

**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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TAB O-3

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E-3B AWACS

O-3b

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 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 Mission Crew Commander
which is kept in my records system.
5 July 94
Date

William L. Harris
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. IOT GRADUATES. IOT 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
MMS:PREP
SQUADRON AREA

READING/DEMO-PERFORMANCE
TRACK 1: 1.0 HOUR
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
MMP:DOCS
STUDY AREA

READING/DEMO-PERFORMANCE
TRACK 1: 2.0 HOURS
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
MMS:M301
STUDY AREA

ASSIGNED READING
TRACK 2 ONLY: 2.0 HOURS

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
MME:BK01
STUDY AREA

EVALUATION
TRACK 1: 2.0 HOURS
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
MMP:TRNG
STUDY AREA

READING/INFORMAL LECTURE
3.0 HOURS

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

M2.2 CREW SUPERVISION AND COORDINATION
MMS:CREW
STUDY AREA

ASSIGNED READING
TRACK 1: 4.0 HOURS
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
MMS:MSYS
STUDY AREA

READING/DEMO-PERFORMANCE
TRACK 1: 7.0 HOURS
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
MMP:IESS
STUDY AREA

DEMONSTRATION-PERFORMANCE
3.0 HOURS

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
MME:BK02
STUDY AREA

EVALUATION
TRACK 1: 2.0 HOURS
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
MMS:BMAN
STUDY AREA

ASSIGNED READING
8.0 HOURS

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

M3.4 COMPOSITE/JOINT OPERATIONS
MMP:JOIN
STUDY AREA

READING/DEMO-PERFORMANCE
12.0 HOURS

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
MMS:THEA
STUDY AREA

ASSIGNED READING
8.0 HOURS

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
 MMP:CFLG
 STUDY AREA

READING/INFORMAL LECTURE
 3.0 HOURS

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
 MMP:INTS
 STUDY AREA/WING INTELLIGENCE

READING/INFORMAL LECTURE
 3.0 HOURS

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

M3.10 INTELLIGENCE THREAT KNOWLEDGE
 AND COUNTERMEASURES
 MME:TKCM
 STUDY AREA

ASSIGNED READING
 3.0 HOURS

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
 MME:BK03
 STUDY AREA

EVALUATION
 2.0 HOURS

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.

24 June 1992

BLOCK II - SYSTEMS

M2.5 DIFFERENCE TRAINING MISSION
M302

DEMONSTRATION-PERFORMANCE
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

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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 MSW Crew Cmdr

which is kept in my records system.

11 May 94
Date

W-LH
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 peacetime, 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

1 April 1993

ZMG:REV A

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
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	
<i>MQT Guide, E-3 Senior Director</i>	
which is kept in my records system.	
<i>8 May 94</i> Date	<i>W. L. Harris</i> WILLIAM L. HARRIS, Capt, USAF, MSC Evidence Custodian, Incirlik Air Base, Turkey

Supersedes SD MQT Guide dated August, 1991

OPR: 552 OSS/OST

OC: ~~CMSC ID~~

DISTR: ~~BUTL 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.

1 April 1

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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

~~OCPR: CMO/ID~~

~~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.

8 May 94
Date

William L. Harris
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
AME:LN56
CLASSROOM

ACADEMIC EVALUATION
2.0 HOURS

Academic test on lessons 5 and 6 academic objectives.

7. US NAVY PROCEDURES
AMS:MNVY
CLASSROOM

ASSIGNED READING
4.0 HOURS

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

LESSON 7 TEST
AME:LN07
CLASSROOM

ACADEMIC EVALUATION
1.0 HOUR

Academic test of lesson 7 academic objectives.

8. NORAD PROCEDURES
AMS:MNOR
CLASSROOM

ASSIGNED READING
2.0 HOURS

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

LESSON 8 TEST
AME:LN08
CLASSROOM

ACADEMIC EVALUATION
1.0 HOUR

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.

1 July 1993

AG:REV A

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

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
Operations Group Commander

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	
<i>MQT Guide, E-3 Weapons Director</i>	
which is kept in my records system.	
<i>2 May 94</i>	
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: [REDACTED]~~

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
WMA:INTR
CLASSROOM

LECTURE--INFORMAL
1.0 HOUR

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

1.2 SQUADRON ADMINISTRATIVE PROCEDURES
WMA:ADM
CLASSROOM

LECTURE-INFORMAL
2.0 HOURS

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
WMA:EMP
CLASSROOM

INFORMAL LECTURE-DISCUSSION
3.0 HOURS

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
WMA:STD
CLASSROOM

INFORMAL LECTURE
2.0 HOURS

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

1.5 TACTICAL EMPLOYMENT
WMA:TAC
CLASSROOM

INFORMAL LECTURE-DISCUSSION
2.0 HOURS

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
WMA:DIR
CLASSROOM

LECTURE-INFORMAL
5.0 HOURS

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
WMA:CERT
CLASSROOM

DISCUSSION-INFORMAL
6.0 HOURS

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
WMA:S101 and S102

PERFORMANCE-DEMONSTRATION
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

MISSION PLANNING DEMONSTRATION/PERFORMANCE

FLYING-DEVICE TRAINING ON E-3

PERFORMANCE

27.0 HOURS

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

E-3B/C

PERFORMANCE

21.5 HOURS

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

M202
E-3B/C

EVALUATION/PRACTICE
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

E-3B AWACS

O-3a

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-3a Initial and Upgrade Qualification Training Technical Report

O-3d

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 and would investigate the crash of two U.S. Army Black Hawk helicopters in the Pacific Ocean in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

OPC Simulator Document

which is kept in my records system:

15 May 94
Date

William L. Harris
WILLIAM L. HARRIS, Capt, USAF, USAF
Evidence Custodian
United States Air Force, Turkey

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

EXTRACT <i>Reduced Page</i>	
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	
<i>JPC Simulation Test Document</i>	
which is kept in my records system.	
<i>15 May 94</i> Date	<i>W. L. Harris</i> WILLIAM L. HARRIS, Capt, USAF, MSC Evidence Custodian, Incirlik Air Base, Turkey

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:

<u>DESIGNATION</u>	<u>LAT/LONG</u>	<u>DESCRIPTION</u>
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

NOTE: 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

Extract from the Report of the Board of the Accident Investigation Board of
the United States Air Force, dated 14 April 1984, and titled "The
Accident on 14 April 1984".

OPC Simulate This Document

15 May 94

W. H. H.
W. H. H. Capt. USAF MC
15 May 94

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//
MISSN/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//
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/

KC135R

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 -	MISSILE 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 TAF-6 Document
which is kept in my records system.

15 May 94
Date

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

[REDACTED] BIA

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 deconfliction 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] BIA

[REDACTED] *Def*

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] *Def*

[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
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 Board convened to investigate the crash of two U.S. Army Black Hawk helicopters in the fly zone in northern Iraq on 14 April 1994, and that this is a true and accurate extract from

522AEW Crew Incident Studies
which is kept in my records system.

4 May 94
Date

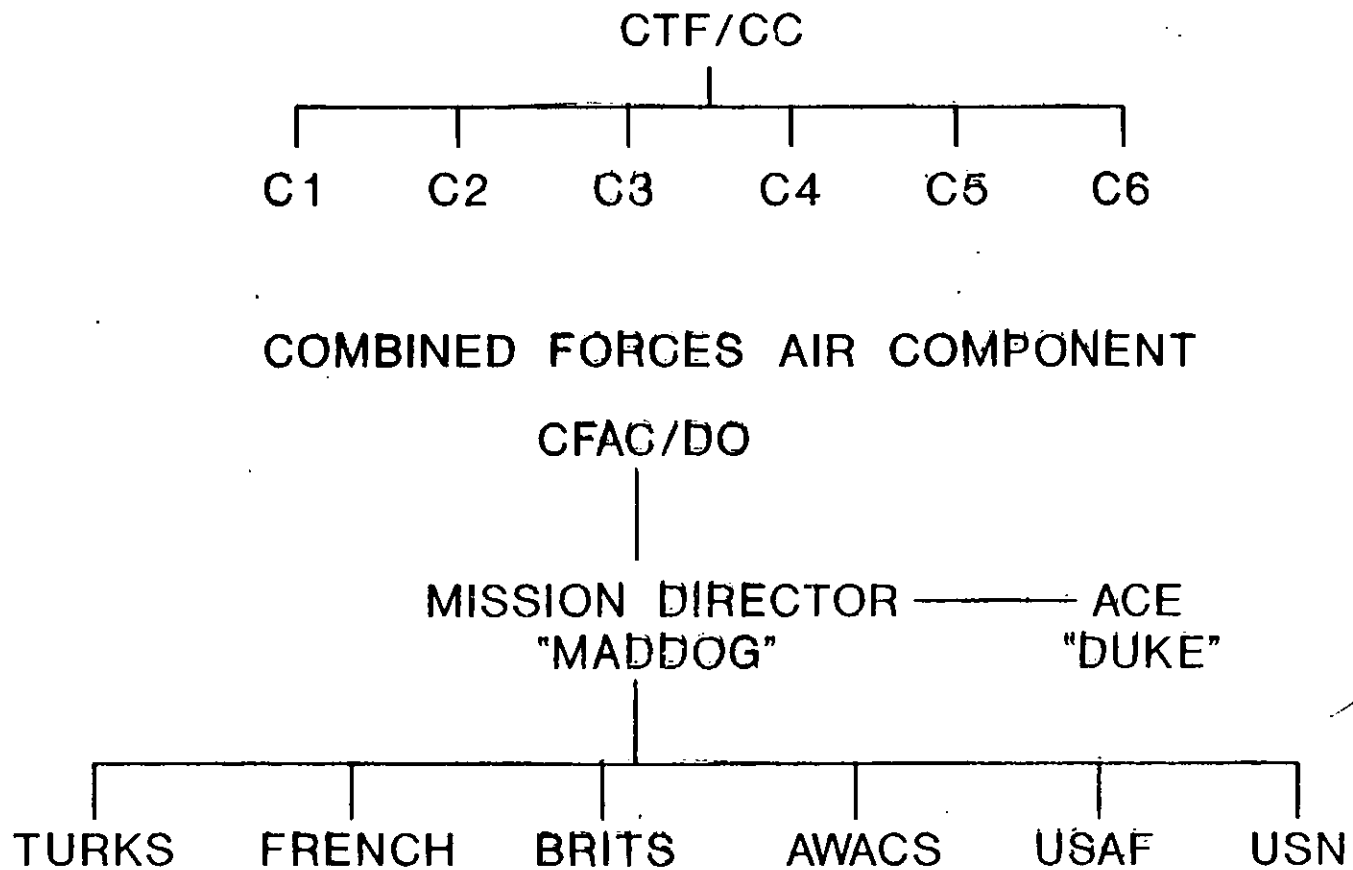
William L. Harris
WILLIAM L. HARRIS, Capt, USAF, MSC
Records Custodian, Incirlik AB, Turkey

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 TAAF 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 Group
which is kept in my records system.

1 May 94
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. ~~2~~ 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 Taurus)

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 ROZI.

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
CB--CTF HQ'S
MAD DOG OPNS

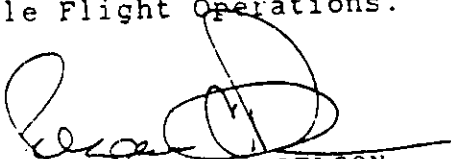
COMMAND/REFUEL

552ACW .AWACS
100EW TANKER
101SQ TANKER

FIGHTERS/RECON

32FS F15
23FS F16
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

15 May 94

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	=	EATUFAN	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	=	DAHUF	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	=	SHALADIA	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	=	SPINEAR	N36'58.4	E43'19.1	38S	LF	5100	9310
V	=	DAM	N36'40.4	E44'14.1	38S	MF	3380	6030
W	=	ZAKHU	N37'08.5	E42'40.7	38S	KG	9331	1353
X	=	ZAWITA	N36'54.2	E43'08.2	38S	LF	3394	8588

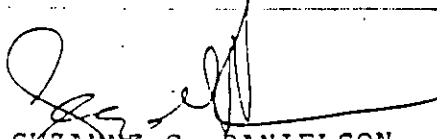
EAGLE FLIGHT INTERNAL FREQUENCIES (Secure capable UHF/FM)
 UHF 300.00 VHF 141.800 FM 41.45/30.30

ULTR COORDINATES

DIYABAKIP	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

O-3a

E-3B AWACS

O-3b

O-3c

O-3a Initial and Upgrade Qualification Training Technical Report

O-3d

O-3b Mission Qualification Training Technical Report

O-3e

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)

1/11

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

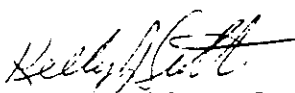
related to the primary mission surveillance systems. (TAB U2D,H) TCTO number 1E-3-673 is an upgrade for the electronic support system (ESS). (TAB U2D) TCTO number L552401 is a 552d Air Control Wing one-time inspection of flight control cables. (TAB U2E) All scheduled inspections had been complied with. (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 deficiencies 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 discrepancies 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)

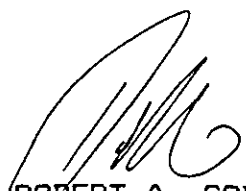
RT18 w/KY-58 #10 (SECURE Voice)

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

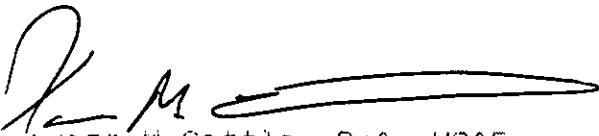
<u>RADIO</u>	<u>TECHNICAL ORDER REFERENCE</u>
High Power UHF T1/R2	T.O. 1E-3A-2-23-2, Table 7-6
High Power UHF T3/T4	T.O. 1E-3A-2-23-2, Table 7-7
RT7 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5 and 7-9
RT8 W/KY-58	T.O. 1E-3A-2-23-2, Table 5-5
RT8 W/KY-58	T.O. 1E-3B-2-23-1, Table 4-1 thru 4-5
RT9 W/KY-58	T.O. 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 11 1994

On 5 May 1994, I, Xavier M. Cottle of the 963rd Airborne Warning and Control Squadron, performed an operational checkout of the audio distribution system on F-15 aircraft 77-0331. The checkout primarily consisted of inserting all MAPS (Mission Audio Panels) and SAPS (Special Audio Panels) were operational. MAPS and SAPS at seats A through 20 were inspected.

All positions operated properly in accordance with Technical Order 10-39-2-20-2, 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.



Xavier M. Cottle, SrA, USAF
#63 AWACS/FSMU

D. M. _____

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.

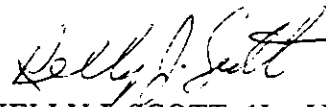
Test Of Identification Friend or Foe System Components using the On-Board Test Maintenance and Monitoring (OBTM&M) System. No errors or failures noted

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

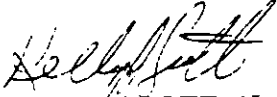
Test of IFF Using OBTM&M

T.O. 1E-3A-43-3-1-2
Table 3-7

Confidence Testing of Radar System

<u>REFERENCE</u>	<u>SYSTEM</u>
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 g of 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 Oscillator (STALO)
Transmitters
Receivers
Synchronizer
Digital Doppler Processor (DDP)
Antenna

IDENTIFICATION 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
Identification Friend or FOE On-Board Test Monitor Maintenance Program
Identification 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

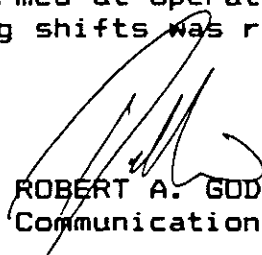
MEMO FOR AFR 110-14 Accident Investigation Team

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 oversight due to differing shifts was responsible for the omission from his training records.


