Command (USCENTCOM) no later than 45 days from the date of this memorandum certifying compliance with this direction.

b. All addressees will review the actions of their subordinate personnel for initial consideration or reconsideration of administrative or disciplinary action as deemed appropriate. Review should consider mitigation and aggravating circumstances of this incident, the recommendations of the initial investigating officer, this and earlier reviews. Appropriate officials may thereby assess application of U.S. Armed Forces standards of accountability under the Uniform Code of Military Justice (UCMJ) and applicable Department of Defense and/or military service regulations, directives or instructions.

c. All addressees are requested to review the recommendations of the investigating officer, as amended, and to take action thereon, as you deem appropriate.

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SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot Down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003 [REVISED]

8. There is to be no public release concerning this matter until the required next-of-kin notification has occurred. USCENTCOM will then post an unclassified summary of the report of investigation on the USCENTCOM Home Page. All requests concerning the report made pursuant to the Freedom of Information Act and/or Privacy Act should be forwarded to USCENTCOM, attention FOIA Officer.

9. All other inquiries concerning this investigation should be directed to COL [REDACTED] USCENTCOM Staff Judge Advocate,
[REDACTED]


JOHN P. ABIXAID
General, USA

Enclosures

- 1 - Classified Executive Summary
- 2 - Unclassified Executive Summary
- 3 - 32D AAMDC Message, dated 18 Jul 03
- 4 - CDUSNAVCENT Memo, dated 22 Aug 03
- 5 - Engagement Diagram
- 6 - Excerpt, FM 3-01.87, PATRIOT Tactics, Techniques, and Procedures
- 7 - Report of Investigation, dated 23 Apr 03

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[REDACTED]

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Commander, Special Operations Command Central, MacDill AFB,
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AE 09363
Commander, 32d Army Air and Missile Defense Command, APO AE
09889
U.S. Joint Forces Command, ATTN: J85, [REDACTED] 1562 Mitscher
Avenue, Suite 200, Norfolk, VA 23551-2488

SUBJECT: Panel of Experts Report on Friendly Fire Incidents
Involving the Patriot Missile System During OIF

REF: DoD Instruction 6055.7, 3 Oct 00, Subject: Accident
Investigation, Reporting, and Record Keeping

1. On 1 March 2004, per my direction, the Chief of Staff of US Central Command convened a Panel of Experts. In addition to reviewing a specific finding in one of the Reports of Investigation involving a Patriot Friendly Fire incident, the Panel was charged with making recommendations concerning corrective measures that might help avoid future mishaps. They were provided with all the reports of investigation for friendly fire incidents involving the Patriot missile system. They also had access to all other friendly fire investigations.

[REDACTED]

[REDACTED]

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SUBJECT: Panel of Experts Report on Friendly Fire Incidents
Involving the Patriot Missile System During OIF

2. The Panel completed its review in compliance with my direction and made numerous recommendations as to corrective measures. I find the Panel's work to be well reasoned, researched and insightful, and I am approving it. The Report, however, does raise issues associated with the integration of the Patriot system into a complex battlespace. Any finding or inference that inadequate Airspace Control Measures (ACMs) were a factor in these accidents has to be considered in the total context of the combat operation. Through the benefit of hindsight, it is clear that deficiencies in the Patriot system resulted in integration problems. These Patriot shortfalls, until corrected, might be partially mitigated through imposition of ACMs, but only at the cost of lost combat sorties and the associated risks that entails. This balancing of risks is inevitable within joint combat operations and is worthy of further review within both Service and joint channels. I am forwarding the Panel's full report and recommendations to all the Components for evaluation and action. I am also forwarding the Report to the Joint Forces Command to evaluate the possible impact of the Panel's recommendations on joint warfighting.

3. As the ultimate goal of any friendly fire investigation is to recognize the lessons learned and minimize future occurrences, addressees should ensure they have in place a comprehensive process to collectively review all of the friendly fire incidents and take appropriate actions to address the lessons learned.

4. There is to be no public release concerning these incidents until the required next-of-kin notification has occurred. All requests concerning the report made pursuant to the Freedom of Information Act and/or Privacy Act should be forwarded to USCENTCOM, attention FOIA Officer.

5. All other inquiries concerning this investigation should be directed to [REDACTED], USCENTCOM Staff Judge Advocate, at [REDACTED]


JOHN P. ABIZAID
General, USA

Enclosure

[REDACTED]

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[REDACTED]

COMMANDER DIRECTED INVESTIGATION

REVIEW OF FINDING

IN THE

**FRIENDLY FIRE REPORT OF
INVESTIGATION,**

PATRIOT SHOOT-DOWN OF

U.S. NAVY F/A-18,

NEAR KARBALA GAP/AN NAJAF, IRAQ

2 APR 03

[REDACTED]

[REDACTED]

EXECUTIVE SUMMARY
COMMANDER DIRECTED INVESTIGATION
REVIEW OF FINDING IN THE
FRIENDLY FIRE REPORT OF INVESTIGATION, PATRIOT SHOOT-DOWN OF
U.S. NAVY F/A-18, NEAR KARBALA GAP/AN NAJAF, 2 APR 03

On 1 March 2004, the Commander, U.S. Central Command, appointed a board represented by experts from the Army, Navy and Air Force to review a finding contained in his 3 September 2003 memorandum relating to the friendly fire investigation report concerning a Patriot system shoot down of a U. S. Navy F/A-18 on 2 April 2003 near Karbala Gap/An Najaf, Iraq. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The panel was also directed to analyze the friendly fire incident reports (Patriot/GR4, F-16CJ/Patriot and the Patriot/FA-18) in Operation IRAQI FREEDOM. [REDACTED]

[REDACTED]

This panel also reviewed the three friendly fire incidents with the view towards discerning if there were theater systemic problems that may not have been obvious to any particular investigation. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] While the panel's recommendations for the future covered several areas, the key concept was increasing situational awareness of joint warfighters using weapons systems with varying degrees of integration in the electronic battlespace.

[REDACTED]



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I. AUTHORITY AND PURPOSE

1. On 3 April 2003, the Commander, U.S. Central Command, directed a friendly fire investigation be convened in accordance with Department of Defense Instruction (DoDI) 6055.7, *Accident Investigation, Reporting, and Record Keeping*, to determine the facts and circumstances surrounding a Patriot missile system shoot down of a U. S. Navy F/A-18 on 2 April 2003 near Karbala Gap/An Najaf, Iraq. This board was appointed on 11 April 2003 and produced a report of investigation.

2. On 1 March 2004, General John P. Abizaid, Commander, U.S. Central Command, directed a review of a finding contained in his 3 September 2003 review memorandum relating to the above friendly fire investigation report. The panel was convened to resolve concern among the Armed Services over this finding.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] A panel of experts from the Army, Navy and Air Force was appointed as members. The panel was to provide findings of fact and opinion regarding circumstances which bear on the validity of this finding. The panel was given copies of the friendly fire incident reports involving the Patriot missile system. The panel was also charged with making recommendations to the Commander concerning corrective measures that might help avoid future such mishaps.

3. The panel membership included:

Colonel [REDACTED]	Senior Board Member (USA)
Captain [REDACTED]	Board Member (USN)
Colonel [REDACTED]	Board Member (USAF)

The following personnel provided support to the panel:

Lieutenant Colonel [REDACTED]	Legal Advisor (USAF)
Technical Sergeant [REDACTED]	Recorder (USAF)

4. The panel considered three friendly fire incidents involving coalition aircraft and the Patriot system that occurred in OIF. These incidents are summarized below:

a. Royal Air Force (RAF) Tornado GR4A Incident: On 22 March 2003, a flight of two RAF Tornado GR4A aircraft [REDACTED] assigned to RAF Combat Air Wing, Ali Al Salem AB, Kuwait were tasked to execute a Suppression of Enemy Air Defense (SEAD) in Kill Box [REDACTED]. Following mission execution and while returning to base [REDACTED] while

approximately [REDACTED] from Patriot Battery C/5-52 ADA, presented flight characteristics consistent with an Anti-Radiation Missile (ARM). [REDACTED] had not responded to any IFF interrogations from C/5-52 ADA, AWACS, or the Kuwaiti Air Operations Center during its return to base. C/5-52, operating in an autonomous mode, believing it was being threatened by an ARM, engaged [REDACTED] in a self defense engagement IAW established procedures. A single Patriot missile was fired, [REDACTED] was destroyed, and the crew of two were killed (more detailed facts on this incident are outlined in the attached report of investigation narrative and the summary prepared by this panel).²

b. USAF F-16CJ Incident: On 24 March 2003, a flight of four F-16CJ aircraft (call sign [REDACTED] assigned to the 22nd Expeditionary Fighter Squadron, 379th Expeditionary Wing were tasked to execute a Suppression of Enemy Air Defense mission. While enroute to their mission area they approached Echo Battery, 5-52 ADA from the battery's south. The battery was oriented and radiating to the north in Tactical Ballistic Missile search mode. Using their HARM as a seeker, [REDACTED] flight misidentified Echo's side lobes as Iraqi radar emissions. Believing they were north of the Fire Support Coordination Line (FSCL) and having not been briefed Patriot units were operating this far north (but still south of the FSCL), [REDACTED] flight lead authorized his #3 aircraft to engage the radar. The HARM impacted to the side of the Patriot radar; did not detonate but did enough damage to render the radar and its associated Engagement Control Station non-operative or non-mission capable. There were no injuries to personnel in this incident (more detailed facts on this incident are outlined in the attached narrative from the report of investigation and the attached summary prepared by this panel).³

c. USN F/A-18 Incident: On 02 April 2003, a flight of two USN F/A-18 Hornet aircraft (call signs [REDACTED] assigned to STRIKE FIGHTER SQUADRON ONE NINE FIVE (VF A-195), attached to CARRIER AIR WING FIVE (CVW-5), embarked on the USS KITTY HAWK (CV-63), were tasked to attack and destroy enemy mechanized vehicles in a military compound West/Northwest of Baghdad, Iraq. As the flight egressed, a Patriot radar detected what appeared to be a Tactical Ballistic Missile (TBM) [REDACTED]. The Battalion Tactical Director (TD) ordered launchers to "operate" and the system automatically engaged the target that was in fact [REDACTED]. At 20:30:42Z [REDACTED] was intercepted and destroyed by the Patriot interceptors and the pilot was killed (more details on this incident are outlined in the underlying report of investigation and the [REDACTED]).

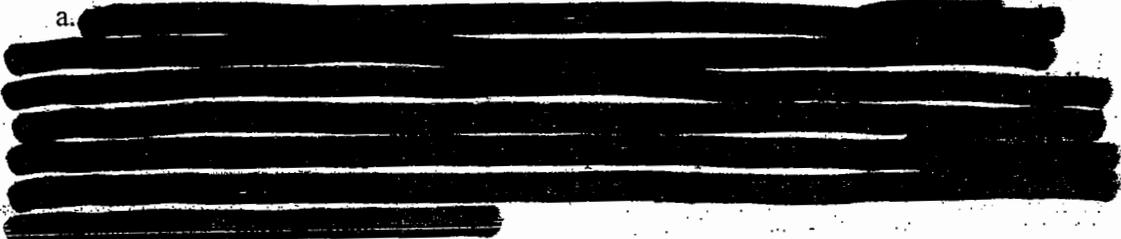
d. The panel addressed the issue of the [REDACTED], and then also addressed report issues in connection with the two other friendly fire investigations. Finally, the panel outlined recommendations concerning corrective measures that might be implemented to help avoid future friendly fire incidents.

II. STATEMENT OF OPINION

A. Validity of the "Pre-Flight Brief" as a Contributory Factor in the Patriot/FA-18 Friendly Fire Incident on 2 April 2003, CDI Report

1. **Finding:** The panel determined by clear and convincing evidence that the finding of whether the "generalized nature of the pre-flight air operations brief to pilots on the movement of air defense assets in the AOR along their pre-planned flight path" was not a valid contributing factor in the F/A-18 being shot down by the Patriot system.

2. Discussion:

a. 

b. In the panel's review, no evidence was found in the original investigation or all the friendly fire incidents that supports the two phrases in the CENTCOM Memorandum⁴ dated SEP032003 relating to a "pre-flight brief." It is important to note that the two phrases never appeared in the actual body of the F/A-18 friendly fire investigation.

c. 

d. Tactical planners and mission briefers had no guidance from Naval Tactics, Training, and Procedures (TTPs)⁵ or standing orders to avoid Patriot locations.⁶ The original investigation correctly states the CFACC's Special Instructions (SPINS) and Air Control Order (ACO) did not promulgate any active Air Control Measures (ACM), Missile Engagement Zones (MEZ) or Restricted Operating Areas (ROA)/Restricted Operating Zones (ROZ) regarding Patriot.⁷ Additionally, no Theater Air and Missile Air Control Measures were issued (by the SPINS or ACO) concerning Patriot following the  GR-4 friendly fire incident. All immediate corrective measures were internal to Patriot Firing Units and not disseminated to the joint force to support situational awareness.⁸

e. [REDACTED]

[REDACTED] First, tactical units had no knowledge of specific details relating to the GR-4 incident and aviation units had confidence in the electronic Identification Friend or Foe (IFF) system as an anti-friendly fire measure. Additionally, tactical units do not have the authority to implement local airspace control measures but instead can make recommendations through the chain of command to the Area Air Defense Commander (AADC).⁹ With no information to base such a recommendation on, it is not logical to expect mission planners to make a recommendation.

f. As noted in the [REDACTED] investigation, Patriot positions were briefed to aircrews; however, the purpose was to build aircrew awareness in anticipating ambiguous threat indicators during ingress/egress.¹⁰ Finally, a locally generated MEZ or ROA placed in the vicinity of Echo, 5-52 ADA (on 02 April 2003) would have effectively precluded dozens of missions scheduled on that day's ATO.¹¹

3. **Recommendation:** Provide an addendum to reflect the following changes to the United States Central Command Memorandum DTD SEP032003:¹²

a. On page 1, the last sentence, change:

"Contributing factors were the generalized nature of the preflight air operations brief to pilots on the movement of friendly ADA in the AOR along the pre-planned flight path and the degraded communications between Patriot assets and the other operational elements of Link 16."

To:

"A contributing factor was the degraded communications between Patriot assets and the other operational elements of Link 16."

b. On page 3, para 5, the third sentence, delete:

"...who failed to brief him on the friendly ADA positions in his egress path..."

4. **Conclusion:** This panel concluded that there was no validity with the finding that "the generalized nature of the pre-flight air operations brief to the pilots on the movement of friendly ADA in the AOR along their pre-planned flight path" was a contributing factor in the F/A-18 being shot down by the Patriot system on 2 April 2003.

B. F-16CJ/Patriot Friendly Fire Incident on 24 March 2003, CDI Report

1. **Observation:** During the panel's review of the above investigation, an additional inconsistency was discovered in an endorsing letter that in the opinion of the panel was important enough that it should be addressed. References to 'actions at the Echo Battery, 5-52 ADA' contained in the Command Directed Investigation's "Incident Summary" are inaccurate and do not properly represent the situation at the battery, when [REDACTED] Flight engaged the unit with a HARM.

2. **Discussion:** A sworn statement obtained from the Board Team Lead determined the statements were the 'presumptions of an individual' and not founded on interviews with personnel at the battery, at the time of the incident.¹³ A sworn statement from the Battalion Commander, 5-52 ADA, who was at Echo Battery's site during the HARM engagement, affirms the system was fully manned prior to and after the HARM attack; was never put in an auto-engagement state; and upon impact of the HARM, the Patriot's Engagement Control Station and radar lost all power, making it impossible for the battery to search for, acquire or track a target; and it could not launch a missile or engage an aerial target.¹⁴ The letter from Commander, 32d Army Air & Missile Defense Command, also affirms Echo Battery's crew was at their duty stations in the Engagement Control Station, when the HARM impacted.¹⁵

3. Recommendation:

a. The United States Central Command Memorandum, [SUBJ: Investigation of Friendly Fire Incident Involving an F-16CJ HARM and Patriot Battery South of An Najaf, Iraq; Operation Iraqi Freedom, 24 Mar 2003; dtd 29 Oct 2003],¹⁶ should be amended to correct the implication Echo Battery's Patriot system was 'set in automatic mode when it is known that friendly aircraft may be transiting the airspace overhead.'¹⁷ 'Automatic Mode and Active Radiate' are not the same. The Patriot was not in an automatic engagement mode when the HARM attack occurred or subsequent to it.

b. Delete the following sentence contained in paragraph 1 of the Classified Executive Summary:

[REDACTED]

The sworn statements obtained by this panel confirm that the above sentence is inaccurate.

c. Delete the following entire last paragraph from page 3 of the Classified Executive Summary¹⁸ contained within the Investigation of Friendly Fire Incident Involving an F-16CJ

[REDACTED]

HARM and Patriot Battery South of An Najaf, Iraq; Operation IRAQI FREEDOM, 24 March 2003:

“(U) With the Patriot Engagement Control Station in an active search mode, its radar could continue searching for and engaging theater ballistic missiles launched from the Baghdad area. The radar faced North and continued actively searching for threats. It is not clear from the report of investigation whether the ADA system was left completely unmanned, or whether the two member weapons crew remained with the Patriot system while the remainder of the battery took cover. In response to an informal query, the Executive Officer of 5-52 ADA indicated that the two man crew remained inside of the van and at no time was the equipment left completely unmanned. However, this matter may warrant further consideration. As the Patriot sometimes misidentifies friendly aircraft as enemy missiles, placing the Patriot in an active search mode may create a situation conducive to a friendly fire incident.”

d. Recommend replacing the entire Incident Summary contained within the Investigation of Friendly Fire Incident Involving an F-16CJ HARM and Patriot Battery South of An Najaf, Iraq; Operation IRAQI FREEDOM, 24 March 2003 with the following:

“On the afternoon of 24 March 2003, a Patriot surface-to-air missile system, belonging to Echo Battery, 5th Battalion, 52nd Air Defense Artillery (Patriot), a unit assigned to the U.S. Army's 5th Corps, was conducting counter theater ballistic missile operations south of An Najaf, Iraq. The battery's radar was oriented to the North and it was radiating, searching for tactical ballistic missiles. The flight of four F-16CJs equipped with HARM, flight call sign [REDACTED] were transiting the area, from the South, enroute to their mission objective west of Baghdad. Three of the four F-16CJs received indications of an enemy surface-to-air missile (SAM) over a two minute period. Due to the [REDACTED] illumination [REDACTED] and proximity of his flight, the flight lead perceived an imminent SAM threat and directed his wingman, [REDACTED] to fire his HARM. The missile impacted the desert near the Patriot battery and broke apart. For an undetermined reason, its warhead did not detonate. However, missile fragments from the HARM rendered the Patriot radar inoperative and the battery non-mission capable.”

e. The reference to the F-16CJ incident in paragraph-4 (pg-3) of the United States Central Command Memorandum, [SUBJ: Investigation of Friendly Fire – Patriot Shoot Down of U.K. Tornado GR4A Aircraft Number [REDACTED] Udari Range, Northern Kuwait, 22 March 2003, dtd 08 Oct 2003]¹⁹ should be deleted or amended as the reference infers Echo Battery, 5-52 ADA contributed to F-16 engagement, when in fact Echo Battery was not tracking the F-16, was attacked from it's rear, and was purely the victim in the F-16 HARM incident.

4. Conclusion: During the panel's review of the F-16CJ HARM and Patriot battery incident

investigation, errors in fact were discovered referencing 'actions at the Echo Battery, 5-52 ADA.' Additional sworn statements were obtained to support the changes recommended above. In the opinion of the panel, the errors in the report and the CENTCOM memorandums should be corrected.

C. Patriot/Tornado GR-4A Friendly Fire Incident on 22 March 2003,
CDI Report

a. Opinion: In the Tornado incident, the employment of Charlie Battery, 5-52 ADA in an
[REDACTED]

b. Discussion:

1. Charlie Battery, 5-52 ADA was positioned to provide TBM defense over Tactical Assembly Area New Jersey. Charlie Battery's equipment had not arrived and it assumed this mission with a minimum engagement capability organized from operational readiness float equipment and launchers from other batteries. [REDACTED]

2. The decision to execute the TBM mission, in this fashion, was driven by the need to provide protection to critical assets occupying Tactical Assembly Area (TAA) New Jersey. This decision was operationally sound and validated by the three successful TBM engagements Charlie Battery executed from its site at Udari Range, [REDACTED] on: 20 March, 23 March, and 24 March 2003.^{20,21}

3. A critical mitigation factor that was not applied to avert the possible engagement of an aircraft was the use of Return to Base / Return to Force Airspace Control Measures (RTB/RTF ACMs) to avoid over-flight or to control flight profiles of aircraft that had to transit Charlie Battery's missile engagement zone (MEZ). [REDACTED]

[REDACTED] If an RTB/RTF ACM had been planned and in effect, [REDACTED] would not have presented a flight profile consistent with the criteria for ARM classification.

4. In essence, [REDACTED] failure to respond to IFF interrogations deprived Charlie Battery of its organic identification means and the lack of RTB/RTF ACMs to ensure safe transit through the MEZ denied Charlie Battery [REDACTED] and enabled the aircraft to be misclassified.

5. Additionally, examination of [REDACTED] flight's 'fence checklist' (return to friendly area checks) shows turning-off of their organic electronic counter measure (ECM) devices [REDACTED]

[REDACTED]
[REDACTED] This device, being active on [REDACTED] may have contributed to its classification as an ARM.

c. Recommendation:

1. When the operational situation dictates a battery operate in independent or autonomous operations it is essential that fact be promulgated throughout the command via ATO SPINS and the ACO; Airspace Control Measures (ACM) are activated to enable safe transit; and airspace controllers advise transiting aircraft that strict compliance with ACMs is necessary.

2. When friendly aircraft must transit friendly ground-based air defense in rear areas, 'fence checks' should be modified to ensure activation of all IFF modes and inactivation of all airborne ECM devices are first order events as the aircraft crosses into friendly airspace.

3. The United States Central Command Memorandum, dtd 08 Oct 2003; text on page-2, paragraph-2, beginning on line-10, which currently reads:²⁴

[REDACTED]

Should be modified to read:

"Patriot batteries should only be employed in an autonomous or independent mode of operation when the operational risk of leaving a critical asset undefended outweighs the potential risk of a friend-on-friend engagement. However, all forms of airspace control must be applied to ensure the potential risk of a friend-on-friend engagement is mitigated to the maximum extent possible. All mitigation factors were not applied in the Tornado incident and the loss of an aircraft and two pilots resulted. The fundamental construct of Patriot batteries operating in [REDACTED]

[REDACTED] Leaders, who place units in this situation because of operational need, must ensure they have provided the maximum number of procedural and process checks to ensure the potential for a friend-on-friend engagement is minimized; and should ensure this unit is manned by their most experienced crews."

4. The reference to the F-16CJ incident in paragraph-4 (pg-3) of the United States Central Command Memorandum, [SUBJ: Investigation of Friendly Fire – Patriot Shoot Down of U.K. Tornado GR4A Aircraft Number [REDACTED] Udari Range, Northern Kuwait, 22 March 2003, dtd 08 Oct 2003]²⁵ should be deleted or amended as the reference infers Echo Battery, 5-52 ADA contributed to F-16 engagement, when in fact Echo Battery was not tracking the F-16, was attacked from it's rear, and was purely the victim in the F-16 HARM incident.

d. Conclusion: During the panel's review of the Tornado incident, the employment of Charlie Battery, 5-52 ADA in an autonomous mode was operationally justified, but not supported with adequate risk mitigation steps. In addition, references to the F-16CJ incident are inaccurate and the above recommended changes should be made.

²⁵ Tab E

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D. (U) Recommendations as to Corrective Measures

1. (U) Overview

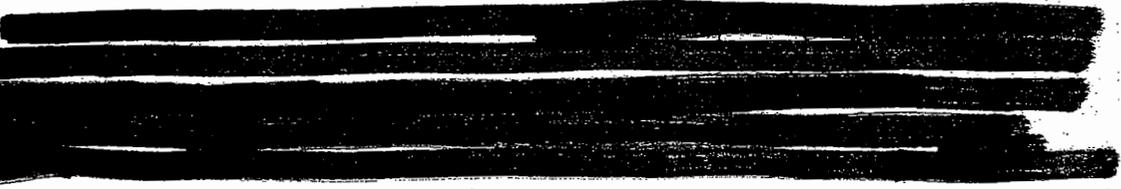
a. (U) The panel was also charged with making recommendations to the Commander concerning corrective measures that might help avoid future such mishaps. The recommendations are based on observations of issues analyzed from the various friendly fire incidents.

b. (U) Joint/Coalition warfare in OIF fused an intense air campaign, large scale Special Operations Forces (SOF) operations and a rapid, violent ground campaign conducted by Coalition ground forces. For the first time US Services and Coalition partners operated in a synchronized manner during major combat operations. This is in contrast to Desert Storm where sequential scheduling allowed for joint participation but not extensive integration.

c. (U) OIF was also the first major campaign to benefit from the Electronic Battlefield and Netcentric Warfare (EBNW), with US Military Services and Coalition partners participating and executing on a common operational picture. This electronic link built theater situational awareness and sped the flow of information.

d. (U) It is clear that strategic risk was mitigated by the short-notice initiation of near-simultaneous air, maritime, ground, and SOF campaigns. The fused campaign was complex, and tactical risk increased due to asynchronous efforts by key elements.

e. (U) This combination of Joint Warfare and electronic battlefield yielded great combat power and new risk. However, seams developed in the integration process. Priority misalignment and poor communication allowed gaps to develop in execution. In our analysis of three friendly fire incidents it is clear that some key joint warfighting issues were not addressed by Component Commanders because they fell into a seam created by overlapping responsibility, operational tempo, and equipment limitations.

f. 

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[REDACTED]

g. (U) Future conflicts will require that forces and information processing/sharing be even more integrated. US Armed Services must develop systems and training to safely and effectively fight in this environment. The panel analyzed several key issues presented below. We looked at these issues from a joint perspective, addressing key planning, training, C2, equipment, and risk management points.

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Review of Finding, Friendly Fire Report of Investigation, Patriot Shoot-down of
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[REDACTED]

2. (U) Area Air Defense Plan

a. (U) Observation: The Area Air Defense Plan (AADP)²⁶ defined command relationships and procedures that exceeded the Joint Forces' abilities to execute.

b. (U) Discussion: IAW the AADP, U.S. Corps-level Patriot forces deployed forward to protect the maneuver forces and they were required to maintain connectivity with their Area Air Defense Engagement Authority (EA). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

c. (U) Recommendations:

1. (U) The AADC's CCIR should include the inability or failure to execute a planned AADP action and any degradation in communications between C2 nodes and air defense units.
2. (U) Branches and sequels should be developed to ensure responsive and redundant communications and C2 architectures are developed, in the event key assumptions prove invalid or combat losses are sustained.
3. (U) The AADP must be synchronized with the Ground Component's scheme of maneuver to ensure proper prioritization of movements.

[REDACTED]

[REDACTED]

3. (U) Airspace Control Measures

a. (U) Observation: The Airspace Control Orders (ACOs) did not implement airspace control measures (ACMs) to mitigate the possibility of friend-on-friend engagements.

b. [REDACTED]

2. (U) The implementation of Restricted Operating Areas (ROAs) or Missile Engagement Zones (MEZs), and Return To Force Transit Corridors developed in concert with the air and ground schemes of maneuver will help to mitigate risk. Aircrew, airspace controllers aboard AWACS or in SADCs, and Patriot crews are informed of these ACMs through the Daily ACO.

[REDACTED]

[REDACTED]

[REDACTED]

5. (U) System knowledge and situational awareness are critical to safe operations in the forward area. Airspace controllers should have knowledge of Patriot characteristics and locations when controlling aircraft in the forward area. Situational awareness at the Patriot battery becomes paramount to ensuring friendly protection functions are performed. Connectivity between SADC, airspace controllers, and Patriot units is essential. Any degradation in connectivity must be elevated up command channels and corrected to ensure positive control and situational awareness is maintained.

[REDACTED]

c. (U) Recommendations:

1. (U) For rear area operations establish and implement a ROZ out to ranges that are commensurate with published self defense criteria or operationally supportable. If aircraft must transit these areas, implement strict RTF Transit Corridors, [REDACTED] and ensure positive control of transiting aircraft and connectivity to Patriot units.

2. (U) As a minimum the ACO should specify a ROA for all Patriot Batteries, based on potential missile interceptor-aircraft collision, as was done during OIF.³⁴ Air defense operators and all joint/coalition members must continually evaluate risk and recommend the creation of a MEZ/ROA in the forward area as required.

[REDACTED]

[REDACTED]

[REDACTED]

3. (U) In all operations, airspace controllers and SADCs must be positioned and resourced with adequate communications equipment (to include Patriot units) to ensure reliable, responsive command and control can be applied.

[REDACTED]

4. (U) Intelligence Preparation of the Battlefield

a. (U) **Observation:** The AADP did not discuss Anti-Radiation Missiles (ARMs) as an aerial threat the ground based radars, including the Patriots, would face during the execution of OIF.³⁵

b. [REDACTED]

c. (U) **Recommendation:** AADP Intelligence Annex must include all aerial threats coalition forces are expected to face to ensure proper defense design and system configuration; and should provide an assessment of the threat capability so commanders can modify tactics, techniques, and procedures accordingly.

[REDACTED]

[REDACTED]

[REDACTED]

5. (U) Joint Air Defense – Air Operations Training

a. (U) **Observation:** OIF demonstrated that the Joint Force needs to train as it will fight (integrated, with degraded communications and in a rapidly changing battlespace) and that our skills to operate in a dynamic airspace and air defense joint engagement zone are not adequate.

b. (U) **Discussion:** Lapses and shortcomings in training, preparation, and certification contributed to all three fratricide incidents. It is also critical to note training issues exist at all levels of command. Equally important, solutions to these issues often require action on the part of more than one Service. The issues are joint in nature and the solutions lay in effective joint integration at the tactical, operational and strategic level.

1. [REDACTED]

(U) The operational situation may drive Patriot units to operate in the autonomous mode when the number and dispersal of key assets (CAL/DAL) exceeds the capacity of the PATRIOT Battalions deployed. The risk accepted by deploying C/5-52 Battery autonomously appears to be validated by the battery's successful intercept of three enemy TBMs from that position during OIF, potentially saving hundreds of lives. However, anticipating such a likely deployment and the risk inherent with it, then focused training crews to perform in this very demanding independent mode was not conducted.

(U) The crew of Battery C/5-52 completed their certification just prior to deployment. The TCO and her crew met all qualification standards yet still engaged and destroyed a misclassified friendly aircraft.³⁹ They were inexperienced and had not worked in a joint/coalition environment. Their limited experience did not enable them to question the situation, they did not have a means for obtaining higher echelon support, and they did not possess the skill set to operate in an [REDACTED] in OIF's complex battlespace.

(U) When the mission dictates autonomous operations, commanders should ensure they place experienced crews who possess the special skills required for the mission. Modification of TTP should be considered to reinforce less skilled crews if they must man the system (ie: application of the fourth man concept).

[REDACTED]

[REDACTED]

[REDACTED]

(U) The Panel recognizes the need for a change in Patriot crew training philosophy. The current methodology should be modeled on the methods used for training tactical aviators in the USAF and USN. Currently Patriot crews receive basic weapons familiarization training from the Air Defense Artillery Officers School at Fort Bliss, then receive additional weapons training and certification at the battalion and brigade level.

(U) The panel observed that this "in-house" training produced vast differences in operator capabilities. Although requirements were set by the Air Defense Artillery Officers School and standards distributed, implementation was at the unit level with no external standardization oversight. In contrast, tactical aviators (who are called upon to make similar ROE engagement decisions with similarly lethal results) are trained/mentored in the command by aircrew with a special weapons training qualification. This training qualification is awarded not by the individual units but by an external command (USN)/unit (USAF) responsible for developing TTPs and standardizing training (Naval Strike and Air Warfare Command/Top Gun or USAF Weapons School).

(U) At key points in an officer's training and development in the unit, the officer must undergo an evaluation (simulator exercise or check flight, for example) given by an instructor/evaluator from the external command (USN)/ a Stan/Eval from outside the unit (USAF) responsible for developing and standardizing TTPs. This ensures that warfighters making ROE decisions and operating lethal weapons systems in a complex environment meet minimum training standards and are familiar with the latest TTPs.

