AIRCRAFT ACCIDENT INVESTIGATION BOARD REPORT

US ARMY UH-60
BLACK HAWK HELICOPTERS
87-26000 AND 88-26060

VOLUME 6

TABS O-3b thru O-3f

AIRCRAFT
ACCIDENT INVESTIGATION BOARD
REPORT

COPY

15

OF

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TECHNICAL REPORT
E-3 AWACS MISSION QUALIFICATION TRAINING

I. INTRODUCTION:

The purpose of this evaluation was to determine the relevance and effectiveness of the E-3 AWACS Mission Qualification Training (MQT) program to support E-3 aircrew operational missions in Operation Provide Comfort (OPC). MQT is intended to prepare aircrew members to perform tactical duties in support of unit taskings and follows graduation from Initial Qualification or Upgrade Training Programs. (TAB O3a) MQT is administered by the aircrew member's assigned operational flying squadron, and all Mission Ready (MR) E-3 aircrew members are graduates of MQT. Additional specialized Theater Training is required prior to MR crew members conducting operations in OPC. (TAB O3d)

II. BACKGROUND:

E-3 AWACS crew members aboard a US E-3 aircraft, serial number 77-0351, were performing airborne warning and control duties during the crash of two US Army Black Hawk helicopters, serial numbers 88-26060 and 87-26000, in the northern "No Fly Zone" of Iraq on 14 April 1994. An AFR 110-14 Accident Investigation Board is examining the possible involvement of US F-15 fighter aircraft, serial numbers 79-0025 and 84-0025, in the crash of these helicopters.

III. EVALUATION:

This evaluation included review of MQT Guides and associated primary courseware for the Mission Crew Commander (MCC) course, Senior Director (SD) course, Air Surveillance Officer (ASO) course, and Weapons Director (WD) course. MQT courses consist of academics, Aircrew Training Device (ATD) training (also known as simulator training), and flying training. Academic training objectives and associated courseware modules were thoroughly reviewed. Objectives for the simulator sessions, which primarily support associated academic modules, were reviewed. Flying training objectives were reviewed, but they are broad and primarily intended to familiarize the aircrew member with any squadron-unique procedures rather than new, specific knowledge or skill training objectives.

IV. DETERMINATION:

A. Mission Crew Commander MQT Course. The MCC course consists of 82 hours of academics, three ATD sessions for 17 hours, and two E-3 flights. (Atch 1) The course covers special systems knowledge, air battle management, composite and joint operations, theater operations, theater training, and threat knowledge countermeasures training. Simulator sessions train MCCs in conducting and managing composite force and joint missions. The course emphasizes E-3 air battle management roles and planning factors, as well as identification (ID) roles and missions. MCCs are trained to recognize properly established and maintained air pictures, avoid fratricide, and understand the interrelationship of ID and the rules of engagement

(ROE). The courseware advises the students that the MCC rarely has the authority to directly apply the ROE. (Atch 2) E-3 self defense tactics and procedures are also trained.

B. Senior Director MQT Course. The SD course consists of 20.5 hours of academics, two ATD sessions of 6 hours each, and two E-3 flights. (Atch 3) Academics cover mission planning and employment considerations for strategic defense and tactical employment scenarios. Simulator training reinforces the academics. SD hands-on training includes supervising WDs, as well as crew coordination with the MCC and ASO. Also addressed are: ROE; air space management and air picture maintenance (i.e. tracking, threat initiation and warning); the need to jointly plan mission specifics with surveillance; strategic orbit point fighter flow; marshaling procedures; protecting search and rescue (SAR) forces during contingency operations; and safety of flight.

C. Air Surveillance Officer MQT Course. The ASO course consists of 30 hours of academics, six ATD sessions for 35 hours, and two E-3 flights. (Atch 4) ASO subjects and training objectives include E-3 self defense, safe passage, maritime radar operations, special information systems, electronic counter counter measures (ECCM), Navy procedures, and North American Air Defense (NORAD) procedures.

D. Weapons Director MQT Course. The WD course consists of 36.5 hours of academics, two ATD sessions of five hours each, and two E-3 flights (Atch 5). Academic and simulator training includes safe passage, SAR missions including helicopters, high value airborne asset protection, strategic defense, surveillance/weapons interface, tactical employment, ID methods, and ROE.

E. E-3 AWACS MQT. Courses adequately build on the Initial Qualification and Upgrade Training courses to train the Basic Qualified crew member to attain MR status. (TAB O3a) Altogether, the training provides the knowledge and skills necessary to conduct AWACS roles and missions worldwide with additional theater specific training. (TAB O3d) However, neither courses for the WD addressed helicopter operations such as found in OPC, and neither course put academic emphasis on the SD's leadership role as the head of the weapons team.

BERTRAM H. PRYOR, JR., Lt Col, USAF
Technical Advisor, AWACS Systems

5 Atchs

1. Extract, 552 ACW MQT Guide, Mission Crew Commander, Jun 1992
2. Extract, MCC MQT Trainee Guide MMS:BK03 (REV A)
3. Extract, 552 ACW MQT Guide ZMG:REV A Senior Director, Apr 1993
4. Extract, 552 ACW MQT Guide AMG:REV A, Air Surveillance Officer, Mar 1993
5. Extract, 552 ACW MQT Guide WMG:REV A, Weapons Director, Jul 1993

CERTIFICATION

I am Lt Col Bertram H. Pryor, Jr., assigned to the 552 Air Control Wing, Tinker AFB, Ok as the Director of Wing Requirements. I am a Technical Advisor to the AFR 110-14 Accident Board, investigating the crash of two U.S. Army Black Hawk helicopters and the possible involvement of U.S. F-15 fighter aircraft and U.S. E-3 AWACS aircraft in the crash of these helicopters in the northern "No Fly Zone" of Iraq on 14 April 1994. I have held various positions as an AWACS crew member and staff officer over the past 15 years. I have been qualified as an AWACS Weapons Director, Senior Director, and Instructor Mission Crew Commander. I have held AWACS-related staff positions as 552d Wing Simulation Training Officer, Chief of Airborne Training at HQ Tactical Air Command, and 552d Wing Chief of Operations Training. I have served as an AWACS Flight Commander and AWAC Squadron Deputy Commander. I served as the USCENTAF senior AWACS planner for Operation Desert Storm, and flew 20 combat support AWACS missions. I am currently a mission ready E-3 Mission Crew Commander with over 2800 hours in the E-3 aircraft. In my capacity as AWACS Systems Technical Advisor, I reviewed the materials used in various AWACS operations training programs including:

The syllabus and course materials for the Initial Qualification, Mission Qualification, and Upgrade Training programs for the following E-3 crew positions: Mission Crew Commander, Senior Director, Weapons Director, and Air Surveillance Officer.

AWACS continuation training program requirements.

The AWACS Theater Training program and associated courseware prepared by the 552 ACW and applicable to Operation Provide Comfort.

The individual training records, flight evaluation folders, and AFORMS training completion products for all crew members of the incident E-3 crew.

In all, I estimate I reviewed over 3,000 pages of material over a 14 day period. This report summarizes my review of this material.

15 May 1994
(Date)

Bertram H. Pryor, Jr.
(Signature)

DEPARTMENT OF THE AIR FORCE
HQ 552 Air Control Wing
Tinker AFB, Oklahoma 73145-6503

MCC MQT GUIDE

USAF MISSION QUALIFICATION TRAINING PROGRAM

E-3 MISSION CREW COMMANDER

JUNE 1992

INTRODUCTION

This training guide prescribes the overall training strategy and approximate amount of instruction required for a student having the entry prerequisites to attain the program goals. The program is designed to produce mission crew commanders who are positionally knowledgeable and proficient, well versed in battle management, and capable of exercising strong leadership to obtain unity of effort in accomplishing the mission. Units tasked to implement this program are responsible for ensuring that each student demonstrates the knowledge and skill proficiencies set forth in the program. Within directive constraints, the amount and level of training devoted to mission elements, events or subjects should be adjusted, as required, to meet the needs of individual students.

OFFICIAL

WILLIAM J. BALL
Brigadier General, USAF
Commander

THOMAS F. BLISS, Colonel, USAF
Operations Group Commander

Supersedes MCC MQT Guide, August 1991
DISTRIBUTION: X

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from
MCC MQT Guide, E-3 MSN Crew Commander
which is kept in my records system.

5 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

CHAPTER 1

PROGRAM ACCOUNTING

1-1. PREREQUISITES. Crew members will normally complete Initial Qualification Training (IQT) IAW the ACC Syllabus and ACCM 51-60 before entering Mission Qualification Training (MQT). Direct entry into MQT is authorized for crew members who are E-3 qualified (i.e., NATO, Saudi), crew members going to or from a geographically separated unit (GSU), and those non-current (unqualified) up to but not greater than 18 months. Refer to ACCM 51-60 for recurrency and/or requalification requirements. The MCC MQT program is divided into two tracks based on these prerequisites:

a. Track 1 is for graduates of IQT.

b. Track 2 is for direct entry aircrew members.

1-2. PURPOSE. The purpose of MQT is to qualify individuals in their respective aircrew position to mission ready (MR) status. Completion of this training and squadron commander certification will qualify the individual for MR status IAW ACCM 51-60.

1-3. DURATION. Track 1 is 19 training days and Track 2 is 21 training days so as to complete MQT within 30 calendar days as required by ACCM 51-60, Volume II.

1-4. CURRENCY REQUIREMENTS. Academic, simulator, and live flying continuation training requirements (Phase II) do not apply during MQT. The start date for these requirements is the first day of the next month after the squadron commander certifies the crew member mission ready (MR). See ACCM 51-60, Volume II for requirements and proration procedures.

1-5. MQT INSTRUCTOR REQUIREMENTS. MQT will be accomplished under the supervision of an instructor MCC. A single instructor is not required to certify all items completed in the MQT program but squadrons are encouraged to designate a primary instructor to the maximum extent possible to ensure continuity.

1-6. MR CERTIFICATION. 552 ACW Form 52 (Attachment 1) and the crew position specific MQT Completion Checklist (Attachment 2) will be submitted to the squadron commander when all required actions have been completed.

1-7. INVENTORY OF HOURS:

a. IQT Graduates (Track 1):

(1)	Academic		82.0 Hours
(2)	Device:		
	(a) Planning/Briefing/Debriefing	–	8.0 Hours
	(b) Device Time (3 sessions)	–	9.0 Hours
	(c) Total		17.0 Hours
(3)	Flying (2 sorties):		
	(a) Planning/Briefing/Debriefing	–	23.0 Hours
	(b) Flying	–	20.0 Hours
	(c) Total		43.0 Hours

b. Direct Entry (Track 2)

(1)	Academic		102.0 Hours
(2)	Device:		
	(a) Planning/Briefing/Debriefing	–	8.0 Hours
	(b) Device Time (3 sessions)	–	9.0 Hours
	(c) Total		17.0 Hours
(3)	Flying (2 sorties):		
	(a) Planning/Briefing/Debriefing	–	23.0 Hours
	(b) Flying	–	20.0 Hours
	(c) Total		43.0 Hours

SECTION B — ACADEMIC DESCRIPTIONS

3-6. IQT GRADUATES. IQT graduates will complete the academic units described below for Track 1. If an academic description does not specify different times and content for the two tracks, the lesson applies equally to both categories of student.

3-7. DIRECT ENTRY. Direct entry students will complete the academic units described below for Track 2 and common units as discussed above.

3-8. Academic training is listed by lesson number, subject, instructional method, alphanumeric identifier, nominal time for completion, facility, and concise narrative of content.

BLOCK I — SQUADRON INTRODUCTION

M1.1 MQT INTRODUCTION AND OVERVIEW — INFORMAL LECTURE
MMP:INTR — 2.0 HOURS
STUDY AREA

An introduction to the MQT program, administrative procedures, and student responsibilities. An overview of the MQT Guide. Additionally, the student's background will be reviewed to tailor the MQT program within directive constraints. A tentative schedule should be provided, using the checklist at Attachment 2, by filling in the expected completion date column for each item.

M1.2 SQUADRON ORIENTATION — INFORMAL LECTURE/TOUR
MMP:SQDN — 6.0 HOURS
SQUADRON AREA

A comprehensive orientation to squadron facilities, personnel, and procedures and an overview of squadron policies. A re-emphasis of MCC responsibilities within the operational squadron context.

M1.3 MISSION PLANNING — READING/DEMO-PERFORMANCE
MMS:MPLN — TRACK 1: 11.0 HOURS
SQUADRON AREA — TRACK 2: 16.0 HOURS

While both students are trained on tactical mission planning requirements and squadron procedures, in addition the Track 2 student is introduced to 552 ACW standard mission planning procedures. Primarily assigned reading for the Track 1 student, the Track 2 student is given a demonstration and tour. An additional eight hours of planning time is included, but is accounted for in the flight training time for M301. Prerequisite for M301.

M1.4 DEPARTURE PREPARATION — READING/DEMO—PERFORMANCE
MMS:PREP — TRACK 1: 1.0 HOUR
SQUADRON AREA — TRACK 2: 3.0 HOURS

While the Track 1 student is merely oriented to any unique squadron procedures, the Track 2 student is again introduced to 552 ACW standard departure preparation procedures. As for the previous lesson, the Track 2 student is given a demonstration. An additional hour spent on this subject is accounted for in the flight training time for M301. Prerequisite for M301.

M1.5 FORMS, REPORTS, AND LOGS — READING/DEMO—PERFORMANCE
MMP:DOCS — TRACK 1: 2.0 HOURS
STUDY AREA — TRACK 2: 4.0 HOURS

While both students are oriented to squadron reporting procedures and policies, the Track 2 student is also introduced to 552 ACW standard reporting procedures. Prerequisite for M301.

M1.6 SQUADRON ORIENTATION MISSION — ASSIGNED READING
MMS:M301 — TRACK 2 ONLY: 2.0 HOURS
STUDY AREA

The Track 2 student receives additional training on 552 ACW standard mission procedures. There are no academics for the Track 1 student in this lesson.

M1.7 BLOCK I TEST — EVALUATION
MME:BK01 — TRACK 1: 2.0 HOURS
STUDY AREA — TRACK 2: 3.0 HOURS

Open and closed book tests for both categories of student on Block I knowledge objectives.

BLOCK II — SYSTEMS

M2.1 TRAINING AND EVALUATION REQUIREMENTS — READING/INFORMAL LECTURE
MMP:TRNG — 3.0 HOURS
STUDY AREA

Introduction to E—3 mission crew training and evaluation requirements and the reports used to monitor training accomplishments.

M2.2 CREW SUPERVISION AND COORDINATION — ASSIGNED READING
MMS:CREW — TRACK 1: 4.0 HOURS
STUDY AREA — TRACK 2: 8.0 HOURS

Primarily intended to provide the direct entry student an understanding of the US E—3 crew, this lesson also discusses tactical aspects of crew supervision and coordination for both categories of student.

M2.3 MISSION SYSTEMS — READING/DEMO—PERFORMANCE
MMS:MSYS — TRACK 1: 7.0 HOURS
STUDY AREA — TRACK 2: 10.0 HOURS

In addition to describing the ESS system, this lesson provides a wide variety of difference training for both categories of student and discusses tactical applications of mission systems. Prerequisite for ATD session MMA:IESS.

M2.4 INTELLIGENCE/ESS PRACTICUM — DEMONSTRATION—PERFORMANCE
MMP:IESS — 3.0 HOURS
STUDY AREA

This lesson is the academic preparation and planning to use the ESS and intelligence interface features of the E-3 in the simulator. Prerequisite for ATD session MMA:IESS.

M2.6 BLOCK II TEST — EVALUATION
MME:BK02 — TRACK 1: 2.0 HOURS
STUDY AREA — TRACK 2: 3.0 HOURS

Open and closed book tests for both categories of student on Block II knowledge objectives.

BLOCK III - TACTICAL EMPLOYMENT

M3.1 BATTLE MANAGEMENT — ASSIGNED READING
MMS:BMAN — 8.0 HOURS
STUDY AREA

Discusses general concepts of air battle management in preparation for more specific applications in the rest of Block III.

M3.4 COMPOSITE/JOINT OPERATIONS — READING/DEMO—PERFORMANCE
MMP:JOIN — 12.0 HOURS
STUDY AREA

This lesson prepares the student to operate in the composite/joint force arena. It covers composite USAF operations, joint E-3/Navy operations, and joint E-3/Army operations. Prerequisite for ATD session MMA:CJEX.

M3.6 THEATER OPERATIONS — ASSIGNED READING
MMS:THEA — 8.0 HOURS
STUDY AREA

The student completes certification in the three most common theaters of E-3 employment (NORAD, CENTCOM, and LANTCOM) in preparation for conducting a theater employment scenario. Prerequisite for ATD session MMA:THEX.

M3.7 CHECKERED FLAG TRAINING — READING/INFORMAL LECTURE
MMP:CFLG — 3.0 HOURS
STUDY AREA

The student completes Checkered Flag readiness training IAW ACCR 55-120 and 552 ACWR 50-2 as a logical supplement to theater training.

M3.9 INTELLIGENCE SUPPORT — READING/INFORMAL LECTURE
MMP:INTS — 3.0 HOURS
STUDY AREA/WING INTELLIGENCE

The student is briefed on local intelligence support and studies tactical intelligence interfaces.

M3.10 INTELLIGENCE THREAT KNOWLEDGE AND COUNTERMEASURES — ASSIGNED READING
3.0 HOURS
MME:TKCM
STUDY AREA

The student completes Intelligence Threat Knowledge and Countermeasures training IAW ACCM 51-60, Volume I as a logical supplement to tactical employment training.

M3.11 BLOCK III TEST — EVALUATION
MME:BK03 — 2.0 HOURS
STUDY AREA

Closed book test on Block III knowledge objectives.

SECTION B — DEVICE SESSION DESCRIPTIONS

4-6. Device sessions are listed by lesson number, subject, instructional method, alphanumeric identifier, planning/debriefing time, device required, device time, and concise narrative of content, including prerequisite academics.

BLOCK II — SYSTEMS

M2.4 INTELLIGENCE/ESS PRACTICUM — DEMONSTRATION-PERFORMANCE
MMA:IESS — PLANNING — (Included in M2.4 academics)
SIMULATOR — DEVICE — 3.0 HOURS

Intensive, "hands-on" exposure to the ESS system and a refresher on EWI and ESM. Includes demonstration, practice, and evaluation in one session. Portions of MMS:MSYS and MMP:IESS are prerequisites.

BLOCK III — TACTICAL EMPLOYMENT

M3.5 COMPOSITE/JOINT SCENARIO — DEMONSTRATION-PERFORMANCE
MMA:CJEX — PLANNING — 4.0 HOURS
SIMULATOR — DEVICE — 3.0 HOURS

Students conduct a simulated flag or similar composite/joint force exercise in order to apply tactical mission planning and battle management skills in the composite/joint tactical mission. MMS:BMAN and MMS:JOIN are prerequisites.

M3.8 THEATER SCENARIO — DEMONSTRATION-PERFORMANCE
MMA:THEX — PLANNING — 4.0 HOURS
SIMULATOR — DEVICE — 3.0 HOURS

Students conduct a simulated theater employment scenario in order to apply tactical mission planning and battle management skills in the overseas theater mission. Also serves as the performance evaluation for the block and the program. MMS:BMAN and MMS:THEA are prerequisites.

4-7. SIMULATOR TASKS. Performance standards are depicted in objectives and matrices in the instructor guide and the student study guide. Detailed objectives in both documents describe performance requirements. A composite matrix for the entire program is provided in Chapter 5.

5-5. PERFORMANCE EVALUATIONS. Student performance will be evaluated, as a normal part of the demonstration-performance method, on both missions. Performance standards will be as shown in the matrices described above. Student performance will be graded on preprinted ACC Forms 206 provided for each specific mission. If a student fails to achieve performance standards on at least 85% of the mission elements on mission M302 or fails to achieve the overall grade required on either mission, the mission should be marked NON-EFFECTIVE/STUDENT NON-PROGRESSION and corrective action IAW Chapter 2 should be taken. If events outside the student's control (e.g., aborts, cancellations, equipment malfunctions, etc.) prevent completion of the elements required to achieve an effective mission and they cannot be incorporated into subsequent missions, the mission should be marked NON-EFFECTIVE/OTHER and the mission should be repeated. Elements which can be incorporated should be annotated on the performance matrix and should be signed off when completed.

SECTION B - MISSION DESCRIPTION

5-6. GENERAL. A typical E-3 training sortie requires three training days to complete as follows:

Day 1	Mission Planning	6.0 Hours
Day 2	Prebrief/Preflight	1.0 Hour
	Sortie	8.0 Hours
	Mission Debriefs	1.0 Hour
Day 3	Training Debrief	2.0 Hours
TOTAL		18.0 Hours

In this program additional planning time has been allocated to ensure students have plenty of time for extra pre-planning and preparation within the intensive MQT program. In the descriptions below, planning time includes pre-planning, mission planning, prebrief/preflight, and debriefing.

5-7. Flight training is listed by lesson number, short subject, instructional method, alphanumeric identifier, planning time, flight time, and concise narrative of content.

BLOCK I - SQUADRON INTRODUCTION

M1.6 SQUADRON ORIENTATION MISSION — DEMONSTRATION-PERFORMANCE
M301 — PLANNING - 12.0 HOURS
FLIGHT - 8.0 HOURS

For the Track 1 student this mission is primarily an orientation to their new squadron's procedures for planning, preparing to fly, and reporting. The Track 2 student is additionally introduced to standard 552 ACW procedures for planning, preparation to fly, AWACS monitor, assuming station, emergency drills, debriefing and reporting. MMP:SQDN, MMS:MPLN, MMP:PREP, and MMP:DOCS are prerequisites.

BLOCK II – SYSTEMS

M2.5 DIFFERENCE TRAINING MISSION — DEMONSTRATION–PERFORMANCE
M302 — PLANNING – 15.0 HOURS
FLIGHT – 8.0 HOURS

In addition to consolidating performance requirements from the first two blocks of instruction, this mission also serves as the vehicle for difference training on systems and procedures which students have not used before. It includes counter–drug procedures and tactical applications of mission systems. M301, MMP:TRNG, MMS:CREW, and MMS:MSYS are prerequisites.

5–8. MISSION PROFILES. The profile of each mission is the summation of the objectives outlined in the flying matrices in the instructor guide and the student study guide, as available from the scheduled sorties. See "as available" tasks in Chapter 2. Detailed objectives in both documents describe performance requirements.

CHAPTER 6

ASSOCIATED TRAINING

SECTION A — CHEMICAL WARFARE DEFENSE (CWD) TRAINING

6-1. Initial CWD training is required for US and Canadian co-manning aircrew member MR status and will be accomplished prior to MQT completion. An individual may not be certified as MR before completing CWD initial training which consists of the following:

6-2. INITIAL CHEMICAL AND BIOLOGICAL WARFARE DEFENSE TRAINING (CW10). This training in CB equipment (e.g., ground crew ensemble) and procedures (and unexploded ordnance (UXO) recognition) is conducted by 2854 ABG Disaster Preparedness personnel. It is required once during an individual's Air Force career. 552 TS will schedule this training (or refresher, CW40, if previously trained) for students in "awaiting training" status to the maximum extent practical. In any event, training will be completed prior to MR certification.

6-3. REFRESHER CHEMICAL AND BIOLOGICAL WARFARE DEFENSE TRAINING (CW40). This training, which includes UXO recognition training, is conducted by 2854 ABG Disaster Preparedness personnel. It is required once every 12 months. Delinquency will result in decertification/reclassification to BQ status until the training is completed and recertification/ redesignation is accomplished.

6-4. INITIAL AIRCREW CHEMICAL WARFARE DEFENSE FLIGHT TRAINING (CW60). Initial aircrew CWD flight training is required for ALL aircrew members. It will be managed with flight safety as a primary concern, and will be conducted while performing primary (positional checklist) aircrew duties. This one-time event (which includes preflight, in-flight, and post-flight duties and excludes ingress/egress) will be conducted wearing the CWD mask, filter pack, hood, and gloves. CWD ensemble items may be obtained from squadron life support. For all mission crew positions, initial LS04 is a prerequisite to CW60.)

6-5. INITIAL AIRCREW CHEMICAL WARFARE DEFENSE TRAINING (LS04). This training is conducted by Life Support. It trains aircrew members in aircrew ensemble equipment. Training in wear of the coverall, aircrew hood, mask, gloves, and filter pack with element in a classroom environment and ingress/egress training in the CWD ensemble is included. 552 TS will schedule this training for students in "awaiting training" status to the maximum extent practical. In any event, training will be completed prior to MR certification.

6-6. REFRESHER AIRCREW CHEMICAL WARFARE DEFENSE TRAINING (LS04). This training is conducted by Life Support and is required once every 12 months. Training may be credited by attendance at the LS04 life support class at the life support facility or by participation in a Phase II Operational Readiness Exercise/Inspection (ORE/ORI). In the latter case, the aircrew member must complete both an ingress/egress and decontamination through a Contamination Control Area (CCA) while wearing the aircrew chemical defense ensemble. Delinquency will result in decertification/reclassification to BQ status until the training is completed and recertification/redesignation is accomplished.

SECTION B - THREAT KNOWLEDGE/COUNTERMEASURES

6-7. THREAT KNOWLEDGE/COUNTERMEASURES TRAINING. Training may be accomplished by live briefings or sound-on-slide presentation, and if briefing or slide presentation cannot be accomplished, aircrew members may accomplish a written test. Available dates and times may be obtained from squadron DOT. Training will consist of the following:

Block 1 (IN04). Threat training on aircraft and surface-to-air missiles and countermeasures to defeat the threat. Required of AC, P, NAV, MCC, SD, WD, ASO and AST.

Block 2 (IN02). Threat training on electronic warfare, early warning, GCI, and acquisition radars and countermeasures to the threat. Required of AC, P, NAV, MCC, SD, WD, ASO, AST, CSO, ART and CT.

Block 3 (IN03) - Escape and evasion training. Required of all crew positions.

SECTION C - THEATER CERTIFICATION

6-8. THEATER TRAINING. NORAD theater training is the minimum requirement for MR certification at Tinker AFB. Applicable theater training will be substituted at the GSUs as directed by the squadron commander. Training in other theaters will be accomplished prior to deployment into the specific theater of operation or as directed by the squadron commander. If only the minimum MQT requirements are met, however, the MR MCC would be prepared only to operate in his/her assigned theater while the task listing requires basic procedural knowledge of NORAD, CENTCOM, and LANTCOM theater operations due to the likelihood of employment in these theaters. Therefore, the MCC MQT program must go beyond the minimum requirements of ACCM 51-60. This training is included here because of its relationship to task requirements even though it is administered separately. See Lesson M3.6 (MMS:THEA) in Chapter 3.

SECTION D - CHECKERED FLAG TRAINING

6-9. CHECKERED FLAG TRAINING. Instructor will review with the student the individual procedures and knowledge required to operate in the Checkered Flag Theater.

MISSION QUALIFICATION TRAINING

E-3 MISSION CREW COMMANDER
(G1716)
BLOCK III
TACTICAL EMPLOYMENT

OCTOBER 1993

AIR COMBAT COMMAND

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

MQT, E3 MSN Crew Cmd's

which is kept in my records system.

11 May 24
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

Rules of Engagement. Combat airspace control, identification and rules of engagement are interrelated and often mutually dependent functions in an area of operation. Effective counter air requires the establishment of common rules of engagement (ROE) throughout the area of operations and across command boundaries. ROE are used to define what activities constitute hostile acts or behavior or what characteristics make a suspect track hostile in nature. Decisions made under the ROE are among the most critical made in combat because of their nearly instantaneous impact on events which could mean the difference between peace and war or could escalate isolated hostile acts into full-blown conflict. For this reason, ROE decisions are normally retained at the highest command level possible until all-out war ensues. Established by the operational commander, ROE are specific constraints applied to operational peace-time, contingency, and wartime employment of air assets. They might include political considerations, tactical restrictions, engagement and/or weapons employment criteria, or any other procedures which somehow constrain employment.

The basic philosophy behind any US-developed ROE is the same: Defensive actions are intended to avoid escalation of tension and commanders are to exercise restraint and critical judgement before employing force. On the other hand, nothing in any published ROE is meant to prevent commanders from defending themselves or their units when subjected to attack. As for identification, the real issue here is not the procedures to be followed. These will be clearly spelled out in command planning and tasking documents. Again, the issue is authority. As mentioned above, seldom will an E-3 MCC have the authority to directly apply the ROE, but in the extreme case where the E-3 may be the only theater command element, the MCC will be obligated to observe the same restraint and critical judgement as any commander. As a factor in planning, the MCC and SD must clearly understand the ROE in effect and how they may change with time or changes in the tactical situation. They must be certain of their authority (or lack of same) to declare objects hostile, intercept them and engage them. If they don't have the authority, they must know the procedures, communications, and command relationships required to support whoever has the authority. The ROE won't usually require changes to the data base but may require specialized briefings for the crew.

Battle Plans. While defensive counter air is largely reactive in nature, many of the measures to be used in that reaction may be planned ahead of time.

Review pages 23 (AIR DEFENSE) through 47 of BMATS Lesson 1 for an overview of battle planning considerations

Review pages 39 (WEAPONS MANAGEMENT) through 45 of BMATS Lesson 2 for additional battle planning considerations

DEPARTMENT OF THE AIR FORCE
552 AIR CONTROL WING (ACC)
TINKER AFB, OKLAHOMA 73145-6503

USAF MISSION QUALIFICATION TRAINING PROGRAM

E-3 SENIOR DIRECTOR
1745G

APRIL 1993

INTRODUCTION

This guide prescribes the overall training strategy and general nature of instruction required for a student having the entry prerequisites to attain the program goals. The contents of this guide have been developed in coordination with Air Force subject matter experts and contractor curriculum developers. The information contained herein applies to all personnel responsible for planning and/or conducting MQT for this specialty. Units tasked to implement this program are responsible for ensuring that each student demonstrates the knowledge and skills set forth in the program training standards. Within directive constraints, the amount and level of training devoted to mission elements, events or subjects should be adjusted, as required, to meet the needs of individual students.

OFFICIAL

DAVID OAKES, Brig Gen, USAF
Commander

GARY W. DAVIS, Colonel, USAF
Commander, Operations Group

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

MQT Guide, E-3 Senior Director

which is kept in my records system.

8 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

Supersedes SD MQT Guide dated August, 1991
OPR: 552 OSS/OST
OCR: CMSGT
DISTRIBUTION: X

1-8. RESOURCE REQUIREMENTS: The resources required to conduct this training are listed in the individual lesson plans. The squadron DOT will ensure that sufficient quantities of materials required to conduct this course are available at all times. All resources are government furnished.

SECTION B - TOTAL INVENTORY

1-9. INVENTORY:

TYPE OF TRAINING	UGT ENTRY	DIRECT ENTRY
Academic	20.5 HOURS	22.5 HOURS
ATD	12.0 HOURS	12.0 HOURS
Flying (2 sorties)	21.5 HOURS	21.5 HOURS
Total	54.0 HOURS	56.0 HOURS

Table 1-1 Program Training Hours

BLOCK I

1.1 PROGRAM INTRODUCTION — DISCUSSION-INFORMAL
ZMO:INTR — 1.0 HOUR
CLASSROOM

Provides the student with a program overview and determines individual program needs.

1.2 SQ ADMINISTRATIVE PROCEDURES — DISCUSSION-INFORMAL
ZMO:ADM — 2.0 HOURS
CLASSROOM

Presents an overview of squadron administration, location and use of publications and forms required by the Senior Director.

1.3 STRATEGIC DEFENSE — SELF STUDY/DISCUSSION
ZMO:SD01 — 6.0 HOURS
CLASSROOM/SIMULATOR

This lesson unit includes student self study for background in strategic defense self study modules and regulations followed by a discussion of concepts with the instructor.

1.4 TACTICAL EMPLOYMENT — SELF STUDY/DISCUSSION
ZMO:TE01 — 6.0 HOURS
CLASSROOM/SIMULATOR

This lesson unit includes student self study for background in tactical employment study modules and regulations followed by a discussion with the instructor on tactical employment concepts.

1.6 FLIGHT TRAINING – DIRECT ENTRY — SELF STUDY/DISCUSSION
ZMO:FLTD — 2.0 HOURS

Provides academic self study and discussion with instructor to certify knowledge of CONUS airspace procedures, training rules and communications hardware and planning procedures.

1.7 CERTIFICATION — SELF STUDY/WRITTEN EXAMINATION
ZMO:CERT — 5.0/5.5 HOURS
CLASSROOM

Provides instruction for the student to complete theater certifications, TK/CM, End-of-Program Exam and Squadron Certification. Two exams are required for direct entry students and one for UGT entry students. NATO/Saudi and previously qualified students will require theater and TK/CM certifications (additional .5 hour).

SECTION B - AIRCREW TRAINING DEVICE SESSION DESCRIPTIONS

4-6. GENERAL: A typical ATD session is divided into the following segments:

a.	Mission Planning	2.0 hours
b.	Mission Operations	3.0 hours
c.	Mission Debriefing	1.0 hour
d.	Total	6.0 hours

4-7. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

BLOCK I

1.3 STRATEGIC DEFENSE SCENARIO 1:1 RATIO
ZMO:SD01 6.0 HOURS
SIMULATOR

The performance of strategic defense tasks are practiced and evaluated in the simulator session including planning the mission, performance with an integrated mission crew and debriefing the weapons section.

1.4 TACTICAL EMPLOYMENT SCENARIO 1:1 RATIO
ZMO:TE01 6.0 HOURS
SIMULATOR

The performance of tactical employment objectives are practiced and evaluated in this simulator session including planning the mission, performance with an integrated mission crew and debriefing of the weapons section.

1.6 DIFFERENCE TRAINING SIMULATOR 1:1 RATIO
ZMO:DIFF 3.0 HOURS
SIMULATOR

Instructor designed simulator session to provide difference training to direct entry students. Varies based on student experience and previous assignment.

4-8. DESCRIPTION: ATD sessions are listed by lesson number, subject, type performance, alphanumeric identifier, nominal time, device required, and a concise narrative of content.

4-9. ATD TASKS:

a. All MQT students are required to perform in accordance with the following task list standards.

ATD TASKS	STANDARD
STRATEGIC DEFENSE	
1. Incorporate Intel Data	2
2. Plan Airspace Utilization	2
3. Coordinate Mission with BD/BDT	2
4. Adapt Missions to WX Changes	2
5. Direct Movement W/I Continuum of Control	2
6. Direct Handover of Aircraft	2
7. Recommend E-3 Orbit Adjustments	2
8. Complete Mission Logs/Forms	2
TACTICAL EMPLOYMENT	
1. Coordinate Sensor Requirements	2
2. Provide Weapons Plans to MCC	2
3. Allocate Controlled Resources	2
4. Coordinate Mission	2
5. Make Adjustments to Comm Plan	2
6. Employ Tactics	2
7. Movement W/I Continuum of Control	3

b. The direct entry student is required to demonstrate performance in accordance with the following task list standards.

ATD TASKS	STANDARD
STRATEGIC DEFENSE	
1. Incorporate Intel Data	2
2. Plan Airspace Utilization	2
3. Coordinate Mission with BD/BDT	2
4. Adapt Missions to WX Changes	2
5. Direct Movement W/I Continuum of Control	2
6. Direct Handover of Aircraft	2
7. Recommend E-3 Orbit Adjustments	2
8. Complete Mission Logs/Forms	2
TACTICAL EMPLOYMENT	
1. Coordinate Sensor Requirements	2
2. Provide Weapons Plans to MCC	2
3. Allocate Controlled Resources	2
4. Coordinate Mission	2
5. Make Adjustments to Comm Plan	2
6. Employ Tactics	2
7. Movement W/I Continuum of Control	3

SECTION B - MISSION DESCRIPTIONS

5-7. GENERAL: A typical E-3 training mission requires three training days to complete as follows:

DAY	EVENT	TIME
1	Mission Planning	8.0 Hours
2	Prebrief/Preflight Sortie Mission Debriefs	2.5 Hours 8.0 Hours 2.0 Hours
3	Training Debrief	1.0 Hour
Total		21.5 Hours

Table 5-1 Training Mission Time

A typical mission includes mission planning, a pre-mission briefing, preflight, two hours to orbit, four hours on orbit, two hours return to base, and post-flight debrief. Although this is a typical sortie, actual sorties may vary from 6 to 12 hours.

5-8. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

5-9. DESCRIPTION: Flying training is listed by mission number, type training, type aircraft required, nominal time for completion, and a concise narrative of content.

BLOCK I

M201 PERFORMANCE/DEMO
E-3B/C 21.5 HOURS

Student completes mission planning, flight debriefing of a squadron training sortie involving air-to-air training. Additionally, student is provided skills maintenance of tasks certified in UGT.

M202 EVALUATION/PRACTICE
E-3B/C 21.5 HOURS

Student is evaluated on objectives IAW the flying training matrix and continues practice on UGT tasks to maintain skill levels. Student completes mission planning, mission and weapons section debriefing.

CHAPTER 6

ASSOCIATED TRAINING

SECTION A - CHEMICAL WARFARE DEFENSE (CWD) TRAINING

6-1. DEFINITION: CWD training is training that teaches aircrew members to use the CWD equipment and procedures to neutralize the effects of chemical and biological agent on the ability of the E-3 aircrew to complete its mission. See ACCR 51-60, Vol II for more information on this subject.

6-2. RESPONSIBILITY:

a. US E-3 aircrew members and Canadian co-manning aircrew members must complete CWD training as prescribed in paragraph 6-3, below.

b. Those individuals who are responsible for the MQT program have no responsibility for the CWD program. However, there is a responsibility to ensure that the required training has been completed before submitting the certification paperwork to the squadron commander.

(1) The instructors will confirm that the CWD training listed has been completed. They will enter the completion date and their initials in the appropriate columns. Proof of completion will be placed in the students' training folders.

(2) Prior to forwarding the records for certification, the squadron DOT personnel will ensure that the proof of attendance is in the records; otherwise, a check will be made to ensure the accuracy of the entries made by the instructor.

6-3. DESCRIPTIONS:

a. Initial Chemical/Biological Warfare Defense Training (CW10): This training in chemical/biological (CB) equipment use, and the procedures used to counter the effects of CB is conducted by the base disaster preparedness office. It is required once during an individual's career.

b. Refresher Chemical/Biological Warfare Defense Training (CW40): This training is conducted by the base disaster preparedness office. It is required annually. If not accomplished, the individual will be decertified to a BQ status until the training has been completed.

c. Initial Aircrew Chemical Defense Flight Training (CW60): This training is conducted during a mission. It requires the completion of preflight, inflight, and postflight duties while wearing the CWD mask, hood, filter pack and gloves. LS04 is a prerequisite for CW60. This training is required for all aircrew members.

d. Aircrew Chemical Warfare Defense Flight Training (CW70): This training is conducted during a mission. It requires the completion of preflight, inflight, and postflight duties while wearing the CWD mask, hood, filter pack and gloves. CW60 is a prerequisite for CW70. It is required annually for all aircrew members.

e. Aircrew Chemical Warfare Defense Training (LS04): This training is conducted by the life support office. It is designed to train aircrew members in the use of the aircrew ensemble equipment to include wear of the coveralls, hood, mask, gloves, and filter pack with element in a classroom environment. Ingress/egress training wearing the CWD ensemble is also included.

SECTION B — THREAT KNOWLEDGE/COUNTERMEASURES

6-4. THREAT KNOWLEDGE/COUNTERMEASURES TRAINING (IN00): This training may be accomplished by briefings or by taking a written test. Available dates and times may be obtained from the squadron DOT. Training will consist of the following:

a. Block 1: This block deals with threat training on aircraft and surface-to-air missiles, and measures to counter the threat they present. (MCC, SD, WD, ASO, AAST, AST)

b. Block 2: This block deals with threat training on electronic warfare, early warning, GCI, and acquisition radars, and measures to counter the threat that they present. (MCC, SD, WD, ASO, AAST, AST, CSO, ART, CT)

c. Block 3: This lesson provides training in escape and evasion. (All crew positions)

6-5. ECM/ECCM TACTICS AND TECHNIQUES (AREPTS 22): This training provides an introduction to ECM and ECCM tactics and techniques. (MCC, SD, WD, ASO, AAST, AST)

6-6. E-3 THREAT NEUTRALIZATION AND SELF-DEFENSE TACTICS (AREPTS 16): This training deals with threats to the E-3 and means to counter those threats. (MCC, SD, WD, ASO, AAST, AST)

SECTION C — THEATER CERTIFICATION

6-7. CERTIFICATION: Theater certification will be accomplished IAW the individual squadron certification programs.

a. Squadron Responsibilities: Each squadron DOT will develop and maintain a squadron certification program.

b. 552 OSS/OST Responsibility: 552 OSS/OST will assist the squadrons with the development and maintenance of the certification programs.

SECTION D - CHECKERED FLAG

6-8. CHECKERED FLAG TRAINING: Instructors will review with the student the individual procedures and knowledge required to operate in the Checkered Flag Theater.

DEPARTMENT OF THE AIR FORCE
552 AIR CONTROL WING (ACC)
TINKER AFB, OKLAHOMA 73145-6503

USAF MISSION QUALIFICATION TRAINING PROGRAM

E-3 AIR SURVEILLANCE OFFICER
G1744D

MARCH 1993

INTRODUCTION

This guide prescribes the overall training strategy and general nature of instruction required for a student having the entry requisites to attain the program goals. The contents of this guide have been developed in coordination with Air Force subject matter experts and contractor curriculum developers. The information contained herein applies to all personnel responsible for planning and/or conducting MQT for this specialty. Units tasked to implement this program are responsible for ensuring that each student demonstrates the knowledge and skills set forth in the program training standards. Within directive constraints, the amount and level of training devoted to mission elements, events or subjects should be adjusted, as required, to meet the needs of individual students.

OFFICIAL

DAVID OAKES, Brig Gen, USAF
Commander

Gary W. Davis
GARY W. DAVIS, Colonel, USAF
Commander, Operations Group

Supersedes ASO MQT Guide dated September 1991
OPR: 552 OSS/OST
OCDR: CMC/TD
DISTRIBUTION: X

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from MQT Guide, E-3 Air Surveillance Officer which is kept in my records system.

x May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

1-8. RESOURCE REQUIREMENTS: The resources required to conduct this training are listed in the individual lesson plans. The squadron DOT will ensure that sufficient quantities of materials required to conduct this program are available at all times. All resources are government furnished.