ROBERT A. GODIN, TSgt, USAF
Communications/Navigation 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

O-3a Initial and Upgrade Qualification Training Technical Report

O-3d

O-3b Mission Qualification Training Technical Report

O-3e

O-3c Continuation Training Technical Report

O-3f

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 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 1 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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
1	senior director	0613+03Z	"TRACK TD" "HOOK TY06" "ENTER"
5	weapons director	0633+34Z 0633+37Z	"TRACK TD" "HOOK EE01" "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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
1	senior director	0613+25Z 0613+27Z	"TRACK TD" "HOOK TY06" "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:

<u>Console Number</u>	<u>Console Assignment</u>	<u>Times</u>	<u>Switch Action</u>
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:

<u>Time</u>	<u>Heading</u>	<u>Airspeed</u>
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

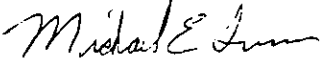
Q18. *How long does it take to see data displayed on an operator's console after a REQUEST SIF switch action is taken?*

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, 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

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SMETCH ACTION REPORT

TIME: 0616+22 CYCLE NUMBER: 710.1

RECORD NUMBER: 9

TABLE SIZE: 219

AFTER: ACTAD11

RRT2

C	P	CATEGORY SELECT	S	T		
O	H		I	E		
N	O	A R S X S Y UTJS SS FEAT.	D	S	UTTON	
S	N	I / P TP T NATJTJTT SEL.	/	T	PRESS	
O	E	RCIF F AADBTBB	F	M		
L	B	ED NPRHAMRSSSI I ACE T O				
E	I	AOBSETNUI SCUGGLHPDHP	///	A	D	
		SGODTSDKRNRTRNACCSSHU	3DF	W	E	

T
H
A
C
K

CURSOR COORDINATES

CONSOLE INPUT TEXT LINE

U V LATITUDE LONGITUDE L1....V....1....V....2....V....3.

MSDA/1-1101100100011001101--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

Smetch Action Rpt, 3 MAY 94 - Reduced

14 May 94
Date

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

*****~~SECRET~~*****

ATT 1

LOC
SIA
S/A
ATT 1

SECRET

SWITCH ACTION REPORT

TIME: 0616*36 CYCLE NUMBER: 712.1 RECORD NUMBER: 6 TABLE SIZE: 219 AFTER: ACTADLI RRT2

C	P	CATEGORY	S/L/SCT	S	I	T			
)	H			I	G	R			
N	S	A	R	S	X	S	Y	DPSS	SS
S	H	I	/	P	TP	T	R	REPORT	DEL. / T
O	S	S	I	F	F		A	ADD	DT
L									
E									

CURSOR COORDINATES CONSOLE INPUT TEXT LINE

U V LATITUDE LONGITUDE L#V....1....V....2....V....3.

SWR/1 1 11.1110110 1101121 AGE 3 0 ENTER ---- -12.0 -114.0 37.00.50 01.53.70 EE H 14200

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

START OF REPORT CYCLE 713 - GHI: 0616*43

SWITCH ACTION REPORT

TIME: 0613+03 CYCLE NUMBER: 682.1 RECORD NUMBER: B TABLE SIZE: 219 AFTER: ACTAD11 RRT2

C	P	CATEGORY SELECT	S	T	T		
O	H		I	F	H		
N	O	A R S XS X UTSS SS FEAT.D S	HUTTON	A	A	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
S	N	I / P TP T WATTJTT SEL. / T	PRESS	C	C		
O	E	RGIF P AADUBTBD	F M	K	K		
L	B	ED NPRHAMRSSSI I ACE T O					
E	I	AOBSETNUISCUGGLHPDHP /// A D					
		SGODTSDKRNRNFACCSUU	9DF B E				

U V LATITUDE LONGITUDE L#V....1....V....2....V....3.

SDA/1	1	11011100100911001101	ACE S O TRACK	TD	----	1.7	-115.7	37.20.8N	42.12.2E
SDA/1	1	11011100100011001101	ACE S O HOOK		TY06	1.7	-115.7	37.20.6N	42.12.2E
SDA/1	1	11011100100011001101	ACE S O 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.
 Date 14 May 94
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 - Redwood
 which is kept in my records system.
 Date 14 May 94
 WILLIAM L. HARRIS, Capt, USAF, MSC
 Evidence Custodian, Incirlik Air Base, Turkey

LOC
SIF

SWITCH ACTION REPORT

TIME: 0621+45 CYCLE NUMBER: 756.3 RECORD NUMBER: 35 TABLE SIZE: 18 BEFORE: ASINITC RHT2

C	P	CATEGORY SELECT	S T	T			
Q	H		T ?	P			
M	C	A R S X S X DTSS SS SPAT.0 S	BITTON	A	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE	
S	M	I / P T R T NATJTT SEL. / T	PRESS	C			
Q	E	PCIX R AADHTRR	R M	X			
L	R	ED NRRHNDSSST T ACY T C					
E	A	A084ETNHISGUGLIPORP /// A 0					
		SC0TSDRNTNAC00H 00R R ?					

000/7 5 111110010111101101 ACB S 0 ENTER --- 15.7 -120.0 37.07.5N 42.29.7E 88 S

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

START OF REPORT CYCLE 756 - GMT: 0621+43

END OF REPORT CYCLE 756 - 3 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 - 3 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: ACTAD11 RRT2

C	P	CATEGORY SELECT	S	T					
O	H		I	E					
N	O	A R S X S X UTSS SS FEAT.	D	S	BUTTCN	A	CURSOR	COORDINATES	CONSOLE INPUT TEXT LINE
S	N	I / P IP T KATTJTT SEL.	/	T	PRESS	C			
O	E	R G I F F A A D B B T O B	F	H		K			
L	B	E D E P R H A M H S S I I	A	C	E	T			
E	E	A O B S E T N U I S C U G G L H P D H P	///	A	D				
		S G O D T S D K R M T R N K A C C S U U	B	D	F	U			
							U	V	LATITUDE LONGITUDE L#V.....1.....V.....2.....V.....3.

SDA/1	1	1101100010011001101	ACE	S	0	TRACK	TD	----	3.4	-115.7	37.20.8N	42.14.2E
SDA/1	1	1101100100011001101	ACE	S	0	HOOK		TYC6	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.

Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
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 Switch Action Rpt, 3 May 94 - Redwood which is kept in my records system.

14 May 94
Date

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

LOC
SIF
S/A

SWITCH ACTION REPORT

TIME: 0613+27 CYCLE NUMBER: 685.2 RECORD NUMBER: 30 TABLE SIZE: 60 BEFORE: ADSID1 RRT2

C	P	CATEGORY SELECT	S T	F			
O	H		I E	H			
H	O	A 1 S X5 X UTSS SS FEAT.D S	BUTTON	A	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE	
S	N	I / P TP T NATTTT 3SL. / T	PRESS	C			
O	E	RGIF Y AADBTSH F M		K			
L	B	ED NRRHAMRSSSI F ACE T O					
S	A	A035ETNHICUGCLAPDP /// A D			U	V	LATITUDE LONGITUDE L#V....1....V....2....V....3.
		SGOOTSDKRNTRNNACCSUU HOF B E					

SBA/1 1 1101130160M1101101 ACE 5 0 ENTER ---- 3.0 -115.7 37.20.5.0 42.14.22 EE 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: 696.3 RECORD NUMBER: 35 TABLE SIZE: 18 BEFORE: ASINITC HRT2

C P CATEGORY SELECT S T T
 O H I E R
 M G A I S X S X U D S S F A T . D S B U T T O N A C U R S O R C O O R D I N A T E S C O N S O L E I N P U T T E X T L I N E
 S N I / P T P T R A T T J T T S Y L . / T P R E S S C
 U E R G I F F A A D I S F R A F H K
 L H E D N P M 4 A M R S S S I I A C F P O
 E 1 A O S B E T H U I S C U G G L H P D M P / / / A D
 S T O O T S D K R N T R N W A C C S U U H O F B E

U Y LATITUDE LONGITUDE L1V.....1....V.....2....V.....3.

SIO/0 7 01011100100111101101 ACF S 0 TRACK TD ---- 6.7 -116.7 37.19.8N 42.18.4E
 SIO/7 7 01011100100111101101 ACF S 0 HOOK TY06 6.7 -116.7 37.19.8N 42.18.4E
 SIO/6 7 01011100100111101101 ACF S 0 ENTER ---- 6.7 -116.7 37.19.8N 42.18.4E

END OF REPORT CYCLE 696 - 1 REPORTS 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.
 Date 14 May 94
 by Donald G. Norris
 DONALD G. NORRIS, GS-13, DADR
 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 Sw. 46 Action Report 7 May 94 Report
 which is kept in my records system.
 Date 14 May 94
 by William L. Harris
 WILLIAM L. HARRIS, Capt, USAF, MSC
 Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

TIME: 0727+22 CYCLE NUMBER: 1311.1 RECORD NUMBER: 0 TABLE SIZE: 177 AFTER: ACTADLI RRT2

C	P	CATEGORY SELECT	S T	T		
O	H		I E	R		
N	O	A R S X S UTSS SS FEAT.D S		A	CURSOR COORDINATES	CONSOLE INPUT TEXT LINE
S	N	I / P TP T NATJTJTT SEL. / T		C		
O	E	RGIP F AADBTTDD	F M	K		
L	B	ED NPRHAMRSSSI I ACE T O				
E	I	AQBSETNUISCUGGLHPDHP /// A D				
		SGODTSDKRNRTRNNACCSUU BDF R E				

U V LATITUDE LONGITUDE L#V....1....V....2....V....3.

MDD/7 5 11011100100111101101 ACE S O INIT (WEAP) F ---- 89.6 -152.2 36.43.4N 44.01.6E

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, 23 Apr 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 28M(3)

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 0650+20

TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT	VAL	MODE 2	VAL
MODE 3	VAL								
0525+30	37:53:00N	040:18:53E	82.1	150.16	346.4			5531	3
0526+00	37:53:30N	040:20:23E	81.7	156.00	346.1			5531	3
0526+31	37:53:30N	040:21:53E	81.5	153.84	346.4			5531	3
0526+59	37:53:20N	040:23:17E	81.4	151.61	346.1			5531	2
0527+02	37:53:17N	040:23:23E	81.4	151.61	346.1			5531	2
0527+30	37:52:35N	040:24:41E	81.5	149.34	345.9			5531	3
0527+32	37:52:35N	040:24:53E	81.5	149.34	345.9			5531	3
0528+03	37:52:35N	040:26:17E	81.4	147.00	345.8			5531	3
0528+22	37:54:11N	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 Report - Mode 2 - Code 5531, SMY 94
 which is kept in my records system.
 14 May 94 Date
 WILLIAM L. HARRIS, Capt, USAF, MSC
 Evidence Custodian, Incirlik Air Base, Turkey

***** SECRET *****

***** SECRET *****

UNCLAS
 12

DATA SET: CCGA. 1426. AP 174. 1207520. ALLMAP

DATE: 90/05/00

TIME: 17:50

PAGE: 04

START
COL

1	2	3	4	5	6	7	8	9
3	0501+11	37:01:00	041:02:17	79.3	126.30	344.9		5531 3
1	0							
1	1							
3	PROCESS DATE: 3 MAY 91							
	ISS REPORT							

1 THE TIME PERIOD REQUESTED WAS FROM 1920+00 TO 0658+21

3	TIME MODE 1	LATITUDE VAL	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1 ALT	VAL	MODE 2	VAL
3	0501+10	37:01:534	041:02:358	79.3	126.30	344.9			5531	3
3	0501+18	37:01:412	041:03:237	79.9	126.30	344.9			5531	3
3	0501+32	37:01:351	041:03:320	79.0	126.30	344.9			5531	3
3	0501+33	37:01:534	041:03:478	79.3	126.30	344.9			5531	3
3	0501+00	37:01:054	041:03:507	71.9	92.73	337.2			5531	3
3	0501+01	37:01:114	041:04:11	79.9	126.30	344.9			5531	3
3	0501+03	37:01:114	041:05:100	79.3	126.30	344.9			5531	3
3	0501+05	37:01:124	041:05:177	79.5	126.30	344.9			5531	3
3	0501+10	37:01:014	041:05:171	79.3	126.30	344.9			5531	3
3	0501+12	37:01:014	041:06:111	79.3	126.30	344.9			5531	3
3	0501+14	37:01:134	041:06:210	79.2	126.30	344.9			5531	3
3	0501+16	37:01:174	041:07:150	79.3	126.30	344.9			5531	3
3	0501+22	37:02:304	041:07:110	78.9	126.30	344.9			5531	3
3	0501+24	37:02:304	041:07:150	78.9	126.30	344.9			5531	3
3	0501+26	37:02:314	041:08:100	78.9	126.30	344.9			5531	3
3	0501+31	37:07:534	041:08:070	71.5	92.66	337.5			5531	3
3	0501+31	37:02:304	041:08:230	78.9	126.30	344.9			5531	3

DATA SET: SCGA.SADS.APA90.36P0523.ALLMAP

DATE: 04/08/79
 TIME: 17:56
 PAGE: 34

DEFAULT
 COL

	1	2	3	4	5	6	7	8	9	10
3	0530+15	37:52:234	043:32:078	80.5	137.92	344.5	2937	3	5531	3
3	0530+16	37:52:004	043:33:414	81.5	137.91	345.5			5531	3
3	0530+16	37:52:174	043:33:118	80.5	137.92	344.5	2936	3	5531	3
3	0530+20	37:48:534	043:30:008	81.5	137.91	345.5			5531	3
3	0530+20	37:52:114	043:33:308	80.5	137.92	344.5	2936	3	5531	3
3	0530+25	37:52:114	043:32:234	80.5	136.33	344.6			5531	3
3	0530+25	37:52:234	043:34:018	81.5	137.91	345.5			5531	3
3	0530+25	37:52:404	043:34:118	80.4	137.92	344.5	2937	3	5531	3
3	0530+27	37:52:004	043:32:018	80.5	136.33	344.6			5531	3
3	0530+27	37:52:114	043:45:308	81.4	137.91	345.5			5531	3
3	0530+27	37:52:304	043:30:308	80.5	137.92	344.5	2937	3	5531	3
3	0530+30	37:52:334	043:35:178	81.3	137.91	345.5			5531	3
3	0530+30	37:52:074	043:34:118	80.3	137.92	344.5	2936	3	5531	3
3	0530+30	37:52:024	043:36:158	81.2	137.91	345.5			5531	3
3	0530+30	37:53:004	043:35:158	80.2	137.92	344.5	2937	3	5531	3
3	0530+37	37:52:354	043:36:178	81.2	137.91	345.5			5531	3
3	0530+37	37:52:504	043:35:118	80.2	137.92	344.5	2937	3	5531	3
3	0530+39	37:52:014	043:36:358	81.2	137.91	345.5			5531	3
3	0530+39	37:53:004	043:36:158	80.2	137.92	344.5	2937	3	5531	3
3	0530+40	37:52:004	043:33:238	80.4	134.61	344.9			5531	3
3	0530+46	37:50:534	043:17:358	81.0	137.91	345.5			5531	3
3	0530+46	37:51:114	043:17:008	80.1	137.92	344.5	2936	3	5531	3
3	0530+48	37:52:054	043:33:418	80.4	134.61	344.9			5531	3
3	0530+48	37:51:004	043:17:478	81.0	137.91	345.5			5531	3
3	0530+48	37:53:174	043:17:178	80.5	137.92	344.5	2936	3	5531	3
3	0530+51	37:51:374	043:30:158	80.0	137.91	345.5			5531	3