(U) Additionally, Patriot training strategy should make autonomous Patriot operation a higher crew qualification or gate in the standardized training program.

2. (U) Battalion: The battalion personnel involved in the F/A-18 friendly fire incident met certification standards, but system knowledge, threat awareness/enemy capabilities and situational awareness varied greatly. Comprehensive battalion crew and staff training, plus the application of reinforcing TTPs should be reviewed and implemented.

[REDACTED]

[REDACTED]

[REDACTED]

(U) Disciplined staff actions during an engagement also played into the F/A-18's engagement. [REDACTED] radio calls to the ICC during the conduct of the engagement prevented target assessment.

(U) A standardized training and engagement concept, would reinforce a disciplined approach to operations. The application of a rigorous certification process for battalion tactical directors, with an external evaluation process, would ensure the most experienced personnel serve as tactical directors.

3. [REDACTED]

(U) Since Desert Storm, the Army's focus has been on countering the Tactical Ballistic Missile (TBM) threat and therefore the requirement [REDACTED] has not been recognized as a critical need. The TBM fight is a relatively fast event and engagement timelines are short, measured in seconds to minutes at most. Given the 'trust in the Patriot system's ability to make the proper [REDACTED] decisions', [REDACTED] to influence the air battle is no longer universally recognized.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(U) With the forward deployment of Patriot units and the high density of air activity around them, [REDACTED] must now be re-assessed. A properly resourced and trained [REDACTED] with joint links and responsive communications, could provide the forward deployed Patriot unit the overwatch and situational awareness [REDACTED] performing this function could have mitigated the challenges the IADS faced [REDACTED]

[REDACTED]

(U) Above Brigade: At echelons above brigade the panel discerned an absence of synchronization and true integration of airspace defense and ground maneuver plan. [REDACTED]

[REDACTED]

[REDACTED] Additionally, when the engagements occurred, the effort to prevent another seemed to focus on the Patriot unit or system vice taking a holistic approach to the problem and considering changes in airspace management, control orders or air mission preparation.

(U) The AADC documented the doctrinal concepts the Airspace Control Orders could implement – unfortunately no ACOs were used as risk mitigators for mixing aircraft and Patriot in a dynamic situation, both initially and as unforeseen failures happened or when the Blue-on-Blue incidents occurred. When a ground force commander made a decision that negatively impacted the air defense plan causing communications to fail or degrade, were leaders or staffs trained to access the new risk and implement mitigating actions/procedures? More importantly, how do you train the command and staff leadership in all Services to do this in the future?

(U) Joint training exercises must capture all aspects of major combat operations and train staffs and leaders to look for asynchronous points in plans and operations. The formation of a Risk Assessment Team or process on senior level staffs to identify gaps or seams in plans and operations is a critical process that should be imbedded in all future operations. The 'fresh, distant set of eyes' often see things those close to an operation or issue do not. Joint schooling and joint exercises are required to develop a Joint Force capable of safely operating in the current operational environment and executing joint engagement zones.

5. (U) Squadron/Wing: The F-16 HARM attack on the Patriot radar indicates serious planning and briefing deficiencies. From the investigation it is clear that the planning process was behind and the element leader did not have the situational awareness necessary to lead the flight when he left the brief. In the F-16 incident the crews failed to capture three critical pieces of information during their mission briefs.⁴²

- (U) FSCL Location (briefed but not noted by crew)
- (U) Friendly Order of Battle, specifically forward maneuver force's progress as it related to their route of flight, working area, and Search & Rescue Plan.
- [REDACTED]

[REDACTED]

(U) The flight lead incorrectly assumed he did not need to know where friendly positions were because his target set was well beyond the FLOT, plus he relied on the Wing Ground Liaison Officer (GLO) who provided incorrect information on Patriot location even though they were listed correctly in the ACO. The flight lead was most concerned with ensuring he was in proper position to support the striking elements. [REDACTED]

[REDACTED] diverted his attention so when the ambiguous threat appeared enroute to his working area, he lacked the situational awareness required and made the error.

(U) Lack of airborne situational awareness on the flight leader's formation position in relation to the FSCL by each member of the flight, especially given their experience levels, is troubling. Joint training with Patriot radars in the field would have helped this crew achieve a level of Patriot awareness that would have enabled them avoid the ambiguous misidentification and emphasized the need to know where Patriots are as part of the Friendly Order of Battle. The flight also commented that they did not include the FSCL in training scenarios at home station either.

6. (U) Situation Awareness: The Patriot system, CRC, AWACS and friendly fighters have become interdependent, but without each player understanding the needs, concerns or requirements of the other. [REDACTED]

[REDACTED] The two different mind sets interfered with a common understanding and hence led to limited mitigation actions/procedures once Friendly Fire incidents occurred (i.e. focus was on internal Patriot mitigators versus holistic ones).

(U) Every flight lead and wingman, every Patriot Battery TCO & TCA, every weapons controller in the CRC and AWACS must be proficient in their own weapon system, but they also must understand what information other members of the IADS have that they need—and then have the training to enable them to be pro-active in obtaining said information. If it is unavailable, then they (flight leads, weapons controllers, and TCOs) must have the training that leads them to be pro-active in demanding mitigating actions/procedures.

(U) When Patriot Batteries are operating in the Forward Area, the TCO/TCA must be trained to understand what that means within the IADS and the air campaign—specifically, they need to understand if they are located near active Kill Boxes a lot of friendly aircraft will be operating, [REDACTED]. Training should teach the TCO/TCA the requirement for the CRC/AWACS to resolve/correlate their air picture in order to provide situational

[REDACTED]

awareness of the very busy Forward Area. TCO/TCAs must also recognize that if they are operating in the Forward Area, even with a data link picture and communications to Battalion, they are still operating in a degraded operational mode unless they have the associated situational awareness required for that environment.

(U) Weapons controllers (CRC, AWACS) must understand their responsibility in resolving/correlating the Patriot picture and if they don't see the Patriot input to pro-actively pursue Patriot's integration into the air picture. If the Patriot can't be connected, then they must pro-actively pursue mitigating actions/procedures (i.e. voice warning to transiting aircraft and Patriot units and/or requesting ACMs). Without the situational awareness, a truly integrated IADS provides, [REDACTED]

(U) The flight leads & wingman must know where the Patriots are located, and if there are any safe transit procedures in effect. If there are no procedures, then they must ensure the CRC/AWACS controller is coordinating their transit through/operation within the Patriot defended area.

(U) This understanding that all players must have can only be achieved if a significant effort is made to train to this level. The training must be captured both within individual units (Patriot Battery, CRC, AWACS, Flight lead) training plans as well as applied during cross-service training exercises. The joint requirement is for a pro-active, thinking combat force—that can only be achieved if we begin growing/training at the lowest level—TCOs & TCAs, weapons controllers, and flight leads & wingman.

c. (U) Recommendations:

1. (U) The execution of the Army's crew certification process should be reviewed to enhance standardization and incorporate external evaluations to ensure compliance with set standards and validate certification across the force. This training, as a part of the certification, should focus on teaching Patriot operators to develop and maintain situational awareness on the air situation in addition to the ground scheme of maneuver. Patriot operators must learn to control and employ their weapon system, not react to it.

2. (U) The Air Expeditionary Wings should review squadron training syllabi, briefing guides and SOP to ensure it is aligned with standing doctrine, and that aircrew training is conducted that includes integration of the ground force maneuver plan. Additionally, the Wings should evaluate what it requires from a GLO and ensure that qualified personnel are assigned.

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3. (U) Development of a formal Joint Air Operations training program, along the lines of the former NATO Tactical Leader Program, to educate and develop a professional cadre of air, air defense, and ground operations officers, capable of developing and executing operations in the joint environment is essential.

4. (U) Joint exercises or simulations are required to practice and hone the skills developed in the Joint Air Operations Program. Service training programs (ie: Naval Strike & Air Warfare Center's Air Wing Training Program or Air Combat Command's Red Flag Exercises) should be joint programs and include Air Defense Planners and units from all Services.

5. (U) The Service training programs need to become more joint in nature. Exercises such as Roving Sands and Joint Combat Identification Evaluation Team should resume, and others such as Ulchi Focus Lens and Intrinsic Action should emphasize airspace planning, management, and control techniques. They should also become Flag Level and General Staff training events, executed akin to the Army's Battle Command Training Program, where injects create the Fog of War and invalidate the plan's baseline assumptions, making staffs develop and execute branches and sequels for operating in the seam. Training programs need to promulgate these friendly fire lessons learned from OIF and not solely focus on what crews or crewmen did or did not do, but more so on where the total process of joint operations came up short.

6. (U) The Army should reassess the concept for manning and employing [REDACTED] to assist Patriot battalions with situation awareness and to back-up Sector Air Defense Center missions.

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[REDACTED]

6. (U) HARDWARE/SOFTWARE

(U) Each friendly fire incident had an element of [REDACTED]. The following is a prioritized list of equipment-related initiatives that will help mitigate future incidents.

1. [REDACTED]
2. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
3. [REDACTED]
[REDACTED]
4. [REDACTED]
[REDACTED]
5. [REDACTED]

[REDACTED]

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7. Conclusion

This panel reviewed the three (Patriot/GR4, F-16CJ/Patriot and the FA-18/Patriot) friendly fire incidents from OIF with the view towards discerning if there were theater systemic problems that may not have been obvious to any particular investigation. The panel believes it uncovered several systemic issues as the joint/coalition force becomes further interdependent. These systemic issues typically were exposed in shared and overlapping seams of responsibility at all levels of the force--from the weapon system level to the component leadership level. The panel's recommendations for the future covered several areas, but the key concept was increasing situational awareness of joint warfighters using weapons systems with varying degrees of integration in the electronic battlespace.

10 March 04
Date

[REDACTED]
[REDACTED] Colonel, USA
Senior Board Member

10 MAR 04
Date

[REDACTED]
[REDACTED] Captain, USN
Board Member

10 MAR 04
Date

[REDACTED]
[REDACTED] Colonel, USAF
Board Member

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III. COMMONLY USED ACRONYMS & ABBREVIATIONS

AADC	Area Air Defense Commander	ID	Identification
AADP	Area Air Defense Plan	IFF	Identification Friend or Foe
AAMDC	Army Air and Missile Defense Commander	KAOC	Kuwaiti Air Operations Center
ABT	Air Breathing Threat	KI/CAS	Killbox Interdiction/Close Air Support
ACM	Air Control Measures	MEZ	Missile Engagement Zones
ACO	Air Control Order	MRR	Minimum Risk Routes
ADA	Air Defense Artillery	NATO	North Atlantic Treaty Organization
AOC	Air Operations Center	NCO	Non-Commissioned Officer
AOR	Area of Responsibility	OIF	Operation Iraqi Freedom
ARM	Anti-Radiation Missiles	ROA	Restricted Operating Areas
ATO	Air Tasking Order	ROZ	Restricted Operating Zone
AWACS	Airborne Warning and Control System	RWR	Radar Warning Receivers
C2	Command and Control	SA	Situational Awareness
CAOC	Combined Air Operations Center	SAM	Surface-to-Air Missiles
CAS	Close Air Support	SEAD	Suppression Enemy Air Defenses
CCAFC	Combined Forces Air Component Commander	SME	Subject Matter Experts
CDI	Command Directed Investigation	SPINS	Spins Instructions
CENTCOM	Central Command	TAA	Tactical Assembly Area
CFLCC	Coalition Forces Land Component Commander	TAOC	Tactical Air Operation Center
COCOM	Combatant Commander	TBM	Tactical Ballistic Missile
EA	Engagement Authority	TCA	Tactical Control Assistance
ECS	Engagement Control Officer	TCO	Tactical Control Officer
FDC	Fire Direction Center	TD	Tactical Director
FSCCL	Fire Support Coordination Line	TTP	Tactics, Training, and Procedures
GBR	Great Britain	UHF	Ultra-High Frequency
GIP	Ground Impact Point	UK	United Kingdom
GLO	Ground Liaison Officer	USA	United States Army
HARM	High-speed Anti Radiation Missile	USAF	United States Air Force
IADS	Integrated Air Defense System	USN	United States Navy
IAW	In Accordance With	WH	Weapons Hold
ICC	Information Control Central		

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[REDACTED]

UNITED STATES CENTRAL COMMAND
OFFICE OF THE COMMANDER IN CHIEF
7115 SOUTH BOUNDARY BOULEVARD
MACDILL AIR FORCE BASE, FLORIDA 33621-5101

CCJA

SEP 03 2003

MEMORANDUM FOR

Commander, U.S. Army Forces Central Command, Fort McPherson,
Georgia 30330-5000
Commander, U.S. Naval Forces Central Command, FPO AE 09501-6008
Commander, U.S. Central Command Air Forces, Shaw Air Force Base,
South Carolina 29152-5000
Commander, U.S. Marine Forces Central Command, Camp H.M. Smith,
Hawaii 96861-5001
Commander, Special Operations Command Central, MacDill AFB,
Florida 33621-5101
Commander, Combined/Joint Task Force 7, APO AE 09304
Commander, Combined/Joint Task Force 180, Bagram Airbase,
Afghanistan APO AE 09356
Commander, Combined/Joint Task Force Horn of Africa (HOA), APO
AE 09363
Commander, 32d Army Air and Missile Defense Command, APO AE
09889

SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot down of U.S. Navy F/A 18 near Karbala Gap/An
Najaf, Iraq, 2 April 2003

REF: DoD Instruction 6055.7, Accident Investigation, Reporting,
and Record Keeping

1. The subject report of investigation was prepared in general compliance with the reference and is accepted, subject to the corrections and amendments provided herein. The endorsement from the Commander, 32d Army Air and Missile Defense Command is approved subject to the modifications set forth in this review. The ultimate conclusion of the investigation, as amended, is that a PATRIOT Air Defense Artillery (ADA) Battery erroneously identified two F/A-18s when its system failed to properly classify and correlate friendly aircraft and the system operators failed to properly execute their friendly protection responsibilities. A principal failure was a lack of human oversight and knowledge of system capabilities by ADA operators. Contributing factors were the generalized nature of the pre-flight air operations brief to the pilots on the movement of friendly ADA in the AOR along their pre-planned flight path and

[REDACTED]

[REDACTED]

CCJA

SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003

the degraded communications between PATRIOT assets and other operational elements on Link 16. Both the air and ground elements failed to demonstrate proficiency with the essential requirements of joint operations. Recommendations for corrective actions are acknowledged and forwarded for evaluation and action.

2. The complexity of the modern battle space is a new dynamic in joint operations and building our joint operations team is an ongoing and elastic process. This investigation establishes that we have not yet completed this process and have significant work to do. Active mitigation of the risk of mistakes must recognize that some human error is inevitable and that active mitigation of risk is not accomplished by completely removing the human element from our processes.

3. The results of this investigation raise issues similar to those observed in an earlier Operation Iraqi Freedom friendly fire incident. This earlier incident was the shoot down of a British Tornado causing the deaths of 2 British aviators. The same ADA Battalion, 5-52 fired the PATRIOT missiles in each incident indicating an urgent need to address tactics, techniques and procedures (TTP). The PATRIOT weapons targeting system can act automatically, but should not operate without active human oversight. At a minimum, two humans and two systems are independently involved in processing and relaying data. Reduction of human input and the resort to automated processing often occurs at the time of highest stress, where troops are in contact with multiple sources, and are executing self-protection while in harm's way. While seeking to reduce human error through automation, the execution of proper procedures for weapons release must be complied with to ensure our own forces are protected and hostile targets prosecuted. Deviations from those procedures come at great risk to our aviation and ground personnel.

4. Opinions differ on the reasonableness of failing to thoroughly interrogate and determine the characteristics of the inbound track, i.e., "hook" the missile track, prior to launch in self-defense on 2 April 2003. However, on this point I agree with the 15 June 2003, 32d Army Air and Missile Defense Command

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SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003

endorsement approving the first, third and fourth Findings and Recommendations, along with the additions they noted and those added by this review.

5. I also concur in the disapproval of the second Finding and Recommendation but for different reasons than those cited in earlier endorsements. The actions of more than one individual contributed to the death of LT White. Those who failed to brief him on friendly ADA positions in his egress path; air and ground personnel who lost contact with [REDACTED] and PATRIOT launchers due to degraded communications, and the PATRIOT operators pre-launch failure to hook and integrate the missile track are to some extent each accountable for the death of LT White. Collectively and individually the consequences of the battlefield exigencies in the operational environment that existed on 2 April 2003 must be considered in mitigation. However, the post-launch failure to hook and integrate, which would have allowed several seconds of track observation when clear non-ballistic characteristics should have been observed, is far less palatable. What should or could have occurred in the 50 plus seconds of the engagement and the last seconds of LT Whites' life is now mere speculation. But it is a fact that it takes only a matter of seconds to hook a track or execute HOLD FIRE. It is also a fact that once HOLD FIRE is pressed a destruct command is sent to any missile assigned to that target.

6. Given these facts, I remain particularly troubled by this violation of launch protocols. Under these or any circumstances, loss of life due to friendly fire is unacceptable. It is significant that a PATRIOT PAC 3 missile can be deactivated by initiating a "HOLD FIRE" command. HOLD FIRE execution will destroy the missile in flight. The execution of a HOLD FIRE involves the operator's push of a button and a normal weapons response of [REDACTED]. Having failed to do so pre-launch, the PATRIOT operators had a post-launch window of opportunity to hook and integrate this suspected hostile track in the manner required pre-launch, but did not thoroughly due so. On 2 April 2003, even during the exigency of the moment, joint interaction and track integration were necessary steps that LT White deserved -- we failed him and ourselves in this respect.

[REDACTED]

CCJA

SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003

7. The report is forwarded to the addressees for actions as indicated below.

a. Commander, ARCENT, shall coordinate with all addressees to conduct a joint review of ADA procedures, particularly as they apply to friendly protection, to the use of the PATRIOT missiles in forward and independent battery configurations, the inability of coalition ground and air elements in the operational theater to communicate and the inability of multiple elements to classify and correlate the same airborne objects thus ensuring common understanding and agreement between air and ground forces. Additionally, ensure that processes are established in theater so that all appropriate personnel understand these procedures and the requirement to comply with them. Commander, ARCENT shall also consider and comment on the Commander, 32d Army Air and Missile Defense Command's message, dated 18 Jun 03 (Enclosure 3) and Commander, U.S. Naval Forces Central Command's memorandum, dated 22 Aug 2003 (Enclosure 4) and its enclosure regarding this incident. An Engagement Diagram (Enclosure 5) and an excerpt from FM 3-01.87, PATRIOT Tactics, Techniques, and Procedures (Enclosure 6) are provided to assist in this review. Commander, ARCENT shall report to the Deputy Commander, U.S. Central Command (USCENTCOM) no later than 45 days from the date of this memorandum certifying compliance with this direction.

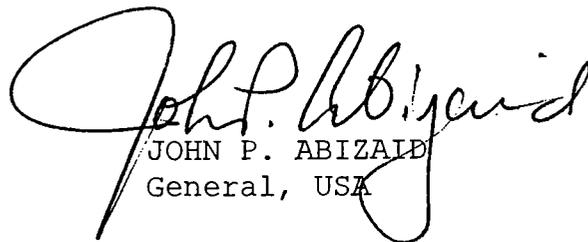
b. All addressees will review the actions of their subordinate personnel for initial consideration or reconsideration of administrative or disciplinary action as deemed appropriate. Review should consider mitigation and aggravating circumstances of this incident, the recommendations of the initial investigating officer, this and earlier reviews. Appropriate officials may thereby assess application of U.S. Armed Forces standards of accountability under the Uniform Code of Military Justice (UCMJ) and applicable Department of Defense and/or military service regulations, directives or instructions.

c. All addressees are requested to review the recommendations of the investigating officer, as amended, and to take action thereon, as you deem appropriate.

CCJA

SUBJECT: Review of Report of Investigation into Friendly Fire -
PATRIOT Shoot down of U.S. Navy F/A 18 near Karbala
Gap/An Najaf, Iraq, 2 April 2003

8. There is to be no public release concerning this matter until the required next-of-kin notification has occurred. USCENTCOM will then post an unclassified summary of the report of investigation on the USCENTCOM Home Page. All requests concerning the report made pursuant to the Freedom of Information Act and/or Privacy Act should be forwarded to USCENTCOM, attention FOIA Officer.


JOHN P. ABIZAID
General, USA

Enclosures

- 1 - Classified Executive Summary
- 2 - Unclassified Executive Summary
- 3 - 32D AAMDC Message, dated 18 Jul 03
- 4 - CDUSNAVCENT Memo, dated 22 Aug 03
- 5 - Engagement Diagram
- 6 - Excerpt, FM 3-01.87, PATRIOT Tactics, Techniques, and Procedures
- 7 - Report of Investigation, dated 23 Apr 03

**CLASSIFIED EXECUTIVE
SUMMARY**

6 pages

WITHHELD IAW FOIA

5 USC 552 (b)(1)

EO 12958, 1.4.a., e., and g.

Unclassified Executive Summary

Background: On 2 April 2003, two U.S. Navy F/A-18 Hornet aircraft from the USS KITTY HAWK were assigned a combat strike mission over Iraq as part of Operation IRAQI FREEDOM. While returning to their ship these planes were targeted by a U.S. Army PATRIOT missile battery. The PATRIOT Battery believed the Hornets to be hostile and, in perceived self-defense, launched two missiles to intercept the aircraft. During this engagement one plane was shot down and its pilot, LT Nathan White, U.S. Navy was killed.

Discussion: The flight of Navy F/A 18s was approaching the location of a forward deployed U.S. Army PATRIOT missile battalion consisting of multiple launching systems called batteries. Elements of the battalion were deployed in several locations near the egress path the Navy aircraft were flying to return to the aircraft carrier.

The PATRIOT batteries were in the area to suppress Iraqi missiles targeting coalition forces. Late on the evening of 2 April 2003, one PATRIOT Missile battery detected what appeared to be the approach of a hostile Iraqi missile. After detection, this initial battery forwarded notification of the hostile missile's detection to their superiors in the air defense network's coordination center, the Information Coordination Center (ICC). However, this hostile missile detection was erroneous. The ICC incorrectly correlated this erroneous missile track to the track of one of the F/A 18s and identified the second Navy plane as an unknown threat.

Within seconds of the initial report, a second PATRIOT battery located closer to the frontline and in the path of the F/A 18 also detected it as an incoming Iraqi missile. The second battery's correlation of the inbound track led it to conclude that it and its' defended asset were the hostile missile's target. These corroborating reports made the ICC and the potential target battery increasingly confident that they were all detecting the same hostile missile, that their detection was accurate, and that this missile was a direct threat to U.S. Forces.

Based on the forward location of the targeted PATRIOT battery, the ICC staff had to quickly launch a counter missile capable of successfully intercepting the Iraqi missile. The ICC ordered the targeted battery to launch status and two PATRIOT interceptor missiles where launched. However, proper procedures

for obtaining launch status were violated in the process. Both PATRIOT missiles located and intercepted LT White's F/A 18. The plane was destroyed and LT White was killed. The second plane returned safely to USS KITTY HAWK.

An investigation confirmed the death of LT White was due to friendly fire and the appropriate command authorities have been provided a copy of the investigation for review. Appropriate actions are ongoing to better protect both coalition ground and air forces in the future.

32D AAMDC MESSAGE

2 PAGES

EXEMPT IAW

5 USC 552 (B) (1), (2), (3)

EO 12958, 1.4.a, e, g



DEPARTMENT OF THE NAVY
COMMANDER, U.S. NAVAL FORCES CENTRAL COMMAND
FPO AE 09501-6008

IN REPLY TO:
5700
Ser 01/S078
22 Aug 03

SECRET (u)

From: Commander, U.S. Naval Forces Central Command
To: Commander, U.S. Central Command

Subj: REVIEW OF REPORT OF INVESTIGATION INTO PATRIOT SHOOTDOWN
OF U.S. NAVY F/A-18 HORNET ON 2 APRIL 03 OVER IRAQ

Encl: (1 CNA memo CME D0008852.A1 of 20 Aug 03

1. (u) (s) On the evening of 2 April 2003, a section of two Navy F/A-18 Hornet aircraft assigned to Strike Fighter Squadron ONE NINE FIVE (VFA-195), call signs [REDACTED] and [REDACTED], successfully completed a strike mission outside Baghdad and began their return flight to USS KITTY HAWK, retracing their ingress route. At least one of the aircraft in the formation was squawking good IFF Modes II and IV, and the aircraft were properly identified and tracked by AWACS and carried in LINK-16 as friendly aircraft. As the aircraft flew over the southeast corner of Bahr Al Milh Lake, at a steady altitude of 33,000 feet and a speed of 310 knots, they were fired upon by a U.S. Army PATRIOT Battery near Karbala, designated as battery E/5-52.

2. (u) (s) [REDACTED], piloted by LT Nathan White, an experienced combat pilot, saw the surface to air fire and called out to [REDACTED] to turn right. For the next 25 seconds, both aircraft executed evasive maneuvers. At 20:30:42Z, [REDACTED] was intercepted by two PATRIOT missiles fired from E/5-52 and destroyed, killing LT Nathan White. [REDACTED], [REDACTED], observed what he believed to be the impact of a missile with [REDACTED]. After several unsuccessful attempts to contact his wingman, he marked his position and initiated a Combat Search and Rescue (CSAR) effort.

Derived from 22Aug03

Declassify on 22Aug04

3 (U) (S) [REDACTED] was mistakenly identified and depicted as an inbound Iraqi theater ballistic missile, [REDACTED], in the Tactical Command Station/Information Coordination Central for PATRIOT Battalion 5-52¹ and battery E/5-52. The investigative board found insufficient data to determine, with confidence, the technical failures that resulted in PATRIOT holding [REDACTED] as a TBM [REDACTED] track, but the board postulated that PATRIOT correlated a spurious TBM [REDACTED] track generated by battery A/5-52 with an aircraft track held on [REDACTED] by battery E/5-52.

4 (U) (S) Notwithstanding the technical failures that occurred within the Patriot track classification and correlation processes, the investigative report makes clear that the shoot down was preventable, and would not have occurred but for human error and an institutional failure, through training and doctrine, to adequately prepare PATRIOT to be fully integrated into a complex joint battle space.

5 (U) (S) The PATRIOT Battalion Tactical Director made the decision to order launchers to "operate," an automatic engagement mode, before he "hooked" the TBM track symbol to display track amplification data.² According to the Special Instructions (SPINS) issued by the Coalition Forces Air Component Commander, "hooking" the target track was a required step prior to putting the system into an operational mode. Hooking the track would have shown that the TBM [REDACTED] symbol was not accurate, and the target actually an aircraft.

6 (U) (S) After the missiles were fired, the Tactical Director and other PATRIOT personnel at the TCS/ICC and battery E/5-52 had approximately [REDACTED] to monitor the engagement on their displays before the missiles impacted the target. They should have used that time to confirm the target's identity, but they failed to do so. Had such an effort been undertaken, they would have noted that the target was taking evasive action, i.e., turning to avoid the missiles. Since TBMs do not have the capability to take evasive action, those personnel would have

¹ PATRIOT Battalion 5-52, consisting of a Tactical Command Station/Information Coordination Central (TCS/ICC), firing batteries A, C, E, and F/5-52, and associated C4I architecture, was positioned to defend ground forces in the Karbala Gap. Battery E/5-52 was located approximately 80 to 90 Km north of the TCS/ICC and other batteries.

² Figures 3a - 5b in the enclosed CNA report (see pages 4 through 8) show the tactical picture displayed to PATRIOT Battalion 5-52 personnel (with color added to enhance viewing for the non-technical reader). By taking a cursor and placing it on the symbol depicted for the TBM [REDACTED], the operator would view amplifying data relevant to the identity and activity of the object represented by the symbol, such as the speed, course, altitude, and IFF mode for an aircraft.

known that the target was not a TBM. The Tactical Director, whose primary mission is preventing the engagement of friendly forces, has the authority and responsibility to execute a hold fire order, which will cause missiles to self-destruct in flight. That order could have been executed up to the point of missile interception of [REDACTED]

(U) (S) [REDACTED]
[REDACTED]
The Commanding General of the 32d AAMDC disapproved that finding and recommendation, noting that the investigative board had documented institutional and operational training deficiencies that resulted in the Tactical Director not having appropriate skills to perform in a complex combat environment. Neither the investigative board nor subsequent endorsers identified or assessed accountability for those individuals or institutions responsible for failing to prepare PATRIOT crews for combat. It is my recommendation that further consideration be given by appropriate officials to the matter of accountability.

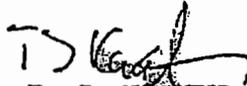
(U) (S) At the request of this command and the Navy Staff, and after coordination with your staff, the Center for Naval Analyses (CNA) reviewed ground-to-air fratricides in Operation IRAQI FREEDOM (OIF) and submitted the enclosed comments on the investigative report into the shoot down of [REDACTED] CNA notes that the institutional failures in PATRIOT training and doctrine that directly led to this incident were identified in joint tests and evaluations over the preceding decade, but recommendations to address those deficiencies were not implemented. Chief among those recommendations are the following:

- a. Ensuring that PATRIOT operators have the authority to identify targets before engagement.
- b. Ensuring that PATRIOT crews become fully competent and participatory members in the integrated air defense system, including, most immediately, Link-16 and voice networks.
- c. Ensuring that AWACS reports track altitudes, including unknown or known inaccurate altitudes, in a way that allows track correlation throughout the integrated air defense system.

(U) (S) One of the key lessons learned from OIF is the importance of fully integrating air defense forces into the joint and coalition battle space. [REDACTED]

battlefield environment.

10 (b) Applying restrictive administrative air space measures in lieu of correcting the doctrinal and training deficiencies in the PATRIOT community is not a feasible solution in a complex battle space. In addition, there is no reason to believe that extending PATRIOT engagement zones will reduce or eliminate surface to air friendly fire incidents. As the investigative report makes clear, the lack of situational awareness in PATRIOT Battalion 5-52 borne from a training and doctrinal system that placed reliance on technical hardware and software over human judgment resulted in the shoot down of [REDACTED]. The solution to correcting that failure is not to further remove human judgment from the equation through the application of artificial air space management rules. The solution is threefold: correct technical deficiencies in PATRIOT track classification and correlation processes, change PATRIOT doctrine to ensure that PATRIOT is a full participant in joint C4I architectures, and ensure that the personnel that operate PATRIOT have sufficient knowledge, expertise, and training to maintain situational awareness and make informed decisions on the battlefield.


T. J. KEATING

Copy to:
CLFCC
CFAAC
CG, 32d AAMDC

**CNA REPORT
CLASSIFIED**

32 PAGES

DIAGRAMS

2 pages

WITHHELD IAW FOIA

5 USC 552 (b)(1)

EO 12958, 1.4.a., e., and g.

PATRIOT TACTICS,
TECHNIQUES, AND
PROCEDURES

Excerpt, 3 pages

WITHHELD IAW FOIA

5 USC 552 (b)(2), (b)(5)



DEPARTMENT OF THE ARMY
COALITION LAND FORCES COMPONENT COMMAND
UNITED STATES ARMY FORCES CENTRAL COMMAND
THIRD UNITED STATES ARMY
APO AE 09304

REPLY TO:
ATTENTION OF:

AFRD-JA

17 June 2003

MEMORANDUM FOR Commander, US Central Command (ATTN: CCJA), CFH, Doha, Qatar
APO AE 09365

5
SUBJECT: [REDACTED]

5
[REDACTED]

5/3/6
2. The investigation is forwarded to you for your review and retention. In the event you have any questions regarding this investigation, please contact [REDACTED] CFLCC at DSN 438-8006.

