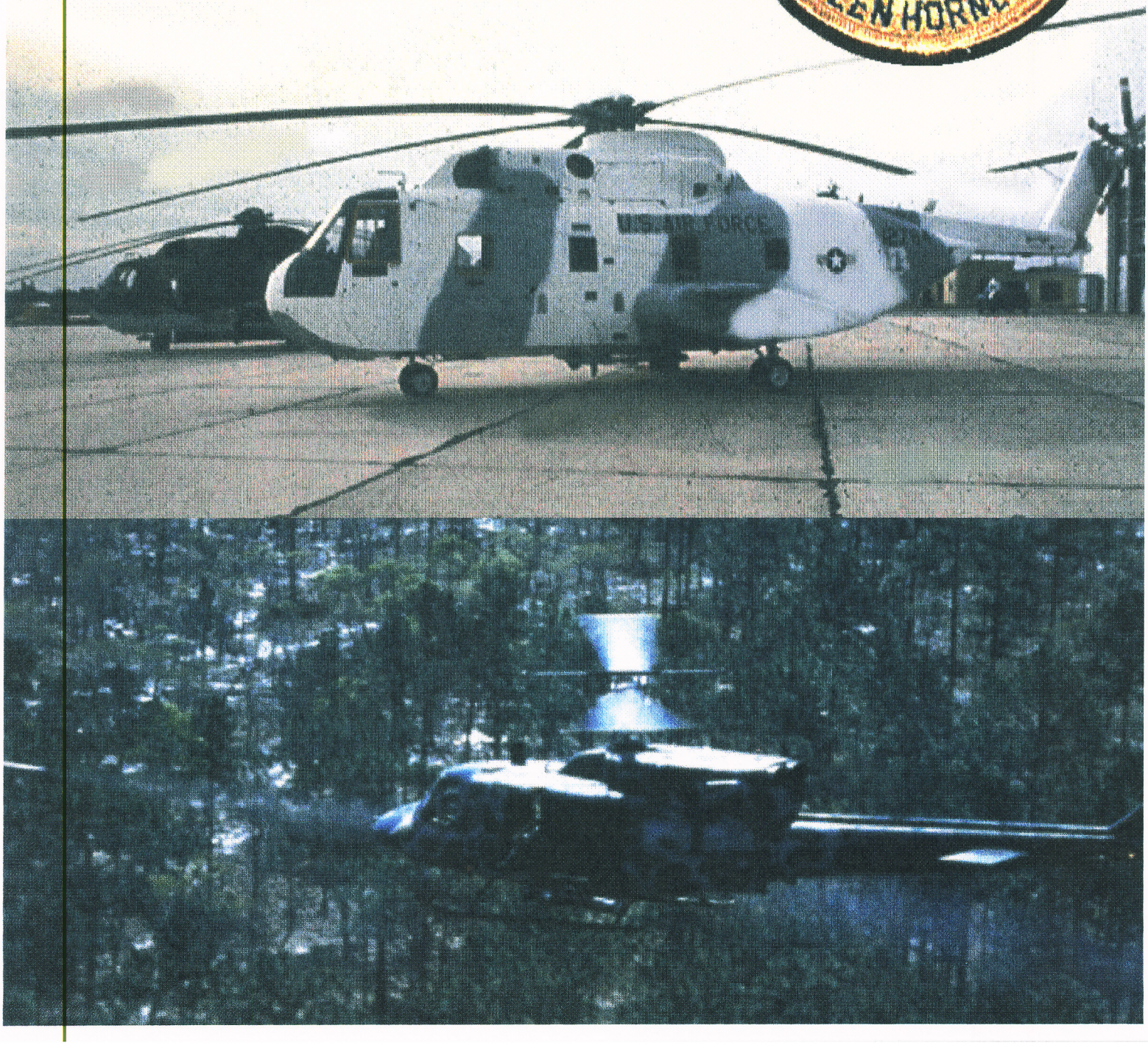
1978

HISTORY OF THE 20th SPECIAL OPERATIONS SQUADRON



MEMORANDUM

Date: 27 Dec 94

From: 20 SOS/CCX

To: WHOM IT MAY CONCERN

Subject: DOCUMENT CLASSIFICATION

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1. The documents contained herein are portions of the 1ST/16TH SOW histories for the dates shown on each document. The SOW histories as a whole are classified for the most part.

2. The documents in this binder are a compilation of materials from varied sources and have all been declassified if necessary. Sheets showing declassification are all posted in the last document protector for each respective binder.

3. Any materials you feel may be of questionable classification you are encouraged to bring to my attention and I will endeavor to alleviate your apprehensions.

SQUADRON HISTORIAN

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HISTORICAL REPORT

TWENTIETH SPECIAL OPERATIONS SQUADRON

1 JANUARY 1978 - 31 MARCH 1978

LT COLONEL JOHN R. ROBERTS
Commander

MISSION STATEMENT

The primary mission of the 20th Special Operations Squadron is extremely comprehensive. The squadron is tasked to conduct day or night infiltration, exfiltration, gunnery support, reenforcement, and resupply into hostile or enemy controlled territory. These operations include the use of airland and airdrop techniques, and entail land and water overflight. Another primary mission is the conduct of psychological operations, which include speaker broadcasts and aerial dispensing of leaflets.

Corollary missions give the squadron the flexibility and varied capabilities for which special operations units are noted. These missions include:

a. Recovery of personnel, which also entails escape and evasion operations, and combat search and rescue (SAR). SAR operations would normally be prosecuted from forward operating locations where dedicated Aerospace Rescue and Recovery Service (ARRS) forces are not available. SAR efforts would include the majority of ARRS techniques: search and location of survivors, airland or aerial recovery (i.e., hoist, STABO rig), first aid, and transportation to the nearest medical facility.

b. Helicopter shipboard operations (joint service).

c. Medical evacuation of injured personnel.

d. Humanitarian and civic action programs.

e. Limited photo reconnaissance, by hand held or modularly installed camera systems.

f. Other missions, as directed by higher headquarters.

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MANNING

Position	Authorized	Assigned
Commander	1	1
Operations Officer	1	1
Flight Surgeon	1	0
Pilots, UH-1N	18	19
Pilots, CH-3E	12	14
Flight Mechanics, UH-1N	9	11
Flight Mechanics, CH-3E	12	14
Weapons Specialists, UH-1N	9	10
Administrative Specialists	3	3
First Sergeant	0	1
Operations Specialists	3	3
Medical Technicians	3	3
Life Support Technicans	4	4
TOTAL	76	83

KEY PERSONNEL

Position	Individual	Effective
Commander	Lt Col John R. Roberts	1 Jan 78
Operations Officer	Maj Standley A. McGhan	6 Apr 78
Asst Ops Officer, UH-1N	Maj Jerome L. Gudvangen	5 Sep 76
Asst Ops Officer, CH-3E	Capt John W. Grove	6 Apr 78
Administrative Officer	Capt John M. Graham	23 May 77
Safety Officer	Capt John H. Schramm	29 Oct 75
A Flight Commander	Capt Edward W. Gmyrek	22 Feb 77
B Flight Commander	Capt Russell J. Spahr	2 Dec 77
C Flight Commander	Capt David L. Schildmeyer	6 Jul 77
D Flight Commander	Maj Richard J. Hlavaty	23 Jan 76
Stan/Eval Officer	Capt Karl W. Poulsen	12 Dec 75
First Sergeant	MSgt George W. Puett	19 Aug 77
NCOIC, Operations	Sgt Paul C. Ramirezdearellano	28 Feb 78
NCOIC, Weapons Specialists	SMSgt Ronald J. Gray	24 Feb 77
NCOIC, Flight Mechanics	MSgt Floyd W. Watson	1 Apr 77
NCOIC, Stan/Eval	MSgt Floyd W. Watson	2 Dec 75

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KEY PERSONNEL

Position	Individual	Effective
NCOIC, Administration	TSgt Allan G. Hineman	11 Jul 77
NCOIC, Life Support	SSgt Lamont C. Pass	28 Sep 76

STATEMENT OF SPECIALIZED EQUIPMENT

The squadron's aircraft equipage, as authorized by Air Force Programming Documents, includes six UH-1Ns and four CH-3Es all special operations forces (SOF) configured. To date, 6 UH-1Ns and 3 CH-3Es are on station, and the remaining aircraft has been identified by tail number.

Various items of specialized equipment are authorized for the unit's primary and corallary mission. This equipment includes:

a. The XM-93 Subsystem, which consists of 7.62mm electrical gattling guns, capable of firing 4000 rounds per minute.

b. The M-23 Subsystem, which includes 7.62mm gas operated machineguns capable of firing 550 rounds per minute.

c. The 2.75 inch Folding Fin Aircraft Rocket (FFAR), which is normally configured with a nine pound warhead.

d. The UH-1N Loudspeaker System, designed primarily for psychological operations, can broadcast taped or live sound over a two mile radius.

e. The 3090-3 Spray System, a self contained, windmill operated aerial spray system with a capacity of 200 gallons.

CHRONOLOGY OF SIGNIFICANT EVENTS

3 Jan 78 Lt Col Robert Mayo officialy introduced Lt Col John R. Roberts as the new Commander of the 20 SOS.

Capt Richard Gardner, TSgt Vanderploeg, Sgts Bobo, Wyman, and AlCs Haines and Hinkler TDY to Kirtland AFB to attend UH-1N & CH-3E School.