SECTION B - TOTAL INVENTORY

1-9. INVENTORY:

TYPE OF TRAINING	IQT ENTRY	DIRECT ENTRY
Academic	30.0 HOURS	30.0 HOURS
Aircrew Training Device	35.0 HOURS	35.0 HOURS
Flying 2 sorties	40.0 HOURS	40.0 HOURS
Total	105.0 HOURS	105.0 HOURS

Table 1-1 Program Training Hours

NOTE: Areas of training are further defined in Chapters 3, 4 and 5.

a. IQT STUDENT: The following training applies to students entering MQT following IQT.

1. PROGRAM INTRODUCTION — DISCUSSION-INFORMAL
AMS:MINT — 3.0 HOURS
CLASSROOM

Provides the student with a program overview and squadron introduction.

2. E-3 SELF DEFENSE AND AWACS MONITOR — ASSIGNED READING
AMS:MMON — 2.0 HOURS
CLASSROOM

Discussion of AWACS Monitor duties and self defense tactics.

3. SAFE PASSAGE/MINIMUM RISK — ASSIGNED READING
AMS:MMIN — 2.0 HOURS
CLASSROOM

Provides terminology and procedures on Army interoperability with safe passage and minimum risk.

LESSON 2/3 TEST — ACADEMIC EVALUATION
AME:LN23 — 2.0 HOURS
CLASSROOM

Academic test on lessons 2 and 3 academic objectives.

4. APY-2 MARITIME RADAR — ASSIGNED READING
AMS:MMAR — 3.0 HOURS
CLASSROOM

Capabilities and parameters of the E-3C maritime radar.

LESSON 4 TEST — ACADEMIC EVALUATION
AME:LN04 — 2.0 HOURS

Academic test on lesson 4 academic objectives.

5. SPECIAL INFORMATION SYSTEM — ASSIGNED READING
AMS:MSIS — 3.0 HOURS
CLASSROOM

Training on the purpose, capabilities and procedures of SIS.

6. ECCM PROCEDURES — ASSIGNED READING
AMS:MECM — 3.0 HOURS
CLASSROOM

A discussion on the specific sensor and communications counter-countermeasures available to the ASO.

LESSON 5/6 TEST — ACADEMIC EVALUATION
AME:LN56 — 2.0 HOURS
CLASSROOM

Academic test on lessons 5 and 6 academic objectives.

7. US NAVY PROCEDURES — ASSIGNED READING
AMS:MNVY — 4.0 HOURS
CLASSROOM

Training on the US Navy organization and terminology and procedures used during missions in support of the Navy.

LESSON 7 TEST — ACADEMIC EVALUATION
AME:LN07 — 1.0 HOUR
CLASSROOM

Academic test of lesson 7 academic objectives.

8. NORAD PROCEDURES — ASSIGNED READING
AMS:MNOR — 2.0 HOURS
CLASSROOM

Discussion on organization, plans, and rules for E-3 operations in the NORAD environment.

LESSON 8 TEST — ACADEMIC EVALUATION
AME:LN08 — 1.0 HOUR
CLASSROOM

Academic test of lesson 8 academic objectives.

b. DIRECT ENTRY STUDENT: Direct entry students will complete the same training as listed in paragraph 3-7a above.

CHAPTER 4

DEVICE TRAINING

SECTION A - SPECIAL INSTRUCTIONS

4-1. CONTENT/SCOPE: This chapter outlines the subjects to be covered during ATD training. These subjects support the tasks designated for MQT, which may be found in the task list. A detailed listing of the supporting activities, conditions, and standards required to train each task may be found in the Task Description Worksheets (TDWs). Criterion objectives have been developed from the information in the TDWs that identify the performance required to accomplish each task listed. They are included in the program training documents and the trainee guide.

4-2. FACILITY REQUIREMENTS: ATD sessions are conducted in the E-3 mission simulator.

4-3. INSTRUCTIONAL METHOD/MEDIA:

a. Demonstration-performance is the preferred method for all ATD instruction. Printed materials, including trainee guides and simulator job sheets are provided for clarification.

b. The student's performance will be documented on the appropriate ACC Form 206.

4-4. INSTRUCTIONAL SEQUENCE: To the extent possible, the training shall proceed according to the program map and management flow charts in Chapter 2. Deviations from this plan must be approved by the squadron DOT.

4-5. PERFORMANCE EVALUATIONS:

a. The grading criteria described in Chapter 2 shall be used to evaluate all ATD sessions.

b. The student must demonstrate required proficiency in all mission tasks in order to complete this training.

c. The student's performance will be evaluated using the ACC Form 206 prepared for that purpose.

SECTION B - AIRCREW TRAINING DEVICE SESSION DESCRIPTIONS

4-6. GENERAL: A typical ATD session is divided into the following segments:

a. Mission Planning 2.0 hours.

b. Mission Operations 3.0 hours.

c. Mission Debriefing 1.0 hour

d. Total 6.0 hours

4-7. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

4-8. PROGRAM DESCRIPTION: ATD sessions are listed by lesson number, subject, type performance, alphanumeric identifier, nominal time, device required, and a concise narrative of content.

a. IQT STUDENT: The criteria listed below applies to all students entering MQT following IQT and all direct entry students.

1. SPECIAL INFORMATION SYSTEM — DEMONSTRATION/PERFORMANCE
AMA:101 — 6.0 HOURS
SIMULATOR

Training on SIS planning, supervision and operations and EWI displays.

2. ECCM PROCEDURES — DEMONSTRATION/PERFORMANCE
AMA:102 — 6.0 HOURS
SIMULATOR

Training on the equipment and procedures used to counter radar, IFF and communications ECM.

3. ECCM EVALUATION — DEMONSTRATION/PERFORMANCE/EVALUATION
AMQ:103 — 6.0 HOURS
SIMULATOR

Evaluation of all lesson 6 performance objectives.

4/5. NAVY PROCEDURES — DEMONSTRATION/PERFORMANCE
AMA:104,105 — 12.0 HOURS
SIMULATOR

Training on specific procedures used for missions in support of Navy operations.

6. NORAD PROCEDURES — DEMONSTRATION/PERFORMANCE
AMQ:106 — 5.0 HOURS
SIMULATOR

Training on identification procedures used in the NORAD environment.

4-9. ATD TASKS: The student entering MQT from IQT and the direct entry student are required to demonstrate performance in accordance with the following task list standards.

ATD TASKS	STANDARD
Counter radar ECM	2
Counter IFF ECM	2
Counter communications ECM	2
Supervise ECCM actions	2
Supervise SIS/VPN	2
Conduct NORAD defense operations	2
Maintain internal and external communications	2

ASO MQT MATRIX

OBJECTIVE NUMBER	DESCRIPTION	M201	M202
6.1	ECCM	P___	2___
6.1a	Passive Tracking	P___	2___
6.1b	Radar ECCM	P___	2___

FIGURE 5-1

5-6. EVALUATION:

a. The grading criteria described in Chapter 2 shall be used for evaluation.

b. The student must demonstrate required proficiency in all mission tasks in order to complete this training.

c. Upon determining that all program training standards have been achieved, the instructor will enter the following statement in the remarks of the final ACC Form 206: "Program training standards achieved for MQT".

d. The student's performance will be evaluated using the ACC Form 206.

SECTION B - MISSION DESCRIPTIONS

5-7. GENERAL: A typical E-3 training sortie requires four training days to complete as follows:

DAY	EVENT	TIME
1	Pre-mission Planning	3.0 Hours
2	Mission Planning	6.0 Hours
3	Prebrief/Preflight Sortie Mission Debriefings (Maintenance and Operations)	1.0 Hour 8.0 Hours 1.0 Hour
4	Training Debriefing	1.0 Hour
	Total:	20.0 Hours

Table 5-1 Training Sortie Time

A typical mission includes pre-mission planning, mission planning, a pre-mission briefing, preflight, two hours to orbit, four hours on orbit, two hours return to base, and post-flight debrief. Although this is a typical sortie, actual sorties may vary from 6 to 12 hours.

5-8. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

5-9. DESCRIPTION: Flying training is listed by mission number, type training, type aircraft required, nominal time for completion, and a concise narrative of content.

M201 DEMONSTRATION-PERFORMANCE
E-3B/C 20.0 HOURS

Student completes mission planning, flight and debriefing of a squadron training sortie. Additionally, student is provided skills maintenance of tasks certified in IQT. ECCM procedures are demonstrated and practiced.

M202 DEMONSTRATION-PERFORMANCE
E-3B/C 20.0 HOURS

Student is evaluated on ECM training and continues practice in IQT tasks. Student completes mission planning, flight and debriefing tasks.

CHAPTER 6

ASSOCIATED TRAINING

SECTION A -- CHEMICAL WARFARE DEFENSE (CWD) TRAINING

6-1. DEFINITION: CWD training is training that teaches aircrew members to use the CWD equipment and procedures to neutralize the effects of chemical and biological agent on the ability of the E-3 aircrew to complete its mission. See ACCR 51-60, Volume II for more information on the subject.

6-2. RESPONSIBILITY:

a. US E-3 aircrew members and Canadian co-manning aircrew members must complete CWD training as prescribed in paragraph 6-3, below.

b. Those individuals who are responsible for the MQT program have no responsibility for the CWD program. However, there is a responsibility to ensure that the required training has been completed before submitting the certification paperwork to the squadron commander.

(1) The instructors will confirm that the CWD training listed has been completed. They will enter the completion date and their initials in the appropriate columns. Proof of completion will be placed in the student's training folders.

(2) Prior to forwarding the records for certification, the squadron DOT personnel will ensure that the proof of attendance is in the records; otherwise, a check will be made to ensure the accuracy of the entries made by the instructor.

6-3. COURSE DESCRIPTIONS:

a. Initial Chemical/Biological Warfare Defense Training (CW10): This training in chemical/biological (CB) equipment use, and the procedures used to counter the effects of CB is conducted by the base disaster preparedness office. It is required once during an individual's career.

b. Refresher Chemical/Biological Warfare Defense Training (CW40): This training is conducted by the base disaster preparedness office. It is required annually. If not accomplished, the individual will be decertified to a BQ status until the training has been completed.

c. Initial Aircrew Chemical Defense Flight Training (CW60): This training is conducted during a mission. It requires the completion of preflight, inflight, and postflight duties while wearing the CWD mask, hood, filter pack and gloves. LS04 is a prerequisite for CW60. This training is required for all aircrew members.

d. Aircrew Chemical Warfare Defense Flight Training (CW70): This training is conducted during a mission. It requires the completion of preflight, inflight, and postflight duties while wearing the CWD mask, hood, filter pack and gloves. CW60 is a prerequisite for CW70. It is required annually for all aircrew members.

e. Aircrew Chemical Warfare Defense Training (LS04): This training is conducted by the life support office. It is designed to train aircrew members in the use of the aircrew ensemble equipment to include wear of the coveralls, hood, mask, gloves, and filter pack with element in a classroom environment. Ingress/egress training wearing the CWD ensemble is also included.

SECTION B - THREAT KNOWLEDGE/COUNTERMEASURES

6-4. THREAT KNOWLEDGE/COUNTERMEASURES TRAINING IN00: This training may be accomplished by briefings or by taking a written test. Available dates and times may be obtained from the squadron DOT. Training will consist of the following:

a. Block 1: This block deals with threat training on aircraft and surface-to-air missiles, and measures to counter the threat they present. (MCC, SD, WD, ASO, AAST, AST)

b. Block 2: This block deals with threat training on electronic warfare, early warning, GCI, and acquisition radars, and measures to counter the threat that they present. (MCC, SD, WD, ASO, AAST, AST, CSO, ART, CT)

c. Block 3: This lesson provides training in escape and evasion. (All crew positions)

6-5. ECM/ECCM TACTICS AND TECHNIQUES (AREPTS 22): This training provides an introduction to ECM and ECCM tactics and techniques. (MCC, SD, WD, ASO, AAST, AST)

6-6. E-3 THREAT NEUTRALIZATION AND SELF-DEFENSE TACTICS (AREPTS 16): This training deals with threats to the E-3 and means to counter those threats. (MCC, SD, WD, ASO, AAST, AST)

SECTION C - THEATER CERTIFICATION

6-7. CERTIFICATION: Theater certification will be accomplished IAW the individual squadron certification programs.

a. Squadron Responsibilities: Each squadron DOT will develop and maintain a squadron certification program.

b. 552 OSS/OST Responsibility: 552 OSS/OST will assist the squadrons with the development and maintenance of the certification programs.

SECTION D - CHECKERED FLAG

6-8. CHECKERED FLAG TRAINING: Instructors will review with the student the individual procedures and knowledge required to operate in the Checkered Flag Theater.

DEPARTMENT OF THE AIR FORCE
552 AIR CONTROL WING (ACC)
TINKER AFB, OKLAHOMA 73145-9012

USAF MISSION QUALIFICATION TRAINING PROGRAM
E-3 WEAPONS DIRECTOR
1745G

JULY 1993

INTRODUCTION

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DAVID OAKES, Brig Gen, USAF
Commander

Gary W. Davis

GARY W. DAVIS, Colonel, USAF
Operations Group Commander

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MQT Guide, E-3 Weapons Director

which is kept in my records system.

2 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

Supersedes WD MQT Guide dated November, 1991
OPR: 552 OSS/OST
OCDR: [redacted]
DISTRIBUTION: X

1-8. RESOURCE REQUIREMENTS: The resources required to conduct this training are listed in the individual lesson plans. The squadron DOT will ensure that sufficient quantities of materials required to conduct this course are available at all times. All resources are government furnished.

SECTION B - TOTAL INVENTORY

1-9. INVENTORY:

TYPE OF TRAINING	IQT ENTRY	DIRECT ENTRY
Academic	36.5 HOURS	41.5 HOURS
ATD	6.0 HOURS	6.0 HOURS
Flying 2 sorties	43.0 HOURS	43.0 HOURS
Total	85.5 HOURS	90.5 HOURS

Table 1-1 Program Training Hours

CHAPTER 3

ACADEMIC TRAINING

SECTION A - SPECIAL INSTRUCTIONS

3-1. CONTENT/SCOPE: This chapter outlines the subjects to be covered in each academic block/unit of instruction. These subjects support the tasks designated for MQT, which may be found in the task list. A detailed listing of the supporting activities, conditions, and standards required to train each task may be found in the Task Description Worksheets (TDWs). Criterion objectives have been developed from the information in the TDWs that identify the performance required to accomplish each task listed. They are included in the program training documents and the trainee guide(s) for this course.

3-2. FACILITY REQUIREMENTS: A study area free from distractions and interruptions that is cleared for classified discussion is required.

3-3. INSTRUCTIONAL METHOD/MEDIA: Printed materials such as student study guides, self-study modules, technical orders, manuals, regulations, OPLANs, etc., are relied upon in academic training as primary training delivery systems. Demonstration-performance is the method used to develop positional skills and task proficiency, along with their supporting knowledge.

3-4. INSTRUCTIONAL SEQUENCE: To the extent possible, the training shall proceed according to the program map and management flow charts in Chapter 2. Deviations from this plan must be recommended by the squadron DOT and approved by the squadron commander.

3-5. ACADEMIC EVALUATIONS: Minimum passing grade on all examinations will be 85%. All examinations will be corrected to 100%. In case of failures, students will be given remedial training, corrective counseling, and be retested IAW Chapter 2.

SECTION B - ACADEMIC DESCRIPTION

3-6. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

3-7. DESCRIPTION: Academic training is listed by lesson number, subject, instructional method, alphanumeric identifier, nominal time for completion, facility requirements, and a concise narrative of content.

BLOCK I

1.1 COURSE INTRODUCTION — LECTURE-INFORMAL
WMA:INTR — 1.0 HOUR
CLASSROOM

Provide the student with a course overview and determine individual needs.

1.2 SQUADRON ADMINISTRATIVE PROCEDURES — LECTURE-INFORMAL
WMA:ADM — 2.0 HOURS
CLASSROOM

This lesson provides an overview of squadron requirements and locations of documents to be used in carrying out weapons director tasks.

1.3 GENERAL EMPLOYMENT — INFORMAL LECTURE-DISCUSSION
WMA:EMP — 3.0 HOURS
CLASSROOM

Student is taught WD responsibilities during Safe Passage/Minimum Risk operations. Procedures used by WDs during peacetime and wartime SAR missions are covered as is HVAA protection. Additionally, Relief/ Handover actions and WD roles in applying E-3 communications capabilities are covered.

1.4 STRATEGIC DEFENSE — INFORMAL LECTURE
WMA:STD — 2.0 HOURS
CLASSROOM

This lesson addresses ROE, Safe Passage/Minimum Risk, NORAD/E-3 operations, airspace control and coordination with the Senior Director.

1.5 TACTICAL EMPLOYMENT — INFORMAL LECTURE-DISCUSSION
WMA:TAC — 2.0 HOURS
CLASSROOM

This lesson ties together the pieces of tactical employment with the general employment lesson. Included are Safe Passage/Minimum Risk, ROE, HVAA and SAR, and enemy aircraft capabilities.

b. DIRECT ENTRY STUDENT: The criteria listed below also applies to direct entry students.

1.7 DIRECT ENTRY TRAINING — LECTURE-INFORMAL
WMA:DIR — 5.0 HOURS
CLASSROOM

The purpose of this lesson is to give direct entry student specifics for mission planning. Preparation of Mission Fact Sheet or Mission Flow Sheet is included. Instruction is provided for operations under CONUS rules and procedures.

1.8 MISSION CERTIFICATIONS — DISCUSSION-INFORMAL
WMA:CERT — 6.0 HOURS
CLASSROOM

The purpose of this informal discussion is to verify that all required certifications for the WD have been accomplished.

SECTION B — AIRCREW TRAINING DEVICE SESSION DESCRIPTIONS

4-6. GENERAL: A typical ATD session is divided into the following segments:

a. Mission Planning: 1.0 hours

b. Mission Operations: 3.0 hours

c. Mission Debriefing: 1.0 hours

d. Total: 5.0 hours

4-7. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

4-8. DESCRIPTION: ATD sessions are listed by lesson number, subject, type performance, alphanumeric identifier, nominal time, device required, and a concise narrative of content.

a. IQT STUDENT: The criteria listed below applies to all students entering MQT.

SIMULATOR SCENARIO — PERFORMANCE-DEMONSTRATION
WMA:S101 and S102 — 10 HOURS

Both the Direct Entry and IQT graduate will perform two ATD scenarios that will include a full weapons team, surveillance team and an MCC. The focus should be on crew integration for IQT graduates and familiarization of typical wing taskings for the Direct Entry student. The performance of tasks are practiced and evaluated in the simulator. The first hour is dedicated to mission planning and the last hour is provided for the debriefing.

4.9 ATD TASKS: All MQT students are required to perform in accordance with the following task list standards.

ATD TASKS	**STANDARD**
Employ fighters	3
Safe Passage/Minimum Risk	2
Support mission elements	2
Mission updates	2
Employ control procedures	2
SAR support	2
Threat warning	2

WEAPONS DIRECTOR

MQT FLIGHT MATRIX

	OBJECTIVE	M201	M202	COMMENTS
1.6.1	FLT ADMIN FLT Logs/ PUBs/FCIF/MORF/TRN Requirements	P___	2___	
1.6.2	Passenger Brief	P___	2___	

The following objectives are for Direct Entry students only.

	OBJECTIVE	M201	M202	COMMENTS
1.7.1	MORF/FCIF/FLT Order	P___	2___	
1.7.2	MSN Fact Sheet/FTR Flow Sheet	P___	2___	
1.7.5	Aircraft Check-In	P___	2___	
1.7.7	TR/Safety	P___	2/3_	
1.7.10	Control/Airspace	P___	2___	

"P" indicates the task the student is to practice

"2" or "3" indicates the task is to be evaluated by the instructor IAW established ACC standards (i.e., level "2" or "3")

FIGURE 5-1 (Sheet 1 of 3)

WEAPONS DIRECTOR

MQT SKILLS MAINTENANCE MATRIX

	SKILLS MAINTENANCE	M201	M202	COMMENTS
7.1.1	MORF/FCIF/FLT	____	____	
7.1.2	Mission Research	____	____	
7.1.3	Data Base Check	____	____	
7.1.4	Fact Sheet/ Lessons Learned	____	____	
7.1.5	Map Prep	____	____	
7.1.6	MCF 3-1 Tactics	____	____	
7.1.7	WD/NAV A/R Coordination	____	____	
7.1.8	Pilot/WD Brief	____	____	
7.2.1	Pre-Flight	____	____	
7.2.2	Crew Coordination	____	____	
7.2.3	Outbound Console/ Comm Checkout	____	____	
7.2.4	Handoff/Check-In	____	____	
7.2.5	Target Brief	____	____	
7.2.6	Tracking	____	____	
7.2.7	Communication Guidelines	____	____	
7.2.8	Safety/TR	____	____	
7.2.9	Recovery	____	____	
7.2.10	AWACS Monitor	____	____	
7.2.11	WD Assisted A/R*	____	____	
7.2.12	Overall MSN Standards	____	____	
7.2.13	WD Logs	____	____	

FIGURE 5-1 (Sheet 2 of 3)

WEAPONS DIRECTOR

MQT SKILLS MAINTENANCE MATRIX

	SKILLS MAINTENANCE	M201	M202	COMMENTS
7.2.14	Post Flt Duties	____	____	
7.2.15	Emergency Actions	____	____	
7.2.16	Classified Documents Security	____	____	
7.2.17	E-3 Refueling Procedures *	____	____	

"*" Indicates item will be accomplished only if schedule permits.

FIGURE 5-1 (Sheet 3 of 3)

5-6. EVALUATION:

a. The grading criteria described in Chapter 2 shall be used for evaluation.

b. The student must demonstrate required proficiency in all mission tasks in order to complete this training.

c. Upon determining that all program training standards have been achieved, the instructor will enter the following statement in the remarks of the final ACC Form 206: "Program training standards achieved for MQT" (Attachment 3).

d. The student's performance will be evaluated using the ACC Form 206.

SECTION B — MISSION DESCRIPTION

5-7. GENERAL: A typical E-3 training mission requires three training days to complete as follows:

DAY	EVENT	TIME
1	Mission Planning	8.0 Hours
2	Prebrief/Preflight Sortie Mission Debriefs	2.5 Hours 8.0 Hours 2.0 Hours
3	Training Debrief	1.0 Hour
	Total	21.5 Hours

Table 5-1 Training Mission Time

A typical mission includes mission planning, a pre-mission briefing, preflight, two hours to orbit, four hours on orbit, two hours return to base, and post-flight debrief. Although this is a typical sortie, actual sorties may vary from 6 to 12 hours.

5-8. INSTRUCTOR REQUIREMENTS: Instructor to student ratio is 1:1.

5-9. DESCRIPTION: Flying training is listed by mission number, type training, type aircraft required, nominal time for completion, and a concise narrative of content.

BLOCK I

1.6 FLYING TRAINING

WMA:FLT	PERFORMANCE
MISSION PLANNING DEMONSTRATION/PERFORMANCE	27.0 HOURS
FLYING-DEVICE TRAINING ON E-3	16.0 HOURS

This lesson incorporates squadron mission planning procedures, pre-mission procedures, and weapons control procedures with an operational crew. This lesson requires two E-3 missions to complete.

M201	PERFORMANCE
E-3B/C	21.5 HOURS

Student completes mission planning, passenger brief, flight and debriefing of a squadron training sortie involving air-to-air training.

M202 EVALUATION/PRACTICE
E-3B/C 21.5 HOURS

Student is certified on objectives IAW the flying training matrix. Student completes mission planning, mission and weapons section debriefing.

CHAPTER 6
ASSOCIATED TRAINING

SECTION A - CHEMICAL WARFARE DEFENSE (CWD) TRAINING

6-1. DEFINITION: CWD training is training that teaches aircrew members the use of the equipment and procedures designed to neutralize the effects of chemical and biological agents on the ability of the E-3 aircrew to complete its mission. See ACCR 51-60, Volume II for more information on this subject.

6-2. RESPONSIBILITY: Squadron DOTs are responsible for ensuring that all US and co-manning Canadian aircrew members complete all applicable CWD training as prescribed in paragraph 6-3 prior to MS/MR certification. Instructors will confirm that all CWD training has been completed and will record the completion date and initial the appropriate columns on the Mission Ready Certification Checklist. IQT students will normally complete all CWD training, with the exception of CW60, prior to graduating from IQT.

6-3. DESCRIPTIONS:

a. Initial Chemical/Biological Warfare Defense Training (CW10): CW10 is initial training in the procedures and ground crew chemical/biological equipment used to counter the effects of CB warfare. CW10 is taught by the base disaster preparedness personnel. All aircrew members must complete CW10 prior to MR/MS certification.

b. Refresher Chemical/Biological Warfare Defense Training (CW40): CW40 is annual refresher training in the procedures and ground crew chemical/biological equipment used to counter the effects of CB warfare. CW40 is taught by the base disaster preparedness personnel. All aircrew members must complete this refresher training or must have completed CW10 within one year prior to MR/MS certification.

c. Aircrew Chemical Warfare Defense Training (LS04): LS04 is initial training and annual refresher training in the procedures and aircrew chemical/biological equipment used to counter the effects of CB warfare. Additionally, aircraft emergency egress procedures and equipment are trained. LS04 is taught by wing life support personnel. All aircrew members must be current in this annual requirement prior to MR/MS certification.

d. Initial Aircrew Chemical Defense Flight Training (CW60): CW60 is initial training in the conduct of preflight and/or inflight duties while wearing the aircrew CWD mask, hood, filter pack and gloves. CW60 is taught by squadron instructors during an E-3 mission. LS04 is prerequisite for CW60. All aircrew members must complete CW60 prior to MR/MS certification.

e. Refresher Aircrew Chemical Warfare Defense Flight training (CW70): CW70 is annual refresher training in the conduct of preflight and/or inflight duties while wearing the aircrew CWD mask, hood, filter pack and gloves. CW70 is taught by squadron instructors during an E-3 mission. All aircrew members must complete this annual requirement or must have completed CW60 within one year prior to MR/MS certification.

SECTION B - THREAT KNOWLEDGE/COUNTERMEASURES TRAINING

6-4. THREAT KNOWLEDGE/COUNTERMEASURES TRAINING (INOO): This training may be accomplished by briefings or by taking a written test. Available dates and times may be obtained from the squadron DOT. Training will consist of the following:

a. Block 1: This block deals with threat training on aircraft and surface-to-air missiles, and measures to counter the threat they present. (MCC, SD, WD, ASO, AAST, AST)

b. Block 2: This block deals with threat training on electronic warfare, early warning, GCI, and acquisition radars, and measures to counter the threat that they present. (MCC, SD, WD, ASO, AAST, AST, CSO, ART, CT)

c. Block 3: This lesson provides training in escape and evasion. (All crew positions)

6-5. ECM/ECCM TACTICS AND TECHNIQUES (AREPTS 22): This training provides an introduction to ECM and ECCM tactics and techniques. (MCC, SD, WD, ASO, AAST, AST)

6-6. E-3 THREAT NEUTRALIZATION AND SELF-DEFENSE TACTICS (AREPTS 16): This training deals with threats to the E-3 and means to counter those threats. (MCC, SD, WD, ASO, AAST, AST)

SECTION C - THEATER TRAINING

6-7. THEATER CERTIFICATION: Theater certification will be accomplished IAW the individual squadron certification programs.

6-8. CHECKERED FLAG TRAINING: MQT students will complete the Checkered Flag Briefing (TL50) prior to MR/MS certification.

TAB O-3 O-3a

E-3B AWACS O-3b

O-3c

O-3a Initial and Upgrade Qualification Training Technical Report

O-3b Mission Qualification Training Technical Report

O-3c Continuation Training Technical Report

O-3d Theater Training Technical Report

(See also Classified Addendum)

O-3e Maintenance Technical Report

O-3f Data Reduction Technical Report

(See also Classified Addendum)

TECHNICAL REPORT
E-3 AWACS CONTINUATION TRAINING

I. INTRODUCTION:

The purpose of this evaluation was to determine the relevance and effectiveness of E-3 AWACS Continuation Training (CT) requirements for E-3 AWACS aircrew members supporting operational missions in Operation Provide Comfort. CT is designed to maintain or improve aircrew capabilities to perform E-3 roles and missions and is administered by the aircrew member's assigned flying squadron.

II. BACKGROUND:

E-3 AWACS crew members aboard a US E-3 aircraft, serial number 77-0351, were performing airborne warning and control duties during the crash of two US Army Black Hawk helicopters, serial numbers 88-26060 and 87-26000, in the northern "No Fly Zone" of Iraq on 14 April 1994. An AFR 110-14 Accident Investigation Board is examining the possible involvement of US F-15 fighter aircraft, serial numbers 79-0025 and 84-0025 in the crash of these helicopters.

III. EVALUATION:

This evaluation included review of continuation training requirements contained in ACCR 51-60, Vol 2, E-3 Training.

IV. DETERMINATION:

ACCR 51-60, Vol 2 promulgates CT requirements for E-3 aircrews. CT includes ground training, aircrew training device (ATD), and flying training designed to maintain or improve aircrew capabilities to perform E-3 roles and missions. (TAB AA5 p13 para 4-2a)

A. GROUND TRAINING. Training includes weapons system academic training (WSAT) administered quarterly, and semi-annual training in aircrew intelligence and threat knowledge/countermeasures (TK/CM), theater training (see E-3 AWACS THEATER TRAINING, REPORT OF TECHNICAL ADVISOR, TAB O3d), and general flying-related ground training such as life support. (TAB AA5 p13 para 4-5)

B. ATD REQUIREMENTS. Requirements are semi-annual and are designed to provide training that may not be available in flight or is prohibited by flight safety, and to provide specialized training such as theater familiarization. (TAB AA5 p14 para 4-6) ATD mission crew scenario types are not specified, and are normally the result of the flying activity for which the crew is scheduled, such as for pre-deployment or exercise preparation. (TAB AA5 p14 Table 4-2 Note 1)

C. SEMI-ANNUAL FLYING TRAINING. Training requirements are based on the aircrew member's experienced or inexperienced designation and assigned Graduated Combat Capability (GCC) level. Flying training requirements for mission crew members include both sortie (called system operations or weapons sortie) requirements, and specific training events for some crew positions. (TAB AA5 p16 para 4-7b) For WDs, specific events are defined by fighter mission types (air-to-air, air-to-surface, air refueling) and events of each type must be controlled during the training period. (TAB AA5 p16 Table 4-4) GCC levels are designed to aid in the allocation of limited training resources (such as tanker support or fighter sorties) and flying hours to facilitate the building of a well-balanced, fully-trained combat ready unit. GCC level-A is the minimum amount of training necessary for an E-3 crew member to perform the unit's Designed Operational Capability (DOC), the unit's primary mission. GCC level-B establishes a level of training to increase proficiency and accomplish the unit's full tasking, and level-C is the maximum level of training and develops maximum aircrew proficiency and unit capability to meet additional taskings. (TAB AA5 p7-8 para 1-8c) All aircrew members should first be trained to level-A. Additional training resources available should then be allocated to best meet the unit's DOC tasking. The assigned training level can be tailored to meet individual needs, such as assigning training greater than level-A for a recent graduate of Initial Qualification Training (IQT) to achieve proficiency. Additionally, a crew member returning from a period of extended non-flying may require training at a higher GCC level to regain proficiency. A one month review and, if needed, a three month GCC sortie "look back" is stipulated to better manage aircrew training resources, rather than waiting until the end of the semi-annual training period to examine aircrew training completion progress. (TAB AA5 p8 para 1-8f)

D. AIRCREW RATING. Aircrew members are defined as Basic Qualified (BQ), Mission Support (MS), or Mission Ready (MR). BQ is for those who are graduates of IQT, but have yet to complete Mission Qualification Training (MQT). MS crew members may require further training prior to conducting operational duties; this designation is only for staff personnel above squadron level. MR aircrews are certified to perform duties in support of E-3 roles and missions with no further training. (TAB AA5 p29 para A-2-7/8/9)

E. MR STATUS. Aircrew members may lose MR status if: the squadron commander determines that insufficient semi-annual training events have been accomplished; the crew member fails to complete applicable theater training, life support training, or chemical warfare defense training; the aircrew member fails to meet GCC minimum sortie completion rates; or the crewmember fails to maintain currency. Downgrading may also occur for failure to complete quarterly weapons system academic training, but aircrew members are given a 45 day grace period to complete this training before loss of MR occurs. (TAB AA5 p8 para 1-8f and p19 para 4-12)

F. CONTINUATION TRAINING REQUIREMENTS. ACR 51-60 Vol 2 adequately addresses continuation training requirements for MR E-3 aircrew members. The training requirements adequately address the AWACS roles and missions applicable to Operation Provide Comfort when supplemented by theater specific training. (TAB O3d) The high contingency tasking and operations tempo of the E-3 AWACS operational squadrons, particularly for the weapons team, may affect or degrade crew employment effectiveness. The loss of MR status and

the failure of a qualification evaluation by one WD was attributed to deficiencies in flying training. (TAB T3d) Additionally, several aircrew members indicated their temporary duty (TDY) schedule diminished their training. (TAB O7a Atch 6) Lastly, GCC training levels were not adjusted by the unit to tailor training to meet individual needs, such as for recent IQT graduates or crewmembers returning from an extended non-flying period. (See also Section O2)

BERTRAM H. PRYOR, JR., Lt Col, USAF
Technical Advisor, AWACS Systems

CERTIFICATION

I am Lt Col Bertram H. Pryor, Jr., assigned to the 552 Air Control Wing, Tinker AFB, Ok as the Director of Wing Requirements. I am a Technical Advisor to the AFR 110-14 Accident Board, investigating the crash of two U.S. Army Black Hawk helicopters and the possible involvement of U.S. F-15 fighter aircraft and U.S. E-3 AWACS aircraft in the crash of these helicopters in the northern "No Fly Zone" of Iraq on 14 April 1994. I have held various positions as an AWACS crew member and staff officer over the past 15 years. I have been qualified as an AWACS Weapons Director, Senior Director, and Instructor Mission Crew Commander. I have held AWACS-related staff positions as 552d Wing Simulation Training Officer, Chief of Airborne Training at HQ Tactical Air Command, and 552d Wing Chief of Operations Training. I have served as an AWACS Flight Commander and AWAC Squadron Deputy Commander. I served as the USCENTAF senior AWACS planner for Operation Desert Storm, and flew 20 combat support AWACS missions. I am currently a mission ready E-3 Mission Crew Commander with over 2800 hours in the E-3 aircraft. In my capacity as AWACS Systems Technical Advisor, I reviewed the materials used in various AWACS operations training programs including:

The syllabus and course materials for the Initial Qualification, Mission Qualification, and Upgrade Training programs for the following E-3 crew positions: Mission Crew Commander, Senior Director, Weapons Director, and Air Surveillance Officer.

AWACS continuation training program requirements.

The AWACS Theater Training program and associated courseware prepared by the 552 ACW and applicable to Operation Provide Comfort.

The individual training records, flight evaluation folders, and AFORMS training completion products for all crew members of the incident E-3 crew.

In all, I estimate I reviewed over 3,000 pages of material over a 14 day period. This report summarizes my review of this material.

15 May 1994
(Date)

Bertram H. Pryor, Jr.
(Signature)

TAB O-3 O-3a

E-3B AWACS O-3b

O-3c

O-3d

O-3a Initial and Upgrade Qualification Training Technical Report

O-3b Mission Qualification Training Technical Report

O-3c Continuation Training Technical Report

O-3d Theater Training Technical Report

(See also Classified Addendum)

O-3e Maintenance Technical Report

O-3f Data Reduction Technical Report

(See also Classified Addendum)

TECHNICAL REPORT
E-3 AWACS THEATER TRAINING

I. INTRODUCTION:

The purpose of this evaluation was to determine the relevance and effectiveness of the theater training programs in supporting E-3 AWACS operational missions in Operation Provide Comfort. Theater Training supplements Initial, Upgrade, Mission Qualification, and Continuation Training to prepare E-3 aircrews for duties within that theater.

II. BACKGROUND:

E-3 AWACS crew members aboard a US E-3 aircraft, serial number 77-0351, were performing airborne warning and control duties during the crash of two US Army Black Hawk helicopters, serial numbers 88-26060 and 87-26000, in the northern "No Fly Zone" of Iraq on 14 April 1994. An AFR 110-14 Accident Investigation Board is examining the possible involvement of US F-15 fighter aircraft, serial numbers 79-0025 and 84-0025, in the crash of these helicopters.

III. EVALUATION:

This evaluation included review of ACCR 51-60 Vol 2 theater training requirements, 552 OG OI 60-2 theater briefing requirements, and review of theater training materials used both at home station and at Incirlik Air Base, the deployed AWACS location.

IV. DETERMINATION:

A. THEATER TRAINING. ACCR 51-60 Vol 2 requires aircrew members to complete applicable Theater Training prior to assuming duties within that theater. (TAB AA5 p13 para 4-5a(4)) Theater Certification Training consists of crew familiarization in theater geography and terrain, command structure, intelligence, resources, the Rules of Engagement (ROE), Command Control Communications (C3) interfaces, local procedures, and theater employment. Theater training for the Operation Provide Comfort (OPC) theater is based on the Central Command (CENTCOM) Area of Responsibility (AOR) because Iraq is within CENTCOM's AOR, although Turkey is not. Review of the training material revealed it is based on a COMUSCENTAF OPLAN, rather than OPC OPLAN 91-7. Some of the material (geographic, intelligence) is applicable to both OPLANs, but much of it is not. Significantly, the training pertaining to the ROE, C3 interfaces, local procedures and theater employment does not apply to OPC. (Atch 1)

B. EXERCISE/DEPLOYMENT SPIN-UP TRAINING. ACCR 51-60 Vol 2 also requires squadrons to conduct Exercise/Deployment spin-up training. (TAB AA5 p13 para 4-5a(5)) The training will consist of academics and simulator (if available) for aircrews prior to their actual deployment. Review of this material revealed it is specific to

OPC. The training consists of both academics (briefing by unit tactics office) and normally two OPC simulator sessions of three hours each. The unit's OPC briefing addressed crew manning, OPC mission objectives, the chain of command, air order of battle, E-3 OPC sortie profiles, surveillance and weapons team roles, the ROE, the threat, and threat avoidance. (Atch 2) The OPC simulator training scenario is designed and conducted by the Boeing Company under Air Force contract and is based on inputs provided by the Wing Tactics office. The OPC simulator objectives and study material prepare crews to operate in real-world OPC prior to their deployment in theater. (Atch 3) It provides area familiarization (e.g. airbases, airspace orientation, call signs) and activities which could be encountered on a typical sortie. Weapons Directors (WDs) perform flight following, identification intercepts, and tanker refuelings. Surveillance personnel detect tracks of interest and coordinate with the Turkish Sector Operations Centers. Unlike actual OPC sorties, the Mission Crew Commander (MCC) fulfills the Airborne Command Element (i.e. DUKE) responsibilities. Simulator mission planning aids and documents include an OPC Airspace Control Order (dated 11 Dec 92), and a representative Air Tasking Order (ATO) which replicates the simulation scenario. (Atchs 4 and 5) The ATO includes two Eagle Flight UH-60 sorties. The crew is also given a scenario study guide that outlines what the crew should expect during the simulator and actual OPC missions. (Atch 6) The study guide stresses Eagle Flight activity, noting that Eagle Flight will check-in and request flight following and that they are a high interest track. It also indicates that often radar contact with Eagle flight is lost and suggests symbology can be suspended (frozen). Describing the three WD positions, the study guide suggests the easiest of the three positions is the Area Of Responsibility (AOR) controller, and that it is a good place for an inexperienced controller to be on the first few missions. In addition to Eagle Flight, the simulator scenario also includes Syrian and Iraqi helicopter activity. Exercise/Deployment spin-up training is not specifically documented in AFORMS.

C. INBRIEF REQUIREMENTS. 552 OG OI 60-2 (TAB AA7 p3-4 para 2) and 552 ACW Local Procedures for OPC (Atch 7) requires aircrews to be thoroughly in-briefed upon arrival in the OPC theater before flying missions. Aircrews are tasked to ensure that they are prepared and have all questions answered by the unit's deployed staff before flying missions or assuming duties. In-theater training consists of a briefing by the deployed staff, specialized one-on-one sessions with their counterpart crew position from the staff (if available), and self study of various theater documents (Atch 8).

The staff briefing is intended to be given to the entire crew and is normally conducted by the Detachment Commander (DETCO), operations staff, and intelligence staff. The briefing comprehensively covers the E-3 flying schedules, E-3 mission profiles, and outbound and inbound enroute E-3 timing. The ROE briefing refers to classified ROE in the Aircrew Read File (ARF), points out that self defense is authorized, and that no intercepts on known friendly aircraft are permitted in the Tactical Area Of Responsibility (TAOR). The briefing also directs crews to use Modes 2 and 4 for primary identification. The briefing covers surveillance tracking responsibilities including the responsibility to detect and track all aircraft in the TAOR. Surveillance interoperability responsibilities to provide a Joint Tactical Information Distribution System (JTIDS) link to the Turkish

Sector Operations Centers, and a Tactical Digital Information Link-A (TADIL-A) link to the Combined Task Force are covered. The briefing reminds crew members that surveillance symbology identifications are in the Surveillance Fly Away Book. Technician topics include computer tape procedures, communications security, and the importance of establishing a JTIDS link with the Turkish Sector Operations Center. Weapons procedures point out that the F-15s are the air-to-air mission commander, that F-15s provide electronic identifications, and that weapons is to maintain tracking continuity on bandits. Additional topics include DUKE procedures and the requirement for all aircraft to call the DUKE when entering/exiting the TAOR, E-3 combat retrograde procedures, and lessons learned, including the need for weapons/surveillance to coordinate fighter contacts not in the system. The weapons briefing slides do not address Eagle Flight activities. The intelligence overview includes the local terrorist threat, Iraq daily and weekly flying activity, Iraq training air bases, combat radii of threat aircraft, the electronic warfare threat, Iraq early warning coverage, surface-to-air missile threats, and escape and evasion codes. Finally, crew members are told to accomplish one-on-one briefings/discussions, read the ARF and Operations Read Files, review Weapons and Surveillance Fly Away books, and to get any questions answered.