DAVID D. MCKIERNAN
Lieutenant General, USA
Commanding



DEPARTMENT OF THE ARMY
COALITION FORCES LAND COMPONENT COMMAND
UNITED STATES ARMY FORCES CENTRAL COMMAND
THIRD UNITED STATES ARMY
APO AE 09304

PRELIMINARY LEGAL REVIEW
CFLCC

3/6

3/6

3/6

2/5



DEPARTMENT OF THE ARMY
32d ARMY AIR AND MISSILE DEFENSE COMMAND
COALITION FORCES LAND COMPONENT COMMAND
UNITED STATES ARMY FORCES CENTRAL COMMAND
APO, AE 09889

AFVL-CG

5 June 2003

MEMORANDUM THRU

Commander, Coalition Forces Land Component Command, APO AE 09889
Commander, Coalition Forces Air Command, 524 Shaw Dr, Shaw Air Force Base, SC 29152

DJM 23 Jun 03 *Con WH*

FOR Commander, United States Central Command, Mac Dill AFB, Tampa, FL 33621-5101

SUBJECT: Investigation of Downing of Navy F/A-18 by Patriot Missile System

Attached for your review is the original investigation conducted by a Board of Officers into the shoot-down of a Navy F/A-18 aircraft on 22 April 2003. The Board arrived at four sets of Findings and Recommendations. I approved the first, third and fourth sets of Findings and Recommendations, with additions, and disapproved the second set of Findings and Recommendations, substituting an alternative set of Findings and Recommendations.

2. The finding and recommendations I approved dealt with the theory of the cause of [REDACTED] radar tracks and how the [REDACTED] tracks resulted in the engagement of the F/A-18, and with the shortcomings of the training of Patriot operators in light of the increasingly congested electronic battlefield.
3. The Findings and Recommendations I did not approve found a basis for and recommended adverse administrative action in the form of a General Officer Memorandum of Reprimand (GOMOR) directed to the officer who actually enabled the battery to engage the aircraft. It would be inappropriate to reprimand this officer for failing to take actions that were specifically identified as having not been adequately taught or trained, with the further complications resulting from the operational environment.
4. Additionally we will take the following actions:
 - a. Request Department of the Army support in addressing appropriate modifications to the software and training simulation deficiencies highlighted in the report.
 - b. Request the Commander, Joint Forces Command support appropriate changes to joint and combined air and air defense operations, training, exercises and doctrine to overcome deficiencies identified in this report in addition to other Operation Iraqi Freedom lessons learned.

IF MORE SPACE IS REQUIRED IN FILLING OUT ANY PORTION OF THIS FORM, ATTACH ADDITIONAL SHEETS

SECTION I - APPOINTMENT

Appointed by HOWARD B. BROMBERG, BG, USA; DEPUTY AREA AIR DEFENSE COMMANDER
(Appointing authority)

on 11 APRIL 03 (Date) (Attach inclosure 1: Letter of appointment or summary of oral appointment data.) (See para 3-15, AR 15-6.)

SECTION II - SESSIONS

The (investigation) (board) commenced at CAMP DOHA, KUWAIT at 1800 HRS
(Place) (Time)

on 11 APRIL 03 (Date) (If a formal board met for more than one session, check here . Indicate in an inclosure the time each session began and ended, the place, persons present and absent, and explanation of absences, if any.) The following persons (members, respondents, counsel) were present: (After each name, indicate capacity, e.g., President, Recorder, Member, Legal Advisor.)

- [REDACTED] PRESIDENT
- [REDACTED] MEMBER
- [REDACTED] MEMBER
- [REDACTED] TECHNICAL ADVISOR
- [REDACTED] TECHNICAL ADVISOR

The following persons (members, respondents, counsel) were absent: (Include brief explanation of each absence.) (See paras 5-2 and 5-8a, AR 15-6.)

The (investigating officer) (board) finished gathering/hearing evidence at 1600 HRS on 21 APRIL 2003
(Time) (Date)
and completed findings and recommendations at 1600 HRS on 23 APRIL 2003
(Time) (Date)

SECTION III - CHECKLIST FOR PROCEEDINGS

A. COMPLETE IN ALL CASES		YES	NO ^{1/}	NA ^{2/}
1.	Inclosures (para 3-15, AR 15-6)			
	Are the following inclosed and numbered consecutively with Roman numerals: (Attached in order listed)			
	a. The letter of appointment or a summary of oral appointment data?	X		
	b. Copy of notice to respondent, if any? (See item 9, below)			X
	c. Other correspondence with respondent or counsel, if any?			X
	d. All other written communications to or from the appointing authority?	X		
	e. Privacy Act Statements (Certificate, if statement provided orally)?	X		
	f. Explanation by the investigating officer or board of any unusual delays, difficulties, irregularities, or other problems encountered (e.g., absence of material witnesses)?			X
	g. Information as to sessions of a formal board not included on page 1 of this report?			X
	h. Any other significant papers (other than evidence) relating to administrative aspects of the investigation or board?			

FOOTNOTES: ^{1/} Explain all negative answers on an attached sheet.
^{2/} Use of the NA column constitutes a positive representation that the circumstances described in the question did not occur in this investigation or board.

		YES	NO	NA
2	Exhibits (para 3-16, AR 15-6)			
	a. Are all items offered (whether or not received) or considered as evidence individually numbered or lettered as exhibits and attached to his report?	X		
	b. Is an index of all exhibits offered to or considered by investigating officer or board attached before the first exhibit?	X		
	c. Has the testimony/statement of each witness been recorded verbatim or been reduced to written form and attached as an exhibit?	X		
	d. Are copies, descriptions, or depictions (if substituted for real or documentary evidence) properly authenticated and is the location of the original evidence indicated?	X		
	e. Are descriptions or diagrams included of locations visited by the investigating officer or board (para 3-6b, AR 15-6)?	X		
	f. Is each written stipulation attached as an exhibit and is each oral stipulation either reduced to writing and made an exhibit or recorded in a verbatim record?	X		
	g. If official notice of any matter was taken over the objection of a respondent or counsel, is a statement of the matter of which official notice was taken attached as an exhibit (para 3-16d, AR 15-6)?			X
3	Was a quorum present when the board voted on findings and recommendations (paras 4-1 and 5-2b, AR 15-6)?	X		
B. COMPLETE ONLY FOR FORMAL BOARD PROCEEDINGS (Chapter 5, AR 15-6)				
4	At the initial session, did the recorder read, or determine that all participants had read, the letter of appointment (para 5-3b, AR 15-6)?			
5	Was a quorum present at every session of the board (para 5-2b, AR 15-6)?			
6	Was each absence of any member properly excused (para 5-2a, AR 15-6)?			
7	Were members, witnesses, reporter, and interpreter sworn, if required (para 3-1, AR 15-6)?			
8	If any members who voted on findings or recommendations were not present when the board received some evidence, does the inclosure describe how they familiarized themselves with that evidence (para 5-2d, AR 15-6)?			
C. COMPLETE ONLY IF RESPONDENT WAS DESIGNATED (Section II, Chapter 5, AR 15-6)				
9	Notice to respondents (para 5-5, AR 15-6):			
	a. Is the method and date of delivery to the respondent indicated on each letter of notification?			
	b. Was the date of delivery at least five working days prior to the first session of the board?			
	c. Does each letter of notification indicate --			
	(1) the date, hour, and place of the first session of the board concerning that respondent?			
	(2) the matter to be investigated, including specific allegations against the respondent, if any?			
	(3) the respondent's rights with regard to counsel?			
	(4) the name and address of each witness expected to be called by the recorder?			
	(5) the respondent's rights to be present, present evidence, and call witnesses?			
	d. Was the respondent provided a copy of all unclassified documents in the case file?			
	e. If there were relevant classified materials, were the respondent and his counsel given access and an opportunity to examine them?			
10	If any respondent was designated after the proceedings began (or otherwise was absent during part of the proceedings):			
	a. Was he properly notified (para 5-5, AR 15-6)?			
	b. Was record of proceedings and evidence received in his absence made available for examination by him and his counsel (para 5-4c, AR 15-6)?			
11	Counsel (para 5-6, AR 15-6):			
	a. Was each respondent represented by counsel?			
	Name and business address of counsel:			
	(If counsel is a lawyer, check here <input type="checkbox"/>)			
	b. Was respondent's counsel present at all open sessions of the board relating to that respondent?			
	c. If military counsel was requested but not made available, is a copy (or, if oral, a summary) of the request and the action taken on it included in the report (para 5-6b, AR 15-6)?			
12	If the respondent challenged the legal advisor or any voting member for lack of impartiality (para 5-7, AR 15-6):			
	a. Was the challenge properly denied and by the appropriate officer?			
	b. Did each member successfully challenged cease to participate in the proceedings?			
13	Was the respondent given an opportunity to (para 5-8a, AR 15-6):			
	a. Be present with his counsel at all open sessions of the board which deal with any matter which concerns that respondent?			
	b. Examine and object to the introduction of real and documentary evidence, including written statements?			
	c. Object to the testimony of witnesses and cross-examine witnesses other than his own?			
	d. Call witnesses and otherwise introduce evidence?			
	e. Testify as a witness?			
	f. Make or have his counsel make a final statement or argument (para 5-9, AR 15-6)?			
14	If requested, did the recorder assist the respondent in obtaining evidence in possession of the Government and in arranging for the presence of witnesses (para 5-8b, AR 15-6)?			
15	Are all of the respondent's requests and objections which were denied indicated in the report of proceedings or in an inclosure or exhibit to it (para 5-11, AR 15-6)?			
FOOTNOTES: 1) Explain all negative answers on an attached sheet. 2) Use of the N/A column constitutes a positive representation that the circumstances described in the question did not occur in this investigation or board.				

SECTION IV - FINDINGS (para 3-10, AR 15-6)

The (investigating officer) (board), having carefully considered the evidence, finds:
SEE THE ATTACHED MEMORANDUM CONTAINING THE BOARD'S FINDINGS.

SECTION V - RECOMMENDATIONS (para 3-11, AR 15-6)

In view of the above findings, the (investigating officer) (board) recommends:
SEE THE ATTACHED MEMORANDUM CONTAINING THE BOARD'S RECOMMENDATIONS.

THIS REPORT OF PROCEEDINGS IS COMPLETE AND ACCURATE. (If any voting member or the recorder fails to sign here or in Section VII below, indicate the reason in the space where his signature should appear.)

3/6

(Recorder)



3/6

(Member)

3/6

(Member)

(Member)

SECTION VII - MINORITY REPORT (para 3-13, AR 15-6)

To the extent indicated in Inclosure _____, the undersigned do(es) not concur in the findings and recommendations of the board. (In the inclosure, identify by number each finding and/or recommendation in which the dissenting member(s) do(es) not concur. State the reasons for disagreement. Additional/substitute findings and/or recommendations may be included in the inclosure.)

(Member)

(Member)

SECTION VIII - ACTION BY APPOINTING AUTHORITY (para 2-3, AR 15-6)

The findings and recommendations of the (investigating officer) (board) are (approved) (disapproved) (approved with following exceptions/ substitutions) (If the appointing authority returns the proceedings to the investigating officer or board for further proceedings or corrective action, attach that correspondence (or a summary, if oral) as a numbered inclosure.)

"SEE ATTACHED"

3/6

3/6

W.B. B...
BG, USA

SECTION VIII - ACTION BY APPOINTING AUTHORITY (para 2-3, AR 15-6)

I approve Finding and Recommendation 1 (Paragraphs 7.a.i. and ii), adding the following additional sentences to Recommendation 1: "The Department of the Army should direct the Lower Tier Air Defense Project Office (LTPO) to review and make changes to Patriot

2/5

[REDACTED]

Lastly, LTPO, CG, USAADSCH and CG, 32d AAMDC should review and recommend changes as appropriate to firing doctrine and joint air space management based on potential operational risk when employing the PAC 3 active seeker in a dense joint battle space against both cruise and ballistic missiles."

3/6

I disapprove Finding 2 (Paragraph 7.b.i.) and substitute the following Finding: "A training deficiency, resulting from both institutional and operational training methods, resulted in the Tactical Director, [REDACTED] not having the appropriate skills to optimally perform in an intense wartime environment. This training deficiency coupled with the operational environment [REDACTED] contributing factors to the tragic loss of LT White. It is evident from the Board's investigation that additional institutional and operational study and training development must be accomplished to achieve the appropriate level of training required for optimal air defense operations in the dense Joint Battlespace."

2/6

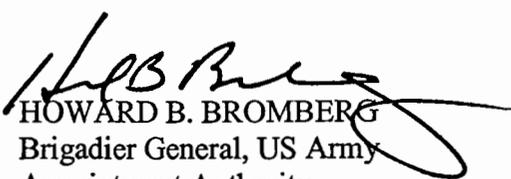
3/6

I disapprove Recommendation 2 (Paragraph 7.b.ii.), and substitute the following Recommendation: [REDACTED] and his crew should not receive disciplinary action when the Board identified clear training and system deficiencies that were significant contributing factors to the engagement of this aircraft. Nonetheless, [REDACTED] and his crew should be recertified to ensure they are fully confident in their capabilities after this tragic event".

3/6

I approve Finding and Recommendation 3 (Paragraphs 7.c.i. and ii), adding the following additional sentence to Recommendation 3: "CG, USAADSCH, in coordination with CG, 32d AAMDC, should review operational and institutional training and make appropriate changes to increase operator knowledge, awareness, and qualification standards."

I approve Finding and Recommendation 4 (Paragraphs 7.d.i. and ii), adding the following additional sentence to Recommendation 4: "CG 32d AAMDC requests support from Commander, JFCOM, to examine and change, as necessary, risk mitigation and procedural control measures for joint and combined air and air defense training and operational TPPs, based upon this and other fratricides during Operation Iraqi Freedom.


HOWARD B. BROMBERG
Brigadier General, US Army
Appointment Authority

(u)



32d ARMY AIR AND MISSILE DEFENSE COMMAND
COALITION FORCES LAND COMPONENT COMMAND
UNITED STATES ARMY FORCES CENTRAL COMMAND
APO, AE 09889

REPLY TO
ATTENTION OF:

PRELIMINARY LEGAL REVIEW

3/6

3/6

2/5

P-2 PRELIMINARY LEGAL REVIEW

3/6

3/6

3/6

3/

2/5

EXECUTIVE SUMMARY

1. (U) Following the loss of a USN F/A 18, call sign [REDACTED] and the death of its pilot, a Board of Officers conducted an informal investigation under the procedures of Army Regulation 15-6. The President of the Board was [REDACTED], and Board membership included a U.S. Naval Officer and a U.S. Air Force Officer, as well as technical advisors. The investigation was conducted in parallel with a US Army Safety Investigation Board.

2. (U) WHAT HAPPENED

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

fratricide of a Tornado GR4 as an ARM and subsequent remedial measures. Throughout the theater, operators had been exposed to irregularities they had not seen in their training, they responded by developing techniques to evaluate TBM tracks, and these techniques were disseminated both formally and informally. For example, this Battalion published a checklist of speed and altitude characteristics of each threat TBM classification.

iii.

c. (U) The airspace during this operation was extremely crowded. To mitigate all the risk associated with friendly aircraft in the vicinity of a PATRIOT unit during the engagement of a TBM would unacceptably limit close air support and access to kill boxes. However, choosing to not use any procedural means to mitigate risk associated with highly lethal weapons working in the same dense area is not an acceptable solution either. The procedural means that once served us so well in years past for a war envisioned to be much more complex and dynamic are still viable and are an effective means to mitigate risk.

4.

a. (U) PATRIOT Weapons System

1.

ii.

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

b. (U) Operator Performance:

i. (U) Findings:

ii. (U) Operator Performance Recommendations: The Board recommends that

c. (U) PATRIOT Air Defense Training:

i. (U) Findings: The Board found gaps in the training of F-52 ADA PATRIOT crews that reflect significant deficiencies in the skills required to operate such a lethal weapon system. These gaps include (but are not limited to): threat knowledge, in-depth understanding of PATRIOT launcher modes, interrogation/classification methods, standardized crew briefs and debriefs, degraded system operations, target correlation procedures, and the crew coordination elements of task sharing/prioritization, and battlespace awareness.

ii. (U) PATRIOT Air Defense Training Recommendations: The Board recommends a complete review of all aspects of the PATRIOT system training program, unit and other applicable SOPs, personnel and unit qualification/certification, exercise scenarios, employment doctrine and operational procedures. Air Defense must relook the level of expertise required to operate such a lethal weapon system on the modern battlefield. The first step is the most challenging. The culture of the PATRIOT community must be changed. Our collective military fascination with, and dependence on technology has increased our lethality by an order of magnitude, but as in this case, has also effectively removed the human from the most critical part of the decision loop. The majority of the personnel the Board interviewed were trained to service and monitor "the system" and trust it without question. The training program and operational procedures must recognize that complex, software-based technology is a tool for the war fighter that should not be viewed as a substitute for the informed judgment of a human.

d. (U) Airspace Management:

i. (U) Findings: Had there been procedural measures in place such as a missile engagement zone or restricted operating zone around F-52 ADA, DOGWOOD flight may not have been so close to a PATRIOT missile battery thus preventing the immediacy of the threat.

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ii. (U) Recommendations: Joint Forces must still be required to implement and practice procedural methods of mitigating risk – especially since the battlefield is the only real proving ground for our more complex, highly technologically based systems.

5. Immediately following the incident, changes were implemented via the Special Instructions (SPINS) concerning PATRIOT ROE and IFF procedures.

Page
[REDACTED]

1/2 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1. (U) CENTCOM Guidance
- i. Deny Regime use of Iraqi TV to command and control military and security forces
 - ii. Suppress TBM threat
 - iii. [REDACTED]
 - iv. Support JSOTF-N operations

2

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

d. [REDACTED]

e. [REDACTED]

f. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

g. [REDACTED]

h. [REDACTED]

i. [REDACTED]

j. [REDACTED]

k. [REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

5. (U) Background:

a.

[REDACTED]

b. (U) PATRIOT System Description and Crew Training Requirements

[REDACTED]

ii.

iii.

2

1/2 [REDACTED]
REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

iv. (U) Crew Training/Certification Standards Overview

- 2
- (1) (U) Certification Process (Annex AA). PATRIOT crews work toward attaining three levels of certification IAW the PATRIOT Combined Arms Training Strategy and Unit SOPs. Each of these certification levels includes simulated air battles that are highly intense. The simulated air battles teach crews to react quickly, engage early, and trust their system [REDACTED] Each level and the required standard are summarized below.
- (2) (U) Table IV Certification (Individual Level): Table IV certification for the Tactical Control Officer (TCO) and the Tactical Control Assistant (TCA) consists of two elements: 1) a comprehensive written examination and 2) a practical exercise. The Table IV certification for the crew's communication specialist is accomplished via the practical exercise. Table IV certification means the individual has demonstrated the basic skills necessary to begin training with their assigned crew.
- (3) (U) TCOs spend nine weeks in the Air Defense Artillery School studying the PATRIOT weapon system, tactics, techniques, and procedures. They are tested throughout that nine-week period. The school's objective is to fully prepare the officer for a Table IV certification after arrival at his first unit of assignment. TCA training in the Air Defense School is similar. The communication specialist is not involved in the tactical employment of the system. His job is to ensure all the communication equipment is operational.
- (4) (U) After arrival to the unit, TCO's and TCA's spend some amount of time (normally 30 days) studying unit specific tactics, techniques, and procedures normally governed by the unit's unique mission. They also spend a great deal of time in the Engagement Control Station (ECS) fighting simulated air battles designed to be representative of threat situations they may encounter.
- (5) (U) Once ready, the next higher level of command (the PATRIOT Battalion Headquarters) administers a written test. Assuming that test is passed, the Battalion-level Tactical Director administers a practical test involving power-up and initialization procedures and an air battle. If for any reason the standard is not met, retraining is conducted until the standard of proficiency can be demonstrated.
- (6) (U) Table VIII Certification (Crew Level): The TCO, TCA, and the communication specialist then continue their collective training working toward a Table VIII certification. Table VIII certification is the minimum level required for conducting combat operations. The train-up towards a Table VIII certification focuses on the crew learning to work as a team and on increasing their proficiency to respond to ever more complex situations. It includes demonstrating the ability to prepare the equipment for movement, setting the equipment up, putting the equipment into operation, and exercising control within the framework of a more complex air battle. When ready, the crew undergoes a Table VIII certification by the Battalion. Table VIII certification means the crew has demonstrated the skills
- 1/2 [REDACTED]

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necessary to put the PATRIOT weapon system into operation and successfully demonstrate the air battle skills to counter a moderately difficult threat;

(7) (U) Table XII Certification (Fire Unit Level): The final certification level is called Table XII. Table XII requires the same type of evaluation, as does Table VIII. However, Table XII includes the challenges of difficult operating environmental conditions and their impact on the crew's ability to successfully operate the PATRIOT Fire Unit. Those conditions include, night operations, under NBC conditions, and adverse weather. This is also coupled with a more challenging air battle.

(8) (U) Battalion Tactical Directors (TDs) and Tactical Director Assistants (TDAs): TDs and TDAs are normally experienced TCOs and TCAs drawn from the battery level to the battalion level. They are required to go through a similar certification regimen as described above, tailored to reflect control of multiple batteries.

c. (U) Training level/experience of ECS crew and ICC crew. Both the ECS and the ICC crews had been certified IAW the Combined Arms Training Strategy. Both crews were relatively experienced when measured in terms of their peers. However, significant personnel turnover had occurred in the Battalion just prior to deployment resulting in the shifting of personnel to meet operational requirements. The net effect of this is the synergy developed between TD and TDA, TCO and TCA did not completely develop. However, the Board did not determine that factor to materially impact on the findings.

d. (U) Standard Operating Procedures

i.

ii.

iii.

(1)

23
2
1
2
(2)

f. (U) F/A-18 System Description and Crew Training Requirements

- i. (U) System description: The F/A-18 Hornet is a single seat fighter/attack aircraft built by McDonnell Douglas Aerospace. It is powered by two General Electric F404-400 or 402 (enhanced performance) turbofan engines with afterburners. The aircraft features a variable camber mid-wing with leading edge extensions (LEX) mounted on each side of the fuselage from the wing roots to just forward of the windshield. The twin vertical stabilizers are angled outboard 20 degrees from the vertical. The wings have hydraulically actuated leading edge and trailing edge flaps and ailerons. The twin rudders and differential stabilators are also hydraulically actuated. The speed brake is mounted on the topside of the aft fuselage between the vertical stabilizers. An electrically operated clamshell canopy encloses the pressurized cockpit. An aircraft mounted auxiliary power unit (APU) is used to start the engines. On the ground, the APU may be used to supply air conditioning or electrical and hydraulic power to the aircraft systems. The aircraft has multi-role capability and is designed to operate in the air-to-ground, air-to-air, and suppression of enemy air defense roles. It is equipped with multi-mode air-to-air and ground mapping radar. It can also be equipped with a laser spot tracker (LST) and a forward-looking infrared (FLIR) targeting system that includes a ground-targeting laser. The aircraft is equipped with an Identification Friend or Foe (IFF) system that is designed to provide a positive friend indication to airspace controllers and friendly weapon operators. The aircraft has a basic weight of about 25,000 pounds, is 56 feet long, has a 40.5-foot wingspan, and is slightly over 15 feet tall.

ii.

[REDACTED]

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[REDACTED]

iii. (U) Training level/experience of the pilots:

(1) [REDACTED]

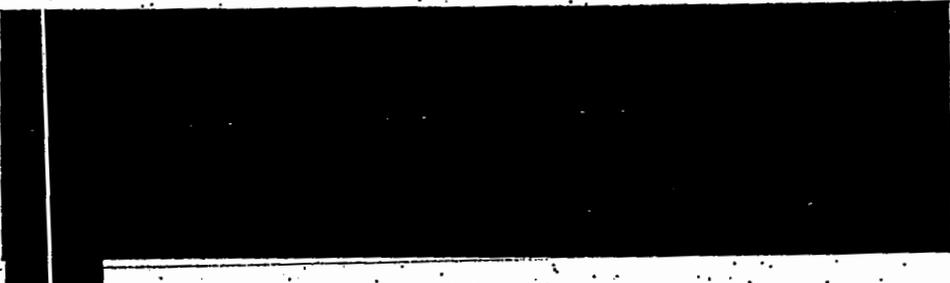
(2) [REDACTED]

iv. [REDACTED]

v. [REDACTED]

⁴(U) Naval Tactics, Techniques, and Procedures

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6. (U) WHY IT HAPPENED

a. (U) PATRIOT System Factors⁵:

- i. (U) Detailed engineering analysis was not possible due to the lack of an Embedded Data Recorder (EDR) tape. Therefore, three possible theories as to how the misclassification of this aircraft by the PATRIOT system occurred were developed based upon engineering analysis of the available data. No other theories were reasonably evident to the Board for investigation. The investigation has concluded that one of the three theories must have contributed to the misclassification of an F/A-18 ABT as a TBM. The possibility that any of the three theories occurred on 2 April 2003 was viewed as remote. However, of the three theories, theory 2 is the most probable.
- ii. (U) Utilizing Joint Tactical Information Distribution System (JTIDS) video, PATRIOT Tactical Command Station (TCS) video and the flight data recorder information within the F/A-18, the incident continues to be analyzed at the time this report is being prepared by Army and Naval engineers. The PATRIOT weapon system automatically prints hardcopy data of significant TBM engagement events and that hardcopy has been gathered for use by engineers. The investigation was also hampered by the fact that none of the four batteries had an operable EDR.

b.

i.

ii.

⁵ (U) Paragraphs 6. d. through 6. f. were provided by LTPO engineering analysis and modified only slightly for readability and consistency.

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

iii. [REDACTED]

c. [REDACTED]

i. [REDACTED]

ii. [REDACTED]

(1) [REDACTED]

(2) [REDACTED]

2

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iv.

(1)

(2)

(3)

[REDACTED]

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[REDACTED]

(4) [REDACTED]

(5) [REDACTED]

v. [REDACTED]

(1) [REDACTED]

(2) [REDACTED]

(3) [REDACTED]

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

d.

[REDACTED]

i.

[REDACTED]

ii.

[REDACTED]

c.

[REDACTED]

i.

[REDACTED]

f.

[REDACTED]

i.

[REDACTED]

[REDACTED]

(U) The Lower Tier Project Office has never received a data tape proving this has ever occurred in the PATRIOT stem.

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[REDACTED]

ii. [REDACTED]

iii. [REDACTED]

g. [REDACTED]

i. [REDACTED]

ii. [REDACTED]

iii. [REDACTED]

iv. [REDACTED]

v. [REDACTED]

vi. [REDACTED]

h. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

" (U) Friendly protection is the task of preventing the engagement of friendly aircraft. A principal duty of a Tactical Director and a Tactical Control Officer is to conduct friendly protection. This is done by continuous assessment of all tracks on their display to determine their identification status. Weapons control is articulated in terms of identification status. Friendly protection is rather like the process of continuously scanning the side and rearview mirrors while driving your car to maintain situational awareness in case something abrupt occurs.

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

o. [REDACTED]

p. [REDACTED]

i. [REDACTED]

ii. [REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

q. [REDACTED]

r. [REDACTED]

i. [REDACTED]

ii. [REDACTED]

iii. [REDACTED]

iv. [REDACTED]

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

[REDACTED]

[REDACTED]

v.

[REDACTED]

vi.

[REDACTED]

vii.

[REDACTED]

[REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

7. (U) FINDINGS AND RECOMMENDATIONS:

a. (U) PATRIOT Weapons System:

i. [REDACTED]

ii. [REDACTED]

b. (U) Operator Performance:

i. (U) Finding: We find that the Tactical Director, [REDACTED], failed in his basic duty to execute friendly protection. Based on the Board's interviews and investigation it is reasonable to conclude that [REDACTED] should have "hooked" the threatening TBM track and evaluated the track [REDACTED]. He should have noticed the other "UNKNOWN" and "FRIEND" symbology near the TBM symbology. [REDACTED] in his position as Battalion Tactical Director should have had sufficient understanding of the implications [REDACTED].

However, he had 25 more seconds to continue his evaluation of the target under engagement during which he could have ordered a "HOLD FIRE", preventing the fratricide. He failed to continue his evaluation. The information was available to [REDACTED] to recognize the target he was engaging could not have been a TBM. The target was flying the altitude and speed of an aircraft and it had a Mode 2 IFF return.

3/6
3/6
3/6
3/6 2
3/6

1/2 [REDACTED]

REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

3/6
ii. (U) Recommendation: The Board recommends that [REDACTED] receive a General Officer Letter of Reprimand for being derelict in his duties by failing to perform in an efficient manner leading to the destruction of a Navy F/A-18 and the death of its pilot [REDACTED].

c. (U) PATRIOT Air Defense Training:

2
i. (U) Finding - The Board found systemic gaps in the training of 5-52 ADA PATRIOT crews that reflect significant deficiencies in the skills required to operate such a lethal weapon system. These gaps include (but are not limited to): threat knowledge, in-depth understanding of PATRIOT launcher [REDACTED] modes, interrogation/classification methods, standardized crew briefs and debriefs, degraded system operations, target correlation procedures, and the crew coordination elements of task sharing/prioritization, and Battlespace Awareness.

2
(1) (U) The majority of the questioned TCOs and TCAs, and even the TD on watch during the F/A-18 shoot-down, had a limited understanding of the range, speed, and altitude parameters of the various classes of TBMs. Knowledge of TBM flight profiles would have triggered immediate recognition that the target's speed and [REDACTED] did not logically correspond to a TBM-D classification, reasonably leading to further target analysis, and a decision [REDACTED].

2
(2) (U) The Board found crews did not have an appreciation of the reason for keeping launchers [REDACTED].

2
(3) (U) With the exception of the senior Tactical Director (TD) in the Battalion, none of the crews interviewed displayed any in-depth understanding of PATRIOT system identification and classification software and logic. In the case of TBMs, it was assumed by crews that the system could not misclassify a TBM. Crews were not trained to an acceptable level of understanding regarding system limitations. The TCA of the firing unit, said: "I was never trained to evaluate TBMs. I just go to "operate" and wait for the system."

2
(4) (U) Although all the 5-52 ADA ICC and ECS crews have a turnover log for shift change, there is not a standardized format, or "read and initial" verification process that ensures an accurate tactical and operational situation picture for the oncoming crew. The fact that a previous crew experienced [REDACTED] TBMs in the same general area as the [REDACTED] TBM track which led to this incident was never briefed to the crews that were on duty during the incident. That information may have helped added further cues to question what the system presented to the operators.