DATASET: FCSA. 5A26. APR94. BLE 1520. ALLMAP

DATE: 94/05/06
TIME: 07:56
PAGE: 35

START COL	1	2	3	4	5	6	7	8	9	10
3	0530+51	37:53:35N	040:37:10E	79.9	137.92	344.5	2900	3	5531	3
3	0530+56	37:51:41N	040:35:47E	80.7	137.91	345.5			5531	3
3	0530+56	37:53:53N	040:38:11E	79.7	137.92	344.5	2900	3	5531	3
3	0530+58	37:51:30N	040:39:05E	80.7	137.91	345.5			5531	3
3	0530+58	37:53:07N	040:36:30E	79.8	137.92	344.5	2900	3	5531	3
3	0531+00	37:51:20N	040:39:10E	80.3	137.91	345.5			5531	3
3	0531+00	37:53:41N	040:38:53E	79.9	137.92	344.5	2900	3	5531	3
3	0531+05	37:52:53N	040:34:05E	79.3	133.31	344.5			5531	3
3	0531+07	37:52:47N	040:34:17E	79.9	133.31	344.5			5531	3
3	0531+10	37:52:41N	040:34:47E	80.3	133.31	344.5			5531	3
3	0531+16	37:53:05N	040:35:05E	79.6	131.81	344.1	2900	2	5531	3
3	0531+26	37:49:11N	040:35:10E	81.3	131.73	345.4	2900	3	5531	3
3	0531+29	37:52:53N	040:35:33E	79.7	131.81	344.1	2900	2	5531	3
3	0531+29	37:49:05N	040:35:07E	81.4	131.73	345.6	2900	3	5531	3
3	0531+18	37:52:00N	040:36:17E	79.9	130.22	344.4			5531	3
3	0532+06	37:50:41N	040:36:53E	79.4	129.64	343.9			5531	3
3	0532+09	37:50:35N	040:37:05E	79.4	129.64	343.9			5531	3
3	0532+24	37:51:53N	040:38:00E	79.6	127.13	344.2			5531	3
3	0532+36	37:52:00N	040:38:17E	79.5	127.13	344.2			5531	3

2 0

PAGE 2

SECRET

1 1

PROCESS DATE: 3 MAY 94
IFF REPORT

SECRET

3 THE TIME PERIOD REQUESTED 495 S (04 0530+0) TO 0650+20

3	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	ALTIM	MODE C	ALT	VAL	MODE 2	VAL
		MODE 1	VAL								

DATA SET: BCSA.1326.17070.0LPC520.ALLMAP

DATE: 04/15/85
TIME: 07:50
PAGE: 30

STATION
COL

1	2	3	4	5	6	7	8	9	0
3	0532+32	37:51:474	040:38:350	79.5	127.13	344.2		5531	3
3	0532+39	37:47:534	040:46:520	80.4	126.30	344.9		5531	3
3	0532+42	37:49:478	040:39:118	80.1	126.30	344.9		5531	3
3	0532+49	37:49:304	040:40:178	80.5	126.30	344.9		5531	3
3	0532+52	37:49:304	040:40:350	80.5	126.30	344.9		5531	3
3	0532+54	37:49:231	040:43:110	80.5	126.30	344.9		5531	3
3	0532+58	37:52:054	040:39:218	79.2	124.73	343.7		5531	3
3	0532+58	37:49:474	040:41:418	80.4	126.30	344.9		5531	3
3	0533+01	37:52:114	040:39:558	79.1	124.74	343.7		5531	3
3	0533+11	37:49:474	040:42:358	80.3	126.30	344.9		5531	3
3	0533+13	37:49:418	040:42:170	80.4	126.30	344.9		5531	3
3	0533+18	37:50:154	040:43:350	80.2	126.30	344.9		5531	3
3	0533+18	37:50:054	040:43:170	80.2	126.30	344.9		5531	3
3	0533+23	37:49:514	040:43:418	80.3	126.30	344.9		5531	3
3	0533+25	37:50:154	040:44:350	80.2	126.30	344.9		5531	3
3	0533+30	37:51:534	040:46:110	79.1	121.20	343.6		5531	3
3	0533+34	37:47:474	040:44:350	80.3	126.30	344.9		5531	3
3	0533+22	37:47:534	040:44:530	80.1	126.30	344.9		5531	3
3	0533+24	37:49:414	040:45:270	80.3	126.30	344.9		5531	3
3	0533+19	37:49:414	040:46:110	80.3	126.30	344.9		5531	3
3	0533+31	37:49:014	040:46:170	80.3	126.30	344.9		5531	3
3	0533+34	37:49:074	040:46:350	80.2	126.30	344.9		5531	3
3	0533+39	37:49:014	040:47:110	80.2	126.30	344.9		5531	3
3	0533+42	37:49:414	040:47:418	80.2	126.30	344.9		5531	3
3	0533+43	37:49:304	040:48:110	80.2	126.30	344.9		5531	3

DATASET: DCSA.SA26.RD104.BLP520.ALLMAP

DATE: 94/05/15
TIME: 07:56
PAGE: 37

START COL	1	2	3	4	5	6	7	8	9	10
3	0533+50 2436	37:53:05H 3	040:41:11E	78.2	126.94	342.8	2900	3	5531	3
3	0533+50 2437	37:49:41H 3	040:41:53E	79.3	126.94	344.4	2900	3	5531	2
3	0533+50	37:49:23H	040:49:00E	80.3	126.30	344.9			5531	3
3	0533+53	37:49:30H	040:49:23E	80.3	126.30	344.9			5531	3
3	0533+55	37:47:23H	040:49:35E	80.3	126.30	344.9			5531	3
3	0534+00	37:49:35H	040:50:17E	80.2	126.30	344.9			5531	3
3	0534+02	37:49:23H	040:50:35E	80.3	126.30	344.9			5531	3
3	0534+04	37:49:30H	040:51:00E	80.2	126.30	344.9			5531	3
3	0534+09	37:49:30H	040:51:47E	80.2	126.30	344.9			5531	3
3	0534+12	37:49:23H	040:52:00E	80.2	126.30	344.9			5531	3
3	0534+14	37:49:23H	040:52:11E	80.2	126.30	344.9			5531	3
3	0534+21	37:51:05H	040:42:32E	78.3	114.50	343.3			5531	3
3	0534+21	37:49:00H	040:53:11E	80.3	126.30	344.9			5531	3
3	0534+23	37:48:53H	040:53:35E	80.4	126.30	344.9			5531	3
3	0534+30	37:48:41H	040:54:35E	80.5	126.30	344.9			5531	3
3	0534+33	37:48:41H	040:54:58E	80.5	126.30	344.9			5531	3
3	0534+35	37:43:35H	040:55:13E	80.5	126.30	344.9			5531	3
3	0534+40	37:41:13H	040:56:45E	80.3	126.30	344.9			5531	3
3	0534+42	37:49:35H	040:56:17E	80.4	126.30	344.9			5531	3
3	0534+45	37:43:41H	040:55:35E	80.4	126.30	344.9			5531	3
3	0534+52	37:51:35H	040:44:11E	78.2	116.43	342.7			5531	3

1 0
1 1
3

PROCESS DATE: 3 MAY 94
187 RECORDS

3 THE TIME PERIOD REPORTED WAS FROM 0520+00 TO 0650+20

STATION: 5531 37 03 53.00 126.30 344.9

DATE: 04/15/95
 TIME: 07:50
 PAGE: 30

STATION
 CODE

-----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1	VAL	MODE 2	VAL
0530+52	37:03:35N	041:57:35E	80.4	126.30	344.9			5531	3
0530+54	37:03:47N	041:57:53E	80.4	126.30	344.9			5531	3
0530+55	37:03:51N	041:58:17E	80.3	126.30	344.9			5531	3
0530+51	37:03:53N	041:58:53E	80.2	126.30	344.9			5531	3
0530+54	37:03:53N	041:59:17E	80.2	126.30	344.9			5531	3
0530+56	37:03:47N	041:59:35E	80.2	126.30	344.9			5531	3
0530+51	37:03:00N	041:59:17E	80.3	126.30	344.9			5531	3
0530+53	37:03:51N	041:59:35E	80.2	126.30	344.9			5531	3
0530+55	37:03:47N	041:59:53E	80.2	126.30	344.9			5531	3
0530+52	37:03:00N	041:59:23E	78.2	113.72	342.5			5531	3
0530+22	37:03:00N	041:59:35E	80.5	126.30	344.9			5531	2
0530+55	37:03:47N	041:59:23E	80.7	126.30	344.9			5531	3
0530+27	37:03:23N	041:59:47E	80.3	126.30	344.9			5531	3
0530+52	37:03:00N	041:59:35E	80.9	126.30	344.9			5531	3
0530+54	37:03:53N	041:59:53E	81.0	126.30	344.9			5531	3
0530+37	37:03:00N	041:59:17E	81.0	126.30	344.9			5531	3
0530+41	37:03:00N	041:59:35E	80.9	126.30	344.9			5531	3
0530+48	37:03:00N	041:59:17E	80.9	126.30	344.9			5531	3
0530+46	37:03:23N	041:59:35E	80.7	126.30	344.9			5531	3
0530+53	37:03:51N	041:59:53E	77.5	111.29	342.1			5531	3
0530+53	37:03:53N	041:59:17E	80.3	126.30	344.9			5531	3
0530+56	37:03:00N	041:59:35E	80.4	126.30	344.9			5531	3
0530+56	37:03:00N	041:59:53E	80.3	126.30	344.9			5531	2

DATASET: SCSE, 3426, A9490, 9LP520, ALLNA>

DATE: 94/05/05
TIME: 07:56
PAGE: 49START
COL

-----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0650+20

3	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C	ALT	VAL	MODE 2	VAL
	MODE 3	VAL									
3	0537+09	37:44:01.4	041:17:30.7	81.5	126.30	344.9				5531	3
3	0537+13	37:34:35.8	041:19:23.8	86.1	126.30	344.9				5531	3
3	0537+16	37:32:00.4	041:19:35.8	87.3	126.30	344.9				5531	3
3	0537+18	37:25:41.4	041:19:53.8	90.1	126.30	344.9				5531	3
3	0537+23	37:44:11.4	040:51:41.8	80.2	104.27	327.7	4100	2		5531	3
3	0537+23	37:41:00.4	040:52:11.8	82.0	104.27	329.5	4100	3		5531	3
3	0537+25	37:41:11.4	040:52:23.8	81.3	104.27	327.7	4100	2		5531	3
3	0537+25	37:33:00.4	041:52:41.8	83.6	104.27	329.5	4100	3		5531	3
3	0537+25	37:06:00.4	041:18:17.8	99.0	126.30	344.9				5531	3
3	0537+28	37:35:23.4	041:53:23.8	35.0	104.27	327.7	4100	2		5531	3
3	0537+28	37:32:05.4	040:52:10.8	86.7	104.27	329.5	4100	3		5531	3
3	0537+28	36:59:05.4	041:16:41.8	102.2	126.30	344.9				5531	3
3	0537+35	37:19:11.4	040:53:53.8	93.6	104.27	327.7	4100	2		5531	3
3	0537+35	37:16:01.4	041:53:17.8	95.1	104.27	329.5	4100	3		5531	3
3	0537+35	36:40:41.4	041:10:55.8	110.3	126.30	344.9				5531	3
3	0537+37	37:10:23.4	040:53:30.8	96.2	104.27	327.7	4100	2		5531	3
3	0537+37	37:11:17.4	041:52:53.8	98.0	104.27	329.5	4100	3		5531	3
3	0537+37	36:35:17.4	041:07:35.8	113.4	126.30	344.9				5531	3
3	0537+39	37:10:53.4	040:53:00.8	96.1	104.27	327.7	4100	2		5531	3
3	0537+39	37:07:47.4	040:52:11.8	99.0	104.27	329.5	4100	3		5531	3
3	0537+39	36:31:23.4	041:05:30.8	115.3	126.30	344.9				5531	3

***** SEP 87 *****

***** SEP 87 *****

DATA SET: NCSA.SA25.APR74.SLP0520.ALLRAD

DATE: 94/05/05
TIME: 07:56
PAGE: 41

START
COL

1	2	3	4	5	6	7	8	9	0	
3	0537+14	37:01:171	040:51:113	103.3	104.27	327.7	4100	2	5531	3
3	0537+14	36:57:173	040:49:073	105.5	104.27	329.5	4100	3	5531	3
3	0537+14	36:20:054	040:58:303	121.0	126.30	344.9			5531	3
3	0537+17	36:54:304	040:50:373	104.3	104.27	327.7	4100	2	5531	3
3	0537+17	36:55:304	040:49:113	106.5	104.27	329.5	4100	3	5531	3
3	0537+17	36:13:114	040:57:153	122.0	126.30	344.9			5531	3
3	0537+19	36:52:004	040:48:113	108.4	104.27	329.5	4100	3	5531	3
3	0537+19	36:14:304	040:54:353	123.3	126.30	344.9			5531	3
3	0537+54	37:48:414	040:52:003	76.8	103.05	294.3			5531	3
3	0537+54	37:47:114	040:52:303	77.2	103.05	294.3			5531	3
3	0537+56	36:44:414	040:45:303	112.4	104.27	329.5	4100	3	5531	3
3	0537+56	36:06:534	040:48:413	127.3	126.30	344.9			5531	3
3	0537+58	37:45:304	040:52:533	78.1	103.05	294.3			5531	2
3	0537+58	36:43:054	040:44:413	113.2	104.27	329.5	4100	3	5531	3
3	0537+58	36:05:234	040:47:173	128.0	126.30	344.9			5531	3
3	0538+11	37:44:174	040:53:173	78.0	103.05	294.3			5531	3
3	0538+11	36:42:054	040:44:233	113.4	104.27	329.5	4100	3	5531	3
3	0538+11	36:04:174	040:40:173	129.2	126.30	344.9			5531	3
3	0538+15	36:03:234	040:46:353	129.4	126.30	344.9			5531	3
3	0538+18	36:03:304	040:47:153	129.2	126.30	344.9			5531	3
3	0538+10	36:04:054	040:48:113	128.7	126.20	344.9			5531	3
3	0538+15	37:50:174	040:52:113	74.5	102.77	292.3			5531	3
3	0538+15	36:07:004	040:51:513	126.3	126.30	344.9			5531	3
3	0538+17	37:51:234	040:52:003	73.9	102.77	292.3			5531	3
3	0538+17	36:07:414	040:52:473	126.3	126.30	344.9			5531	3

1 0

DATASET: SCNA.3126.APR90.1LP500.ALLNA2

DATE: 04/25/95

TIME: 17:56

PAGE: 02

YEAR
COL

-----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

1 1
3 PROCESS DATE: 3 MAY 74
3 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0521.00 TO 0558.00

TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1	ALP	VAL	MODE 2	VAL
0530+26	36:09:47N	041:55:10E	125.1	126.30	344.9				5531	3
0530+27	36:19:05N	041:53:10E	120.1	126.30	344.9				5531	3
0530+29	36:21:23N	041:51:33E	118.3	126.30	344.9				5531	3
0530+31	36:25:15N	041:50:47E	116.4	126.30	344.9				5531	3
0530+36	37:57:00N	041:53:00E	73.5	102.30	306.5	4600	3		5531	3
0530+36	36:30:30N	041:18:35E	111.9	126.30	344.9				5531	3
0530+39	37:53:53N	041:51:47E	71.3	102.30	306.5	4600	3		5531	3
0530+39	36:24:00N	041:17:12E	109.7	126.30	344.9				5531	3
0530+41	36:02:07N	041:19:42E	107.4	126.30	344.9				5531	3
0530+46	36:55:07N	041:25:00E	101.0	126.30	344.9				5531	3
0530+46	36:53:30N	041:25:53E	99.7	126.30	344.9				5531	3
0530+50	37:04:00N	041:27:33E	97.1	126.30	344.9				5531	3
0530+57	37:17:47N	041:30:35E	90.3	126.30	344.9				5531	3
0530+59	37:21:01N	041:30:23E	86.9	126.30	344.9				5531	3
0530+02	37:25:03N	041:30:35E	87.0	126.30	344.9				5531	3
0530+07	37:09:35N	041:54:17E	72.9	106.61	332.9				5531	3
0530+07	37:31:00N	041:32:12E	89.5	126.30	344.9				5531	3
0530+09	37:11:00N	041:54:15E	72.9	106.61	332.9				5531	3
0530+09	37:32:23N	041:31:11E	84.9	126.30	344.9				5531	3