Specialized one-on-one sessions are conducted for the flight crew, MCC, weapons team, and surveillance team. These sessions consist of like-crew position representatives from the unit's deployed staff (or from another crew, if no staff representative) discussing crew position specific procedures, techniques, and other mission details and answering questions. The weapons specialized briefing is supported by slides that indicate WDs are responsible for aircraft check-in, Mode IV checks, and a "Picture" call to each flight as they enter the TAOR. (Atch 9) Also, a typical OPC fighter package flow is covered that indicates that no fighters would take off from Incirlik AB until AWACS determines that all mission subsystems, such as radar, identification friend or foe, and communications are operational. The requirement for defensive counter air (DCA) assets to enter the TAOR before any other aircraft and sanitize the area is also briefed. The briefing indicates these DCA assets are the first aircraft to enter and the last to leave the TAOR. Helicopter support operations, such as Eagle Flight operations, are not specifically addressed. There was a list of Eagle Flight navigation points located in the Weapons Fly Away Book. (Atch 10) Review of Surveillance and Weapons Fly Away Books revealed some inaccurate ROE guidance in the weapons book. (Atch 11)

D. THEATER TRAINING PROGRAM MATERIALS. 552 ACW theater training program materials address both war OPLANs and contingency OPC operations in the theater. Together, home station and in theater training materials are comprehensive and suitable to prepare the aircrews to deploy and operate in OPC. The home station-conducted Theater Certification Training, being based on OPLAN taskings rather than the on-going OPC contingency operations, may not be effective training for OPC-bound aircrews, as some material could cause confusion during OPC operations. Both the home station-conducted Exercise/Deployment academic and simulator spin-up training effectively address OPC. In-theater briefings and one-on-one specialized sessions adequately reinforce home station training, cover any changes, and provide the

opportunity to discuss and ask questions of aircrews currently experienced in OPC. In-theater material does not, however, reinforce the importance of AWACS support to Eagle Flight operations as does the home station simulator training, and there was inaccurate ROE information in the Weapons Fly Away Book.

BERTRAM H. PRYOR, JR., Lt Col, USAF
Technical Advisor, AWACS Systems

11 Atchs

1. Extract, USCENTCOM Theater Certification, (SECRET NOFORN WNINTEL)
2. 963rd DOW Provide Comfort Spin Up Brief, Undated (SECRET)
3. Extract, OPC Simulator, Introduction
4. Extract, OPC Simulator, ACO
5. Extract, OPC Simulator, ATO
6. Extract, Simulator Study Guide
7. Extract, 552 Air Control Wing (Deployed) Local Procedures for Operation Provide Comfort (OPC), Para 2A, 15 March 1994
8. Extract, Paper Slides, Undated, 552 Air Control Wing Deployed Operations, Incirlik AB Turkey
9. Extract, Undated, Weapons Specialized Briefing
10. Department of the Army Eagle Flight Detachment letter, Eagle Flight Coordinates, 28 Dec 1992
11. Extract, Weapons Fly Away Book, SUPPLEMENTAL ROE, Undated, (SECRET)

CERTIFICATION

I am Lt Col Bertram H. Pryor, Jr., assigned to the 552 Air Control Wing, Tinker AFB, Ok as the Director of Wing Requirements. I am a Technical Advisor to the AFR 110-14 Accident Board, investigating the crash of two U.S. Army Black Hawk helicopters and the possible involvement of U.S. F-15 fighter aircraft and U.S. E-3 AWACS aircraft in the crash of these helicopters in the northern "No Fly Zone" of Iraq on 14 April 1994. I have held various positions as an AWACS crew member and staff officer over the past 15 years. I have been qualified as an AWACS Weapons Director, Senior Director, and Instructor Mission Crew Commander. I have held AWACS-related staff positions as 552d Wing Simulation Training Officer, Chief of Airborne Training at HQ Tactical Air Command, and 552d Wing Chief of Operations Training. I have served as an AWACS Flight Commander and AWAC Squadron Deputy Commander. I served as the USCENTAF senior AWACS planner for Operation Desert Storm, and flew 20 combat support AWACS missions. I am currently a mission ready E-3 Mission Crew Commander with over 2800 hours in the E-3 aircraft. In my capacity as AWACS Systems Technical Advisor, I reviewed the materials used in various AWACS operations training programs including:

The syllabus and course materials for the Initial Qualification, Mission Qualification, and Upgrade Training programs for the following E-3 crew positions: Mission Crew Commander, Senior Director, Weapons Director, and Air Surveillance Officer.

AWACS continuation training program requirements.

The AWACS Theater Training program and associated courseware prepared by the 552 ACW and applicable to Operation Provide Comfort.

The individual training records, flight evaluation folders, and AFORMS training completion products for all crew members of the incident E-3 crew.

In all, I estimate I reviewed over 3,000 pages of material over a 14 day period. This report summarizes my review of this material.

15 May 1994
(Date)

Bertram H. Pryor, Jr.
(Signature)

Atch 1 to TAB O3d

Extract, USCENTCOM Theater Certification, (SECRET NOFORN WNINTEL)

(See Classified Addendum)

Atch 2 to TAB O3d

963rd DOW Provide Comfort Spin Up Brief, Undated (SECRET)

(See Classified Addendum)

SECTION 1

INTRODUCTION

1.1 **SIMULATION OVERVIEW.** The Operation Provide Comfort (OPC) simulation is designed to prepare mission crews to operate effectively in the real-world OPC activity. The scenario provides the crew an opportunity for area familiarization and to participate in activities which could be encountered on a typical sortie. The weapons controllers will perform the flight following and tanker refueling requirements, and surveillance will detect tracks of interest and coordinate with external agencies for identification information. Unlike the real-world mission, there is no Airborne Command Element (ACE) in the simulation; the Mission Crew Commander will fulfill these responsibilities.

1.2 **SIMULATION PARAMETERS.**

a. Participants.

(1) Friendly Forces. E-3, KC-135, VC-10, F-15, F-16, F-1, A-10, F-4E, F-111, EF-111 and Jaguar aircraft.

(2) Opposition Forces. Opposition Forces consist of any of the real-world assets encountered in the tactical area of responsibility.

b. Location. Middle East.

c. Date. 12 December 19XX (Saturday).

d. Duration. 3 hours.

e. Classification. Unclassified.

f. ECM. None.

g. Datalink. A JTIDS Link will be established with ground agencies and a TADIL-A link will be established with another E-3 and a US Navy unit at Incirlik.

i. Background. Representative background traffic is presented.

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the [illegible] on the night of [illegible] on 14 April 1994, and that this is a true, and complete extract from

OPC Simulator Document

which is kept in the ordinary course of business.

15 May 94
Date

WILLIAM L. HARRIS, Capt, USAF
Evidence Custodian
[illegible] Air Force Base

1.3 **OBJECTIVES.**

a. Scenario Objective: Prepare mission crews to operate effectively in Operation Provide Comfort.

b. Positional Objectives:

(1) Battle Staff (MCC, SD, ASO).

(a) Provide surveillance and control of all Operation Provide Comfort aircraft.

(b) Provide surveillance of all air activity over the area.

(c) Interpret and use information contained in the Air Tasking Order (ATO) and Airspace Control Order (ACO).

(2) Weapons.

(a) Flight Follow OPC aircraft enroute to, operating in and returning from the Tactical Area of Responsibility (TAOR).

(b) Provide pointouts to aircraft for air refueling.

(c) Perform identification intercept if required.

(d) Conduct practice intercepts and simulated HVAA (E-3) protection using Turkish F-4Es.

(e) Conduct WD-assisted E-3 refueling.

(3) Surveillance.

(a) Provide surveillance of air activity over Iraq.

(b) Track aircraft in and along the borders of Turkey, Syria, Iran, and the old USSR.

1.4 **PRE-MISSION CREW REQUIREMENTS.** This scenario depicts the various types of activities which could occur on an actual OPC mission. It is intended to familiarize, not duplicate all the activity, and it may have more action than a crew will encounter on any single sortie. For the simulation, a crew is expected to:

a. Mission Plan at least one work-day prior to the simulator

NOTE: FOR THE SIM SCENARIO, THE AIR CONTROL ELEMENT (ACE), CALLSIGN "DUKE", WILL NOT BE MANNED. COUGAR MCC WILL BE RESPONSIBLE FOR THESE DUTIES.

PROVIDE COMFORT AIRSPACE CONTROL ORDER/STANDING SPINS
EFFECTIVE DATE: 11 DEC 92

1. AIRSPACE CONTROL ORDER (ACO) PROCEDURES: The ACO will be published as required. Additional information/restrictions effecting flying operations will be published in the Daily Air Tasking order (ATO), or passed by the Mission Director (MAD DOG). All times affecting PROVIDE COMFORT (PC) missions in the ACO, ATO and ATO NOTES will be given in ZULU time. The procedures outlined in this ACO incorporate changes reflected in the COMSECONDTAF ACO dated 181605Z Jun 92, COMSECONDTAF 131330Z Oct 92 Msg, Subj: Change to 2TAF Standing ACO for PC-III flights, and CTF/CS (TU) MEMO, dated 8 Oct, subj: PC flights in the Incirlik AB MTCA.

2. MISSION: The primary mission for CFAC fighter aircraft in the TAOR is to show PRESENCE. The secondary mission is to RECCE points and areas per ATO tasking. Each aircrew will accomplish the primary task of presence, then RECCE, if weather, fuel and time permit.

3. RULES OF ENGAGEMENT:

A. Classified ROE and special conditions affecting operation PROVIDE COMFORT flying will be published as Battle Staff Directives (BSDs) or Aircrew Read Files (ARFs). [For the simulation, read PC OPORD 91-7 and the latest ROE ARF item in your squadron tactics office.]

B. There will be no intercepts of known friendly tracks within the Tactical Area of Responsibility (TAOR). There will be no intercepts conducted on unknown aircraft in Turkish airspace.

4. GENERAL FLIGHT RULES:

A. All aircraft flying missions in support of PC will contact the Mission Director ("MAD DOG") on UHF 315.4 prior to departure.

B. Responsibility for compliance with ACO altitudes and entry and exit procedures rests with each aircrew.

(1) Cougar (AWACS) provides ATC service to and from the AOR (except when midnight) and in ROZ 01, 02 and 03. The actual control of the airspace is maintained by Turkish ARTCC (INDIA/MARDIN).

(2) If aircrews are unable to comply with published ACO procedures (i.e. emergency or thunderstorms) a request

for deviations should be made from Mardin through AWACS.
(3) If safety of flight (fuel state) is jeopardized by communication delays, squawk 7700, declare an emergency, and RTB.

(4) Deviations will be recorded in a written report to DETCOs, then CFAC OG/CC ASAP after landing.

C. Transition Altitude (TA) for Turkey is 5,000 MSL. (Individual airfields could be higher, e.g. LTCC IS 7,000 MSL.) An altimeter setting of 29.92 will be used above TA.

D. All altitudes are above ground level (AGL) unless otherwise stated.

E. Formations will be flown with a maximum spacing of 12,000 feet while transitting from Incirlik to the gates and from the gates returning to Incirlik.

F. All Special Corridors (SC) /Low Level Transit Routes (LLTR) will be flown in VMC to the max extent possible within the corridor altitude blocks, except as noted in Para 8 in the ACO. See Para 7 and 8 for additional information on SCs/LLTRs.

G. IFR hemispheric altitudes will be flown on special corridors. As much as possible, aircrews should fly at their aircraft specific IMC transit altitudes on the SCs. Deviations from these altitudes may be approved/directed by AWACS or Mardin Radar for VMC or fuel considerations. VFR hemispheric altitudes of odd plus 500 feet MSL and even plus 500 feet MSL will be used when transitting LLTRs. Attempt to fly as close as possible to 6,000 feet, (8,000 MSL) (e.g., 7,500 MSL and 8,500 MSL), weather permitting.

H. AWACS Procedures: All missions will be planned with AWACS working in Restricted Operating Zone (ROZ) 01, unless under contingency ops. Contingency ops must be approved by the CFAC Operations Group Commander.

(1) Aircraft will be advised when AWACS is not capable of radar surveillance of the TAOR or if departing it's station for RTB.

(2) If unable to contact INDIA and AWACS is "Midnight", all aircraft will make procedural position reports on enroute frequency when over Kahramanmaras ("K-TOWN") and Savur. Format will be: Callsign, Position, and Altitude.

I. Aircraft will use the QNH altimeter setting for Iraq whenever operating below 15,000 feet MSL in the TAOR.

J. Base Altitudes: The base altitude published in the ATO is

only to be used in the TAOR. Aircraft transitting to/from the TAOR or operating in ROZ 01 will report altitudes in the clear.

K. IFF/SIF will be used during the entire flight. Primary identification will be modes II and IV. Turn your Mode III and C to standby or off upon entering the TAOR. Squawk all modes and codes after exiting.

5. NAVIGATION POINTS:

DESIGNATION	LAT/LONG	DESCRIPTION
SC-1/2 POINTS:		
K-TOWN	N3734/E3658	WAY POINT
SAVUR	N3733/E4054	WAY POINT
JUMP PT.	N3732/E4153	WAY POINT, (LV/JOIN SC-1/SC-2)
LLTR AND SC-1A/SC-2A POINTS:		
ALPHA	N3717/E3648	WAY POINT
BRAVO	N3720/E3753	WAY POINT
CHARLIE	N3714/E3914	WAY POINT
DELTA	N3729/E4050	WAY POINT
ECHO	N3727/E4152	WAY POINT
GATES:		
GATE 01	N3715/E4239	TAOR ENTRY/EXIT
GATE 02	N3722/E4310	TAOR ENTRY/EXIT
GATE 03	N3714/E4347	TAOR ENTRY/EXIT
REFUELING ANCHOR POINTS:		
EXXON	N3730/E4330	ROZ 02 NORTH RENDEZVOUS PT.
SIRSENK	N3705/E4316	ROZ 02 SOUTH RENDEZVOUS PT.

6. TAOR GATES:

A. Three gates are located on the Turkish/Iraq border for purposes of entry/exit into the TAOR. No other entry/exit points are authorized. The gates are 10NM wide. Every attempt will be made to use GATE 01 for all relief efforts in order to minimize conflicts with Turkish Army helicopter traffic operating from surface to 1500 feet along the Turkish/Iraqi border.

GATE 01: Entry/Exit Altitudes for GATE 01:
Helicopters: 8000 feet MSL.
Transport A/C: FL 070-140
other A/C: FL 150-290

GATE 02: Entry/Exit AT FL180-200

GATE 03: Entry/Exit AT FL180-200

NOTE: Tankers are not required to use the gates.

J. Supersonic Flight: No supersonic flight is authorized over Iraq unless specifically required for operational necessity (E.G. intercepts on a track believed to be of a hostile nature).

K. Rotary Wing Procedures:

(1) All helicopter flights will be accomplished between sunrise and sunset. This restriction does not apply to training flights in the Incirlik MTCA.

(2) Max altitude of 400 feet. Do not exit assigned block altitude unless positively cleared by AWACS.

(3) Unless operational requirements do not allow compliance, all rotary wing aircraft will operate at night with normal position lighting.

(4) Unless mission requirements will not allow compliance, all rotary wing aircraft should avoid known AAA sites and small arms ranges by the required distances.

(5) All known AAA sites and small arms ranges will be posted in unit operations and transferred to operational charts required.

11. AWACS PROCEDURES:

A. ROUTING: AWACS will take off from Incirlik and fly north to the DAN 010035 and hold in the block FL310-320 until the system is operational. Proceed direct to "K-Town" at FL310, then direct to ROZ 01. Return routing to Incirlik is via "K-Town" at FL320.

B. AWACS aircraft will contact Diyarbakir Control Tower and Mardin Radar on 364.2 when entering/exiting the area. Local traffic and test flights between FL250-FL310 will be transmitted to AWACS from Mardin Radar. All flights between FL250-310 in the area will be under control of Mardin Radar/AWACS.

C. During periods when AWACS is "Midnight" for any reason, (e.g. refueling, maintenance) aircraft transitting Roz 01 will avoid FL250-260. AWACS will advise all other aircraft when they initially contact AWACS or when AWACS goes "Midnight".

12. REFUELING PROCEDURES:

A. General:

(1) Refueling operations in ROZ 02 north and south and ROZ 03 will be IAW EMCON 3 "Smooth flow" procedures (Navy-"ZIP LIP"). Refueling operations in ROZ 01 will be

TE: FOR THE SIM SCENARIO, THE AIR CONTROL ELEMENT (ACE), CALLSIGN DUKE", WILL NOT BE MANNED. COUGAR MCC WILL BE RESPONSIBLE FOR THESE DUTIES.

PART I. MISSION TASKING (ATO PC-614), 12 DEC 9X
THE FOLLOWING IS A KEY TO ALL SETS CONTAINED WITHIN THE AIR TASKING ORDER.
ANY FIELD THAT DOES NOT CONTAIN DATA WILL BE REPLACED WITH A HYPHEN
MISSN/MSN#/#ACFT/MSN/SCL1/TOT/TGTLOC/
CALLSIGN/SIF2/REFUEL/TKR
CALLSIGN/ARCT/TRACK/ALT/OFFLOAD/COMMENTS/
NOTE: ALL FIELDS ARE ACCOUNTED FOR UNTIL THE LAST MANDATORY FIELD//
ALL TRAILING OPTIONAL FIELDS WITHOUT DATA ARE DROPPED//
PERIOD/ 240001Z TO 242359Z//
----------INCIRLIK----------
----------F-15----------
TASKUNIT/ 32FS//
MISSN/A2415/2/RECCE/47499/0510Z-0550Z/0600Z-0730Z/
WOLF/1501/REFUEL/PUMA 11/0550Z/ROZ 02S/FL190/10K/
COMMENTS/TASKING: COORDINATE WITH MISSN'S A2401,A2410,A2411
ESCORT/COVERAGE//
MISSN/A2416/2/RECCE/47499/0730Z-0815Z/0825Z-1000Z/
RAMBO/1511/REFUEL/PUMA 33/0815Z/ROZ 02S/FL190/10K/
COMMENTS/TASKING: COORDINATE WITH MISSN'S A2402,A2412
ESCORT/COVERAGE//
MISSN/B2415/2/RECCE/47499/1000Z-1100Z/1110Z-1230Z/
CONAN/1521/REFUEL/PUMA 55/1100Z/ROZ 02S/FL190/10K/
MISSN/B2416/2/RECCE/47499/1230Z-1320Z/1330Z-1500Z/
RAMBO/1531/REFUEL/PUMA 77/1320Z/ROZ 02S/FL190/10K/
COMMENTS/TASKING: COORDINATE WITH MISSN'S B2402,B2411
ESCORT/COVERAGE//
MISSN/D2415/2/RECCE/47499/AR/-/
WOLF/1501/-/AR/
COMMENTS/TASKING: LAUNCH AS REQUIRED//
MISSN/D2416/2/RECCE/47499/AR/-/
RAMBO/1511/-/AR//
COMMENTS/TASKING: LAUNCH AS REQUIRED//
NARR/UNIT REMARKS: 32FS//
MAKE TOS. MAKE LAND TIME FOR TURN. MAKE ARCT. ADJUST TOS TO MAKE ARCT IF REQUIRED. FUEL CONSIDERATIONS TAKE PRECEDENCE OVER AOR COVERAGE
CONTACT DUKE FOR MSN UPDATES//
----------F-16----------
TASKUNIT/ 512FS//
MISSN/A2401/2/RECCE/293/0510Z-0600Z/0610Z-0700Z/
HELYUN/1601/REFUEL/PUMA 11/0500Z/ROZ 02S/FL190/6K/
REFUEL/PUMA 22/0615Z/ROZ 02S/FL190/6K/
COMMENTS/TASKING: COORDINATE WITH MISSN'S A2415,A2410,A2411
ESCORT/COVERAGE//
MISSN/A2402/2/RECCE/293/0700Z-0800Z/0810Z-0900Z/
VIPER/1611/REFUEL/PUMA 22/0650Z/ROZ 02S/FL190/6K/
REFUEL/PUMA 33/0800Z/ROZ 02S/FL190/6K/
COMMENTS/TASKING: COORDINATE WITH MISSN'S A2416,A2411,A2412,

EXTRACT

from the Records Custodian for the Incident Investigation Board of
Northern Iraq on 14 April 1994, and that said
is a true
15 May 94