1/2 [REDACTED]
REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

- 2
- (5) (U) Crews testified that the relatively sterile CONUS training environment provided few or no opportunities to operate with a degraded system, or be forced to deal with numerous [REDACTED] targets." As an example, the problem of [REDACTED] targets was a daily occurrence throughout the Theater of Operations, yet none of the crews had trained to respond to this challenge prior to deployment, or in exercises leading to their Table IV, VIII, and XII certifications.
 - (6) (U) It was clear from the testimony of the ICC crew that the interaction between the Battalion Tactical Operations Center and the ICC was out of synch and proved to be a major distraction to the ICC crew during a crucial period of an engagement.
 - (7) (U) The target correlation function of the PATRIOT system that could have been used to clarify the radar picture around the F/A-18 flight and the TBM target symbol was not well understood by the crews interviewed by the Board. Only three crewmembers were familiar with the correlation process, and all stated they had "not trained on correlation."
 - (8) (U) It was clear in the Board's interviews with crewmembers that there was a lack of clarity of the division of tasks between crewmembers. Significant personnel turbulence just prior to the Battalion's deployment exacerbated the problem in that crews had not had the opportunity to develop into completely cohesive teams. Crews that had been together for a few months felt comfortable in a benign environment but were not trained to prioritize tasks and function efficiently in the confusion and pressure of a combat environment. Crew coordination training also known as Aircrew Coordination Training (ACT) in military aviation, and Crew Resource Management (CRM) in the commercial airline industry, was determined to be obvious training shortfall.
 - (9) (U) The root cause of the majority of these training shortfalls is a blind faith in "the system." One result of this absolute confidence in the PATRIOT system is a mindset that the miscorrelation of an ABT as a TBM is not only unlikely, it is impossible. The training leading up to certification is comprehensive in regards to the Tactical Standard Operating Procedures (TSOP), unit TTPs, and equipment movement/set up and moderately difficult air battle problems. However, it is based on a false assumption that the PATRIOT system is infallible with regards to TBMs. The crews are taught to evaluate ABTs but to react immediately to anti-radiation missiles and TBMs by ensuring the system can execute the engagement. The focus of training is to reduce human intervention so crews react quickly, engage early and trust the system. This focus on imprinting rote behavior patterns on crews is a fatal flaw in the training system. The following quote by [REDACTED] is representative of the mindset of the personnel the Board interviewed: "I was not concerned with identification or classification, only with the missiles working."
- 3/18
- ii. (U) Recommendations — The Board recommends a complete review of all aspects of the PATRIOT system training program, unit and other applicable SOPs, personnel
- 1/2 [REDACTED]

1/2 [REDACTED]
REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

and unit qualification/certification, exercise scenarios, employment doctrine and operational procedures to increase system knowledge and operator recognition of their responsibilities to monitor and control. The Air Defense Artillery branch must re-evaluate the level of expertise required to operate such a lethal weapon system on the modern battlefield. The first step is the most challenging. The culture of the PATRIOT community must be changed. Our collective military fascination with, and dependence on technology has increased our lethality by an order of magnitude, but as in this case, has also effectively removed the human from the most critical part of the decision loop. The majority of the personnel the Board interviewed were trained to service and monitor "the system" and trust it without question. The training program and operational procedures must recognize that complex, software based technology is only a tool for the war fighter that should not be viewed as a substitute for the informed judgment of a human warrior. Specific recommendations include:

- (1) (U) A rigorous in-depth academic curriculum must be instituted that provides common baseline knowledge of all threat platforms (performance, range, speed, profile, etc.) and adversary threat tactics. The curriculum should be tailored to the experience level and organizational position of all PATRIOT crews. The curriculum should also include a comprehensive discussion of PATRIOT capabilities, limitations, and operating procedures when system degradation or EMI is suspected. The education program should also include an in-depth understanding of other users of the airspace in which PATRIOT operates. Conduct of this training should be conducted in a joint environment that would increase cross-service appreciation of doctrine and weapons system capabilities.
- (2) (U) Evaluate the adoption of a standardized shift change or "battle-handover" format and verification procedures to ensure oncoming crews receive a thorough brief on the tactical situation, PATRIOT system maintenance/readiness status, and any changes in TTPs, ROE, and SPINS that have been received during the previous shift(s).
- (3) (U) Evaluate the efficacy of adopting a training system based on the Navy's Aircrew Coordination Training (ACT) or commercial aviation's Resource Management training system. A prior mishap involving air defense systems shows the value of this approach. Blind faith in the Aegis weapon system was a critical factor in the shoot down of an Iranian airliner. Changes in Navy operational procedures and programs similar to ACT are viewed as having significantly enhanced the efficiency and procedural judgment of Aegis combat crews. The adoption of such a training system would serve to: promote standardization between crews, encourage the mentoring of inexperienced crew members and provide a forum for discussion and promulgation of operational lessons learned, TTPs and safety issues.
- (4) (U) Replicate as much as possible a complex battlespace for training using simulators and real world joint exercises to train to the worst case combination of adversary capabilities and adverse environmental conditions.

1/2 [REDACTED]
REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF F/A-18, 02 Apr 03

d. (U) (U) Airspace Management Factors:

- i. (U) Findings – Had there been procedural measures in place such as a missile engagement zone or restricted operating zone around F/5-52 ADA, DOGWOOD flight may not have flown so close to a PATRIOT missile battery.
- ii. (U) Recommendations – Joint Forces must still be required to implement and practice procedural methods of mitigating risk – especially since the battlefield is the only real proving ground for our more complex, highly technologically based systems. Procedural methods are still necessary because we still do not have a 100% reliable way to electronically establish “friendly” or “hostile”. Furthermore, the threat has advanced to such a degree that differentiating between a short range TBM, an aircraft, or an ARM, for example remains extremely difficult. Reaction time for crews is decreasing rapidly and targets are becoming stealthier. There is no time to clear crowded airspace to engage an incoming ballistic missile that may be carrying a weapon of mass destruction other than by procedural means.

8. (U) Annexes:

Annex A: Index

Annex B: Appointment Orders

Annex C: Crew Statements

Annex D: Aircrew Qualifications

Annex E: BMC4I Video Snapshots of Incident

Annex F: Communications Plan

Annex G: Air Operations Directive

Annex H: Special Instructions

Annex I: Executive Summary of Rescue Operation

Annex J: Preliminary Postulation of Engagement Event

Annex K: SAM SHORAD Tactical Order

Annex L: SAM STATUS Report

Annex M: 1-3 April 2003 5-52 Log

Annex N: Fragmentary Orders

Annex O: Movement Warning/Execution/Completion Reports

Annex P: PAC 3 Lethality

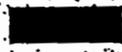
Annex Q: Various Analysis Data Used During Investigation

Annex R: F/5-52 Hard Copy Data

Annex S: A/5-52 Hard Copy Data

Annex T: 5-52 ICC Tabular Entries

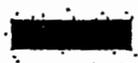
1/2



REPORT OF INVESTIGATION: PATRIOT SHOOT-DOWN OF E/A-18, 02 Apr 03

- Annex U: E/5-52 Tabular Entries
- Annex V: E/5-52 TWUD Printout
- Annex W: E/5-52 Baseline Printout
- Annex X: 5-52 [Redacted] Track History
- Annex Y: E/5-52 Hardcopy of IFF responses
- Annex Z: Digital Data of various Surveillance Sources
- Annex AA: PATRIOT Combined ARMS Training Strategy
- Annex AB: Weather Data

1/2



Annex A: Index

10 pages

CLASSIFIED



[REDACTED]

DEPARTMENT OF THE ARMY
32d ARMY AIR AND MISSILE DEFENSE COMMAND
COALITION FORCES LAND COMPONENT COMMAND
UNITED STATES ARMY FORCES CENTRAL COMMAND
THIRD UNITED STATES ARMY
APO AE 09889

REPLY TO
ATTENTION OF:

S: May 2003

AFVL-CG (15-6)

11 April 2003

MEMORANDUM FOR COL [REDACTED]

SUBJECT: Investigating Officer Appointment

1. **Appointment.** You are appointed as President of a Board of Officers pursuant to Army Regulation (AR) 15-6 to conduct an informal investigation into all facts and circumstances surrounding the suspected downing on, or about, 2 April 2003 of a U.S. Navy F-18 aircraft ("Dogwood 02"), STRKFITRON 195, Carrier Air Wing Five, on board the U.S.S. Kitty Hawk (CV 63), by a Patriot missile fired by a U.S. Army air defense unit. This is a "legal investigation" as envisioned by DoDD 6055.7, para E4.7. This investigation is the primary duty for you and takes precedence over all other duties assigned. Captain [REDACTED]

[REDACTED] Colonel [REDACTED] are designated as the remaining board members.

2. (U) **Legal Orientation.** Before you begin your investigation, you must receive a briefing from your legal advisor, COL [REDACTED], Office of the Staff Judge Advocate, Coalition Forces Land Component Command, [REDACTED]. You must have your legal briefing completed no later than 13 April 2003. You will consult with COL [REDACTED] regarding all aspects of this investigation, including developing an investigative plan, determining whether United States witnesses need to be advised of their rights under the UCMJ, Article 31 or the Fifth Amendment, special procedures for interviewing Department of Defense civilian employees, and preparing findings and recommendations. COL [REDACTED] will provide you with the forms and regulations necessary for you to complete your investigation.

3. (U) **Procedures.** While the manner of conduct of the board will be as directed by you, you should conduct this investigation using the procedures outlined in AR 15-6. No individual has been named as a respondent at this time. All witnesses will be sworn prior to their interview. You are to thoroughly document all witness interviews in writing, preferably on a DA Form 2823 (Sworn Statement). You will interview all witnesses in person, if practical. If in the course of your investigation you come to suspect that certain United States citizens may have committed criminal conduct, you must advise them of their rights under Article 31, UCMJ, or the Fifth

[REDACTED]

AFVL-CG

SUBJECT: Investigating Officer Appointment

Amendment, U.S. Constitution, as appropriate. Witness waivers of their Article 31 or Fifth Amendment rights will be documented on a DA Form 3881 (Rights Warning Procedure/Waiver Certificate). In addition, you may need to provide a witness with a Privacy Act statement before you solicit any information. You are to maintain a daily written chronology of your actions on this investigation. You are strongly encouraged to consult your legal advisor if you have any questions regarding these procedures.

4. **Evidence.** Your investigation will obtain and preserve all available evidence for use in litigation, claims, and disciplinary actions. To this end, all physical evidence (e.g., aircraft video and audio recordings) will be immediately secured, preserved, and provided to the investigating board upon request.

5. **Specific Areas for Inquiry.** The report of investigation must include, but is not limited to, findings on the following issues:

a. Establish a detailed timeline of the events of 2 April 2003 that lead to the loss of the F-18 aircraft, tracking the actions of both the aircraft and E Battery, 5th Battalion of the 52 Air Defense Artillery Regiment, attached to the 31st Air Defense Artillery Brigade, in support of V Corps operations, which possibly downed this aircraft.

b. A comprehensive review of all factors relating to the actions of E Battery, 5-52 ADA, that you believe may have contributed to the possible downing of this aircraft. Provide a review, where appropriate, of technical training of unit members, tactical employment of the unit, the established doctrine for siting of this type of unit, the established doctrine for engagement of aerial targets by this type of unit, unit Standard Operating Procedures (SOP) for tactical employment, performance and readiness of unit members, performance of unit weapons systems (to include: radar systems, communications systems internal and external to the unit, graphic display systems used to convey information to the Tactical Control Officer and section of the unit, and the missile systems in use by the unit), the Special Instructions (SPINS) and the Rules for Engagement (ROE) used by this unit.

c. A complete review of any factors relating to the employment of the F-18 aircraft that you believe contributed to its possible downing. Provide a review, where appropriate, of technical training of the aircrew, tactical employment of the aircraft, coordination of air control measures for the battle space, unit Standard Operating Procedures (SOP), briefings provided to the crew, performance and readiness of crew members, performance of the aircraft systems (to include: radar systems, communications systems, anti-fratricide systems [REDACTED] to identify friendly aircraft (IFF)).

d. If you determine that the F-18 aircraft was downed by a Patriot missile fired by E Battery, 5-52 ADA, provide me with specific recommendations as to whether any unit member's

[REDACTED]

AFVL-CG
SUBJECT: Investigating Officer Appointment

actions rise to the level of negligence, dereliction, or misconduct. If fault, negligence, dereliction, or misconduct are identified, provide me with recommendations on the appropriate level of disposition.

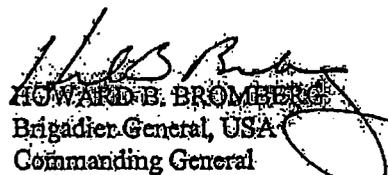
c. [REDACTED] If you determine that the F-18 aircraft was downed by a Patriot missile fired by E Battery, 5-52 ADA, provide me with specific recommendations to prevent recurrence of such events in the future, identifying systemic technical, tactical, or SPINS/ROE related deficiencies, as well as unit-specific deficiencies that must be corrected. Identify any retraining requirements for unit members.

You will consult with your legal advisor in developing your findings and recommendations. Submit your findings and recommendations on a DA Form 1574 (Report of Proceedings by an Investigating Officer/Board of Officers) to me no later than 1 May 2003. Submit any requests for modification of this suspense or the scope of your investigation to me, through your legal advisor.

6. (U) Expert Assistance. COL [REDACTED], CDR [REDACTED] CW4 [REDACTED] are appointed as technical advisors to assist you in the conduct of your investigation. If you require additional expert assistance during the course of this investigation (such as public affairs, medical, technical, or safety experts) you may request the appointment of technical advisors to provide expert testimony and assistance.

7. (U) Criminal Misconduct. If you determine through your investigation that possible criminal conduct has occurred, immediately notify your legal advisor before proceeding any further with your investigation.

8. (U) Coordination. This appointment was made after coordination with the Commander, U.S. Central Command, and the Commanding General, Coalition Forces Land Component Command. This investigation constitutes the "legal investigation" of the Commander, U.S. Central Command, and appointment is made pursuant to his delegation of authority to the Commander, Coalitional Forces Land Component Command, and a subsequent redelegation to me. All appointments to this investigation were made after securing the approval of the board member's and technical advisors' respective chains of command.


HOWARD B. BROMBERG
Brigadier General, USA
Commanding General

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 8387 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION: Korbala Iraq
2. DATE (YYYYMMDD): 2003 04 04
3. TIME: 0920
4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME
6. SSN
7. GRADE/STATUS
8. POSITION OR ADDRESS: C5152 ADA

3/6

3/6

Since the beginning of my deployment we have experienced my "spurious" tracks. My unit was one of the first to find this out. Raytheon then developed patches for the sofir ware that was supposed to fix the problem. To my knowledge they did not. On any given day I have experienced very high numbers of these spurious tracks; ICC and all units track them and determine that they are fake and tell us to let them go by. My van shifts are from 1000 to 1400 L and again at 2000 to 2200 L time very day. On April 2 I assumed duty as usual I experienced many spurious tracks I hard copy all data for my record and send the some data to the ICC. On April 3 at 20:29:48 Z time my system picked up Track #81 A TBM, ICC tracked the same track. The TBM was from my site. TBM was a high bright with a positive TLL (time to last launch) with a GIP (ground impact point) over my asset (the battery location) The TBM had a
I brought all launchers to operate. The system engaged by
The system used 2 Pac-3 missiles. The
Track 81 around 15 min later we start receiving In-Graton that we had engaged a friendly. I have provided all records to the battery commander. After the engagement I was order to bring launchers to standy.

2
2
2
2

10. EXHIBIT
11. INITIALS OF PERSON MAKING STATEMENT
PAGE 1 OF 3 PAGES

3/6

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF TAKEN AT DATED
THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

STATEMENT OF

TAKEN AT

Karbala Iraq

DATED

4 APR 03

9. STATEMENT (Continued)

Approximately 5 min after I brought the launcher down from operate mode the ICC called down a 2nd Alert and ordered us to bring Launchers back to operate. I brought all Launchers back to operate mode. Another spurious track appeared on scope and then the ICC ordered to bring all Launchers back down to stand by. I brought all Launchers back to stand by.

Q: WHAT is your job and MOS?

A: My Job is to be a TCA (Tactical Control Assistant) and I am a 14E. I have been a TCA for 4 1/2 years. My Job is to assist my TCO with siding tracks and engagements on order from the TCO or higher echelon authority. My last certification was 1 week prior to deployment. I have Table 4ed at least 4 times since being assigned to ESTSA and Table 8ed twice as many times since being assigned to ESTSA.

Q: WHAT was different about this track from the spurious tracks you have seen?

A: The majority of the spurious tracks that I have seen all come from around the 100k mark on the scope. This one was at the 25k mark. All spurious tracks show up as a low bright on the scope. This one was a high bright. I have never received Launch data from the RaF scope on spurious tracks. This one was give Launch point data. All spurious tracks do not have a (GIP) and an engageable symbol around them. This one did. On the times we have brought Launchers to operate on order from ICC on spurious tracks the system has never engaged this time it did.

Q: HAVE you ever seen on your scope any other ^{Actual} TBM that was tracked by another unit also?

A: NO, I have never been in the van and watched another unit engage a TBM while my system tracked it.

Q: EXPLAIN what safety precautions are used by the unit and BATTALION to prevent engagements of friendlies.

A: We have to follow strict criteria before bringing Launchers to operate!

INITIALS OF PERSON MAKING STATEMENT

3/6

STATEMENT OF

TAKEN AT

Karbala Iraq

DATED

4 APR 03

9. STATEMENT (Continued)

At an Alert state & all Launcher remain in standby, meaning the # safely
is on.

[REDACTED]

Q: What document(s) outline all of the engagement Criteria?
A: The TSOB (Tactical standard operation procedures) we have a copy

In the van at all time we are required to take a written exam every
6 months at the least. or if you fail an evaluation you must requalify with
a new test. Also special instructions are send down in a Frago (Fragement by
order, from the IEC all van crews are required to read all changes

Q: Is there any other information that you can provide that is
pertinent to this incident?

During the whole incident I did what I was trained to do I followed
All doctrinal and orders from the higher echelon authority. I feel that the
System needs to be evaluated and [REDACTED] so that this sort of
thing can not happen again.

END OF STATEMENT

AFFIDAVIT

I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT
WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 3. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE
BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS
STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL THROUGHTMENT.

[REDACTED]
(Signature of Person Making Statement)

WITNESSES:

Subscribed and sworn to before me, a person authorized by law to
administer oaths, this 4 day of APR 03
at Karbala IRAQ

ORGANIZATION OR ADDRESS

[REDACTED]
(Signature of Person Administering Oath)

ORGANIZATION OR ADDRESS

[REDACTED]
(Typed Name of Person Administering Oath)
[REDACTED]
(Authority To Administer Oaths)

INITIALS OF PERSON MAKING STATEMENT

[REDACTED]

PAGE 3 OF 3 PAGES

SWORN STATEMENT

For use of this form, see AR 180-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 8387 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION: Kaabala Iraq
2. DATE (YYYYMMDD): 20030404
3. TIME: 0930
4. FILE NUMBER:
5. LAST NAME, FIRST NAME, MIDDLE NAME: [REDACTED]
6. SSN: [REDACTED]
7. GRADE/STATUS: [REDACTED]
8. ORGANIZATION OR ADDRESS: E btry S/52 ADA

I, [REDACTED] WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:
On 3 APR 03 at 0030L a TBM appeared on the scope. The Icc told all units to bring their launchers to operate. 1LT [REDACTED] (TCO) and SFC [REDACTED] (TCA) did as they were directed. The system was set up in auto engagement mode for TBM's. The target was engaged with 2 missiles using the [REDACTED]. The 2 patriot missiles fired were PAC-3 missiles. The target was destroyed.

Q: What is your job and MOS?

A: 3IR, provide the van with voice and data for communication with the Icc and other units in the net. My MOS is 14E

Q: Did you have both voice and data communications to the Icc at the time of the firing?

A: Yes; both voice and data were in that's how the TCO and TCA knew to bring the launchers to operate.

Q: Did you have the communications in with TROPO on the CRG?

A: The communications were with the TROPO.

Q: How reliable has your tropo shot been at this location, both before and after the firing?

A: At this location the shot was in and I don't remember any major problems with it. before the firing the shot was solid but last night the shot was in and out for most of the day. I'm not sure who's end was having problems but later last night the shot was solid.

10. EXHIBIT:
11. INITIALS OF STATEMENT: [REDACTED]
PAGE 1 OF 3 PAGES

ADDITIONAL PAGES MUST CONTAIN THE READING "STATEMENT OF [REDACTED] TAKEN AT [REDACTED] DATED [REDACTED]"

THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

3/6

STATEMENT OF

[REDACTED] AT

Karbala, IRAQ

DATED

4 APR 03

9. STATEMENT (Continued)

Q: IS there any other information that you can provide that is pertinent to this incident?

A: All I can add is there have been alot of spurious tracks since we came to the theater. This has been happening in Kuwait before we came to Iraq. Also the TCO and TCA were just following orders from higher.

END OF STATEMENT

3/6

[REDACTED]

3/6

[REDACTED]

[REDACTED]

3/6

[REDACTED]

3/6

INITIALS OF PERSON MAKING STATEMENT

[REDACTED]

PAGE 2 OF 3 PAGES

3/6

STATEMENT OF

TAKEN AT

Vanbala, Iraq

DATED

4 APR 03

9. STATEMENT (Continued)

[Redacted Statement Content]

3/6

AFFIDAVIT

I, [Redacted], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 3. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

3/6

[Redacted Signature]

(Signature of Person Making Statement)

WITNESSES:

Subscribed and sworn to before me, a person authorized by law to administer oaths, this 4 day of APR, 2003 at Vanbala, Iraq

ORGANIZATION OR ADDRESS

[Redacted Witness Information]

(Signature of Person Administering Oath)

(Authority To Administer Oaths)

ORGANIZATION OR ADDRESS

INITIALS OF PERSON MAKING STATEMENT

[Redacted Initials]

PAGE 3 OF 3 PAGES

3/6

3/6

3/6

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION: 003 Lions, Iraq
2. DATE (YYYYMMDD): 2003 04 19
3. TIME: 1630
4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME
6. SSN
7. GRADE/STATUS
8. ORGANIZATION OR ADDRESS: HHB/5-57 ADA FORT BLESS TX 79916

I, [redacted], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:
- Please address the reasons why launchers [redacted]
The reason we have the [redacted] is so there is some human involvement in engagements. With a lethal weapon such as Patriot you need multiple checks and keeping humans involved provides another check on the system before an engagement.
- Please address what friendly protect meant to you before and at the time of the FAIB incident.
my unit was involved in a TOM mission in Iraq, Air Defense Warning for ABMs was Red which means imminent or in progress, ADW for ABTs was white which means not probable. Friendly protect in this situation weighed most heavily on the fire units and the assets they were defending. Friendly protect for aircraft was not as [redacted] high a priority due to the threat.
- Did you have any spurious TEMs that night while on shift prior to the incident?
I was on shift for only 30 min before the incident and had not seen any spurious tracks that night.
Nothing Follows

10. EXHIBIT
11. INITIALS OF PERSON MAKING STATEMENT
PAGE 1 OF 2 PAGES

THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

3/6

STATEMENT OF [REDACTED] TAKEN AT 1700 hrs DATED 19 April 2003

9. STATEMENT (Continued)

[REDACTED]

3/6

AFFIDAVIT

3/6

I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 2. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

3/6

[REDACTED]

(Signature of Person Making Statement)

3/6

WITNESSES [REDACTED]

Subscribed and sworn to before me, a person authorized by law to administer oaths, this 19 day of April, 2003 at HQ 15-SCADA BLAP

3/6

[REDACTED]

[REDACTED]

(Signature of Person Administering Oath)

3/6

ORGANIZATION OR ADDRESS

(Typed Name of Person Administering Oath)

3/6

ORGANIZATION OR ADDRESS

COL. ADA BOHRO PRESIDENT
(Authority To Administer Oaths)

3/6

INITIALS OF PERSON MAKING STATEMENT [REDACTED]

PAGE 2 OF 2 PAGES

RIGHTS WARNING PROCEDURE/WAIVER CERTIFICATE

For use of this form, see AR 190-30; the proponent agency is ODCSOPS

DATA REQUIRED BY THE PRIVACY ACT

AUTHORITY: Title 10, United States Code, Section 3012(g)
PRINCIPAL PURPOSES: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your Social Security Number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your Social Security Number is voluntary.

1. LOCATION HQB / 5-52 ADA BAGHDAD	2. DATE 18 Apr 05	3. TIME 1308	4. FILE NO.
5. NAME (Last, First, MI) [REDACTED]	8. ORGANIZATION OR ADDRESS HQ / 5-52 ADA		
6. SSN [REDACTED]	7. GRADE/STATUS [REDACTED]		

PART I - RIGHTS WAIVER/NON-WAIVER CERTIFICATE

Section A. Rights

The investigator whose name appears below told me that he/she is with the United States Army [REDACTED] and wanted to question me about the following offense(s) of which I am suspected/accused: [REDACTED]

Before he/she asked me any questions about the offense(s), however, he/she made it clear to me that I have the following rights:

- I do not have to answer any question or say anything.
- Anything I say or do can be used as evidence against me in a criminal trial.
- (For personnel subject to the UCMJ) I have the right to talk privately to a lawyer before, during, and after questioning and to have a lawyer present with me during questioning. This lawyer can be a civilian lawyer I arrange for at no expense to the Government or a military lawyer detailed for me at no expense to me, or both.

- or -

(For civilians not subject to the UCMJ) I have the right to talk privately to a lawyer before, during, and after questioning and to have a lawyer present with me during questioning. I understand that this lawyer can be one that I arrange for at my own expense, or if I cannot afford a lawyer and want one, a lawyer will be appointed for me before any questioning begins.

If I am now willing to discuss the offense(s) under investigation, with or without a lawyer present, I have a right to stop answering questions at any time, or speak privately with a lawyer before answering further, even if I sign the waiver below.

6. COMMENTS (Continue on reverse side)

Section B. Waiver

I understand my rights as stated above, I am now willing to discuss the offense(s) under investigation and make a statement without talking to a lawyer first and without having a lawyer present with me.

WITNESSES (if available)		3. SIGNATURE OF INTERVIEWEE [REDACTED]
1. NAME (Type or Print) [REDACTED]	b. ORGANIZATION OR ADDRESS AND PHONE [REDACTED]	4. SIGNATURE OF INVESTIGATOR [REDACTED]
2. NAME (Type or Print) [REDACTED]		5. SIGNATURE OF WITNESS [REDACTED]
b. ORGANIZATION OR ADDRESS AND PHONE [REDACTED]		6. ORGANIZATION OF INVESTIGATOR [REDACTED]

Section C. Non-waiver

1. I do not want to give up my rights
 I want a lawyer
 I do not want to be questioned or say anything

SIGNATURE OF INTERVIEWEE
[REDACTED]

ATTACH THIS WAIVER CERTIFICATE TO ANY SWORN STATEMENT, DA FORM 2823, SUBSEQUENTLY EXECUTED BY THE SUSPECT/ACCUSED

SWORN STATEMENT
For use of this form, see AR 180-45; the proponent agency is GOCSDPS

PRIVACY ACT STATEMENT
Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSM).
To provide commanders and law enforcement officials with means by which information may be accurately identified.
Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
Disclosure of your social security number is voluntary.

1. LOCATION <i>HQ/5-52 ADA BIAF</i>	2. DATE (YYYYMMDD) <i>2003 04 18</i>	3. TIME <i>1430</i>	4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME [REDACTED]	6. SSN [REDACTED]	7. GRADE/STATUS [REDACTED]	
8. ORGANIZATION OR ADDRESS <i>HQB/5-52 Fort Bliss, TX 79916</i>			

3/6

3/6

WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:
Was there a valid ACO used in the system on 2 Apr 03? who entered it?
To the best of my knowledge, there was a valid ACO. It [REDACTED] the TO on duty after me is the one who enters it.
Do you recall any commo loss (Data) with the engaging FLL during the engagement?
I did not notice any commo loss during the engagement.
Did you or your TOA [REDACTED] during the engagement (Before the engagement)?

No This is not part [REDACTED]
How many times in the past have you gone to or Directed battery(s) to go to operate?
I can recall one other time, once the track was determined to not be threatening, the launchers were brought to standby. (the track became low-bright)

What training or discussions were conducted at Brigade, Battalion, or Battery level regarding what IFS-ic, misclassification. Were the discussions (if any) before or after the Tornado shoot-down?
As far as I know, there was no discussion between Brigade and Battalion and Battalion to Battery was limited. we had seen the [REDACTED] before, however no guidance or restrictions were placed on the Battalion or Battery until after the Tornado shoot-down. We have not had any training time while in theater, due to the real-world mission.

Is there any crew coordination training - formal or informal regarding tasks, execution, or degraded operations?
Yes, we are trained and tested during Tables I-VIII, however [REDACTED]

10. EXHIBIT	11. INITIALS OF PERSON MAKING STATEMENT	PAGE 1 OF	PAGES
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3/6

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF [REDACTED] TAKEN AT [REDACTED] DATED [REDACTED].
THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

3/6

STATEMENT OF

[REDACTED]

TAKEN AT

HQ/552 AOA

DATED

18 Apr 03

9. STATEMENT (Continued)

- What is the role of the TD?
Friendly Protect for both aircraft and swordsmen units. Also the link between ID & Eng Authority and the Batteries.

- What is the division of duties between TD & TDA?
Both the TD and TDA interrogate the track and the TDA makes suggestions or points out facts so the TD can make a well-informed decision.

- Describe in detail each action, thought, and direction you did during the incident.

2

The threat was a Frog-7, which is a short-range TBM. We were at Air Defense Warning Red, which means an attack was imminent or in progress, and the [REDACTED] which Echo Battery was defending. Due to these facts, I was prepared for the imminent attack. It came at 1230L 2 Apr 03. A high-white TBM appeared on scope. At this point, I wanted to interrogate it and ensure it was a real TBM. Before I had a chance to hook it, a GIP Box appeared indicating the TBM would land on Echo/5-52's Site. At this point I was only thinking self-defense for Echo and ordered them to bring their launchers to operate. I thought even if the [REDACTED] then [REDACTED]

2
2
2

A TBM with [REDACTED] in the [REDACTED]. I ensured Echo brought their launchers to operate and tried to get a hold of higher echelon units. The TBM was engaged and I was able to make a hard copy of the track Amp Data. I thought we had just engaged a TBM until a second TBM appeared on scope out of the impact point. I immediately looked the second track and noticed the speed and altitude and realized it was not a TBM. I directed all units to bring their launchers to stand by and tried to get information on the track we had engaged.

2
2

- How did you evaluate the TBM?
I evaluated it by seeing if it was [REDACTED] or [REDACTED] and then if it had a [REDACTED], and then if it was automatically engaged.

3/6

INITIALS OF PERSON MAKING STATEMENT

[REDACTED]

PAGE 2 OF 4 PAGES

3/6

STATEMENT OF

[REDACTED]

TAKEN AT

HQ/5-52 AOA

DATED

18 Apr 03

9. STATEMENT (Continued)

What did you see on scope and around where the TBM track popped to?
I do recall seeing other tracks around or near the TBM

What was the difference between other [REDACTED] TBMs and this TBM?
The engaged TBM was not [REDACTED] & had high-bright TBM symbology and produced GIP box [REDACTED] tracks have always come up as low-bright

Are you supposed to look a track and evaluate it?
No part of the Search ready for action drill requires the operator to look and evaluate a TBM. A TBM on scope is self defense in war or peace time, and higher echelon approval is not required to Engage

At what point did you look the track
During the Engagement

Why did you not Engage the second TBM?
I was able to get a good look at the track and follow its flight path because of this I knew it was not a TBM but a misclassified track

Did you do radar registration? Were all units onto Engage and for how long?

All units were onto Engage for at least a week except B/5-52 who had not gotten to their new site earlier that day and A/6-52, who had just engaged in B/5-52's old spot. I do not know what you mean by radar registration

AFFIDAVIT

I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE [REDACTED]. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

(Signature of Person Making Statement)

WITNESSES:

Subscribed and sworn to before me, a person authorized by law to administer oaths, this [REDACTED] day of [REDACTED] at [REDACTED]

(Signature of Person Administering Oath)

(Typed Name of Person Administering Oath)

(Authority To Administer Oath)

ORGANIZATION OR ADDRESS

ORGANIZATION OR ADDRESS

INITIALS OF PERSON MAKING STATEMENT

[REDACTED]

PAGE 3 OF 4 PAGES

3/6

3/6

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is OCSOP3

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1993 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION: KARBALA, IRAQ
2. DATE (YYYYMMDD): 2003/03/04
3. TIME: 0920
4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME
6. SSN
7. GRADE/STATUS
8. ORGANIZATION OR ADDRESS: EIS-52 ADA

I, [redacted], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

On 3 APR 03 at 20:29:48Z, 0029L time a TBM appeared at [redacted] Range from my units location. The track appeared as a high-bright TBM with a Ground Impact Point (GIP) and positive Time to last launch (TL). The TBM had an assigned threat category (ATC) of 2 on asset 1, our asset. The ICC ordered my unit to bring launchers to operate. The TBM was Not Processed for Engagement (NOTPR) under the Engagement Status, but the system engaged the TBM after the launchers were placed into operate. The TBM had an engaged symbol, a solid line, on "it" when we heard the missiles fire and watched them intercept the target. Intercept occurred at 20:30:42. The missiles were launched from LS6, a PAC 3 launcher. 2 PAC3 Missiles were fired. LS6 then had a missile hazard alert after the engagement. We notified the CP and Hotcrew. It was determined that a card inside the launcher was damaged during the launch, resulting in a mis-fire status. The ICC congratulated us on the engagement.

Our EDR (Embeded Data Recorder) has been inoperable since 3 MAR 03. The system was not being jammed and no other aircraft were in the range of the TBM. All other aircraft were at [redacted] Range. The last time the system was rebooted prior to the engagement was 021130L APR 03 when the system was emplaced. No maintenance time was given prior to the launch at our current location. The Radar skroud is fully mission capable. A Baseline and TWU had not been performed on the system due to the absense of maintenance time.