14
57

BASELINE: 000A.0A20.A0004.0LP0500.A00000

DATE: 04/15/78
TIME: 07:56
PAGE: 43

START COL	1	2	3	4	5	6	7	8	9
3	0530+12	37:24:114	041:31:172	83.1	126.30	344.9		5531	3
2	0530+16	37:37:264	041:31:350	81.5	126.30	344.9		5531	3
3	0530+19	37:38:054	041:31:418	81.3	126.30	344.9		5531	3
3	0530+21	37:39:114	041:31:478	80.8	126.30	344.9		5531	3
3	0530+28	37:42:474	041:32:050	79.1	126.30	344.9		5531	3
3	0530+30	37:43:534	041:32:110	76.5	126.30	344.9		5531	3
3	0530+33	37:44:254	041:32:170	78.2	126.30	344.9		5531	3
3	0530+38	37:46:354	041:32:300	77.3	126.30	344.9		5531	3
3	0530+40	37:47:054	041:32:350	77.1	126.30	344.9		5531	3
3	0530+42	37:47:414	041:32:470	76.3	126.30	344.9		5531	3
3	0530+47	37:49:474	041:33:170	76.3	126.30	344.9		5531	3
3	0530+49	37:49:474	041:33:300	76.3	126.30	344.9		5531	3
3	0530+52	37:49:534	041:33:410	76.2	126.30	344.9		5531	3
3	0530+59	37:49:114	040:56:530	72.3	97.03	341.3		5531	3
3	0530+59	37:49:374	041:34:470	76.4	126.30	344.9		5531	3
3	0540+11	37:49:234	041:35:110	76.4	126.30	344.9		5531	3
3	0540+13	37:49:534	041:36:350	77.1	126.30	344.9		5531	3
3	0540+11	37:49:174	041:37:350	77.4	126.30	344.9		5531	3
3	0540+13	37:49:474	041:37:350	77.5	126.30	344.9		5531	3
3	0540+19	37:49:014	041:38:350	78.1	126.30	344.9		5531	3
3	0540+24	37:49:234	041:38:410	76.3	126.30	344.9		5531	3
3	0540+22	37:49:054	041:39:350	78.4	126.30	344.9		5531	3
3	0540+30	37:49:534	041:40:170	78.9	126.30	344.9		5531	3
3	0540+32	37:49:234	041:40:410	79.1	126.30	344.9		5531	3
3	0540+30	37:49:054	041:40:350	79.1	126.30	344.9		5531	3
3	0540+39	37:41:304	041:41:530	79.5	126.30	344.9		5531	3

DATASYS: COSA. 3A26.APR74.4LP*520.ALLMAP

DATE: 04/05/85
TIME: 07:50
PAGE: 45

START COL	1	2	3	4	5	6	7	8	9	0
3	0541+33	37:02:234	041:48:47E	78.9	126.30	344.9			5531	3
3	0541+36	37:02:230	041:49:05E	78.9	126.30	344.9			5531	3
3	0541+40	37:02:174	041:49:47E	78.9	126.30	344.9			5531	3
3	0541+43	37:02:054	041:50:05E	79.0	126.30	344.9			5531	3
3	0541+45	37:02:114	041:50:23E	79.0	126.30	344.9			5531	3
3	0541+50	37:01:53E	041:51:11E	79.1	126.30	344.9			5531	3
3	0541+52	37:02:074	041:51:17E	79.0	126.30	344.9			5531	3
3	0541+55	37:01:53E	041:51:42E	79.1	126.30	344.9			5531	3
3	0542+39	37:03:05E	041:01:47E	70.7	89.61	336.8			5531	3
3	0542+42	37:03:374	041:01:53E	70.5	89.61	336.8			5531	3
3	0542+42	37:42:53E	041:52:23E	78.0	126.30	344.9			5531	3
3	0542+44	37:49:47E	041:01:35E	69.5	89.61	336.8			5531	3
3	0542+44	37:49:47E	041:52:17E	77.7	126.30	344.9			5531	3
3	0542+46	37:50:47E	041:01:17E	68.9	89.61	336.8			5531	3
3	0542+46	37:46:394	041:52:05E	76.0	126.30	344.9			5531	3
3	0542+11	37:50:374	041:00:11E	66.3	89.61	336.8			5531	3
3	0542+11	37:52:074	041:51:07E	74.0	126.30	344.9			5531	3
3	0542+14	37:56:53E	041:50:17E	64.7	89.61	336.8			5531	3
3	0542+14	37:55:234	041:50:17E	72.7	126.30	344.9			5531	3
3	0542+16	37:57:214	040:58:05E	63.0	89.61	336.8			5531	3
3	0542+16	37:59:074	041:49:17E	71.1	126.30	344.9			5531	3
3	0542+21	33:09:414	041:45:05E	65.9	126.30	344.9			5531	3
3	0542+23	33:11:474	041:44:11E	64.0	126.30	344.9			5531	3
3	0542+25	33:16:054	041:42:00E	62.7	126.30	344.9			5531	3
3	0542+32	37:01:354	041:01:41E	68.0	86.44	357.3			5531	3
3	0542+32	34:29:534	041:33:05E	55.7	126.30	344.9			5531	3

SECRET
SECRET

DATA: 003A 1A 16 APP 34 04 19 52 0 ALLNAP

DATE: 90/05/05
TIME: 07:56
PAGE: 47

START COL	1	2	3	4	5	6	7	8	9	0
3	0543+01	39:23:114	038:58:533	350.0	126.30	344.9			5531	3
3	0543+10	39:23:234	038:52:302	348.6	126.30	344.9			5531	3
3	0543+13	39:25:354	038:46:304	344.2	126.30	344.9			5531	3
3	0543+16	37:49:414	041:06:200	72.7	83.25	76.1			5531	3
3	0543+16	39:25:304	038:34:308	342.0	126.30	344.9			5531	3
3	0543+18	37:52:114	041:05:603	71.0	83.25	76.1			5531	3
3	0543+18	39:24:000	038:28:234	339.3	126.30	344.9			5531	3
3	0543+13	39:19:474	038:14:413	334.5	126.30	344.9			5531	3
3	0543+55	39:13:114	038:10:052	332.3	126.30	344.9			5531	3
3	0543+57	37:47:174	041:07:052	75.2	83.44	82.6			5531	3
3	0543+57	39:16:004	038:04:238	330.4	126.30	344.9			5531	3
3	0544+05	39:03:014	037:48:350	323.0	126.30	344.9			5531	3
3	0544+10	37:45:534	041:08:238	77.6	84.39	111.9			5531	2
3	0544+10	37:44:534	041:09:352	79.5	86.06	131.9			5531	2
3	0544+59	37:48:334	041:10:174	79.9	98.22	153.2			5531	3
3	0545+07	37:45:154	041:11:112	80.2	92.67	162.2			5531	2
3	0545+13	37:45:004	041:13:200	81.0	99.66	165.4			5531	2
3	0546+16	37:44:474	041:20:470	83.4	116.64	169.4			5531	3
3	0549+07	37:48:174	041:21:174	81.0	119.44	182.9			5531	3
3	0549+09	37:52:534	041:20:112	79.5	119.44	182.9			5531	3
3	0549+13	37:49:174	041:23:000	82.4	123.39	209.7			5531	3
3	0549+10	37:47:304	041:22:172	80.9	123.39	209.7			5531	3
3	0549+12	37:53:424	041:21:178	78.0	123.39	209.7			5531	3
3	0549+15	37:57:414	041:20:112	76.0	123.39	209.7			5531	3
3	0549+17	37:44:354	041:23:532	83.0	124.61	217.3			5531	3
3	0549+47	38:01:474	041:18:472	74.0	123.39	209.7			5531	3

DATA SITE: 700A, SAZS, AP 199, 010 0529, 100712

DATE: 04/05/05
TIME: 07:50
PAGE: 49SITE 7
COL

1	2	3	4	5	6	7	8	9
3	0549+49	37:04:071	041:23:050	81.7	124.61	217.8	5531	3
3	0549+49	38:05:534	041:17:111	72.7	123.39	209.7	5531	3
3	0549+52	37:53:354	041:21:534	78.7	124.61	217.8	5531	3
3	0549+52	38:12:359	041:15:058	70.5	123.39	209.7	5531	3
3	0549+54	37:57:074	041:20:418	76.7	124.61	217.8	5531	3

SECRET

PAGE 3

SECRET

PROCESS DATE: 3 MAY 04
IFF REPORT

THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20

3	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALL	VAL	MODE 2	VAL
	MODE 3	VAL								
3	0549+54	38:14:234	041:13:050	68.5	123.39	209.7	5531	3		
3	0549+57	38:02:174	041:09:050	74.5	124.61	217.8	5531	3		
3	0549+57	38:13:024	041:10:470	66.3	123.39	209.7	5531	3		
3	0549+59	38:22:474	041:08:170	64.1	123.39	209.7	5531	3		
3	0549+01	38:27:214	041:05:030	61.1	123.39	209.7	5531	3		
3	0550+00	38:31:054	041:02:030	59.5	123.39	209.7	5531	3		
3	0550+06	38:35:214	041:09:058	57.3	123.39	209.7	5531	3		
3	0550+08	37:07:234	041:20:170	81.1	126.75	236.8	5531	3		
3	0550+11	37:09:534	041:23:470	79.7	126.75	236.8	5531	3		
3	0550+13	37:54:414	041:22:354	77.5	126.75	236.8	5531	3		
3	0550+15	37:59:054	041:21:050	75.7	126.75	236.8	5531	3		
3	0550+18	38:02:024	041:20:000	73.5	126.75	236.8	5531	3		
3	0550+20	38:07:114	041:18:178	71.0	126.75	236.8	5531	3		

DATASET: SC5A.5A26.APR94.HLP0500.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	38:11:53M	041:16:11E	69.1	126.75	236.8			5531	3
3	0550+25	38:15:53M	041:14:11E	67.1	126.75	236.8			5531	3
3	0550+27	38:20:05M	041:11:35E	64.9	126.75	236.8			5531	3
3	0550+30	37:46:00M	041:25:23E	80.9	128.27	256.1			5531	3
3	0550+30	38:25:23M	041:08:21E	62.1	126.75	236.8			5531	3
3	0550+32	37:43:17M	041:25:00E	79.8	128.27	256.1			5531	3
3	0550+32	38:20:35M	041:06:00E	60.4	126.75	236.8			5531	3
3	0550+34	37:52:41M	041:24:05E	77.7	128.27	256.1			5531	3
3	0550+34	38:32:17M	041:03:11E	58.4	126.75	236.8			5531	3
3	0550+37	37:57:05M	041:22:47E	75.6	128.27	256.1			5531	3
3	0550+37	38:36:05M	041:06:05E	56.2	126.75	236.8			5531	3
3	0550+39	38:41:41M	041:58:53E	52.9	126.75	236.8			5531	3
3	0550+41	38:06:05M	041:19:35E	71.2	128.27	256.1			5531	3
3	0550+41	38:43:35M	041:53:05E	51.4	126.75	236.8			5531	3
3	0555+20	37:47:05M	041:39:00E	75.5	115.72	346.4			5531	2
3	0555+20	39:23:23M	033:38:35E	345.2	128.27	256.1			5531	3
3	0555+20	39:03:53M	037:45:23E	325.9	126.75	236.8			5531	3
3	0555+23	39:22:23M	033:30:11E	343.5	128.27	256.1			5531	3
3	0555+23	38:01:41M	037:41:47E	324.2	126.75	236.8			5531	3
3	0555+25	39:21:05M	033:29:30E	342.3	128.27	256.1			5531	3
3	0555+25	38:59:11M	037:37:53E	322.3	126.75	236.8			5531	3
3	0555+27	39:19:11M	033:18:53E	339.1	128.27	256.1			5531	3
3	0555+27	38:56:23M	037:33:33E	320.3	126.75	236.8			5531	3
3	0555+30	39:17:41M	033:14:15E	337.4	128.27	256.1			5531	3
3	0555+30	39:57:00M	037:24:23E	316.9	126.75	236.8			5531	3
3	0555+32	39:15:47M	033:09:11E	335.3	128.27	256.1			5531	3

STATION: 0058, 3526, 4000, 4150, 550, ALLMAP

DATE: 04/05/05
TIME: 17:50
PAGE: 50

STATION COL 1 2 3 4 5 6 7 8 9

3	0555+32	38:49:47Z	037:25:03Z	315.0	126.75	236.8	5531	3
3	0555+34	39:13:35Z	038:43:47Z	332.0	129.27	256.1	5531	3
3	0555+34	33:46:17Z	037:21:17Z	313.7	126.75	236.8	5531	3
3	0555+37	38:41:23Z	037:16:11Z	310.7	126.75	236.8	5531	3
3	0555+39	38:34:11Z	037:13:15Z	306.3	125.75	236.8	5531	3
3	0555+41	37:51:36Z	041:36:41Z	73.2	114.34	3.5	5531	2
3	0555+41	38:34:05Z	037:09:30Z	306.5	126.75	236.8	5531	3

1 0
 1 1
 2 PROJECTS DATE: 3 MAY 04
 IFF REPORT

THE TIME PERIOD REQUESTED HAS FROM 0526+30 TO 0559+21

3	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1	ALT	VAL	MODE 2	VAL
3	0555+40	38:29:01Z	037:11:30Z	304.1	126.75	236.8	5531			3	
3	0555+46	38:03:09Z	037:01:52Z	270.5	126.75	236.8	5531			3	
3	0555+49	38:20:39Z	036:59:50Z	299.2	126.75	236.8	5531			3	
3	0555+51	38:16:09Z	036:56:33Z	296.0	126.75	236.8	5531			3	
3	0555+55	38:11:17Z	036:50:31Z	294.0	126.75	236.8	5531			3	
3	0555+56	38:07:24Z	036:52:19Z	292.6	126.75	236.8	5531			3	
3	0555+58	38:02:35Z	036:45:41Z	290.1	126.75	236.8	5531			3	
3	0556+00	37:57:24Z	036:42:47Z	287.6	126.75	236.8	5531			3	
3	0556+03	37:52:17Z	036:47:17Z	285.1	126.75	236.8	5531			3	
3	0556+05	37:48:13Z	036:46:17Z	282.5	126.75	236.8	5531			3	
3	0556+07	37:44:23Z	036:44:41Z	279.5	126.75	236.8	5531			3	