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  SSN/D2450/2/RECCE/-/AR/-/
     MEDOC/0101/REFUEL/AR/
     COMMENTS/TASKING:  LAUNCH AS REQUIRED//
MISSN/D2451/2/RECCE/-/AR/-/
     MUSCAT/0111/REFUEL/AR/
     COMMENTS/TASKING:  LAUNCH AS REQUIRED//
-------------------------------JAGUAR-----------------------------------
TASKUNIT/  41SQ//
MISSN/A2435/2/RECCE/-/0525Z-0615Z/-/
     KODAK/0201/REFUEL/LION 06/0510Z/ROZ 3/FL170/7K//
MISSN/A2436/2/RECCE/-/1230Z-1310Z/-/
     REBEL/0211/-/-/-/-/-/-/-//
MISSN/A2435/2/RECCE/-/AR/-/
     KODAK/0201/REFUEL/AR//
MISSN/D2436/2/RECCE/-/AR/-/
     REBEL/0211/REFUEL/AR//
-------------------------------------TURKISH F-4E-------------------------
TASKUNIT/  112SQ//
MISSN/A2460/4/TNG/0600Z-0645Z/ROZ 01/-/
     PANTHER/0401/REFUEL/PUMA 22/0550Z/ROZ 01/FL260/2K/
     REMARKS/COMMENTS:  INTERCEPT TRAINING AFTER AAR//
-------------------------------------HC-130-------------------------------
TASKUNIT/  39SOW//
MISSN/A2473/1/SAR/-/AR/
     GHOST 11/1360/1 HOUR ALERT/
     COMMENTS:  SAR ALERT STANDBY//
 ISSN/A2474/1/MAINT/-/AR/
     GHOST 55/1361/-/-/
     COMMENTS:  MAINTENANCE TEST FLIGHT//
-------------------------------------AWACS--------------------------------
TASKUNIT/552ACW//
MISSN/A2430/1/AEW/0500Z-1430/ROZ 01/-/
     COUGAR (MSN) SAVVY (AIRCREW)/0301/
     REFUEL/PUMA 22/0715Z/ROZ 01/FL260/35K//
MISSN/D2431/1/AEW/-/-/-/
     COUGAR (MSN) SAVVY (AIRCREW)/0302/AR/-/
     COMMENTS:  THIS MSN WILL LAUNCH AR//
NARR/UNIT REMARKS:  552ACW//
-------------------------------------TANKERS------------------------------
TASKUNIT/  306SW//                                        KC135R
MISSN/A2421/1/AAR/-/-//
     PUMA 11/3511/0500Z-0615Z/ROZ 02S/FL190/
     REFUEL/A2401/HELYUN/2F16/6K/0500Z/JP4/BOOM/
            A2410/STREAK/2A10/5K/0520Z/JP4/BOOM/
            A2411/THUNDER/2A10/5K/0535Z/JP4/BOOM/
            A2415/WOLF/2F15/10K/0550Z/JP4/BOOM/
     COMMENTS/ A/A TACAN 31Y-94Y//
MISSN/A2422/1/AAR/-/-//
     PUMA 22/3522/0530Z-0600Z/ROZ 01/FL260/
                  0610Z-0705Z/ROZ 02S/FL190/
                  0710Z-0730Z/ROZ 01/FL260/
```

COMMENTS: MAINTENANCE TEST FLIGHT//
NARR/UNIT REMARKS: 39SOW/55SOS RECCE/AR/
COMMENTS: DEP/ARR TIMES PLUS, MINUS 15 MINUTES//
11AVN----------UH60----------DIYARBAKIR
MISSN/D2462/2/TRANSPORT/-/0530Z-1500Z/
EAGLE 1,2/5530-1/LTCC-TAOR-LTCC/
DEP LTCC 0500Z/
GATE 1: 0605Z/
ARR ZAKHU 0610Z/
DEP ZAKHU 0630Z/
GATE 1: 0635Z/
ARR LTCC 0740Z/
COMMENTS/SPT COL NAAB AS DIRECTED/MCC//
MISSN/E2462/1/TRANSPORT/-/0530Z-1500Z ON CALL/
EAGLE 3/5540/LTCC-LTAG-LTCC/
COMMENTS/TRANSPORT PAX AND PARTS/MCC//
MISSN/F2462/1/MAINT/-/0530Z-1500Z ON CALL/
EAGLE 4/5550/LOCAL AREA/
COMMENTS/MAINTENANCE TEST FLIGHT//
MISSN/G2462/1/TRANSPORT/-/SPARE # 1 FOR MISSN D2462/
EAGLE 5/5560/LTCC-TAOR-LTCC/
COMMENTS/SUPPORT COL NAAB AS DIRECTED/MCC//

PART II. SPINS
----------SPINS----------SPINS---------SPINS----------

1. COMMUNICATIONS PLAN
CODE WORDS:

WORD	DESCRIPTION
HYPER -	WX RECALL
MARBLES -	NO AIR COVER
WORKING -	ENTERING TGT AREA
HAPPY -	EXITING IRAQ
ORBIT -	HOLD PRESENT POSITION
ABORT -	LEAVE TGT/IRAQ (PERMANENTLY)
THIRSTY -	VECTOR TO TANKER
MICKEY -	TOD
CASINO -	RETROGRADE TO BORDER (AWACS RADAR OUT)
BULLSEYE -	MIKE (MOSEL)/ECHO (ERBIL)/QUEBEC (Q-WEST)
MIDNIGHT -	AWACS NOT OPERATING
SUNRISE -	AWACS OPERATING
TIEDOWN -	AWACS RADAR DEGRADED
SLIP -	SEARCH RADAR DETECTED
SWEEPER -	TTR DETECTED
DRUMBEAT -	MISSLE GUIDANCE DETECTED
ACTIVE -	EF-111 JAMMING ON
RAWHIDE -	EF-111 JAMMING OFF
ARSON -	SLIP TOT --- MINUTES
FILLY -	MISSN NO. --- CANCELLED

B. DAY/BASE ALT/BASE NO: 11/3.0/5
RESCUE WORD/NUMBER/LETTER OF THE DAY: BENDER/11/T
C. HAVE QUICK
TOD GENERATOR 338.025

[redacted]

OVERALL MISSION FLOW

The mission flow is simple, however there may be confusion at times. So it shouldn't be taken lightly. Once the weapons team has a handle on things, it should run smoothly. Refer to a map while reading this (ONC G-4 works well).

A typical day will begin with an E-3 airborne, along with tankers and fighters. The tankers will proceed to their airspace (ROZ 2) and the fighters will follow and either get gas or proceed directly to the TAOR. The E-3 will be in ROZ 1 and on station at this point.

From there, more fighters and tankers will do the same, all day. Fighters will get on tank before and/or after their TAOR missions, as required.

The E-3 will refuel once or twice, depending on the mission. The rendezvous will occur in ROZ 1, and will be WD directed. A "Midnight" call will be made and all coalition aircraft will exit the TAOR except F-15s and F-16Cs. They will set up a CAP to monitor the TAOR. Planes will be checking in and out and pushing different control frequencies while Cougar is "Midnight", so the weapons team must monitor their frequencies and note who's checked in/out to maintain situational awareness. Upon "Sunrise", expect more of the same activity.

In addition, you can expect the Eagles (UH-60) to check in and request flight follow and help coordinating "gate times"; i.e. a time when they can exit the TAOR through a gate. They are a high interest track and they must be hard copied once every 5 minutes in Turkey and once every 2 minutes in the TAOR. There is also a special log that must be filled out documenting Eagle activity. Often, radar contact with Eagle is lost and the symbology can be suspended. Ensure the hard copy is on after re-tagging them. (NOTE: Logs and hard copies will not be used for the sim scenario.)

Viking (C-12 transport) may also check in for flight follow.

Turkish F-16s/F-4Es are training only. After they check in, they meet a U.S. tanker in ROZ 1 and then either RTB Incirlik or proceed to a CAP point northeast of ROZ 1 for intercept training. AWACS will control Turkish intercepts on the coalition fighters (not tankers) outbound from the TAOR. The "Enroute" frequency will be used for control, and they will be assigned an altitude block of FL270-290. These will be close control stern conversions IAW JR

[redacted]

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from OPC Simulator TAC-E Document which is kept in my records system.

15 May 96
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

[redacted]

55-79. Safety is paramount with these intercepts. It is a good chance to get air-to-air hacks, but do not compromise safety.

AWACS will stay up until all aircraft have gone to Incirlik approach frequencies.

THE CONTROLLER POSITIONS

There are three controller positions - Check-in, Tanker, and AOR Monitor.

Check-In: The check in controller has the most challenging position. He/she will deal with the most aircraft over the largest area. It is best to use the x4 expansion and clean up the scope to see the whole area. Check-in will provide ATC-type service to all aircraft on the "enroute" frequency. This includes altitude deconfiliction and traffic separation. A good technique is to keep a log of what altitudes aircraft on the Enroute frequency are currently at, and then check the mode C's to be sure.

In addition, he/she will tag-up and turn the hard copy on for each track. (Use the "H" option of the "Track TD" switch action.) Have Quick and secure frequencies should also be checked here. American F-15s, F-16Cs, EF-111s, and KC-135Rs have both Have Quick and secure capabilities. All other U.S. aircraft and Jaguars are limited to Have Quick only. All coalition aircraft can be given sweet/sour checks.

Tanker: The tanker controller is responsible for flight safety for all aircraft on rendezvous frequencies. EMCON 3 is fragged, but the main objective is to keep it safe and simple. Obviously, some aircraft have better radar than others. F-16s will find tankers easily, whereas an A-10 will need more help.

The Jaguars will meet up with the VC-10 east of K-Town, follow him to ROZ 3 or ROZ 2, and refuel there. Then the VC-10 will RTB and the Jags will proceed into the TAOR.

The French use timing patterns to rendezvous in ROZ 2. Thus, the French tanker and its chicks won't take your vectors when rendezvousing. Sometimes, their orbits will spill out of the airspace. The Tanker controller should still make airspace calls and give bogey dope to them.

The Turkish interceptors check in and then refuel in ROZ 1. A U.S. tanker will head from ROZ 2 to meet them there. They usually do point parallel procedures, so be sure to ask them what they want

[redacted]

[redacted]

early. They generally will take AWACS vectors, but sometimes will eat up the offset you've created as they near the tanker. Sometimes they will even call the tanker turn, so you have to beat them to it if you like close control.

Aircraft may tank before, during, or after their TAOR mission. There is a listing of what's planned in the daily ATO.

AOR Mon: This is the easiest of the three positions, and it is a good place for an inexperienced controller to be on the first few missions. He/she is responsible for picture calls and flight safety for those on the "Area Primary" frequency.

When aircraft enter the TAOR, they will check in with Duke, and then push the Area Primary freq for control. The controller should check that "hard copy" is on. If field 4 of the B feature has a "D" in it, hard copy is on.

The primary bullseye is "Mike" and the secondary is "Echo" (not to be confused with the navigation point "Echo"). Picture calls should be made at least every 10 minutes. There are times when IDs are necessary. The Duke will advise you what is necessary.

You must keep the coalition aircraft inside the TAOR. There is a 5 mile buffer zone with Syria and a 10 mile buffer with Iran. Buffer calls and vectors should be given if necessary. However, many missions will require aircraft to skirt the borders. The main thing is make sure they know where they are. Do what you are trained to do to keep them in the airspace, but keep in mind their mission requirements.

LESSONS LEARNED

(1) Some of the Dukes are inexperienced. They will need to be double-checked after they make a decision. Knowledge of the ACO is imperative.

(2) When dealing with foreign pilots, it is helpful to speak slowly, and don't be afraid to ask them to repeat transmissions. Often, they won't understand certain terms. For example, the French understand "border" as opposed to "airspace." Often acronyms present difficulty as well. Be patient and polite when speaking with the foreign pilots.

(3) It may be helpful to modify the standard comm plan provided by Savvy Ops to fit your crew's needs. Some suggestions:

[redacted]

[redacted]

(a) Seat all controllers on one bank to make coordination easier. The enroute controller should sit in the center.

(b) Have a controller monitor the Duke's frequency. The best choice is put it in the AOR Monitor's delta push. This will improve coordination with the Duke.

(4) Keep aware of the "big picture." Don't get caught up in small priority tasks (e.g. rendezvousing an F-16C with good radar on tank). Safety and international borders take priority.

(5) Occasionally, the SD or WDs will need breaks during the long missions. As a minimum, three members of the weapons team should be on scope, with good situational awareness. The entire working area from Incirlik to the TAOR is too large for one inexperienced controller to watch alone. The SD should keep this in mind when giving breaks.

(6) Remember that the TAOR is Iraqi airspace. Code words, base numbers and base altitudes are there to protect the pilots. Use them.

(7) The Turkish interceptor mode C's are often inaccurate. Verbal confirmation of altitude may be necessary. They are given a block to work in, and it is the WDs job to make sure they stay in it.

(8) Incirlik has an Officer's Club. The pilots you work with go there. You can learn much by debriefing with them there, or ask them questions about their aircraft.

RECOMMENDATIONS FOR SPINNING UP INEXPERIENCED WDs

(1) ATC type control may be new to many controllers. Reviewing FAA 7110.65G may be useful. This book deals with air traffic control (separation, etc.). If you'd like more, go to the Airspace Management Officer/FAA Liaison located in Room 203 above the 965th. A briefing from FAA on this topic would be even more useful. Arranging a tour of an FAA control facility may also help.

(2) The aircraft you work with aren't typical for AWACS. Insure the controllers are familiar with them, including their radar capabilities and refueling procedures (e.g. A-10). An MCM 3-1 brief should be given on them prior to deployment.

[redacted]

I. GENERAL OPERATIONS

1. INTRODUCTION

A. These procedures supplement USAF, MAJCOM, and 552 ACW operations procedures and are in effect for normal 552 ACW OPC operations at Incirlik AB, Turkey.

B. These procedures are intended to provide guidelines and techniques for safe and efficient mission accomplishment in this theater. Changes to these procedures which improve mission effectiveness and efficiency of operations are encouraged. Changes should be coordinated through the 552 ACW Deployed Staff and then published in this document to ensure continuity.

C. Both Flight and Mission Crews must be familiar with this document as well as the daily Air Tasking Order (ATO), latest Airspace Control Order (ACO), Battle Staff Directives (BSD), Operations Read File (ORF), Aircrew Read File (ARF), Flight Crew Information File (FCIF), local flying procedures, and the weekly/daily schedule. These contain essential mission information: check for daily changes and updates. Additional detailed information can be found in the classified CTF PROVIDE COMFORT OPLAN 91-7, dated 20 Jul 91, which is stored in the Weapons and Tactics safe.

2. ARRIVAL/INPROCESSING/SPINUP

A. After arrival, each crew will receive a comprehensive orientation consisting of a standard agenda of briefings from the DETCO, DO, ADO-M, Intel, First Sgt/Ops Superintendent, and the 39th Operations Group. All arriving crews are in-briefed by the Combined Forces Air Component (CFAC) DO or ADO the day after arrival- usually at 1300L in the CFAC/DO conference room (duration 15-20 min). It is highly recommended that, prior to their first mission, the AC and MCC conduct a one-time summary Briefing/meeting to review/clarify responsibilities, crew show times, and crew procedures unique to Incirlik.

B. Following spinup, each crew will enter a repeating three-day cycle consisting of cocking/DNIF cover duties (DAY 1), flying crew (Day 2), and an off day (Day 3). This cycle will be modified by scheduled down days and mission lengths to ensure each crew receives equal opportunities to fly, pull alert, and have off days during their deployment. Surge (24-hr ops) will also modify this cycle.

3. CREW REST/DNIF COVER

A. Normal AFR 60-1/ACC Sup 1 and 552 ACW ORFs apply. Noise in the living area should be kept to a minimum since other crews in the same building may be in crew rest. Crew rest violations should be brought to the attention of the First Sergeant, ADO-M, DO, or DETCO as soon as possible to determine the best course of action.

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

552 ACW (Deployed) Local Procedures for OPC

which is kept in my records system.

7 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

552nd AIR CONTROL WING

DEPLOYED OPERATIONS

INCIRLIK AB, TURKEY

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Boar
convened to investigate the crash of two U.S. Army Black Hawk helicopters in the n
fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extrac
from 52AEW Crew Locat Studies
which is kept in my records system.

7 May 96
Date

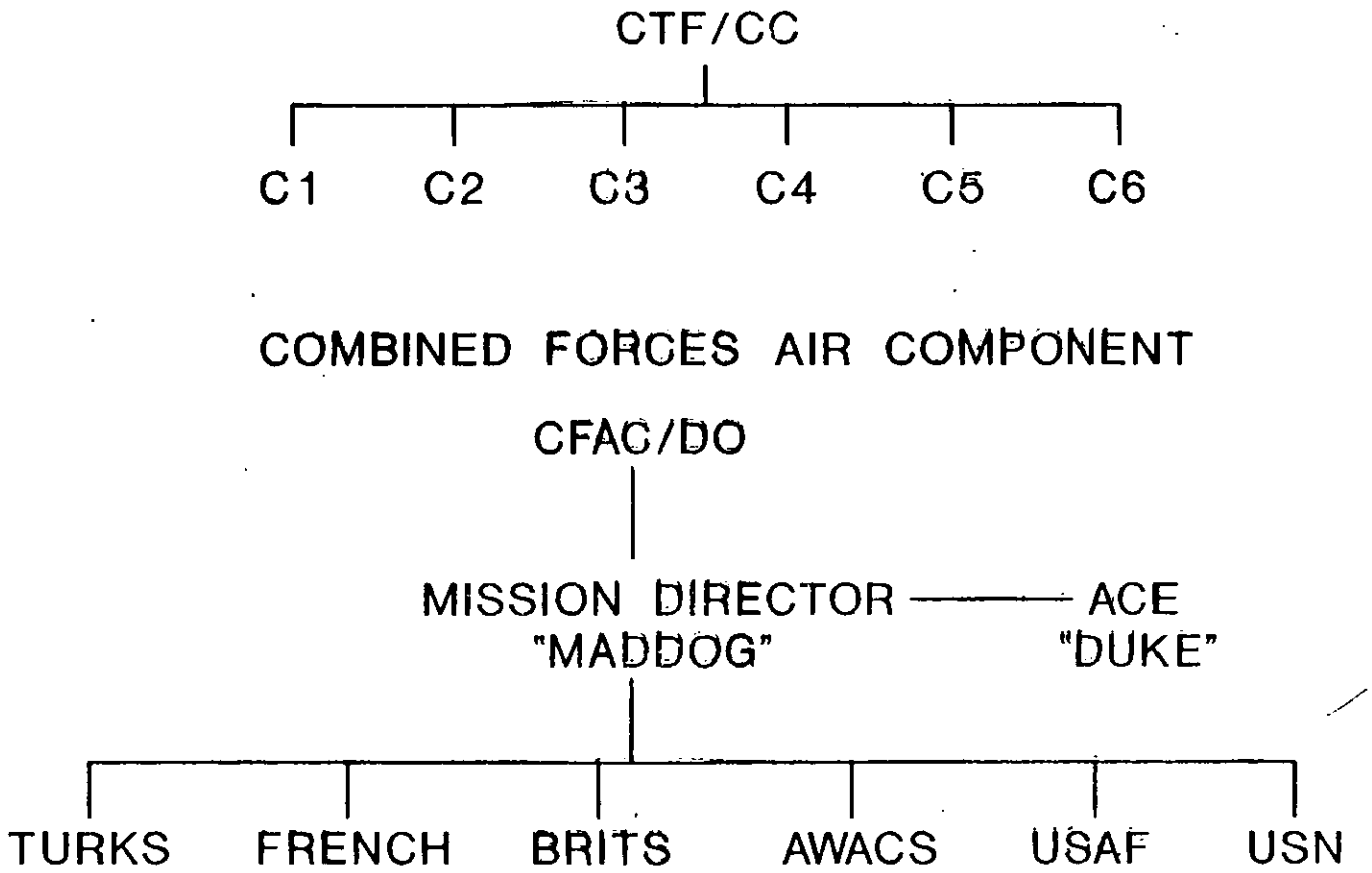
WILLIAM L. HARRIS, Capt, USAF, MSC

PROVIDE COMFORT MISSION OBJECTIVES

* SHOW OF FORCE

* PRESENCE

OPERATION PROVIDE COMFORT
CHAIN OF COMMAND



AWACS RESPONSIBILITIES

* COMMAND AND CONTROL
  -- ACE AND TC

* CONTROL/AIRSPACE MANAGEMENT
  --THREAT WARNING AND CONTROL IN TAOR
  --REFUELING RENDEZVOUS

* ENROUTE FLIGHT FOLLOWING
  --CONTROL CTF AIRCRAFT ENROUTE/IN/FROM/THE TAOR
  --CONTROL OF A/S MAINTAINED BY TURKISH ATC (MARDIN RADAR)
  --TRAFFIC DECONFLICTION BEYOND 50 nms FROM INCIRLIK
  --WEATHER INFORMATION

SCEDULE 3 DAY CYCLE

- 3 JETS/CREWS - WINDOW 0330Z-1930Z
- DAY 1 - FLY
  -- BUS 1+30hr PRIOR TO T/O
  -- 1+20hr BRIEF AT OPS
- DAY 2 - OFF
- DAY 3 - DNIF COVER/COCKING CREW/SOF
  -- CSO/CT ASSISTS MANNING OPS RADIOS
  -- SD/WD MAY ASSIST STAFF WD
- DOWN DAY ALERT CREW
  -- CREW REST/BOTTLE TO THROTTLE 1700L
  -- 0500-1700.3 HR RESPONSE TO ALERT SCRAMBLE

MISSION PROFILE

* SHOWTIME 1+30 before T/O
* BRIEF 1+20 before T/O
* TAKEOFF 2+40 before first activity
  ROLEX DECISION MADE 1+20 AFTER T/O
* HOLDING ORBIT (010/35, FL 310 to FL 320)
* BRING UP SYSTEM (wake up on DIODT)
* "OPS NORMAL" CALL BEFORE LEAVING WAKE UP ORBIT
* DRIVE K-TOWN TO ROZ1 AT FL 320
* DECLARE ON STATION WHEN REQUIREMENTS MET

MISSION PROFILE

* BEGIN ACTIVITY

* REFUEL IN ROZ1; "MIDNIGHT" PROCEDURES

* CONTINUE ACTIVITY

* FLIGHT FOLLOW AIRCRAFT FROM K-TOWN, INTO AOR, RTB
  -- if E-3 breaks, MADDOG can direct contingency ops
  -- call SAVVY OPS ASAP

* DECLARE OFF STATION WHEN ALL REQUIREMENTS MET
  -- Terminate links at off station

* RTB VIA K-TOWN FL 320

MISSION PROFILE

* TRANSFER CONTROL OF ALL AIRCRAFT

* AT 100nm OUT, FLIGHT DECK CONTACT INCIRLIK APPROACH

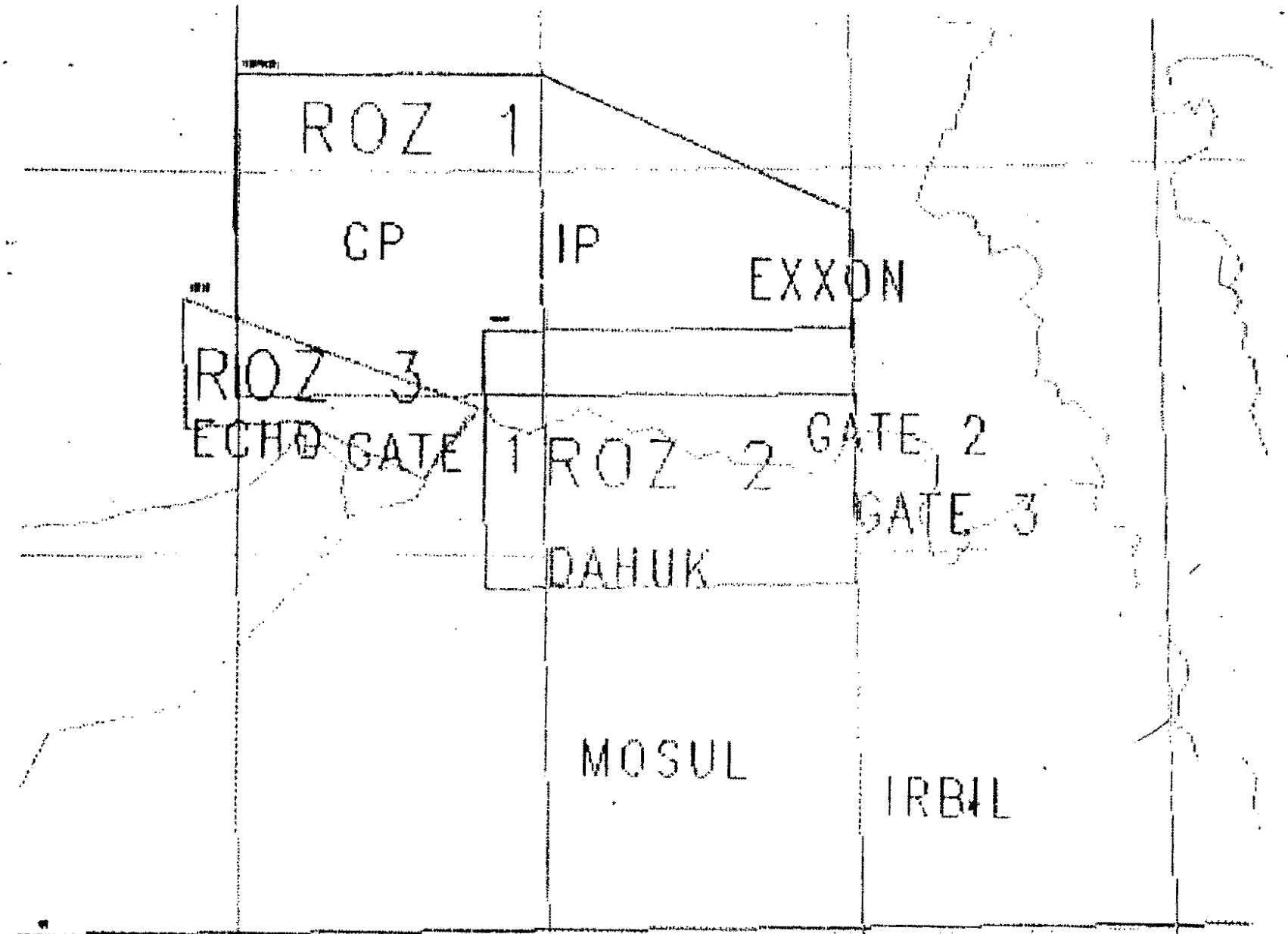
* BY 80nm OUT, BEGIN DESCENT AND SYSTEM SHUTDOWN
  -- May need to go to Wake up Orbit to wait for Ftrs
  -- AC/MCC Coordinated

* LAND AND DEBRIEF AT OPS

OUTBOUND/INBOUND ENROUTE TIMING

* OUTBOUND:
  -- DEPART WAKEUP TO REACH ROZ1 WITH FIRST AIR-TO-AIR FIGHTERS LESS THAN 50nm IN TRAIL
  -- FTRs WILL PASS E-3 AND ENTER TAOR BEFORE E-3 ENTERS ROZ1

* INBOUND:
  -- DEPART ROZ1 TO REACH JUMP POINT AHEAD OF LAST AIR-TO-AIR FIGHTERS OUT OF BOX


ROZ 1
CP
IP
EXXON
ROZ 3
ECHO GATE 1
ROZ 2
GATE 2
GATE 3
DAHUK
MOSUL
IRBIL

ON STATION REQUIREMENTS

* RADAR

* IFF

* SATCOM/HF
  -- ONE system MINIMUM
  -- if NO SATCOM: Pass to SAVVY OPS ASAP

* ACTIVE JTIDS
  --ONE site ACTIVE in Link MINIMUM: Daddy or India

RULES OF ENGAGEMENT

* CLASSIFIED ROE PUBLISHED AS BATTLESTAFF DIRECTIVES (BSDs) AND AIRCREW READ FILES (ARFs)

* SELF-DEFENSE AUTHORIZED

* NO INTERCEPTS ON KNOWN FRIENDLIES IN TAOR

* NO INTERCEPTS ON UNKNOWN A/C IN TURKISH A/S

* PRIMARY ID: MODE 2 AND 4

* MODES 3 AND C ARE OFF/STANDBY IN TAOR; ON IN TURKEY

SURVEILLANCE TRACKING RESPONSIBILITIES

* DETECT/TRACK ALL AIRCRAFT IN THE TAOR

* DETECT/TRACK ALL AIRCRAFT IN IRAQI AIRSPACE WITHIN E-3 RADAR COVERAGE

* DETECT/TRACK OTHER AREAS AS TASKED IN THE ATO BY CFAC/CC

* DETECT/TRACK OTHER AREAS TASKED BY SOC 2 ON A NON-INTERFERENCE BASIS

SURVEILLANCE

* JTIDS
  -- to SOC2 TUAF via CRC/CRP's (X-Ray, Daddy, India)
  -- SOC2 Link Manager (TIGER)
  -- Turkish controller (TC) is liaison
  -- NAEW Master if present (irregular)

* TADIL A
  -- PRIMARY: "ROADWARRIOR" Down Link for MADDOG via Navy Mults
  -- SECONDARY: Saudi Link

* ID
  -- In Turkey: SOC2 Authority (TIGER)-use TC
  -- TAOR: -per matrix
  -use S.V. on TOI's in TAOR as necessary

RESTRICTIONS

* USE BASE ALTITUDES IN TAOR ONLY

* AVOID SYRIA BY 5nm, IRAN BY 10nm

* ALL A/C CALL DUKE ENTERING/EXITING TAOR
  -- on DUKE FREQ
  -- ALL Secure checks done on DUKE FREQ

* WEATHER MINS
  -- 10,000ft CEILING/5nm VIS FOR VFR OPS BELOW
  -- 5,000ft ABOVE DECK/5nm VIS FOR VFR OPS ABOVE

* REFUELING
  -- ROZ2 & ROZ3: EMCON 3
  -- ROZ1: EMCON 1

ACFT/ FIGHTER THREAT AVOIDANCE

* ALTITUDE RESTRICTIONS

* AIRSPACE/AREA RESTRICTIONS

* ENEMY SYSTEMS RESTRICTIONS

LESSONS LEARNED

* WD/ASTs DEBRIEF WITH INTEL ON IRAQI TRACKS

* DEBRIEF ANY AOR INTERCEPTS ON UN A/C

* DEBRIEF ANY 36 DEGREE LINE CROSSING/COMMIT
  -- Save Tape recordings (VCR and Audio)
  -- Will go to C2 (Intel)

* DEBRIEF ANY JAMMING INCIDENTS

* DEBRIEF ANY POSSIBLE A/C ATTACKS OR MUNITIONS EXPENDITURES

* LOAD UN FLIGHT ROUTES

KEY STEP ITEMS

* FLT DECK FOOTBALL/FLY AWAY KIT
    -- JEPPESENS
    -- FLT INFO w/ DOT FORMS
* ASO KIT
    -- INTEL UPDATES
    -- LINK INFO (STEP BRIEF)
    -- UN FLT SCHEDULE
* WPNS KIT
    -- ATO BREAKOUTS
    -- ACO
    -- PC STANDARDS
    -- DUKE PACKAGE
    -- VIDEO TAPE
    -- AUDIO RECORDER
    -- A/C CAPABILITIES & LIMITS
    -- CREW SPECIFIC FOLDER
* VIDEO CAMCORDER w/ STAND
* HEADSET BAG--3 HEADSETS FOR DUKE & TC
* 2 CASES OF WATER

SUCCESS KEYS

* HAVE A GAME PLAN
  - WEAPONS/COMMIT/SHOOTER EMPLOYMENT
  - SURVEILLANCE/LINK
  - RETROGRADE

* LEAD TURN MENTALITY

* PROMPT PROBLEM IDENTIFICATION

* EARLY PROBLEM CALLS TO SAVVY OPS/MADDOG
  - JTIDS SYSTEM STATUS
  - JTIDS LINK STATUS
  - OTHER E-3 SYSTEMS STATUS

* THREAT KNOWLEDGE AND VIGILANCE

* ATTENTION TO CLUES

THINGS TO DO TODAY

* ONE ON ONE BRIEFS
* REVIEW LOCAL OPS PROCEDURES
* READ ARF AND LOCAL ORF
* REVIEW FLY AWAY KITS & CONTENTS
* GET ANY QUESTIONS ANSWERED

OPS NOTES
OPS PHONE # x63300

* SCHEDULING BOARD
* MORALE CALLS
* WATER ISSUE
* DNIF PROCEDURES
* SICK CALL HOURS
* MAIL/E-MAIL
* MAINTENANCE/OPS ISSUES
* BASE RESTRICTIONS

WD RESPONSIBILITIES:

ENROUTE- RESPONSIBLE FOR THE AIRCRAFT CHECK-IN, HAVE QUICK CHECKS AND SAFETY IN THE CORRIDOR. STATE STATUS OF MODE 4 CHECK ONLY IF SOUR. ALL PLAYERS HAVE FRAGGED INGRESS AND EGRESS ALTITUDES BUT DON'T BE AFRAID TO SET ALTITUDES IF YOU SEE A PROBLEM ESPECIALLY WHEN WEATHER IN THE CORRIDOR BECOMES A FACTOR. THE CORRIDOR IS FL180-400. BE AGGRESSIVE!

AAR- PRESENTS THE MOST CHALLENGING TASK ESPECIALLY WHEN THERE IS WEATHER OR A ROLEX. MIN COMM IS A MUST, GIVE BEARING AND RANGE TO TANKER ONLY AT PILOT REQUEST HOWEVER IF THINGS CHANGE BE DIRECTIVE AND SPECIFIC. YOU SHOULD ALWAYS BE DIRECTIVE WITH THE TURKS. A/C MAY ASK FOR A PICTURE SOUTH CALL WHEN COMING OFF TANKER POINT OUT TRAFFIC THAT MAY BE A FACTOR.

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

Weapon Specialized Training

which is kept in my records system.

4 May 95
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

WD RESPONSIBILITIES CON'T

TAOR- GIVE A PICTURE CALL TO EACH FLIGHT AS THEY ENTER THE TAOR. THERE IS NO NEED TO GIVE PERIODIC PICTURE CALLS IF NOTHING IS CHANGING. IF THERE ARE A/C AT Q-WEST DON'T CONTINUE TO CALL THEM OUT. PLAIN ENGLISH CALL THAT THERE IS "PATTERN WORK AT Q-WEST" IS SUFFICIENT. PILOTS DON'T WANT A PICTURE CLEAN CALL UNLESS THE PICTURE IS REALLY CLEAN. TELL THEM WHAT YOU SEE. PICTURE CALLS ARE GIVEN IN DIGITAL BULLSEYE ONLY. THE CODE WORD FOR BULLSEYE CHANGES PERIODICALLY USE THE CODE WORD! EVERY A/C IS ASSIGNED AN ALTITUDE BLOCK TO WORK HOWEVER THERE HAVE BEEN SOME CO-ALTITUDE CLOSE CALLS SO WATCH THE ALTITUDES!

BUFFER ZONES-

SYRIA-5NM IRAN-10 NM

AIRCRAFT CAPABILITIES:

ALL PLAYERS ARE HQ CAPABLE. TOD COMES FROM INCIRLIK.
(Except Tnkrs)

RADIOS/RADAR

F-15	2xUHF, HQ, SECURE /A-A RADAR
F-16	1 UHF, 1 VHF, HQ, SECURE/ A-A RADAR
F-111	1 UHF, 1 HF, HQ, SECURE
EF-111	1 UHF, 1 HF, HQ, SECURE
F4-G	1 UHF, HQ, SECURE/A-A RADAR LIMITED
HARRIERS	2 UHF, VHF, HQ, NO SECURE OR A-A RADAR
JAGUARS	1 UHF, 1 HF, VHF, HQ, NO SECURE OR A-A RADAR
F-1	1 UHF, 1 VHF, HQ, NO SECURE/A-A RADAR
KC-135	2 UHF, 1 HF, 1 VHF(AM ONLY), HQ, SECURE

TYPICAL FLOW:

NO FIGHTERS LAUNCH UNTIL AWACS IS OPS NORMAL PLUS JTIDS

USUALLY TANKERS WILL TAKEOFF FIRST FOLLOWED BY DCA ASSETS. THE FIGHTERS WILL OVERTAKE THE TANKERS AND WE FLOW IN BEHIND THEM AND PROCEED TO ROZ1.

THE DCA ASSETS WILL ENTER THE TAOR AND SANITIZE THE AREA.

THE DCA ASSETS ARE THE FIRST TO ENTER THE TAOR AND THE LAST ONES TO LEAVE.

COMMUNICATIONS

Communications

- Know equipment status

- Know fighter/tanker flow

- Be ready for changes

- Advise pilots of changes and the reason for the change

- Keep transmissions concise. Be brief and direct but explain situation

- Use "secure" sparingly Have Quick is OK for perishable information

- Secure troublesome to F-4s

- Use 3-D radar and mental picture to stop conflicts before they happen

DEPARTMENT OF THE ARMY
Eagle Flight Detachment
APO AE 09825

AETV-AVA-B-AH 28 DEC 1992

MEMORANDUM FOR PERSONNEL CONCERNED

SUBJECT: Eagle Flight Coordinates

1. The attached sheet contains the destination coordinates with coordinating letter designations. These letter designations will be used to transmit the location and destination to Cougar and coalition aircraft.

2. The routes of flight will be straight line from point to point unless otherwise indicated. On occasion, Eagle Flight may request a fly by or escort while conducting operations in the TAOR, for security reasons. These coordinates will aid the coalition aircraft in locating the route of flight or ground location.

3. The following CFAC units should receive the coordinates:

CFAC OPNS
C3--CTF HQ'S
MAD DOG OPNS

COMMAND/REFUEL		FIGHTERS/RECON	
552ACW	AWACS	32FS	F15
100RW	TANKER	23FS	F16
101SQ	TANKER	944FS	F16
		524FS	F111
		429ECS	EF111
		33RW	F1
		41SQ	JAGUAR

4. If there are any questions, please contact CW2 Suzanne Danielson at 676-7085, Eagle Flight Operations.

SUZANNE C. DANIELSON
CW2 AV
S-2

EAGLE FLIGHT CHECKPOINT DESTINATION COORDINATES

A = AL AMADIYA	N37'05.6	E43'29.8	38S	LG	6555	0645
B = BARUSHKI	N37'04.1	E43'04.5	38S	LG	2900	0410
C = BARZAN	N36'55.5	E44'02.7	38S	MF	1500	8700
D = BATUFAH	N37'10.7	E43'00.7	38S	LG	2350	1650
E = AQURAH	N36'45.5	E43'54.0	38S	MF	0145	6905
F = BASHUR AFLD	N36'32.0	E44'20.5	38S	MF	4100	4335
G = DAHUK	N36'51.5	E43'00.0	38S	LF	2220	8070
H = DIYANAH	N36'39.8	E44'32.7	38S	MF	5934	5769
I = FIDAH	N36'48.9	E42'54.6	38S	LF	1350	7650
J = QAL'AH CHIN	N36'38.6	E44'19.4	38S	MF	3920	5410
K = HARIK	N37'02.5	E43'40.1	38S	LG	8176	0041
L = IREIL	N36'13.0	E43'58.5	38S	MF	0800	0862
M = KANI MASI	N37'13.8	E43'26.5	38S	LG	6180	2165
N = MANGESH	N37'02.5	E43'08.0	38S	LG	3096	0065
O = SALAH A DIN	N36'21.3	E43'16.0	38S	MF	3420	2350
P = SHALADIZA	N37'02.3	E43'48.1	38S	LF	9345	9995
Q = SHAQLAWA	N36'23.5	E44'19.9	38S	MF	2875	2689
R = SHURI	N37'01.1	E43'49.7	38S	LF	9575	9770
S = SIRSENK	N37'02.4	E43'20.7	38S	LG	5275	0065
T = SIRSENK AFLD	N37'06.0	E43'16.2	38S	LG	4630	0735
U = SPINDAR	N36'58.4	E43'19.1	38S	LF	5100	9310
V = DAM	N36'40.4	E44'14.1	38S	MF	3380	6030
W = ZAKHO	N37'08.5	E42'40.7	38S	KG	9331	1353
X = ZAWITA	N36'54.2	E43'08.2	38S	LF	3394	8588

EAGLE FLIGHT INTERNAL FREQUENCIES (Secure capable UHF/FM)
UHF 300.00 VHF 141.800 FM 41.45/30.30

LTR COORDINATES

DIYARBAKIR	N37'53.8	E40'11.6	37S	FB	0502	9518
TP #1	N37'43.5	E41'47.5	37S	GB	4602	7918
TP #2	N37'25.5	E41'51.8	37S	GB	5350	4600
TP #3	N37'25.1	E41'13.1	38S	KG	5382	4498
GATE 1	N37'12.1	E42'36.8	38S	KG	8815	1998

LTCC FREQS UHF 257.800 VHF 122.100 VOR 110.00
EAGLE NEST (AMERICAN RAMP) FM 41.45 Secure capable

INCIRLIK COORDINATES

CP1	N37'14.0	E39'14.0	37S	EB	2070	2085
CP2	N37'20.0	E37'53.0	37S	DB	0107	3250
CP3	N37'17.0	E36'48.0	37S	CB	0496	2864
INCIRLIK (LTAG)	N36'59.8	E35'25.5	36S	YF	1580	9732

FREQ.S	APPR. CNTRL	VHF 123.025	126.5	
	TWR	VHF 129.4	122.1	UHF 276.5
	GRND	UHF 382.05		
	NDB 309	LOC 109.3		

SUZANNE C. DANIELSON
CW2, AV
S-2

Atch 11 to TAB O3d

Extract, Weapons Fly Away Book, SUPPLEMENTAL ROE, Undated (SECRET)

(See Classified Addendum)

TAB O-3

E-3B AWACS

REPORT OF TECHNICAL ADVISOR
AWACS MAINTENANCE

AIRCRAFT EVALUATED: E-3B Serial Number 77-0351
INCIDENT DATE: 14 April 1994

I. INTRODUCTION:

The purpose of this evaluation was to determine the air worthiness, capability, and effectiveness of the aircraft and mission system of Airborne Warning and Control System (AWACS) E-3B serial number 77-0351. This aircraft arrived at Incirlik Air Base on 17 Feb 94 with 13,161.4 hours total airframe time. (TAB H2C, 16 Feb 94.) Aircraft had flown 12 sorties, totaling 104.2 hours, since that date. (TAB U2C)

II. BACKGROUND:

This technical report was prepared for the official AFR 110-14 aircraft accident investigation into the facts and circumstances surrounding the crash of two US Army Black Hawk helicopters and the possible involvement of US fighter aircraft in the crash of these helicopters in the northern "No-Fly Zone" of Iraq on 14 April 1994. It reports the technical evaluation processes and determinations regarding the air worthiness and serviceability of the AWACS aircraft, E-3B, Serial Number 77-0351, which was involved in the mishap.

III. EVALUATION:

The evaluation included a maintenance historical records review of the following aircraft systems: engine, hydraulic, electric, environmental control, guidance and control, communication, navigation, data processing, radar and identification, friend or foe (IFF). This was accomplished by reviewing AFTO Forms 781 series (active forms and jacket file), the equipment review report, maintenance debriefs, oil analysis records, and airborne radar technician (ART) mission logs. Discrepancies were cross-checked for continuity and accuracy to determine what effects, if any, they had on mission capability and performance (TAB H2) Crew testimony was reviewed to determine what equipment discrepancies, if any, may have played a role in the mishap.

In accordance with the applicable Air Force technical data, an operational check was performed on the following mission systems: Communications; Data Processing; Radar; and IFF.

COMMUNICATIONS. On 27 Apr 94, an operational check was performed on all UHF, VHF, SATCOM, Have Quick, Time of Day, UHF GUARD and VHF GUARD radios. (Atch 1) Each radio was operated to determine both transmit and receive capabilities and

evaluated to determine any discrepancies which may have contributed to the accident. Thirteen of fourteen radios were operated to determine both transmit and receive capabilities. One radio (R/T-15) was inoperative. (Atch 1) Additionally, all mission audio panels were operationally checked to determine mission crew communication capability. (Atch 5)

DATA PROCESSING. Mission tape replays were conducted on 19 Apr 94 to determine serviceability of mission crew monitors in the data processing system. Data was loaded into the mission computer to determine the capability of the system to process information for display on the mission crew monitors. (These monitors display radar and IFF data, allowing the crew member to see airborne traffic.) Seat 10 monitor was inoperative on 14 Apr 94 and annotated in the AFTO Form 781A. (TAB H2B, 13 Apr 94, Pg 1, Blk 3) All other monitors (13 total) were found to be serviceable. On 27 Apr 94, the Airborne Operational Computer program was loaded to determine serviceability of the mission computer system. (Atch 2) This program contains the necessary mission data for a specific area of responsibility.

RADAR. The mission radar was checked in both high and low chain (high and low radio frequency power) to determine whether or not sufficient RF power was available for accurate surveillance. Sample targets were generated and passed across the interface to determine communication capability of the radar/computer interface. (The interface changes radar returns into signals which are then processed and displayed on mission crew monitors.) Fault isolation testing (FIT) (an internal troubleshooting system) was accomplished on the radar data correlator and radar receiver to determine the ability of mission radar to accurately locate other airborne aircraft. (Atch 2)

IFF. An IFF Mode IV loop test was accomplished to determine whether IFF Mode IV was capable of receiving a response to its interrogation pulse. A FIT program called On Board Test, Maintenance and Monitoring (OBTM&M) was run to locate any system errors within the IFF not otherwise noted by the mission aircrew. (Atch 3)

Maintenance procedures and supervision were also reviewed for any discrepancies which may have contributed to the accident. Personnel training records were reviewed for task proficiency. (TAB U2G)

Crew testimony was reviewed to determine possible equipment malfunctions during the incident sortie. (TAB V2)

IV. DETERMINATION:

The maintenance historical records review revealed discrepancies that could be related to this accident. (TABS H2; U2) The analysis of maintenance documentation is divided into two subsections, General Aircraft Systems and Mission Systems. General Aircraft Systems include fundamental systems necessary for aircraft flight. Mission Systems include systems necessary to perform airborne surveillance, and command and control for

an area of responsibility. Discrepancies that existed during the mishap sortie (open discrepancies) are listed within each subsection first. Historical discrepancies (one is previously documented as repaired) follow open discrepancies.

Discrepancies for the following systems were noted.

A. GENERAL AIRCRAFT SYSTEMS.

There were no open discrepancies in the AFTO Form 781A forms binder prior to the sortie on 14 Apr 94. (TAB H2A, 13 Apr 94, Pg 1) Upon recovery of the aircraft on 14 Apr 94, the number two engine had two red diagonal discrepancies (a red diagonal denotes a minor, but flyable aircraft discrepancy) in the AFTO Forms 781A. Both discrepancies were written up during the incident sortie. (TAB H2A, 13 Apr 94, Pg 2, Blks 2 and 3) The first discrepancy noted that the "... #2 throttle is one and one-half knobs AFT of other throttles on take-off and climb out and AFT of other throttles during all phases of flight...." The second discrepancy noted that the "#2 engine compressor stalled momentarily when descending from 32,000 feet to 25,000 feet. Stalled a second time when fuel flow was pulled back to 2000 lbs per hour...." (TAB H2A, 13 Apr 94, Pg 2, Blks 2 and 3) Neither discrepancy hindered aircraft performance. (TAB V2 Q14-16)

The hydraulic, electric, environmental control, guidance and control, and communication/ navigation systems all had no open discrepancies in the AFTO Form 781A prior to or during the incident sortie. (TAB H2A, 13 Apr 94, Pg 1)

Historical records revealed no discrepancies on general aircraft systems that were capable of degrading mission effectiveness. (TAB H2A)

B. MISSION SYSTEMS.

The radar system had zero open radar discrepancies during the incident sortie. (Tab H2B) Aircraft 77-0351 flew with one open red diagonal discrepancy in the identification, friend or foe (IFF) system during the incident sortie. "...IFF system interferes with AIMS Transponder: AIMS constantly interrogated on all modes...." (TAB H2B, 6 Apr 94, Pg 2, Blk 3) In other words, the general aircraft IFF answers the mission system IFF's interrogation pulses. The result is green IFF dots appear on the mission crew monitors indicating the E-3's own position. The discrepancy did not degrade the E-3's ability to transmit IFF interrogation pulses or receive replies to those pulses. (TAB V2, Para 3 and 4.)

There was one open communications system red diagonal discrepancy in the AFTO Form 781A during the incident sortie, "HF #2 has bad PP-4992." (TAB H2B, 13 Apr 94, Pg 1, Blk 2) The PP-4992 is a power supply for the HF #2 radio. The radio was inoperative; however, both other HF radios (#1 and #3) were fully operational. (TAB H2B and TAB V2, Control #8, Q22 & Q23)

There was one communications system deferred discrepancy written up on the AFTO Form 781K. (A deferred discrepancy is a minor discrepancy which cannot be corrected immediately.) UHF Receiver/Transmitter (R/T -15) was inoperative. (TAB H2G, 10 Feb 94, Blk H) Another R/T was used in place of R/T-15. There was no mission impact. (Tab V2,Control Witness #4, Para. 3)

There was one data processing system monitor inoperative on the aircraft before the incident sortie. Seat 10 had a bad high voltage power supply (HVPS), written up on a red diagonal with: "NOTE: Do not power up seat 10." (TAB H2B, 13 Apr 94, Pg 1, Blk 3) Seat 10 was not used during the incident sortie. (TAB V2, Control #20, Q36-38) Mission effectiveness was not degraded. (TAB V2, Control #20, Q39)

At the start of the incident sortie, one of three magnetic tape transports (MTT) failed to bring up a vacuum and was unusable. This unit is used to record mission data or load mission programs. With one MTT down, the computer technician on board must rewind and reload magnetic data (not video) recording tapes manually, every 30 minutes. Although this caused 3 - 5 minute gaps in the recorded data, recording capability was not a factor in the incident. Another MTT was used to load mission program. (TAB V2, Control # 20, Q34 - 35)

The historical records for mission systems showed one discrepancy for the radar system. On 12 Mar 94, the radar was written up for a test 24 failure, an under-compression of the radio frequency (RF) power that caused poor picture quality. (TAB H2B,11 Mar 94, Pg 2, Blk 3) Maintenance adjusted the level-set attenuator to bring the RF power within parameters. (TAB H2B,11 Mar 94, pg 2, Blk 3) Since then, five sorties totaling 46.7 hours have been flown with no recurrence of the problem. (TAB U2C, Pgs 1-6)

There were no communications/navigation system discrepancies discovered in the historical forms that could have degraded mission effectiveness. (TAB H2B)

There were no data processing system discrepancies discovered in the historical forms review that could have degraded mission effectiveness. (TAB H2B) However, a review of the crew testimony indicated that the seat 14 monitor was "ballooning." The images on the screen would expand, then the monitor would blank out for about 20 seconds, then return to normal. This cycle occurred every 5 to 10 minutes (TAB V2, Control #20, Q7) The malfunction was not written up at the maintenance debrief after sortie completion. (TAB H2B and TAB U2C) The inflight computer technician assessed the malfunction as "...not anything really serious enough to require him [the MCC] to move from his position..." (TAB VZ, Control #20, Q7) Another fully functional position with monitor was available (seat 15). (TAB H2B)

The equipment review report and AFTO Forms 781 were reviewed for Time Compliance Technical Order (TCTO) compliance, special inspection compliance and component time change compliance. This revealed two TCTOs not complied with, neither of which are

related to the primary mission surveillance systems. (TAB U2D,H) TCTO number 1E-3-673 is an upgrade for the electronic support system (ESS). (TAB U2D) TCTO number L552401 is a 552d Air Control Wing one-time inspection of flight control cables. (TAB U2E) All scheduled inspections had been complied with. (TAB U2F,H) The last phase inspection was a first "phase three" at 13,060.8 hours. (TAB H2F) The aircraft has flown 204.8 hours since last phase. (TABs H2F and H2C) No component time change items were overdue. Those recently accomplished were not related to mission systems. (TAB U2F)

Engine, Fuel, Hydraulic, and Oil Inspection Analysis. Samples were not taken after the incident sortie. These systems were not related to the accident. (TAB V2, Control #3 Q 19-22) Routine interval oil inspection was not due. (TAB H2F) Oil analysis records indicate no abnormal trends. (TAB U2A)

C. PROCEDURES.

Aircraft maintenance preflights were accomplished IAW T.O. 1E-3A-6 prior to the mishap sortie. (TAB H2C, 12 Apr 94, Blk 7) One discrepancy was noted. The communication/ navigation preflight was documented by a technician who had not been signed off on that task in his training record. (TAB U2G, Item 10f) Investigation revealed he had been trained and was competent at performing the task. The omission in the training record was a documentation error. (TAB U2G) Maintenance supervisors received aircraft procedures routinely. (TAB H2, U2) No deficiences in maintenance procedures were noted.

4 May 94

KELLY J. SCOTT, 1Lt, USAF
Technical Advisor, E-3 Maintenance

DEPARTMENT OF THE AIR FORCE
552d AIR CONTROL WING DEPLOYED
APO AE 09396

MEMO FOR AFR 110-14 Accident Investigation Team 28 Apr 94

FROM: MA

SUBJECT: Operational Check of E-3B AWACS Aircraft 77-0351

On the 27 of April 1994 I, TSgt Robert A. Godin, under the observation of 1Lt Scott, operationally checked the following communications systems on E-3B aircraft 77-0351. No discrepencies were found that would prevent normal operation for listed equipment.

RADIO POSITION/USED WITH:

UHF Radios
High Power UHF T1/R2
High Power UHF T3/R4
RT7 (SATCOM Sys #1) w/KY-58 #1 (Secure Voice)
RT8 (Have Quick A-NET) w/KY-58 #2 (Secure Voice) Normal and Antijam
RT9 (Have Quick A-NET) w/KY-58 #3 (Secure Voice) Normal and Antijam
RT10 w/KY-58 #4 (Secure Voice)
RT11 w/KY-58 #5 (Secure Voice)
RT12 UHF Guard Radio
RT14 (SATCOM Sys #2) w/KY-58 #6 (Secure Voice)
RT16 (Have Quick A-Net) w/KY-58 #8 (Secure Voice) Normal and Antijam
RT17 w/KY-58 #9 (Secure Voice)
RT18 w/KY-58 #10 (SECURE Voice)
RT20 (Have Quick Auto Time-of-Day Radio)

VHF Radios

VHF-AM #2
VHF-AM Guard

ROBERT A. GODIN, TSgt, USAF
Communications/Navigations Tech

1

ATCH 1

On 27 Apr 94, I observed the communications system operational checks as performed by TSgt Godin. These checks were done IAW the T.O. references on attachment 1.

KELLY J. SCOTT, 1Lt, USAF
Technical Advisor

RADIO	TECHNICAL ORDER REFERENCE
High Power UHF T1/R2	T.O. 1E-3A-2-23-2, Table 7-6
High Power UHF T3/T4	T.O. 1E-3A-2-23-2, Table 7-7
RT7 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5 and 7-9
RT8 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5
RT8 W/KY-58	T.O. 1E-3B-2-23-1, Table 4-1 thru 4-5
RT9 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5 T.O. 1E-3B-2-23-1, Table 4-1 thru 4-5
RT10 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5 T.O. 1E-3A-2-23-2, Table 5-5, 7-10
RT11 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5, 7-10
RT12 W/KY-58	T.O. 1E-3A-2-23-2, Table 7-11
RT14	T.O. 1E-3A-2-23-2, Table 5-5, 7-12b
RT16 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5 T.O. 1E-3B-2-23-1, Table 4-1 thru 4-5
RT17 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5, 7-12A
RT18 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5, 7-12A
RT20	T.O. 1E-3B-2-23-1, Table 4-1 thru 4-5
VHF AM#2	T.O. 1E-3A-2-23-2, Table 8-6
VHF AM GUARD	T.O. 1E-3A-2-23-2, Table 8-7

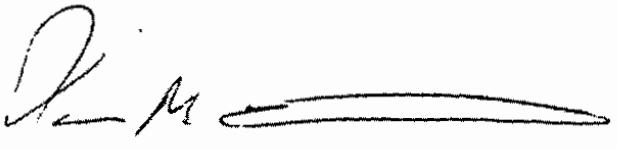
5 [illegible]

On 5 May [illegible] I, [illegible]vier M. Cottle of the 963rd Airborne Warning and Control Squadron, performed an operational checkout of the audio distribution system on E-3 aircraft 77-0351. The checkout primarily consisted of insuring all MAPs (Mission Audio Panels) and SAPs (Special Audio Panels) were operational. MAPs and SAPs at seats 6 through [illegible] were inspected.

All positions operated properly in accordance with Technical Order 1E-3A-2-23-2, tables 3-13 and 3-14, including proper volume control. The only defect noted was at seat 17 having an inoperative MAP Net 3.

This statement is true to the best of my knowledge.

[illegible]vier M Cottle, SrA, USAF
963 AWACS/FSMU



DEPARTMENT OF THE AIR FORCE
552d AIR CONTROL WING DEPLOYED
APO AE 09396

MEMO FOR AFR 110-14 Accident Investigation Team 28 Apr 94

FROM: MA

SUBJECT: Operational Check of E-3B AWACS Aircraft 77-0351

On the 27 of April 1994 I, SSgt Carl R. Nilsen Jr., under the observation of 1Lt Scott, operationally checked the following computer systems on E-3B aircraft 77-0351. No discrepancies were found that would prevent normal operation for listed equipment.

PROCEDURES INCLUDE:

Load of Airborne Operational Computer Program in accordance with technical order 1E-3A-43-3-1-2, Table 3-1.

Test Of Identification Friend or Foe System Components using the On-Board Test Maintenance and Monitoring (OBTM&M) System. No errors or failures noted

Ran confidence testing of Radar System during radar target interface check. No errors or failures noted

Also troubleshot Magnetic Tape Transport (MTT) number two writeup in accordance with technical order 1E-3A-2-46-3. Found faulty magnetic tape transport. MTT one and three performed in accordance with technical order 1E-3A-2-46-3, allowing full mission performance capability

CARL R. NILSEN JR., SSgt, USAF
Computer Technician

On 27 Apr 94, I observed the data processing operational checks as performed by SSgt Nilsen. These checks were done IAW the T.O. references on attachment 1.

KELLY J. SCOTT, 1Lt, USAF
Technical Advisor

REFERENCE	SYSTEM
T.O. 1E-3A-43-3-1-2 Tables 3-4 & 3-7	Test of IFF Using OBTM&M
T.O. 1E-3A-43-3-1-2 Table 3-7	Confidence Testing of Radar System

REFERENCE	SYSTEM
T.O. 1E-3A-43-2-93-1-20 Table 3-6	System Power Up
T.O. 1E-3A-43-2-93-1-30 Table 7-2	Radar Test
T.O. 1E-3A-43-2-93-120	Fault Isolation Testin gof Radar Data Correlator and Receiver Group
T.O. 1E-3A-43-2-93-120 Para 6-35	RDC Fit Operation
T.O. 1E-3A-43-2-93-120 Para 5-68	Analog Receiver Fit Operation
T.O. 1E-3A-43-2-93-120	Radar Targets Transferred Across Interface
T.O. 1E-3A-43-2-93-120 Table 9-3	Manual Control of Test Targets Across RDC/IAU Interface Procedure
T.O. 1E-3A-43-2-93-2	Identification Friend or Foe Mode IV Loop Test
T.O. 1E-3A-43-2-93-2 Table 5-1	Interrogator System Preparation for Checkout
T.O. 1E-3A-43-2-93-2 Table 5-2	Interrogator System Preliminary Checks
T.O. 1E-3A-43-2-93-2 Table 5-4	Interrogator System Checkout Procedure

On 27 Apr 94, I observed the radar/IFF operational checks as performed by SSgt Schneidmuller. These checks were done IAW the T.O. references on attachment 1.

KELLY J. SCOTT, 1Lt, USAF
Technical Advisor

DEPARTMENT OF THE AIR FORCE
552d AIR CONTROL WING DEPLOYED
APO AE 09396

MEMO FOR AFR 110-14 Accident Investigation Team 28 Apr 94

FROM: MA

SUBJECT: Operational Check of E-3B AWACS Aircraft 77-0351

On the 27 of April 1994 I, SSgt George C. Schneidmuller Jr., under the observation of 1Lt Scott, operationally checked the following radar and identify friend or foe systems on E-3B aircraft 77-0351. No discrepancies were found that would prevent normal operation for listed equipment.

AN/APY-1 RADAR SYSTEM TO INCLUDE:

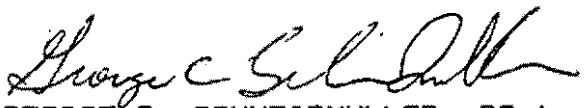
Radar Data Correlator (RDC)
Radar Control Maintenance Panel (RCMP)
Stable Local Oscilator (STALO)
Transmitters
Receivers
Synchronizer
Digital Doppler Processor (DDP)
Antenna

INDENTIFICATION FRIEND or FOE (IFF) TO INCLUDE:

Receiver/Transmitter (RT)
Receiver Target Data Processor (RTDP)
Interrogator Computer (KIR-1A)

TEST PERFORMED

System Turn-On
Radar Test in both High and Low Transmitter Chains
Fault Isolation Testing of Radar Data Correlator and Receiver group
Radar Targets Transferred Across Interface
Indentification Friend or FOE On-Board Test Monitor Maintenance Program
Indentification Friend or Friendly MODE 4 Loop Test



GEORGE C. SCHNEIDMULLER, SSgt, USAF
Radar Technician

rm7.50"

DEPARTMENT OF THE AIR FORCE
552d AIR CONTROL WING DEPLOYED
APO AE 09396

MEMO FOR AFR 110-14 Accident Investigation Team 28 Apr 94

FROM: MA

SUBJECT: Training Records for SSgt Klee

SSgt Klee, communications/navigation technician, was properly trained on performing comm/nav preflights as performed at Operation Provide Comfort. Administrative oversite due to differing shifts was responsible for the ommission from his training records.

ROBERT A. GODIN, TSgt, USAF
Communications/Navigations Tech

ATCH 4

BIOGRAPHICAL DATA -- 1LT KELLY J. SCOTT
AWACS MAINTENANCE TECHNICAL ADVISOR

-maintenance experience
- --16 years in aircraft maintenance
  - —1991 - present: 3 years E-3B/C AWACS,
  - —1981 - 1990: 10 years FB-111A & KC-135A/Q/E
  - —1978 - 1981: 3 years C-141A/B

-previous investigations
- --Technical Advisor for AFR 127-4 investigation of class A mishap involving ground fire of KC-135 at Pease AFB, NH, 1988 (est.)
- --over 50 investigations of foreign object damage incidents, fallen object incidents and inflight emergencies, 1982-1986

-technical training
- --Jet Engine Mishap Investigation Course, 2 wks, SAFB TX, 1993
- --Aircraft Munitions/Maintenance Officers Course,17 wks, CAFB IL, 1991

-related service history
- --1991 - Present: E-3 AWACS Maintenance Officer, 964th Flying Squadron Maintenance Unit, Tinker AFB OK. Led a workforce of 195 people in 16 specialties providing worldwide support for all squadron E-3 aircraft.
- --1982 - 1986: Quality Assurance Evaluator, Plattsburgh AFB NY. Performed technical inspections and personnel evaluations. Conducted investigations of inflight emergencies, ground mishaps, Foreign Object Damage and Dropped Object incidents.

-education
- --Civilian: B.S. Computers and Management, Franklin Pierce College, Rindge NH, 1990. High Honors

  A.S. Mathematics/Science, Clinton Community College, Plattsburgh NY, 1985
- --CCAF: A.A.S. Instructor in Technology, 1988
  A.A.S. Aircraft Powerplant Technology, 1986

TAB O-3 O-3a

E-3B AWACS O-3b

O-3c

TECHNICAL REPORT
AWACS Data Reduction

Incident Date: 14 April 1994

I. INTRODUCTION:

The purpose of this evaluation was to analyze the data contained on the Airborne Operational Recording Tapes (AORTA's) taken from E-3B serial number 77-0351, mission number OPC084, flown on 14 April 1994, and to answer specific questions posed by the AFR 110-14 Accident Investigation Board Members.

II. BACKGROUND:

The accident investigation involved the crash of two US Army Black Hawk helicopters, serial numbers 88-26060 and 87-26000, and the possible involvement of US F-15 fighter aircraft, serial numbers 79-0025 and 84-0025, and a US AWACS, serial number 77-0351, in the crash of these helicopters in the northern "No Fly Zone" of Iraq on 14 April 1994. The E-3 AWACS recorded the electronic data received by its mission systems during the 14 April 1994 flight. The data can be replayed and analyzed to determine what data was available to crew members and what switch actions were taken by them. The Accident Investigation Board presented specific questions. The answers must be considered in the context of the overall investigation. No conclusions regarding the significance of the answers are attempted in this report.

III. EVALUATION:

The questions posed by the AFR 110-14 Accident Investigation Board Members were as follows:

1. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to REQUEST SIF or LOCATE SIF on a Mode I code 4200?

2. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to change the airborne track identification for track TY06 ?

3. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to change the track designation of TY06 to EE01?

4. Were any MODE IV switch actions taken on tracks TY06 or EE01 from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z to 0800Z?

5. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to suspended EE01's track symbology?

6. Were any MODE IV switch actions taken on track TR01 from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z to 0800Z? If so, did TR01 send a valid response?

7. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) that re-initiated EE01's track symbology at approximately 0655Z?

8. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to send an arrow to console 1 (senior director) at approximately 0714Z?

9. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to drop the track symbology for track EE01?

10. Did AWACS detect any valid IFF Mode II code 5530 or Mode II code 5531 returns between 0520Z and 0800Z during the incident mission?

11. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to initiate a new track in the vicinity of 36° 47' N 43° 57' E at approximately 0727Z during the incident mission?

12. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z that would have displayed Track TD information on tracks TY06 or EE01 ?

13. What switch actions were taken at console 1 from 0713+00Z to 0715+00Z?

14. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) from 0712+00Z to 0721+00Z that would have suspended track EE01 ?

15. Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to do a REQUEST SIF or MODE IV from 0710+00Z to 0730+00Z?

16. What Data Link Reference Number (DLRN) was assigned to the aircraft squawking IFF Mode I 42, Mode II 5531 from 0520+00Z to 0800+00Z?

17. What was the heading and airspeed from 0713+00Z to 0720+00Z, taken on the minute, for Data Link Reference Number (DLRN) 2006?

18. How long does it take to see data displayed on an operator's console after a REQUEST SIF switch action is taken?

19. What was the earliest time in the recorded data that AWACS was transmitting track data to JTIDS?

To answer these questions, the original AORTA's from AWACS serial number 77-0351 was evaluated using a process known as data reduction. AORTA's are magnetic tapes used by the E-3 onboard computer system onto which radar data and IFF data received by the E-3, and switch actions taken by crew members are recorded. Data was recorded onto the AORTA's during the following timeframes during the incident AWACS mission of 14 April 1994:

0520+00Z to 0550+41Z
0555+18Z to 0623+58Z
0627+56Z to 0658+20Z
0701+55Z to 0732+36Z
0736+23Z to 0807+39Z

Data reduction is the process by which information is gleaned from the AORTA's using various computer programs. Data reduction processing began at approximately 0030L 23 Apr 94 at Tinker AFB, OK. The tapes were loaded onto the mainframe computer in Bldg. 284, Tinker AFB, OK, and the data contained on the tapes was copied onto disk drives on the mainframe computer system. The data that was copied onto the mainframe

disk drives was taken directly from the AORTA's and was not altered or enhanced in any way. All subsequent processing was done using the AORTA data residing on the disk drives. After the copying was completed, the original AORTA tapes were secured.

Several computer programs were used to extract information from the AORTA data and produce a variety of data reduction products. These products included a switch action report, Identification Friend or Foe (IFF) data reports, Joint Tactical Information Distribution System (JTIDS) message listing, and photographs of E-3 console displays at various crew positions taken while a replay tape was being run in the mission simulator at Tinker AFB, OK.

a. Switch Action Report -- This report was generated from the original AORTA data residing on the mainframe computer using a program called Test Data Processor. It lists all switch actions taken at the AWACS crew console(s) for a specified time period. A switch action is a series of an operator's console input actions (the buttons that an operator pushes at his/her console).

b. IFF Data Listing -- This listing was generated from the original AORTA data residing on the mainframe computer using a program called BLIP/SCAN. This report lists the latitude, longitude, and time the E-3 received the IFF Mode II or III codes from any aircraft.

c. JTIDS Message Listing -- JTIDS is a data network among various command and control platforms. Each participating platform automatically sends information on aircraft they are tracking onto the network for all participants to see. The message listing is all JTIDS messages sent and received by the E-3 from approximately 0520Z to 0800Z.

d. Photographs -- These were taken from a replay of the actual mission data displayed in E-3 mission simulators at Tinker AFB, OK. The replayed data was taken from the AORTA's from the 14 April 1994 mission involving E-3B serial number 77-0351. The replay tape was created from the original AORTA data residing on the mainframe computer using a program called Replay Tape Generator. The information was not altered or changed in any way and the photographs are an accurate representation of the console displays of the incident AWACS mission.

Definitions for switch actions used in this report:

MODE IV --Used to do a Mode IV IFF interrogation of a specified aircraft being tracked by the E-3.

REQUEST SIF -- Used to display IFF information associated with a specific aircraft, or to identify targets squawking a specific IFF mode and code

LOCATE SIF --Used to display the location of IFF returns for which a specified mode/code has been entered into the operator's console via the keyboard. The location of each specified mode/code return will be represented by a single character on the console screen.

TRACK TD -- Used to display a block of text at the bottom of the operator's screen which shows information on a particular aircraft being tracked by the E-3. Information such as the track's current latitude and longitude, airspeed, heading, and IFF Mode I, II, and III codes if available, call sign, and data link reference number are displayed.

DROP -- Used to drop a track or a group of tracks. The track symbology and tabular displays for dropped tracks will no longer be displayed on the console screen.

INIT -- Allows the operator to initiate a surface or airborne track into the system. A track will display symbology, a block of data identifying the track, at the current location of the aircraft being tracked.

RE-INIT - Used to relocate a track's symbology onto its radar and/or IFF data. Also used to change the symbology parameters of a track, such as its identity and call sign.

HOOK -- By placing the cursor over a track and pressing "HOOK", the track and its position are input as part of a complete switch action.

ENTER -- Used to complete a switch action.

IV. DETERMINATION:

Q1. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to REQUEST SIF or LOCATE SIF on a Mode I code 4200?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 1. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
1	senior director	0616+22Z	"LOCATE SIF"
		0616+36Z	"H 14200" "ENTER"

Q2. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to change the airborne track identification for track TY06 ?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 6. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
1	senior director	0614+09Z	"RE-INIT (WEAP)"
			"HOOK TY06"
		0614+16Z	"FHG" "ENTER"

Q3. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to change the track designation of TY06 to EE01?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 8. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0621+29Z	"HOOK TY06"
		0621+31Z	"T EE01" "ENTER"

Q4. *Were any MODE IV switch actions taken on tracks TY06 or EE01 from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z to 0800Z?*

The switch action report was examined for the indicated console positions and times. The results are as follows:

No MODE IV switch actions were taken on tracks TY06 or EE01 from the indicated consoles and times.

Q5. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z to suspended EE01's track symbology?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 10. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0633+25Z	"RE-INIT (WEAP)"
			"HOOK EE01"
		0633+27Z	"SU" "ENTER"

Q6. *Were any MODE IV switch actions taken on track TR01 from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z to 0800Z? If so, did TR01 send a valid response?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 7. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0636+55Z	"MODE IV"
		0636+57Z	"HOOK TR01" "ENTER"

TR01 did have a valid response to the above Mode IV interrogation. The valid response is documented in Atch 16.

Q7. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) that re-initiated EE01's track symbology at approximately 0655Z?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 11. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0655+14Z	"RE-INIT" "HOOK EE01"
		0655+18Z	"HOOK EE01" "ST" "ENTER"

Q8. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to send an arrow to console 1 (senior director) at approximately 0714Z?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 9 and Atch 18. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
7	surveillance officer	0713+54Z	"ARROW" "HOOK"
		0713+56Z	"01" "ENTER"

The arrow's coordinates were 35° 21' 6"N 43° 09' 6"E

Q9. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to drop the track symbology for track EE01?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 3. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0720+38Z	"DROP"
		0720+40Z	"HOOK EE01"
		0720+43Z	"ENTER

The track was dropped at coordinates 36° 47' 4"N 43° 32" 4"E

Q10. *Did AWACS detect any valid IFF Mode II code 5530 or Mode II code 5531 returns between 0520Z and 0800Z during the incident mission?*

Examination of the IFF data listing indicated valid IFF returns for Mode II code 5530 and Mode II code 5531 between 0520+30Z and 0800+00Z. The exact positions and times of the returns are listed in Atch 5.

Q11. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to initiate a new track at 36° 47' N 43° 57' E at approximately 0727Z during the incident mission?*

director) to initiate a new track at 36° 47' N 43° 57' E at approximately 0727Z during the incident mission?

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 4. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
5	weapons director	0727+22Z	"INIT (WEAP)"
		0727+24Z	"HOOK"
		0727+27Z	"ENTER"

Q12. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) between 0520Z and 0800Z that would have displayed Track TD information on tracks TY06 or EE01 ?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 2. These switch actions would have displayed a Track TD on the requested track(s). The results are as follows:

Console Number	Console Assignment	Times	Switch Action
1	senior director	0613+03Z	"TRACK TD" "HOOK TY06" "ENTER"
5	weapons director	0633+34Z	"TRACK TD" "HOOK EE01"
		0633+37Z	"ENTER"
7	surveillance officer	0614+47Z	"TRACK TD" "HOOK TY06" "ENTER"

A Track TD is a text block displayed at the bottom of the operator's screen which shows information on a particular aircraft being tracked by AWACS. Information such as the track's current latitude and longitude, airspeed, heading, and IFF Mode I, II, and III codes if available, call sign, and data link reference number are displayed.

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 2. These switch actions would have displayed a Local Track SIF Codes TD on the requested track(s). The results are as follows:

Console Number	Console Assignment	Times	Switch Action
1	senior director	0613+25Z	"TRACK TD" "HOOK TY06"
		0613+27Z	"S" "ENTER"

5	weapons director	0621+41Z	"TRACK TD"
		0621+43Z	"HOOK EE01"
		0621+45Z	"S" "ENTER"

A Local Track SIF Codes TD is a text block displayed at the bottom of the operator's screen which shows any IFF Modes and codes used by particular aircraft being tracked by AWACS.

Q13. *What switch actions were taken at console 1 from 0713÷00Z to 0715÷00Z?*

The switch action report was examined for the indicated console positions and times. The results are as follows:

No switch actions were taken at console 1 from 0713÷00Z to 0715÷00Z.

Q14. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) from 0712÷00Z to 0721÷00Z that would have suspended track EE01 ?*

The switch action report was examined for the indicated console positions and times. The results are as follows:

No switch actions were taken from the indicated consoles and times that would have suspended track EE01.

Q15. *Were any switch actions taken from consoles 1 (senior director), 5 (weapons director), 6 (weapons director), 7 (surveillance officer), 24 (duty officer), or 25 (weapons director) to do a REQUEST SIF or MODE IV from 0710÷00Z to 0730÷00Z?*

The switch action report was examined for the indicated console positions and times. Extracts from evidence are in Atch 12. The results are as follows:

Console Number	Console Assignment	Times	Switch Action
25	weapons director	0722+41Z	"REQ/ASG IFF/SIF"
		0722+43Z	"HOOK TR01"
		0722+50Z	"S 21501" "ENTER"

5	weapons director	0725+21Z	"MODE IV"
		0725+24Z	"HOOK SE01" "ENTER"

Q16. *What Data Link Reference Number (DLRN) was assigned to the aircraft squawking IFF Mode I 42, Mode II 5531?*

The JTIDS message listing was examined for the indicated IFF modes and codes. Extracts from evidence are in Atch 13. The results are as follows:

The DLRN assigned to the above modes and codes was 2006.

Q17. *What was the heading and airspeed from 0713-00Z to 0720-00Z, taken on the minute, for Data Link Reference Number (DLRN) 2006?*

The JTIDS message listing was examined for the indicated times for DLRN 2006. Extracts from evidence are in Atch 14. The results are as follows:

Time	Heading	Airspeed
0713+04	137	127
0713+56	137	127
0714+58	137	127
0715+59	137	127
0717+00	137	127
0718+02	90	127
0719+03	90	127
0720+05	90	127

Q18. *How long does it take to see data displayed on an operator's console after a REQUEST SIF switch action is taken?*

The documented response time is listed in Atch 15.

Q19. *What was the earliest time in the recorded data that AWACS was transmitting track data to JTIDS?*

The JTIDS message listing was examined for the earliest times that AWACS was transmitting track data to JTIDS. Extracts from evidence are in Atch 17. The results are as follows:

AWACS was transmitting track data at approximately 0526+38Z.

Michael E Turner

MICHAEL E. TURNER, Capt, USAF
Technical Advisor, E-3 Data Reduction

20 Atch

1. Switch action report, locate SIF
2. Switch action report, system track TD of track TY06
3. Switch action report, dropping of system track EE01
4. Switch action report, initiating new track
5. Computer listing of IFF data for Mode II codes 5530 and 5531
6. Switch action report, change airborne track identification
7. Switch action report, Mode IV taken on track TR01
8. Switch action report, change track designation TY06 to EE01
9. Switch action report, arrow to console 01 at 0713+56Z
10. Switch action report, EE01's track symbology suspended at 0633+27Z
11. Switch action report, EE01's track symbology re-initiated at 0655+18Z
12. Switch action report, REQUEST SIF and MODE IV from 0710+00Z and 0730+00Z
13. JTIDS message listing, DLRN assigned to IFF Mode I 42, Mode II 5531
14. JTIDS message listing, 0713+04Z to 0720+05Z
15. Signed statement regarding response time for REQUEST SIF
16. JTIDS message listing, valid Mode IV response for TR01
17. JTIDS message listing, earliest transmitted track data
18. Extract from SDC Operator Block 20/25.1 Switch Action & Comprehensive Session, Book I
19. Memo for record, data reduction questions
20. Statement of Certification