10. EXHIBIT
11. INITIALS OF PERSON MAKING STATEMENT
PAGE 1 OF 4 PAGES

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF [redacted] TAKEN AT [redacted] DATED [redacted]

THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

3/6
STATEMENT OF

TAKEN AT Kerkala, Iraq

DATED 4 APR 03

B. STATEMENT (Continued)

The time from detection to auto engagement and interception of the TBM was 54 sec.

Approximately 15 minutes after the engagement a message came from outside the Engagement Control Station that an F18 or helicopter had been reported missing. I asked ICC and the Tactical Director told us he hadn't heard anything yet. He told us that our crew did everything we were supposed to do.

We had experienced spurious tracks prior to the engagement and after the engagement. They classified as low-bright and highbright TBMs on the scope, but ^{did} not have GIPs or engageable statuses. My crew has experienced spurious tracks since we assumed the PAC 2 MEF at Camp New Jersey in FEB 03. On our shift on 3 APR 03 from 2200-0200 4 APR 03 we experienced 7 spurious tracks in 4 hours.

Immediately after the engagement, ICC ordered us to bring our launchers out of operate. After that, they told us of a SCUD launch message, with a [redacted] inbound on our position. ICC ordered us to bring our launchers back ~~into~~ operate. The ICC then told us the message was wrong, and to bring the launcher out of operate.

The ICC and C/2-1 said over the party line that they all saw the TBM on scope.

I am the Tactical Control Officer of [redacted] E/5-S2 ADA. I am the senior TCO and Battery Trainer. I am responsible for the training of my crew and the other Air Defense Crews in the Battery. It is my responsibility to control the operations of my crew in all Air Defense Operations. As a TCO it is my job to monitor the all friendly protection of my assigned assets. I relay orders from the ICC and send them all information on my ECS's role and actions on [redacted] the battlefield. I have Table Eight Certified six times with different crews within the Battalion. I certified with my current crew approximately one week before deployment, after I trained the two other crews in the battery and they certified!

INITIALS OF PERSON MAKING STATEMENT

3/6
PAGE 2 OF 4 PAGES

3/6

STATEMENT OF [REDACTED] TAKEN AT Karbala, Iraq DATED 4 APR 03

B. STATEMENT (Continued)

I served as the chief instructor on the Mobile Training Team sent to train Kuwait fire Unit 5, resulting in 12 ECS crew certifications. I served as a Tactical Director prior to being assigned to E/S-52 for deployment.

Q: Explain what safety precautions are used by the unit and battalion to prevent engagement of friendlies.

A: Launchers are not brought to operate without direction of the ICC or Engagement Authority. We were directed not to engage any aircraft in theater, only TBMs and ARMs. Friendly aircraft have IFF/SIF Mode and Code responses. These codes are loaded into our system and Radar specifically Mode 1 and Mode 4 Codes are loaded into the system daily.

Q: Had Maintenance been conducted on system prior to your movement to Karbala?

A: Yes, prior to March Order on the 1 APR 03, at 1100 HRS. A Baseline was conducted. Two hours of Maintenance time had been given by the ICC.

[REDACTED]

2

Q: Is there any other pertinent information about this incident that you would like to add?

AFFIDAVIT
I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE [REDACTED]. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

WITNESSES:

ORGANIZATION OR ADDRESS

ORGANIZATION OR ADDRESS

(Signature of Person Making Statement)

Subscribed and sworn to before me, a person authorized by law to administer oaths, this _____ day of _____ at _____

(Signature of Person Administering Oath)

(Typed Name of Person Administering Oath)

(Authority To Administer Oath)

INITIALS OF PERSON MAKING STATEMENT [REDACTED]

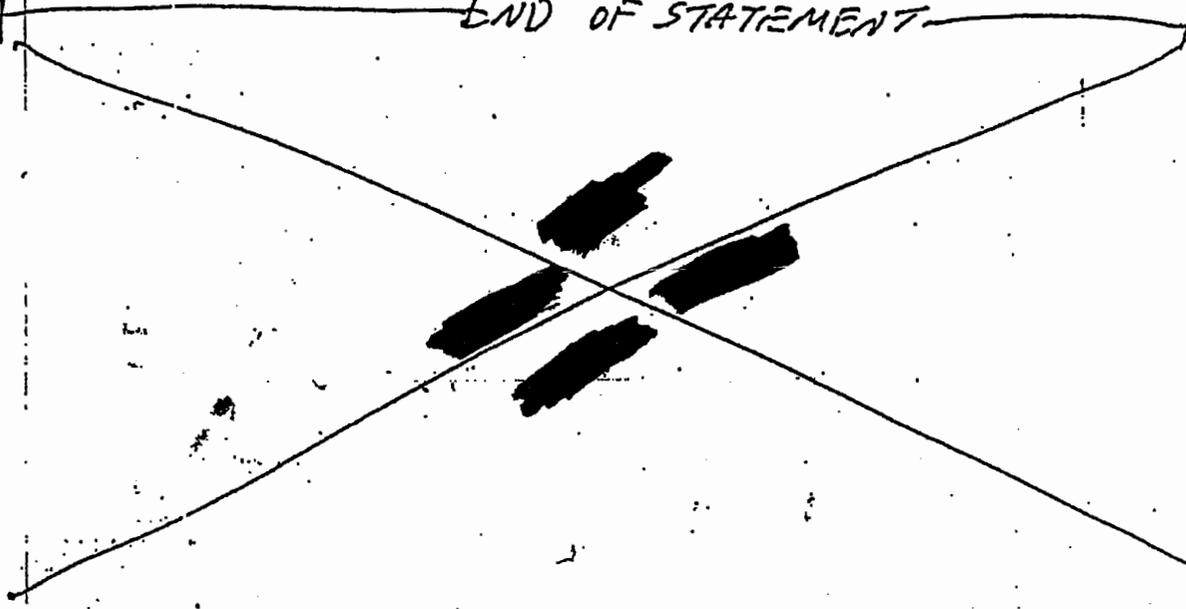
PAGE 3 OF 4 PAGES

3/6

8. STATEMENT (Continue)

A: Yes, our ICC asked us to verify our Model and 4 Codes after the intercept. All Codes were correct for that day, Our Radar picked up the RBM a.t. [REDACTED] I thought it could possibly have been an [REDACTED] due to the shorter range, and was not given confirmation of the F18 being shot down until approximately 1800 Hours on 3 APR 03.

END OF STATEMENT



3/6

AFFIDAVIT

[REDACTED] HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE [REDACTED]. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INCOUCEMENT.

3/6

3/6

3/6

5/6

WITNESSES:

ORGANIZATION OR ADDRESS

ORGANIZATION OR ADDRESS

[REDACTED]
(Signature of Person Making Statement)

Subscribed and sworn to before me, a person authorized by law to administer oaths, this 4 day of APR 03 at Karbala, IRAQ

[REDACTED]
(Signature of Person Administering Oath)

[REDACTED]
(Print Name of Person Administering Oath)

① What is the problem with the EDR? What is the fix?

The EDR won't hold a tape. It rejects all tapes.

The EDR was outspotted: 3 MAR 03

only fix is a new EDR. There are no replacements in country.

② Hardcopies of engagement data - inside folder.

System reboot time: 021130L APR 03

③ Last reboot time: 021130L APR 03, when the system was emplaced.

④ Hardcopies of IFF Tracks (3 hardcopies) - in folder.

⑤ Condition of Radar Shroud - Fully Mission Capable.

⑥ Were we jammed? If so, what type? - No

⑦ How long was the TBM tracked as a TBM before engagement?

[REDACTED]

3/6

3/6

page 1 of 1

[REDACTED] 3 APR 03

[REDACTED]

⑧ What aircraft were in the vic. TBM [REDACTED]?

Any wingmen or tracks near target?

No tracks were near the TBM at [REDACTED]

all other tracks were at [REDACTED]

⑨ What did ICC tell you about engagement?

Bring launchers to operate, and we did everything correctly.

hardcopies of all TABs - with folder

Hardcopy of Baseline / T.W.W.D

Last Baseline performed prior to 011000L APR 03,
before the battery moved forward to Karbala

last time system rebooted before engagement?

021130L APR 03

3/6

3/6

[REDACTED] 3 APR 03
[REDACTED]

Inventory

① ajem + Data.

D testi ti Tr k Ar y D ta at d. tecti on

p. 2 T d' Ar y D ta after PAC bi dercept time

3 Intercept ti l. l ventory fr. fo m messag

the approximate engagement p rit a

L 6 Test Re ts

TR k Ar y D ta fald TB M ofiter ten y.

② [Redacted]

③ [Redacted]

④ [Redacted] ✓ ✓ ✓ ✓ ✓ ✓ ✓

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSNI).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION 31st BDE TOC BIAP	2. DATE (YYYYMMDD) 20030419	3. TIME 0906	4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME [REDACTED]	6. SSN [REDACTED]	7. GRADE/STATUS [REDACTED]	
8. ORGANIZATION OR ADDRESS A/5-52 ADA			

I, [REDACTED], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

On the night of the incident, at approximately 2330, we were told SCUSS were on scope. A few seconds later, ICC told us to bring launchers to operate. My TCA and I saw a TBM appear on our scope in front of Echo/5-52 battery site. We then heard over the party line that Echo had fired two PAC-3 missiles at this TBM. A few seconds later, we noticed the "E11"

Cross-hairs appear on our CRT. We looked that track, saw its altitude to be [REDACTED] kft, and its speed to be 575 kts. From the cross-hairs, an unknown track appeared. This unknown almost immediately turned into a low-brite TBM. After approx. 3 seconds as a low-brite TBM, it changed symbology and became a high-brite TBM. This high-brite TBM began moving south towards my battery. It was initially [REDACTED] out. Its initial [REDACTED] data said it was travelling at [REDACTED] kts. It continued to move south, slowly picking up speed. As it continued its course along the left search sector boundary, it made a small turn to my left and then back to my right. This

10. EXHIBIT	11. INITIALS AND SIGNATURE [REDACTED]	DATE [REDACTED]	PAGE 1 OF 1
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ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT TAKEN AT [REDACTED] DATED [REDACTED]"
 THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

16 STATEMENT OF [REDACTED] TAKEN AT 1145 DATED 19 Apr 05

9. STATEMENT (Continued)

3/6 Confirmed my belief that this was not a TBM. I immediately called up to the ICC and asked to bring launchers out of operate. I told them that this was not a TBM. My 3/6 TCA did the same. The track was approximately [REDACTED] from the fire unit at this time. The track continued to pick up speed slowly. It was now travelling over 400 kts. 3/6 The ICC granted us permission to bring launchers out of operate while the track was slightly over [REDACTED]. 1/6 The TBM continued south, and flew over us travelling at 3/6 34.6 kft and 526 kts.

3/6 The type of system we were operating on was a Contig 2 + System. We had a Contig 2 radar from B/3-43. It had an RTG, giving us a TBM NOGO, but an ABT search and track degrade. Overall the radar was degraded. 3/6 We had no EDR at the time. Our EDR was INOP, and was removed. 1/6

3/6 On the night of the incident, we had two incidents concerning TBM. Both times, the spurious tracks were travelling in excess of 9000 kts, and were low bright. We normally saw the tracks several seconds after the other batteries noticed them. 3/6 These tracks seemed to have come primarily from the area to the north of Karabala Gap. This was the same general vicinity of where the incident occurred. 3/6

INITIALS OF PERSON MAKING STATEMENT

PAGE 2 OF 23 PAGES

TAKEN AT 11415

DATED 14 April 03

NT (Continued)

previous [redacted] TBMs,

[redacted] and [redacted] The ICC would [redacted] were meeting the criteria close enough to be in fact, not real TBMs. Batteries [redacted] brought

[redacted] independently.

I did not hear anyone [redacted]

The criteria I posted listed all of the characteristics for threatening TBMs in the area. It listed the [redacted] and the [redacted] It gave the type of TBM [redacted] the range, and the speed. I received this from the ICC. I believe that we received it before we entered Iraq.

I did not see any debris on the Super or on the Trip AMP DATA AS far as situational awareness, we were not given daily updates to the TBM threat. We were not briefed on what types to expect or location of launches as the days passed while in Iraq. We were given the intel brief, but it was not continually updated as it should have been done.

AFFIDAVIT

I, [redacted], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 3. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THIS STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

[redacted] 3/6
(Signature of Person Making Statement)

WITNESSES:

Subscribed and sworn to before me, a person authorized by law to administer oaths, this 19 day of April, 2003 at 366th AFB, BILB

[redacted] ORGANIZATION OR ADDRESS

[redacted] (Signature of Person Administering Oath)

[redacted] (Typed Name of Person Administering Oath)

[redacted] ORGANIZATION OR ADDRESS

COL, ADA BOARD PRESIDENT 3/6
(Authority To Administer Oaths)

INITIALS OF PERSON MAKING STATEMENT

PAGE 3 OF 3 PAGES



DEPARTMENT OF THE ARMY
5th Battalion, 82nd Air Defense Artillery
LSA BUSHMASTER, IRAQ

AFVJR-S3

03 APR 03

MEMORANDUM FOR RECORD

SUBJECT: STATEMENTS REGARDING F/A - 18 INVESTIGATION ON 03 APR 03

1. The purpose of this memorandum is to answer the 31st Brigade Commander's questions regarding the F/A-18 incident on 03 APR 03. The following answers are taken from handwritten statements by 1LT (P) [REDACTED]

Remaining Portion

CLASSIFIED

2 PAGES TOTAL

SWORN STATEMENT

For use of this form, see AR 180-42; the proponent agency is DCCSOFS

PRIVACY ACT STATEMENT

AUTHORITY: Title 18 USC Section 201; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (2346).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

Table with 4 columns: 1. LOCATION, 2. DATE (YYYYMMDD), 3. TIME, 4. FILE NUMBER. Row 1: BACHROAD, 2003 04 19, 1640, [redacted]. Row 2: [redacted], [redacted], [redacted], [redacted]. Row 3: ORGANIZATION OR ADDRESS: HNB/S-52 ADA.

I, [redacted], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

Q. Please Describe exactly what happened at the time of the incident.
I was in the Tactical Control Station (TCS) working on a Battle Update Brief with the S-4. My IVJ on the Tac Planner notified me of a TBM on scope. I looked to the right at the monitor beside me. "SCUD LAUNCH" was called in there. All personnel were focused on the TBM. The radio telephone operator (RTO) was getting information for a TBM engagement report, Date time group, Launch Location, # of missiles, Area of risk, and type of missile. When I was notified by the IVJ I was looking at the screen and also reaching for the phone to the ICE. I saw that the missile was a TBM and it had a ground impact point on E/S-52. The missile was just inside the upper left corner of the TBM footprint. A launch location also appeared on the left side of the screen, it was the North End of a lake. ICE answered the phone and I asked if they saw what I was seeing. They said they had a TBM. I asked if they had any other data to see if it was [redacted] because it looked [redacted] to me. The ICE told me the missile was destroyed by E/S-52 using two PAC-III missiles. At that point the screen showed a second TBM appear where the first one was destroyed. It was also classified in the Tac planner as a TBM. Approximately four seconds later the amplifying data also showed it was classified as debris. I asked the ICE if they knew that it was because it wasn't dropping speed or altitude. It stayed at 174 knots, it had a GP, and it flew straight south towards C/2. When it was in front of C/2-1 it went hard to the East. When it left the radar fan it dropped off the screen. ICE never received clarification from CAOC through the AC-10 what the second TBM was.

10. EXHIBIT, 11. INITIALS OF PERSON MAKING STATEMENT, PAGE 1 OF 3 PAGES

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF [redacted] TAKEN AT [redacted] DATED [redacted]
THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

STATEMENT OF [REDACTED] TAKEN AT 1140 DATED 15 April

B. STATEMENT Continued

Q. Who did you call in the ICC + what questions did you ask?

A. I called the TD LT [REDACTED]. I asked for validation that the TBM I saw was really a TBM [REDACTED]. I was told it looked real. I was on hold a few seconds and when they came back on the line I asked if they had any further details. They said 4/5-52 just engaged and they had a confirmed kill using two Pac-3 missiles. When I saw the second TBM I asked if they could help me with the TD since it showed as a TBM and debris. I never was able to get an answer from the ICC. After the TBM was off screen I asked for TBM engagement data. Type of missile, # of missiles, # of missiles fired, type of missile fired, intercept point.

Q. Did LT [REDACTED] know it was a TBM?

A. When I asked what they saw because I saw a TBM [REDACTED] He said it looked real to him.

Q. Did you see any other symbology near the TBM?

A. When I saw the TBM symbology that is where I focused. I did not see any other tracks beside it.

Q. Did you tell the ICC to put the launchers into operate?

A. - No

Q. Why do you need additional information

A. I need to provide the units with Early Warning. With the number of [REDACTED] tracks we had been seeing, I did not want to send the units to bunkers and [REDACTED] until I knew for sure the classification. I am only receiving tracks from outside sources such as Anwar, 2nd J, TDS. The ICC is able to determine whether the track is being picked up by local Patriot radar or being fed into the system.

Q. Have you seen [REDACTED] TBM tracks concentrated in certain areas or times?

A. [REDACTED] tracks have been seen throughout the AO. Some time frames such as around 0001(3) and 0900(3) tend to have higher volumes of spurious tracks. 4/5-52 and 4/21 seemed to track the majority of [REDACTED] tracks.

Q. What Percentage of the time and how many EORs are in op?

A. 4/5-52 had the only working EOR at the time and they were in movement. If EOR's did show as operational it was only for a day or so before it would become in op.

Q. Did you receive any formal training to become battle captain?

A. No

INITIALS OF PERSON MAKING STATEMENT

PAGE 2 OF 3 PAGES

STATEMENT OF [REDACTED] TAKEN AT 1640 DATED 18 APR 03

8. STATEMENT (Continued)

End of Statement

Nothing follows

Nothing follows

AFFIDAVIT

I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 3, I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

[REDACTED] (Signature of Person Making Statement)

Subscribed and sworn to before me on a person authorized by law to administer oaths on this day of April, 2003 at 1640 57 ADA 161 AT

[REDACTED] (Signature of Official)

ORGANIZATION OR ADDRESS [REDACTED]

ORGANIZATION OR ADDRESS [REDACTED]

INITIALS OF PERSON MAKING STATEMENT [REDACTED]

PAGE 3 OF 3 PAGES



DEPARTMENT OF THE ARMY
5th Battalion, 82nd Air Defense Artillery
LSA BUSHMASTER, IQ

AFUR-S3

03 APR 03

MEMORANDUM FOR RECORD

SUBJECT: STATEMENTS REGARDING F/A-18 INVESTIGATION ON 03 APR 03

1. The purpose of this memorandum is to answer the 31st Brigade Commander's questions regarding the F/A-18 incident on 03 APR 03. The following answers are taken from handwritten statements by CPT [REDACTED]

Remaining Portion

CLASSIFIED

2 PAGES TOTAL

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 8397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION HQ 15-52-ADA B1AP 2. DATE (YYYYMMDD) 20030419 3. TIME 1600 4. FILE NUMBER
5. LAST NAME, FIRST NAME, MIDDLE NAME [REDACTED] 6. SSN [REDACTED] 7. GRADE/STATUS [REDACTED]
8. COMMAND AND ADDRESS HNB 15-52 ADA

3/6 I, [REDACTED], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:
THE PROCEDURES I FOLLOW DURING A SCUD LAUNCH ARE AS FOLLOWS: DETECT A SCUD ON SCOPE. CALL IT DOWN TO THE BATTERIES AND UP TO THE TCS. HOOK THE TRACK, LOOK AT DATA ON TRACK AMP DATA TO SEE WHAT ALTITUDE, SPEED, & REMAINING ARC. DETERMINE IF IT'S THREATENING AN ASSET, IF IT IS DETERMINED IT IS A THREATENING SCUD, BRING LAUNCHERS TO OPERATE. MONITOR THE ENGAGEMENT AND PASS UP INFORMATION ON MISSILES FIRED, PROBABLE OR CONFIRMED KILL OR MISS, LAUNCH POINT DETERMINATIONS, AND ANY OTHER ENGAGEMENT DATA WE RECEIVE FROM THE FIRE UNITS.
FOR [REDACTED] TRACKS - FIRST WE LOOK [REDACTED]

2 WHEN I RECEIVED THE THREAT DATA FOR THE THEATER I MADE A "EVENT SHEET" AND POSTED IT IN THE ICE NEXT TO THE CONSOLE FOR QUICK REFERENCE. I CALLED THE FILE IN THE PARTY LINE & GAVE THEM THE SAME DATA I SUGGESTED THEY POST IT AS WELL. ANY OTHER ENGAGEMENT CRITERIA WAS PASSED THROUGH ME FROM HIGHWAY.

YOU SHOULD ALWAYS HOOK A TRACK & LOOK @ TRACK AMP DATA BEFORE BRINGING LAUNCHERS TO OPERATE.

BETTER SITUATIONAL AWARENESS CAN BE PROVIDED TO THE CREWS THROUGH REGULAR THREAT UPDATES. WHAT EXACTLY IS THE REMAINING THREAT, WHAT IS LIKELY WHAT IS UNLIKELY. ENSURE CREWS PASS ON & LOG ALL INFORMATION & THAT IT GETS BRIEFED TO EACH CREW. WE ALSO NEED MORE TRAINING WITH LIVE AIRCRAFT FLYING IN RADAR COVERAGE SO UNITS KNOW THE WAY PILOTS FLY IN REAL LIFE. TD'S MUST ENSURE THEY RECEIVE A COMPLETE BRIEF FROM THE PREVIOUS CREW AND THAT BATTERY CREWS ARE PASSING ON THE INFORMATION.

10. EXHIBIT [REDACTED] 11. INITIALS OF PERSON MAKING STATEMENT [REDACTED] WITHIN USE FOLLOWS [REDACTED] PAGE 1 OF 5 PAGES

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT" TAKEN AT _____ DATED _____

3/6 3/6 THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

3/6 STATEMENT OF [REDACTED] TAKEN AT 16201 DATED 14 APR 03

9. STATEMENT (Continued)

[REDACTED]

3/6 INITIALS OF PERSON MAKING STATEMENT

PAGE 2 OF 3 PAGES

STATEMENT OF [REDACTED] TAKEN AT 7620L DATED 19 APR 03

3/6

9. STATEMENT (Continued)

[REDACTED STATEMENT CONTENT]

3/6

2/6

AFFIDAVIT

I, [REDACTED], HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 3. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME, THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

3/6

3/6

[REDACTED SIGNATURE] (Signature of Person Making Statement)

WITNESSES:

[REDACTED WITNESS SIGNATURES]

3/6

3/6

Subscribed and sworn to before me, authorized by law to administer oaths, on [REDACTED] 2003

at [REDACTED] (City and State)

3/6

Col. ADA [REDACTED] PRESIDENT (Authority To Administer Oaths)

ORGANIZATION (OR ADDRESS)

3/6

INITIALS OF PERSON MAKING STATEMENT

PAGE 3 OF 3 PAGES

3/6 [REDACTED]

✓ 1. SPACE #1 LT [REDACTED] FROM A/5-5Z RE: THE ENGAGEMENT ON 2 APR 63
ICC CALLED SCUD LAUNCH & HE THINKS ECHO SAW IT AT THE SAME TIME

✓ [REDACTED] TOLD THE BATTERIES TO BRING LAUNCHERS TO OPERATE, WHICH
ALPHA DID. AT THAT POINT ALPHA SAW THE SCUD POP UP ON TOP OF
ECHO'S LOCATION AS PLOTTED ON THE SCOPE. THEY SAW THE LAUNCHER FROM
ECHO & THE CROSS HAIRS POP UP SHOWING THE MISSILES HAD HIT THE TRACK.

3/6 AT THAT POINT, LT [REDACTED] LOOKED THE TRACK & NOTED THE ALTITUDE WAS
APPROX. 34 KFT & SPEED WAS APPROX 550 KTS. FROM THIS TRACK HE SAW
AN UNKNOWN POP ON SCOPE IN HIGH BRIGHT WHICH BECAME A LOW BRIGHT.

3/6 [REDACTED] THEN A HIGH BRIGHT TBM [REDACTED] ITS BEARING WAS DIRECTLY DOWN
THE LEFT SECTOR BOUND. LINE OF ALPHA'S RANGE FAN, HEADING
TOWARD THE FIRE UNIT [REDACTED]. ITS SPEED WAS APPROX

3/6 380 KTS, IT WENT TO LEFT, THEN RIGHT, LT [REDACTED] CALLED ICC
& INFORMED THEM THAT THIS WAS NOT A TBM, BUT AN ABT SLOWING
DOWN. ICC ACKNOWLEDGED & TOLD ALPHA TO CONTINUE TO MONITOR & TOLD
FIRE UNITS TO PUT LAUNCHERS BACK TO STANDBY. THE TRACK PICKED UP

3/6 SPEED & FLEW OVER ALPHA AT APPROX 34.6 KFT, 526 KTS. [REDACTED]
THINKS ICC WAS SCUD TRYING TO GET CH-1 TO PUT LS BACK IN STANDBY
AT THIS POINT.

3/6 HE DOES NOT RECALL ANY SPECIAL INSTRUCTIONS, ROWS, ETC IN EFFECT AT THAT TIME
EXCEPT MAYBE THE ONE RE: ^{ABT} ~~ABT~~ BEING ENGAGED IF OVER 2000 KTS.

3/6 HE DID NOT RECALL SEEING THE DBR NEXT TO THE TRACK

RS. FREQUENCY: 23

ALPHA'S EDR WAS NOT FUNCTIONING AT THIS TIME.

3/6 [REDACTED]

L STOPS WITH [REDACTED] FROM C/2-1 REG: THE INCIDENT ON 2 APR 03.

HE HEARD SCUD ON SCOPE FROM ICC & RECEIVED ORDER TO BRINE CS TO [REDACTED]
WHEN HE FINALLY SAW THE TRM IT WAS ALREADY ENGAGED WITH CROSSHAIR
SYMBOLS. HE HOOKED THE TRACK & NOTICED THE ALTITUDE AROUND 30 KFT AND
SLOW SPEED (ALTHOUGH DOES NOT REMEMBER HOW FAST/SLOW) THE ENGAGED TRM
DISAPPEARED & AN UNKNOWN POPPED UP & IT HAD CONFIRMED KILL (CROSSHAIRS)
SYMBOLS. THEN IT DROPPED OFF SCOPE. THE SECOND TRM WAS
SPOTTED & C/2-1 REG'D THE ORDER TO PUT LS TO STANDBY. RECALLS ICC
TRYING TO GET A HOLD OF ALPHA TO PUT LS IN STDBY

HE DOES NOT RECALL ANY SPECIAL INSTRUCTIONS OR CHANGES TO THE REG'S

AT THIS TIME.

AS FREQ: 26.

HE DID NOT SEE DIRECT TO TRACK

A/6-32 HAD DATA & VOICE (DROPPED IN JUST PRIOR TO LT [REDACTED] STBY

A/6-32, C/2-1 & AT CDR REG HAD DATA & VOICE ON ICC THAT NIGHT.

[REDACTED]



~~XXXXXXXXXX~~
DEPARTMENT OF THE ARMY
5th Battalion, 52nd Air Defense Artillery
LSA BUSHMASTER, IRAQ

AFJ/R-SJ

03 APR 03

MEMORANDUM FOR RECORD

SUBJECT: STATEMENTS REGARDING F/A-18 INVESTIGATION ON 03 APR 03

The purpose of this memorandum is to provide a statement regarding the F/A-18 incident from the ICC Communications Specialist.

Remaining Portion
Classified

1 PAGE

SWORN STATEMENT

For use of this form, see AR 190-46; the proponent agency is DDCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

Form with fields: 1. LOCATION (5-52 ADA, H4B B1A7), 2. DATE (20030418), 3. TIME (1546), 4. FILE NUMBER, 5. LAST NAME, FIRST NAME, 6. ESN, 7. GRADE/STATUS, 8. ORGANIZATION/UNIT FOR RES.

3/6

3/6

I, SPC [REDACTED], WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

Q. DID YOU NOTICE COMMAND LOSS (TRAILING HITS) TO E BTRY DURING TBM ENGAGEMENT?

A. NOT DURING THE ENGAGEMENT. PREVIOUSLY WE HAVE BEEN LOSING COMMAND AND ALSO AFTER THE INCIDENT

Q. HOW LARGE WAS E BTRY'S ASSET? WHAT WERE THEY PROTECTING?

A. [REDACTED]. AT THE ONLY TIME THE ONLY ASSET I WAS AWARE OF WAS THEIR TBM FOOTPRINT.

Q. DID YOU THINK IT WAS A REAL TBM?

A. YES

Q. WAS THE SPEED OF THE TBM STRANGE?

A. YES IT WAS NOT AS FAST AS I HAVE SEEN IN TPT'S

Q. DID YOU NOTICE THE IFF CONDITION ON THE TRK AMP DATA?

A. I WAS GLANCING AT IT BUT I WAS BUSY ON THE PHONE WITH THE TCS.

Q. DID THE TO PUT LAUNCHERS TO OPERATE?

A. HE TOLD THE FIRE UNITS TO BRING LAUNCHERS TO OPERATE.

Q. DID THE TO HAVE HIS TRACK AMP DATA TABS BEFORE GOING TO OPERATE?

A. YES

Q. WHAT WAS CPT [REDACTED] WANTING FROM YOU AND HOW DID HE KEEP YOU FROM YOUR DUTIES?

A. AREA AT RISK, LAUNCH POINT, INTERCEPT POINT AND SOME OTHER INFORMATION. HE COMMANDED ME WITH QUESTION AND FRUSTRATING ME FOR A QUICK ANSWER FOR THE COL.

Q. HOW DO YOU IF YOUR IFF IS WORKING OR NOT?

A. WE HAVE IFF STATUS IN FP STATUS S/I.

Q. DID YOU FEEL THAT BECAUSE YOU WERE ON THE PHONE YOU WERE UNABLE TO DO YOUR JOB?

A. YES

Q. WERE RESTRICTIONS REGARDING HOOKING A TRACK PLACED UPON YOU?

A. NO.

76

3/6

Form with fields: 10. EXHIBIT, 11. INITIALS OF PERSON MAKING STATEMENT, PAGE 1 OF 3 PAGES

ADDITIONAL PAGES MUST CONTAIN THE HEADINGS: STATEMENT OF [REDACTED] DATED [REDACTED] THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

USE THIS PAGE IF NEEDED. IF THIS PAGE IS NOT NEEDED, PLEASE PROCEED TO FINAL PAGE OF THIS FORM.

3/6

STATEMENT OF [REDACTED] TAKEN AT HQ/5-SZ AOA BIAF DATED 18 Apr 03

9. STATEMENT (Continued)

Q. HOW WAS YOUR SCOPE SETUP? ANY FILTERS ON? WHAT WOULD HAPPEN IF YOU ASKED THE TD TO STOP ENGAGEMENT?

A. NO FILTERS WERE ON. HE WOULD STRONGLY CONSIDER WHAT I WAS SAYING AND REASSESS THE SITUATION.

Q. WAS THE COMMO IN, OUT, SPOTTY AT THE TIME OF THE ENGAGEMENT?

A. IN.

Q. WHAT EXPERIENCE WITH [REDACTED] TRACKS?

A. 3 OR FOUR AT NIGHT 2 OR 3 DURING DAY SHIFT.

Q. DESCRIBE CREW COORDINATION WITH TD?

A. GENERALLY WE UNDERSTAND FROM PREVIOUS TPT'S.

Q. WHAT WAS THE DATA LINK SITUATION?

A. IN AND OUT.

Q. IS IT COMMON FOR THE EDR NOT TO WORK? HOW OFTEN IS IT INOPERATIVE?

A. YES. I HAVE 5 1/2 YRS PATRIOT EXPERIENCE AND HAVE NEVER SEEN A WORKING EDR.

Q. WHY DIDN'T YOU PASS YOUR DOUBTS ABOUT THE ENGAGEMENT TO THE TD?

A. I WAS ON THE PHONE AND I HAD VERY SMALL DOUBTS,

NOTHING ELSE FOLLOWS

3/6

INITIALS OF PERSON MAKING STATEMENT [REDACTED]

PAGE 2 OF 3 PAGES

3/6

STATEMENT OF

[REDACTED]

TAKEN AT HQ/5-52 ADA BIAP

DATED 18 Apr 03

B. STATEMENT (Continued)

[REDACTED]

3/6

AFFIDAVIT

WHICH BEGINS ON PAGE [REDACTED] AND ENDS ON PAGE [REDACTED]. I HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INTIMIDATION.