Capt Frank Gray TDY to MacDill AFB, FL for Empire Glacier 78 as part of the REDCOM Staff Augmentation (Joint Planning and Control Group)

5 Jan 78 Lt Col Frank Spencer with 8th SOS/CC and 1 SOW/DOW held an informal discussion at Langley AFB, VA with 9AF/DO Col Tolbert, Maj General Ellis (TAC/DO), and Brigadier General Russ (TAC/DO) on the results of the 1 SOW participation in Red Flag 78.

7 Jan 78 Farewell party for Lt Col & Mrs Mayo in Destin, FL.

13 Jan 78 Capt Joe Vallimont (20 SOS/DOW) and Capt Gary Weikel (1 SOW/DOW) represented the Wing at TAC/XPJ. Hosted meeting Joint Countering Attack Helicopter program (J-CATCH).

14 Jan 78 The following people were TDY to Griffis AFB, NY for Empire Glacier 78. Maj McGhan and Porter, Captains Charfaurous, Greer, Blough, O'Day, Cowan, Graham, Poulsen; 1 Lts St Romain, Pounder, Collins, 2Lt Roark; MSgt Otis; TSgts Houston, Schutte, Craig, Brown, Marshall; SSgts Broussard, Rech, Carter, Griffin and Pass.

17 Jan 78 Capt Hlavaty, Lt Chatham, TSgt Mustered and Sgt Magill flew General Hill, Commander NORAD to the SPADAT Site.

Lt Col Spencer TDY to Indian Springs to recover UH-1N 604 which was deployed to Red Flag. Aircraft received structural modification at Indian Springs.

Lt Col Roberts, Capts Weikel and Vallimont TDY to Ft Rucker to attend a one day conference to discuss involvement of the 1 SOW in future J-CATCH evaluations.

30 Jan 78 Capts Weikel and Tota went TDY to Luke AFB, AZ for a Staff Assistance Visit to the 302 SOS.

1 Feb 78 Aircrews redeployed from Griffis AFB, NY from Empire Glacier 78. Capt Vallimont briefed Wing Staff on J-CATCH.

7 Feb 78 Capt Edgerton & SSgt Hall attended Joint Tri-Service working Party for Guns at Martin-Marietta Corporation at Orlando, FL. Items discussed: laser designator for helos and ground parties; target acquisition designator system, pilot night vision system (FLIR); terrain simulator for use in counter-attack role, .50 caliber soft mount.

9 Feb 78 A J-CATCH modification conference met in the DO Conference room. Lt Col Schade (TAWC), Mr. Tom Graves (ASD) and Maj Rader TAC/XP discussed with the 1 SOW J-CATCH Committee various proposals/ options for helo modifications and future activities to be undertaken by the committee.

13 Feb 78 Capt Joe Vallimont is undergoing training at Ft Hood, Texas for Night Vision Goggle Training.

Maj General White (USMC) viewed 1 SOW/20 SOS aircraft displayed by Capt Edgerton, Lt Pounder, TSgt Mustered and SSgt Vasquez.

15 Feb 78 1 SOW/DOV conducted a no-notice staff assistance visit. The evaluation was thorough and included aircrew testing in the Base theater.

UH-1N 696644 sustained damage to the tail rotor while conducting an infil mission. Aircraft was flown back to Hurlburt Field and is awaiting maintenance repair.

16 Feb 78 Major Stan MacGhan and Capt Gary Weikel attended an Air Combat Engagement-Force Development and Experimentation Phase II Joint Instrumentation Planning Conference at Ft Rucker, AL.

21 Feb 78 Lt Col Roberts attended a J-CATCH TD&E Conference at Nellis AFB, Nevada. The purpose of this conference was to develop a draft TD&E plan for J-CATCH.

24 Feb 78 The 20 SOS held a Special Safety meeting to discuss flying discipline which were key factors in a recent Red Flag accident.

27 Feb 78 Capt Johnson TAC Stan/Eval is visiting the 20 SOS to become recurrent in the UH-1N.

28 Feb 78 Capt Edgerton & SSgt Hall TDY to Bloomington, IND to attend "Small Caliber Mounting Adapter" Meeting.

3 Mar 78 The 20 SOS donated 102% of its AFA goal to the AFA Drive.

Maj Stan McGhan made a site survey of the J-CATCH support facilities at Ft Rucker, AL.

Capt Vallimont briefed the 1 SOW/CC/DO and 9AF Assistance Team Chief, Colonel Shockley on NVG.

4 Mar 78 The 20 SOS actively led the recent Wing-Dining In held in the Hurlburt Officer's Club Open Mess. Thirty-one assigned and attached pilots attended.

MSgt Puett, Sgt Ramirezdearellano and A1C Meyers TDY to Kunson AB, Korea to participate in Team Spirit.

12 Mar 78 Maj McGhan attended J-CATCH meeting at the Tactical Fighter Weapons Center, NV to develop a draft tactics development and evaluation plan.

19 Mar 78 Lt Col Roberts attended a POST briefing to Lt Gen Hartinger 9 AF/CC.

22 Mar 78 20 SOS (H-3) flew blood to Mobile, AL. Coverage of flight appeared on local television.

26 Mar 78 Lt Col Roberts TDY to Washington DC to attend Soviet Awareness Training Course.

SPECIAL ACHIEVEMENTS

The following individuals completed the USAF Special Operations Foreign Internal Defense Course:

Maj Jerome L. Gudvangen
Capt David L. Schildmeyer
1Lt William M. Collins

The following individual completed the USAF Special Operations School Uncoventional Warfare Course:

Capt David L. Schildmeyer

In addition to completing the professional courses and schools listed above several squadron members have achieved special recognition.

The following were awarded Commendation Medals.

TSgt Thomas G. Erschen
TSgt Glenn C. McKim

The following individual was chosen as Base NCO of the Quarter:

SSgt James T. Carter

HIGHLIGHTS OF ROUTINE OPERATIONS

1. The squadron had serval significant matters of Operational interest this quarter. The first item was participation in Empire Glacier 78. The 20 SOS sent four aircraft (UH-1Ns 653 and 654, CH-3Es 695811 and 679290) and crews to Griffis AFB, NY. At Griffis AFB the Helos were under operational control of the Air Force Special Operations Facility (AFSOF) which was also manned by 20 SOS personnel. The commander of the AFSOF was Maj Stan McGhan; Operations Officers was Capt Lloyd L. Buchfinck; Mission Managers were Capts John Graham and Stetson R. Cowan; Mission Planners were Capt George Tota and Lt Mike Collins. NCOIC of Operations was TSgt Jerry Schutte. The AFSOF was completely self-contained as the 1 SOW contingent included administration, intelligence and aircraft maintenance. The purpose of the exercise was to test our winter operations capability. The winter flying experience gained by our crews was great in that a number of our crew members had never operated in snow conditions. The 20 SOS once again led the 1st SOW in demonstrating special operations capability. We proved that we could operate in a separate remote operating environment from the AFSOB in severe weather conditions.

2. The second item of interest was the squadron's initial introduction to Night Vission Goggles (NVG). Capt Joe Vallimont was sent to the Army's NVG course at Ft Hood, Texas. Capt Vallimont found that with practice helicopter crews could operate safely at extremely low altitudes at night with minimum of risk. The flying training officer has developed lesson plans which will be used to upgrade squadron personnel in the use of these devices. We are strongly confident that NVG use will greatly enhance our night operational capability.

3. The third special interest item is J-CATCH (Joint Countering Attack Helicopter). The increasing number and technological advancements of threat attack helciopters in recent years has been dramatic. These advancements will create a new environment in the air-land conflict of the future. The 20 SOS is deeply concerned with these matters and will support requirements which are levied from higher headquarters.

4. The last item of interest is POST (Production Orientated Scheduling Technique) which is desinged to obtain maximum use of our resources (both people and aircraft). The way POST works in the 20 SOS is that the first 3½ days of the week are scheduled for maximum flying days. The remaining 1½ days are used for required ground training and additional duties. The schedule is very demanding and requires a maximum effort by aircrew members coupled with long maximum crew duty days. The benefit is that maintenance has been able to schedule required work without being interrupted by the flying schedule.

SPECIAL PROBLEMS

1. The lack of a dedicated squadron briefing room has become more urgent as flying operations increase in tempo. The squadron facility has been previously identified as a general use conference room, and is used by the base education office as a classroom in the evenings. Therefore, it is not available for aircrew briefings and debriefings during this period, This is critical, as this briefing room has been specially outfitted with the maps, projection screens, and audio visual aids that enhance professional briefings.

2. The lack of adequate floor space in the life support section has become more urgent as the squadron acquires more attached individuals and an overlap of inbound PCS verus outbound PCS. The additional commitment of Chemical/Biological equipment has also depleted all existing storage space in the section. Life Support T.O. 15X-1-1 requires a minimum of 1000 sq ft of floor space for all life support sections. This T.O. does not account for the new Chemical/Biological Commitment. Our Life Support Section has only 700 sq ft of floor space. The past several inspections of this section have mentioned this problem but as of this time no adequate solution has been found.