DATASET: SC5A.3A25.4PA90.4LPOS20.ALLMAP

DATE: 04/25/55
TIME: 07:56
PAGE: 51

START COL	1	2	3	4	5	6	7	8	9
3	0556+10	17:36:234	036:44:214	277.6	126.75	236.8		5531	3
3	0556+12	37:59:650	041:40:478	74.7	112.41	36.8		5531	3
3	0556+12	37:21:178	036:43:538	275.2	126.75	236.8		5531	3
3	0556+15	37:53:434	041:39:418	72.8	112.41	36.8		5531	3
3	0556+15	37:25:534	036:43:478	272.7	126.75	236.8		5531	3
3	0556+19	37:15:418	036:40:308	267.9	126.75	236.8		5531	3
3	0556+22	37:17:224	036:45:238	265.3	126.75	236.8		5531	3
3	0556+24	37:56:534	041:41:608	74.7	111.95	48.8		5531	3
3	0556+24	37:05:604	036:46:238	262.8	126.75	236.8		5531	3
3	0556+26	37:50:054	036:47:418	266.5	126.75	236.8		5531	3
3	0556+29	36:54:478	036:49:238	257.9	126.75	236.8		5531	3
3	0556+31	36:49:304	036:51:238	255.3	126.75	236.8		5531	3
3	0556+33	36:44:024	036:53:238	252.9	126.75	236.8		5531	3
3	0556+36	36:40:534	036:55:158	251.1	126.75	236.8		5531	3
3	0556+36	36:33:134	036:59:068	247.4	126.75	236.8		5531	3
3	0556+41	36:31:304	037:01:078	246.2	126.75	236.8		5531	3
3	0556+43	36:27:054	037:03:038	243.3	126.75	236.8		5531	3
3	0556+45	36:22:354	037:06:018	241.4	126.75	236.8		5531	3
3	0556+50	36:14:054	037:13:538	236.5	126.75	236.8		5531	3
3	0556+52	36:09:024	037:17:518	234.5	126.75	236.8		5531	3
3	0556+55	36:05:074	037:22:008	231.5	126.75	236.8		5531	3
3	0556+57	36:02:054	037:26:118	229.3	126.75	236.8		5531	3
3	0556+59	35:58:304	037:30:178	226.6	126.75	236.8		5531	3
3	0557+02	35:55:004	037:35:178	224.4	126.75	236.8		5531	3
3	0557+04	35:51:514	037:39:538	222.2	126.75	236.8		5531	3
3	0557+07	35:48:074	037:44:018	219.8	126.75	236.8		5531	3

RATAU AT: TONGA, SA25 APR 94, 3000000, ALIEN

DATE: 94/15/05
 TIME: 17:56
 PAGE: 52

STATION
 001

1	2	3	4	5	6	7	8	9
3	0557+09	35:45:174	037:50:530	217.0	126.75	236.8	5531	3
3	0557+11	35:43:054	037:54:518	215.1	126.75	236.8	5531	3
3	0557+14	35:41:054	037:58:530	213.3	126.75	236.8	5531	3
3	0557+16	37:01:354	041:05:352	92.4	112.69	148.7	5531	3
3	0557+16	35:38:358	034:04:237	210.9	126.75	236.8	5531	3
3	0557+15	35:34:054	033:15:175	206.2	126.75	236.8	5531	3
3	0557+13	35:32:014	033:20:550	203.9	126.75	236.8	5531	3
3	0557+15	35:30:358	033:20:118	202.7	126.75	236.8	5531	3
3	0557+18	35:29:114	033:31:177	199.5	126.75	236.8	5531	3

1 0

PAGE 11

UNRECORDED

1 1

PLACING DATE: 3 MAY 94

UNRECORDED

3

171 REPORT

3 THE TIME PERIOD REGISTERED WAS FROM 0520+00 TO 0658+20

1	TIME	LATITUDE	LONGITUDE	HEADING	RANGE	BEARING	MODE 1	VAL	MODE 2	VAL
3	0557+30	35:27:478	039:37:310	197.2	126.75	236.8	5531	3		
3	0557+13	35:26:418	039:43:178	194.9	126.75	236.8	5531	3		
3	0557+15	35:25:418	039:48:418	192.4	126.75	236.8	5531	3		
3	0557+17	37:00:418	041:46:310	63.7	118.24	140.0	5531	3		
3	0557+17	35:20:514	038:50:410	140.5	126.75	236.8	5531	3		
3	0557+16	35:24:058	038:01:532	207.7	126.75	236.8	5531	3		
3	0557+12	35:23:054	038:00:300	185.5	126.75	236.8	5531	3		
3	0557+14	35:23:204	038:12:112	183.7	126.75	236.8	5531	3		
3	0557+17	35:23:204	038:18:050	181.5	126.75	236.8	5531	3		

DATASET: MCSA.1A26.APP94.9610529.ALLHAP

DATE: 04/05/05
TIME: 07:56
PAGE: 53

START COL	1	2	3	4	5	6	7	8	9	0
3	0557+49	35:23:309	039:22:309	179.8	126.75	236.8			5531	3
3	0557+51	35:23:478	039:26:238	177.5	126.75	236.8			5531	3
3	0557+54	35:24:174	039:34:238	175.2	126.75	236.8			5531	3
3	0557+56	35:24:538	039:40:118	172.9	126.75	236.8			5531	3
3	0557+58	37:41:308	041:47:178	84.0	116.44	150.2			5531	2
3	0557+58	35:25:414	039:46:058	170.5	126.75	236.8			5531	3
3	0558+01	35:26:410	039:51:078	168.4	126.75	236.8			5531	3
3	0558+03	35:27:534	039:57:534	166.0	126.75	236.8			5531	3
3	0558+06	35:29:114	040:03:238	163.0	126.75	236.8			5531	3
3	0558+08	35:30:250	040:06:118	161.0	126.75	236.8			5531	3
3	0558+10	35:32:114	040:13:238	159.7	126.75	236.8			5531	3
3	0558+13	35:33:054	040:16:118	158.5	126.75	236.8			5531	3
3	0558+15	35:34:114	040:18:478	157.3	126.75	236.8			5531	3
3	0558+17	35:35:000	040:21:058	156.3	126.75	236.8			5531	3
3	0558+22	35:36:074	040:25:008	154.5	126.75	236.8			5531	3
3	0558+24	35:37:304	040:26:178	153.3	126.75	236.8			5531	3
3	0558+27	35:38:008	040:27:178	153.3	126.75	236.8			5531	3
3	0558+29	35:38:354	040:28:308	152.7	126.75	236.8			5531	3
3	0558+32	35:39:054	040:29:178	152.2	126.75	236.8			5531	3
3	0558+34	35:39:304	040:29:538	151.0	126.75	236.8			5531	3
3	0558+36	35:39:554	040:30:238	151.5	126.75	236.8			5531	3
3	0558+39	35:40:114	040:30:538	151.2	126.75	236.8			5531	3
3	0558+41	35:40:414	040:31:358	150.7	126.75	236.8			5531	3
3	0558+43	35:41:004	040:32:008	150.5	126.75	236.8			5531	3
3	0558+46	35:41:274	040:32:178	150.3	126.75	236.8			5531	3
3	0558+48	35:41:308	040:32:308	150.0	126.75	236.8			5531	3

SECRET

SECRET

DATASET: SCSA.SA26.APR94.BLP2520.ALLMAP

DATE: 04/05/95

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	040:54:11E	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 2400 3	041:54:55E	84.7	147.19	325.8	7500	3	5531	2
3	0604+05	37:39:05N	041:53:47E	82.2	147.19	325.8	7500	3	5531	2
3	0604+05	37:32:35N	041:54:23E	84.3	143.06	350.4	7500	3	5531	2
3	0604+07	37:33:23N	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	352.0			5531	3

DATASET: SCSA.3026.APR04.BLP3520.ALL0AP

DATE: 04/05/05
 TIME: 07:50
 PAGE: 56

START COL -----1-----2-----3-----4-----5-----6-----7-----8-----9-----)

3	0605+37	37:28:05N	041:56:05E	86.0	138.30	352.0		5531	3
3	0605+39	37:27:30N	041:56:30E	86.2	138.30	352.0		5531	3
3	0605+56	37:30:00N	041:56:35E	85.1	136.80	349.5		5531	3
3	0605+56	37:29:07N	041:56:43E	85.2	136.80	349.5		5531	3
3	0606+05	37:29:11N	041:57:05E	85.3	136.03	350.1		5531	3
3	0606+08	37:29:17N	041:57:17E	85.3	136.03	350.1		5531	3
3	0606+10	37:29:35N	041:57:35E	85.1	136.03	350.2		5531	3
3	0606+26	37:29:23N	041:56:00E	85.2	134.40	350.9		5531	3
3	0606+36	37:28:30N	041:58:23E	85.4	133.61	351.7		5531	3
3	0606+38	37:28:02N	041:58:35E	85.4	133.61	351.7		5531	3
3	0606+57	37:27:07N	041:59:17E	85.6	132.02	352.0		5531	3
3	0606+59	37:27:41N	041:59:01E	85.7	132.02	352.0		5531	3
3	0607+07	37:26:11N	041:59:07E	85.4	131.25	351.5		5531	3

1 0
 1 1
 3 PROCESS DATE: 3 MAY 08
 3 REP REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+26

3	TIME	LATITUDE	LONGITUDE	HEADING	RANGE	AZIMUTH	MODE C ALT VAL	MODE 2 VAL	VAL
3	MODE 3 VAL	VAL							
3	0607+09	37:26:05N	042:00:05E	85.5	131.25	351.5		5531	3
3	0607+28	37:30:53N	042:00:23E	84.2	129.58	359.0		5531	3
3	0607+30	37:34:30N	042:00:17E	82.6	129.58	359.0		5531	3
3	0607+37	37:32:41N	042:00:35E	81.4	121.71	7.9		5531	3
3	0607+40	37:35:23N	042:00:30E	82.2	128.73	7.9		5531	3

DATA 01: SCGA.S325.20500.HLPS20.ALLCAP

DATE: 94/15/95
TIME: 07:56
PAGE: 57

START COL	1	2	3	4	5	6	7	8	9	0
3	0607+02	37:01:000	041:59:530	79.7	126.73	7.9			5531	3
3	0608+01	37:07:350	042:01:007	81.6	127.22	30.3			5531	3
3	0608+03	37:03:020	042:00:000	78.9	127.22	30.3			5531	3
3	0608+20	37:32:070	042:02:300	84.5	126.26	55.9			5531	3
3	0608+22	37:36:000	042:02:170	83.1	126.20	55.9			5531	3
3	0608+32	37:50:000	041:57:530	73.1	126.20	55.9			5531	3
3	0608+30	38:00:000	041:56:000	70.6	126.20	55.9			5531	3
3	0608+01	38:02:110	041:07:170	62.1	126.20	55.9			5531	3
3	0608+05	38:26:110	041:04:010	60.1	126.20	55.9			5531	3
3	0609+02	37:22:010	042:04:230	91.3	126.66	108.6			5531	3
3	0609+15	37:25:000	042:04:000	90.1	126.66	108.6			5531	3
3	0609+20	37:29:230	042:05:000	93.0	126.55	131.7			5531	2
3	0609+26	37:23:170	042:05:110	91.7	123.55	131.7			5531	2
3	0613+32	37:22:000	041:17:050	92.3	163.01	192.0			5531	3
3	0613+00	37:27:410	042:17:170	90.3	163.41	192.0			5531	3
3	0613+30	37:30:000	042:17:120	86.5	163.41	192.0			5531	3
3	0613+39	37:00:110	042:10:170	86.3	163.41	192.0			5531	3
3	0613+01	37:00:300	042:10:050	84.0	163.41	192.0			5531	3
3	0613+03	37:00:300	042:17:070	91.3	164.60	201.2			5531	3
3	0613+03	37:02:500	042:15:050	81.3	163.41	192.0			5531	3
3	0613+06	37:33:200	042:17:070	86.5	164.60	201.2			5531	3
3	0613+06	37:59:350	042:13:010	79.4	163.41	192.0			5531	3
3	0613+08	38:06:110	042:11:530	77.0	163.41	192.0			5531	3
3	0613+50	38:10:300	042:09:510	70.6	163.41	192.0			5531	3
3	0610+10	37:24:500	042:19:170	85.5	168.66	231.6			5531	3
3	0620+16	37:32:110	042:19:110	86.3	163.66	231.6			5531	3

DATAFILE: FGSA.3426.22004.3121529.ALLRAD

DATE: 06/05/15

TIME: 07:15

PAGE: 53

STATION	COL	1	2	3	4	5	6	7	8	9
3	0610+19	37:39:234	042:19:000	85.3	160.66	231.6			5531	3
3	0610+21	37:46:234	042:18:178	83.4	160.66	231.6			5531	3
3	0610+26	37:27:414	042:19:158	49.6	169.61	242.7			5531	3
3	0610+26	33:00:174	042:15:167	76.4	160.66	231.6			5531	3
3	0610+28	38:07:234	042:13:428	75.9	160.66	231.6			5531	3
3	0610+31	38:14:314	042:12:100	73.4	160.66	231.6			5531	3
3	0610+33	33:23:054	042:08:471	76.9	160.66	231.6			5531	3
3	0610+35	36:27:474	042:05:475	66.9	160.66	231.6			5531	3
3	0610+38	38:34:414	042:02:173	65.3	160.66	231.6			5531	3
3	0610+40	33:41:314	041:59:300	63.3	160.66	231.6			5531	3
3	0610+42	33:47:504	041:56:453	60.4	160.66	231.6			5531	3
3	0610+45	34:50:124	041:00:228	57.7	160.66	231.6			5531	3
3	0610+47	37:23:414	042:20:117	90.1	170.92	265.3			5531	3
3	0610+47	36:58:174	041:05:475	56.4	160.66	231.6			5531	3
3	0610+50	39:04:114	041:00:478	53.9	160.66	231.6			5531	3

UNRECORDED

PAGE 13

UNRECORDED

1 6071 0451 2 177 24
1 6071 0451 2 177 24

THE TIME PERIOD REQUESTED HAS BEEN ADJUSTED FROM 0520+23 TO 0650+20

1	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1	ALT	VAL	MODE 2	VAL
3	MODE 1	VAL									
3	0610+32	39:02:534	041:35:178	51.5	160.66	231.6			5531	3	
3	0610+36	33:15:274	041:29:417	49.5	160.66	231.6			5531	3	
3	0610+37	39:20:304	041:23:358	46.6	160.66	231.6			5531	3	

DATASET: SC5A.SA26.APE04.BLP0520.ALLMAP

DATE: 94/05/05
TIME: 07:56
PAGE: 59

START COL	1	2	3	4	5	6	7	8	9
3	0610+39	39:25:53H	041:16:53E	44.0	168.66	231.6		5531	3
3	0615+41	39:30:35H	041:16:23E	42.0	168.66	231.6		5531	3
3	0615+44	39:35:31H	041:03:23E	39.1	168.66	231.6		5531	3
3	0615+46	39:39:23H	040:56:25E	36.6	168.66	231.6		5531	3
3	0615+48	39:43:01H	040:48:17E	34.0	168.66	231.6		5531	3
3	0615+49	39:47:23H	040:40:41E	31.5	168.66	231.6		5531	3
3	0615+13	39:51:05H	040:32:41E	29.1	168.66	231.6		5531	3
3	0615+16	39:55:05H	040:22:35E	26.1	168.66	231.6		5531	3
3	0615+18	39:57:23H	040:16:00E	24.1	168.66	231.6		5531	3
3	0615+20	40:00:05H	040:07:30E	21.7	168.66	231.6		5531	3
3	0615+23	40:02:35H	039:58:30E	19.1	168.66	231.6		5531	3
3	0615+25	40:04:05H	039:51:47E	17.2	168.66	231.6		5531	3
3	0615+27	40:06:00H	039:42:53E	14.9	168.66	231.6		5531	3
3	0615+30	40:07:02H	039:33:11E	12.1	168.66	231.6		5531	3
3	0615+32	40:09:00H	039:23:53E	9.6	168.66	231.6		5531	3
3	0615+34	40:09:51H	039:14:41E	7.1	168.66	231.6		5531	3
3	0615+37	40:11:30H	039:05:17E	4.6	168.66	231.6		5531	3
3	0615+39	40:10:47H	038:55:17E	1.9	168.66	231.6		5531	3
3	0615+42	40:11:01H	038:46:15E	359.4	168.66	231.6		5531	3
3	0615+44	40:10:17H	038:36:30E	356.9	168.66	231.6		5531	3
3	0615+46	40:09:05H	038:22:35E	353.1	168.66	231.6		5531	3
3	0615+49	40:08:20H	038:17:41E	351.3	168.66	231.6		5531	3
3	0615+51	40:07:05H	038:08:35E	349.2	168.66	231.6		5531	3
3	0615+53	40:05:23H	037:59:00E	346.7	168.66	231.6		5531	3
3	0615+58	40:01:00H	037:40:53E	341.6	168.66	231.6		5531	3
3	0615+00	39:58:53H	037:34:00E	339.7	168.66	231.6		5531	3