```
                                        SWITCH ACTION REPORT

 TIME:  0616+22   CYCLE NUMBER:  710.1     RECORD NUMBER:     9   TABLE SIZE:      219    AFTER: ACTADIT        BRT2-

 C    P   CATEGORY SELECT         S T                  T
 O    H                           I E                  R
 N    O A  R S  XS T UTJS SS FEAT.D S    BUTTON        A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S    N I  / P  TP T NATTJTT SEL. / T    PRESS         C
 O    E RGIF  F     AADDBTBB      F M                  K
 L      BED NPRHAMRSSSI  I    ACE T O
 E    # AOBSETNUISCUGGLHPDHP  /// A D
        SGODTSDKRNTRNNACCSHU  BDF B E                         U      V    LATITUDE LONGITUDE L1....V....1....V....2....V....3.

 SDA/1  1 1101110010001100110 1  ACE S O LOCATE  SIF     ----  -12.9  -114.0 37.22.5N  41.53.7E

 END OF REPORT CYCLE  710 -   1 REPORT  PRINTED
 * WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  711 - GMT:  0616+29

 END OF REPORT CYCLE  711 -   0 REPORTS PRINTED
 * WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  712 - GMT:  0616+36
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 3 MAY 94 Reduced which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

ATT 1

LOC SIF S/A ATT 1

[illegible] SECRET [illegible]

3 MAY 94 PAGE 113

SWITCH ACTION REPORT

TIME: 0616+36 CYCLE NUMBER: 712.1 RECORD NUMBER: 6 TABLE SIZE: 219 AFTER: ACTADLI HRT2

```
C   P   CATEGORY SELECT         S I                 T
O   R                           I G                 R
N   O A  R S  XS X UPSS SS FEAT.D S    BUTTON       A          CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
S   B I  / P  TP T [illegible] SEL. / T    PRESS        C
O   [illegible]                 F R                 K
L   [illegible]                 T O
E   [illegible]                 / D
    [illegible]                 E E                       U      V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

[illegible]                                        ----   -12.7  -118.3 37.22.5[illegible] 41.53.7[illegible] EE H 14200
```

END OF REPORT CYCLE 712 - 1 REPORT PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 713 - GMT: 2426+43

[illegible] SECRET [illegible]

SWITCH ACTION REPORT

```
TIME:  0613+03    CYCLE NUMBER:  682.1     RECORD NUMBER:      8    TABLE SIZE:       219      AFTER: ACTADII        RHT2

 C     P    CATEGORY SELECT           S T                    T
 O     H                              I E                    R
 N     O A   R S  XS X UTSS SS FEAT.O S     BUTTON           A            CURSOR  COORDINATES           CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T NATTJTT SEL. / T     PRESS            C
 O     E RGIF  F      AADUBTBB        F M                    K
 L       BED NPRHAMRSSSI  I     ACE  T O
 E     # AOBSETNUISCUGGLHPDHP  ///  A D
         SGODTSDKRNTRNKACCSUU  DDF  B E                                   U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

SDA/1  1 11011100100011001101  ACE S 0 TRACK   TD           ----      1.7   -115.7 37.20.8N  42.12.2E
SDA/1  1 11011100100011001101  ACE S 0 HOOK                 TY06      1.7   -115.7 37.20.8N  42.12.2E
SDA/1  1 11011100100011001101  ACE S 0 ENTER                ----      1.7   -115.7 37.20.8N  42.12.2E ----------------------------------

END OF REPORT CYCLE  682 -   1 REPORT  PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                              START OF REPORT CYCLE  683 - GMT:  0613+10
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 3 May 94 - Redacted which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

```
 TIME: 0633+30    CYCLE NUMBER: 855.3    RECORD NUMBER:   39    TABLE SIZE:      19    BEFORE: ASINITC      RHT2

 C    P   CATEGORY SELECT          S T                  T
 O    H                            I E                  R
 N    O A  H S  YS I UTSS SS FEAT.D S    BUTTON         *          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S    N I  / P  TP T NATTIFT SEL. / T    PRESS          C
 O    R RGIP  P     A10BBT0B       P M                  K
 L      BSD NPRHAMPSSSI  I     ACE T O
 E    * ADRSETMHISCHGGLIPOTP  /// A D
        SCOOTSOKRNTRMNACCSUU  90P R E                          H        V    LATITUDE LONGITUDE LF ....V....1....V....2....V....3.

 HOD/7  5 11011100100111101101  ACE S O TRACK   TD         ----      27.1  -131.7 37.04.9N  42.43.9E
 HOD/7  5 11011100100111101101  ACE S D HOOK               EE01      27.7  -124.3 37.12.1N  42.44.8E
```

END OF REPORT CYCLE 855 - 1 REPORT PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 856 - GMT: 0633+37

SWITCH ACTION REPORT

```
 TIME:  0633+37    CYCLE NUMBER:  956.1      RECORD NUMBER:     A    TABLE SIZE:      228      AFTER: ACTADII        RRT2

 C    P   CATEGORY SELECT          S T                   T
 O    H                            I P                   R
 N    O A  I S  TS K HTSS SS FEAT.D S    BUTTON          A        CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
 S    N I  / P  TP T NATTITT SEL. / T    PRESS           C
 O    E RGIP  P      AADPRTPR     F M                    K
 L      RSD NPRHAMPSSSI  I     ATS T O
 E    * AOBSKTNUISCHSGLHPOHP  /// A D
        EGOOTSDKRNTRNNAZCSUU  DOF R E                        H        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

 ADD/7  S 11011100100111011101  ACT S O ENTER          ----      27.7  -129.3 37.12.19  02.00.9E --------------------------------

END OF REPORT CYCLE  956 -    1 REPORT  PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  957 - GMT:  0633+44

END OF REPORT CYCLE  957 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  958 - GMT:  0633+51

END OF REPORT CYCLE  958 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  959 - GMT:  0633+53

END OF REPORT CYCLE  959 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                 START OF REPORT CYCLE  960 - GMT:  0639+35
```

SWITCH ACTION REPORT

TIME: 0621:41 CYCLE NUMBER: 755.1 RECORD NUMBER: 8 TABLE SIZE: 195 AFTER: ACTAD1I RRT2

C O N S O L E	P H O A / P RGIP #	CATEGORY SELECT A R S XS X UTSS SS FEAT. BSD MPRHAMRSSSI I ACE AODSETNUISCUGGLHPDMP SGODTSDKRNTRNNACCSUU	S I N	T E X T	BUTTON PRESS	T R A C K	CURSOR COORDINATES U V LATITUDE LONGITUDE	CONSOLE INPUT TEXT LINE
								.....V....1....V....2....V....3.
MOD/7	S	11011100100111101101	AGR	S	O	TRACK TD ----	11.1 -197.7	35.58.9N 42.23.6E

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23Apr94 - Redacted which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

```
 TIME:  0621+43    CYCLE NUMBER:  755.?      RECORD NUMBER:     34    TABLE SIZE:       60     BEFORE: ADSID1        BRT2

 C     P   CATEGORY SELECT          S T                  T
 O     H                            I S                  R
 N     O A  R S  XG Y HTSS SS STAT.D S     BUTTON        A         CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T HATTITT SEL. / T     PRESS         C
 O     E RGIF  V     AAOHBTPB      T H                   K
 L       RED NPRHAMESSSI  I    ACS T O
 E     * AOBSETNUISCUGGLMPDSP  /// A D
         SGODTSPKRNTRNNACCSUU  BDF B E                        U        V     LATITUDE LONGITUDE LN ....V....1....V....2....V....3.

MDD/7  5 110111001001111101101  ACS 5 0 HOOK            ELPI     15.7  -129.0 37.07.59  42.29.7E
MDD/7  5 110111001001111101101  ACS 5 0 HOOK            ESOL     15.7  -129.0 37.07.59  42.29.7E
```

SWITCH ACTION REPORT

```
 TIME:  0621+45    CYCLE NUMBER:  755.3     RECORD NUMBER:    35    TABLE SIZE:       18     BEFORE: ASINITC        RHT2

  C     P   CATEGORY SELECT          S T                    T
  O     H                            I T                    R
  N     O A  R S  XS X HTSS SS STAT.O S    BUTTON           A         CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
  S     N I  / P  TP T NATTJTT SEL. / T    PRESS            C
  O     E PCIZ  P     AADHATBS      E M                     K
  L       BED NPRHAMPSSSI  I    ACT T O
  E     A AOBSETNHISCUGGLIPOHP  /// A D
          SCODTSDEPNTPNNACCSHH  3DP H T                           H        V    LATITUDE LONGITUDE L* ....V....1....V....2....V....3.

HOD/7  S 11011100100111101101  ACT S O ENTER         ----   15.7  -129.0 37.07.5N  42.29.7E EE S

END OF REPORT CYCLE  755 -    3 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                         START OF REPORT CYCLE  756 - GMT:  0621+48

END OF REPORT CYCLE  756 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                         START OF REPORT CYCLE  757 - GMT:  0621+55

END OF REPORT CYCLE  757 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                         START OF REPORT CYCLE  758 - GMT:  0622+02

END OF REPORT CYCLE  758 -    0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                         START OF REPORT CYCLE  759 - GMT:  0622+09
```

SWITCH ACTION REPORT

TIME: 0613:25 CYCLE NUMBER: 685.1 RECORD NUMBER: 0 TABLE SIZE: 219 AFTER: ACTAD1I RRT2

CONSOLE	PHOTO / PP	CATEGORY SELECT	STATUS / TYPE	BUTTON PRESS	TARGET CODE	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
						X Y LATITUDE LONGITUDE	L# ....V....1....V....2....V....3.
SDA/1	1	11011000100311001101	ACK S	0 TRACK TD	----	3.4 -115.7 37.20.8N 42.14.2E	
SDA/1	1	11011100100311001101	ACK S	0 HOOK	TYGS	3.4 -115.7 37.20.8N 42.14.2E	

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 3 May 94 - Redacted which is kept in my records system.

14 May 94
Date

W. Harris
WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

Exc Sitara 5/A

```
                                     SWITCH ACTION REPORT

     TIME: 0613+27    CYCLE NUMBER: 685.2     RECORD NUMBER:    34    TABLE SIZE:        60     BEFORE: ADSIDI          RRT2

   C     P   CATEGORY SELECT          S T                     T
   O     R                            I A                     R
   R     O A  I S  XS X UTSS SS FEAT.D S     BUTTON           A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
   S     N I  / P  TP T NATTSTT SEL. / T     PRESS            C
   O     E RGIF  P     AADBSTSB      P M                      K
   L       BSD NPRHANRSSSI  I     ACE T O
   E     # AOBSETNUISCUGCLAPDHP  /// A D
           SGOOTSOKRNTRNNACCSUU  HDF 9 E                             U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

  SEA/I  1 11011101000110011101  ACK 5 0 ENTER              ----      3.4  -115.7 37.20.51  42.14.2E 2E  S

  END OF REPORT CYCLE  685 -    2 REPORTS PRINTED
  * WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                     START OF REPORT CYCLE  686 - GMT:  0613+32

  END OF REPORT CYCLE  686 -    0 REPORTS PRINTED
  * WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                     START OF REPORT CYCLE  687 - GMT:  0613+39

  END OF REPORT CYCLE  687 -    0 REPORTS PRINTED
  * WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                                     START OF REPORT CYCLE  688 - GMT:  0613+46
```

SWITCH ACTION REPORT

TIME: 0614+47 CYCLE NUMBER: 699.3 RECORD NUMBER: 35 TABLE SIZE: 10 REPORT: ASINTC RRT2

	C	P	CATEGORY SELECT	S	T		T				
O	.	M			I	R	R				
M		O	\	I	S	XS	X	UCSS	SS	FSAT.	O	S	SUTTON	A	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
S		N	I	/	P	TP	T	RATTJTT	SSL.	/	T	PRESS	C		
U		E	RGIP	P		AADJHFBH			P	M	K				
L			NED	RPRMAMRSSSE	I	ACM	P	O							
R		*	AOSJETMUISCUGGLRPDHP	///	A	D									
			SMOOTSDKRNTPMRACCSDU	HOP	R	E									

													U	V	LATITUDE	LONGITUDE	L1 ....V....1....V....2....V....3.
SIO/0	7	0101110010011111011101	ACF	S	0	TRACK	FD	----	6.7	-116.7	37.19.8N	42.18.4E					
SIO/1	7	0101110010011111011101	ACF	S	0	HOOK		TYOS	6.7	-116.7	37.19.3N	42.18.4E					
SIO/0	7	0101110010011111011101	ACF	S	0	ENTER		----	6.7	-116.7	37.19.8N	42.18.4E	----------				

END OF REPORT CYCLE 696 - 1 REPORT PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 697 - GMT: 0614+50

END OF REPORT CYCLE 697 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 698 - GMT: 0614+57

END OF REPORT CYCLE 698 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 699 - GMT: 0615+04

END OF REPORT CYCLE 699 - 1 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 700 - GMT: 0615+11

END OF REPORT CYCLE 700 - 1 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 701 - GMT: 0615+18

END OF REPORT CYCLE 701 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

DONALD G. NORRIS, GS-15, DAF
Declassification Team Chief, HQ USEUCOM

14 May 94
Date

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from which is kept in my records system.

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

14 May 94
Date

23 APR 94 PAGE 349

SWITCH ACTION REPORT

TIME: 0720+38 CYCLE NUMBER: 1254.1 RECORD NUMBER: 8 TABLE SIZE: 177 AFTER: ACTADII RRT2

```
C   P   CATEGORY SELECT          S T                   T
O   H                            I E                   R
N   O A  R S  XS Y UTSS SS FEAT.D S   BUTTON           A        CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
S   N I  / P  TP T NATTJTT SEL. / T   PRESS            C
O   E RGIP  F     AADBBTBB      F M                    K
L     BED NPRHAMBSSSI  I    ACE T O
E   # AOBSETNUISCUGGLHPDHP  /// A D
      SGODTSDKRNTHNNACCSUD  BDF B E                         U      V     LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WOD/7- 5 11011100100111101101  ACE S O DROP            ----   30.1  -140.7  36.55.6N  42.47.5E
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Apr 94 - Reduced which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

```
 TIME:  0720:00    CYCLE NUMBER: 1254.2     RECORD NUMBER:    36    TABLE SIZE:       60     BEFORE: ADSID1          RRT2

 C     P    CATEGORY SELECT            S T                        T
 O     R                               I E                        R
 N     O A  H S  XS X UTSS SS FEAT.D S     BUTTON                 A       CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T KATTJTT SEL. / T     PRESS                  C
 O     E RGIP  F      AADBRTSP       F M                          K
 L       RFD NPRHAMRSSSI  I     ACE T O
 E     # AOBSETNUISCUGGLHPDHP  /// A D
         SGODTSDKRNTRHNACCSUU  RDF R E                                 U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WOD/7  5 11011100100111111101  ACE S O HOOK                       EE01    66.1  -148.7 36.47.4N  43.32.4E
```

SWITCH ACTION REPORT

```
 TIME:  0720+43    CYCLE NUMBER: 1254.3      RECORD NUMBER:    38    TABLE SIZE:       10     BEFORE: ASINITC        RRT2

  C     P    CATEGORY SELECT         S T                 T
  O     H                            I E                 R
  N     O A  R S  XS X UTSS SS FEAT.D S      BUTTON      A         CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
  S     N I  / P  TP T NATTJTT SEL. / T      PRESS       C
  O     E BGIF  P      AADBBTRB      F M                 K
  L       BSD NPRHAMRSSSI  I    ACE T O
  E     # ADHIETNUISCUGGLHPDHP  /// A D
          SGODTSDKRNTRNNACCSUU  BDF H E                        U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDO/7  5 11011100100111101101  ACE S O ENTER          ----     66.1  -148.7 36.47.4N  43.32.4E -------------------------------
```

END OF REPORT CYCLE 1254 -   3 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1255 - GMT: 0720+45

END OF REPORT CYCLE 1255 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1256 - GMT: 0720+52

END OF REPORT CYCLE 1256 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1257 - GMT: 0720+59

END OF REPORT CYCLE 1257 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1258 - GMT: 0721+06

END OF REPORT CYCLE 1258 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1259 - GMT: 0721+13

END OF REPORT CYCLE 1259 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1260 - GMT: 0721+20

*********** SECRET ***********

SWITCH ACTION REPORT

TIME: 0727:22 CYCLE NUMBER: 1311.1 RECORD NUMBER: 0 TABLE SIZE: 177 AFTER: ACTADII RRT2

CONSOLE	PHONE	CATEGORY SELECT	STATUS / FEAT. SEL.	BUTTON PRESS	TRACK	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
						U V LATITUDE LONGITUDE L#	....V....1....V....2....V....3.
MDD/7	5	11011100100111101101	ACE S 0 INIT	(WEAP) F ----		69.6 -152.2 36.43.4N 44.01.6E	

SWITCH ACTION REPORT

```
TIME:  0727+24   CYCLE NUMBER: 1311.2    RECORD NUMBER:    33   TABLE SIZE:     60     BEFORE: ADSID1        RRT2

 C     P   CATEGORY SELECT        S T                   T
 O     H                          I E                   R
 N     O A  R S  XS X UTSS SS FEAT.D S    BUTTON        A        CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T NATTJTT SEL. / T    PRESS         C
 O     E RGIF  F     AADBBTRB      F M                  K
 L       BED NPRHAMRSSSI  I     ACZ T O
 E     # AOBSETNUISCUGGLHPDHP  /// A D
         SGOOTSDKRNTRNNACCSUU  BOF H E                        U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WOD/7  5 11011100100111101101  ACE S 0 HOOK            ----    86.4  -147.8 36.47.8N  43.57.7E
```


*********** SECRET ***********

SWITCH ACTION REPORT

```
TIME: 0727+27   CYCLE NUMBER: 1311.3   RECORD NUMBER:  34   TABLE SIZE:   13   BEFORE: ASINITC     RRT2

C   P   CATEGORY SELECT        S T                T
O   H                          I E                R
N   O A. R S  XS X UTSS SS FEAT.D S   BUTTON      A       CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
S   N I  / P  TP T NATTJZT SEL. / T   PRESS       C
O   E RGIF  ?     AADSRTRB      F M               K
L     RSD NPRHAMESSSI  I    ACE T O
E   * AOBSETNUISCUGGLHPDHP  /// A D
      SGODTSDKHNTRNKACCSUU  BDF D E                     U        V   LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/7  5 11011100100111101101  ACE S O ENTER-      ----  87.1  -148.0 36.47.7N  43.58.6E --------------------------------
WDD/7  5 11011100100111101101  ACE S O TRACK   TD  ----  87.1  -148.0 36.47.7N  43.58.6E

END OF REPORT CYCLE 1311 -    3 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS
```