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SPECIAL INTEREST ITEM

FLYING SUMMARY

1 JANUARY 1977 - 31 MARCH 1978

Following is a list of flying hours and sorties flown by the squadron although category 0-8 only includes functional check flights, category T-3 includes training, cross country, and support missions.

UH-1N

Month	Category	Sorties	Hours	Landings
Jan 78	0-8	61	30.5	437
	T-3	94	131.1	
Feb 78	0-8	28	43.5	689
	T-3	87	100.5	
Mar 78	0-8	44	22.0	738
	T-3	110	165.3	

CH-3E

Jan 78	0-8	14	8.4	355
	T-3	77	136.7	
Feb 78	0-8	19	11.4	400
	T-3	56	94.1	
Mar 78	0-8	17	10.2	435
	T-3	77	142.5	

During this period the squadron flew a total of 896.2 flying hours which were the result of 590 sorties. A total of 1864 landing were completed.

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DEPARTMENT OF THE AIR FORCE
20TH SPECIAL OPERATIONS SQUADRON (TAC)
EGLIN AF AUXILIARY FIELD NO. 9, FLORIDA 32544

SPECIAL ORDER
GB-13

1 January 1978

Under the provisions of AFR 35-54, I assume command of the 20 SOS (TAC), vice Lt Col ROBERT E. MAYO, [redacted].

JOHN R. ROBERTS, Lt Col, USAF
Commander, 20 SOS

FOR THE COMMANDER

OFFICIAL

JOHN [illegible] COE JR., LT COL, USAF
CHIEF, CENTRAL BASE ADMINISTRATION

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DOW 17 March 1978

Trip Report

1 SOW/DO
CCE
CV
CC
20 SOS/DOW
IN TURN

1. Purpose: Attend Small Caliber Meunting Adapter Committee Meeting.

2. Dates and Duration of Visit: 6-9 Mar 78, 4 days.

3. Mode of Travel: Commercial Air

4. Place of Visit: U.S. Navy officer, Research and Conference Center, the Poplars, Bloomington, Indiana.

5. Key Personnel Contacted: See Atch 1.

6. Discussion: The 20th Special Operations Squadron provides two members to the Joint-Tri-Service Committee for soft Mounting Small Caliber Weapons on Helicopters. Captain Robert C. Edgerton and Staff Sergeant Robert W. Hall are representatives to the committee. The March meeting drafted a final report that when finalized will be presented to the Joint Technical Coordinating Group, Working Party for Guns. Copies of the draft and proposed changes to it will be distributed by mail to all committee members. Final review and signing of the report will take place 12 thru 13 Apr 78 at Hurlburt Field, FL. Captain Edgerton and SSgt Hall will host the meeting that is expected to last for two days. Some administrative typing support will be required on both 12 & 13 April to produce the final report on the 13th for signature of all members. Discussion items addressed at the meeting were as follows:

a. Numerous errors existed in the cost data estimates for the soft mounts as they were presented to the committee.

b. The proposed Navy system did not meet the needs of the U.S. Air Force

c. The U.S. Army representative took exception to previously compiled testing requirements and will present a revised plan.

d. The number of soft mount systems required by the USAF and U.S. Army should be included in the final report.

e. Of the eight recoil absorbing systems considered by the committee, a universal soft mount does not now exist. The committee recommends to the Working Party for Guns that a new system be developed at Tri-Service level for each caliber of weapon. This family of mounts should be used by all services as standard interchangable items.

7. Recommendations:

a. That the 20th SOS host the 12 April 78 meeting of the Soft Mount Committee.

b. Efforts be continued for the installation of soft mounting .50 caliber guns on Special Operations Force helicopters as soon as possible in conjunction with the J-CATCH effort.

Robert C. Edgerton

ROBERT C. EDGERTON, Captain, USAF
Weapons Officer

1 Atch
1. Key Personnel List

1st Ind

TO: DOW Ltr, dated 17 Mar 78

Approved

JOHN R. ROBERTS, Lt Col, USAF
Commander

Atch 1

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CC

19 January 1978

Trip Report

1 SOW/DO
CCE
CV
CC
IN TURN

1. Purpose: Joint Countering Attack Helicopter (J-CATCH) Conference.

2. Dates and Duration of Visit: 17 - 18 Jan 78, 2 days.

3. Mode of Travel: Private Auto.

4. Place of Visit: US Army Aviation Center, Ft Rucker, Alabama.

5. Key Personnel Contacted: See Atch 1.

6. Discussion: J-CATCH is a joint effort to develop tactics to defeat enemy armed helicopters. This conference was called to begin coordination of requirements, evaluation and timing of joint efforts to meet the threat. Briefings were provided by Army and Air Force agencies to update conferees on past, current and future programs relating to J-CATCH. Army briefings identified "lack of meaningful participation" by USAF. Fortunately this briefing was followed by an excellent presentation of the MAC/TAC/USA/USMC simulation program results (Maj Olson from Rescue). Discussion items were as follows:

a. It was agreed that the J-CATCH effort should be composed of three basic elements:

(1). Army peculiar requirements such as self-protection of the Cobra/Scout Team.

(2). Air Force peculiar requirements such as protection of fixed wing aircraft against missile armed enemy helicopters.

(3). Joint requirements such as counter helicopter tactics for the A-10/AH-1 team.

b. The Army has several on-going programs which are J-CATCH related. These programs will be modified or rescheduled to provide evaluations and documentation for J-CATCH. The most directly related program is Air Combat Engagement (ACE) a four phase program which has reached the completion of phase I. Phase II will now be restructured to accommodate Army and joint J-CATCH objectives. They also hope J-CATCH priority will relieve funding difficulties they are having with ACE.

c. TAC representatives agreed that both rotary and fixed wing USAF assets will be required to satisfy J-CATCH objectives. No level of commitments was established. 1st SOW representatives were requested to provide an instrumentation/equipment list for 1SOW helicopter participation as agressors and defenders for J-CATCH evaluations. We will be invided to a joint meeting at HQ TAC late next week to refine our requirements and capabilities to participate and to discuss program milestones.

7. RECOMMENDATIONS:

a. That 1 SOW provide two representatives to HQ TAC meeting.

b. That 1SOW/DOT develop draft DACT training program for helicopters to prepare selected crews for participation in J-CATCH evaluations.

c. That 1 SOW develop tentative list of instrumentation/equipment required to evaluate and document helicopter/AC-130 participation in J-CATCH.

/s/

JOHN R. ROBERTS, LtColonel, USAF
Commander

Attachments
1. Attendance Roster
2. Conference Agenda

File MGT-2 Cpb

15 FEB 1978

DOW

Trip Report

1 SOW/DO
CCE
CV
CC
20 SOS/DOW
IN TURN

1. Purpose: Joint Tri-Service Working Party for Guns (WPFG) meeting.

2. Dates and Duration of Visit: 6-10 Feb 78, 5 days.

3. Mode of Travel: Commercial Airlines.

4. Place of Visit: Martin-Marietta Aerospace and Naval Training Equipment Center, Orlando, Florida.

5. Key Personnel Contacted: See Atch 1.

6. Discussion: The 20th Special Operations Squadron is a participant in the Joint Tri-Service Working Party for Guns (WPFG). In this capacity, Captain Robert C. Edgerton and Staff Sergeant Robert W. Hall are members of the Committee for Commonality for 50 caliber soft recoil mounts. Items addressed were as follows:

7. a. Advances in the Cannon Launched Guided Projectile (CLGP) called Copperhead, are providing the 155mm round with pinpoint accuracy of terminal guidance. Our areas of interest are in both the airborne and ground laser designators. These systems can be used by helicopters and combat control teams as a means of improving fire support accuracy. Atch 3, tab. A & B.

b. The Target Acquisition Designation System and the Pilot Night Vision System with the target designation plus the capacity for Forward Looking Infrared (FLIR).

c. Soft recoil mounting of the 50 caliber machine gun on helicopters of all services requires the development of a device that meets the needs of all branches. The 20th SOS has demonstrated the capability for [illegible] is in negotiation with committee members from the other services on a final report for recommended production designs.

d. A facility and terrain model at Martin-Marietta can simulate low level flight. This simulator could possibly be adapted for the counter attack helicopter role.

e. The Naval Training Equipment Center in Orlando, FL has tested a helicopter 50 caliber simulator. Training for helicopter gunners can be improved with the use of semiconductor lasers at a substantial cost saving over live firing. Possible applications for a gun simulator are through a centrally located facility for all Air Force training. The system also has applications in air gunnery.

7. Recommendations:

a. That the 20th SOS continue its participation in the WPFG because of the increasing importance of interoperability within the services.

b. That the squadron representatives continue negotiation with the soft mount committee in order to formulate a report and presentation on the 50 caliber for the next WPFG meeting.

c. That the 20th SOS pursue the instillation of the 50 caliber on its aircraft in order to improve the suppressive firepower capability.