DATASITE: CSST-3336.A2104.BLP-520.ALLIAP

DATE: 04/05/95
TIME: 07:51
PAGE: 00

STATION COL	1	2	3	4	5	6	7	8	9
3	0616+03	39:56:059	037:26:110	337.1	168.66	231.6		5531	3
3	0616+05	39:51:239	037:10:059	335.2	168.66	231.6		5531	3
3	0616+08	39:53:239	037:12:009	333.0	168.66	231.6		5531	3
3	0616+10	39:48:419	037:08:118	331.9	168.66	231.6		5531	3
3	0616+12	39:46:479	037:04:178	330.5	168.66	231.6		5531	3
3	0616+15	39:45:059	037:01:059	329.5	168.66	231.6		5531	3
3	0616+17	39:42:479	036:57:009	328.0	168.66	231.6		5531	3
3	0616+19	39:42:219	036:50:009	327.5	168.66	231.6		5531	3
3	0616+22	39:41:219	036:50:239	327.1	168.66	231.6		5531	3
3	0616+24	39:40:119	036:53:009	326.5	168.66	231.6		5531	3
3	0616+29	39:38:139	036:51:179	325.9	168.66	231.6		5531	3
3	0616+41	39:33:239	036:50:419	325.5	168.66	231.6		5531	3
3	0616+44	39:37:539	036:50:129	325.2	168.66	231.6		5531	3
3	0616+36	39:27:039	036:49:419	324.9	168.66	231.6		5531	3
3	0616+38	39:37:009	036:49:179	324.7	168.66	231.6		5531	3
3	0616+41	39:36:309	036:48:419	324.4	168.66	231.6		5531	3
3	0616+43	39:26:059	036:48:129	324.2	168.66	231.6		5531	3

1 1
 2 PAGE 19
 3 PROCESS DATES: 3 MAY 94
 4 IFF REPORT

7 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0650+20

STATION	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE	C	ALT	VAL	MODE 2	VAL
3	0616+05	39:35:419	036:48:109	323.0	168.66	231.6				5531	3

SECRET

SECRET

DATA SET: TCSEA.5A26.APR90.0LPO520.ALLMAP

DATE: 90/05/25
TIME: 07:54
PAGE: 01

START COL	1	2	3	4	5	6	7	8	9
3	0616+08	39:35:054	036:47:358	323.6	168.66	231.6		5531	3
3	0616+36	39:34:534	036:47:238	323.5	168.66	231.6		5531	3
3	0616+52	37:21:114	042:25:238	88.7	165.20	356.9		5531	2
3	0616+52	39:34:414	036:47:308	323.4	168.66	231.6		5531	3
3	0616+35	39:34:414	036:47:478	323.4	168.66	231.6		5531	3
3	0616+57	39:34:014	036:48:358	323.4	168.66	231.6		5531	3
3	0617+36	39:34:014	036:48:308	323.4	168.66	231.6		5531	3
3	0617+32	39:34:474	036:49:008	323.5	168.66	231.6		5531	3
3	0617+34	39:35:054	036:49:538	323.7	168.66	231.6		5531	3
3	0617+37	39:35:234	036:50:418	323.3	168.66	231.6		5531	3
3	0617+39	39:35:474	036:51:538	324.1	168.66	231.6		5531	3
3	0617+11	39:36:114	036:52:478	324.3	168.66	231.6		5531	3
3	0617+14	39:36:254	036:53:538	324.5	168.66	231.6		5531	3
3	0617+16	39:36:534	036:54:418	324.7	168.66	231.6		5531	3
3	0617+18	39:37:354	036:56:238	325.1	168.66	231.6		5531	3
3	0617+21	39:37:474	036:57:178	325.2	168.66	231.6		5531	3
3	0617+23	39:38:114	036:57:478	325.4	168.66	231.6		5531	3
3	0617+25	39:38:304	036:58:328	325.7	168.66	231.6		5531	3
3	0617+28	39:39:004	037:00:008	325.7	168.66	231.6		5531	3
3	0617+30	39:39:114	037:01:478	326.1	168.66	231.6		5531	3
3	0617+33	39:39:274	037:02:358	326.2	168.66	231.6		5531	3
3	0617+35	39:39:474	037:02:358	326.4	168.66	231.6		5531	3
3	0617+37	39:39:474	037:03:058	326.5	168.66	231.6		5531	3
3	0617+40	39:39:414	037:03:238	326.4	168.66	231.6		5531	3
3	0617+42	39:39:474	037:03:478	326.5	168.66	231.6		5531	3
3	0617+44	39:39:534	037:04:238	326.6	168.66	231.6		5531	3

DATA SET: SCBA.3626.APA90.9L60520.ALLCAP

DATE: 94/05/05
 TIME: 07:56
 PAGE: 02

1000

START COL	1	2	3	4	5	6	7	8	9	10
3	0617+17	39:39:47N	037:04:35E	326.5	168.66	231.6			5531	3
3	0617+19	39:39:47N	037:05:11E	326.5	168.66	231.6			5531	3
3	0617+31	39:39:47N	037:05:17E	326.5	168.66	231.6			5531	3
3	0617+50	39:39:47N	037:05:15E	326.5	168.66	231.6			5531	3
3	0617+36	39:39:47N	037:05:53E	326.5	168.66	231.6			5531	3
3	0617+19	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	037:06:12E	326.3	168.66	231.6			5531	3
3	0618+16	39:39:11N	037:06:23E	326.2	168.66	231.6			5531	3
3	0618+13	39:39:09N	037:06:23E	326.2	168.66	231.6			5531	3
3	0618+10	39:38:47N	037:06:30E	326.2	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	325.9	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+21	39:38:30N	037:07:47E	325.7	168.66	231.6			5531	3
3	0618+19	37:13:05N	042:09:17E	99.5	157.93	755.3			5531	3
3	0618+15	39:38:30N	037:06:11E	326.5	168.66	231.6			5531	3
3	0618+27	39:38:35N	037:06:45E	326.7	168.66	231.6			5531	3

1 0
 1 1
 3 PROCES DATA: 1 MAY 94
 INT REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20

3 TIME LATITUDE LONGITUDE BEARING RANGE AZIMUTH NODE 0 ALY VAL NODE 2 VAL
 NODE 3 VAL

***** START *****
***** STOP *****

DATABASE: SCGA.SA26.APR94.SLP0520.ALLMAP

DATE: 94/06/05
TIME: 07:56
PAGE: 63

START
COL -----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

3	0618+29	39:38:304	037:08:53E	326.3	168.66	231.6	5531	3
3	0618+32	39:38:114	037:08:41E	325.3	168.66	231.6	5531	3
3	0618+34	39:37:414	037:08:55E	325.5	168.66	231.6	5531	3
3	0618+36	39:37:304	037:08:11E	325.4	168.66	231.6	5531	3
3	0618+39	39:37:054	037:07:47E	325.2	168.66	231.6	5531	3
3	0618+41	39:36:474	037:07:47E	325.1	168.66	231.6	5531	3
3	0618+43	39:36:304	037:07:15E	324.9	168.66	231.6	5531	3
3	0618+46	37:27:054	042:30:11E	90.0	156.38	356.8	5531	3
3	0618+46	39:36:174	037:07:35E	324.3	169.66	231.6	5531	3
3	0618+48	39:36:174	037:07:53E	324.9	168.66	231.6	5531	3
3	0618+51	39:36:174	037:08:23E	324.3	168.66	231.6	5531	3
3	0618+53	39:36:174	037:08:41E	324.3	168.66	231.6	5531	3
3	0618+55	39:36:234	037:09:05E	324.3	168.66	231.6	5531	3
3	0618+58	39:36:174	037:09:23E	324.3	168.66	231.6	5531	3
3	0619+00	39:35:304	037:18:17E	324.4	168.66	231.6	5531	3
3	0619+02	39:33:534	037:06:00E	323.5	169.66	231.6	5531	3
3	0619+05	37:19:534	042:31:00E	89.3	154.70	356.6	5531	3
3	0619+05	39:32:054	037:03:23E	322.5	168.66	231.6	5531	3
3	0619+07	37:21:234	042:31:17E	88.4	154.70	356.6	5531	3
3	0619+07	39:27:534	037:00:17E	321.3	168.66	231.6	5531	3
3	0619+09	37:25:414	042:31:35E	86.3	154.70	356.6	5531	3
3	0619+09	39:26:534	036:56:05E	319.3	168.66	231.6	5531	3
3	0619+12	39:23:474	036:52:00E	318.2	168.66	231.6	5531	3
3	0619+14	39:21:004	036:48:35E	316.3	163.66	231.6	5531	3
3	0619+17	39:16:474	036:43:35E	314.3	168.66	231.6	5531	3

LATAS NO: 0037.5A 26 APR 90 ALP7500.ABL110

DATE: 04/05/90
 TIME: 17:56
 PAGE: 04

START COL	1	2	3	4	5	6	7	8	9
3	0619+19	39:12:114	036:10:107	312.7	169.66	231.6		5531	3
3	0619+18	39:02:354	036:20:254	308.0	169.66	231.6		5531	3
3	0619+16	37:23:474	042:31:538	87.5	153.69	14.2		5531	3
3	0619+16	39:55:354	036:22:000	355.5	169.66	231.6		5531	3
3	0619+20	37:29:004	042:32:000	85.6	153.69	14.2		5531	3
3	0619+20	38:49:214	036:10:118	303.1	169.66	231.6		5531	3
3	0619+31	38:42:354	036:13:308	300.3	169.66	231.6		5531	3
3	0619+33	38:35:414	036:09:110	297.7	169.66	231.6		5531	3
3	0619+35	38:29:304	036:15:178	294.9	169.66	231.6		5531	3
3	0619+30	37:27:114	042:32:108	86.4	152.34	25.8		5531	3
3	0619+33	38:21:174	036:11:338	292.2	169.66	231.6		5531	3
3	0619+40	38:14:054	035:59:218	289.5	169.66	231.6		5531	3
3	0619+43	38:05:214	035:56:118	286.4	169.66	231.6		5531	3
3	0619+45	37:59:374	035:50:158	284.1	169.66	231.6		5531	3
3	0619+47	37:50:014	035:53:238	282.4	169.66	231.6		5531	3
3	0619+50	37:46:304	035:52:158	279.1	169.66	231.6		5531	3
3	0619+54	37:31:354	035:50:107	274.5	169.66	231.6		5531	3
3	0619+57	37:23:534	035:56:178	271.9	169.66	231.6		5531	3
3	0619+59	37:16:354	035:51:278	269.1	169.66	231.6		5531	3
3	0620+12	37:04:154	035:57:178	266.6	169.66	231.6		5531	3
3	0620+14	37:01:354	035:53:158	264.1	169.66	231.6		5531	3

1
 1
 3
 PROCES DATE: 3 MAY 90
 IFF REPORT

3 THE TIME PERIOD REQUESTED WAS FROM 0620+00 TO 0650+20

1-1

DATA SET: 000A.0126.APR64.0101500.ALLMAP

DATE: 04/19/65

TIME: 07:56

PAGE: 65

START COL -----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

3	TIME MODE 3	LATITUDE VAL	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C	ALT	VAL	MODE 2	VAL
3	0620+06	36:53:077	036:55:237	261.3	168.66	231.6				5531	3
3	0620+09	36:46:014	036:57:307	256.7	168.66	231.6				5531	3
3	0620+11	36:39:307	036:00:058	256.1	168.66	231.6				5531	3
3	0620+13	36:30:174	036:00:157	252.7	168.66	231.6				5531	3
3	0620+16	36:24:471	036:00:538	250.7	168.66	231.6				5531	3
3	0620+18	36:18:114	036:10:308	248.1	168.66	231.6				5531	3
3	0620+20	36:11:357	036:19:237	245.6	168.66	231.6				5531	3
3	0620+23	36:01:258	036:21:358	241.5	168.66	231.6				5531	3
3	0620+25	35:56:059	036:24:118	240.1	168.66	231.6				5531	3
3	0620+27	35:53:234	036:26:358	238.2	168.66	231.6				5531	3
3	0620+30	35:47:174	036:33:018	235.5	168.66	231.6				5531	3
3	0620+32	35:41:174	036:39:358	232.8	168.66	231.6				5531	3
3	0620+35	35:35:534	036:45:398	230.3	168.66	231.6				5531	3
3	0620+37	35:30:174	036:51:538	227.6	168.66	231.6				5531	3
3	0620+39	35:25:174	036:58:178	225.1	168.66	231.6				5531	3
3	0620+42	35:20:394	037:05:358	222.6	168.66	231.6				5531	3
3	0620+44	35:15:054	037:13:018	219.5	168.66	231.6				5531	3
3	0620+46	35:11:534	037:19:158	217.5	168.66	231.6				5531	3
3	0620+49	35:07:014	037:26:418	214.4	168.66	231.6				5531	3
3	0620+51	37:10:004	040:34:358	95.6	152.16	115.3				5531	3
3	0620+53	35:04:054	037:30:058	212.5	168.66	231.6				5531	3
3	0620+56	34:57:234	037:40:078	207.4	168.66	231.6				5531	3
3	0620+58	34:54:234	037:46:238	204.3	168.66	231.6				5531	3

DATA SITE: FCSA, SA26, APRON, SEPTEMBER, ALLIAP

DATE: 04/15/05
TIME: 07:58
PAGE: 66

STAFF COL	1	2	3	4	5	6	7	8	9
3	0621*02	34:51:014	033:30:000	202.4	168.66	231.6		5531	3
3	0621*03	34:03:234	030:10:111	199.3	164.65	231.6		5531	3
3	0621*05	34:07:254	033:22:100	197.4	163.66	231.6		5531	3
3	0621*08	34:06:090	030:29:050	195.5	160.66	231.6		5531	3
3	0621*10	34:00:354	033:37:111	193.1	163.65	231.6		5531	3
3	0621*07	34:03:234	034:03:300	190.5	160.65	231.6		5531	3
3	0621*15	34:02:114	035:07:200	197.2	168.66	231.6		5531	3
3	0621*17	34:01:534	033:01:351	166.3	160.66	231.6		5531	3
3	0621*19	34:01:300	033:09:171	183.6	160.66	231.6		5531	3
3	0621*20	34:01:174	039:08:051	191.2	168.66	231.6		5531	3
3	0621*27	34:01:074	035:30:000	170.7	164.65	231.6		5531	3
3	0621*29	34:02:304	034:02:200	174.2	163.66	231.6		5531	3
3	0621*31	34:03:354	039:50:170	171.3	163.65	231.6		5531	3
3	0621*38	34:00:074	033:59:000	169.4	168.66	231.6		5531	3
3	0621*46	34:05:214	040:16:000	167.2	166.65	231.6		5531	3
3	0621*43	34:04:000	031:14:000	160.1	160.66	231.6		5531	3
3	0621*41	34:00:074	041:20:100	167.0	160.66	231.6		5531	3
3	0621*45	34:01:174	041:27:111	161.0	163.66	231.6		5531	3
3	0621*48	34:00:154	041:10:100	167.0	163.66	231.6		5531	3
3	0621*46	34:00:354	040:50:171	167.0	160.66	231.6		5531	3
3	0621*00	34:07:234	041:00:111	155.4	160.66	231.6		5531	3
3	0621*37	34:03:174	000:00:111	150.0	160.66	231.6		5531	3
3	0621*05	35:03:034	000:03:050	162.7	160.66	231.6		5531	3