3/6

3/6

3/6

3/6

WITNESSES

[REDACTED]

Subscribed and sworn to before me, a person authorized by law to administer oaths, this [REDACTED] day of April, 2003, at HQ/5-52 ADA BIAP

NAME OF WITNESS
CAPT [REDACTED]
ORGANIZATION OR ADDRESS
[REDACTED]

[REDACTED]

ORGANIZATION OR ADDRESS

(Typed Name of Person Administering Oath)
COL. ADA [REDACTED] PRESIDENT
(Authority To Administer Oath)

INITIALS OF PERSON MAKING STATEMENT

[REDACTED]

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is ODCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 8397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

1. LOCATION HMS 1st Bde B1AP	2. DATE (YYYYMMDD) 20030419	3. TIME 0906	4. FILE NUMBER
6. LAST NAME - FIRST NAME - MIDDLE NAME [REDACTED]	6. SSN [REDACTED]	7. GRADE/STATUS [REDACTED]	
8. ORGANIZATION OR ADDRESS A-55			

3/6
3/6

8. [REDACTED] WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

"TBM on Scope", was called over the Party line. Icc directed us to bring launchers to operate. We didn't see the TBM until it was engaged. At that time it showed up on the scope as a "high bright". A few seconds later I saw the "kill symbology" on the scope. The TBM disappeared, then at that time an "Unknown" track appeared in the same spot. It appeared for only a second then disappeared. Then at that time another TBM popped up as a "low bright". The system classified the TBM as "DBR" which is Debris. I hooked the TBM and looked at the "TRK AMPL DATA" tab. The TBM was about [REDACTED] in altitude and about 530 kts in velocity. It was heading about 187°. At this time I thought to myself, that this is not a TBM, we continued to watch it and saw that it was increasing in altitude slightly and its speed increased slightly as well. Its heading changed from 187° to about 130°. The TRACK was about [REDACTED] in front of our Fire Unit when it changed its heading.

3/6

10. EXHIBIT	11. INITIALS OF PERSON MAKING STATEMENT [REDACTED]	PAGE 1 OF 3 PAGES
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ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT TAKEN AT _____ DATED _____"
 THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

3/6

STATEMENT OF [REDACTED] TAKEN AT 1000 hrs DATED 2003 April 19

2/4
2/5
2/6

STATEMENT (Continued)

The ~~track~~ track continued to stay at a "low bright". We then asked the ICC for permission to bring our launchers out of operate. At that time they gave us permission. A few moments after that the track traveled out of our track sector and it dropped from the scope. We had no functional EDR at that time. We handcopied the TBM that was classified as debris.

3/6
2/16

In addition we were seeing a lot of [REDACTED] TBMs that might in the same location and vector that the engaged target [REDACTED] had popped up. There [REDACTED] was not any other aircraft on the scope in that [REDACTED] area.

1. Discuss the [REDACTED] TBM you experienced prior to the incident, Was there any correlation or similarities?

2

The TBMs we saw prior to the incident were all showing up in the same general area and traveling around the same vector. They were all appearing on "low bright" and spears of [REDACTED]. This was the first time I have had experience with "[REDACTED] tracks". I have never seen anything like this until I got here into the Middle East.

2. When were you told to bring your LS' in and out of operate?

I was directed to bring the launchers to operate by the ICC when the TBM was reported as being on the scope by another unit. We brought them out of operate when the second TBM was about [REDACTED] in front of us [REDACTED] as it was changing in vector and altitude.

3/6

INITIALS OF PERSON MAKING STATEMENT

PAGE 2 OF 3 PAGES

SECRET



DEPARTMENT OF THE ARMY
5th Battalion, 52nd Air Defense Artillery
LSA BUSHMASTER, IRAQ

A(17)-R-83

03 APR 03

MEMORANDUM FOR RECORD

SUBJECT: STATEMENTS REGARDING F/A-18 INVESTIGATION ON 03 APR 03

The purpose of this memorandum is to provide a statement regarding the F/A-18 incident from the ICC Tactical Director Assistant.

Remaining Portion
classified
1 page

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is DDCSOPS

PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

Form with fields: 1. LOCATION (HQ/5-52 LDA BIAP), 2. DATE (20030418), 3. TIME (1800), 4. FILE NUMBER, 5. LAST NAME, FIRST NAME, MIDDLE NAME, 6. SSN, 7. GRADE/STATUS, 8. ORGANIZATION OR ADDRESS (HQB 5-52)

WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

Q. Did you see any other symbology near the TBM symbology?

A. Yes, at any given time, because of our [redacted], there are hundreds of tracks on scope.

Q. Did LT [redacted] identify the track as a TBM?

A. During the timeline I was deeply engaged in a conversation with the TCS. TCS first asked me if it was a TBM and I asked both TD and TDA if it was a TBM. I honestly can not remember who answered. It might have been SPC [redacted] who answered it was a TBM, but I did get an answer.

Q. When did you give the phone to the TDA?

A. On or around the same time that the first TBM was engaged.

Q. When did you first see track amplify data?

A. Not until I was on the AC-10 get with KMART WISKEY watching the second track flying towards our asset.

Q. How long did KMART WISKEY not receive your tracks?

A. All that I know for sure is that KMART did not see our track during the timeline we saw TBM symbology on our scope on the night in question. Every other time KMART verified that JU # 153 was active in the "Timber". I always assumed this meant our end was up and operational.

Nothing Follows

Form footer: 10 EXHIBIT, 11 INITIALS OF PERSON MAKING STATEMENT, PAGE 1 OF 2 PAGES

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF [redacted] TAKEN AT [redacted] DATED [redacted]
THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

3/2

STATEMENT OF [REDACTED] TAKEN AT 1900 hrs DATED 18 Apr 2003

9. STATEMENT (Continued)

3/6

[REDACTED]

3/6

AFFIDAVIT

[REDACTED] HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS [REDACTED] ENDS ON PAGE 2. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

3/6

[REDACTED] Making Statement

3/6

WITNESSES

Subscribed and sworn to before me on this day of April, 2003 at HO 19 57 40 01 13 03

ADJUTANT AND BOARD MEMBER
DEP DIR CIVIL RIGHTS & EQUAL

ORGANIZATION OR ADDRESS

3/6

[REDACTED] Administering Oath

COL; ADA BOARD PRESIDENT
(Authority To Administer Oaths)

ORGANIZATION OR ADDRESS

3/6

INITIALS OF PERSON MAKING STATEMENT

PAGE 2 OF 2 PAGES

SECRET



DEPARTMENT OF THE ARMY
5th Battalion, 51st Air Defense Artillery
LSA BUSEMASTER, IRAQ

A:VJ-R-S3

03 APR 03

MEMORANDUM FOR RECORD

SUBJECT: STATEMENTS REGARDING F/A-18 INVESTIGATION ON 03 APR 03

1. The purpose of this memorandum is to provide a statement regarding the F/A-18 incident from the ICC Communications Specialist.

*Remaining Portion
classified
1 page*

3/6 C5-31ADAJTOCS3 (██████████ MAJ)

From: 6-52 ADA BN ██████████
Sent: Thursday, April 17, 2003 9:17 PM
3/6 To: 'C5-31ADAJTOC (██████████ MAJ)' 6/3
Subject: A/6-52 ECS Crew Statements

3/6 The Alpha Battery Fire Control Crew on shift consisted of ██████████
██████████ TCO, ██████████ - TCA, and SGT ██████████ - 31R during the
fratricide incident in E/5-52 ADA.

3/6 ██████████ made the following statement: Scud Alert was announced over
the net. He saw a track on the screen that was at the edge of his scope.
2 Upon reviewing Track Amp Data he determined the speed to be ██████████ and the
track was identified as a TBM at which time he told his TCA that it was
not a TBM. The track was only on his screen for 5 seconds.

3/6 ██████████ made the following statement: 5-52 announced Scud Alert.
3/6 ██████████ saw the track at the edge of the scope, approximately ██████████ away.
Upon reviewing Track Amp Data he determined the speed to be ██████████ and the
track was identified as a TBM. Track was only on the screen for a few
seconds.

3/6 ██████████ made the following statement: While watching the TCO
scope he saw a track at the edge of the scope and then heard SCUD ALERT
announced over the net. At which time he started his SCUD Drill and did not
witness anything further.

SEMPER Main

CAG

Here is my response to Zulu's request Thought it should go through the chain of command.

2Apr 03/J3092
Event: 10D1/Msn #3401
Dogwood 01/02.
Launch: 1900Z Recovery 2130Z
USS Kitty Hawk

Our mission for the night was to attack and destroy enemy mechanized vehicles in a military compound west northwest of Baghdad in Kill Box [redacted] pad 2 and 6. We completed organic tanking and proceeded on our pre-planned route. [redacted]

[redacted] to the target area. Based on preflight intel, we agreed that the best approach was to stay south of the course line out of Eugene to avoid direct over flight of the lines of communication and major population centers along the Euphrates. At Karbala, we beamed around the south to the [redacted]

[redacted] over the lake as a sanctuary.

2. Coordinating with [redacted] was declared open and we were cleared to prosecute targets. We made one ID run from [redacted] to the target, returned for the first attack run from the [redacted] out

2. [redacted] left turn back to the [redacted] run. We released one LGB on the first pass and quantity 2 on the second pass (3 total). Fires were heavy out of the Baghdad area including AAA and unguided rockets, all appeared short of our position. There was moderate AAA in the target area. During our attack runs we had multiple mud 2 indications and at one point Dogwood 01 had a [redacted] spike from an F-15.

2. After the final attack run, from [redacted]; we turned left away from Baghdad and [redacted] clear of the target area. [redacted] were conducted at [redacted] and we began a climb to [redacted] feet and began flowing to the south towards Karbala. Dogwood 02 had fallen into about a 2nm trail on the final off target maneuvering and was catching Dogwood 01 in the climb and level off. We f [redacted]

2. [redacted] and remaining approximately [redacted] away from the town.

At approximately 2045Z, Dogwood 02 called out a safire and directed a turn to the right to place the missiles at the left 9-10 o'clock position. Dogwood 02 was [redacted] on the 45 degree bearing line to the left, stepped up approximately 500 feet. Dogwood 01 sighted the missiles and turned to the right to defend. There were two missiles fairly close to each other with small orange flames from the rocket motor. We had NVDs on and I believe I was looking at the missiles under the goggles at the time. When we turned, the missiles made two or three quick guidance corrections together and I expended chaff. The missiles came very fast. After the second or third correction by the missiles, I decided that it was time to execute a break turn to the left to try to make the missiles over shoot. We were at [redacted] and [redacted] so there wasn't much bite in the turn, my estimation was maybe 5Gs max. At just about the same time, Dogwood 02 called that the missiles were tracking. "They're tracking m..." he said and was cut off. I thought they were tracking me.

I over banked left and put the stick in my lap until there was nothing left and I heard stall warning tone in the head set. The plane

probably turned through about 90 degrees of turn to the left. With the angle of bank still in, I looked over my left shoulder and slightly high, through the goggles this time I believe, and saw Dogwood 02. Thinking there were more missiles, I selected afterburner, unloaded, reversed to the right and tried to execute another break turn but was too slow (approximately [REDACTED]). I then rolled inverted, put the stick in my lap and began a ditch maneuver. The reversal and the inverted ditch put the aircraft in a position where I was inverted, looking back through the tails toward the [REDACTED] approximately where Dogwood 02 might be. Seeing no other missiles and fearing I would lose too much altitude and put myself in other weapon system envelopes, I rolled upright and pointed due [REDACTED]. I did not see Dogwood 02 again. My estimation is that approximately 15 seconds elapsed from seeing the safire to impact. If we say the missiles about half way up the track, they traveled the remaining [REDACTED] feet in [REDACTED] seconds, or [REDACTED] feet per second. The whole event happened very fast. After the initial break turn, when I first looked back over my left shoulder and slightly high, this is what I saw. I first thought the missiles may have detonated above and behind me. There was a pie shaped outline of sparks that I next thought might be a parachute but quickly dismissed. Finally, the picture that I built in my mind as I watched (and it may have only been a matter of seconds) was of the forward part of the fuselage, broken off at about the leading edge of the wing rotating forward with flames coming out of the back. The pie shaped sparks were pieces of the warhead expanding outward. Neither aircraft had any [REDACTED] indications whatsoever and Dogwood 01 expended all chaff and probably no genex. I don't know whether Dogwood 02 executed any defensive maneuvers or expended any chaff. I am fairly certain that what I saw was a direct hit at the wing area of the fuselage on Dogwood 02 by at least one missile. The result of the hit severed the aircraft in half with the nose section tumbling forward. I do not know if there was an ejection and I egressed [REDACTED] out of the MEZ, not returning to see if there was a parachute.

I tried twice to raise Dogwood 02 on tactical frequency without luck. I then called Stiletto to report a downed aircraft, dropped a system mark to capture the location and proceeded on a return route to the ship. Multiple calls to Stiletto and Black Eagle got the CSAR effort going and got word back to the ship. At approximately 2050, I heard Wyant 54 respond taking charge as the on scene commander.

V/R,
[REDACTED]

2/6

[redacted] U.S. Navy, make the following statement:
During a mission on 2 Apr 03/1309Z, Evont [redacted] Dogwood
2, Launch - 1900Z, Recovery - 2130Z aboard USS KITTY HAWK (CV 63).
The mission for the night was to attack and destroy enemy mechanized
forces in a military compound approximately [redacted] at Baidad in
[redacted] Box 88AR key pad 2 and 6. We completed organic tanking 18 1st and
[redacted] on our pre-planned route. Our route of flight waypoint plan
[redacted] use from Lima Lanker track to Eugene then direct to [redacted]
[redacted] to the target area. Based on [redacted]
[redacted] best approach was [redacted]

2

[redacted] The intel brief include that
[redacted] were possible mobile SA-2s and SA-3s in the [redacted]
[redacted] triangle and that SAMBUSH tactics may be employed. I don't
[redacted] friendly force positions were briefed other than to confirm
[redacted] box was open before releasing ordnance. At [redacted] we reamed
[redacted] and the [redacted] to the [redacted] remaining approximately [redacted] away from the
[redacted] staying foot wet over the lake as a sanctuary.

2

[redacted] 6 was
[redacted] ared open and we were cleared to prosecute targets. We made one ID
[redacted] from [redacted] to the target, made a left hand turn off target and
[redacted] turned for the first attack run from the [redacted] We egressed from the
[redacted] attack run out to the [redacted] then made a left turn back to the [redacted]
[redacted] a second attack run. We released one LGB on the first pass and
[redacted] city 2 on the second pass (3 total). Fires were heavy out of the
[redacted] dud area including AAA and unguided rockets, all appeared short or
[redacted] position. There was moderate AAA in the target area that appeared
[redacted] below our altitude. During our attack runs we had multiple mud 2
[redacted] cutters and at one point Dogwood 01 had a [redacted] spike from an F-15
[redacted] he [redacted] of our position.

2

After the final attack run, from [redacted] we turned [redacted] away from
[redacted] and flowed [redacted] until clear of the target area. Attacks were
[redacted] [redacted] feet MSL and we began a climb to [redacted] feet MSL
[redacted] began slowing to the [redacted] towards [redacted]. Dogwood 02 had fallen
[redacted] about a [redacted] (tail on the final off target maneuvering and was
[redacted] being Dogwood 01 in the climb and level off. We followed the same
[redacted] to [redacted], staying [redacted] over the [redacted] and
[redacted] [redacted] approximately [redacted] from the town at high altitude for
[redacted] [redacted].

2

approximately 2045Z, Dogwood 02 called out a safire and directed a
[redacted] to the right to place the missiles at the left 9-10 o'clock
[redacted] [redacted]. Dogwood 02 was approximately [redacted] on the 45 degree bearing
[redacted] to the left, stepped up approximately [redacted] feet. Dogwood 01
[redacted] and the missiles and turned to the right as an initial defense and
[redacted] [redacted] sight of the missiles. There were two missiles fairly close to
[redacted] [redacted] other with small orange flames from the rocket motor. [redacted]
[redacted] and I believe I was looking at the missiles under the goggles
[redacted] [redacted]. When we turned, the missiles made two or three quick
[redacted] [redacted] corrections together and I expended chaff. The missiles came
[redacted] [redacted]. After the second or third correction by the missiles, I
[redacted] [redacted] that it was time to execute a break turn to the [redacted] to try to
[redacted] [redacted] the missiles over shoot. [redacted] [redacted] and [redacted] so
[redacted] [redacted] wasn't much [redacted] [redacted] available in the turn, my estimation was
[redacted] [redacted]. At just about the same time, Dogwood 02 called
[redacted] [redacted] the missiles were tracking. "They're tracking us..." he said and
[redacted] [redacted] off. I thought they were tracking us.

2

2

I over banked [redacted] and put the stick in my lap until there was nothing left and I heard stall warning tone in the head set. The plane probably turned through about [redacted] degrees of turn to the [redacted] (heading approximately [redacted]). With the angle of bank still in, I looked over my left shoulder and slightly high, through the goggles this time I believe, and saw an explosion. Thinking there were more missiles, I selected afterburner, unloaded, reversed to the right and tried to execute another break turn but was too slow (approximately [redacted]). I then rolled inverted, put the stick in my lap and began a ditch maneuver. The reversal and the inverted ditch put the aircraft in a position where I was inverted, looking back through the tails toward the [redacted] approximately where the explosion was and where Dogwood 02 might be. Seeing no other missiles or explosions or Dogwood 02 and fearing I would lose too much altitude and put myself in other weapon system envelopes, I rolled upright and pointed due [redacted]. I did not see Dogwood 02 again. My estimation is that approximately 15 seconds elapsed from seeing the puff until the Dogwood 02 radio transmission was cut off. If we saw the missiles about half way up the track, they traveled the remaining [redacted] feet in [redacted] seconds, or [redacted] feet per second. The whole event happened very fast.

After the initial break turn, when I first looked back over my left shoulder and slightly high, this is what I saw. I first thought the missiles may have detonated above and behind me. There was a pie shaped outline of sparks that I initially thought were the missiles detonating. I next thought it might have been a parachute but quickly dismissed that idea. Finally, the picture that I built in my mind as I watched (and it may have only been a matter of seconds) was of the forward part of the fuselage, broken off somewhere behind the canopy, rotating forward with flames coming out of the back. The pie shaped sparks were pieces of the warhead expanding outward. Neither aircraft had any [redacted] indications and Dogwood 01 expended all chaff and probably no genex. I do not know whether Dogwood 02 executed any defensive maneuvers or expended any chaff. I am fairly certain that what I saw was a direct hit at the wing leading edge area of the fuselage on Dogwood 02 by at least one missile. The result of the hit severed the aircraft in half with the nose section tumbling forward. I do not know if there was an ejection and I egressed [redacted] out of the MEZ, not returning to see if there was parachute.

I tried twice to raise Dogwood 02 on tactical frequency without luck. I then called Stiletto to report a downed aircraft, dropped a system mark to capture the location then proceeded on a return route to the ship. Multiple calls to [redacted] and [redacted] got the [redacted] effort going and got word back to the ship. At approximately 2050, I heard Nyaht 54 respond, taking charge as the on scene commander.

3/6 On 14 April 2003, I, [redacted], do solemnly swear that this statement consisting of two pages is true and correct. So help me God

2/6
3/6
3/6
3/6
SERVING WITH THE U.S. ARMED FORCES ABOARD USS KITTY HAWK (CV 63) AT SEA. The forging instrument was acknowledged before me, by [redacted], personally known to me, on 14 April 2003. I do further certify that I am a person in the service of the U.S. Armed Forces authorized the general powers of a notary public under Title 10 U.S.C. 1041a and JAGMAN Chapter IX. No seal is required.

3/6 Lieutenant Commander [redacted] Judge Advocate General's Corps, U.S. Navy

		SFWT Level 2	SFWT Level 3	Section Lead	SFWT Level 4	Division Lead	Strike Leader	FCR Pilot	NVG	ATTP	NATOPS Inst.	Instrument Inst	ACT	Pri Fly	CATCC
3/6	CDR	Q	I	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
3/6	CDR	I	I	Q	Q	Q	Q	Q	Q	Q(3)	I	I	Q	Q	Q
3/6	ICDR	I	I	Q	Q	Q	Q	Q	Q	Q(3)	I	I	Q	Q	Q
3/6	ICDR	I	S	Q	S	Q	Q	Q	Q	I	I	I	Q	Q	Q
3/6	ICDR	I	S	Q	S	Q	Q	Q	Q	I	I	I	Q	Q	Q
3/6	ICDR	I	I	Q	Q	Q	Q	Q	Q	I	I	I	Q	Q	Q
3/6	LT	I	I	Q	Q	Q	Q	Q	Q	Q(3)	I	I	Q	Q	Q
3/6	LT	I	I	Q	Q	Q	Q	Q	Q	Q(3)	I	I	Q	Q	Q
3/6	LT	I	I	Q	T	I	I	I	Q	Q(1)	I	I	Q	Q	T
3/6	LT	I	I	Q	T	I	I	I	Q	Q(1)	I	I	Q	Q	T
3/6	LT	Q	T	I	I	I	I	I	Q	Q(2)	I	I	Q	Q	T
3/6	LT	Q	T	I	I	I	I	I	Q	Q(2)	I	I	Q	Q	T
3/6	LT	Q	T	I	I	I	I	I	Q	Q(2)	I	I	Q	Q	T
3/6	LT	Q	T	I	I	I	I	I	Q	Q	I	I	Q	Q	T
3/6	LT	Q	T	I	I	I	I	I	Q	Q	I	I	Q	Q	T
3/6	CDR	I	I	Q	Q	Q	Q	Q	Q	Q(3)	I	I	Q	Q	T

2 Q = 
 2 T = 
 2 I = 
 2 S = 
 (#) = Level of qualification

3/6 [REDACTED] CDR CFLCC-32D AAMDC

3/6 From: [REDACTED] LCDR (VFA-195) [REDACTED]@mil
Sent: Tuesday, April 15, 2003 11:04 PM
3/6 To: [REDACTED]@mil
Subject: FW: Contact Info for Zulu, Request from Safety Board



VFA195NOTE3710A
C.doc

XO

Most recent squadron qual matrix attached

3/6 LT [REDACTED]'s hours were as follows:
Total pilot time: 797.7 (194.4 night, 204.3 inst)
Hornet time: 568.9
FY03 hours: 153.6 total (58.6 night, 55.6 inst)
Mar 03 hours: 44.0 total (24.5 night, 24.0 inst)
Carrier landings: 159 total (59 night)

CVIC Misrep read as follows:

10D1 (CHIPPEY 400, 405) CO/OJ

2 AI

Pilots did not debrief in CVIC, but 400 RTB with a misrep to EP of seeing

his wingman's plane descending and flames protruding from the wings at [REDACTED]

[REDACTED] Other aircraft working in the same target area (88AR-2) reported seeing up to three rockets with no [REDACTED] gear indications on

two, but one of them was reported as guided by 405 before transmissions were

lost... Still awaiting further information on the condition of pilot in 405

3/6 V/R [REDACTED]

3/6 LCDR [REDACTED]
VFA-195 Operations Officer

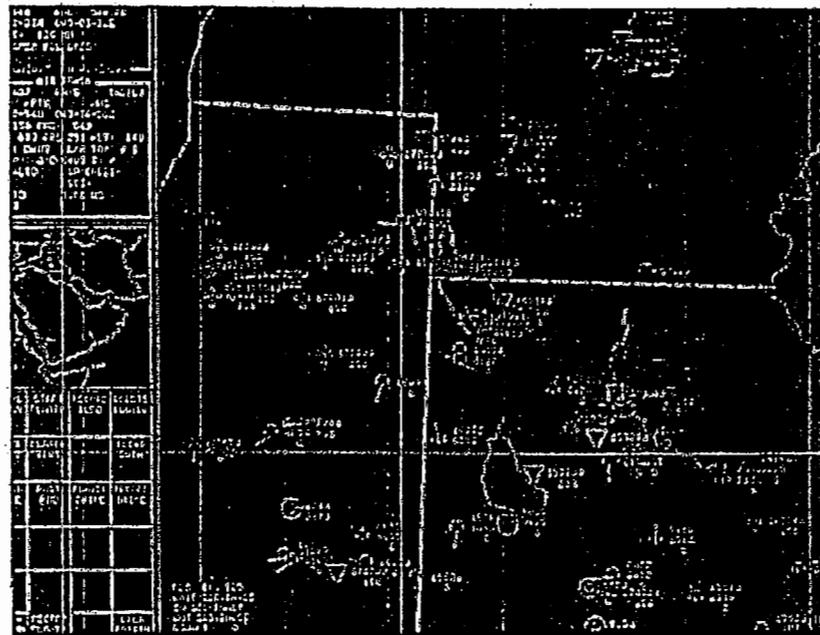
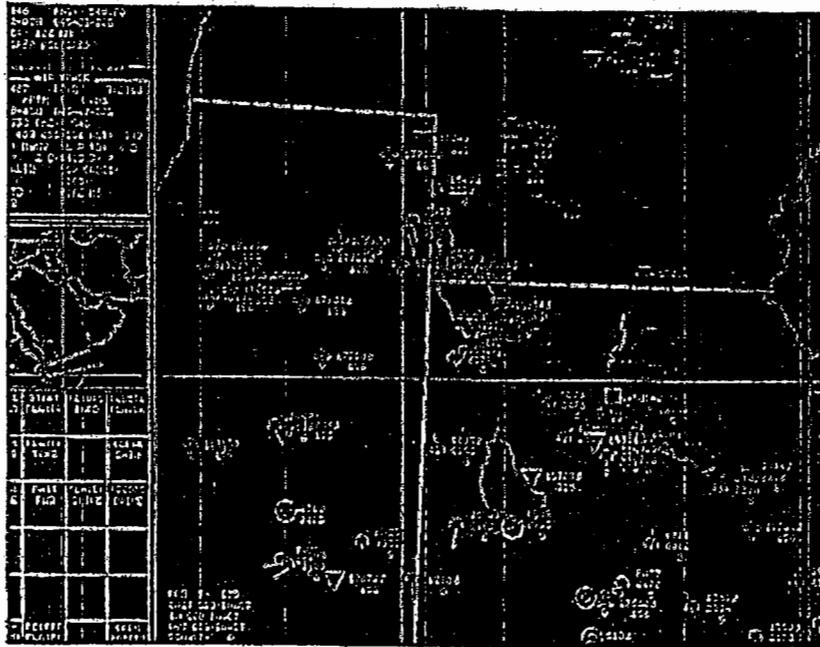
3/6 afloat: [REDACTED]@mil
ashore: [REDACTED]@mil

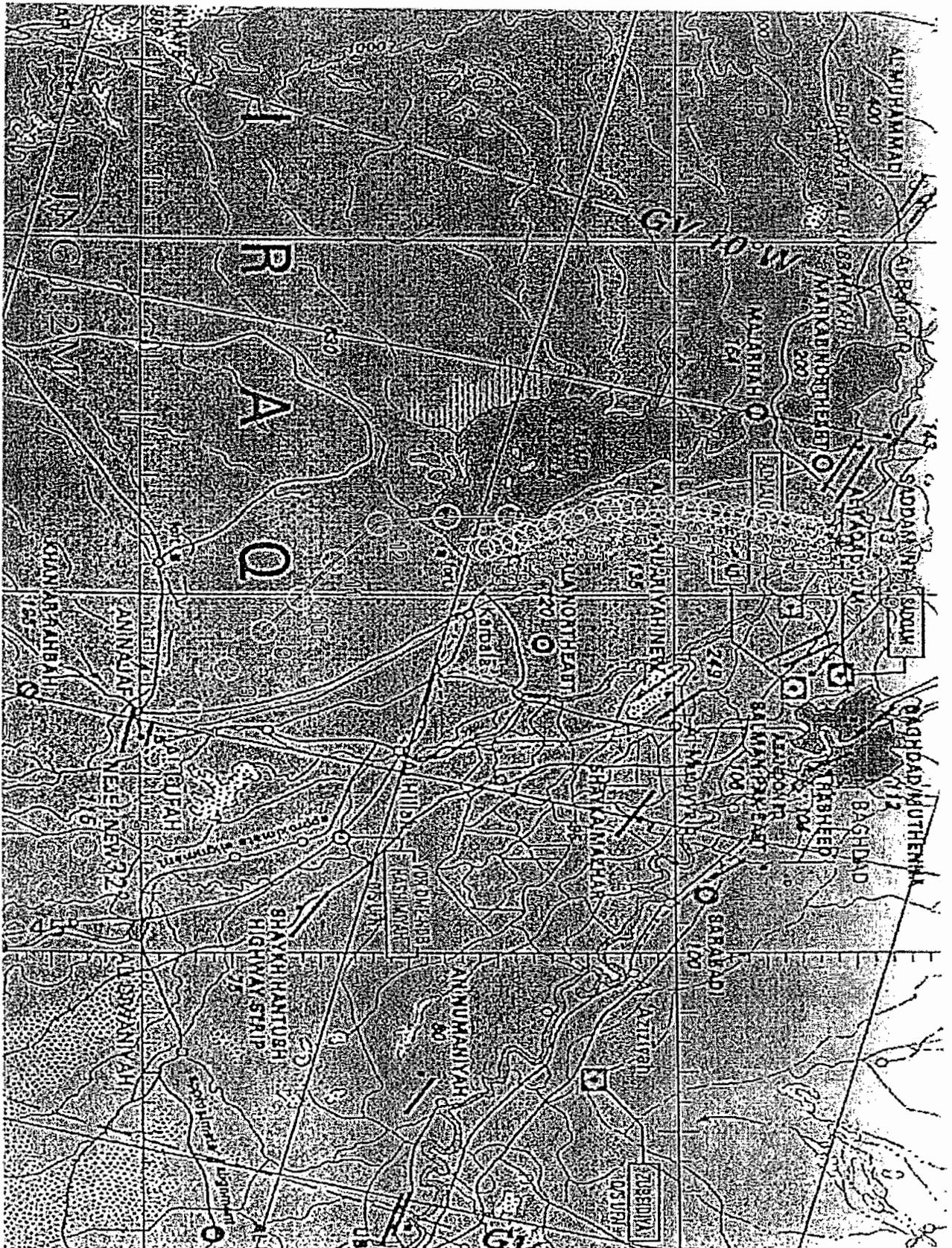
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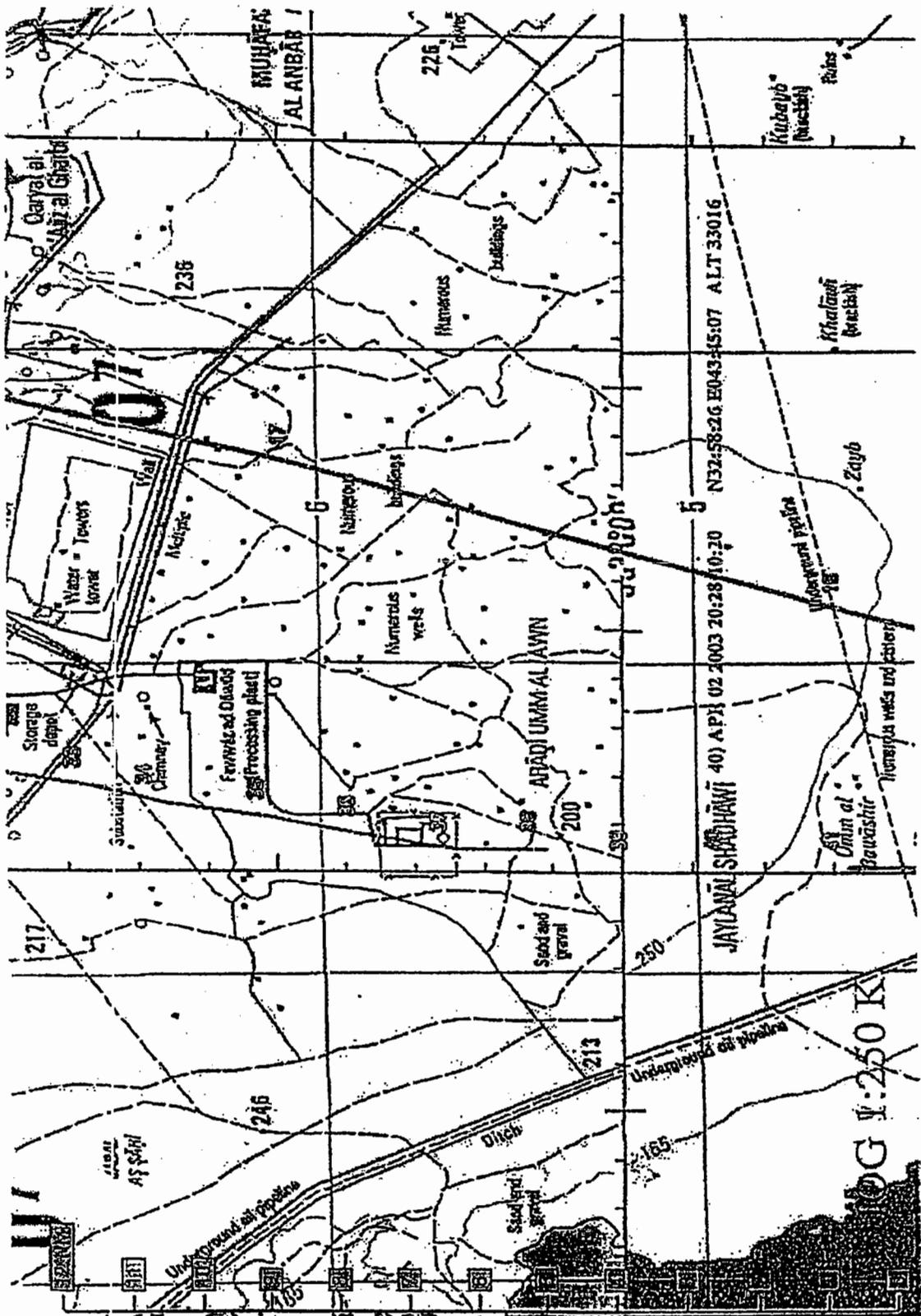
3/6 From: [REDACTED] CDR (VFA-195)
Sent: Wednesday, April 16, 2003 1:00 PM
3/6 To: [REDACTED] LCDR (VFA-195)
Subject: FW: Contact Info for Zulu, Request from Safety Board