Robert C. Edgerton

ROBERT C. EDGERTON, Captain, USAF
Weapons Officer

3 Atch
1. Key Personnel
2. Conference Agenda
3. Copperhead Pamphlet

KEY PERSONNEL CONTACTED

Mr. W. Mirshak	Air Force/WPFG Chairman
Mr. C. Lamizzani	ARMY/ARRADCOM
Mr. W. Quine	ARMY/ARRADCOM
Mr. N. Wood	NAVY/NAVSEA
Mr. P. Miller	NAVY/NAVAIR
Mr. J. Hall	Martin-Marietta Aerospace
Lt Col C. L. Brown	USAF Liasion to US Navy Equipment Training Center

COORDINATION

Office symbol	20[illegible]305 DO	20[illegible]505 CC					
Initials							
Date	16 Feb 78	16 Feb 78					Atch 1

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DEPARTMENT OF THE AIR FORCE
20TH SPECIAL OPERATIONS SQUADRON (TAC)
EGLIN AF AUXILIARY FIELD NO. 9, FLORIDA 32544

REPLY TO ATTN OF: DOW

SUBJECT: Trip Report

TO: 1 SOW/DO PM
CCE RP
CV
CC
20 SOS/DOW
IN TURN

1. Purpose: Night Vision Goggle Training.

2. Date and Duration of Visit: 12 Feb - 1 Mar 78, 18 days.

3. Mode of Travel: Commercial Air.

4. Place of Visit: 6th Air Cav Division, Ft Hood, TX.

5. List of Attendees: N/A

6. Agenda: See Atch 1.

7. Discussion: Helicopter survival and mission accomplishment are dependent on the aircrews' ability to evade detection. The helicopter's comparatively slow speed and low operating altitude make it particularly vulnerable to the enemy's AA defenses. To defeat this threat, it is imperative that the aircrews utilize terrain flight and vegetation masking. Red Flag 78-02 demonstrated the viability of this tactic, but also pointed out our inability to take full advantage of terrain flight at night.

a. To rectify this night deficiency, the 1 SOW procured 12 sets of AN/PVS-5 Night Vision Goggles (NVG). Plans were then made to send a representative to the two month "Night Hawk" training program at Ft Rucker. However, as the result of an inter-service favor, Maj McGhan, Ops Officer; coordinated with the 6th Air Cav. for a one-time training slot in their CAV NAV (NVG) Course. This training cost the USAF only TDY money. I was selected for this training, because of previous qualification in the UH-1H (a stipulation of the Army), familiarity with Army Tactical Terrain Flight, and the fact that I had worked with the NVGs in the ARRS Night Recovery System (NRS) program.

b. The Army has over two years experience using NVGs. The training I received was excellent (Atch 2). My personal instructor, CW4 Robert R. Hawkins, was the 5th Army Aviator of the year in 1976. His personal experience and ability to instruct added an additional dimension to the training program. After completion of the course, I was certified by 6th Brigade Standards as instructor qualified in

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Tactical Terrain Flight and NVGs.

c. As a result of my training and observations (see atch 3), I am confident that 1 SOW helicopter aircrews using NVGs are capable of performing all tasks at night normally performed during daylight. The ability to accomplish the mission safely at night will greatly increase the capability of the special operations helicopter force.

8. Recommendations: Based on my training and observations, and the fact that special operations helicopters need a viable night capability, I recommend the following:

(1) The 1 SOW establish an in-unit NVG training program tailored from my training and the US Army's Flight Training Guide (NVG) AN/PVS-5 MOI Course. This training will parallel to the maximum extent possible the off-range check-out program of AFM 51-2, TAC Sup 1.

(2) The 1 SOW become the qualification/certification agency IAW AFM 51-2, TAC Sup 1, para 6-20.

(3) 1 SOW establish a Terrain Flight Training Course based on my training as outlined in (Army) FM 1-1.

(4) Recommend I retain proficiency in NVG skills (which are time perishable) by flying with the filtered goggles during daylight with a MR aircraft commander as co-pilot, and at night with an instructor as co-pilot. Night flying will be scheduled when 50% illumination or better exists (current illumination requirements contained in TACM 55-41).

(5) This report and atch be sent to 9th AF, 12th AF, TAC HQ and AFRES per their request.

Joseph C Vallimont

JOSEPH C. VALLIMONT, Captain, USAF
Tactics Officer

3 Atch
1. Training Agenda
2. Training Accomplished
3. Observations

APPROVED

John R Roberts

JOHN R. ROBERTS, Lt Colonel, USAF
Commander

TRAINING AGENDA

Day 1: 13 Feb 78. Range Orientation, overview of low level route. UH-1H requalification day VFR.

Day 2: 14 Feb 78. 1 day VFR sortie, 1 night VFR sortie.

1. Night UH-1H requalification.
2. Tour of threat simulator.
3. Meet Maj Freitas S-3 and brigade ALOs.

Day 3: 15 Feb 78. Wx day.

Reviewed Army threat training packages. Toured OPFOR Army threat programs.

Day 4: Simulator, blindfold cockpit check and cockpit configuration.

Day 5: 17 Feb 78. Wx day.

1. Tour Red Thrust (FORCOM).

2. Tour III Corps threat simulator.

3. Tour B Co 163(MI) BTN (CMT)

   a. Simulated threat company complete with soviet uniforms and weapons. Speak Tactical Russian.

   b. Use T-62s and T-54s tanks.

4. Obtained massive amount of threat information. Unclassified.

Day 6: 21 Feb 78.

Two sorties day VFR first use of NVGs with day filters.

Day 7: 22 Feb 78

Night VFR NVG.

Day 8: 23 Feb 78.

Night Nap-of-the-earth.

Day 9: 24 Feb 78.

Day VFR with day filters.
Night VFR NVGs.

Day 10: 27 Feb 78. Wx Abort.

Day 11: 28 Feb 78. Night VFR with NVGs and NVG check ride.

TRAINING ACCOMPLISHED

The ground and flying training at Ft Hood consisted of the following chronological events:

a. Ground Training, three hours

1. Physiological and Psychological aspects of NVGs.

2. Capabilities and limitations.

3. Operating Procedures.

4. Blind fold cockpit check and acft configuration.

b. Requalification

1. Two hour day sortie for requalification UH-1H.

2. Two hours night VFR requalification UH-1H.

c. Six hours day VFR utilizing NVG day filters.

1. Hover maneuvers, masking and unmasking.

2. Traffic patterns: start at 200' 90KIAS progress down to Nap-of-the-earth (NOE) altitudes and airspeed.

3. Low level navigation and confined area operations.

4. NOE maneuvers, and 15 km NOE course.

5. Emergency procedures.

(a) Low level autorotations to the ground

(b) Stuck pedal.

(c) Hydraulic failure.

(d) Goggle failure.

(e) Inadvertent IFR.

6. Day check, NVGs with day filters.

d. 6.5 hours night VFR with NVGs.

1. Accomplished at night all maneuvers performed during day NVG training.

2. Additional 12 km NOE course.

3. Demonstrated ability as instructor pilot, all tactical maneuvers.

a. The Army has found it advantageous to have a completely blacked out instrument panel during night flight with NVGs. Certain lights are taped (ie. Master Caution, RPM) to prevent their illumination from distracting the pilot during critical flight phases. Although the illumination of these taped lights is visible to the crew, using NVGs the illumination is reduced and does not interfere with the pilot's vision. The blacked out instruments are easily read with NVGs by the co-pilot.

b. The day filters are used to facilitate scheduling and safety. The filters limit the pilot to 35% illumination. All maneuvers are accomplished during day VFR using the filters before progressing to night operations.

c. The problems of limited depth perception and tunnel vision are easily overcome with proper training. Operations into and out of LZs as small as Hurlburt's smallest were routine.

d. The Army does not utilize scanners in the back of the aircraft as does the 1 SOW, this gives us a tremendous safety advantage.

e. The Army has been using the NVGs for two years. Aircrews using NVGs are capable of performing at night all tasks normally performed during daylight.

f. Knowledge of NVG operations is not time perishable, however the motor skills are.

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HISTORICAL REPORT

TWENTIETH SPECIAL OPERATIONS SQUADRON

1 April 1978 - 30 June 1978

LT COLONEL JOHN R. ROBERTS
Commander

MISSION STATEMENT

The primary mission of the 20th Special Operations Squadron is extremely comprehensive. The squadron is tasked to conduct day or night infiltration, exfiltration, gunnery support, reenforcement, and resupply into hostile or enemy controlled territory. These operations include the use of airland and airdrop techniques, and entail land and water overflight. Another primary mission is the conduct of psychological operations, which include speaker broadcasts and aerial dispensing of leaflets.

Corollary missions give the squadron the flexibility and varied capabilities for which special operations units are noted. These missions include:

a. Recovery of personnel, which also entails escape and evasion operations, and combat search and rescue (SAR). SAR operations would normally be prosecuted from forward operating locations where dedicated Aeorspace Rescue and Recovery Service (ARRS) forces are not available. SAR efforts would include the majority of ARRS techniques: search and location of survivors, airland or aerial recovery (i.e., hoist, STABO rig), first aid, and transportation to the nearest medical facility.

b. Helicopter shipboard operations (joint service).

c. Medical evacuation of injured personnel.

d. Humanitarian and civic action programs.

e. Limited photo reconnaissance, by hand held or modularly installed camera systems.

f. Other missions, as directed by higher headquarters.