START OF REPORT CYCLE 1312 - GMT: 0727+29

```
START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0
  5     AZIMUTH:       TARGET POSITION FROM E-3 IN DEGREES
  5     MODE C ALT:    TARGET MODE C ALTITUDE IN FEET, NEGATIVE VALUE MAY INDICATE DEFAULT
  5     MODES 2 & 3:   SELECTIVE IDENTIFICATION FEATURE (SIF) CODE
  5     VAL:           SIF VALIDATION
 19                    1:  ONLY GARBLED CODE RECEIVED
 19                    2:  INVALID - 1 UNGARBLED
 19                    3:  VALID - 2 MATCHING CODES, 1 UNGARBLED

  5     BLANK:  VALUE UNAVAILABLE
  5     *******:  INVALID VALUE

  3   THE CCCS ORIGIN WAS 39:16:30N;042:10:00E

  3   THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20

  3   TIME     LATITUDE      LONGITUDE     BEARING     RANGE     AZIMUTH    MODE C ALT  VAL    MODE 2  VAL
        MODE 3  VAL
  3   0525+30  37:53:00N     040:18:53E      82.1      150.16     346.4                          5531    3
  3   0526+00  37:53:30N     040:20:23E      81.7      156.00     346.1                          5531    3
  3   0526+31  37:53:30N     040:21:53E      81.5      153.84     346.4                          5531    3
  3   0526+59  37:53:21N     040:23:17E      81.4      151.61     346.1                          5531    2
  3   0527+02  37:53:17N     040:23:23E      81.4      151.61     346.1                          5531    2
  3   0527+30  37:52:35N     040:24:41E      81.5      149.38     345.9                          5531    3
  3   0527+32  37:52:35N     040:24:53E      81.5      149.38     345.9                          5531    3
  3   0528+00  37:52:35N     040:26:17E      81.4      147.09     345.8                          5531    3
  3   0528+22  37:50:11N     040:27:00E      80.6      145.59     345.0                          5531    3
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

12 May 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

IFF Spt - Mode 2 - Code 5531, 5 May 94

which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

UNCLAS
0004 (12)

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0524+20	37:50:05N	040:27:11E	80.7	145.59	345.0			5531	3
3	0528+13	37:52:37N	040:28:35E	81.2	144.02	345.5			5531	3
3	0528+55	37:52:41N	040:29:05E	80.7	142.50	345.4			5531	3
3	0529+07	37:52:47N	040:29:23E	80.7	142.50	345.4			5531	3
3	0529+10	37:52:53N	040:30:17E	80.3	142.50	345.4			5531	3
3	0529+16	37:53:00N	040:30:41E	80.7	142.50	345.4			5531	3
3	0529+19	37:53:00N	040:31:37E	80.7	142.50	345.4			5531	3
3	0529+23	37:52:41N	040:29:53E	81.3	141.00	345.3			5531	3
3	0529+26	37:52:36N	040:30:25E	80.3	141.00	345.3			5531	3
3	0529+28	37:52:11N	040:30:35E	81.0	141.00	345.3			5531	3
3	0529+45	37:52:00N	040:30:41E	80.0	139.42	345.0			5531	3
3	0530+40	37:52:12N	040:31:53E	81.5	137.91	345.5			5531	3
3	0530+48	37:52:30N	040:31:23E	80.5	137.92	344.5	2900	3	5531	3
	2400	3								
3	0530+56	37:52:11N	040:32:05E	81.5	137.91	345.5			5531	3
3	0530+06	37:52:30N	040:31:35E	80.5	137.92	344.5	2900	3	5531	3
3	0530+58	37:52:05N	040:32:23E	81.5	137.91	345.5			5531	3
3	0530+08	37:52:23N	040:31:53E	80.5	137.92	344.5	2900	3	5531	3

1 ****SECRET****

PAGE 1

1 1 ****SECRET****

PROCESS DATE: 3 MAY 94

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0655+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3 VAL									
3	0531+15	37:52:05N	040:33:23E	81.5	137.91	345.5			5531	3

DATASET: TCSA.SA25.AP434.CLP520.ALLMAP

DATE: 90/05/..
TIME: 17:50
PAGE: 44

START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3 0558+11 37:01:?03 041:42:17? 79.3 126.30 344.9 5531 3

1 ?

PART 5

1 1

PROCESS DATE: 3 JLY 90

SEC?? ?T???

??SE? ?ATE??

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+23

COL	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL	MODE 3	VAL
3	0558+18	37:0?:53?	041:42:35?	79.3	126.30	344.9			5531	3		
3	0558+48	37:03:41?	041:43:23?	79.9	126.33	344.9			5531	3		
3	0558+52	37:03:351	041:43:3??	79.3	126.30	344.9			5531	3		
3	0558+53	37:0?:53?	041:43:47?	79.3	126.30	344.9			5531	3		
3	0558+5?	37:03:?5?	040:59:36?	71.7	92.73	337.2			5531	3		
3	0558+??	37:0?:?1?	041:44:??	79.?	126.3?	344.9			5531	3		
3	0558+?3	37:0?:?1?	041:4?:??	79.3	126.30	344.9			5531	2		
3	0558+?5	37:0?:?21	041:45:?7?	79.3	12?.30	344.9			5531	3		
3	0558+10	37:0?:0??	041:45:47?	79.3	126.30	344.9			5531	3		
3	0558+12	37:01:0??	041:46:1??	79.3	126.30	344.9			5531	3		
3	0558+14	37:01:53?	041:46:2??	79.3	126.30	344.9			5531	3		
3	0558+15	37:02:?7?	041:47:15?	79.3	126.30	344.9			5531	3		
3	0558+22	37:02:3??	041:47:1??	78.?	126.3?	344.9			5531	3		
3	0558+28	37:02:3??	041:47:45?	78.?	126.30	344.9			5531	3		
3	0558+2?	37:02:3??	041:48:3??	78.?	126.3?	344.9			5531	3		
3	0558+32	37:07:53?	04?:??:?7?	71.?	9?.6?	337.5			5531	3		
3	0558+31	37:02:3??	041:48:23?	78.?	126.30	344.9			5531	3		

DATASET: SCSA.SA25.A2A94.SGP3523.ALLMAP

DATE: 94/06/29
TIME: 17:56
PAGE: 34

STAT'P COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0									
3	0530+15	37:52:239	04:32:478	80.5	137.92	344.5	2933	3	5531	3
3	0531+18	37:52:004	04:33:415	81.3	137.91	345.5			5531	3
3	0532+18	37:52:179	04:33:115	80.5	137.92	344.5	2936	3	5531	3
3	0530+20	37:49:538	04:30:002	81.5	137.91	345.5			5531	3
3	0537+20	37:53:119	04:33:368	80.3	137.92	344.5	2936	3	5531	3
3	0534+25	37:52:124	04:32:237	80.5	136.33	344.6			5531	3
3	0538+25	37:51:234	04:34:413	81.3	137.91	345.5			5531	3
3	0530+25	37:52:434	04:30:118	80.4	137.92	344.5	2933	3	5531	3
3	0539+27	37:52:094	04:32:418	80.6	136.33	344.6			5531	3
3	0536+27	37:50:114	04:35:308	81.4	137.91	345.5			5531	3
3	0533+27	37:50:354	04:30:309	80.5	137.92	344.5	2933	3	5531	3
3	0533+30	37:50:334	04:35:278	81.3	137.91	345.5			5531	3
3	0534+30	37:52:474	04:34:118	80.4	137.92	344.5	2933	3	5531	3
3	0531+34	37:50:414	04:36:158	81.2	137.91	345.5			5531	3
3	0534+34	37:52:254	04:35:354	80.2	137.92	344.5	2933	3	5531	3
3	0533+37	37:50:369	04:36:171	81.2	137.91	345.5			5531	3
3	0535+37	37:52:534	04:35:413	80.4	137.92	344.5	2933	3	5531	3
3	0536+39	37:50:414	04:36:153	81.2	137.91	345.5			5531	3
3	0538+39	37:54:004	04:36:257	80.2	137.92	344.5	2933	3	5531	3
3	0536+46	37:52:004	04:33:233	80.4	134.61	344.9			5531	3
3	0535+46	37:50:534	04:37:352	81.3	137.91	345.5			5531	3
3	0537+46	37:51:114	04:37:209	80.1	137.92	344.5	2933	3	5531	3
3	0536+48	37:52:054	04:33:417	80.4	134.61	344.9			5531	3
3	0539+48	37:51:094	04:37:478	81.3	137.91	345.5			5531	3
3	0538+48	37:53:174	04:37:179	80.5	137.92	344.5	2933	3	5531	3
3	0537+51	37:51:274	04:38:452	80.3	137.91	345.5			5531	3

START COL										
3	0530+51	37:53:359	040:37:309	79.9	137.92	308.5	2930	3	5531	3
3	0531+06	37:51:413	040:35:473	80.7	137.91	345.5			5531	3
3	0530+56	37:53:539	040:38:119	79.7	137.92	308.5	2930	3	5531	3
3	0531+58	37:51:349	040:39:259	80.7	137.93	345.5			5531	3
3	0530+52	37:53:079	040:38:309	79.9	137.92	308.5	2930	3	5531	3
3	0531+37	37:51:253	040:39:113	80.3	137.91	308.5			5531	3
3	0531+00	37:53:413	040:38:538	79.3	137.92	308.5	2930	3	5531	3
3	0531+05	37:52:539	040:38:359	79.3	131.31	308.5			5531	3
3	0531+07	37:52:479	040:38:179	79.3	131.31	308.5			5531	3
3	0531+20	37:52:413	040:38:479	80.3	131.31	308.5			5531	3
3	0531+36 24.0	37:53:058 3	040:35:059	79.6	131.81	308.1	2960	2	5531	3
3	0531+26 24.0	37:49:111 3	040:35:319	82.3	131.73	345.4	2960	3	5531	3
3	0531+39	37:52:533	040:35:337	79.7	131.91	308.1	2930	2	5531	3
3	0531+39	37:49:059	040:35:479	81.8	131.73	345.6	2960	3	5531	3
3	0531+18	37:52:059	040:36:179	79.9	130.22	308.8			5531	3
3	0532+05	37:52:413	040:36:539	79.3	129.64	308.4			5531	3
3	0532+58	37:52:359	040:37:359	79.4	129.68	308.5			5531	3
3	0532+38	37:51:533	040:38:059	79.6	127.14	308.2			5531	3
3	0532+36	37:52:059	040:38:179	79.5	127.13	308.2			5531	3

2 5 PAGE 2

1 1 PROCESS DATE: 5 MAY 94

3 IPF 0420ST

3 THE TIME PERIOD REQUESTED WAS FROM 0520+53 TO 0554+26

3 PIPE LATITUDE LONGITUDE NEARING RANGE WEIGHTN MODE 1 ALT VAL MODE 2 VAL
MODE 3 VAL

DATASET: SCSA.3326.57S04.ALP2523.ALLMAP

DATE: 04/05/75
TIME: 07:56
PAGE: 35

START
COL. ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0532+12	37:51:47N	040:38:35E	79.5	127.13	344.2	5531	3
3	0532+19	37:49:53N	040:38:53E	80.4	126.33	344.9	5531	3
3	0532+42	37:49:47N	040:39:11E	80.1	125.30	344.9	5531	3
3	0532+49	37:49:30N	040:40:17E	80.5	126.30	344.9	5531	3
3	0532+52	37:49:30N	040:40:35E	80.5	126.33	344.9	5531	3
3	0532+56	37:49:23N	040:41:[illegible]	80.5	126.30	344.9	5531	3
3	0532+58	37:53:05N	040:39:23E	79.2	124.73	343.7	5531	3
3	0532+58	37:49:47N	040:41:41E	80.4	126.30	344.9	5531	3
3	0533+01	37:52:11N	040:39:55E	79.1	124.74	343.7	5531	3
3	0533+11	37:49:47N	040:42:35E	80.3	126.33	344.9	5531	3
3	0533+13	37:49:41N	040:42:17E	80.4	126.33	344.9	5531	3
3	0533+30	37:53:05N	040:43:35E	80.2	126.33	344.9	5531	3
3	0533+16	37:53:05N	040:43:17E	80.2	126.33	344.9	5531	3
3	0533+13	37:49:53N	040:43:41E	80.1	126.33	344.9	5531	3
3	0533+15	37:51:05N	040:48:35E	80.2	125.33	344.9	5531	3
3	0533+20	37:51:53N	040:40:17E	79.1	123.20	343.6	5531	3
3	0533+20	37:49:47N	040:44:35E	80.3	126.33	344.9	5531	3
3	0533+22	37:49:53N	040:46:53E	80.3	126.33	344.9	5531	3
3	0533+28	37:49:41N	040:45:17E	80.3	126.30	344.9	5531	3
3	0533+39	37:49:41N	040:46:[illegible]	80.3	126.33	344.9	5531	3
3	0533+33	37:49:01N	040:46:17E	80.3	126.33	344.9	5531	3
3	0533+38	37:49:47N	040:46:35E	80.2	126.33	344.9	5531	3
3	0533+39	37:49:41N	040:47:35E	80.2	126.33	344.9	5531	3
3	0533+41	37:49:41N	040:47:41E	80.2	126.33	344.9	5531	3
3	0533+43	37:49:30N	040:48:[illegible]	80.3	126.33	344.9	5531	3

DATASET: SCSA.DA26.AP10H.JLP7520.ALLRSP

DATE: 94/05/05
TIME: 07:56
PAGE: 37

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0533+30	37:53:058	040:41:118	78.2	126.94	342.8	2900	3	5531	3
	2400	3								
3	0533+30	37:49:017	040:49:537	79.3	126.94	344.8	2900	3	5531	2
	2400	3								
3	0533+50	37:49:238	040:49:107	80.3	126.30	344.9			5531	3
3	0533+53	37:49:309	040:49:238	80.3	126.30	344.9			5531	3
3	0533+55	37:49:238	040:49:358	80.3	126.30	344.9			5531	3
3	0534+00	37:49:359	040:50:178	80.2	126.30	344.9			5531	3
3	0534+02	37:49:239	040:50:358	80.1	126.30	344.9			5531	3
3	0534+04	37:49:309	040:51:107	80.2	126.30	344.9			5531	3
3	0534+09	37:49:309	040:51:478	80.2	126.30	344.9			5531	3
3	0534+12	37:49:238	040:52:078	80.2	126.30	344.9			5531	3
3	0534+18	37:49:239	040:52:117	80.2	126.30	344.9			5531	3
3	0534+21	37:51:051	040:42:528	78.3	118.57	343.3			5531	3
3	0534+21	37:49:009	040:53:118	80.3	126.30	344.9			5531	3
3	0534+33	37:48:539	040:53:357	80.4	126.30	344.9			5531	3
3	0534+30	37:48:419	040:54:357	80.5	126.30	344.9			5531	3
3	0534+33	37:48:419	041:04:538	80.5	126.30	344.9			5531	3
3	0534+35	37:48:359	040:55:118	80.5	126.30	344.9			5531	3
3	0534+40	37:48:539	040:56:157	80.3	126.30	344.9			5531	3
3	0534+42	37:48:358	040:56:178	80.4	126.30	344.9			5531	3
3	0534+45	37:48:419	040:55:157	80.4	126.30	344.9			5531	3
3	0534+52	37:51:357	040:40:118	78.2	116.03	342.7			5531	3

1 0

PAGE 1

SECRET

1 1

SECRET

PROCESS DATE: 3 MAY 94

3 IPT REPORT

3 THE TIME PERIOD REPORTED WAS FROM 0520+00 TO 0658+20

DATASET: [illegible]

DATE: 94/05/05
TIME: 07:56
PAGE: 39

	TIME	LATITUDE	LONGITUDE	HEADING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3 VAL									
3	0534+52	37:04:35[illegible]	04[illegible]:57:35[illegible]	80.3	126.30	344.9			5531	3
3	0534+54	37:04:47[illegible]	040:57:53[illegible]	80.3	126.30	344.9			5531	3
3	0534+55	37:04:02[illegible]	04[illegible]:58:17[illegible]	80.3	126.30	344.9			5531	3
3	0535+01	37:03:53[illegible]	04[illegible]:59:53[illegible]	80.2	126.30	344.9			5531	3
3	[illegible]	37:04:53[illegible]	04[illegible]:59:27[illegible]	80.2	126.30	344.9			5531	3
3	0535+06	37:03:47[illegible]	04[illegible]:59:35[illegible]	80.2	126.30	344.9			5531	3
3	0535+11	37:03:[illegible]	041:00:17[illegible]	80.2	126.30	344.9			5531	3
3	0535+13	37:04:51[illegible]	041:[illegible]	80.2	126.30	344.9			5531	3
3	0535+15	37:01:07[illegible]	041:[illegible]:53[illegible]	80.2	126.25	344.9			5531	3
3	0535+22	37:51:0[illegible]	04[illegible]:45:23[illegible]	76.2	113.72	342.5			5531	3
3	0535+22	37:0[illegible]	041:42:[illegible]	90.5	125.30	344.9			5531	3
3	0535+25	37:07:01[illegible]	041:0[illegible]:23[illegible]	80.3	126.30	344.9			5531	3
3	0535+27	37:07:23[illegible]	041:[illegible]:47[illegible]	80.3	126.30	344.9			5531	3
3	0535+32	37:07:0[illegible]	041:[illegible]:5[illegible]	80.3	126.30	344.9			5531	3
3	0535+36	37:06:53[illegible]	041:03:53	81.3	126.30	344.9			5531	3
3	0535+37	37:07:0[illegible]	041:[illegible]:1[illegible]	81.3	126.30	344.9			5531	3
3	0535+41	37:07:0[illegible]	041:15:35[illegible]	80.3	126.30	344.9			5531	3
3	0535+46	37:07:05[illegible]	041:0[illegible]:1[illegible]	80.3	126.30	344.9			5531	3
3	0535+46	37:07:23[illegible]	041:35:[illegible]	80.7	126.30	344.9			5531	3
3	0535+53	37:51:21[illegible]	04[illegible]:46:[illegible]	77.5	111.29	342.1			5531	3
3	0535+53	37:07:53[illegible]	041:56:27[illegible]	80.3	126.30	344.9			5531	3
3	0535+56	37:0[illegible]	041:0[illegible]:35[illegible]	80.4	126.30	344.9			5531	3
3	0535+56	37:0[illegible]:05[illegible]	041:07:[illegible]	80.3	126.30	344.9			5531	3

DATASET: SCSA.SA26.AB320.3LP2520.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 39

START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0536+03	37:43:27	041:37:41	80.2	126.30	344.9			5531	3
3	0536+05	37:44:11	041:38:00	80.3	126.30	344.9			5531	3
3	0536+07	37:43:21	041:38:17	80.2	126.30	344.9			5531	3
3	0536+12	37:43:00	041:39:17	80.3	126.30	344.9			5531	3
3	0536+14	37:44:00	041:39:30	80.3	126.30	344.9			5531	3
3	0536+17	37:47:53	041:39:47	80.4	126.30	344.9			5531	3
3	0536+20	37:50:37	040:48:00	77.7	124.86	342.2	3600	2	5531	3
	2430	2								
3	0536+24	37:47:26	041:10:47	80.5	126.30	344.9			5531	3
3	0536+26	37:47:27	041:11:12	80.5	126.30	344.9			5531	3
3	0536+29	37:47:00	041:11:15	80.7	126.30	344.9			5531	3
3	0536+33	37:47:00	041:12:17	80.7	126.30	344.9			5531	3
3	0536+36	37:47:53	041:12:35	80.5	126.30	344.9			5531	3
3	0536+39	37:47:27	041:12:47	80.5	126.30	344.9			5531	3
3	0536+43	37:47:41	041:13:35	80.3	126.30	344.9			5531	3
3	0536+45	37:47:07	041:13:47	80.1	126.30	344.9			5531	3
3	0536+47	37:47:47	041:14:35	80.3	126.30	344.9			5531	3
3	0536+55	37:49:47	040:49:35	77.5	106.59	342.2	3800	3	5531	3
	2430	3								
3	0536+55	37:48:05	040:49:47	78.3	106.50	343.2			5531	3
3	0536+55	37:47:53	041:15:35	80.2	126.30	344.9			5531	3
3	0536+57	37:47:53	041:15:23	80.1	126.30	344.9			5531	3
3	0536+59	37:47:53	041:15:53	80.2	126.30	344.9			5531	3
3	0537+04	37:47:35	041:16:30	80.1	126.30	344.9			5531	3
3	0537+16	37:45:47	041:16:53	80.7	126.30	344.9			5531	3

1 5

PAGE 4

1 1

PROCESS DATE: 3 MAY 94

3 IFF REPORT

SECRET

DATASET: SCSA.3326.APR00.9LP3520.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 40

SCALE
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL	MODE 3	VAL
3	0537+09	37:44:41N	041:17:36E	81.5	126.33	344.9			5531	3		
3	0537+13	37:39:35N	041:19:23E	86.1	126.33	344.9			5531	3		
3	0537+16	37:32:00N	041:19:35E	87.3	126.33	344.9			5531	3		
3	0537+18	37:25:41N	041:19:53E	96.1	126.33	344.9			5531	3		
3	0537+23	37:44:11N	040:51:41E	80.2	104.27	327.7	4100	2	5531	3	2430	3
3	0537+23	37:41:00N	040:52:11E	82.3	104.27	329.5	4100	3	5531	3	2430	3
3	0537+25	37:41:11N	040:52:23E	81.3	104.27	327.7	4100	2	5531	3		
3	0537+25	37:34:[illegible]	040:52:41E	83.6	104.27	329.5	4100	3	5531	3		
3	0537+25	37:06:00N	041:18:17E	99.0	126.33	344.9			5531	3		
3	0537+28	37:35:23N	040:53:23E	85.0	104.27	327.7	4100	2	5531	3		
3	0537+28	37:32:05N	040:53:10E	86.7	104.27	329.5	4100	3	5531	3		
3	0537+28	36:59:05N	041:16:01E	102.2	126.33	344.9			5531	3		
3	0537+35	37:19:11N	040:53:53E	93.6	104.27	327.7	4100	2	5531	3		
3	0537+35	37:16:07N	040:53:17E	95.1	104.27	329.5	4100	3	5531	3		
3	0537+35	36:40:41N	041:10:35E	110.3	126.33	344.9			5531	3		
3	0537+37	37:10:23N	040:53:30E	96.2	104.27	327.7	4100	2	5531	3		
3	0537+37	37:11:17N	040:52:53E	98.0	104.27	329.5	4100	3	5531	3		
3	0537+37	36:35:17N	041:07:35E	113.4	126.33	344.9			5531	3		
3	0537+39	37:10:53N	040:53:00E	96.1	104.27	327.7	4100	2	5531	3		
3	0537+39	37:07:07N	040:52:11E	99.1	104.27	329.5	4100	3	5531	3		
3	0537+39	36:31:23N	041:05:30E	115.1	126.33	344.9			5531	3		

START COL										
3	0537+44	37:01:17W	040:51:11E	103.3	104.27	327.7	4100	2	5531	3
3	0537+44	36:57:17W	040:49:47E	105.6	104.27	329.5	4100	3	5531	3
3	0537+44	36:20:05W	040:58:30E	121.0	126.30	344.9			5531	3
3	0537+47	36:58:36W	040:50:37E	104.3	104.27	327.7	4100	2	5531	3
3	0537+47	36:55:30W	040:49:11E	106.5	104.27	329.5	4100	3	5531	3
3	0537+47	36:18:11W	040:57:05E	122.0	126.30	344.9			5531	3
3	0537+49	36:52:00W	040:48:11E	108.4	104.27	329.5	4100	3	5531	3
3	0537+49	36:14:36W	040:58:05E	123.3	126.30	344.9			5531	3
3	0537+50	37:48:41W	040:52:00E	76.8	103.05	294.3			5531	3
3	0537+50	37:47:11W	040:52:30E	77.2	103.05	294.3			5531	3
3	0537+50	36:44:41W	040:45:30E	112.4	104.27	329.5	4100	3	5531	3
3	0537+50	36:06:53W	040:58:41E	127.8	126.30	344.9			5531	3
3	0537+50	37:45:30W	040:52:53E	78.1	103.05	294.3			5531	3
3	0537+50	36:43:05W	040:44:41E	113.2	104.27	329.5	4100	3	5531	3
3	0537+50	36:05:23W	040:47:17E	128.6	126.30	344.9			5531	3
3	0538+01	37:44:17W	040:53:17E	78.6	103.05	294.3			5531	3
3	0538+01	36:42:05W	040:44:23E	113.8	104.27	329.5	4100	3	5531	3
3	0538+01	36:04:17W	040:46:35E	129.2	126.30	344.9			5531	3
3	0538+05	36:03:23W	040:46:35E	129.4	126.30	344.9			5531	3
3	0538+08	36:03:30W	040:47:05E	129.2	126.30	344.9			5531	3
3	0538+10	36:04:05W	040:48:11E	128.7	126.30	344.9			5531	3
3	0538+15	37:50:17W	040:52:11E	74.5	102.77	292.3			5531	3
3	0538+15	36:07:05W	040:51:53E	126.8	126.30	344.9			5531	3
3	0538+17	37:51:23W	040:52:05E	73.3	102.77	292.3			5531	3
3	0538+17	36:07:01W	040:52:47E	126.8	126.30	344.9			5531	3

1 0

DATASET: SCSA.3326.APR98.ALP3506.ALLMAP

DATE: 98/05/05
TIME: 07:56
PAGE: 82

START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

1 1 PROCESS DATE: 3 MAY 98

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+30 TO 0558+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3	VAL								
5	0538+26	36:09:479	040:55:566	125.1	126.30	344.9			5531	3
3	0538+27	36:19:059	041:03:158	120.3	126.30	344.9			5531	3
3	0538+29	36:21:234	041:05:531	118.3	126.30	344.9			5531	3
3	0538+31	36:25:059	041:06:472	116.4	126.30	344.9			5531	3
3	0539+36	37:57:069	040:53:607	73.5	162.39	306.5	4600	3	5531	3
3	0538+36	36:30:309	041:15:359	111.4	126.30	344.9			5531	3
3	0539+39	37:53:539	040:51:178	71.3	162.39	306.5	4600	3	5531	3
3	0538+39	36:38:[illegible]	041:17:112	109.7	126.30	344.9			5531	3
3	0538+41	36:42:074	041:19:411	107.3	126.30	344.9			5531	3
3	0538+46	36:55:471	041:25:057	101.0	126.30	344.9			5531	3
3	0538+48	36:59:304	041:25:513	99.7	126.30	344.9			5531	3
3	0538+50	37:04:069	041:27:331	97.1	126.30	344.9			5531	3
3	0538+57	37:17:471	041:30:053	90.3	126.30	344.9			5531	3
3	0539+00	37:21:421	041:30:237	86.9	126.30	344.9			5531	3
3	0539+02	37:25:634	041:30:357	87.4	126.30	344.9			5531	3
3	0539+07	37:09:358	040:54:178	72.3	160.61	332.9			5531	3
3	0539+07	37:31:039	041:32:[illegible]	84.5	126.30	344.9			5531	3
3	0539+09	37:11:[illegible]	040:58:[illegible]	72.5	160.61	332.9			5531	3
3	0539+09	37:32:231	041:31:119	84.5	126.30	344.9			5531	3

DATE: 06/15/11
TIME: 17:56
PAGE: 83

START COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0534+12	37:34:11N	041:31:17E	83.1	126.30	344.9	5531	3
3	0539+16	37:37:35N	041:31:35E	81.5	126.30	344.9	5531	3
3	0539+19	37:38:05N	041:31:41E	81.3	126.30	344.9	5531	3
3	0539+21	37:39:11N	041:31:47E	80.8	126.30	344.9	5531	3
3	0539+28	37:42:47N	041:32:05E	79.1	126.30	344.9	5531	3
3	0539+30	37:43:53N	041:32:11E	78.5	126.30	344.9	5531	3
3	0539+33	37:44:29N	041:32:17E	78.2	126.30	344.9	5531	3
3	0539+38	37:46:35N	041:32:30E	77.3	126.30	344.9	5531	3
3	0539+40	37:47:05N	041:32:35E	77.1	126.30	344.9	5531	3
3	0539+42	37:47:41N	041:32:47E	76.8	126.30	344.9	5531	3
3	0539+47	37:49:47N	041:33:17E	76.3	126.30	344.9	5531	3
3	0539+49	37:44:47N	041:33:37E	76.3	126.30	344.9	5531	3
3	0539+52	37:43:53N	041:33:41E	76.2	126.30	344.9	5531	3
3	0539+55	37:43:11N	040:56:53E	72.3	97.63	341.3	5531	3
3	0539+56	37:48:35N	041:34:47E	76.4	126.30	344.9	5531	3
3	0540+01	37:44:23N	041:35:11E	76.8	126.30	344.9	5531	3
3	0540+04	37:45:53N	041:36:35E	77.1	126.30	344.9	5531	3
3	0540+11	37:46:17N	041:37:35E	77.8	126.30	344.9	5531	3
3	0540+13	37:45:47N	041:37:41E	77.9	126.30	344.9	5531	3
3	0540+18	37:48:41N	041:38:05E	78.1	126.30	344.9	5531	3
3	0540+20	37:44:23N	041:38:41E	78.3	126.30	344.9	5531	3
3	0540+22	37:48:05N	041:39:05E	78.4	126.30	344.9	5521	3
3	0540+30	37:42:53N	041:40:17E	78.9	126.30	344.9	5531	3
3	0541+32	37:42:23N	041:40:41E	79.1	126.30	344.9	5531	3
3	0541+34	37:42:05N	041:41:05E	79.1	126.30	344.9	5531	3
3	0540+39	37:41:30N	041:41:53E	79.5	126.30	344.9	5531	3

DATASET: PCSF.SA26.APP30.HLP520.ALLDAT

DATE: 90/05/05
TIME: 07:50
PAGE: 45

STAT Col	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0501+33	37:02:23W	041:49:47W	78.4	126.30	344.9	5531	3
3	0501+36	37:02:23W	041:49:35W	78.9	126.30	344.9	5531	3
3	0501+42	37:02:17W	041:49:47W	78.9	126.30	344.9	5531	3
3	0501+43	37:02:05W	041:50:05W	79.3	126.30	344.9	5531	3
3	0501+45	37:02:11W	041:50:23W	79.3	126.30	344.9	5531	3
3	0501+50	37:01:53W	041:51:11W	79.1	126.30	344.9	5531	3
3	0501+52	37:02:05W	041:51:17W	79.3	126.30	344.9	5531	3
3	0501+55	37:01:59W	041:51:41W	79.1	126.30	344.9	5531	3
3	0501+59	37:00:05W	041:51:47W	70.7	80.61	336.8	5531	3
3	0502+02	37:01:37W	041:51:53W	70.5	80.61	336.8	5531	3
3	0502+02	37:02:53W	041:52:23W	78.0	126.30	344.9	5531	3
3	0502+08	37:00:47W	041:51:35W	69.6	80.61	336.8	5531	3
3	0502+08	37:00:47W	041:52:17W	77.7	126.30	344.9	5531	3
3	0502+10	37:00:07W	041:51:17W	68.7	80.61	336.8	5531	3
3	0502+14	37:06:35W	041:52:05W	78.9	126.30	344.9	5531	3
3	0502+17	37:00:35W	041:50:11W	66.3	80.61	336.8	5531	3
3	0502+21	37:03:41W	041:51:05W	70.2	126.30	344.9	5531	3
3	0502+24	37:06:53W	041:50:11W	68.7	80.61	336.8	5531	3
3	0502+28	37:06:23W	041:50:17W	72.7	126.30	344.9	5531	3
3	0502+30	37:03:21W	040:58:35W	63.3	80.61	336.8	5531	3
3	0502+36	37:00:05W	041:49:17W	71.1	126.30	344.9	5531	3
3	0502+41	33:09:41W	041:45:05W	65.9	126.30	344.9	5531	3
3	0502+43	33:11:47W	041:44:11W	64.3	126.30	344.9	5531	3
3	0502+45	33:10:05W	041:43:59W	62.7	126.30	344.9	5531	3
3	0502+49	37:01:35W	041:41:41W	68.2	86.44	357.3	5531	3
3	0502+52	38:20:53W	041:43:05W	55.7	126.30	344.9	5531	3

OBJECT CLS									
3	[illegible]	[illegible]	53.2	126.30	388.9			5531	3
3	[illegible]	[illegible]	45.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	43.3	126.30	388.9			5531	3
[illegible]					[illegible]				
[illegible]					[illegible]				
3	[illegible]								
3	[illegible]								

OBJECT CLS									
3	[illegible]	[illegible]	42.1	126.30	388.9			5531	3
3	[illegible]	[illegible]	38.7	126.30	388.9			5531	3
3	[illegible]	[illegible]	66.3	80.95	19.6			5531	3
3	[illegible]	[illegible]	33.4	126.30	388.9			5531	3
3	[illegible]	[illegible]	32.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	23.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	20.9	126.30	388.9			5531	3
3	[illegible]	[illegible]	13.5	126.30	388.9			5531	3
3	[illegible]	[illegible]	69.5	83.81	93.1			5531	2
3	[illegible]	[illegible]	11.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	8.9	126.30	388.9			5531	3
3	[illegible]	[illegible]	3.6	126.30	388.9			5531	3
3	[illegible]	[illegible]	2.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	1.3	126.30	388.9			5531	3
3	[illegible]	[illegible]	353.1	126.30	388.9			5531	3

DATASET: [illegible].ALLHA?

DATE: 94/05/05
TIME: 07:56
PAGE: 47

START COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0543+35	39:29:21?	038:58:53?	355.0	126.30	344.9	5531	3
3	0543+39	39:28:23?	038:52:30?	346.6	126.30	344.9	5531	3
3	0543+43	39:26:35?	038:41:30?	344.2	126.30	344.9	5531	3
3	0543+46	37:49:41?	041:06:30?	72.7	83.25	76.1	5531	3
3	0543+46	39:25:30?	038:34:30?	342.0	126.30	344.9	5531	3
3	0543+46	37:52:11?	041:05:00?	71.0	83.25	76.1	5531	3
3	0543+46	39:20:00?	038:28:21?	339.3	126.30	344.9	5531	3
3	0543+53	39:15:47?	038:14:41?	334.5	126.30	344.9	5531	3
3	0543+55	39:13:11?	038:10:05?	332.4	126.30	344.9	5531	3
3	0543+57	37:47:17?	041:07:05?	75.2	83.44	89.6	5531	3
3	0543+57	39:16:00?	038:04:23?	330.4	126.30	344.9	5531	3
3	0544+25	39:08:01?	037:48:35?	323.0	126.30	344.9	5531	3
3	0544+19	37:45:53?	041:08:23?	77.6	84.39	111.9	5531	2
3	0544+40	37:44:53?	041:09:35?	79.5	86.06	131.9	5531	2
3	0544+55	37:45:33?	041:10:17?	79.9	88.22	150.2	5531	3
3	0545+??	37:45:?5?	041:11:11?	80.1	90.67	162.2	5531	2
3	0545+13	37:45:0??	041:13:22?	81.0	99.66	165.4	5531	2
3	0548+16	37:44:07?	041:20:07?	83.1	116.64	169.4	5531	3
3	0549+07	37:48:17?	041:21:17?	81.0	119.44	182.9	5531	3
3	0549+09	37:52:53?	041:20:11?	79.5	119.44	182.9	5531	3
3	0549+33	37:45:37?	041:23:0??	82.4	123.39	209.7	5531	3
3	0549+40	37:47:30?	041:22:17?	80.9	123.39	209.7	5531	3
3	0549+42	37:53:41?	041:21:17?	78.0	123.39	209.7	5531	3
3	0549+45	37:57:41?	041:20:11?	76.0	123.39	209.7	5531	3
3	0549+47	37:44:35?	041:23:53?	83.0	124.61	217.3	5531	3
3	0549+47	38:01:47?	041:18:47?	74.0	123.39	209.7	5531	3

DATASET: SCSZ.SASS.AP[illegible].[illegible].ALLF[illegible]

DATE: 94/05/05
TIME: 07:5[illegible]
PAGE: 49

STEP
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0549+49	37:44:07N	041:33:15E	81.3	124.61	217.8	5531	3
3	0549+49	38:05:53N	041:17:21E	72.3	123.39	209.7	5531	3
3	0549+52	37:53:35N	041:22:53E	78.7	124.61	217.8	5531	3
3	0549+52	38:1[illegible]:35N	041:15:35E	76.5	123.39	209.7	5531	3
3	0549+54	37:57:07N	041:20:41E	76.7	124.61	217.8	5531	3

SECRET

PAGE 1

SECRET

PROCESS DATE: 3 MAY 94

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0558+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT VAL	MODE 2 VAL	MODE 3 VAL
3	0549+58	38:18:23N	041:13:35E	68.5	123.39	209.7		5531	3
3	0549+57	38:0[illegible]:27N	041:19:35E	74.5	124.61	217.8		5531	3
3	0549+57	38:1[illegible]:02N	041:10:47E	66.3	123.39	209.7		5531	3
3	0549+55	38:22:47N	041:08:17E	64.1	123.39	209.7		5531	3
3	0550+12	38:27:21N	041:05:23E	61.3	123.39	209.7		5531	3
3	0550+18	38:31:15N	041:02:13E	59.4	123.39	209.7		5531	3
3	0550+16	38:35:31N	040:59:15E	57.1	123.39	209.7		5531	3
3	0553+10	37:47:23N	041:28:17E	81.1	126.75	236.8		5531	3
3	0553+11	37:49:53N	041:23:47E	79.3	126.75	236.8		5531	3
3	0553+13	37:54:41N	041:22:35E	77.5	126.75	236.8		5531	3
3	0553+15	37:59:05N	041:21:35E	75.3	126.75	236.8		5531	3
3	0553+18	38:02:42N	041:[illegible]	73.[illegible]	126.75	236.8		5531	3
3	0550+20	38:07:11N	041:18:17E	71.4	126.75	236.8		5531	3

DATASET: SCSA.SA26.APR94.HLP3520.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 49