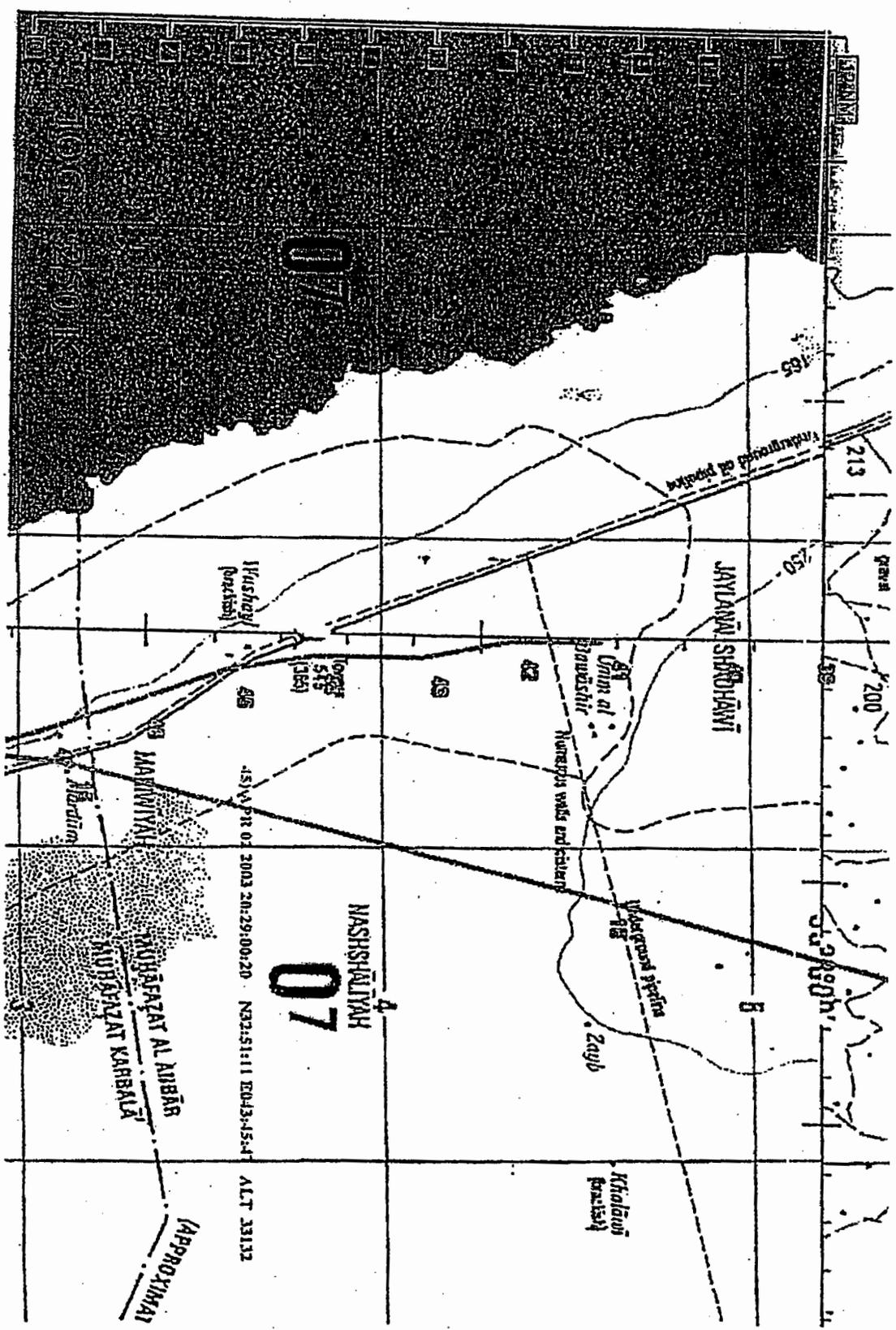
-----Original Message-----

3/6 From: [REDACTED] CDR CFLCC-32D AAMDC
3/6 [mailto:[REDACTED]]
Sent: Tuesday, April 15, 2003 10:22 PM
3/6 To: [REDACTED] CDR (VFA-195)
Subject: RE: Contact Info for Zulu, Request from Safety Board









MASHSHĀLIYAH
07

MURĀFAZĀT AL ĀIBĀR
 MURĀFAZĀT KARBĀLA

(APPROXIMATE)

151W 71E 02 3003 20:29:00:20 N22:51:11 E043:45:47 ALT 33132

Vashay (Qazish)

519 (115)

45

42

42

Khalani (Qazish)

Zayb

Vadqana' yafina

Nunayya walls and pillars

Umm al-Shaykh

JAYLĀNĀ SHRĪHĀNĪ

Vadqana' ya' pashva

213

200

150

165

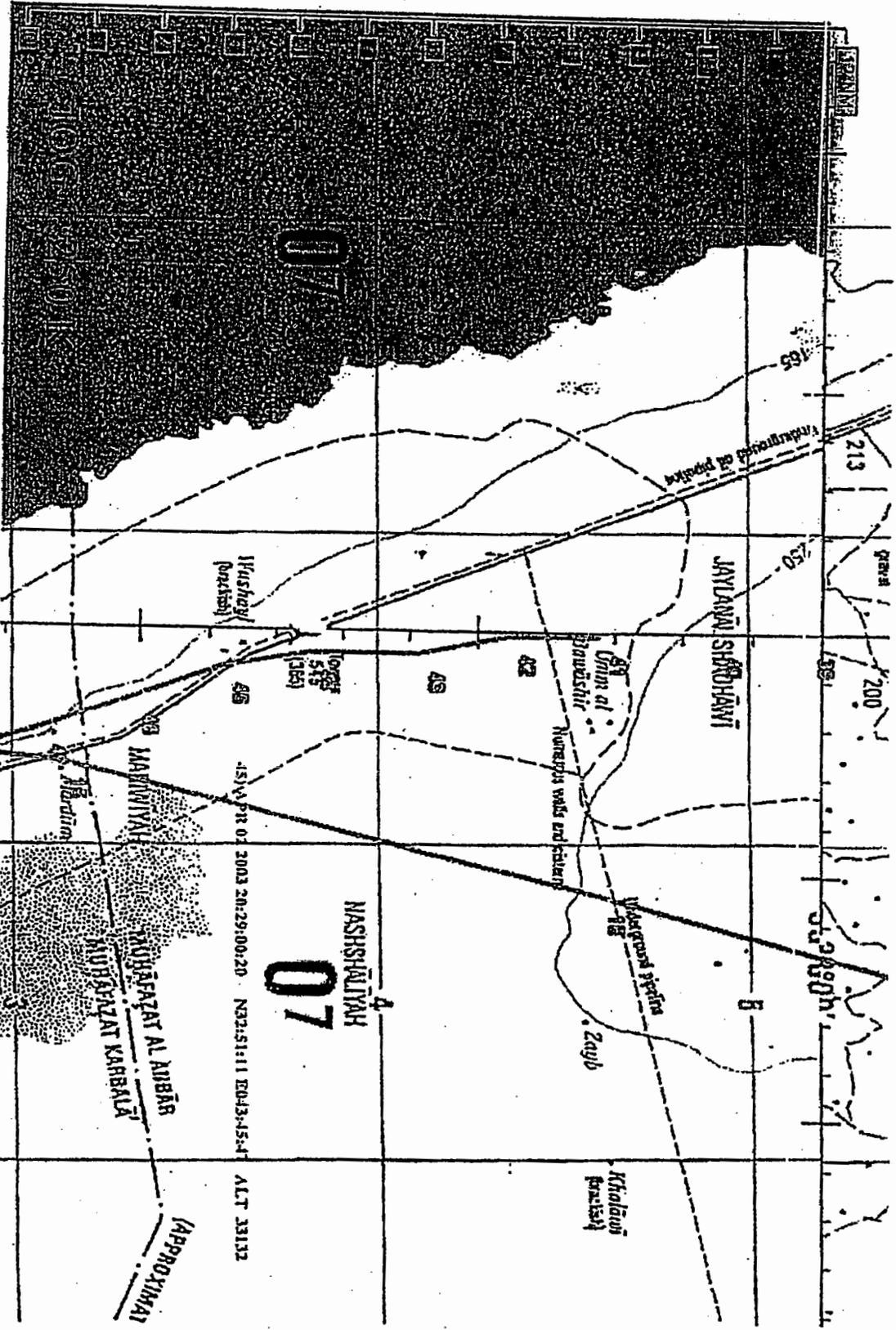
200

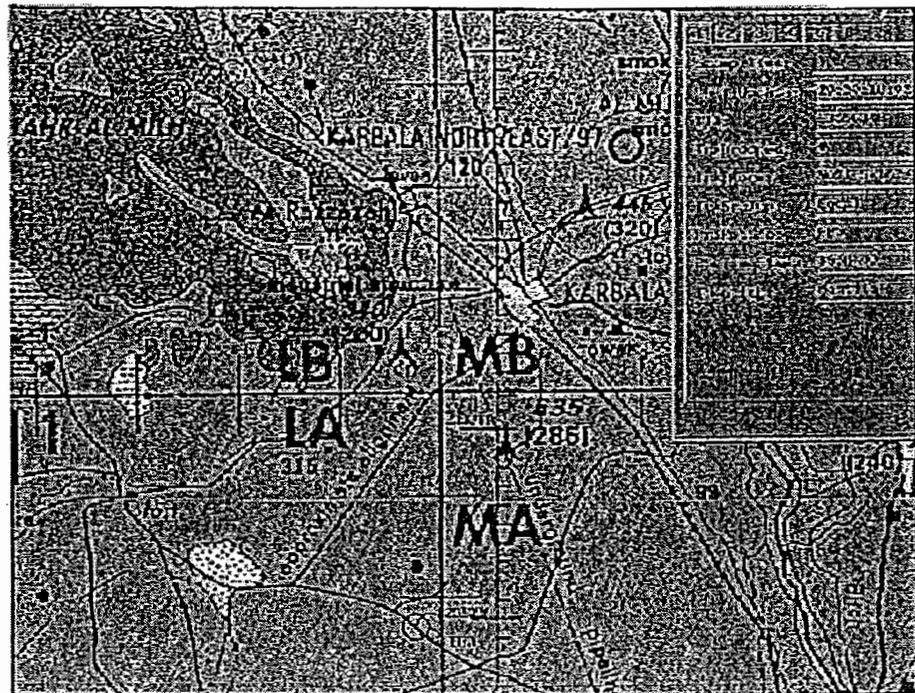
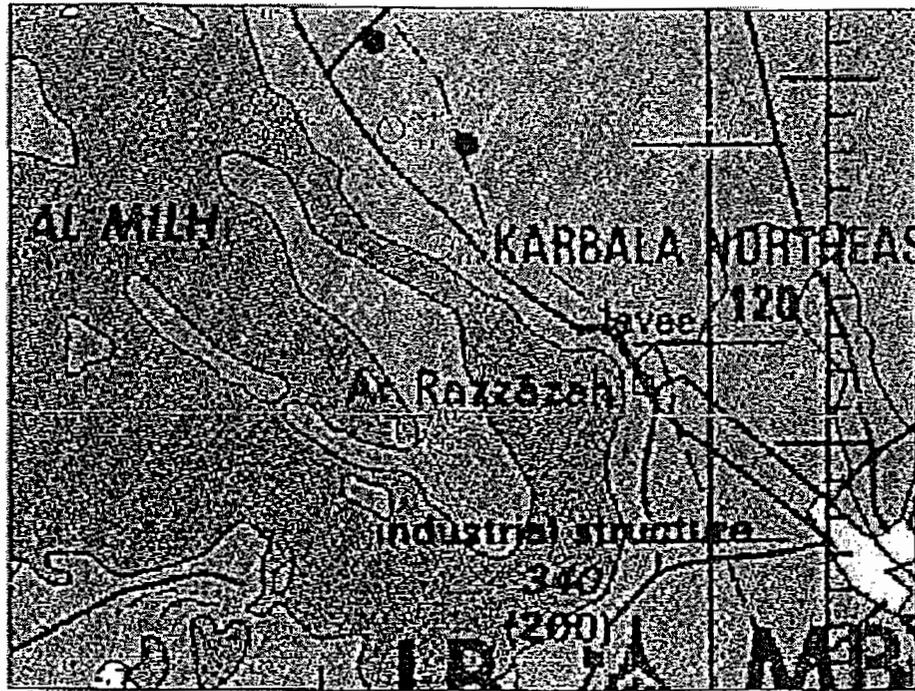
195

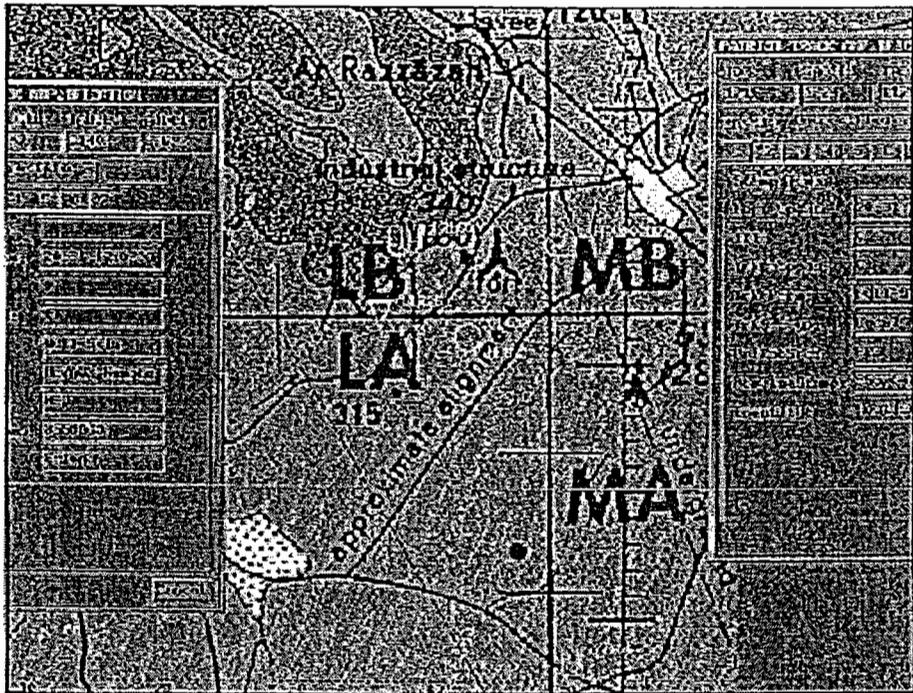
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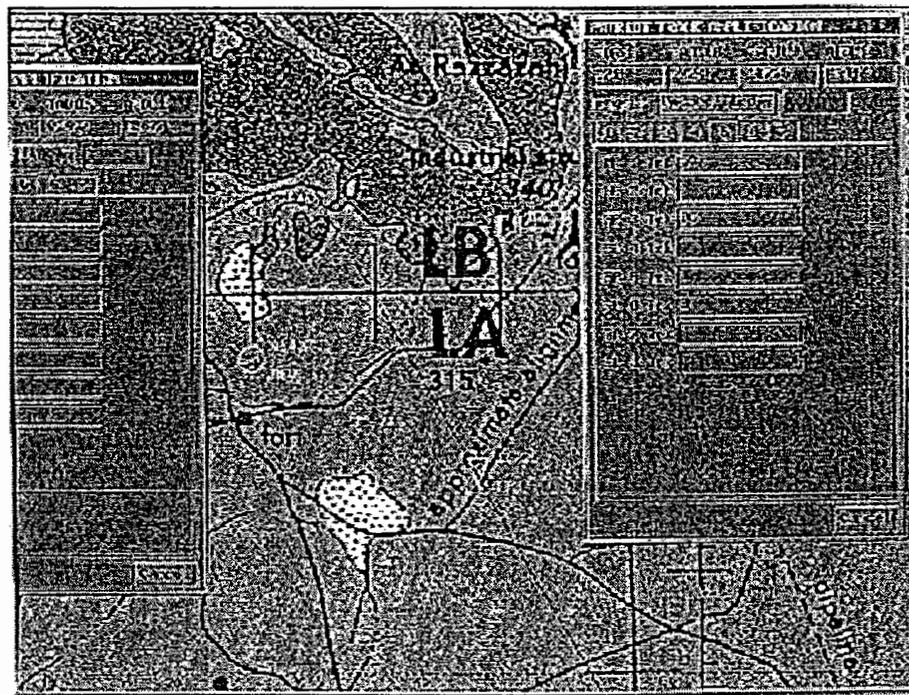
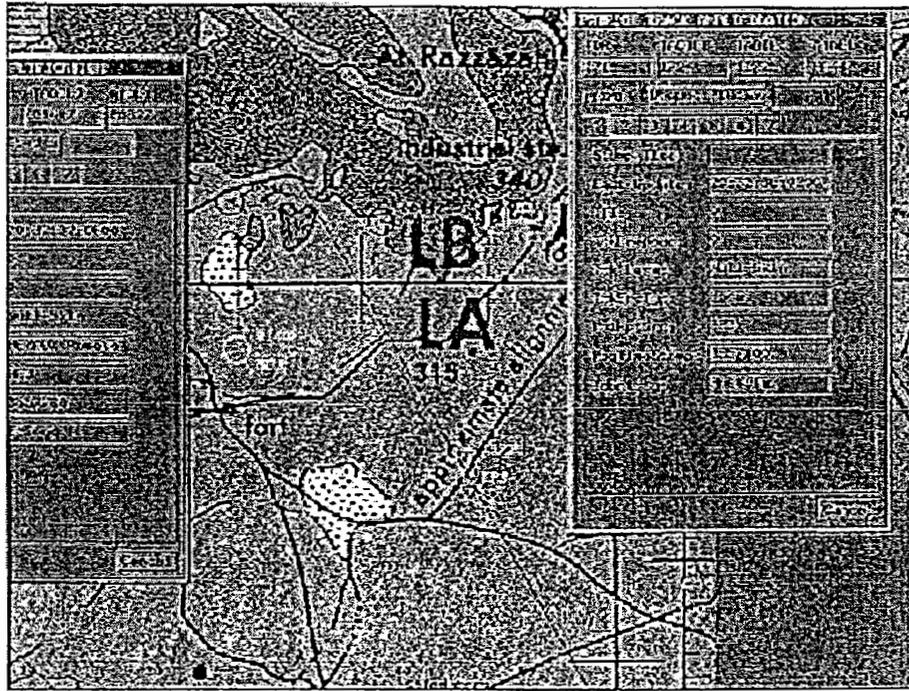
175

165









TAB F
COMM PLAN

2 PAGES

EXEMPT IAW

5 USC 552 (B) (1), (2), (3)

EO 12958, 1.4.a, c, g

~~XXXXXXXXXX~~

AOD A

30 Mar 03



CFACC'S
Air Operations Directive

Remaining additions

12 pages

CLASSIFIED

15 April 2003

From: LCDR [REDACTED]
To: Commander, Carrier Air Wing Five
Via: Deputy Commander, Carrier Air Wing Five
Commanding Officer, Strike Fighter Squadron One Nine Five
Subj: Technical Discussion of Dogwood 02 Wreckage [REDACTED]
Encl: (1) Map of crash area
(2) Line drawing of FA-18 Hornet
(3) Picture of Aircraft 405 in the water
(4) Picture of debris field assembled on the beach.

Geographic coordinates:

Approximate missile intercept location from post flight tape review of wingman mission date:

[REDACTED] 4 April

Most probable missile intercept data provided by outside sources:

[REDACTED] 10 April

Wreckage photographed and examined:

Pilot personal parachute	[REDACTED]	3 April	
Tail section of aircraft 405	[REDACTED]	3 April	
DIFIRS	[REDACTED]	3 April	Approximate
Left leading edge flap	[REDACTED]	10 April	
Possible aileron piece	[REDACTED]	10 April	
Right LEX	[REDACTED]	12 April	Approximate
Turtle back section from immediately behind cockpit with ALQ antennas	[REDACTED]	12 April	Approximate
Starboard horizontal stab	[REDACTED]	12 April	Vicinity of tail
Cockpit pressure regulator control valve	" "	" "	" "
Port ECS condenser	" "	" "	" "
Port HUD cover panel	" "	" "	" "
Bleed air ducting	" "	" "	" "
Right aileron shroud	" "	" "	" "
LAU-7 latch mechanism	" "	" "	" "
Pylon ECP fairing	" "	" "	" "

[REDACTED]

Geographic coordinates (cont.):

Section of port side lower engine cowling	[REDACTED]	12 April	Vicinity of tail
Drop tank tail fairing	" "	"	"
Drop tank internal bracing	" "	"	"
Port fuel/air heat exchanger	" "	"	"
Remains of LT White	[REDACTED]	12 April	

Coordinate datum and notes:

All location data was derived from GPS with the exception of "approximate" coordinates which were taken from [REDACTED]. Dates listed are the date at which the item was located. Decimal points in the location indicate Lat/Long in degrees, minutes, decimal minutes format. No decimal indicates degrees, minutes, seconds format. All coordinates [REDACTED].

Meteorological data:

Winds at altitude night of 2 April 2003 in the vicinity of [REDACTED]

FL310	268@57 knots
FL170	255@34
FL100	248@16
FL 50	258@2
SFC	065@9

Crash site description:

The tail section of the aircraft was located approximately 250 meters from the beachfront. Its orientation was upright and heading approximately south southeasterly. The shoreline and bottom of the lake consisted of very loosely packed mud. The water in lake [REDACTED] was extremely saline. All parts above labeled as located "vicinity of tail" were retrieved from within 20 meters of the vertical stabilizers. All other pieces were recovered at waters edge around either the island in the center of the lake or the lakes [REDACTED] shores.

Condition of wreckage:

No obvious shrapnel marks were found on any wreckage. Upper aft portion of fuselage with vertical stabilizers attached were found basically intact. One engine appeared to be below the tail wreckage, one was unlocated. The left side leading edge flap (LEF) was broken near the middle at a 90 degree angle relative to its top surface. The starboard leading edge extension (LEX) had extensive shear damage to its attachment points along the right fuselage. A piece of forward cockpit bulkhead was attached to the front of the LEX. The fracture lines on the bulkhead piece were very jagged. The turtle back panel

Condition of wreckage (cont.):

[REDACTED]

[REDACTED]

was also basically intact, with its attachment holes enlarged to near the diameter of the attachment fasteners. Fire witness marks (blistered paint) were observed on the port side ECS condenser. The port side lower engine cowling was extremely deformed with jagged fracture lines on all sides. The BUONO of the aircraft was visible on this piece. The only actual piece of the cockpit recovered was a portion of the cockpit pressure regulator valve. This item was broken from the cockpit pressure vessel with similar jagged fracture lines to the rest of the wreckage. The remnants of the tail section were light enough to be towed to shore with the EOD teams zodiac boat and its 50 HP motor.

[REDACTED]

Mission reports from the Para Jumpers indicate that the personnel parachute was "white, green and brown... good condition, no evidence of fire, (no) holes, or noted line breakage... no aircraft fluids or petroleum residue... chute attached to risers". Digital photos of the parachute are consistent of a NACES parachute.

[REDACTED]

[REDACTED]

Discussion and conclusions:

[REDACTED]

[REDACTED]

The evidence found in the aircraft debris field indicate a possible catastrophic inflight breakup either at or immediately following missile impact. This is supported by the following:

- (1) The tail section of the aircraft was of a small enough size that it was possible to be moved with a relatively small boat and motor.
- (2) Portions of the wreckage were found in the water at distances of up to 10 nm from the tail.
- (3) Wreckage found (with the exception of the tail section) was very small in size, indicating explosive breakup at altitude.
- (4) There was no "logical" order of the debris field which would indicate the aircraft was intact at impact.
- (5) The [REDACTED] was not located with the rest of the wreckage, indicating it possibly deployed on initial missile impact.
- (6) The fractured pieces of wreckage did not seem to indicate any single fracture plane (jagged, multidirectional fractures).

[REDACTED]

[REDACTED]

Very Respectfully

[REDACTED]

LCDR [REDACTED]

[REDACTED]

[REDACTED]

I, [REDACTED] do solemnly swear that the statement beginning on page 1 and ending on page 4 is true and complete to the best of my abilities. The statement was made freely and voluntarily without any promises or threats made towards me.

[REDACTED]
[REDACTED] LCDR, USN

20 APR 03 / 1235 JST
Date/Time

I, [REDACTED] the undersigned officer, do hereby certify that on 20 April 2003, before me, personally appeared [REDACTED] who is known to me to be an active duty member of the Armed Forces of the United States; and to be the identical person who is described in, whose name is subscribed to, and who signed and executed that foregoing instrument; and having first made known to him the contents thereof, he personally acknowledged to me that he signed and sealed the same, on the date it bears, as his true, free, and voluntary act and deed, for uses, purposes, and considerations therein set forth. And I do further certify that I am at the date of this certification an Officer of the grade, branch and component of service, and organization stated below in the active service of the United States Armed Forces; that by statute no seal is required on this certification; and same is executed in my present position as the Carrier Air Wing FIVE Assistant Legal Officer; pursuant to authority granted to me by Title 10, Section 1044(a) and (b), United States Code (Uniform Code of Military Justice, Article 136); Sections 0902 and 0903 of the Manual of the Judge Advocate General of the United States Navy; and by any other authority granted to me by Federal and State Law.

[REDACTED]
[REDACTED]
LIEUTENANT JUNIOR GRADE
UNITED STATES NAVY
CARRIER AIR WING FIVE DET OIC
CARRIER AIR WING FIVE ASST LEGAL OFFICER

No Seal Required
Title 10, Sections 1044(a) and (b)
UCMJ Article 136
JAGMAN Sections 0902 and 0903

WITNESSED BY:

[REDACTED]
[REDACTED] AO3, USN, HS-14

[REDACTED]
[REDACTED] PR2, USN, VFA-192

**EXECUTIVE SUMMARY
CLASSIFIED**

11 PAGES

[REDACTED]

15 April 2003

From: LCDR [REDACTED]
To: Commander, Carrier Air Wing Five

Via: Deputy Commander, Carrier Air Wing Five
Commanding Officer, Strike Fighter Squadron One Nine Five

Subj: Chronology of Events Surrounding the Search and Recovery of Dogwood 02

Chronology of significant Events follows below:

2 April: Dogwood 02 was engaged by two surface to air missiles (SAMs) near [REDACTED] Iraq. Initial SAR is performed by assets tasked by the Joint Search and Rescue Center (JSRC)

3 April: Naval Aircrew Common Ejection Seat (NACES) parachute was found on [REDACTED]. The tail section of the aircraft was also found nearby. The Deployable In Flight Incident Reporting System (DIFIRS) was recovered. [REDACTED] were reported by Army units on the ground and the search was temporarily called off. In the evening a VFA-195 aircraft was diverted to [REDACTED] and was met by Col [REDACTED], who participated in the initial SAR. Pictures of the parachute, the search route, and the DIFIRS were provided to the squadron representative and returned to the command aboard USS Kitty Hawk.

4 April: Analysis of the parachute pictures and interviews with local parachute riggers (PRs) and ejection seat maintainers (AMEs) yielded the distinct possibility that some form of ejection had occurred following missile impact. [REDACTED]

[REDACTED] The JSRC resumed the search for Dogwood 02. EOD dive operations were begun at the crash site with limited resources.

5 April: A local Rescue Coordination Cell (RCC) was stood up onboard USS Kitty Hawk. Members begin gathering all data available to assist in the location of Dogwood 02.

6 April: RCC aboard Kitty Hawk continued to analyze and compile data from all available sources. MH-60s from the Air Force Rescue Squadron (Jollies) continued the air search of the area.

7 April: A decision was made to augment the search capability with organic assets from HS-14 and provide a Hornet subject matter expert (SME) for wreckage analysis and planning.

8 April: HS-14 arrived at [REDACTED] airfield in the early evening. They set up a small detachment in the Jollies' Hangar. I arrived in NAVCENT at Bahrain, was outfitted with gear and met with [REDACTED] and [REDACTED]. This day was especially frustrating because the meeting with [REDACTED]

[REDACTED]

[REDACTED]

had nothing to do with the actual mechanics of how to accomplish the rescue and delayed the mission in the field by one day. While in Bahrain no plans could be made that with the overall mission commander [REDACTED] or the HS-14 crews due to limited communications. The operational personnel at Bahrain, especially [REDACTED], at the Force Protection Office bent over backwards to ensure I had all the proper combat equipment and anything else required. Later in the day, I met with LtCol [REDACTED] and the rest of the administrative team to identify personnel responsible for all aspects of the Task Force. LtCol [REDACTED] also was very helpful, and provided me with anything that was required for the mission, including SIPR communications and offered his own home as a place to billet for the night.

9 April: I flew to [REDACTED] in the morning and met with Col [REDACTED] and the team commander, MAJ [REDACTED]. After reporting and establishing roles and responsibilities, the team immediately shared all information that was available and began planning multiple scenarios for recovery. Col [REDACTED] and members of Task Force Dogwood departed for and later arrived at [REDACTED] midday via C-130. After meeting the rest of the team from HS-14, planning was begun in earnest for flight and ground operations the next day.