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MANNING

Position	Authorized	Assigned
Commander	1	1
Operations Officer	1	1
Flight Surgeon	1	1
Pilots, UH-1N	18	17
Pilots, CH-3E	12	12
Flight Mechanics, UH-1N	9	9
Weapons Specialists, UH-1N	9	10
Administrative Specialists	3	3
First Sergeant	0	1
Operations Specialists	3	3
Medical Technicians	3	3
Life Support Technicans	4	3
TOTAL	76	76

KEY PERSONNEL

Position	Individual	Effective
Commander	Lt Col John R. Roberts	1 Jan 78
Operations Officer	Maj Standley A. McGhan	6 Apr 78
Asst Ops Officer, UH-1N	Maj Jerome L. Gudvangen	5 Sep 76
Asst Ops Officer, CH-3E	Capt John W. Grove	6 Apr 78
Administrative Officer	Capt John M. Graham	23 May 77
Safety Officer	Capt Howard Stevens	14 Apr 78
A Flight Commander	Capt David L. Schildmeyer	6 Jul 77
B Flight Commander	Capt Russell J. Spahr	2 Dec 77
Stan/Eval Officer	Capt Karl W. Poulsen	12 Dec 75
First Sergeant	MSgt Hiram L. Robinson	26 Jun 78
NCOIC, Operations	Sgt Paul C. Ramirezdearellano	22 Feb 78
NCOIC, Weapons Specialists	SMSgt Ronald J. Gray	24 Feb 77
NCOIC, Flight Mechanics	SMSgt Floyd W. Watson	1 Apr 77
NCOIC, Stan/Eval	SMSgt Floyd W. Watson	2 Dec 75

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KEY PERSONNEL

Position	Individual	Effective
NCOIC, Administration	TSgt Allan G. Hineman	11 Jul 77
NCOIC, Life Support	SSgt Lamont C. Pass	28 Sep 76

STATEMENT OF SPECIALIZED EQUIPMENT

The squadron's aircraft equipage, as authorized by Air Force Programming Documents, includes six UH-1Ns and four CH-3Es all special operations forces (SOF) configured. To date, 6 UH-1Ns and 3 CH-3Es are on station, and the remaining aircraft has been identified by tail number.

Various items of specialized equipment are authorized for the unit's primary and corallary mission. This equipment includes:

a. The XM-93 Subsystem, which consists of 7.62mm electrical gattling guns, capable of firing 4000 rounds per minute.

b. The M-23 Subsystem, which includes 7.62mm gas operated machineguns capable of firing 550 rounds per minute.

c. The 2.75 inch Folding Fin Aircraft Rocker (FFAR), which is normally configured with a nine pound warhead.

d. The UH-1N Loudspeaker System, designed primarily for psychological operations, can broadcast taped or live sound over a two mile radius.

e. The 2090-3 Spray System, a self contained, windmill operated aerial spray system with a capacity of 200 gallons.

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CHRONOLOGY OF SIGNIFICANT EVENTS

3 Apr 78 The squadron supported Hurlburt Field's Annual Open House by providing static display aircrews. Also, a variety of UH-1N and CH-3E aerial operations were demonstrated, including live paradrop with simulated rapelling and STABO rig maneuvers. The demonstration was highlighted by an exfiltration scenario, complete with simulated gunnery attack patterns.

TSgt Robert Hallprovided his armament expertise to the 302nd SOS (AFRES) at Luke AFB, AZ, for evaluation of the 5.56mm Gattling Gun - also known as the "mini-minigun".

Maj Standley A. McGhan attended the Joint Countering Attack Helicopter (J-CATCH) Test Planning Conference at Ft Rucker, ALA. As the Wing representative, he worked to refine and finalize the original J-CATCH draft test plan.

5 Apr 78 Mr. John Geiling, a representative from AMECON (A Litton Industries subsidiary) demonstrated a portable LORAN (Long Range Navigation) C/D module. Suitable for UH-1N and CH-3E installation, this equipment gives the pilot continuous information on the aircraft's position via a digital report.

7 Apr 78 Because of his previous outstanding performance, TSgt Robert Hall was selected to attend the TAC NCO Academy at Bergstrom AFB, TX.

SSgt Lamont Pass, SSgt John Martin, and A1C Hinkler attended, and later successfully completed, the Air Force Basic Survival School at Fairchild AFB, WA.

A1C Waymond Herring participated in Joint Exercise Brave Shield XVII as an Administrative Specialist at Norton AFB, CA.

12 Apr 78 Capts Peter O'Day and Joseph Vallimont evaluated Litton's LORAN C/D set (designated the AN/PSN-6 Position Location System) during a 50 kilometer low level flight; they came within 10 seconds of their time-on-target (TOT) and within 80 meters of target center.

14 Apr 78 The unit hosted 11 cadets from the Air Force Academy. The cadets were given a squadron orientation, to include briefings and aircraft static displays.

The Ad Hoc Committee for the .50 caliber soft mount met at Hurlburt Field. Aided by Capt Robert Edgerton and TSgt Robert Hall the committee finalized its .50 caliber mount report, and submitted it to the Working Party for Guns.

14 Apr 78 As a result of supervisory emphasis and individual pride, the unit conducted a flawless Open Ranks Inspection.

18 Apr 78 Mr. William R. Bryant Jr., and Mr. Norman Taylor from the Army's Foreign Service Technology Center/Studies and Analysis Section (Aviation Branch), Charlottsville, VA, gave a briefing on threat helicopters.

20 Apr 78 Mr. Malonely, Sikorsky Aircraft representative, briefed the squadron on Aerospace Rescue and Recovery Service's (ARRS) Generalized Operational Requirement (GOR) for an Air Force Rescue version of the Army's UH-60 Blackhawk II helicopter.

21 Apr 78 Colonel Roysdon, Wing Vice Commander, presented a letter from General Jones, Chief of Staff, USAF, that praised SSgt James T. Carter for winning the 1977 Channey Award.

Colonel Roysdon presented Sgt Ramirezdearellano and AF Commendation Medal for superior performance at his last duty station.

22 Apr 78 Capt Kenneth Charfauros departed on TDY to Norfolk NAS, VA, to act as the liaison officer from the Commander, Joint Unconventional Warfare Task Force Atlantic (JUWTFA) to the Commander, Task Force 124 (US Marine element) for Joint Exercise Solid Shield 78.

26 Apr 78 Four UH-1Ns and two CH-3Es conducted mountain training 55 miles north of Dobbins AFB, GA. Working with Army Rangers in the Camp Mosby area, the six aircraft flew 36 sorties for a total of 68.3 flying hours.

27 Apr 78 Maj Connally, from the Military Personnel Center's (AFMPC) Helicopter Rated Assignments section, briefed the squadron's pilots on officer assignments, and later held individual counseling sessions.

Capts Peter O'Day and David Tidd commanded aircraft that stood static display at the Barksdale AFB Open House.

Selected CH-3E pilots received Nap-of-the-Earth (NOE) ground training from the Army at Ft Rucker, ALA.

28 Apr 78 Continuing to prepare for an upcoming Operational Readiness Inspection (ORI), the unit's Tactics/Intel and Stan/Eval offices gave briefings and tests in order to hone aircrew knowledge.

TSgt William Houston and SSgt Jose Tavarez began, and later successfully completed, the Air Force Basic Survival School at Fairchild AFB, WA.

29 Apr 78 Capt Stetson Cowan reported to the NASA Flight Simulator at Langley AFB, VA, and participated in J-CATCH simulator training.

29 Apr 78 Unit personnel assigned to the AF Special Operating Base (the AF element of JUWTFA) arrived at Pope AFB, NC, as staff workers in Exercise Solid Shield 78. Maj Jerome Gudvangen served as Operations Officer, and other players included Capts Robert Edgerton, David Schildmeyer, and Sgt Ramirezdearellano.

5 May 78 Lt Col John Roberts, Maj Standley McGhan, and Capt Joseph Vallimont met with the J-CATCH Working Group at Hurlburt Field.

8 May 78 Maj Standley McGhan departed TDY to Nellis AFB, NV, to work on the J-CATCH Test, Development and Evaluation (TD&E) Phase II Review Board.

9 May 78 Two CH-3Es and one aircrew were deployed to Pope AFB, NC, to participate in Exercise Solid Shield 78.

Second Lieutenant Stephen Roark was upgraded to Aircraft Commander in the CH-3E. Lt Roark is the first Aircraft Commander of a multi-crewed aircraft in TAC.

Because of his superb support of the wing and squadron safety efforts, Lt Joseph Pounder was selected as the Wing Safety Person of the Month. He was specifically cited for his innovative safety briefings, and his extra efforts to identify and resolve unsafe practices.

11 May 78 Second Lieutenant James Mehegan reported in to the unit directly from UPT-H at Ft Rucker, ALA.

TSgt Robert Hall successfully completed the demanding requirements, of the TAC NCO Academy, and was declared a graduate.

14 May 78 The unit supported HQ TAC/DOV by providing sorties and instructor expertise to requalify Capt Horace Johnson in the UH-1N and CH-3E helicopters.

16 May 78 Capt Joseph Vallimont flew the first unit sortie dedicated to Night Vision Goggle Training. Due to HHQ training restrictions, he was required to use day filters, and conduct the flight during daylight hours.