```
START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0
   3    0550+23  38:11:53N   041:16:11E    69.1    126.75    236.8                    5531    3
   3    0550+25  38:15:53N   041:14:11E    67.1    126.75    236.8                    5531    3
   3    0550+27  38:20:05N   041:11:35E    64.9    126.75    236.8                    5531    3
   3    0550+30  37:46:06N   041:25:23E    80.9    128.27    256.1                    5531    3
   3    0550+30  38:25:23N   041:08:11E    62.1    126.75    236.8                    5531    3
   3    0550+32  37:48:17N   041:25:00E    79.8    128.27    256.1                    5531    3
   3    0550+32  38:28:31N   041:06:50E    60.4    126.75    236.8                    5531    3
   3    0550+34  37:52:41N   041:24:25E    77.7    128.27    256.1                    5531    3
   3    0550+36  38:32:17N   041:03:11E    58.4    126.75    236.8                    5531    3
   3    0550+37  37:57:05N   041:22:47E    75.6    128.27    256.1                    5531    3
   3    0550+37  38:36:05N   041:06:05E    56.2    126.75    236.8                    5531    3
   3    0550+39  38:41:41N   041:03:53E    52.1    126.75    236.8                    5531    3
   3    0551+01  39:05:05N   041:19:15E    71.2    128.27    256.1                    5531    3
   3    0551+01  38:43:35N   041:53:35E    51.4    126.75    236.8                    5531    2
   3    0555+20  37:47:45N   041:39:05E    75.5    115.74    346.4                    5531    3
   3    0555+20  38:23:23N   033:38:35E    345.2    128.27    256.1                    5531    3
   3    0555+20  38:23:53N   037:05:23E    325.2    126.75    236.8                    5531    3
   3    0555+23  39:02:23N   033:30:11E    343.5    128.27    256.1                    5531    3
   3    0555+23  38:41:41N   037:41:47E    324.2    126.75    236.8                    5531    3
   3    0555+25  39:21:45N   033:29:23E    342.5    128.27    256.1                    5531    3
   3    0555+25  38:59:11N   037:17:53E    322.3    126.75    236.8                    5531    3
   3    0555+27  39:19:11N   033:18:53E    339.1    128.27    256.1                    5531    3
   3    0555+27  38:56:23N   037:33:23E    326.3    126.75    236.8                    5531    3
   3    0555+30  39:17:41N   033:18:35E    337.4    128.27    256.1                    5531    3
   3    0555+30  38:53:47N   037:29:23E    318.0    126.75    236.8                    5531    3
   3    0555+32  39:15:47N   033:09:11E    335.1    128.27    256.1                    5531    3
```

DATASET: [illegible] DATE: 9[illegible]/[illegible]
TIME: [illegible]7:5[illegible]
PAGE: 5[illegible]

START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0555+32	38:07:47[illegible]	037:25:23[illegible]	315.9	126.75	236.8	5531	3
3	0555+34	39:13:35[illegible]	03[illegible]:[illegible]3:[illegible]7[illegible]	333.[illegible]	129.27	256.1	5531	3
3	0555+34	38:46:27[illegible]	037:2[illegible]:17[illegible]	313.7	126.75	236.8	5531	3
3	0555+37	38:41:23[illegible]	037:16:11[illegible]	310.7	126.75	236.9	5531	3
3	0555+39	38:38:11[illegible]	037:13:[illegible]	308.3	126.75	236.9	5531	3
3	0555+41	37:51:36[illegible]	041:38:[illegible]	73.2	114.3[illegible]	3.5	5531	2
3	0555+41	38:38:[illegible]	037:09:[illegible]	306.5	126.75	236.2	5531	3

1 0 ***SECRET***
DAY [illegible]
1 1 ***SECRET***
PROCESS DATE: 3 MAY 9[illegible]
3 IFF REPORT

3 TH[illegible] [illegible] PERIOD REQUESTED WAS FROM [illegible]520+[illegible] TO [illegible]559+2[illegible]

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3	VAL								
3	0555+44	38:29:01[illegible]	[illegible]37:[illegible]	304.1	126.75	236.[illegible]			5531	3
3	0555+46	38:23:[illegible]	[illegible]37:[illegible]	[illegible]	126.75	236.6			5531	3
3	0555+49	38:22:35[illegible]	036:59:[illegible]	299.2	126.75	236.[illegible]			5531	3
3	0555+57	38:16:[illegible]	036:56:[illegible]	29[illegible].[illegible]	126.75	236.3			5531	3
3	0555+55	38:11:17[illegible]	036:56:[illegible]	298.4	126.75	236.8			5531	3
3	0555+56	38:07:2[illegible]	036:52:[illegible]	292.6	126.75	236.9			5531	3
3	0555+58	38:02:35[illegible]	036:[illegible]	290.1	126.75	236.4			5531	3
3	0556+30	37:57:24[illegible]	036:[illegible]:47[illegible]	287.6	126.75	236.3			5531	3
3	0556+33	37:52:57[illegible]	036:47:17[illegible]	285.1	126.75	236.8			5531	3
3	0556+35	37:[illegible]:[illegible]3[illegible]	036:[illegible]	282.[illegible]	126.75	236.5			5531	3
3	0556+37	37:[illegible]:23[illegible]	036:[illegible]	279.5	126.75	236.8			5531	3

[redacted] SECRET [redacted]

[redacted] SECRET [redacted]

DATASET: SCSA.JA25.APA90.dLOC520.ALLMAP

DATE: 94/25/95
TIME: 07:55
PAGE: 51

STA.V COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0556+10	37:36:238	036:40:21?	277.6	126.75	236.8	5531	3
3	0556+12	37:50:058	041:00:47?	78.7	112.41	36.8	5531	3
3	0556+12	37:31:178	036:43:53?	275.2	126.75	236.8	5531	3
3	0556+15	37:51:338	041:39:41?	72.3	112.41	36.8	5531	3
3	0556+15	37:25:538	036:43:47?	272.7	126.75	236.8	5531	3
3	0556+19	37:15:418	036:40:30?	267.9	126.75	236.8	5531	3
3	0556+22	37:13:338	036:45:23?	265.3	126.75	236.8	5531	3
3	0556+24	37:56:538	041:41:00?	78.7	111.95	48.6	5531	3
3	0556+24	37:05:061	036:46:23?	262.8	126.75	236.8	5531	3
3	0556+26	37:50:058	036:47:41?	260.5	126.75	236.8	5531	3
3	0556+29	36:58:478	036:09:23?	257.9	126.75	236.8	5531	3
3	0556+31	36:49:368	036:51:23?	255.3	126.75	236.8	5531	3
3	0556+33	36:48:028	036:53:23?	252.9	126.75	236.8	5531	3
3	0556+36	36:40:538	036:55:10?	251.1	126.75	236.8	5531	3
3	0556+38	36:33:538	036:59:00?	247.9	126.75	236.8	5531	3
3	0556+41	36:31:308	037:00:[illegible]?	246.2	126.75	236.8	5531	3
3	0556+43	36:27:058	037:03:23?	243.3	126.75	236.8	5531	3
3	0556+45	36:22:358	037:06:41?	241.8	126.75	236.8	5531	3
3	0556+48	36:18:158	037:13:59?	236.6	126.75	236.8	5531	3
3	0556+50	36:09:018	037:17:53?	234.3	126.75	236.8	5531	3
3	0556+53	36:05:078	037:22:05?	232.6	126.75	236.8	5531	3
3	0556+57	36:02:058	037:26:11?	229.3	126.75	236.8	5531	3
3	0556+59	35:58:308	037:30:17?	226.8	126.75	236.8	5531	3
3	0557+02	35:55:408	037:35:07?	224.8	126.75	236.8	5531	3
3	0557+06	35:51:518	037:39:53?	222.3	126.75	236.8	5531	3
3	0557+07	35:48:078	037:44:01?	219.9	126.75	236.8	5531	3

[redacted] SECRET [redacted]

DATA SET: [illegible]

DATE: 98/05/05
TIME: 07:5[illegible]
PAGE: 52

CODE	1	2	3	4	5	6	7	8	9	
3	0557.39	35:05:17[illegible]	037:50:52[illegible]	217.0	126.75	236.8			5531	3
3	0557.12	35:03:[illegible]4	037:50:51[illegible]	215.1	126.75	236.8			5531	3
3	0557.10	35:01:05[illegible]	037:50:50[illegible]	213.3	126.75	236.8			5531	3
3	0557.10	37:01:35[illegible]	081:05:35[illegible]	92.3	112.69	148.7			5531	3
3	0557.10	35:3[illegible]:35[illegible]	036:[illegible]4:23[illegible]	210.9	126.75	236.9			5531	3
3	0557.11	35:34:[illegible]4	036:15:[illegible]3	206.2	126.75	236.8			5531	3
3	0557.13	35:32:11[illegible]	033:[illegible]:[illegible]5	203.3	126.75	236.3			5531	3
3	0557.15	35:3[illegible]:29[illegible]	033:26:11[illegible]	202.7	126.75	236.8			5531	3
2	0557.28	35:29:11[illegible]	033:31:17[illegible]	199.5	126.75	236.8			5531	3
2	/					[illegible]SE[illegible]				
3	1	PAGE [illegible]1				[illegible]SE[illegible]				
1		[illegible]ING DATE: [illegible] MAY 98								
	IFF REPORT									
9	THE TIDY PERIOD REQUESTED WAS FROM 0520.00 TO 0654.20									
1	TIME [illegible] 3 VAL	LATITUDE	LONGITUDE	HEADING	RANGE	BEARING	CODE 1	VAL	MODE 2	VAL
3	0557.30	35:27:07[illegible]	033:37:3[illegible]	197.2	126.75	236.8			5531	3
3	0557.12	35:26:01[illegible]	033:03:27[illegible]	190.0	126.75	236.9			5531	3
3	0557.35	35:25:01[illegible]	032:[illegible]:01[illegible]	192.4	126.75	236.8			5531	3
3	0557.37	37:00:43[illegible]	081:00:3[illegible]	63.7	130.24	140.0			5531	3
3	0557.37	35:20:51[illegible]	033:50:01[illegible]	194.5	126.75	236.8			5531	3
3	0557.00	35:20:[illegible]50	033:01:53[illegible]	207.7	126.75	236.8			5531	3
3	0557.12	35:[illegible]3:[illegible]1	033:00:[illegible]7	196.5	126.75	236.9			5531	3
3	0557.00	35:[illegible]3:[illegible]1	033:12:11[illegible]	183.7	126.75	236.9			5531	3
3	0557.07	35:21:21[illegible]	033:10:[illegible]5	181.5	126.75	236.8			5531	3

DATASET: NCSA.SA26.AP094.[illegible]C530.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 53

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0557+49	35:23:30N	039:22:30E	179.8	126.75	236.8	5531	3
3	0557+51	35:23:47N	039:26:23E	177.5	126.75	236.8	5531	3
3	0557+54	35:24:17N	039:30:23E	175.2	126.75	236.8	5531	3
3	0557+56	35:24:53N	039:40:11E	172.9	126.75	236.8	5531	3
3	0557+58	37:41:30N	041:47:17E	84.0	116.40	150.2	5531	2
3	0557+58	35:25:41N	039:46:05E	170.3	126.75	236.8	5531	3
3	0558+11	35:26:41N	039:51:07E	168.4	126.75	236.8	5531	3
3	0558+13	35:27:53N	039:57:59E	166.0	126.75	236.8	5531	3
3	0558+16	35:29:13N	040:03:23E	163.0	126.75	236.8	5531	3
3	0558+18	35:30:35N	040:06:11E	161.3	126.75	236.8	5531	3
3	0558+10	35:32:11N	040:13:23E	159.7	126.75	236.8	5531	3
3	0558+13	35:33:05N	040:16:11E	158.5	126.75	236.8	5531	3
3	0558+15	35:34:11N	040:18:47E	157.3	126.75	236.8	5531	3
3	0558+17	35:35:00N	040:22:05E	156.3	126.75	236.8	5531	3
3	0558+32	35:36:07N	040:25:20E	154.5	126.75	236.8	5531	3
3	0558+24	35:37:30N	040:26:17E	153.3	126.75	236.8	5531	3
3	0558+27	35:38:00N	040:27:17E	153.1	126.75	236.8	5531	3
3	0558+29	35:38:35N	040:28:30E	152.7	126.75	236.8	5531	3
3	0558+32	35:39:05N	040:29:17E	152.2	126.75	236.8	5531	3
3	0558+34	35:39:30N	040:29:53E	151.9	126.75	236.8	5531	3
3	0558+36	35:39:53N	040:30:23E	151.5	126.75	236.8	5531	3
3	0558+39	35:40:11N	040:30:53E	151.2	126.75	236.8	5531	3
3	0558+41	35:40:41N	040:31:35E	150.7	126.75	236.8	5531	3
3	0558+43	35:41:00N	040:32:00E	150.5	126.75	236.8	5531	3
3	0558+46	35:41:27N	040:32:17E	150.3	126.75	236.8	5531	3
3	0558+48	35:41:30N	040:32:30E	150.0	126.75	236.8	5531	3

DATASET: [illegible]

DATE: [illegible]
TIME: [illegible]
PAGE: 54

COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

COL	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
3	0553+33	35:02:[illegible]	0[illegible]:32:532	109.5	126.75	236.8			5531	3
3	0553+55	35:02:05[illegible]	084:32:418	109.5	126.75	236.8			5531	3
3	0558+58	35:02:05[illegible]	084:32:308	109.5	126.75	236.8			5531	3
3	0559+32	37:01:23[illegible]	081:49:055	85.1	129.19	170.4	76[illegible]	3	5531	3
3	0600+02	37:01:351	081:47:473	85.3	129.19	170.4	7600	3	5531	3
3	0600+13	37:03:254	081:46:[illegible]	85.[illegible]	129.19	170.4	7600	3	5531	3
3	0601+25	37:00:529	081:51:17[illegible]	85.3	133.97	171.4	7500	3	5531	3
	2036	3								
3	0601+33	37:02:178	081:45:258	86.3	129.19	170.4	7600	3	5531	3
3	0601+32	37:01:[illegible]	081:47:478	88.5	129.19	170.4	7600	3	5531	3
3	0602+45	37:10:372	081:52:11[illegible]	86.9	143.34	198.1	7600	3	5531	3
	2036	3								
3	0602+16	37:00:239	081:52:172	85.5	146.68	217.5	7500	3	5531	3
	2036	3								

****SECRET****

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****SECRET****

REPORT TITLE: [illegible]

3 IFF REPORT

3 THE IFF MISSION RECORDED [illegible] FROM 0520+00 TO 0659+20

COL	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3	VAL								
3	0602+16	37:03:3[illegible]	081:53:[illegible]	66.4	146.68	217.5	7600	3	5531	3
3	0602+32	37:00:379	081:51:128	62.9	146.68	217.5	7600	3	5531	3
2	0602+23	37:55:609	081:49:55[illegible]	75.[illegible]	146.68	217.5	7600	3	5531	3
3	0602+26	37:01:231	081:52:350	84.1	147.56	227.4	7500	3	5531	3
	2036	3								
3	0602+49	37:00:[illegible]	081:52:[illegible]	88.5	148.66	249.0	7500	3	5531	3
	2036	3								
3	0603+0[illegible]	37:36:239	081:53:225	95.1	169.48	271.6	7500	3	5531	3
3	0603+13	37:02:230	081:54:536	82.7	143.44	271.6	7500	3	5531	3

DATASET: SCSA.SA26.APR94.BLP0520.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 55

START COL	1	2	3	4	5	6	7	8	9	0
3	0603+15	37:46:35N	041:52:00E	80.3	149.44	271.6	7500	3	5531	3
3	0603+20	38:00:35N	041:49:05E	75.4	149.44	271.6	7500	3	5531	3
3	0603+22	38:06:35N	041:47:11E	72.9	149.44	271.6	7500	3	5531	3
3	0603+25	38:12:35N	041:45:00E	70.4	149.44	271.6	7500	3	5531	3
3	0603+27	38:21:11N	041:41:11E	66.9	149.44	271.6	7500	3	5531	3
3	0603+29	38:25:47N	041:38:47E	64.8	149.44	271.6	7500	3	5531	3
3	0603+32	37:33:30N	041:53:47E	85.4	149.06	293.5	7500	3	5531	3
3	0603+32	38:28:35N	041:37:11E	63.5	149.44	271.6	7500	3	5531	3
3	0603+34	37:39:35N	041:53:23E	83.0	149.06	293.5	7500	3	5531	3
3	0603+34	38:34:05N	041:33:47E	61.1	149.44	271.6	7500	3	5531	3
3	0603+36	38:39:41N	041:29:53E	58.6	149.44	271.6	7500	3	5531	3
3	0603+41	38:50:17N	041:21:05E	53.5	149.44	271.6	7500	3	5531	3
3	0603+43	38:55:23N	041:16:23E	51.0	149.44	271.6	7500	3	5531	3
3	0603+46	39:00:30N	041:11:17E	48.4	149.44	271.6	7500	3	5531	3
3	0603+51	39:10:00N	041:00:00E	43.3	149.44	271.6	7500	3	5531	3
3	0603+53	39:14:17N	040:56:11E	40.8	149.44	271.6	7500	3	5531	3
3	0603+55	39:19:35N	040:47:47E	38.2	149.44	271.6	7500	3	5531	3
3	0604+02	37:33:00N	041:50:05E	84.7	147.19	325.8	7500	3	5531	2
3	2430 0604+05	3 37:39:05N	041:53:47E	82.2	147.19	325.8	7500	3	5531	2
3	0604+45	37:32:35N	041:54:23E	84.3	143.06	350.4	7500	3	5531	2
3	0604+47	37:37:23N	041:54:35E	84.0	143.06	350.4	7500	3	5531	2
3	0605+04	37:29:47N	041:54:47E	85.4	141.09	353.2			5531	3
3	0605+06	37:29:53N	041:55:00E	85.3	141.09	353.2			5531	3
3	0605+25	37:29:00N	041:55:23E	85.6	139.23	352.8			5531	3
3	0605+27	37:28:30N	041:55:41E	85.9	139.23	352.8			5531	3
3	0605+34	37:28:23N	041:55:53E	85.8	138.39	352.6			5531	3

START

DATASET: SCSA.3326.AP30.BLP3520.ALLDAP

DATE: 98/05/05
TIME: 17:56
PAGE: 56

COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0665+17	37:28:45N	041:56:55E	86.0	138.33	352.6	5531	3
3	0665+19	37:27:30N	041:56:30E	86.2	138.39	352.6	5531	3
3	0665+56	37:30:00N	041:56:35E	85.1	136.80	349.5	5531	3
3	0665+56	37:29:47N	041:56:53E	85.1	136.80	349.5	5531	3
3	0666+15	37:29:21N	041:57:05E	85.3	136.03	350.1	5531	3
3	0666+18	37:29:37N	041:57:17E	85.3	136.03	350.1	5531	3
3	0666+16	37:29:35N	041:57:35E	85.1	136.63	350.1	5531	3
3	0666+26	37:29:23N	041:58:00E	85.1	134.44	350.9	5531	3
3	0666+36	37:28:30N	041:58:23E	85.4	133.61	351.7	5531	3
3	0666+38	37:28:41N	041:58:35E	85.4	133.61	351.7	5531	3
3	0666+57	37:27:47N	041:59:17E	85.6	132.02	352.0	5531	3
3	0666+59	37:27:41N	041:59:01E	85.7	132.02	352.6	5531	3
3	0667+17	37:26:11N	041:59:07E	85.4	131.25	351.5	5531	3

3 [illegible]

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1 1

PROCESS DATE: 3 MAY 98

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+13 TO 0650+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL	MODE 3	VAL
3	0667+09	37:28:05N	042:00:05E	85.5	131.25	351.5			5531	3		
1	0667+28	37:30:53N	042:00:23E	84.2	129.54	359.0			5531	3		
3	0667+30	37:30:30N	042:00:17E	82.6	129.54	359.9			5531	3		
3	0667+37	37:32:41N	042:00:35E	83.0	123.71	7.9			5531	3		
3	0667+46	37:35:23N	042:00:30E	82.2	128.73	7.6			5531	3		

[illegible] SECRET [illegible]

DATA SET: [illegible]

DATE: 08/15/95
TIME: 07:56
PAGE: 57

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0607+42	37:01:[illegible]	041:59:53[illegible]	79.7	128.73	7.9		5531	3
3	0609+31	37:27:36[illegible]	042:01:[illegible]	81.6	127.22	30.3		5531	3
3	0608+33	37:03:42[illegible]	042:00:[illegible]	78.4	127.22	30.3		5531	3
3	0608+20	37:32:47[illegible]	042:02:30[illegible]	84.5	126.20	55.9		5531	3
3	0608+22	37:36:00[illegible]	042:02:17[illegible]	83.2	126.20	55.9		5531	3
3	0606+32	37:58:00[illegible]	042:57:53[illegible]	73.3	126.23	55.9		5531	3
3	0608+38	38:08:00[illegible]	041:56:[illegible]	76.6	126.20	55.9		5531	3
3	0608+41	38:22:11[illegible]	041:07:17[illegible]	62.1	126.20	55.9		5531	3
3	0608+43	38:26:11[illegible]	041:08:01[illegible]	66.1	126.20	55.9		5531	3
3	0609+32	37:22:11[illegible]	042:04:33[illegible]	91.3	126.66	168.6		5531	3
3	0609+35	37:25:00[illegible]	042:04:[illegible]	96.1	126.66	168.6		5531	3
3	0609+38	37:29:23[illegible]	042:05:[illegible]	93.1	125.55	131.7		5531	2
3	0609+36	37:23:17[illegible]	042:04:11[illegible]	91.7	125.55	131.7		5531	2
3	0613+32	37:22:00[illegible]	04[illegible]:17:35[illegible]	92.1	163.41	192.9		5531	3
3	0613+38	37:27:43[illegible]	042:17:17[illegible]	90.3	163.41	192.9		5531	3
3	0613+36	37:30:05[illegible]	042:17:11[illegible]	88.5	163.41	192.6		5531	3
3	0613+39	37:08:21[illegible]	042:16:17[illegible]	86.3	163.41	192.6		5531	3
3	0613+41	37:05:36[illegible]	042:16:[illegible]	88.5	163.41	192.6		5531	3
3	0613+43	37:04:36[illegible]	042:17:07[illegible]	91.2	160.69	201.2		5531	3
3	0613+43	37:52:53[illegible]	042:15:[illegible]	81.8	163.41	192.9		5531	3
3	0613+36	37:33:20[illegible]	042:17:07[illegible]	86.4	160.83	201.2		5531	3
3	0613+46	37:09:35[illegible]	042:13:01[illegible]	79.8	163.41	192.9		5531	3
3	0613+48	38:06:11[illegible]	042:11:53[illegible]	77.1	163.41	192.9		5531	3
3	0613+50	38:17:35[illegible]	042:09:51[illegible]	78.6	163.41	192.9		5531	3
3	0610+18	37:29:53[illegible]	042:19:17[illegible]	85.5	160.66	231.6		5531	3
3	0610+16	37:32:31[illegible]	042:19:11[illegible]	86.3	160.66	231.6		5531	3

DATASET: FCSA.3326.A2894.9LP'52J.ALLSA2 DATE: 98/05/15
TIME: 07:5
PAGE: 58

STAT
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0614+19	37:39:23N	082:19:06W	85.8	168.66	231.6	5531	3
3	0614+21	37:46:23N	082:18:17W	83.8	168.66	231.6	5531	3
3	0614+26	37:27:43N	082:19:35W	89.6	169.61	242.7	5531	3
3	0614+26	38:00:17N	082:15:35W	78.9	168.66	231.6	5531	3
3	0614+28	38:07:23N	082:13:42W	75.9	168.66	231.6	5531	3
3	0614+31	38:14:31N	082:10:30W	73.4	168.66	231.6	5531	3
3	0614+33	38:21:05N	082:08:47W	70.9	168.66	231.6	5531	3
3	0614+35	38:27:47N	082:05:47W	68.9	168.66	231.6	5531	3
3	0614+40	38:38:41N	082:02:17W	65.9	168.66	231.6	5531	3
3	0614+40	38:41:23N	081:58:30W	63.3	168.66	231.6	5531	3
3	0614+42	38:47:30N	081:54:53W	60.8	168.66	231.6	5531	3
3	0614+45	38:55:12N	081:48:23W	57.7	168.66	231.6	5531	3
3	0614+47	37:24:43N	082:20:17W	56.1	170.92	265.3	5531	3
3	0614+47	38:58:17N	081:45:47W	56.4	168.66	231.6	5531	3
3	0614+50	39:04:12N	081:40:47W	53.9	168.66	231.6	5531	3

3 [illegible] PAGE [illegible] SECRET
2 [illegible] SECRET
[illegible] DATE: [illegible]
3 [illegible]

3 TB TIME PERIOD [illegible] 0620+13 TO 0658+20

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT VAL	MODE 2	VAL
	MODE 3 VAL								
3	0620+52	39:09:53N	081:35:17W	51.5	168.66	231.6		5531	3
3	0620+56	39:15:27N	081:29:35W	49.5	168.66	231.6		5531	3
3	0624+57	39:20:36N	081:23:35W	46.6	168.66	231.6		5531	3

START COL.	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0								
3	0610+39	39:25:53N	041:16:53E	44.9	160.66	231.6		5531	3
3	0615+42	39:30:35N	041:17:23E	42.8	160.66	231.6		5531	3
3	0615+36	39:35:21N	041:03:23E	35.1	160.66	231.6		5531	3
3	0615+3C	39:39:23N	040:56:05E	36.6	160.66	231.6		5531	3
3	0615+38	39:43:01N	040:48:17E	34.3	160.66	231.6		5531	3
3	0615+33	39:47:23N	040:40:41E	31.5	160.66	231.6		5531	3
3	0615+33	39:51:05N	040:32:42E	29.1	160.66	231.6		5531	3
3	0615+26	39:55:05N	040:22:35E	26.1	160.66	231.6		5531	3
3	0615+18	39:57:23N	040:16:20E	24.1	160.66	231.6		5531	3
3	0615+36	40:00:05N	040:07:30E	21.7	160.66	231.6		5531	3
3	0615+23	40:02:35N	039:58:30E	19.1	160.66	231.6		5531	3
3	0615+25	40:05:05N	039:52:47E	17.2	160.66	231.6		5531	3
3	0615+27	40:06:05N	039:48:53E	16.3	160.66	231.6		5531	3
3	0615+3F	40:07:42N	039:33:22E	12.1	160.66	231.6		5531	3
3	0615+32	40:09:00N	039:23:57E	9.6	160.66	231.6		5531	3
3	0615+34	40:09:53N	039:18:41E	7.1	160.66	231.6		5531	3
3	0615+37	40:10:30N	039:05:17E	6.5	160.66	231.6		5531	3
3	0615+39	40:10:47N	038:55:17E	1.3	160.66	231.6		5531	3
3	0615+43	40:10:30N	038:48:15E	359.8	160.66	231.6		5531	3
3	0615+48	40:10:17N	038:36:30E	356.3	160.66	231.6		5531	3
3	0615+46	40:09:05N	038:22:35E	353.1	160.66	231.6		5531	3
3	0615+49	40:08:20N	038:17:01E	351.8	160.66	231.6		5531	3
3	0615+51	40:07:05N	038:08:05E	349.2	160.66	231.6		5531	3
3	0615+53	40:05:23N	037:59:00E	346.7	160.66	231.6		5531	3
3	0615+58	40:01:00N	037:40:53E	341.6	160.66	231.6		5531	3
3	0615+5	39:58:53N	037:36:05E	339.7	160.66	231.6		5531	3

[redacted] SECRET [redacted]

DATASET: [redacted]

DATE: 94/05/06
TIME: 07:56
PAGE: 69

COL	1	2	3	4	5	6	7	8	9
3	0616+03	39:56:059	037:26:113	337.1	168.66	231.6		5531	3
3	0616+05	39:51:231	037:19:057	335.2	168.66	231.6		5531	3
3	0616+08	39:53:235	037:12:000	333.3	168.66	231.6		5531	3
3	0616+10	39:48:413	037:04:118	331.4	168.66	231.6		5531	3
3	0616+12	39:46:471	037:04:172	330.5	168.66	231.6		5531	3
3	0616+15	39:45:645	037:01:354	329.5	168.66	231.6		5531	3
3	0616+17	39:47:473	036:57:507	328.0	168.66	231.6		5531	3
3	0616+19	39:42:211	036:50:000	327.6	168.66	231.6		5531	3
3	0616+22	39:41:211	036:50:233	327.1	168.66	231.6		5531	3
3	0616+24	39:37:113	036:53:009	326.3	168.66	231.6		5531	3
3	0616+29	39:38:531	036:51:179	325.4	168.66	231.6		5531	3
3	0616+31	39:33:231	036:50:401	325.3	168.66	231.6		5531	3
3	0616+34	39:37:534	036:50:112	325.2	168.66	231.6		5531	3
3	0616+36	39:37:234	036:49:342	324.9	168.66	231.6		5531	3
3	0616+38	39:37:054	036:49:173	324.7	168.66	231.6		5531	3
3	0616+41	39:36:304	036:48:022	324.4	168.66	231.6		5531	3
3	0616+43	39:35:054	036:48:[illegible]	324.2	168.66	231.6		5531	3

1 [redacted]

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1 [redacted]

PROCESS DATE: 3 MAY 94

3 [redacted]

THE TIME PERIOD REQUESTED WAS FROM 0520:00 TO 0558:20

1	TIME MOD 3	LATITUDE VAL	LONGITUDE	ALTITUDE	RANGE	AZIMUTH	MOD C ALT VAL	MOD 2 VAL
3	0616+45	39:35:059	036:48:[illegible]	323.9	168.66	231.6		5531 3

[redacted] SECRET [redacted]

DATASET: PCDA.JA2b.APR98.ALP0520.ALLNAV

DATE: 98/05/03
TIME: 07:56
PAGE: 01

START COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0616+48	39:35:154	036:47:352	323.6	168.66	231.6	5531	3
3	0616+50	39:34:533	036:47:232	323.5	168.66	231.6	5531	3
1	0616+52	37:21:119	042:25:232	88.7	165.20	356.9	5531	2
3	0616+52	39:34:413	036:47:309	323.4	168.66	231.6	5531	3
3	0616+55	39:34:413	036:47:479	323.4	168.66	231.6	5531	3
3	0616+57	39:34:413	036:48:359	323.4	168.66	231.6	5531	3
3	0617+00	39:34:413	036:48:369	323.4	168.66	231.6	5531	3
3	0617+02	39:34:473	036:49:009	323.5	168.66	231.6	5531	3
3	0617+04	39:35:154	036:49:539	323.7	168.66	231.6	5531	3
3	0617+07	39:35:233	036:50:419	323.8	168.66	231.6	5531	3
3	0617+09	39:35:473	036:51:539	324.1	168.66	231.6	5531	3
3	0617+11	39:36:113	036:52:479	324.3	168.66	231.6	5531	3
3	0617+14	39:36:353	036:53:539	324.5	168.66	231.6	5531	3
3	0617+16	39:36:539	036:54:419	324.7	168.66	231.6	5531	3
3	0617+18	39:37:359	036:56:239	325.1	168.66	231.6	5531	3
3	0617+22	39:37:479	036:56:479	325.2	168.66	231.6	5531	3
3	0617+23	39:38:119	036:57:479	325.4	168.66	231.6	5531	3
3	0617+25	39:38:369	036:58:539	325.7	168.66	231.6	5531	3
3	0617+28	39:39:009	037:00:059	325.9	168.66	231.6	5531	3
3	0617+30	39:39:119	037:01:079	326.1	168.66	231.6	5531	3
3	0617+33	39:39:279	037:01:359	326.2	168.66	231.6	5531	3
3	0617+35	39:39:479	037:02:359	326.4	168.66	231.6	5531	3
3	0617+37	39:39:473	037:03:059	326.5	168.66	231.6	5531	3
3	0617+40	39:39:413	037:03:339	326.4	168.66	231.6	5531	3
3	0617+42	39:39:473	037:03:479	326.5	168.66	231.6	5531	3
3	0617+44	39:39:534	037:04:239	326.6	168.66	231.6	5531	3

DATASET: SCSA.3626.AP.OH.HLEG520.ALLMAP

DATE: 99/25/05
TIME: 07:56
PAGE: 02

START COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0							
3	0617+47	39:39:47N	037:04:35E	326.5	168.66	231.6	5531	3
3	0617+49	39:39:47N	037:05:11E	326.5	168.66	231.6	5531	3
3	0617+51	39:39:47N	037:05:17E	326.5	168.66	231.6	5531	3
3	0617+58	39:39:47N	037:05:35E	326.6	168.66	231.6	5531	3
3	0617+56	39:39:47N	037:05:53E	326.5	168.66	231.6	5531	3
3	0617+59	39:39:41N	037:06:11E	326.5	168.66	231.6	5531	3
3	0618+01	39:39:35N	037:06:23E	326.5	168.66	231.6	5531	3
3	0618+03	39:39:17N	037:06:11E	326.3	168.66	231.6	5531	3
3	0618+06	39:39:11N	037:06:23E	326.2	168.66	231.6	5531	3
3	0618+08	39:39:00N	037:06:23E	326.2	168.66	231.6	5531	3
3	0618+10	39:38:47N	037:06:30E	326.0	168.66	231.6	5531	3
3	0618+13	39:38:35N	037:06:23E	325.9	168.66	231.6	5531	3
3	0618+15	39:38:30N	037:06:41E	325.7	168.66	231.6	5531	3
3	0618+17	39:38:30N	037:07:10E	325.3	168.66	231.6	5531	3
3	0618+20	39:38:30N	037:07:35E	325.7	168.66	231.6	5531	3
3	0618+22	39:38:30N	037:07:47E	325.7	168.66	231.6	5531	3
3	0619+25	37:13:45N	042:39:17E	99.5	157.91	355.3	5531	3
3	0618+25	39:38:30N	037:06:11E	326.3	168.66	231.6	5531	3
3	0618+27	39:38:35N	037:06:43E	326.3	168.66	231.6	5531	3

1 6 *****SECRET*****

PAGE 1

1 1 *****SECRET*****

PROCESS DATE: 3 OCT 90

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+2.

3 TIME LATITUDE LONGITUDE BEARING RANGE AZIMUTH MODE C ALT VAL MODE 2 VAL
MODE 3 VAL

DATASET: SCSA.SA26.APR94.SEP0520.ALLMAP

DATE: 98/06/05
TIME: 07:56
PAGE: 63

```
START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

   3   0618+29  39:38:30N   037:08:53E    326.2    168.66    231.6                5531   3
   3   0618+32  39:38:31N   037:08:41E    325.8    168.66    231.6                5531   3
   3   0618+34  39:37:41N   037:08:38E    325.5    168.66    231.6                5531   3
   3   0618+36  39:37:30N   037:08:15E    325.4    168.66    231.6                5531   3
   3   0618+39  39:37:05N   037:07:47E    325.2    168.66    231.6                5531   3
   3   0618+41  39:36:47N   037:07:47E    325.1    168.66    231.6                5531   3
   3   0618+43  39:36:30N   037:07:35E    324.9    168.66    231.6                5531   3
   3   0618+46  37:17:05N   042:30:11E     90.0    156.38    356.6                5531   3
   3   0618+48  39:36:17N   037:07:35E    324.8    168.66    231.6                5531   3
   3   0618+48  39:36:17N   037:07:53E    324.9    168.66    231.6                5531   3
   3   0618+51  39:36:17N   037:08:23E    324.8    168.66    231.6                5531   3
   3   0618+53  39:36:17N   037:08:41E    324.8    168.66    231.6                5531   3
   3   0618+55  39:36:23N   037:09:05E    324.8    168.66    231.6                5531   3
   3   0618+58  39:36:17N   037:09:23E    324.8    168.66    231.6                5531   3
   3   0619+00  39:35:30N   037:08:17E    324.8    168.66    231.6                5531   3
   3   0619+02  39:33:53N   037:06:05E    323.5    168.66    231.6                5531   3
   3   0619+05  37:19:53N   042:31:00E     89.1    156.70    356.6                5531   3
   3   0619+05  39:32:05N   037:03:23E    322.5    168.66    231.6                5531   3
   3   0619+07  37:21:23N   042:31:17E     88.8    156.70    356.6                5531   3
   3   0619+07  39:29:59N   037:00:17E    321.8    168.66    231.6                5531   3
   3   0619+09  37:25:41N   042:31:35E     88.3    156.70    356.6                5531   3
   3   0619+09  39:26:53N   036:56:05E    319.8    168.66    231.6                5531   3
   3   0619+12  39:23:47N   036:52:50E    318.2    168.66    231.6                5531   3
   3   0619+14  39:21:00N   036:48:35E    316.8    168.66    231.6                5531   3
   3   0619+17  39:16:47N   036:43:35E    314.8    168.66    231.6                5531   3
```

DATE: 08/25/..
TIME: 07:56
PAGE: 64

START COL									
1	0619+19	39:13:211	036:38:367	312.7	168.66	231.6		5531	3
3	0613+38	39:02:351	036:2f:359	309.3	168.66	231.6		5531	3
3	.0619+36	37:23:073	042:31:532	87.5	153.67	14.2		5531	3
3	0619+3e	39:59:354	036:33:.77	305.5	168.66	231.6		5531	3
3	0619+3H	37:23:104	042:32:007	85.0	153.67	14.2		5531	3
3	0619+2e	38:03:234	036:18:118	303.3	168.66	231.6		5531	3
3	0619+31	38:02:354	036:13:3**	3**.3	168.66	231.6		5531	3
3	0619+33	38:35:411	036:09:111	297.7	168.66	231.6		5531	3
3	0619+35	38:21:304	036:15:172	294.3	168.66	231.6		5531	3
3	0619+38	37:27:314	042:**:3**	86.4	152.38	25.8		5531	3
3	0619+48	3d:21:274	035:51:53*	292.3	168.66	231.6		5531	3
3	0619+40	39:10:051	035:59:0**	289.5	168.66	231.6		5531	3
3	0619+43	38:05:214	035:56:11*	288.4	168.66	231.6		5531	3
3	0619+45	37:59:374	035:58:15*	284.3	168.66	231.6		5531	3
3	0619+47	37:59:0**	035:53:23*	282.4	168.66	231.6		5531	3
3	0619+5*	37:06:304	035:53:5*	279.3	168.66	231.6		5531	3
3	0619+58	37:11:354	035:5*:**3	278.3	168.66	231.6		5531	3
3	0619+57	37:23:*34	035:5*:*73	277.3	168.66	231.6		5531	3
3	0619+59	37:*6:358	035:53:27*	269.3	168.66	231.6		5531	3
3	062*+*1	37:**:15*	035:5*:17*	266.9	168.66	231.6		5531	3
3	062*+58	37:*1:35*	035:53:15*	268.1	168.66	231.6		5531	3

1 ****SEARCH****

1 1 ****SEARCH****

PROCESS DATE: 3 SEP 90

3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0530+00 TO 1650+20

DATASET: CCSA.SX26.APR94.ULP/5CO.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 65

START
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL	MODE 3	VAL
3	0620+06	36:53:07N	035:55:23E	261.3	168.66	231.6			5531	3		
3	0620+09	36:46:01N	035:57:30E	258.7	168.66	231.6			5531	3		
3	0620+11	36:39:30N	036:00:05E	256.1	168.66	231.6			5531	3		
3	0620+13	36:30:17N	036:04:15E	252.7	168.66	231.6			5531	3		
3	0620+16	36:24:47N	036:06:53E	250.7	168.66	231.6			5531	3		
3	0620+18	36:18:11N	036:10:30E	248.1	168.66	231.6			5531	3		
3	0620+20	36:11:35N	036:14:23E	245.6	168.66	231.6			5531	3		
3	0620+23	36:01:25N	036:21:35E	241.5	168.66	231.6			5531	3		
3	0620+25	35:58:05N	036:24:11E	240.1	168.66	231.6			5531	3		
3	0620+27	35:53:23N	036:28:05E	238.2	168.66	231.6			5531	3		
3	0620+30	35:47:17N	036:33:41E	235.5	168.66	231.6			5531	3		
3	0620+32	35:41:27N	036:39:35E	232.6	168.66	231.6			5531	3		
3	0620+35	35:35:53N	036:45:30E	230.3	168.66	231.6			5531	3		
3	0620+37	35:30:17N	036:51:53E	227.6	168.66	231.6			5531	3		
3	0620+39	35:25:27N	036:58:17E	225.1	168.66	231.6			5531	3		
3	0620+42	35:20:30N	037:05:05E	222.5	168.66	231.6			5531	3		
3	0620+44	35:15:05N	037:13:01E	219.5	168.66	231.6			5531	3		
3	0620+46	35:11:53N	037:19:15E	217.5	168.66	231.6			5531	3		
3	0620+49	35:07:41N	037:26:41E	214.1	168.66	231.6			5531	3		
3	0620+51	37:10:00N	082:34:35E	95.5	152.16	115.3			5531	3		
3	0620+53	35:04:05N	037:34:05E	212.5	168.66	231.6			5531	3		
3	0620+56	34:57:23N	037:49:47E	207.4	168.66	231.6			5531	3		
3	0620+58	34:54:23N	037:56:22E	204.3	168.66	231.6			5531	3		

3	04/21/92	30:51:01	03:36:00	202.8	164.66	231.6		5531	3
3	04/21/92	30:03:23	03:10:11	199.7	164.66	231.6		5531	3
3	04/21/92	30:07:23	03:22:10	197.4	164.66	231.6		5531	3
3	04/21/92	30:06:00	03:29:05	195.3	164.66	231.6		5531	3
3	04/21/92	30:00:36	03:37:13	193.1	164.66	231.6		5531	3
3	04/21/92	30:03:23	03:03:05	196.5	164.66	231.6		5531	3
3	04/21/92	30:02:11	03:37:25	197.3	164.66	231.6		5531	3
3	04/21/92	30:01:53	03:01:05	196.3	164.66	231.6		5531	3
3	04/21/92	30:01:36	03:09:17	195.5	164.66	231.6		5531	3
3	04/21/92	30:01:37	03:18:05	191.2	164.66	231.6		5531	3
3	04/21/92	30:01:07	03:30:05	176.7	164.66	231.6		5531	3
3	04/21/92	30:02:30	03:02:23	178.3	164.66	231.6		5531	3
3	04/21/92	30:03:35	03:50:47	171.3	164.66	231.6		5531	3
3	04/21/92	30:00:47	03:56:00	169.4	164.66	231.6		5531	3
3	04/21/92	30:06:21	04:05:05	167.3	164.66	231.6		5531	3
3	04/21/92	30:07:01	04:15:00	164.3	164.66	231.6		5531	3
3	04/21/92	30:09:07	04:25:35	162.6	164.66	231.6		5531	3
3	04/21/92	30:11:37	04:37:15	161.7	164.66	231.6		5531	3
3	04/21/92	30:15:35	04:46:50	157.4	164.66	231.6		5531	3
3	04/21/92	30:17:36	04:55:47	157.5	164.66	231.6		5531	3
3	04/21/92	30:57:23	04:49:10	165.4	164.66	231.6		5531	3
3	04/21/92	30:53:17	04:05:10	158.3	164.66	231.6		5531	3
3	04/21/92	35:07:53	04:03:05	152.7	164.66	231.6		5531	3

```
START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0
```

3 TBX TIME PERIOD REQUESTED WAS FROM 0520+03 TO 0658+20

J	TIME (GOOD J)	LATITUDE VAL	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
3	[illegible]	35:02:27N	076:55:47W	151.7	168.66	231.6			5531	3
3	0622+36	35:03:07N	076:56:47W	150.7	168.66	231.6			5531	3
3	0622+42	35:05:00N	076:57:56W	149.3	168.66	231.6			5531	3
3	0622+48	35:05:07N	076:58:40W	149.3	168.66	231.6			5531	3
3	0622+57	35:06:41N	076:59:30W	148.7	168.66	231.6			5531	3
3	0623+03	35:07:35N	077:00:23W	148.2	168.66	231.6			5531	3
3	0623+11	35:09:11N	077:01:11W	147.3	168.66	231.6			5531	3
3	0623+18	35:10:52N	077:02:11W	147.4	168.66	231.6			5531	3
3	0623+26	35:12:35N	077:03:17W	146.4	168.66	231.6			5531	3
3	0623+32	35:13:40N	077:03:53W	146.6	168.66	231.6			5531	3
3	0623+41	35:15:35N	077:04:55W	146.1	168.66	231.6			5531	3
3	0623+48	35:16:40N	077:05:35W	146.0	168.66	231.6			5531	3
3	0623+56	37:18:01N	076:39:17W	96.0	168.70	180.7			5531	3
3	0623+58	35:11:57N	077:10:17W	145.0	168.66	231.6			5531	3
3	0624+06	37:19:23N	076:39:05W	96.7	168.70	180.7			5531	3
3	0624+09	35:11:41N	077:10:47W	145.6	168.66	231.6			5531	3
3	0624+16	35:12:11N	077:11:17W	145.3	168.66	231.6			5531	3
3	0624+23	35:12:37N	077:11:43W	145.1	168.66	231.6			5531	3
3	0624+37	37:19:23N	076:40:47W	96.3	167.16	181.4			5531	3
3	0624+47	37:18:00N	076:39:53W	95.8	166.59	181.9			5531	3

DATASET: SCSA.3A26.APR94.BLP0701.ALLMAP

DATE: 94/05/05
TIME: 07:57
PAGE: 23

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	0704+36	37:06:53N	043:02:47E	94.7	192.48	358.2			5531	3
3	0705+16	37:07:00N	043:04:35E	94.7	189.67	358.5			5531	3
3	0705+19	37:07:17N	043:04:47E	94.5	189.67	358.5			5531	3
3	0705+59	37:05:47N	043:06:17E	95.0	186.86	0.7			5531	3
3	0706+10	37:05:11N	043:07:23E	95.2	184.70	0.3			5531	3
3	0707+00	37:05:47N	043:08:41E	95.0	182.63	0.1			5531	3
3	0707+31	37:05:47N	043:10:06E	95.0	180.47	0.3			5531	3
3	0709+02	37:05:41N	043:11:23E	95.0	178.31	359.9			5531	3
3	0720+26	37:36:47N	039:42:17E	278.2	69.58	197.1	13800	3	5531	2
3	0720+28	37:36:41N	039:42:35E	278.1	69.58	197.1	13800	3	5531	2
3	0720+31	37:36:41N	039:43:00E	278.0	69.58	197.1	13800	3	5531	2
3	0720+33	37:36:47N	039:43:17E	278.1	69.59	197.1	13800	3	5531	2
3	0722+55	36:50:41N	043:46:41E	109.1	115.23	27.7			5531	3
3	0722+57	36:50:41N	043:46:47E	109.1	115.23	27.7			5531	3
3	0724+39	36:51:23N	043:51:47E	111.0	108.58	29.5			5531	3
3	0724+41	36:51:23N	043:52:05E	111.0	108.58	29.5			5531	3
3	0726+06	00000000	000000000	111.0	0.0	202.2				
3	0726+06	00000000	000000000	111.0	0.0	202.8				
3	0726+06	00000000	000000000	111.0	0.0	212.8				
3	0726+09	00000000	000000000	111.0	0.0	202.2				
3	0726+09	00000000	000000000	111.0	0.0	202.8				
3	0726+09	00000000	000000000	111.0	0.0	212.8				
3	0726+11	00000000	000000000	111.0	0.0	202.2				
3	0726+11	00000000	000000000	111.0	0.0	202.8				
3	0726+11	00000000	000000000	111.0	0.0	212.8				
3	0726+13	00000000	000000000	111.0	0.0	202.2				

SECRET

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

12 MAY 94
Date

DONALD G. NORRIS, GS-15, DAF
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from IFF Rpt - Mode 2 - Code 5531, 5 May 94 which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

DATASET: [illegible].APRIO.[illegible].ALLEAP

DATE: 94/05/95
TIME: 07:57
PAGE: 24

START COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

1 [illegible] ***SECRET***

PAGE 1

1 [illegible] ***SECRET***

[illegible] DATE: 3 [illegible]

1 IFF REPORT

1 THE TIME PERIOD REQUESTED WAS FROM 0701+57 TO 0807+39

	TIME	LATITUDE	LONGITUDE	HEADING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3 VAL									
1	0726+13	[illegible]	[illegible]	111.	[illegible]	212.8				
1	0726+13	[illegible]	[illegible]	111.0	0.0	212.8				
1	0727+36	36:06:47N	043:57:53E	121.1	116.24	115.9			5531	3

UNCLAS

DATASET: CCSA.G326.AR990.RLP0520.ALL5530 DATE: 94/05/12
TIME: 11:31
PAGE: 10

```
STARS
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

 5      ERROR:  INVALID VALUE


 3    THE CCCS ORIGIN WAS 39:16:30N;042:19:00E


 3    THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20
```

	TIME MODE 3	LATITUDE VAL	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
3	0522+25 2400	37:56:11N 3	040:12:23E	81.7	173.45	348.0	-800	3	5530	2
3	0523+27 2400	37:53:30N 3	040:13:47E	82.4	167.60	348.6	2900	3	5530	3
3	0523+58 2400	37:53:25N 3	040:15:17E	82.2	165.38	348.9	2900	3	5530	3
3	0524+28 2400	37:53:20N 3	040:16:35E	82.2	163.05	348.5	2900	3	5530	3
3	0525+30 2400	37:53:05N 3	040:19:17E	82.1	158.53	346.8	2900	3	5530	2
3	0526+00	37:53:17N	040:20:47E	81.9	156.28	346.2	2800	3	5530	2
3	0527+30 2400	37:52:07N 3	040:24:35E	81.4	149.48	345.9	2900	3	5530	2
3	0527+32	37:52:07N	040:24:47E	81.4	149.48	345.9	2900	3	5530	2
3	0527+35	37:52:53N	040:25:05E	81.4	149.48	345.9	2900	3	5530	2
3	0527+42	37:52:05N	040:26:20E	81.3	149.48	345.8	2900	3	5530	2
3	0527+48	37:52:21N	040:26:17E	81.3	149.44	345.8	2900	3	5530	2
3	0527+47	37:52:27N	040:26:41E	81.3	149.48	345.8	2900	3	5530	2
3	0546+52 2400	37:48:07N 3	041:15:17E	82.2	102.30	166.3	7600	3	5530	2
3	0556+55 2400	37:40:30N 3	041:45:00E	81.7	111.95	87.5	7600	3	5530	3
3	0600+31 2400	37:41:11N 3	041:50:53E	85.3	131.60	170.6	7400	3	5530	3
3	0605+36 2400	37:29:00N 3	041:56:07E	85.5	136.88	350.0	7500	3	5530	3
3	0605+58	37:29:07N	041:57:05E	85.6	136.88	350.0	7500	3	5530	3
3	0609+20 2400	37:33:23N 3	042:07:30E	84.2	126.28	55.6	7500	3	5530	2

DATASET: [illegible].ALL5530

DATE: 9[illegible]/[illegible]/[illegible]
TIME: 13:31
PAGE: 1[illegible]

FRAME
COL ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

3	[illegible]+22	37:36:[illegible]	082:22:17[illegible]	82.1	126.2[illegible]	55.6	7[illegible]	3	5530	2
3	[illegible]+15	37:2[illegible]:21[illegible]	082:[illegible]:47[illegible]	83.0	129.80	182.6	78[illegible]	3	5530	2
	24[illegible]	3								
3	[illegible]+21	37:29:[illegible]	082:19:35[illegible]	86.1	1[illegible].69	2[illegible]2.3	7[illegible]	3	5530	2
	24[illegible]	3								
3	[illegible]+1[illegible]	37:36:27[illegible]	082:19:3[illegible]	86.5	163.60	282.3	76[illegible]	3	5530	2
	[illegible]+10	37:21:17[illegible]	082:2[illegible]:[illegible]	89.3	170.08	33[illegible].1	78[illegible]	3	5530	2
	24[illegible]	3								
3	[illegible]+31	37:25:[illegible]	082:23:1[illegible]	87.3	170.[illegible]	330.1	78[illegible]	3	5530	2
3	[illegible]+53	37:3[illegible]:[illegible]79	082:23:23[illegible]	85.3	170.[illegible]	33[illegible].1	78[illegible]	3	5530	2
3	[illegible]+52	37:[illegible]:21[illegible]	082:25:23[illegible]	89.1	165.3[illegible]	357.2	7[illegible]	3	5530	2
	24[illegible]	3								

[illegible] REPORT [illegible]

[illegible] REPORT [illegible]

P[illegible] 1

[illegible] DATE: 11 MAY 9[illegible]

3 [illegible]

3 THE TIME PERIOD REQUESTED WAS FROM [illegible]20+30 TO [illegible]58+2[illegible]

	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
	MODE 3	VAL								
3	[illegible]+12	37:[illegible]:2[illegible]	082:27:3[illegible]	86.5	161.27	358.7	75[illegible]	3	5530	3
	24[illegible]	3								
3	[illegible]+18	37:[illegible]:[illegible]	082:27:[illegible]	86.5	161.27	358.7	75[illegible]	3	5530	3
3	[illegible]+1[illegible]	37:[illegible]:[illegible]	082:28:12[illegible]	89.[illegible]	161.27	358.7	75[illegible]	3	5530	3
3	[illegible]+30	37:[illegible]:23[illegible]	082:29:1[illegible]	89.5	161.27	358.7	75[illegible]	3	5530	3
3	[illegible]+3[illegible]	37:18:23[illegible]	082:29:23[illegible]	89.5	161.27	358.7	75[illegible]	3	5530	3
3	[illegible]+[illegible]	37:[illegible]:2[illegible]	082:29:3[illegible]	89.5	159.[illegible]7	358.9	78[illegible]	3	5530	3
	24[illegible]	3								
3	[illegible]+[illegible]	37:[illegible]:35[illegible]	082:29:[illegible]	89.5	[illegible]59.[illegible]7	358.9	7[illegible]	3	5530	3
3	[illegible]+[illegible]	37:17:[illegible]	082:[illegible]:17[illegible]	89.3	156.[illegible]	356.4	7[illegible]	3	5530	2
	[illegible]	3								
3	[illegible]	37:[illegible]:[illegible]	082:[illegible]	86.1	151.[illegible]3	62.[illegible]	13[illegible]	2	5530	3
	24[illegible]	3								
3	[illegible]+[illegible]	37:[illegible]:07[illegible]	082:30:1[illegible]	87.1	151.[illegible]3	62.6	13[illegible]	2	5530	3

START COL	----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0								
3	[illegible]	37:15:09N	002:30:[illegible]	92.8	151.13	96.3	75[illegible]	3	5530	3
3	[illegible]	37:09:09N	002:30:35[illegible]	95.9	152.29	115.6	75[illegible]	3	5530	3
3	[illegible]	37:10:17N	002:30:17[illegible]	95.1	159.66	178.[illegible]			5530	3
3	[illegible]	37:12:35N	002:40:11[illegible]	95.4	171.66	180.3			5530	3
3	[illegible]	37:12:20N	002:41:07[illegible]	95.5	171.66	180.[illegible]			5530	3
3	[illegible]	37:10:11N	002:39:[illegible]	92.3	165.28	358.3			5530	3
3	[illegible]	37:10:11N	002:39:35[illegible]	92.3	165.29	358.3			5530	3
3	[illegible]	37:10:20N	002:40:11[illegible]	88.9	159.19	23.8			5530	3
3	[illegible]	37:06:20N	002:42:35[illegible]	96.7	159.30	122.8			5530	3
3	[illegible]	37:05:05N	002:43:11[illegible]	97.7	161.45	145.4			5530	3

```
START
COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0

  3  0704+57  37:02:004  043:03:053   96.2   191.27   359.3                    5530   3
  3  0720+26  37:02:234  043:16:059   96.2   167.45     1.0                    5530   3
  3  0724+38  36:50:304  043:50:113  110.7   110.73    29.2                    5530   3
  3  0724+10  36:50:304  043:50:303  110.8   110.73    29.2                    5530   3
  3  0726+36  00000000   0000000000  110.3     0.0   202.8
  3  0726+36  00000000   0000000000  110.3     0.0   202.8
  3  0726+36  00000000   0000000000  110.3     0.0   202.8
  3  0726+39  00000000   0000000000  110.3     0.0   202.8
  3  0726+39  00000000   0000000000  110.3     0.0   202.8
  3  0726+39  00000000   0000000000  110.3     0.0   202.8
  3  0726+11  00000000   0000000000  110.3     0.0   202.8
  3  0726+11  00000000   0000000000  110.8     0.0   202.8
  3  0726+11  00000000   0000000000  110.8     0.0   202.8
  3  0726+13  00000000   0000000000  110.3     0.0   202.8
  3  0726+13  00000000   0000000000  110.3     0.0   202.8
  3  0726+13  00000000   0000000000  110.8     0.0   202.8
```

SWITCH ACTION REPORT

```
TIME:  0614+09    CYCLE NUMBER:  691.2    RECORD NUMBER:    33    TABLE SIZE:       60    BEFORE: ADSID1         RRT2

 C     P   CATEGORY SELECT          S T                     T
 O     H                            I E                     R
 N     O A  R S  XS X UTSS SS FEAT.D S     BUTTON           A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T NATTJTT SEL. / T     PRESS            C
 O     E RGIF  F     AADBBTBB       F M                     K
 L       RED NPRHAMRSSSI  I     ACE T O
 E     # AODSETHUISCUGGLHPDMP   /// A D
         SGODTSOKRNTRNHACCSUU   BDF B E                               U         V     LATITUDE LONGITUDE LV ....V....1....V....2....V....3.

SDA/1  1 110111001000110011101  ACE S O RE-INIT (WEAP)    ----      6.4   -114.3 37.22.2N  42.18.0E
SDA/1  1 110111001000110011101  ACE S O HOOK              TY06      6.4   -114.3 37.22.2N  42.18.0E
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from

SECRET to UNCLASSIFIED.