SECRET

PAGE 17

SECRET

1 J
1
1

REPORT NUMBER: 500127
 REPORT DATE: 09/05/15

DATA SET: 7052.3426.A0894.0107520.ALLMAP

DATE: 09/05/15
 TIME: 07:56
 PAGE: 67

START COL 1-----2-----3-----4-----5-----6-----7-----8-----9-----0

3 THE TIME PERIOD REQUESTED WAS FROM 0520+00 TO 0658+20

3	TIME MODE 3	LATITUDE VAL	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE C ALT VAL	MODE 2	VAL
3	0621+57	35:02:17N	040:55:47E	151.7	168.66	231.6		5531	3
3	0622+00	35:03:47N	041:50:47E	150.7	168.66	231.6		5531	3
3	0622+02	35:05:00N	041:01:50E	149.3	168.66	231.6		5531	3
3	0622+04	35:05:47N	041:02:10E	149.3	168.66	231.6		5531	3
3	0622+07	35:06:41N	041:04:00E	148.7	168.66	231.6		5531	3
3	0622+09	35:07:35N	041:05:23E	148.3	168.66	231.6		5531	3
3	0622+11	35:08:10N	041:06:11E	147.3	168.66	231.6		5531	3
3	0622+14	35:08:52N	041:07:11E	147.4	168.66	231.6		5531	3
3	0622+16	35:09:35N	041:08:17E	146.7	168.66	231.6		5531	3
3	0622+18	35:09:05N	041:08:53E	146.5	168.66	231.6		5531	3
3	0622+21	35:10:35N	041:09:19E	146.3	168.66	231.6		5531	3
3	0622+23	35:11:00N	041:10:15E	146.3	168.66	231.6		5531	3
3	0622+26	37:14:01N	042:39:17E	94.3	167.70	189.7		5531	3
3	0622+26	35:11:17N	041:10:17E	145.3	168.66	231.6		5531	3
3	0622+26	37:15:23N	042:39:15E	94.7	167.70	189.7		5531	3
3	0622+29	35:11:42N	041:10:47E	145.5	168.66	231.6		5531	3
3	0622+30	35:12:11N	041:11:17E	145.3	168.66	231.6		5531	3
3	0622+33	35:12:17N	041:11:11E	145.3	168.66	231.6		5531	3
3	0622+47	37:14:23N	042:40:47E	94.3	167.16	181.4		5531	3
3	0622+47	37:13:00N	042:39:53E	95.4	166.50	191.9		5531	3

DATASET: SCSA.3A26.APR94.8LP0701.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	164.70	0.3			5531	3
3	0707+00	37:05:47N	043:08:41E	95.0	162.63	0.1			5531	3
3	0707+31	37:05:47N	043:10:00E	95.0	160.47	0.3			5531	3
3	0708+02	37:05:41N	043:11:23E	95.0	178.31	359.9			5531	3
3	0720+26 27+0	37:36:47N 2	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	69.58	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	00000000	111.0	0.0	202.2				
3	0726+06	00000000	00000000	111.0	0.0	202.8				
3	0726+06	00000000	00000000	111.0	0.0	212.8				
3	0726+09	00000000	00000000	111.0	0.0	202.2				
3	0726+09	00000000	00000000	111.0	0.0	202.8				
3	0726+09	00000000	00000000	111.0	0.0	212.8				
3	0726+11	00000000	00000000	111.0	0.0	202.2				
3	0726+11	00000000	00000000	111.0	0.0	202.8				
3	0726+11	00000000	00000000	111.0	0.0	212.8				
3	0726+13	00000000	00000000	111.0	0.0	202.2				

CERTIFICATE OF DECLASSIFICATION
 I certify that the information contained in this document has been declassified from
 _____ to UNCLASSIFIED.
 SECRET
 12 MAY 94
 Date
 DONALD G. NORRIS, GS-15, DAR
 Declassification Team Chief, HQ USEUCOM

EXTRACT *Redlined*
 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 *JFE Red - Model 2 - Order 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

187-1/331
0720-0607

DATASET: 808A.0A06.APR94.0LP0520.ALL5530

DATE: 04/05/12
TIME: 11:31
PAGE: 14

START
COL

-----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

5 00000: 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 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	91.7	173.45	348.0	-800	3	5530	2	
3	0523+27 2400	37:57:30N 3	040:13:47E	82.4	167.64	348.6	2900	3	5530	3	
3	0523+50 2400	37:57:35N 3	040:15:17E	82.2	165.38	348.9	2900	3	5530	3	
3	0524+28 2400	37:57:30N 3	040:16:35E	92.2	163.05	348.5	2900	3	5530	3	
3	0525+30 2400	37:57:00N 3	040:19:17E	82.1	158.53	346.4	2900	3	5530	2	
3	0526+00	37:57:17N 3	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	149.44	345.8	2900	3	5530	2	
3	0527+32	37:52:47N 3	040:24:47E	81.4	149.44	345.8	2900	3	5530	2	
3	0527+35	37:52:53N 3	040:25:05E	81.4	149.44	345.8	2900	3	5530	2	
3	0527+42	37:53:05N 3	040:26:00E	81.3	149.44	345.8	2900	3	5530	2	
3	0527+44	37:53:11N 3	040:26:17E	81.3	149.44	345.8	2900	3	5530	2	
3	0527+47	37:53:17N 3	040:26:41E	81.2	149.44	345.8	2900	3	5530	2	
3	0546+52 2400	37:44:47N 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+11 2400	37:41:11N 3	041:50:53E	85.3	131.64	170.6	7400	3	5530	3	
3	0605+56 2400	37:29:00N 3	041:56:47E	85.5	136.88	350.0	7500	3	5530	3	
3	0605+58	37:28:47N 3	041:57:05E	85.6	136.88	350.0	7500	3	5530	3	
3	0608+20 2400	37:27:03N 3	042:02:30E	84.2	126.28	55.6	7500	3	5530	2	

CERTIFICATE OF DECLASSIFICATION
 I certify that the information contained in this document has been declassified from
 SECRET to UNCLASSIFIED
 DONALD G. NORRIS, GS-15, DAC
 Declassification Team Chief, HQ USEUCOM
 Date: 12 May 94

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 Pod (42/5530) 12 May 94
 which is kept in my records system.
 WILLIAM L. HARRIS, Capt, USAF, MSC
 Evidence Custodian, Incirlik Air Base, Turkey
 Date: 16 May 94

NAME: 0051.5325.0000.6L07500.ALL5510

DATE: 04/15/12
TIME: 11:31
PAGE: 15

001	1	2	3	4	5	6	7	8	9	0
3	0600+30	37:36:30N	042:02:17E	82.1	126.24	55.6	75.0	3	5530	2
3	0600+35	37:37:21N	042:05:47E	83.8	129.60	182.8	76.0	3	5530	2
3	0610+30	37:39:05N	042:19:18E	89.1	149.69	292.3	76.0	3	5530	2
3	0610+35	37:36:17N	042:19:10E	86.5	169.60	242.3	76.0	3	5530	2
3	0615+10	37:31:17N	042:22:05E	89.3	176.68	236.1	76.0	3	5530	2
3	0615+31	37:35:05N	042:23:17E	87.3	176.68	180.1	76.0	3	5530	2
3	0615+53	37:32:17N	042:23:23E	85.3	176.68	336.1	76.0	3	5530	2
3	0615+52	37:30:11N	042:25:23E	89.1	165.21	257.2	76.0	3	5530	2

PAGE 1

~~SECRET~~
~~UNCLASSIFIED~~

PROCESS DATE: 11 MAY 04
ISS: 148027

THE TIME PERIOD REQUESTED WAS FROM 0526+30 TO 0459+20

001	TIME	LATITUDE	LONGITUDE	BEARING	RANGE	AZIMUTH	MODE 1	VAL	MODE 2	VAL
3	0617+10	37:38:23N	042:27:35E	89.5	161.27	354.7	75.0	3	5530	3
3	0617+10	37:38:23N	042:27:47E	89.5	161.27	354.7	75.0	3	5530	3
3	0617+17	37:38:30N	042:28:12E	89.5	161.27	354.7	75.0	3	5530	3
3	0617+30	37:38:23N	042:29:10E	89.5	161.27	354.7	75.0	2	5530	3
3	0617+30	37:38:23N	042:29:23E	89.5	161.27	354.7	75.0	3	5530	3
3	0618+10	37:38:23N	042:28:10E	89.5	159.67	354.0	76.0	3	5530	3
3	0618+30	37:38:35N	042:28:40E	89.5	159.67	354.0	76.0	3	5530	3
3	0618+40	37:37:25N	042:26:17E	89.3	156.22	256.6	71.0	3	5530	2
3	0620+10	37:32:35N	042:30:01E	86.1	151.03	62.6	138.0	2	5530	3
3	0620+11	37:32:07N	042:30:11E	87.1	151.03	62.6	138.0	2	5530	3

DATA: 007.0106.0000.0LP0520.0LL5530

DATE: 94/05/11
TIME: 11:31
PAGE: 16

START COL	1	2	3	4	5	6	7	8	9	0
3	0620+10 2400	37:15:004 3	042:34:100	92.8	151.13	90.3	7500	3	5530	3
2	0620+51 2400	37:00:004 3	042:30:350	95.9	150.29	115.6	7500	3	5530	2
2	0621+55	37:14:174	042:30:170	95.1	159.65	170.0			5530	2
3	0623+18	37:12:354	042:40:110	95.4	171.66	180.3			5530	3
2	0623+20	37:12:304	042:41:470	95.5	171.66	180.0			5530	3
3	0653+58	37:10:114	042:39:000	92.3	165.28	350.3			5530	3
3	0654+20	37:10:114	042:39:050	92.3	165.29	350.3			5530	3
3	0655+12	37:20:204	042:40:410	88.3	159.13	23.4			5530	3
3	0656+27	37:06:204	042:42:350	96.7	159.30	122.0			5530	3
2	0656+10	37:05:054	042:42:110	97.7	161.45	145.4			5530	3

DATABASE: CCGP.3A26.AB204.9L00701.ALL553

DATE: 94/05/12
TIME: 11:31
PAGE: 14

START COL -----1-----2-----3-----4-----5-----6-----7-----8-----9-----0

3	0704+57	37:02:004	043:03:052	96.2	191.27	359.3	5530	3
3	0720+26	37:02:234	043:16:052	96.2	167.45	1.0	5530	3
3	0720+38	36:50:304	043:50:112	110.7	110.73	29.2	5530	3
3	0724+10	36:50:304	043:50:102	110.3	110.73	29.2	5530	3
3	0726+36	00000000	00000000	110.3	0.0	202.2		
3	0726+36	00000000	00000000	110.3	0.0	202.9		
3	0726+36	00000000	00000000	110.3	0.0	212.3		
3	0726+39	00000000	00000000	110.3	0.0	202.2		
3	0726+39	00000000	00000000	110.3	0.0	202.9		
3	0726+39	00000000	00000000	110.3	0.0	212.3		
3	0726+21	00000000	00000000	110.3	0.0	202.2		
3	0726+21	00000000	00000000	110.3	0.0	202.9		
3	0726+21	00000000	00000000	110.3	0.0	212.3		
3	0726+13	00000000	00000000	110.3	0.0	202.2		
3	0726+13	00000000	00000000	110.3	0.0	202.9		
3	0726+13	00000000	00000000	110.3	0.0	212.3		

SWITCH ACTION REPORT

TIME: 061409 CYCLE NUMBER: 691.2 RECORD NUMBER: 33 TABLE SIZE: 60 BEFORE: ADSID1 RRT2

C	P	CATEGORY SELECT	S	T	T
O	N		I	E	R
N	O	A R S X S X UTSS SS FEAT.D S	B	U	T
S	N	I / P TP T NATJTIT SEL. / T	P	R	A
O	E	R GIF F AADBUTB9	P	R	C
L	H	E D N P R H A M S S S I I	A	C	E
E	A	O B S E T H U I S C U G G L H P D M P	C	E	K
		S G O D T S O K R N T R N H A C C S U U			

CURSOR COORDINATES CONSOLE INPUT TEXT LINE

U V LATITUDE LONGITUDE LVV....1....V....2....V....3.

SDA/1	1	11011100100011001101	ACE	S	O	RE-INIT (WEAP)	----
SDA/1	1	11011100100011001101	ACE	S	G	HOOK	TY06

6.4	-114.3	37.22.2N	42.18.0E
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
 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 Report, 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

SWITCH ACTION REPORT

TIME: 0510+16 CYCLE NUMBER: 692.2 RECORD NUMBER: 34 TABLE SIZE: 60 BEFORE: ADSID1 RPT2

C	P	CATEGORY SELECT	S	T				
O	H		L	E				
B	O	A	K	S	K	S	FEAT.	D
S	R	I	/	P	T	P	ATTITUDE	S
D	E	ACTIV	F				ADDBUTTON	F
L	3	5					ACQ	P
R	4						///	A
								D
								E

CURSOR COORDINATES CONSOLE INPUT TEXT LINE

0 V LATITUDE LONGITUDE LtV....1....V....2....V....3.

003/1 1 11011111001101101 ACQ S 0 ENTER ---- 6.4 -114.3 07.22.2N 02.18.0E 25 PMS

END OF REPORT CYCLE 692 - 1 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 693 - GMT: 0614+21

END OF REPORT CYCLE 693 - 1 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 694 - GMT: 0614+20

END OF REPORT CYCLE 694 - 0 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 695 - GMT: 0614+25

END OF REPORT CYCLE 695 - 1 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 696 - GMT: 0614+22

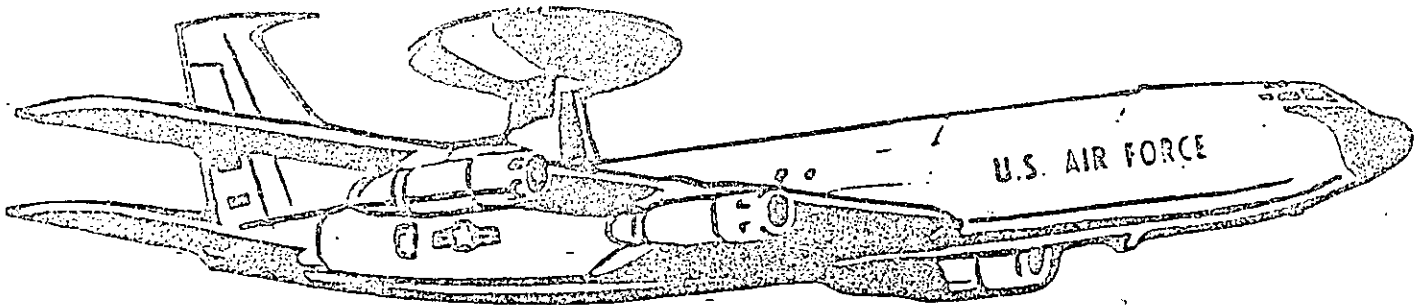
END OF REPORT CYCLE 696 - 1 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 697 - GMT: 0614+20

END OF REPORT CYCLE 697 - 1 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 698 - GMT: 0614+27

E-8B/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 <u>552d ACW HB 55-1, VOL II</u>	
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.	
<u>27 Mar 94</u> Date	<u>Arnon D. Byer</u> Signature Name/Organization/Section

R416Va 1/27/92

This switch action is used to point out an object of attention to all operators on board ARCS or at an adjacent facility. The ARROW/ALERT (ATTN) 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.