19 May 78 SSgt Hose Tavarez departed PCS enroute to the Canal Zone. The squadron hosted a luncheon for Sgt Tavarez, and his wife, at a local resturant.

30 May 78 The unit begins to support Air Force Academy Project Third Lieutenant. By the end of the project, the unit will have hosted almost 50 cadets. These Academy seniors and juniors were given squadron briefings and local orientation and tactical flights. They are all very much impressed with the firepower of the 7.62mm gattling gun.

1 Jun 78 The squadron continues its J-CATCH efforts by participating in the Data Reduction Meeting. Chaired by the Wg Tactics function - heavily supported by squadron expertise-representatives were sent from TAC, the Tactical Fighter Weapons Center, Aerospace Systems Development, and three separate Army Commands (USAAVNGO, AAMSA, CACAT).

2 Jun 78 The squadron held its first Unit Advisory Council Meeting.

Capt Robert Blough and Sgt James Stull separated from the Air Force, both intending to pursue civilian careers.

6 Jun 78 Lt Colin Chatham departed TDY to Bergstrom AFB, TX. He will be working with the 502 TASS, and will be receiving CH-53 familiarization.

7 Jun 78 Capts Edward Gmyrek and Frank Gray with TSgts Samuel Adams and Jon Knox, and A1C Randall Haines left for Robbins AFB, GA. Crewing a CH-3E, they provided pathfinder services for a flight of 22 Army helicopters from the Ft Benning area. Capt Gmyrek led the flight over a 73 mile low level route, and was within 10 seconds of his TOT. Dubbed Operation Night Hawk, the crew also participated in a combat search and rescue exercise and "saved" two people.

A crew commanded by Capt Peter O'Day departed for Pope AFB and the Cape Fear area of N.C. They surveyed landing sites, and coordinated with Special Forces personnel for our participation in their Operation Diamond Jim. Other crew members included Lt Jame Mehegan, MSgt Jame Roach, and TSgt Thomas Erschen.

9 Jun 78 UH-1N and CH-3E static display aircrews supported the USAF Special Operations School.

Capt Frank Waid departed PCS for the 302nd SOS (AFRES). He has decided to become an Air Reserve Technician. The unit attend a sendoff for Capt Waid at the Base NCO Open Mess.

12 Jun 78 Maj Leo Galvin and Capt Kenneth Mansfield from the Canadian Armed Forces arrived to observe UH-1N gunnery procedures and attack patterns. This is a prelude to the rocket firing phase for Canada's CH-58A and UH-1N helciopters.

Capt John Grove is temporary duty to New Brunswick, Canada to evaluate their min-TAT gun system for possible use on the CH-3E for J-CATCH.

16 Jun 78 The squadron held a picnic at the Hurlburt Picnic Area to honor Maj Richard Hlavaty and Capt Karl Poulsen. Maj Hlavaty has departed PCS to the Air Command and Staff College, while Capt Poulsen will persue a civilian career.

SSgt Richard Dolby arrived from Keflavic, Iceland, where he was a CH-3E flight mechanic.

20 Jun 78 Four UH-1Ns and two CH-3Es deployed to Pope AFB, NC to support the Army Special Forces' Operations Diamond Jim. Working out of the Willington Airport, our helicopters performed daylight site surveys, and later night infiltrated the 80 troops and their associated equipment; the exfiltration was also performed at night, two days later. Landing zones consisted of snadbars and small islands in the Cape Fear area. The squadron used night vision goggles to authenticate the exfiltrations.

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SPECIAL ACHEIVEMENT

The following individual completed the USAF Special Operations Foreign Internal Defense Course:

Capt Lloyd Buchfinck

The following individuals completed the USAF Special Operations Dynamics of International Terrorism:

Capt Frank Gray
Lt Mike Collins

The following individual completed the TAC NCO Academy:

TSgt Robert Hall

The following individuals were awarded the AF Commendation Medal:

Sgt Paul C. Ramirezdearellano
TSgt Lee Brown

The Squadron Airman of the Quarter was:

AMN James F. Burns

The Squadron NCO of the Quarter was TSgt John Civick

The following individual was awarded $1070.00 for a suggestion to use a different flare for helicopter operations.

TSgt Robert Hall.

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HIGHLIGHTS OF ROUTINE OPERATIONS

1. The squadron had several significant events of Operational interest this quarter. The squadron has been fortunate to operationally evaluate an AN/PSN-6 Position Location System. The unit is a LORAN C/D which gives the pilot digital readout information. The device provides continuous magnetic reading to a target, and position update in UTMJ grid co-ordinates. This unit is built by the AMECON (Subsidiary of Litton Industries). Used by Capt O'Day and Capt Vallimont on a UH-1N in the Eglin complex, they flew a low level navigation route 50 KM long and came to the target with in 10 seconds and 80 meters. The unit was evaluated again on a CH-3E in Solid Shield 78 on three different occasions. The set was further evaluated by a CH-3E in Robbins AFB/Ft Benning, GA area where in Operation Night Hawk Capt Ed Gmyrek led a 22 Army helicopter formation on a 73 nm route and was within 10 seconds of his TOT. The mission was scheduled for night low level, however a weather delay dictated day operation.

2. A second item of interest was mountain training received on 26-27 Apr in the mountains 55 miles north of Dobbins AFB, GA. The training was conducted at the US Army's Ranger Camp Mosby. A total of 68.3 hours were flown. The training received was realistic for the CH-3E aircraft, but the relatively low altitude did not fully test the UH-1N's capability. A total of six aircraft, two flights - consisting of 1 CH-3E and 2 UH-1Ns each flew 36 sorties with no difficulties encountered.

3. A third item of interest was the 20 SOS participation in Solid Shield 78 at Pope AFB, NC. The 20 SOS was highly envolved and provided a great deal of staff and operational assistance. Major Jerome Gudvangen served as Assistant Operations Officer in the AFSOB. Capt David Schildmeyer was a CH-3E Mission Manager, Capt Robert Edgerton was a CH-3E Mission Planner, and Capt Kenneth Charfauros was afloat with TF 125 (US Marines) serving in a Liaison Officer position. A great deal of realistic crew training was accomplished. Two CH-3E and three crews flew a total of 116 hours and 50 sorties. The LORAN C/D (AN/PSNG) Position Loacation System was again operationally evaluated, and proved to be extremely useful.

4. POST (Production Oriented Scheduling Technique) flying performance deserves mention. To date, the 20 SOS has progressed very well. The aircrews have readily adopted to the new schedule. Although there are long working days, not having FCFs and other flights on weekends has pleased everyone. The UH-1N in April 78 set a record high of 210 hours. The CH-3E flew over 183.4 hours.

5. "Operation Night Hawk" was another first for the 20 SOS during this period. A CH-3E helo crewed by Captain Edward Gmyrek, Capt Frank Gray, TSgt Samuel Adams, TSgt Jon Knox and A1C Randall Haines flew out of Dobbins AFB in the Ft Benning area and provided "pathfinder" services for 22 US Army helicopters. The mission was unique in that the USAF led a flight of Army helos for the first time. Capt Gmyrek led the formation on a 73 nm route, and was 10 seconds of his TOT. He also participated in a combat SAR exercise and rescued two individuals. We were again fortunate to evaluate the AN/PSN-6 Position Location System which proved to be an envaluable nagivation aid.

6. Operations Diamond Jim, conducted between 20 and 24 Jun 78, gave the squadron a unique opportunity to work closely with large numbers of Army Special Forces personnel. The unit accomplished a number of "firsts". Diamond Jim was the first time that exfiltration and infiltration landing zones consisted of small islands and sandbars. The operation also saw our initial use of night vision goggles in an exercise scenario situation - in this case, to authenticate the teams for extraction. Four UH-1Ns and two CH-3Es were deployed, and collectively they transported over 80 troops.

7. Between 26 and 30 Jun 78, the Wing received its annual 9AF Standardization/ Evaluation Visit. As a whole the wing was rated highly "satisfactory". The squadron contributed to this rating by scoring "outstanding" on our aircrew testing. Also, we received very favorable comments for our Life Support funciton, and our maintenance of the Flight Crew Information File (FCIF).

SPECIAL PROBLEMS

1. The lack of a dedicated squadron briefing room has become more urgent as flying operations increase in tempo. The squadron facility has been previously identified as a general use conference room, and is used by the base education office as a classroom in the evenings. Therefore, it is not available for aircrew briefings and debriefings during this period. This is critical, as this briefing room has been specially outfitted with maps, projection screens, and audio visual aids that enhance professional briefings.

2. The lack of adequate floor space in the life support section has become more urgent as the squadron acquires more attached individuals and an overlap of inbound PCS verus outbound PCS. The additional commitment of Chemical/Biological equipment has also depleted all existing storage space in the section. Life Support T.O. 15X-1-1 requires a minimum of 1000 sq ft of floor space for all life support sections. This T.O. does not account for the new Chemical/Biological Commitment. Our Life Support Section has only 700 sq ft of floor space. The past several inspections of this section have mentioned this problem but as of this time no adequate solution has been found.

SPECIAL INTEREST ITEM

FLYING SUMMARY

1 April 1978 - 30 June 1978

Following is a list of flying hours and sorties flown by the squadron although category O-8 only includes functional check flights, category T-3 includes training, cross country, and support missions.