10 April: Task Force Dogwood was airlifted to the crash site in the morning by Army helicopters. The initial perimeter was then set up by security force. Col [REDACTED] and myself flew to the site near midday. After general familiarization with the crash site, the Col and myself landed on the beach near the primary wreckage and met with Maj [REDACTED] and Capt [REDACTED] of the [REDACTED] team. All data that was known by the team from the ship was passed to the search team on the ground, the divers, and EOD personnel. We identified a part of wreckage that had floated ashore, and then took off to begin the new air search. The decision was made by the team to fly an irregular search pattern to investigate leads from RCC aboard Kitty Hawk. It was determined from this search that [REDACTED] would have been found had he been on any part of the Island in the middle of the lake, and that no man-made overt or covert signs had been left there. Other areas of the search concentrated on the shoreline where some other pieces of Hornet wreckage were found. These pieces were identified and photographed on site and left in place. The team then flew back to [REDACTED]. Following post flight mission reporting, the team met to plan the following days search. Requests for information were forwarded to and replied to by NAVCENT, the JSRC and the RCC aboard the Kitty Hawk. The Air Force provided SIPRnet accounts at the communications tent without which communications would have been poor at best. This proved to be the best method for information exchange from the team to the ship. It was further apparent that information flow from all parties definitely helped the situation and allowed the operational element in the field to make the right decisions. Multiple sources would often have slightly different data, but all this information could be quickly run to ground in the field.

11 April: The task force was unable to fly to the site this day due to weather and aircraft maintenance. The bulk of the day was thus spent proposing and exploring all possible scenarios for what could have happened after missile intercept given the data on hand at the time. Winds aloft data, wreckage found to date, aircraft systems and ejection seat

[REDACTED]

[REDACTED]

capabilities were all examined to determine what should be done the following day. It was determined by Col [REDACTED] that he would go to [REDACTED] for coordination of possible ground operations and exploitation of intelligence sources, the Hornet SME would spend the day at the dive site, and the HS-14 crews would search the primary areas we expected to find LT White and wreckage. Working together this day revealed the unsurpassable dedication to the mission and professionalism of Col [REDACTED] and the HS-14 crews that would punctuate the entire mission. The day could be summarized as a planning day for how we were going to find and return LT White home.

12 April: Weather was good on this day and the task force was able to launch early to begin the plan for the day. On arrival at the site I was dropped off and met by Maj [REDACTED] and representatives from the EOD and Army dive teams. Another part of the wreckage had been recovered and was identified. After initial conversation with the EOD team, it was apparent the divers working the site did not know what an FA-18 was, or what it looked like. The decision was thus made for me to go out on the boat and direct dive operations from there. After providing some rough sketches of an FA-18, the diver was able to bring to the surface many more pieces of wreckage. These were identified placed in the boat. As these pieces were brought up, it was becoming apparent that the wreckage was not as complete as originally thought. Given this, the dive team decided to try to tow what was thought to be a major piece of wreckage to shore. This was done, and the piece was relocated to nearer shore. All pieces found to date were laid out to scale on the beach for analysis by myself and the Naval Safety Center representative. At this time the word was passed from Major [REDACTED] that the helicopters had found human remains about [REDACTED] miles away. A security team was formed, boarded the helo and secured the site while the dive team and I proceeded by boat to the location of the remains. On arrival, LT White was found and identified by myself via facial recognition, flight equipment marking and name tag. LT White was then placed aboard the [REDACTED] helo for transportation to [REDACTED]. Confirmation of identity was radioed back to [REDACTED] to Col [REDACTED] who relayed the same to NAVCENT. Upon arrival in [REDACTED], Col [REDACTED] had arranged and led an Honors Squad to greet LT White. This again demonstrated to me the great compassion, honor and commitment of the Col and his men to returning LT White to his home. Col [REDACTED] confirmed that LT White was to be taken to Camp [REDACTED] for disposition to Mortuary Affairs headed by Col [REDACTED]. Upon arrival in [REDACTED] an Army Chaplain met us and led the group in scripture while honors were rendered by the search team while LT White was moved from the helicopter to transportation to the temporary morgue. At the morgue, formal preliminary identification was made by me and all paperwork was signed. [REDACTED] LT White's [REDACTED]. Having someone with FA-18 experience present made this task considerably smoother and less intrusive for all. At the same time, I took custody of LT White's service weapon, [REDACTED] and [REDACTED] survival radio. His personal items, including a [REDACTED] were cataloged and taken custody of by the personnel at mortuary affairs. Points of contact were established and it was determined through conversation with Col [REDACTED] that an escort would not be allowed for the remains due to Army regulations. This information was passed along to the chain of command. The day was ended by the task force returning to [REDACTED]

[REDACTED]

[REDACTED]

13 April: Final MISREPs were prepared and forwarded to NAVCENT and CVW-5. At this point the Task Force divided with Col [REDACTED] remaining in Tallil, and the [REDACTED] team, EOD and Army divers at the crash site. The HS-14 detachment and myself returned to the Kitty Hawk via [REDACTED] in the early afternoon.

15 April: Chronology of events prepared and forwarded to the chain of command.

Very Respectfully,

LCDR [REDACTED]

[REDACTED]

OPERATION IRAQI FREEDOM

SPECIAL INSTRUCTIONS

(SPINS)

Remaining Additional

10 pages

CLASSIFIED

TAB H
10 ADDITIONAL PAGES
CLASSIFIED

**TABI
CLASSIFIED**

20 PAGES

TAB J
CLASSIFIED

10 PAGES

THIS IS: KMART		FOR: ALL 31st ADA BDE UNITS									
SSIO # 003		020921ZAPR03									
LINE 1 (DTG)	None	ID#	Modifications			Ac/Deact Times					
LINE 2											
LINE 2a											
LINE 2b											
LINE 2c											
LINE 3	CAOC	RADC	SADC	BDE	FDC	BTRY					
LINE 3a (EA)											
LINE 3b (ID)											
LINE 3c	HIMAD					WT					WF
	SHORAD					WT					WF
LINE 4											
LINE 4a	1	2	3	4	5	6	7	8	9	0	
LINE 4b											
LINE 4c											
LINE 4d											
LINE 4e											
LINE 4f											
LINE 4g											
LINE 5a	ADE		1		2		3	4	5		
LINE 5b			WHITE							RED	
REMARKS:	[REDACTED] is ONLY: [REDACTED]										
INITIALS											

22

2

**TABL
CLASSIFIED**

5 PAGES

**TAB M
CLASSIFIED**

20 PAGES

TAB N
CLASSIFIED

24 PAGES

[REDACTED]

NOTES:

Points 1-26 above recorded 1/min.
Points 27-55 above recorded 6/min.

A [REDACTED] value for aircraft ROLL, indicates [REDACTED]

A [REDACTED] value for aircraft Mag Heading indicates headings greater than [REDACTED]

The Aircraft had what appears to be an [REDACTED] at APR 02 2003 20:13:52:80

[REDACTED]

All points are plotted in PowerPoint file [REDACTED]

[REDACTED]

<u>Date & Time</u>	<u>I.A.T</u>	<u>I.ONG</u>	<u>MAG-HEADING</u>	<u>ROLL</u>	<u>IND AS</u>	<u>Baro ALT</u>
1) APR 02 2003 20:00:00:65	[REDACTED]	[REDACTED]	-63.0	0.0	292.0	30184
2) APR 02 2003 20:01:00:65	[REDACTED]	[REDACTED]	-64.4	0.0	312.0	30184
3) APR 02 2003 20:02:00:65	[REDACTED]	[REDACTED]	-65.8	-1.4	300.0	30188
4) APR 02 2003 20:03:00:65	[REDACTED]	[REDACTED]	-65.8	0.0	320.0	30180
5) APR 02 2003 20:04:00:65	[REDACTED]	[REDACTED]	-65.8	0.0	320.0	30188
6) APR 02 2003 20:05:00:85	[REDACTED]	[REDACTED]	-67.2	-7.0	316.0	30204
7) APR 02 2003 20:06:00:85	[REDACTED]	[REDACTED]	-67.2	0.0	344.0	26376
8) APR 02 2003 20:07:00:85	[REDACTED]	[REDACTED]	-58.8	1.4	320.0	23764
9) APR 02 2003 20:08:00:85	[REDACTED]	[REDACTED]	-61.6	1.4	300.0	24016
10) APR 02 2003 20:09:00:85	[REDACTED]	[REDACTED]	-56.0	-8.4	296.0	23912
11) APR 02 2003 20:10:00:85	[REDACTED]	[REDACTED]	-64.4	-26.6	324.0	21240
12) APR 02 2003 20:11:00:85	[REDACTED]	[REDACTED]	-33.6	14.0	344.0	19696
13) APR 02 2003 20:12:00:85	[REDACTED]	[REDACTED]	+1.4	4.2	332.0	19356
14) APR 02 2003 20:13:00:80	[REDACTED]	[REDACTED]	-9.8	1.4	328.0	19360

[REDACTED]

<u>Date & Time</u>	<u>LAT</u>	<u>LONG</u>	<u>MAG HEADING</u>	<u>ROLL</u>	<u>IND AS</u>	<u>Baro. ALT</u>
15) APR 02 2003 20:14:00:80	[REDACTED]	[REDACTED]	+2.8	-28.0	356.0	19236
16) APR 02 2003 20:15:00:00	[REDACTED]	[REDACTED]	+9.8	4.2	372.0	19216
17) APR 02 2003 20:16:00:00	[REDACTED]	[REDACTED]	+8.4	-8.4	372.0	20008
18) APR 02 2003 20:17:00:00	[REDACTED]	[REDACTED]	+8.4	0.0	400.0	20360
19) APR 02 2003 20:18:00:00	[REDACTED]	[REDACTED]	-46.2	37.8	400.0	21176
20) APR 02 2003 20:19:00:00	[REDACTED]	[REDACTED]	-92.4	-71.4	392.0	20604
21) APR 02 2003 20:20:00:00	[REDACTED]	[REDACTED]	+123.2	5.6	380.0	19696
22) APR 02 2003 20:21:00:00	[REDACTED]	[REDACTED]	-124.6	30.8	348.0	20744
23) APR 02 2003 20:22:00:00	[REDACTED]	[REDACTED]	-109.2	-5.6	408.0	20480
24) APR 02 2003 20:23:00:00	[REDACTED]	[REDACTED]	+60.2	-71.4	364.0	20756
25) APR 02 2003 20:24:00:00	[REDACTED]	[REDACTED]	+40.6	-12.6	452.0	17388
26) APR 02 2003 20:25:00:00	[REDACTED]	[REDACTED]	-144.2	-44.8	388.0	20308
27) APR 02 2003 20:26:00:00	[REDACTED]	[REDACTED]	-162.4	-5.6	316.0	28412
28) APR 02 2003 20:26:10:00	[REDACTED]	[REDACTED]	-165.2	-9.8	304.0	29672
29) APR 02 2003 20:26:20:00	[REDACTED]	[REDACTED]	-165.2	-5.6	292.0	30808

*:

[REDACTED]



Date & Time	LAT	LONG	MAG	HEADING	ROLL	IND	AS	Baro	ALT
30) APR 02 2003 20:26:30:00	[REDACTED]	[REDACTED]	-166.6	-5.6	300.0	31144			
31) APR 02 2003 20:26:40:00	[REDACTED]	[REDACTED]	-166.6	-1.4	304.0	31564			
32) APR 02 2003 20:26:50:00	[REDACTED]	[REDACTED]	-166.6	-4.2	304.0	32064			
33) APR 02 2003 20:27:00:00	[REDACTED]	[REDACTED]	-166.6	5.6	308.0	32428			
34) APR 02 2003 20:27:10:00	[REDACTED]	[REDACTED]	-166.6	-1.4	316.0	32696			
35) APR 02 2003 20:27:20:00	[REDACTED]	[REDACTED]	-166.6	-5.6	324.0	32760			
36) APR 02 2003 20:27:30:00	[REDACTED]	[REDACTED]	-168.0	-5.6	328.0	32844			
37) APR 02 2003 20:27:40:00	[REDACTED]	[REDACTED]	-168.0	-4.2	324.0	32864			
38) APR 02 2003 20:27:50:20	[REDACTED]	[REDACTED]	-173.6	-29.4	320.0	32864			
39) APR 02 2003 20:28:00:20	[REDACTED]	[REDACTED]	-175.0	2.8	312.0	32924			
40) APR 02 2003 20:28:10:20	[REDACTED]	[REDACTED]	-176.4	-4.2	316.0	33016			
41) APR 02 2003 20:28:20:20	[REDACTED]	[REDACTED]	+177.8	-7.0	324.0	33000			
42) APR 02 2003 20:28:30:20	[REDACTED]	[REDACTED]	+177.8	-1.4	324.0	33088			
43) APR 02 2003 20:28:40:20	[REDACTED]	[REDACTED]	+177.8	-4.2	324.0	33144			
44) APR 02 2003 20:28:50:20	[REDACTED]	[REDACTED]	+172.2	-22.4	320.0	33148			





Date & Time	LAT	LONG	MAG HEADING	ROLL	IND AS	Baro ALT
45) APR 02 2003 20:29:00:20	[REDACTED]	[REDACTED]	+165.2	-14.0	320.0	33132
46) APR 02 2003 20:29:10:20	[REDACTED]	[REDACTED]	+161.0	-11.2	324.0	33136
47) APR 02 2003 20:29:20:20	[REDACTED]	[REDACTED]	+155.4	-15.4	320.0	33132
48) APR 02 2003 20:29:30:20	[REDACTED]	[REDACTED]	+156.8	-1.4	312.0	33116
49) APR 02 2003 20:29:40:20	[REDACTED]	[REDACTED]	+155.4	-1.4	308.0	33148
50) APR 02 2003 20:29:50:20	[REDACTED]	[REDACTED]	+155.4	-4.2	312.0	33088
51) APR 02 2003 20:30:00:20	[REDACTED]	[REDACTED]	+154.0	1.4	312.0	32924
52) APR 02 2003 20:30:10:20	[REDACTED]	[REDACTED]	+154.0	0.0	312.0	32804
53) APR 02 2003 20:30:20:20	[REDACTED]	[REDACTED]	+151.2	-22.4	308.0	32816
54) APR 02 2003 20:30:30:20	[REDACTED]	[REDACTED]	+169.4	63.0	308.0	33044
55) APR 02 2003 20:30:37:20	[REDACTED]	[REDACTED]	-172.2	-33.6	304.0	33088



**TAB P
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2 PAGES

3/6 Host: "32d Operations" whispers to "31ST BCPT FWD":
For COL [REDACTED] TCS Playback from F-18 incident showed that FP1 was the first to classify as TBM [REDACTED]

3/6 "6-52 BN CDR" ([REDACTED]) has left the conversation.
Host: "32d Operations" whispers to "31ST BCPT FWD":
According to the plots, it was [REDACTED] in front of another unit. Replicated that at [REDACTED] TBM tracks generated.

Host: "32d Operations" whispers to "31ST BCPT FWD":
Need to get to FP1 (A/5-5277) and see if they remember a [REDACTED] TBM. TCS data shows they generated the Launch Point for the TBM.

Host: "32d Operations" whispers to "31ST BCPT FWD":
Orer

3/6 "31ST BCPT FWD" whispers to "32d Operations":
Good Copy will pass on to COL [REDACTED]

3/6 "32D SOC TMD" ([REDACTED]) has joined the conversation.
Host: "32d Operations" whispers to "31ST BCPT FWD":
3/6 Thanks. [REDACTED] can call my cell phone if necessary. CW3 [REDACTED] has number.

Host: "32d Operations" whispers to "31ST BCPT FWD":
Orer

2/6

"32d Operations" whispers to "31ST ADA S3 Forward":
M/LJ [REDACTED] is COL [REDACTED] available to talk w/ COL [REDACTED]

"31ST ADA S3 Forward" whispers to "32d Operations":
She is not here at the moment.

"32d Operations" whispers to "31ST ADA S3 Forward":
Rcger - let me ask if he wants to pass traffic to you

"31ST ADA S3 Forward" whispers to "32d Operations":
Rcger

"32d Operations" whispers to "31ST ADA S3 Forward":
will meet you here in about 2-3 minutes - please stand by

"31ST ADA S3 Forward" whispers to "32d Operations":
OK

3/6

"32d Operations" whispers to "31ST ADA S3 Forward":
[REDACTED] this is Col [REDACTED]

"31ST ADA S3 Forward" whispers to "32d Operations":
Yes Sir

"32d Operations" whispers to "31ST ADA S3 Forward":
Need to coordinate for our investigation team to come your way.

"31ST ADA S3 Forward" whispers to "32d Operations":
OK, when are they coming?

"32d Operations" whispers to "31ST ADA S3 Forward":
I have 6 people that are part of the board.

"32d Operations" whispers to "31ST ADA S3 Forward":
we are working the aircraft right now

"32d Operations" whispers to "31ST ADA S3 Forward":
could be tomorrow night or the next night, I don't know yet

"32d Operations" whispers to "31ST ADA S3 Forward":
Soon as I do, you'll be the first to know.

"31ST ADA S3 Forward" whispers to "32d Operations":
Thanks Sir.

"32d Operations" whispers to "31ST ADA S3 Forward":
We will spend 48 hours with you guys

"32d Operations" whispers to "31ST ADA S3 Forward":
We need to go to the battery first and talk to the crew

"31ST ADA S3 Forward" whispers to "32d Operations":
You are coming also, will be good to see you.

"32d Operations" whispers to "31ST ADA S3 Forward":
Then we need to spend time with the ICC crew and time with those who witnessed the event at brigade

We will have questions already written out for the interview to ponder and respond to on a statement form. We'll then add question as necessary.

"32d Operations" whispers to "31ST ADA S3 Forward":

At Ixigade, I want those that monitor the [REDACTED] witnessed the event, and did whatever you all do under those circumstances.

3/6

"31ST ADA S3 Forward" whispers to "32d Operations":

Roger. CW2 [REDACTED] actually saw event, but I will have all available. OK, do you want me to give them the questions early?

"32d Operations" whispers to "31ST ADA S3 Forward":

Now, let me add one more piece to this puzzle, separate but linked.

"32d Operations" whispers to "31ST ADA S3 Forward":

I won't have all our questions ready until tomorrow night. If it works out, I'll send to you but doubtful

"31ST ADA S3 Forward" whispers to "32d Operations":

Roger. What is next piece?

"32d Operations" whispers to "31ST ADA S3 Forward":

The CFLCC safety guys were directed to look into the [REDACTED] incident. Same battery.

"31ST ADA S3 Forward" whispers to "32d Operations":

Roger.

"32d Operations" whispers to "31ST ADA S3 Forward":

There are two guys who want to tag along and do their thing at the same time.

"32d Operations" whispers to "31ST ADA S3 Forward":

It might be better from your perspective to get all the pain over with in one shot.

"31ST ADA S3 Forward" whispers to "32d Operations":

OK, might as well get it all out of the way at once.

"32d Operations" whispers to "31ST ADA S3 Forward":

That would make 8 to move around, I know that's a real pain.

"31ST ADA S3 Forward" whispers to "32d Operations":

Roger, but we will work it.

"32d Operations" whispers to "31ST ADA S3 Forward":

OK. One last thing. We may try to run some experiments on your battery taking advantage of some aircraft

"31ST ADA S3 Forward" whispers to "32d Operations":

Like what type experiments?

"32d Operations" whispers to "31ST ADA S3 Forward":

We want to try to collect some data on [REDACTED], etc. We're still working with CFACC on what's flying and what's possible.

"31ST ADA S3 Forward" whispers to "32d Operations":

Roger.

"32d Operations" whispers to "31ST ADA S3 Forward":

"31ST ADA S3 Forward" whispers to "32d Operations":
OK

"32d Operations" whispers to "31ST ADA S3 Forward":
I will also need to spend some time with the 140As

"32d Operations" whispers to "31ST ADA S3 Forward":
So I envision day one at the battery and day two at brigade and battalion.

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger.

"32d Operations" whispers to "31ST ADA S3 Forward":
Do you see a problem with the timing and getting around?

3/6 "31ST ADA S3 Forward" whispers to "32d Operations":
I don't see a problem with timing, except that COL [REDACTED] intended

"31ST ADA S3 Forward" whispers to "32d Operations":
to go to [REDACTED] on the first day of your visit

"31ST ADA S3 Forward" whispers to "32d Operations":
Do you need her?

"32d Operations" whispers to "31ST ADA S3 Forward":
No I do not need her as part of this. Would like to talk to her at some point, but it's best she is not around for our interviews.

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger, I also have your statements and will have CD soon.

"32d Operations" whispers to "31ST ADA S3 Forward":
Great.

"31ST ADA S3 Forward" whispers to "32d Operations":
Intended to send back with BJ 06. Do you want me to send down or hold for you.

"32d Operations" whispers to "31ST ADA S3 Forward":
Yes, hold for us. He is going to overlap with us anyway if we get a flight tomorrow night

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger, I will hold for you.

"32d Operations" whispers to "31ST ADA S3 Forward":
Based upon my experience with the first investigation, people need to be at the ready

"31ST ADA S3 Forward" whispers to "32d Operations":
OK, I will give warning order to 5-52 tonight.

3/6 "31ST ADA S3 Forward" whispers to "32d Operations":
I think only person at Brigade you need is CW2 [REDACTED]

"31ST ADA S3 Forward" whispers to "32d Operations":
I have him tied to site.

"32d Operations" whispers to "31ST ADA S3 Forward":

We would have Echo up and radiating with all Tabs in the same configuration as that night

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger.

"32d Operations" whispers to "31ST ADA S3 Forward":
Then we're going to try and get some [REDACTED] and other aircraft to expose the system to some of the things we believe it was exposed to that night

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger, big experiment.

"31ST ADA S3 Forward" whispers to "32d Operations":
Lots of resources.

"32d Operations" whispers to "31ST ADA S3 Forward":
Las: Item, I will keep you apprised of when we get the aircraft. I assume that the timing of our flight will be the same as the ones BJ06 uses. If you could draft up a rough itinerary that would be helpful.

"32d Operations" whispers to "31ST ADA S3 Forward":
I assume we'll need our battle rattle, mask, weapon. Sleeping bag?

"31ST ADA S3 Forward" whispers to "32d Operations":
Roger, we are picking him up tonight around 0145.

"31ST ADA S3 Forward" whispers to "32d Operations":
I will work schedule. Yes Sir, still fighting around here.

"32d Operations" whispers to "31ST ADA S3 Forward":
I have myself, a navy capt, air force col, navy CDR, and my two warrants. Will see who safety guys bring

"32d Operations" whispers to "31ST ADA S3 Forward":
OK [REDACTED] anything else you need to know?

"31ST ADA S3 Forward" whispers to "32d Operations":
We have ice pack within 10 minutes.

"31ST ADA S3 Forward" whispers to "32d Operations":
No thanks, that should be it.

"32d Operations" whispers to "31ST ADA S3 Forward":
Alright [REDACTED], thanks, we'll be in contact soon

"31ST ADA S3 Forward" whispers to "32d Operations":
Have a safe trip Sir.

3/6

TAB Q

17 pages

WITHHELD IAW FOIA

5 USC 552 (b)

And EO 12958, 1.4

**TAB R
CLASSIFIED**

10 PAGES

TAB S
CLASSIFIED

9 PAGES

**TAB T
CLASSIFIED**

8 PAGES

**TAB U
CLASSIFIED**

21 PAGES

E 5:57 ADA

TWUD

4-Apr-83

10:30 hrs



Systems NOC J SSG

START OF IOCE CONFIDENCE
CHECK OF MMU0.

CHECK OF MMU0 DONE.
START OF CONFIDENCE CHECK
OF MMU2.

CHECK OF MMU2 DONE.
START OF CONFIDENCE CHECK
OF MMU10.

CHECK OF MMU10 DONE.

***END OF IOCE UGENM

*** LOADING CPUE ***
START OF CPUE UGEN00
START OF TEST ON CP1
END OF TEST ON CP1
START OF TEST ON CP2
END OF TEST ON CP2
END CPUE

*** LOADING ELDR ***
START OF MMUE/U00N00
TESTING MEMORY BANK 1
TESTING MEMORY BANK 2
TESTING MEMORY BANK 3
TESTING MEMORY BANK 4
TESTING MEMORY BANK 5
TESTING MEMORY BANK 6
TESTING MEMORY BANK 7
TESTING MEMORY BANK 8
TESTING MEMORY BANK 9
TESTING MEMORY BANK 10
TESTING MEMORY BANK 11

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TESTING MEMORY BANK 12
TESTING MEMORY BANK 13
TESTING MEMORY BANK 14
TESTING MEMORY BANK 15
PUMMING DATRET TEST ON THE FOLLOWING GOOD MEMORY BANKS
TESTING MEMORY BANK 1
TESTING MEMORY BANK 2
TESTING MEMORY BANK 3
TESTING MEMORY BANK 4
TESTING MEMORY BANK 5
TESTING MEMORY BANK 6
TESTING MEMORY BANK 7
TESTING MEMORY BANK 8
TESTING MEMORY BANK 9
TESTING MEMORY BANK 10
TESTING MEMORY BANK 11
TESTING MEMORY BANK 12
TESTING MEMORY BANK 13
TESTING MEMORY BANK 14
TESTING MEMORY BANK 15
START OF TEST 0030 - REASSN ON ALL GOOD MEMORY BANKS
EXCHANGING LOGICAL MEMORY ADDRESSES OF MMU 0 AND MMU 1
TESTING MEMORY BANK 0
RESTORING LOGICAL MEMORY ADDRESSES OF MMU 0 AND MMU 1
RUNNING TESTS 0010, 0030, 0050, 0080 ON CPU2
TESTING MEMORY BANK 1
TESTING MEMORY BANK 2
TESTING MEMORY BANK 3
TESTING MEMORY BANK 4
TESTING MEMORY BANK 5
TESTING MEMORY BANK 6
TESTING MEMORY BANK 7
TESTING MEMORY BANK 8
TESTING MEMORY BANK 9
TESTING MEMORY BANK 10
TESTING MEMORY BANK 11
TESTING MEMORY BANK 12
TESTING MEMORY BANK 13
TESTING MEMORY BANK 14
TESTING MEMORY BANK 15
START OF TEST 0080 - REASSN ON ALL GOOD MEMORY BANKS
EXCHANGING LOGICAL MEMORY ADDRESSES OF MMU 0 AND MMU 1
TESTING MEMCRY BANK 0
RESTORING LOGICAL MEMORY ADDRESSES OF MMU 0 AND MMU 1
FINISHED RUNNING ON CPU2
NUMBER OF PFSES - 1
END OF MMUE/00DM00
U03 M08 OS INITIALIZED
MSG
MSG **TOS LOAD ECS 00THUD 00HM00
MSG
GOTO DCID
** FU DISK -ZUS **
START OF DIAGNOSTIC DCID / UIEM00
START OF TEST 0020 INTERFACE TEST

```

00
00
00
00

2

START OF TEST 0030 AUTO BITE TEST
START OF TEST 0040 KEYBOARD TEST
NUMBER OF TIMES THROUGH THE SEQUENCE = 1
START OF TEST 0020 INTERFACE TEST
START OF TEST 0030 AUTO BITE TEST
START OF TEST 0040 KEYBOARD TEST
NUMBER OF TIMES THROUGH THE SEQUENCE = 1
END OF DIAGNOSTIC DCID / UIEM00
GOTO TPHD
START OF DIAGNOSTIC TPHD / U0WM00
START OF TEST 0015 PCU TEST FOR OPTICAL DISK
TESTING CHANNEL 8
START OF TEST 0030 INTERVAL TIMER TEST
START OF TEST 0045 TIME OF DAY CLOCK TEST
START OF TEST 0050 HCU STATUS TEST
PLEASE MAKE SURE THE HCU IS ON LINE.

3
3



START OF TEST 0060 HCU DATA PATTERN TEST

4
4

1 ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789 \<<>>|' ..:;!?'* _--+&@#**
2 ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789 () / ..:;!?'* _--+ **
3 THIS LINE TESTS EVEN PARITY
4 THIS IS OK

5 EOT WILL SKIP 11 LINES

END OF TEXT

18 THERE SHOULD BE 11 BLANK LINES ABOVE THIS LINE

END OF LINE

19
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54 THERE SHOULD BE A FOLD BETWEEN HERE AND BELOW

5

55

56

57 THERE SHOULD BE A FOLD BETWEEN HERE AND ABOVE

58

59 THIS SHOULD BE THE LAST LINE ON THIS PAGE

6

6



THIS LINE SHOULD BE ON THE TOP OF THE 3RD PAGE OF THE PRINTOUT END OF TEST

7
7

Y
Y
Y
N

START OF TEST 0070 PROGRAM HALT BUTTON TEST
DO NOT PRESS PROGRAM HALT BUTTON UNTIL NOTIFIED TO DO SO.
PRESS PROGRAM HALT BUTTON
PRESS THE Y KEY AFTER THE PROGRAM HALT BUTTON HAS BEEN
PRESSED

Y
PRESS PROGRAM HALT BUTTON
PRESS THE Y KEY AFTER THE PROGRAM HALT BUTTON HAS BEEN
PRESSED

Y
NUMBER OF TIMES THROUGH THE SEQUENCE - 1

END OF DIAGNOSTIC TPMD / U0WMD0

GOTO MPCE

START OF DIAGNOSTIC MPCE / U0EM0A

START OF TEST 0010 INTERPROCESSOR-MEMORY BUS MAX. CONFLICT
DISPLAY WILL BE TURNED OFF FOR 35 SECONDS

START OF TEST 0020 BLOCK INT. BRANCHING FROM IOCU PROGRAM

START OF TEST 0030 MPC, TRAP INT. BRANCHING FROM IOCU PROG.

START OF TEST 0040 MPC, TRAP INT. BRANCHING FROM BLOCK TRANS

START OF TEST 0050 MEM BUSY BRANCHING FROM IOCU BLOCK TRANS

START OF TEST 0060 MEM BUSY BRANCHING FROM MPC, TRAP INDIR.

START OF TEST 0070 UPPER MEMORY ACCESS TEST

START OF TEST 0080 IOCU 24 BIT OPERATIONAL TEST

START OF TEST 0090 CPU 24 BIT OPERATIONAL TEST

START OF TEST 0100 EWCC MEMORY TEST

NUMBER OF TIMES THROUGH THE SEQUENCE - 1

END OF DIAGNOSTIC MPCE / U0EM0A

GOTO ODSO

START OF DIAGNOSTIC ODSO / U0GM00

START OF TEST 0010 READ TEST

THE PART NUMBER OF THE DISK IN DISK UNIT 1 IS 11479921-2US

START OF TEST 0020 READ/WRITE/VERIFY TEST

NUMBER OF TIMES THROUGH THE SEQUENCE - 1

START OF TEST 0010 READ TEST

THE STATUS WORD IS 44350004

IF YOU WISH TO TEST UNIT 2,

INSERT A NON-WRITE PROTECTED DISK INTO UNIT 2

ENSURE THAT DISK UNIT DOOR IS COMPLETELY CLOSED

~~BE SURE THAT READY LIGHT IS LIT OR FLASHING~~

TYPE Y FOLLOWED BY AN ENTER TAB WHEN READY TO CONTINUE.

TYPE N FOLLOWED BY AN ENTER TAB IF YOU DO NOT WISH TO TEST

N

NUMBER OF TIMES THROUGH THE SEQUENCE - 1

START OF TEST 0030 EMBEDDED DATA RECORDER (EDR) TEST

TO RUN EDR TEST, FIRST INSERT COLLECTION MEDIA IN EDR UNIT.

TYPE Y FOLLOWED BY AN ENTER TAB WHEN MEDIA IS IN DRIVE.

TYPE N FOLLOWED BY AN ENTER TAB IF YOU DO NOT WISH TO TEST.

N

NUMBER OF TIMES THROUGH THE SEQUENCE - 1

START OF TEST 0040 IFOT TEST

NUMBER OF TIMES THROUGH THE SEQUENCE - 1

**TAB W
CLASSIFIED**

177 PAGES

Baghdad 5-Day Forecast

3 Apr 4 Apr 5 Apr 6 Apr 7 Apr

SKY COND AND WEATHER	 Mostly cloudy HAZE	 All Mostly Cloudy Partly Cloudy HAZE	 Partly cloudy HAZE	 Mostly Cloudy Isold Late Showers HAZE	 Mostly Cloudy with Isold TS/Showers HAZE
VSBY (MI)	45 Haze	6 Haze	6 Haze	6 Haze	3-4 Haze
LO / HI °F	60 / 83	66 / 94	67 / 96	71 / 89	64 / 81
WINDS (Kt)	SE 10-16	SE 8-12 G18	SE 10-16	AM 9-10-15 PM NW 10-15 G28	NW 10-18 G25