13 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 3 MAY 94 - Redund
which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

UNCLASSIFIED (13)

SWITCH ACTION REPORT

TIME: 0614+12 CYCLE NUMBER: 691.3 RECORD NUMBER: 34 TABLE SIZE: 18 BEFORE: ASINITC HRT2

```
C    P   CATEGORY SELECT         S T                    T
O    H                           T E                    R
N    O A  R S  XS X UTSS SS FEAT.D S     BUTTON         A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
S    N I  / P  TP T KATTJIT SEL. / T     PRESS          C
O    E RGIP  F      AADBBTRB     F M                    K
L      HSD NPRRAMRSSSI  I    ACE T O
E    # AOBSETNUESCUGGLHPOHP  /// A D
       DGODTSDKRNTRHRACCGDB  SDF B E                               U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

SDA/1  1 11011110100011101101  ACE S O SDC ALARM CLEAR  ----     6.4  -114.3 37.22.2N  42.18.0E
SDA/1  1 11011100100011001101  ACE S O SDC ALARM CLEAR  ----     6.4  -114.3 37.22.2N  42.18.0E
SDA/1  1 11011100100011001101  ACE S O SDC ALARM CLEAR  ----     6.4  -114.3 37.22.2N  42.18.0E
```

END OF REPORT CYCLE 691 - 3 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 692 - GMT: 0614+14

SWITCH ACTION REPORT

```
TIME: 0619+16    CYCLE NUMBER: 692.2    RECORD NUMBER:  34    TABLE SIZE:   60    REPORT: ADSID1    RKT2

C   P   CATEGORY SELECT         S T              T
O   H                           I E              R
N   O [illegible]   FEAT.D S    BUTTON           A        CURSOR  COORDINATES        CONSOLE INPUT TEXT LINE
S   N [illegible]   SEL. / T    PRESS            C
O   E [illegible]        F M                     K
L     [illegible]    I   ACS F O
E   # [illegible]        /// A D
      [illegible]        [illegible] E                 U       V    LATITUDE LONGITUDE LT ....V....1....V....2....V....3.

[illegible]/1  1 [illegible]  ACC S 0 ENTER        ----     6.4  -118.3 37.22.2[illegible]  82.18.0E 65 [illegible]

END OF REPORT CYCLE  692 -   1 REPORT  PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  693 - GMT:  0619+21

END OF REPORT CYCLE  693 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  694 - GMT:  0619+26

END OF REPORT CYCLE  694 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  695 - GMT:  0619+35

END OF REPORT CYCLE  695 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  696 - GMT:  0619+42

END OF REPORT CYCLE  696 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  697 - GMT:  0619+53

END OF REPORT CYCLE  697 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS

                        START OF REPORT CYCLE  698 - GMT:  0619+57
```

*********** SECRET ***********

23 APR 94 PAGE 173

SWITCH ACTION REPORT

```
TIME:  0636+55    CYCLE NUMBER:  884.1    RECORD NUMBER:     7    TABLE SIZE:      229     AFTER: ACTADII       RRT2

  C     P   CATEGORY SELECT          S T                      T
  O     H                            I S                      R
  N     O A  R S  XS X UTSS SS FEAT.D S    BUTTON             A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
  S     H I  / P  TP T HATTJTT SEL. / T    PRESS              C
  O     E RGIP  F      AADBBTBB     S M                       K
  L       RED NPRHAMRSSSI  I    ACE T O
  E     # AOBSETNUISCUGGLHPOHP  /// A D
          SGOOTSOKRUTRNNACCSHU  BDF B E                              U         V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/7   S 11011100100111101101  ACE S O HOOK                  PA22  -315.3  -125.0 37.00.1N  35.35.3E      *
WDD/7   S 11011100100111101101  ACE S O ENTER                 ----  -315.3  -125.0 37.00.1N  35.35.3E -------------------------------
WDD/7   S 11011100100111101101  ACE S O MODE     IV           ----  -315.3  -125.0 37.00.1N  35.35.3E
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rept, 23 Apr 94 - Reduced which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

*********** SECRET ***********

SWITCH ACTION REPORT

TIME: 0636+57 CYCLE NUMBER: 880,2 REPORT NUMBER: 33 TABLE SIZE: 60 REPORT: ADSTD1 RPT2

CURSOR COORDINATES CONSOLE INPUT TEXT LINE

LATITUDE LONGITUDE L# ....¥....1....¥....2....¥....3.

VB9/7 S 11011110010011111011101 ICP 3 0 HOOK TRCI -321.9 -128.5 36.56.1N 35.27.4E

VB9/7 S 11011110010011111011101 ICP 3 0 SN** ---- -321.9 -128.5 36.56.1N 35.27.4E ----------

END OF REPORT CYCLE 880 - 2 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 885 - GMT: 0637+02

END OF REPORT CYCLE 885 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 886 - GMT: 0637+09

END OF REPORT CYCLE 886 - 2 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 887 - GMT: 0637+16

END OF REPORT CYCLE 887 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 888 - GMT: 0637+23

END OF REPORT CYCLE 888 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 889 - GMT: 0637+30

SWITCH ACTION REPORT

TIME: 0621:29 CYCLE NUMBER: 753.2 RECORD NUMBER: 94 TABLE SIZE: 60 BEFORE: ADSID1 RRT2

CONSOLE	PHOTO	CATEGORY SELECT	STATUS	BUTTON PRESS	TRACK	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
						U V LATITUDE LONGITUDE	LI ....V....1....V....2....V....3.
WDD/7	5	1101112001001111121101 ACE	S 0 HOOK	TYOS	13.7	-127.7 37.09.91 42.27.2E	

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 MAY 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Apr 94 - Redacted which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

```
TIME: 0621:31    CYCLE NUMBER: 753.3    RECORD NUMBER:  35   TABLE SIZE:     19    BEFORE: ASINITC      RPT2

C   P   CATEGORY SELECT       S T              T
O   H                         I E              R
N   O A  H S  XS Y HTSS SS PEAT.D S   BUTTON   A       CURSOR  COORDINATES        CONSOLE INPUT TEXT LINE
S   N I  / P  TP T RATTITT SEL. / T   PRESS    C
O   E RCIF  F     *ADRHTRR      F M            K
L     RPD NPRHAMRSSSI  I     ACE T O
E   * AORSETNUISCHGGLHPDHP  /// A D
      SCOOTSOKRHTRNHACCSHH  ROF R E                  U      V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

VDD/7  5 11011100100111101101  ACE S 0 ENTER     ----   11.7  -127.7 37.09.9N  82.27.2E RR T RS01
```

END OF REPORT CYCLE 753 -   3 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 754 - GMT: 0621:34

END OF REPORT CYCLE 754 -   0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 755 - GMT: 0621:41

SWITCH ACTION REPORT

```
  TIME:  0713:58    CYCLE NUMBER: 1197.1    RECORD NUMBER:    8   TABLE SIZE:    177    AFTER: ACTADII      RST2

  C    P    CATEGORY SELECT       S T                T
  O    H                          I E                R
  N    O A  R S  XS K UTSS SS FEAT.D S   BUTTON      A      CURSOR  COORDINATES        CONSOLE INPUT TEXT LINE
  S    N I  / P  TP T NATTJTT SEL. / T   PRESS       C
  O    E RGIF  F     AADHBTBB      S M               K
  L      BED HPRHANRSSSI  I    ACE T O
  E    # AOBSPTNUISCUGGLHPOHP  /// A D
         SGOOTSOKRNTRNNACCSUU  BDF B E                         U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/2 25 11011111111111101101  ACE S O HOOK          ----    50.4  -198.0 35.58.3N  43.12.1E *
SIO/0  7 11011100100111101101  BDF S O ARROW         ----    55.4  -147.0 36.49.2N  43.19.1E
WDD/2 25 11011111111111101101  ACE S O HOOK          ----    48.7  -234.7 35.21.6N  43.09.6E
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT Redred

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Apr 94 which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

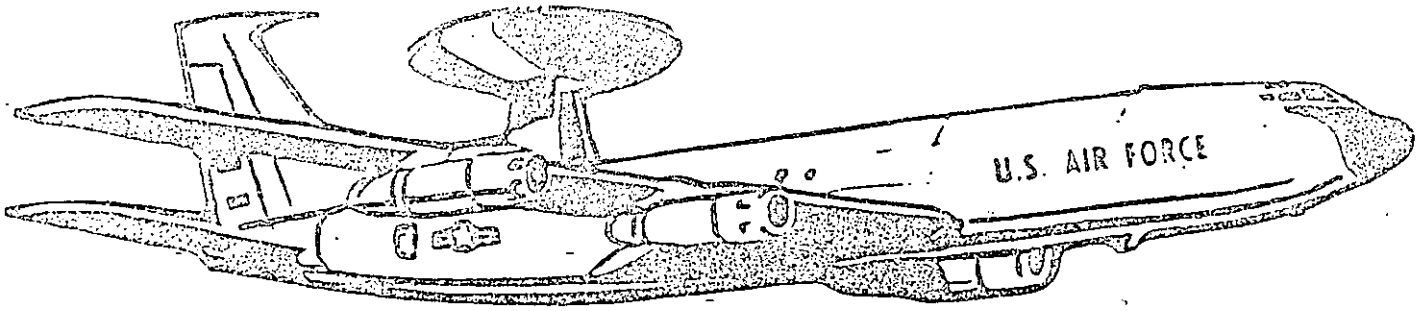
SWITCH ACTION REPORT

TIME: 0713:56 CYCLE NUMBER: 1197.2 RECORD NUMBER: 30 TABLE SIZE: 60 BEFORE: ADSID1 RRT2

```
C     P   CATEGORY SELECT          S T                  T
O     H                           I E                  R
N     O A  R S  XS X UTSS SS FEAT.O S    BUTTON         A        CURSOR COORDINATES        CONSOLE INPUT TEXT LINE
S     M I  / P  TP T NATTJTT SEL. / T    PRESS          C
O     P RGIF  F      AADBDTBB      F M                  K
L       95D NPRHAMPSSSI  I    ACE T O
E     # AOBSETNUISCUGGLHPDHP  /// A D
        SGODTSDERNTRNNACCSU9  3DP 9 E                        U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

SIO/0   7 1101111001001111J1101  8DF 5 O ENTER           ----    55.4  -147.0 36.49.2N  43.19.1E EE 01
```

E-3B/C POSITIONAL HANDBOOK
WEAPONS



1 MARCH 1993

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This handbook supersedes 28 ADHB 55-1, VOL II (STD, 20/25) dated 1 NOVEMBER 1986

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 552d AIR CONTROL WING (ACC)

CERTIFICATION OF EXTRACT

I reviewed 552d ACW HB 55-1/Vol II. From that source document, I extracted the information contained in this extract. I certify the information contained herein is a true and accurate extract of that source document.

Aaron D. Ryle
Signature

27 May 94 — Aaron D. Ryle
Date — Name/Organization/Section

R416Vo 1/27/92

This switch action is used to point out an area of the [illegible] operators on board A'ACS or at an adjacent facility. [illegible] switch must be ON to view this display.

NOTE: The Attention Arrow SD is accompanied by an Arrow Alert Attention display. Also, if an error message results, no arrows are sent. For instance, if an arrow is sent to all consoles and one console has an arrow displayed, an error message will result and no arrows are sent.

	RESULTING DISPLAYS	AFFECTED DISPLAYS
TD Lines: 13 SA Entry/Edit Line BCA ARW 14 (CSL——, "S,W",ALL ("M" MSG)),(FCL("TA,TJ")"S,W,E") ("T"TIM PER,OFF)CUR Modifiers: ALL, OFF	ATTENTION ARROW SITUATION DISPLAY ARROW ALERT	ALERT BUTTON

PROCEDURE	PREREQUISITES/RESTRICTIONS	RESULTS
a. TO SEND ARROW TO LOCAL CONSOLE.		
1. Depress ARROW button.	1. Receiving console cannot display more than one arrow.	1. LN 14 displays menu. BCA displays: ARW
2. Enter console selective intercom numbers of consoles to receive arrow (NN), or depress ALL button.	2. Multiple console designations may be made up to the maximum number of active SDCs in the configuration. If arrow is to be sent to all consoles, use ALL switch action. ALL includes originating console.	2. LN 13 displays: NN
3. Position the cursor at the point of the desired arrow.		
4. Depress ENTER button.	4. If receiving console(s) have an arrow, sender will receive an error message ARW # OVERFLOW. If ALL has been entered, originating console can remove arrow by depressing ALARMS ALERT caution light. If an error message is displayed, no arrows are sent.	4. BCA adds: ENT SID displays cursor on object of attention. Receiving and sending consoles receive an arrow with originators selective intercom number. Receiving consoles receive an arrow alert message and blinking alert light. See display example.

d. ALARM/ALERT CLEAR – Depressing this button clears all alarms and alerts displayed at the SDC. It also extinguishes the flashing lights associated with the ALERT button and ALARM button and the audio tone associated with the ALARM button.

e. MSG ACK (message acknowledge) – A message has been routed to the SDC, either from another console or from the computer. Indicator is on when condition exists and goes out when pressed. Depressing the button also removes the message.

f. ALERT – Tabular or situation display information of special importance to the operator is being forced to the TAB alarm/alert area and possibly to the SID. The operator may need to return to a lower display expansion to see the indicated condition if it is outside of the current viewing area. Alert light blinks when condition exists and goes out when pressed.

g. ALARM – A system alarm condition exists. The alarm condition is indicated in the alarm/alert area of the TAB. Alarm light blinks when condition exists and goes out when pressed. An audio tone accompanies the alarm.

2-11. SCALE EXPANSION CONTROL BUTTONS.

The operator may use the expansion control buttons to expand the SID area at his console by factors of 1, 2, 4, 8, 16, or 32. When one expansion control button is pushed, it illuminates, and any previous expansion button is automatically released. Except for integral displays such as the track block, the relative positions of data items change in proportion to the selected expansion. Refer to the classified Mission System Operations supplement for exact coverage area values. Decreasing SDC scale expansion from a higher scale to "1" cancels any "offset" requested by the operator. If a scale expansion is not selected the default scale expansion is "2".

2-12. AUX CURSOR CONTROL BUTTONS.

The auxiliary cursor control buttons enable the operator to: (1) change the position of the center of an expanded viewing area and (2) cause the SID or TAB cursor to blink. Moving the cursor and depressing the OFFSET button results in a situation picture centered about the cursor position. CANCEL OFFSET brings back the previous picture and RETURN TO CENTER puts the cursor on the physical center point display screen, leaving the expansion unchanged. SID CURSOR BLINK/STDY and TAB CURSOR BLINK/STDY alternately turn on and off the blink condition for their respective cursors. B/R selects current position of SID cursor for tactical bearing/range request without attempt to correlate with any track.

2-13. SDC MODE CONTROL SWITCHES.

Three additional switches are included in the ALARMS/DISPLAY CONTROL section.

a. COLOR SELECT (See paragraph 3-5, page 1-15)

b. DSPL MODE – Selects either SID or FTAB display. The 64 x 12 TD array, alarm/alert area, message area, and time/date fields remain unchanged during mode switching. The menu line, button codes, and entry/edit data are cleared. For FTAB the top 56 lines are cleared to accommodate displays required for the new mode.

c. TEST MODE – Switch selects either the built-in test pattern display (STAND ALONE) or the display dialog testing function (WRAP AROUND). Normal no-test position is off.

2-14. SDC DISPLAY CONTROL PANEL.

The DISPLAY CONTROL panel contains BRT (brightness), CONTRAST, FOCUS, POWER LAMP TEST, and DEGAUSS controls. It also has a warning light for an OVERHEAT condition, a POWER ON indicator, and a gasper valve.

```
                                 SWITCH ACTION REPORT

 TIME:  0633+25    CYCLE NUMBER:  854.2     RECORD NUMBER:    33    TABLE SIZE:       63     BEFORE: ADSID1        RRT2

 C     P    CATEGORY SELECT          S T                        T
 O     H                             I E                        R
 N     O A  R S  XS X OTSS SS PRAT.D S      BUTTON              A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S     N I  / P  TP T HATTJTT SEL. / T      PRESS               C
 O     E RGIP  P      AADRRTRR       P M                        K
 L       BED NPRHAMRSSSI  I      ACE T O
 E     S AOBSETYUISCUGGLMPDHP   /// A D
         SGODTSDKRNTRNNACCSRU   NDP R E                                H         V    LATITUDE LONGITUDE LI ....V....1....V....2....V....3.

WDD/7  S 11011100100111101101   ACE S O RE-INIT (WRAP)       ----     28.7   -138.7 37.01.08   42.40.9E   *
WDD/7  S 11011100100111101101   ACE S O HOOK                 E501     22.1   -126.0 37.10.54   42.37.6E
WDD/7  S 11011100100111101101   ACE S O HOOK                 E501     25.7   -126.3 37.10.14   42.42.2E
```

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Apr 94 - Redacted which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

```
TIME: 0633+27   CYCLE NUMBER: 954.3   RECORD NUMBER: 34   TABLE SIZE: 14   REPORT: ASTKITC   BST2

C   P  CATEGORY SELECT       S T              T
O   N                        I E              E
M   O 1  R S  ES Y UTSS SS FEAT.D S   BUTTON   A        CURSOR COORDINATES       CONSOLE INPUT TEXT LINE
S   S I  / R  TR T KATTIT SEL. / T   PRESS    C
O   P RCI     [illegible]    E M              K
L     TED [illegible]  I   ACS E O
E   1 [illegible]       /// A D
      [illegible]          [illegible]               X      Y    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

MOD/T S 11311100100111111111 ACS 3 0 [illegible]     ----      25.1 -135.? 37.1?.4? 02.41.0? ?? SU
```

END OF REPORT CYCLE 954 - 2 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 955 - GMT: 0633+2?

SWITCH ACTION REPORT

TIME: 0655:14 CYCLE NUMBER: 1939.1 RECORD NUMBER: 8 TABLE SIZE: 219 AFTER: ACTADII RRT2

```
C    P   CATEGORY SELECT           S T                      T
O    H                             I E                      H
N    O A  R S  XS X UTSS SS FEAT.D S    BUTTON              A       CURSOR  COORDINATES           CONSOLE INPUT TEXT LINE
S    N I  / P  TP T HATTJTT SEL. / T    PRESS               C
O    E RGIF  F     AADUBTBB      F M                        K
L      BED NPRHANRSSSI  I    ACE T O
E    # AOBSETNUISCUGGLHPORP  /// A D
       SGOOTSDKRRTRNNACCSHU  BDF 9 E                             U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/7  S 11011100100111101101  ACE S 0 RE-INIT (WEAP)      ----      0.1  -118.0 37.18.5N  42.10.1E .
WDD/7  S 11011100100111101101  ACE S 0 HOOK                EE01     27.4  -123.7 37.12.8N  42.44.3E
```

CERTIFICATE OF DECLASSIFICATION

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14 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Ap 94 - Redacted which is kept in my records system.

14 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

*********** SECRET ***********

SWITCH ACTION REPORT

```
  TIME:  0655+18    CYCLE NUMBER: 1039.3     RECORD NUMBER:     39    TABLE SIZE:        18     BEFORE: ASINITC         RRT2

  C     P   CATEGORY SELECT          S T                      T
  O     H                            I E                      R
  N     O A  I S  XS X UTSS SS FEAT.D S     BUTTON            A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
  S     M I  / P  TP T NATTJTT SEL. / T     PRESS             C
  O     S RGIF  F     AADBBTBB      F M                       K
  L       BED NPRHAMRSSSI  I     ACE T O
  E     # AOBSETNUISCHGGLHPDHP  /// A D
          SGOOTSDKRNTRNNACCSUU  BDF B E                                  U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/7  5 11011100100111101101  ACE S 0 HOOK               EE01      24.4  -128.0 37.08.5N  42.40.5E
WDD/7  5 11011100100111101101  ACE S 0 ENTER              ----      24.7  -129.0 37.07.5N  42.41.0E EE ST

END OF REPORT CYCLE 1039 -   2 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS


                                        START OF REPORT CYCLE 1040 - GMT:  0655+21

END OF REPORT CYCLE 1040 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS


                                        START OF REPORT CYCLE 1041 - GMT:  0655+28

END OF REPORT CYCLE 1041 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS


                                        START OF REPORT CYCLE 1042 - GMT:  0655+35

END OF REPORT CYCLE 1042 -   0 REPORTS PRINTED
* WARNING 15:  ONE OR MORE INCOMPLETE REPORTS


                                        START OF REPORT CYCLE 1043 - GMT:  0655+42
```

SWITCH ACTION REPORT

```
TIME:  0725+21    CYCLE NUMBER: 1294.1     RECORD NUMBER:    8    TABLE SIZE:     177     AFTER: ACTADII      RRT2

C     P    CATEGORY SELECT           S T             T
O     H                              I E             R
N     O A   R S   XS X UTSS SS FEAT.D S    BUTTON    A        CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
S     N I  / P   TP T NATTJTT SEL. / T     PRESS     C
O     E RGIP  F      AADBBTBB       F M              K
L       RED NPRHAMRSSSI  I     ACE T O
E     # AOBSETNUISCUGGLHPDHP   /// A D                     U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.
        SGODTSOKRNTRNNACCSUU   ADF R S

WDD/7  5 11011100100111101101  ACE S O MODE     IV       ----  -293.6  -114.5 37.12.1N  36.01.5E
```

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt, 23 Apr 94 (0710-0730HRS) which is kept in my records system.

16 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

16 May 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

SWITCH ACTION REPORT

```
TIME:  0725+24    CYCLE NUMBER: 1294.2     RECORD NUMBER:    36    TABLE SIZE:       60    BEFORE: ADSID1         RRT2

  C    P   CATEGORY SELECT        S T                    T
  O    H                          I F                    R
  N    O A  R S  XS X UTSS SS FEAT.D S    BUTTON         A          CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
  S    N I  / P  TP T NATTJTT SEL. / T    PRESS          C
  O    E RGIF  F     AADBBTBB      F M                   K
  L      RED NPRHAMPSSST  I    ACE T O
  E    # AOBSETNUTSCUGGLHPDHP  /// A D
         SGODTSDKRNTRNNACCJUU  BDF B E                       U         V     LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/7  5 11011100100111101101  ACE S C HOOK            SE01  -296.1  -113.3 37.13.1N  35.58.3E
WDD/7  5 11011100100111101101  ACE S C ENTER           ----  -296.1  -113.3 37.13.1N  35.58.3E ----------------------------------
```

END OF REPORT CYCLE 1294 - 2 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1295 - GMT: 0725+28

END OF REPORT CYCLE 1295 - 0 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1296 - GMT: 0725+36

```
 TIME:  0722+01    CYCLE NUMBER: 1271.2     RECORD NUMBER:    34    TABLE SIZE:       60     BEFORE: ADSID1         BRT2

 C    P   CATEGORY SELECT          S T                    T
 O    H                            I S                    R
 N    O A  R S  IS X UTSS SS PEAT.D S    BUTTON           A        CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S    N I  / P  TP T HAITJTT SEL. / T    PRESS            C
 O    E RGIP  C     AADBBTBB       E M                    K
 L      AED NPRHAMNSSSI  I    ACE T O
 E    # AOBSETNUISCUGGLEPDHP  /// A D
        SGODTSDKRNTRNNACCSUU  BDP R E                     U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

VDD/2 25 11011111111111131101  ACE S O REQ/ASG IFF/SIF  ----    43.1  -132.0 37.04.3N  43.03.9E
```

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from Switch Action Rpt for Req of SIF, 23Apr94 which is kept in my records system.

16 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

16 MAY 94
Date

DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

SWITCH ACTION REPORT

```
 TIME:  0722+43    CYCLE NUMBER: 1271.3     RECORD NUMBER:     35    TABLE SIZE:        18     BEFORE: ASINITC        RRT2

  C     P   CATEGORY SELECT         S T                      T
  O     H                           I S                      R
  N     O A  I S  XS X UTSS SS FEAT.D S    BUTTON            A          CURSOR  COORDINATES         CONSOLE INPUT TEXT LINE
  S     N I  / P  TP T NATTJTT SEL. / T    PRESS             C
  O     E RGIF  F     AADBBT9B      F M                      K
  L       BED NPRHAMRSSSI  I    ACE T O
  E     # AOBJETMUISCUGGLIPDH?  /// A D
          SGODTSDKRNTRNNACCSUU  BDF B S                              U       V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

WDD/2 25 11011111111111101101  ACE S 0 HOOK              TR01     44.1  -132.7 37.03.6N  43.05.1E
```

END OF REPORT CYCLE 1271 - 2 REPORTS PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1272 - GMT: 0722+45

SWITCH ACTION REPORT

```
 TIME:  0722+50    CYCLE NUMBER: 1272.3    RECORD NUMBER:    34    TABLE SIZE:     18    BEFORE: ASINITC       RRT2

 C    P   CATEGORY SELECT         S T                    T
 O    R                           I E                    R
 N    O A  R S  KS K UTSS SS STAT.D S    BUTTON          A         CURSOR  COORDINATES          CONSOLE INPUT TEXT LINE
 S    M I  / P  TP T NATTJTT SEL. / T    PRESS           C
 O    E RGIF  F     AADBBTRB      P M                    K
 L      BSD NPRHAMRSSSI  I    ACE T O
 E    # AORSETNUISCUGGLMPOMP  /// A D
        SGODTSDKRNTRNNACCSUU  30F R E                          U        V    LATITUDE LONGITUDE L# ....V....1....V....2....V....3.

W00/2 25 11011111111111101101  ACE S O ENTER             ----      00.1  -132.7 37.23.6N  43.05.1E EE S 21501
```

END OF REPORT CYCLE 1272 -   1 REPORT PRINTED
* WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 1273 - GMT: 0722+53

DATE: 94/04/26
TIME: 10:10
PAGE: 60

2 0531 09.77 JT 03000 T1 2036/SRN36011/ 37:51: 0N / 40:33:07E /FRIEND /GENSRA
L /MS /CHK QUAL 7
16 /EC/*T? /USH COR 0 /SIZE SINGLE /HS MODE C /ALT 2875.00/COURSE 97 /SPD 12
7/34 /VBL 2 /SPEC/R1?/X1?
16 /VBL 2 /CHAR HS /NTN GA061 /MODE 1 42 /MODE 2 5531 /MODE 3 2400 /MN 0
/EM 0

CERTIFICATE OF DECLASSIFICATION

I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.

22 MAY 94
Date

Donald G Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army UH-60 Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from JTIDS NSA Data 26 Apr 94 which is kept in my records system.

22 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, ARRC
Evidence Custodian, Incirlik Air Base, Turkey

DATE: 00/04/26
TIME: 10:10
PAGE: 1671

2 0713 50.69 JT 00000 P1 2006/S2N06011/ 36:56:30N / 43:20:11E /FRIEND /HELO
/05 /SRT QUAL 2
/SC/YPA /MSN COR) /SIZE SINGLE /HS MODE C /ALT 7375.00/COURSE 137 /SPD 12
16 7/S0 /VOL 1 /SPIO/RIO/YIO
/VOL 1 /IDNT 02 /YPN GA061 /PENDING /ENG AVAIL /STALE 0 /RAID N
S /CLASS /AT O/A VOL

CERTIFICATE OF DECLASSIFICATION

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22 MAY 94
Date

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HQ USEUCOM

EXTRACT

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23 May 94

WILLIAM L. HARRIS, Capt, USAF, MSC

```
2   0713 55.69   JT  00139      T1          2006/3RN96P11/ 36:55:21N  / 43:21:41E  /FRIEND      /HELO
        /95           /TRK QUAL  1
16                 /C0/ST0       /USN COR   0 /SIZE SINGLE /MS MODE C   /ALT  7375.99/COURSE 137  /SPD 12
    9714  /IFL  2         /SPIC/DIC/XIC
15                 /VDI  ?       /CIAN NS      /U19 CA061   /MODE 1 02   /MODE 2 5531 /MODE 3 2000 /MU ?
        /IP ?
```

```
2   2219 51.59   JT  06093      T1           2006/SPN06011/ 35:51:53N  / 43:25:23E  /FRIEND       /HELO
         /HS          /TRK QUAL  1
15                 /EC/PP1      /ESN COR   0 /SIZE SINGLE /SS MODE C   /ALT  7375.00/COURSE 137  /SPD 12
   7/2N  //DL  2       /SPIO/RIO/YIO
15                 /VDL  2      /CHAN NS      /NIN GA061   /MODE 1 42   /MODE 2 5531 /MODE 3 2400 /M4 0
         /2R 0
```

```
 2   0717 05.03   JP  C0001      TI            2006/SE996011/ 36:50:17N  / 43:27:11E  /FRIEND       /HELO
         /IC          /TIX 0911  1
 16                 /20/PT)      /FSN COR    0 /SIZE SINGLE /BS MODE C   /ALT  7375.00/COURSE 137  /SPD 12
    7/AJ  /FPL  2      /SPIC/RID/XID
 16                 /RPL  ?      /CHAN SS     /SPM GA061   /MODE 1 42   /MODE 2 5531 /MODE 3 2409 /M4 C
         /PP 9
```

DATE: 94/30/26
TIME: 10:10
PAGE: 1771

2 0718 91.83 JF 00000 TJ 2006/SRW06011/ 36:49:35N / 83:20:11E /FRIEND /HELO
/IS /TYP QUAL 3
16 /SC/??) /TGT COR 0 /SIZE SINGLE /HS MODE C /ALT 7375.00/COURSE 90 /SPD 12
7/SW //DL 1 /SPIO/SIO/XIO
14 /YDL ? /TEST 02 /TTN SA061 /PENDING /ENG AVAIL /STALE 0 /RAID N
S /CLASS /A? 0/APDL

```
2   0719 23.83   JT  G3C03      T1           2096/SRN06011/ 36:09:39N  / 43:31:53E  /FRIEND       /HELO
         /#S           /TRK QUAL  1
16                /SG/PTD       /MSN COR    0 /SIZE SINGLE /HS MODE C    /ALT  7375.00/COURSE  90  /SPD 12
  7/SW  //DL  1        /SPIO/BIO/XID
16                /VDL  1       /IDNT 02      /NCN GA061   /PENDING      /ENG AVAIL   /STALE 0      /RAID N
  S      /CLASS  /AT C/ATOL
```

```
2   ¢779 ..20   JT  C9010      71          2006/S9906011/ 35:09:35N  / 03:39:41E  /FRIEND      /HELO
          /45          /T2S QUAL  1
14                   /3C/FT       /T39 COR   3 /SIZE SINGLE /NO MORE C   /ALT  7775.33/CORRSP  90 '/SPD 12
   7/1 9  /TOL  1       /3P1C/RID/XID
15                   /MDI  1       /IDST 02     /YCH GA062   /PENDING      /ENG AVAIL   /STALE 9      /PAID N
    1     /CLASS  /AT 0/A22L
```

STATE OF OKLAHOMA)

COUNTY OF OKLAHOMA)

AFFIDAVIT

I, Christopher G. Wells, 552 Airborne Computer Squadron/ACEM, 552 ACW, Tinker AFB, OK, do hereby state:

In response to your question regarding the Request SIF switch action, I am including the following unclassified excerpt from the classified document, E-3A System Description, D204-12004-2, February 1976, Table 4-1b, Page 4-3:

> "Identification achieved for 99% of tracks within 30 seconds after aircraft reaches effective range of system."

17 May 1994

Christopher G. Wells

CHRISTOPHER G. WELLS, GS 12, DAF
AWACS Computer Specialist
552 ACW/ACEM

STATE OF OKLAHOMA)

COUNTY OF OKLAHOMA)

Sworn to and subscribed before me this 17th day of May, 1994.

Kathleen R. VanDenberg
Notary Public

My Commission Expires: 17 August 1994

CERTIFICATE

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate copy of the record which is kept in my records system.

19 May 94
Date

WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

```
2   0537 41.57   37  03000      71          2117/S2906078/ 36:59:41N  / 35:33:47E  /FRIEND       /INT-FT
  8     /IAP          /TRK QUAL  7
16                  /SC/PTP       /MSN COR   0 /SIZE SINGLE /HS RADAR    /ALT 11656.25/COURSE  60  /SPD 43
  5/SW  /IDL  2       /SPID/RID/XID
16                  /VDL  2       /CHAN NS      /HTR K3070    /MODE 1 43    /MODE 2 1501 /MODE 3 2422 /M4 3
        /ER 0
```

[illegible] [illegible] [illegible] 2117/[illegible]/ 36:55:17N / 35:28: [illegible] /FRIEND /INT-PT
/[illegible] /TRK QUAL [illegible]
/[illegible] /[illegible] COV [illegible] /SIZE SINGLE /ES RADAR /ALT [illegible]7.50/COURSE 63 /SPD 32
/[illegible] 1 /SPI[illegible]/[illegible]/[illegible]
/VRL 1 /IDNT 01 /C[illegible] [illegible] /VC TH01

CERTIFICATE OF DECLASSIFICATION
I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.
23 MAY 94 — Date
DONALD G. NORRIS, GS-15, DAC — Declassification Team Chief, HQ USEUCOM

EXTRACT
I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from JTIDS MSG Data, 26 Apr 94 which is kept in my records system.
22 May 94 — Date
WILLIAM [illegible] HARRIS, Capt, USAF, MSC — Evidence Custodian, Incirlik Air Base, Turkey

ATCH 17 to TAB O 3 f

Extract, JTIDS message listing, earliest AWACS track data transmissions (SECRET)

See Classified Addendum

20 May 1994

CERTIFICATE OF EXTRACT

I am Eddie Reed and I work at the 552d Computer Group, Tinker Air Force Base, Oklahoma. I reviewed Switch Action Book One, dated 15 March 1992, Block 2025.1. From that source data I extracted the information contained in this extract. I certify the information contained herein is a true and accurate extract of that source document.

EDDIE REED, GS-12, DAF
Chief, Combat Analysis Flight

EXTRACT

I certify that I am the Records Custodian for the Accident Investigation Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the no fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from SDC Operator Block 20/25.1 dtd 920315 which is kept in my records system.

23 May 94
Date

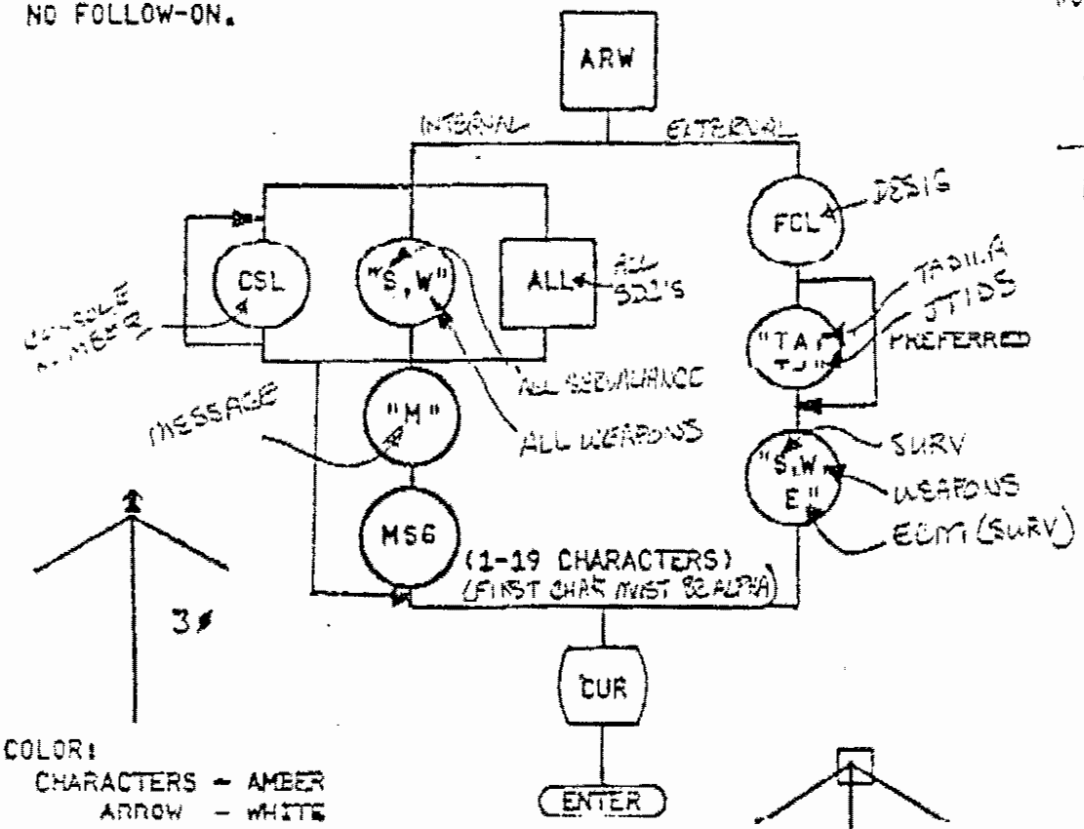
LAURA A. ELLIS, SrA, USAF
Evidence Custodian, Incirlik Air Base, Turkey

ATTENTION ARROW SD REQUEST

TO POINT OUT AN AREA OF INTEREST ON A SITUATION DISPLAY CONSOLE (SDC) BY SENDING A SITUATION DISPLAY ARROW TO ONE, ANY NUMBER, OR ALL SDCs WITHIN THE LOCAL E-3A. ADDRESSED BY CONSOLE PHONE NUMBER.
CAN SEND UP TO FIVE ATTENTION ARROWS TO AN ADJACENT E-3A'S SENIOR SURVEILLANCE OR WEAPONS POSITION.
ARROW ALERT AND ALERT LIGHT AT SENDING AND RECEIVING SDCs.
RECEIVING CONSOLE CAPACITY IS ONE ARROW DISPLAYED AT A TIME.
TURNED OFF AT SENDERS AND RECEIVERS SDC WHEN RECEIVER DEPRESSES ALERT LIGHT, EXCEPT WHEN SENDING ATTENTION ARROW TO ADJACENT FACILITY.
NOTE: THE ATTENTION ARROW IS DISPLAYED AT THE SENDING CONSOLE UNLESS IT IS BEING SENT TO AN ADJACENT FACILITY.
ATTENTION ARROW SDs AUTOMATICALLY DELETED AFTER 60 SECONDS.
A MESSAGE OF 19 CHARACTERS MAYBE SENT TO ONE OR MORE CONSOLES.
NO FOLLOW-ON.

INTERNAL/EXTERNAL
Only 5 SEND
5 RECV

MUST HAVE "VECTOR SWITCH ON



COLOR:
CHARACTERS - AMBER
ARROW - WHITE

FCL OVER CAPACITY (MESSAGE)

ARW OVER CAPACITY (MESSAGE)

ARROW

1. SENDING SDCs PHONE NUMBER OR SENDING FACILITY'S DESIGNATOR OR BLANK

(CSL---,"S,W": ALL ("M" MSG)),(FCL("TA:TJ")"S,W,E")CUR

ENGR.					ARROW	
CHECK	6-387		BS	5-7		ARW
APP	5-70		WPN	5-7		
APP	4-54		SUR	5-7		
20/25.1			STM	5-7	BOEING	213

Memo for Record 23 May 1994

Subj: Data Reduction Questions

The following questions were asked by the Accident Investigation Board (Maj Byas). The questions and answers are as follows:

1. *Why are the Data Link Reference Numbers (DLRN's) different on the replay tapes, video tapes, photographs, and 35mm slides?*

The DLRN's are generated by the E-3 on-board computer system. When a replay is done, new DLRN's are generated by the system and assigned to tracks as they appear. I know of no way to ensure that the DLRN's generated by the system during a replay can be made to match those generated during a live mission. All video tapes, photographs, and 35mm slides were taken from displays of replay tapes.

2. *Why does some track symbology appear during a replay and some does not?*

Track symbology will only appear during a replay if the replay is running during the exact time that the track was initiated during the mission. For example, if a replay tape is advanced over a time frame that a certain track was initiated, that track symbology will never appear. Also, if the replay tape is started at a point in time after a certain track was initiated, that track symbology will never appear. Additionally, all sensor data and switch actions taken while no recording is being accomplished will not be on any data reduction. This includes track initiations, drops, request/assign SIF, TD's, etc.

3. *Why are there gaps in the recorded data?*

If, for some reason, only one Magnetic Tape Transport (MTT) is available during a mission, as was the situation during the incident mission of 14 Apr 94, the Computer Display Maintenance Technician (CDMT) will have to rewind a recording tape when it is full and replace it with another blank tape. While this is being accomplished, no data can be recorded. The gaps in recording during the incident mission of 14 Apr 94 are as follows:

From 0550+41Z to 0555+18Z
From 0623+58Z to 0627+56Z
From 0658+20Z to 0701+55Z
From 0732+36Z to 0736+23Z

4. *Which Category Select and Feature Select switches are listed in the TDP switch action report?*

The following Feature Select switch settings are listed in the report:

A/B
C/D
E/F

The following Category Select switch settings are listed in the report:

WEAPONS AIRBASES
SELF-GENERAT GEOGRAPHY
IDBO
REQUESTED/FORCED SDS
NET PART PRIMARY E-3
SPECIAL POINTS
FRIENDLY
HOSTL/UNK/FAKER TRK
CROSSTOLD TRACKS - AIR
SPECIAL MISSION
INTERCEPTOR
CROSSTOLD TRACKS - SURF
ASSIGNED TRACKS
UNASSIGNED TRACKS
TADIL - /LINK 11 DATA
STROBES HISTORY C
STROBES PRESENT C
JTIDS / ERCS DATA
STROBES HISTORY U
STROBES PRESENT U
SID/FTAB
TEST MODE

The following switch settings are not listed in the report:

BOUNDARIES ADIZ
UNSAFE AREA/ENEMY INSTL
GEOREF LAT LONG
MAP #1
MAP #2
MAP #3
STOPR/BASES
RADAR HISTORY C
RADAR HISTORY U

RADAR PRESENT C & U
SIF/IFF HISTORY C
SIF/IFF HISTORY U
SIF/IFF PRESENT C & U
EXERCISE C & U
MARITIME HISTORY C & U
MARITIME PRESENT C & U

Additionally, no information is available on the following console settings:

Scale Expansion
Display Offset
Color Select
Console Radio and Intercom settings (volume, on/off, etc.)
Focus, brightness, and contrast adjustments

MICHAEL E. TURNER, Capt, USAF
Technical Advisor, AWACS Data Reduction

STATEMENT OF CERTIFICATION

I am Capt Mike Turner, assigned to the Combat Analysis Flight, 552d Ground Computer Squadron, 552d Computer Group, 552d Air Control Wing, Tinker AFB, OK, as Chief, Exercise and Analysis Section. I am a Technical Advisor to the AFR 110-14 Accident Board, investigating the crash of two U.S. Army Black Hawk helicopters in the northern No-Fly-Zone of Iraq on 14 April 1994. I have been working with AWACS data reduction for 2 years 9 months. My current duties include all data reduction responsibilities for the 552 Air Control Wing, as well as new data reduction and wing command post software development. My previous position was as Leader, Data Reduction Element. I have deployed twice to Riyadh, Saudi Arabia in direct support of AWACS operations. I have completed data reduction projects for numerous organizations within 552d Air Control Wing, as well as Department of the Navy, HQ NORAD, Joint Air Defense Operations/Joint Engagement Zone (JADO/JEZ) project, Air Force Rescue Coordination Center, Air Force Electronic Warfare Center, and Armstrong Laboratories.

16 MAY 1994
(Date)

Michael E Turner
(Signature)