UH-1N

Month	Category	Sorties	Hours
Apr 78	O-8	17	4.6
	T-3	119	205.0
May 78	O-8	23	11.6
	T-3	84	145.2
Jun 78	O-8	11	3.1
	T-3	152	238.6

CH-3E

Apr 78	O-8	1	0.3
	T-3	89	193.3
May 78	O-8	1	1.2
	T-3	81	198.0
Jun 78	O-8	3	0.7
	T-3	76	142.2

During this period the squadron flew a total of 1143.8 flying hours which were the result of 657 sorties.

20TH SPECIAL OPERATIONS SQUADRON

(U) The 20th Special Operations Squadron (SOS) possessed six UH-1N and three CH-3E helicopters, all Special Operations configured. Various items of specialized equipment on the helicopters included the XM-93 and M-23 subsystems, the 2.75 inch folding fin rocket, the 2090-3 spray system and the UH-1N loudspeaker system.[46]

(U) The 20 SOS flew a total of 580 sorties and 899.0 hours while participating in local training and the various exercises and support missions previously related in this chapter. A breakdown of flying hours and sorties by category and aircraft type follows:[47]

		UH-1N		CH-3E	
Month	Category	Sorties	Hours	Sorties	Hours
July	0-8	19	9.5	6	3.4
	T-3	78	114.1	58	92.5
August	0-8	19	10.1	17	10.3
	T-3	139	244.1	81	156.1
September	0-8	25	13.2	3	2.1
	T-3	87	141.2	48	102.4

SPECIAL OPERATIONS COMBAT CONTROL TEAM

(U) In addition to participating in various exercises and support missions mentioned throughout the early portion of this chapter, the Special Operations Combat Control Team (SOCCT) continued local training and support of the Wing flying squadrons and the 919th Special Operations Group (AFRES) at Eglin Air Force Auxiliary Field 3. Air operations support of the US Army Rangers at Eglin Air Force Auxiliary Field 6 also continued.[48]

(U) The SOCCT supported joint training with approximately 40 US Army reservists of the 2nd Special Forces Battalion, 20th Special Forces Group at Eglin Air Force Auxiliary Field 6 during the period 11-13 July 1978. Events included joint beacon/transponder training, gunship briefing and films, field training with the SOCCT and observations of SOCCT team working with MC-130E and AC-130H aircraft over Field 6 and the Yellow River area. A static display of the MC-130E and the AC-130H was also provided.[49]

TD&E OF JOINT COUNTERING ATTACK HELICOPTER

(TAC Project Order 77X-010F)

(U) During the past few months, 1SOW personnel were involved in preliminary planning and studies of TAC Project 77X-010F, Tactics Development and Evaluation (TD&E) of Joint Countering Attack Helicopter (J-CATCH). Briefly, J-CATCH is the examination of the attack helicopter as a threat to friendly fixed and rotary wing aircraft. Joint US Army/Air Force preliminary studies and evaluations were conducted by the USAF Tactical Fighter Weapons Center at the direction of TAC and the Combined Arms Center as directed by the US Army Training and Doctrine Command (TRADOC). TAC and TRADOC jointly agreed to conduct the J-CATCH TD&E in six phases.[50]

(U) Phase I was conducted in the National Aeronautics and Space Administration (NASA), Langley Research Center, Differential Maneuvering Simulator at Hampton, Virginia. The simulator provided the means for evaluating aircraft weapons' capabilities, initial tactics development and aircrew training.[51]

(U) Phase II centers around tactics development and capability evaluation of friendly helicopters versus generic threat attack helicopters. Phase III consists of tactics development and capability of Tactical Air Forces (TAF) fixed wing aircraft versus generic threat attack helicopters. Phase IV involves both helicopters and fixed wing aircraft versus generic threat attack helicopters. Phase V will be a capability evaluation of ground forces versus the generic threat attack helicopters. Phase VI will be a joint test of combined helicopter, fixed wing aircraft, and ground forces versus the generic threat attack helicopter.[52]

(U) In addition to being involved in preliminary planning, the 1SOW involvement included modification and painting of 1SOW helicopters, developing tactics and flying practice sorties of these tactics. All of this was in preparation for participating in the actual TD&E, Phase II, jointly with the US Army, scheduled for 6-15 November 1978 at Fort Rucker, Alabama. Phase II results will be forthcoming in next quarter's history.[53]

MISCELLANY

(U) Miscellaneous operational activity included operations planning, command post exercises (CPX), Supervisor of Flying (SOF) evaluation exercise, flight evaluations by the Standardization/Evaluation Division and updating letters of agreement pertaining to flight operations. Operations Plans personnel were heavily involved in planning for several large scale exercises scheduled for November and December 1978 and January and February 1979. These

included GALLANT EAGLE 79, KIOWA TRAIL 79, and JACK FROST 79. All of these were US Readiness Command sponsored Joint Readiness Exercises. The command post participated in four CPX exercises directed by higher headquarters and eight CPX exercises generated by the Wing.[54] Standardization and Evaluation personnel administered 228 flight evaluations, of which 197 rated qualification level 1, 25 were rated level 2 and six were level 3.[55] A Supervisor of Flying (SOF) exercise on 10 July 1978 received an overall satisfactory rating.[56] The Letters of Agreement pertained to single tandem landing weight at Eglin AF Auxiliary Field 3 and airspace coordination procedures between Eglin AFB, Florida, Fort Rucker, Alabama, and US Naval Air Station, Pensacola, Florida.[57]

(U) In the area of combat crew training and training for operational squadrons, a summary follows:[58]

Aircrew Training/Aircrew Instructor Training Course

CLASS	DATES	STUDENTS GRADUATED
78-07	12-14 July	4
78-08/09	30 August - 1 September	7

Pilots Instrument Refresher Course

DATES	STUDENTS GRADUATED
July	8
August	9
September	13

Navigator/Electronics Warfare Officer Course

DATES	STUDENTS GRADUATED
July	7
August	7
September	2

Physiological Training

Initial	10 Students
Refresher	41 Students

Aircrew Instructor Refresher Course

September	5 Students

PROJECT J-CATCH

(U) During this quarter, 1SOW maintenance personnel continued to be heavily involved in the modification of the wing helicopter fleet to meet the objectives of the Joint Countering Attack Helicopters (J-CATCH) study, authorized under TAC Project Order 77X-010F.* Aircraft modifications included camouflage paint, TV monitored pallets, radar detection equipment, and the installation of the CH-136 Mini-Tat turret system.[6] Canadian Forces personnel of the 403d Squadron, CFB Gagetown, New Brunswick, Canada trained wing maintenance personnel locally in the maintenance of the turret system.**[7]

PROJECT NEW LOOK

(U) On 19 Sep 78, TAC initiated Project New Look to improve the work environment and incentive of maintenance personnel. Facility improvements, along with programs to provide meaningful recognition of outstanding performance among maintenance personnel, were included in the overall plan. Operating hours of base support functions were reviewed to make services in the areas of finance, routine medical care and personnel more readily available to maintenance personnel on extended duty hours.[8]

(U) TAC guidance required the Wing to identify deficiencies in maintenance facilities and furnishings and to develop a wing plan, with timetables and estimated costs, to bring the facilities up to the desired standard.[9] A working panel of maintenance and staff personnel developed a Wing New Look plan. The panel inspected facilities, work areas, and furnishings throughout the maintenance complex, identified desired improvements, and prioritized corrective actions. The Wing plan also included an awards and incentive program and base support that was required to establish a sound program to meet desired objectives.[10]

(U) The helicopter Aircraft Maintenance Unit (AMU) and squadron rest and work areas were assigned top priority for upgrading. Base civil engineering personnel were instructed to accept only priority 1 and 2 (mission essential or safety related) work orders from other base units, and to divert their major effort to maintenance facility improvements.[11]

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* *(U) J-CATCH is a joint Training and Doctrine Command (TRADOC) and Tactical Air Command (TAC) study of helicopters in a countering attack role.*

** *(U) See Chapter II, this history, for J-CATCH helicopter activities in an operational role.*

HISTORICAL REPORT

TWENTIETH SPECIAL OPERATIONS SQUADRON

1 October 1978 - 31 December 1978

LT COLONEL JOHN R. ROBERTS
Commander

MISSION STATEMENT

The primary mission of the 20th Special Operations Squadron is extremely comprehensive. The squadron is tasked to conduct day or night infiltration exfiltration, gunnery support, reenforcement, and resupply into hostile or enemy controlled territory. These operations include the usedof airland and airdrop techniques, and entail land and water overflight. Another primary mission is the conduct of psychological operations, which include speaker broadcasts and aerial dispensing of leaflets.

Corollary missions give the squadron the flexibility and varied capabilities for which special operations units are noted. These missions include:

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b. Helicopter shipboard operations (joint service).

c. Medical evacuation of injured personnel.

d. Humanitarian and civic action programs.

e. Limited photo reconnasissance, by hand held or modularly installed camera systems.

f. Other missions, as directed by higher headquarters.