TD Lines:	RESULTING DISPLAYS	AFFECTED DISPLAYS
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. 2. Enter console selective intercom numbers of consoles to receive arrow (NN), or depress ALL button. 3. Position the cursor at the point of the desired arrow. 4. Depress ENTER button.	1. Receiving console cannot display more than one arrow. 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. 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.	1. LN 14 displays menu. BCA displays: ARW 2. LN 13 displays: NN 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: 054.2 RECORD NUMBER: 33 TABLE SIZE: 63 BEFORE: ADSID1 RRT2

C	P	CATEGORY SELECT	S T	T			
O	M		E F	R			
N	O	A R S YS X UTSS SS PRAT.D S		A	CURSOR COORDINATES		CONSOLE INPUT TEXT LINE
S	N	I / P TP T HATTJTT SEL. / T		C			
O	E	RGI? P AADHRTAR	P M	X			
L	B	ED HPRHARSSSI I	ACE T O				
E	A	OBSEYUISCUGGLNPDNP ///	A D				
	S	GODTSOKRNRNACC50U	SDP B E				

	"	V	LATITUDE	LONGITUDE	LIV....1....V....2....V....3.
WDD/7	S	11011100100111101101	ACE S O	RE-INIT (PRAP)	----	24.7 -134.7 37.01.8N 42.40.9E
WDD/7	S	11011100100111101101	ACE S O	HOOK	ES01	22.1 -126.0 37.10.5N 42.37.6E
WDD/7	S	11011100100111101101	ACE S O	HOOK	ES01	25.7 -126.3 37.10.1N 42.42.2E

CERTIFICATE OF DECLASSIFICATION
 I certify that the information contained in this document has been declassified from SECRET to UNCLASSIFIED.
 Date 14 May 94
 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.
 Date 14 May 94
 WILLIAM L. HARRIS, Capt, USAF, MSC
 Evidence Custodian, Incirlik Air Base, Turkey

SWITCH ACTION REPORT

TIME: 0613+27 CYCLE NUMBER: 854.3 RECORD NUMBER: 34 TABLE SIZE: 18 BEFORE: ASINITC RPT2

C	P	CATEGORY SELECT	S	T					
0	4		I	P					
4	0	1	R	S	VS	V	HTSS	SS	HEAT.D
5	5	I	/	P	TP	T	KAPITP	SSL	/
0	P	RCIF	P						
1									
2	1	A	D	H	B	E	T	N	H

CURSOR COORDINATES CONSOLE INPUT TEXT LINE

400/7 5 1101110010011110101 ACB 5 0 24722 ---- 25.1 -126.0 17.17.44 02.41.47 59 SU

END OF REPORT CYCLE 854 - 2 REPORTS PRINTED
WARNING 15: ONE OR MORE INCOMPLETE REPORTS

START OF REPORT CYCLE 855 - GMT: 0613+27

SWITCH ACTION REPORT

TIME: 0655+14 CYCLE NUMBER: 1009.1 RECORD NUMBER: 0 TABLE SIZE: 219 AFTER: ACTAD11 RRT2

C	P	CATEGORY SELECT	S	T	T			
O	H		I	E	H			
N	O	A R S X S UTSS SS FEAT.D S	BUTTON	A		CURSOR COORDINATES		CONSOLE INPUT TEXT LINE
S	M	I / P TP T NATTTT SEL. / T	PRESS	C				
O	E	RGIF F AADBTMB	F	T	K			
L	B	ED NPRHAMRSSSI I ACE T O						
E	A	OBSEPTNUI SCUGLHPDHP /// A D						
		SGOOTS DKKRTRNNACCSHU	BDF	9	E	U	V	LATITUDE LONGITUDE L#V.....1.....V.....2.....V.....3.

WDD/7	S	11011100100111101101	ACE S 0	RE-INIT (REAP)	----	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

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, SAC
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 - Rechecked
which is kept in my records system.

14 May 94
Date

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

TIME: 0722+01 CYCLE NUMBER: 1271.2

RECORD NUMBER: 34

TABLE SIZE: 60

BEFORE: ADSID1

RRT2

C P CATEGORY SELECT S T
 O H O A R S X S UTSS SS FEAT.D S
 S N I / P TP T NAITJTT S&L. / T
 O E RGIP F AADSBTBB P M
 L RED NRRHAMR55SI I ACE T O
 E AOBSETNUI SCUGGLPOMP /// A O
 SGOOTSDKRNRNACCSUU BOP R E

BUTTON PRESS

T
R
A
C
K

CURSOR COORDINATES

CONSOLE INPUT TEXT LINE

U V LATITUDE LONGITUDE L#V.....1.....V.....2.....V.....3.
 43.1 -132.0 37.04.3N 43.03.9E

4DD/2 25 11011111111111111101 ACE S O REQ/ASG IFF/SIF ----

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 Search Action Rpt for Reg of SIF, 23 Apr 94 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
 DONALD G. NORRIS, GS-15, DAC
 Declassification Team Chief, HQ USEUCOM

2 0531 00.77 JT 00000 F1 2000/5R096011/ 37:51: 0N / 00:33:47E /FRIEND /GENSRA
L /NS /PRK QUAL 7
14 /EC/PTD /M5N COR 0 /SIZE SINGLE /HS MODE C /ALT 2675.00/COURSE 97 /SPD 12
7/08 /VBL 2 /SPIC/R10/X10
16 /VBL 2 /CHAN NS /RTM GA061 /MODE 1 42 /MODE 2 5531 /MODE 3 2400 /MH 0
/FR 3

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 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 NSC Data 26 Apr 94
which is kept in my records system.
22 May 94 Date
W. L. Harris
WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

DATE: 04/24/26
TIME: 10:10
PAGE: 1671

2 0714 09.84 JT 00000 PL 2006/S2006011/ 36:56:30N / 43:20:11E /FRIEND /HELO
/AS /PRF QUAL 2
14 /EC/PTD /MSN COR) /SIZE SINGLE /HS MODE C /ALT 7375.00/COURSE 137 /SPD 12
16 7/SH //DL 1 /SPID/RID/YEO
S /CLASS /AT 0/A09L /YDL 1 /IDNT 02 /VFN GA061 /PENDING /ENG AVAIL /STALE 0 /RAID 4

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, HO 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, 126 Apr 94
which is kept in my records system.
20 May 94
William L. Harris
WILLIAM L. HARRIS, Capt, USAF, MSC

DATE: 04/14/25

TIME: 10:19

PAGE: 1699

0 0713 55.69 JT 00100 T1 2006/SR06011/ 36:55:11N / 43:21:41E /FRIEND /HELO
/45 /TRK QUAL 1
16 /SC/PT0 /NSH COB 0 /SIZE SINGLE /45 MODE C /ALT 7375.02/COURSE 137 /SPD 12
16 7014 /101 2 /SPIC/110/110
/VMI 2 /CIAN NS /V14 CAS61 /MODE 1 42 /MODE 2 5531 /109E 3 2400 /44 0
/CP 0

DATE: 90/04/36
TIME: 10:10
PAGE: 1711

2 0710 51.04 JT 0000 01 2006/58000011/ 36:53:30 / 43:23:30 /STEND /MELD
/IS /TR QUAL 1
17 7/10 /IBL 2 /26/20 /MSY COR 0 /SIZE SINGLE /MS MODE C /ALT 7375.00/COURSE 137 /SPD 12
/010/010/XTD
10 /IBL 2 /CIAN 05 /MTR 0001 /MODE 1 42 /MODE 2 5531 /MODE 3 2400 /M 2
/SPD

DATE: 08/08/25
TIME: 10:10
PAGE: 1732

2 0715 01.53 JT 0000 TL 2006/SPNDAG11/ 35:51:53N / 43:25:23E /FRIND /HELO
/RS /TK QUAL 1
16 /RS/RS /NSN COP 0 /SIZE SINGLE /RS MODE C /ALT 7375.00/COURSE 137 /SPD 12
14 7/08 /IDL 2 /SP10/R10/Y10
/VPL 2 /CHAN NS /NEN GA051 /MODE 1 42 /MODE 2 5531 /MODE 3 2400 /M4 0
/PR 0

DATE: 94/04/26
TIME: 10:10
PAGE: 1751

2 0917 21.03 JP 0000 TL 2006/SEN06011/ 36:50:17N / 43:27:11E /FRIEND /HEL0
/ID /TK QUAL 1
14 /SO/PT /RGN CDR 0 /SIZE SINGLE /RS MODE C /ALT 7375.00/COURSE 137 /SPD 12
14 7/50 /IDL 2 /SPIC/RID/VID
/VPL 2 /CHAN NG /RPN GA061 /MODE 1 42 /MODE 2 5531 /MODE 3 2400 /M4 E
/RPN

DATE: 94/04/26
TIME: 10:10
PAGE: 1771

2 0713 01.03 JT 00000 FJ 2006/58406011/ 36:49:35N / 43:20:11E /FRIEND /HELO
/HS /TRK QUAL J
10 /SC/PTD /TSM COR 0 /SIZE SINGLE /HS MODE C /ALT 7375.00/COURSE 90 /SPD 12
14 7/SM /VDL 1 /SP10/R10/X10
/VDL 1 /IDNT 02 /NTN 5A061 /PENDING /ENG AVAIL /STALE 0 /RAID N
5 /CLASS /AT 0/ATDL

2	0719 01.03	JT 0000	T1	2006/SEN06011/ 36:49:30N	/ 43:31:53E	/FRIEND	/HELD
	/45		/TRK QUAL 1				
16		/SG/PTD	/MSG CDR	0 /SIZE SINGLE /HS MODE C	/ALT 7375.00/COURSE 90	/SPD 12	
14	7/5W /VPL 1	/SP10/R10/X10					
		/VPL 1	/IGHT 02	/NPN GA051	/PENDING	/ENG AVAIL	/STALE 0
	S	/CLASS	/AT C/ATOL				/RAID 4

DATE: 98/06/26
TIME: 19:10
PAGE: 1310

2 0720 01.28 JT 00000 01 2006/SRND6011/ 36:09:30Y / 43:34:41F /FRIEND /HELD
/MS /TNS QUAL 1
16 /30/STP /MSN COR A /SIZE SINGLE /MS MODE C /ALT 7375.00/COURSE 90 /SPD 12
7/10 /TDL 1 /SPIC/RI0/XLD
16 /YDI 1 /IDST 02 /YCH 0A061 /PENDING /ENG AVAIL /STALE 0 /PAID 0
/CLASS /AC 04/00L

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.

Paul Lee Q. Van Der Berg
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

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

1 0000 0000 00 0000 01 0117/00000070/ 36:55:17N / 35:28: 00 /PRINND /INT-PT
2 /LAP /TYPE QUAL
3 /NO/PT /MOM COP
4 /SIZE SINGLE /IS PAPER /ALR 11297.53/COURSE 63 /SPD 32
5 /VFL 1 /IDR 01 /SPIC/PIO/PIO
6 /VFL 1 /IDR 01 /SIDR 00000 /VC TR01

CERTIFICATE OF DECLASSIFICATION
I certify that the information contained in this document has been declassified from
SECRET to UNCLASSIFIED.
Donald G. Norris
DONALD G. NORRIS, GS-15, DAC
Declassification Team Chief, HOUJFUCOM
23 MAY 94

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.
W. L. Harris
22 May 94
WILLIAM L. HARRIS, Capt, USAF, MSC
Evidence Custodian, Incirlik Air Base, Turkey

ATCH 17 to TAB O 3 f

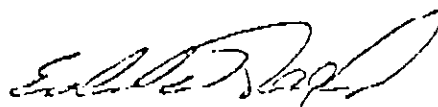
Extract, JTIDS message listing, earliest AWACS track data transmissions (SECRET)

See Classified Addendum

20 May 1994

CERTIFICATE OF EXTRACT

I am Eddie Reed and I work at the 532d 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 #4 920315

which is kept in my records system.

25 April 1994

Date


LAURA A. ELLIS, MAJ USAF

Evidence Custodian, Incirlik Air Base, Turkey

ATTENTION ARROW 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.

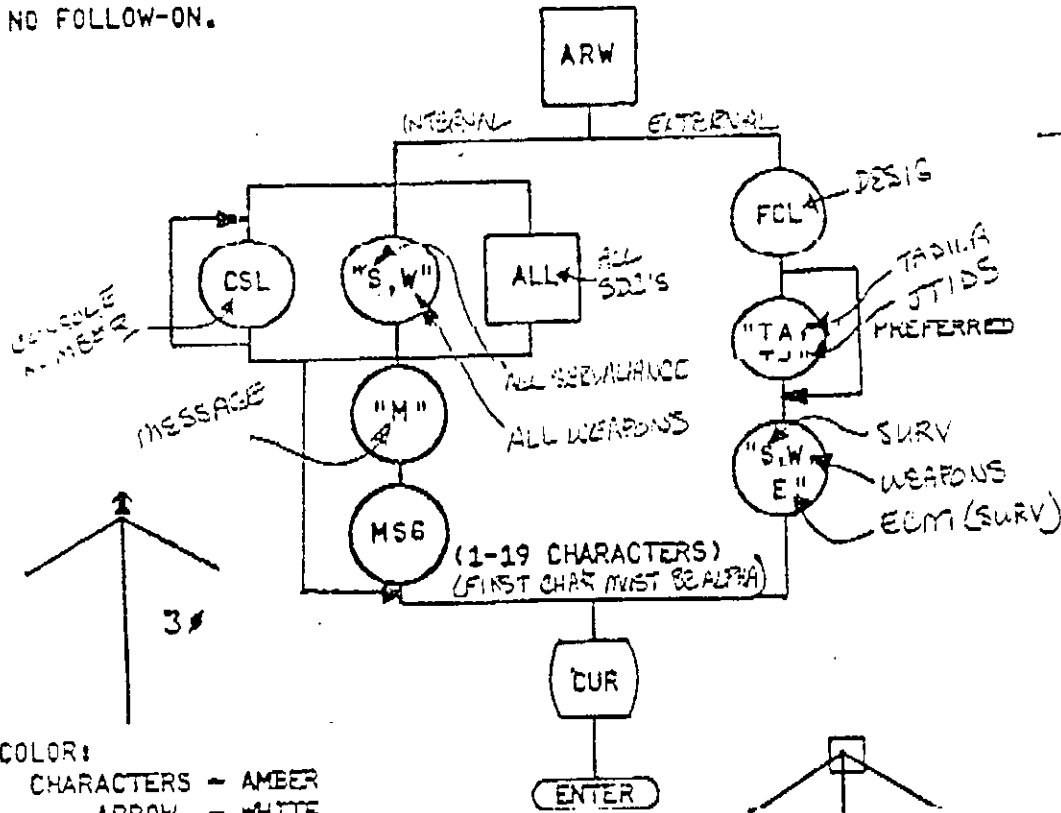
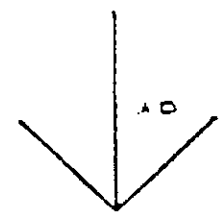
A MESSAGE OF 19 CHARACTERS MAYBE SENT TO ONE OR MORE CONSOLES.

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

ENCL.					ARROW	ARW
CHECK	6-387		BS	5-7		
APR	5-70		WPH	5-7	<i>BEARING</i>	213
APR	4-54		SUR	5-7		
20/25.1			STW	5-7		

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

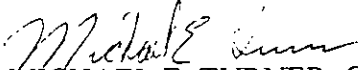
The following switch settings are not listed in the report:

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)