MANNING

Position	Authorized	Assigned
Commander	1	1
Operations Officer	1	1
Flight Surgeon	1	1
Pilots, UH-1N	18	18
Pilots, CH-3E	12	12
Flight Mechanics, UH-1N	9	10
Flight Mechanics, CH-3E	12	12
Weapons Specialists, UH-1N	9	9
Administrative Specialists	3	3
First Sergeant	0	1
Operations Specialists	3	4
Medical Technicians	3	3
Life Support Technicans	4	5
	TOTAL 76	81

KEY PERSONNEL

Position	Individual	Effective
Commander	Lt Col John R. Roberts	1 Jan 78
Operations Officer	Maj Standley A. McGhan	6 Apr 78
Asst Ops Officer, UH-1N	Maj Jerome L. Gudvangen	5 Sep 76
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A Flight Commander	Capt David L. Schildmeyer	6 Jul 78
B Flight Commander	Capt Richard L. Gardner	1 Jul 78
Stan/Eval Officer	Capt Stetson R. Cowan	1 Jul 78
First Sergeant	MSgt Hiram L. Robinson	26 Jun 78
NCOIC, Operations	[redacted]	Sep 78
NCOIC, Flight Mechanics	SMSgt Floyd W. Watson	1 Apr 77
NCOIC, Stan/Eval	SMSgt Floyd W. Watson	2 Dec 75
Supervisor of Training & Scheduling	Capt Russell J. Spahr	1 Jul 78

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KEY PERSONNEL

Position	Individual	Effective
NCOIC, Administration	TSgt Allan G. Hineman	11 Jul 77
NCOIC, Life Support	SSgt Lamont C. Pass	28 Sep 76

STATEMENT OF SPECIALIZED EQUIPMENT

The squadron's aircraft equipage, as authorized by Air Force Programming Documents, includes six UH-1Ns and four CH-3Es all special operations forces (SOF) configured.

Various items of specialized equipment are authorized for the unit's primary and corollary mission. This equipment includes:

a. The XM-93 Subsystem, which consists of 7.62mm electrical gattling guns, capable of firing 4000 rounds per minute.

b. The M-23 Subsystem, which includes 7.62mm gas operated machineguns capable of firing 550 rounds per minute.

c. The 2.75 inch Folding Fin Aircraft Rocker (FFAR), which is normally configured with a nine pound warhead.

d. The UH-1N Loudspeaker System, designed primarily for psychological operations, can broadcast taped or live sound over a two mile radius.

e. The 2090-3 Spray System, a self contained, windmill operated aerial spray system with a capacity of 200 gallons.

CHRONOLOGY OF SIGNIFICANT EVENTS

3 Oct 78 Two Canadian Armed Forces enlisted personnel arrived to instruct 20 SOS aircrews in use of Mini-TAT System to be used in J-CATCH.

11 Oct 78 1 SOW/ADO and 20 SOS/CC briefed Maj Gen Ellis and Brig Gen O'Donnell at TAC HQ. Rules of Engagement for Phases II and III were approved including flight to 25' AGL.

Maj McGhan departed for Wilford Hall, TX for further treatment.

13 Oct 78 Major Borinski's selection for O-5 announced

16 Oct 78 Gallant Eagle 79 begins. 20 SOS supplies AFSOB Operations Officer Major George Borinski, CH-3 mission manager, Maj Dave Schieldmeyer, CH-3 Mission Planner, 1Lt Pete Trent, UH-1N Mission Manager Capt Howard Stevens, UH-1N Mission Planner Lt Roger Smith & Lt Frank Wallace and Operations Specialist A1C Jim Burns.

19 Oct 78 J-CATCH Site Survey by LGX, AGS and 20 SOS of Ft Rucker, J-CATCH operating location.

20 Oct 78 First fully modified H-3, 719 returned from Ft Rucker, ALA.

21 Oct 78 Canadian NCOs departed after instructing AGS and 20 SOS personnel on Mini-TAT equipment.

22 Oct 78 First J-CATCH H-3 painted in new color scheme.

UH-1N flew first NVG missions for Gallant Eagle 79 using ACAR 3075 illuminators.

23 Oct 78 Wing - J-CATCH Opord published.

4 Nov 78 20th SOS completed participation in Gallant Eagle 79.

6 Nov 78 103 officers and enlisted personnel of the 20 SOS and 834 AGS dep departed for Ft Rucker, AL to begin operation of Phase II of J-CATCH.

9 Nov 78 2Lt Robert S. Clegg reported in. He is a UH-1N pilot.

10 Nov 78 Squadron personnel are surveying additional duties which may need to be eliminated. Directed by HQ TAC/CC.

14 Nov 78 20 SOS was informed by Det 3, 4400 Management Engineering Squadron that TAC/XPMQ has approved "A" prefix for 20 SOS Medical personnel.

21 Nov 78 - 20 SOS personnel returned from Ft Rucker, ALA for Thanksgiving break.

26 Nov 78 - 20 SOS personnel deployed again to Ft Rucker for continuation of Phase II J-CATCH.

10 Dec 78 - J-CATCH Phase II completed at Ft Rucker, ALA.

11 Dec 78 - 20 SOS redeploys to Hurlburt Field including main body of personnel, 5 UH-1N and 3 CH-3E aircraft.

15 Dec 78 - J-CATCH data reduction trailers closed down-DATA Ferries return to Hurlburt Field.

18 Dec 78 - H-3E picked up J-CATCH computers from Ft Rucker, ALA for use in J-CATCH Phase III.

AIC Charles Smith Jr. reported into the squadron. He is a Life Support Technician.

Special Achievement

The following individual completed the USAF Special Operations Foreign Internal Defense Course:

Major David M. Jones

The following individual completed the USAF Special Operations Dynamics of International Terrorism:

Major David M. Jones

The following individual completed Phase II PME:

Sgt Douglas F. Wyman

The Squadron Airman of the Quarter was:

A1C Waymond L. Herring

The Squadron NCO of the Quarter was:

SSgt Ronald Magill

The following individual was 20 SOS Senior NCO of the Year:

SMSgt Floyd W. Watson

The following individual was 20 SOS NCO of the Year:

SSgt Ronald D. Magill

The following individual was 20 SOS Airman of the Year:

A1C Waymond L. Herring

SPECIAL PROBLEMS

1. The lack of adequate floor space in the life support section has become more urgent as the squadron acquires more attached individuals and an overlap of inbound PCS versus outbound PCS. The additional commitment of Chemical/ Biological equipment has also depleted all existing storgage space in the section. Life Support T.O. 15X-1-1 requires a minimum of 1000 sq ft of floor space for all life support sections. This T.O. does not account for the new Chemical/Diological Commitment. Our Life Support Section has only 700 sq ft of floor space. The past several inspections of this section have mentioned this problem but as of this time no adequate solution has been found.

SPECIAL INTEREST ITEM

FLYING SUMMARY

1 October 1978 - 31 December 1978

Following is a list of flying hours and sorties flown by the squadron although category O-8 only includes functional check flights, category T-3 includes training, cross country, and support missions.

Month	Category	Sorties	Hours
	UH-1N		
Oct 78	O-8	9	3.7
	T-3	104	144.6
Nov 78	O-8	11	6.3
	T-3	179	183.5
Dec 78	O-8	10	5.7
	T-3	141	168.8
	CH-3E		
Oct 78	O-8	3	1.1
	T-3	54	96.9
Nov 78	O-8	2	1.1
	T-3	105	186.6
Dec 78	O-8	5	1.8
	T-3	122	193.8

During this period the squadron flew a total of 913.9 hours which were the result of 745 sorties. J-CATCH sorties for Nov and Dec for the UH-1N was 271 for a total of 272.2 hours. J-CATCH sorties for the CH-3E was 147 for a total of 160.4 hours.

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EMPLOYMENT MISSION DATA

FOR

CH-3

HELICOPTER

2 March 1979

Prepared by:

1st Special Operations Wing
Operations Plans Division
Hurlburt Field FL 32544

(Captains Merriott/DeMeyer)

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d. Psychological Operations.

(1) Leaflet drop. Agencies requesting a leaflet mission must furnish the helicopter unit with material to be dispersed and the location and confines of the objective area. Methods of dispersal will depend upon the requesting agency. Two methods most suitable are:

(a) Delayed Opening Leaflet System (DOLLS).

(b) Dropping by hand.

DOLLS allow for higher altitude drops. Hand dispersal of leaflets can be effective if hostile action is not a factor.

(2) Loud Speaker Operations (LOUDHAILER). Speaker missions are very effective in civic action work or in disaster areas. Organizations requesting speaker operations should provide required message for voice transmission, or a compatible tape player for recorded message transmission.

e. Flare Operations.

(1) Use: To illuminate areas for landing, base defense, helicopter/Gunship operations, dropping of supplies, or for rescue operations at a disaster scene.

(2) Types: Aircraft are capable of carrying LUU-2A/B airborne illuminating flares.

6. Exercise Operations.

a. The following guidelines are consolidated for use when employing 1 SOW helicopter in a special operations role during joint training exercises.

(1) Minimum Weather Criteria.

(a) Ceiling - 700 feet.

(b) Visibility - 1 mile.

(c) Winds - 35 knots maximum or 15 knot gust spread.

(2) Terrain Flight and Navigation.

(a) Terrain flight will be conducted only within military reserved airspace. Pre-exercise inflight survey of the operating area is highly desirable. If this is not possible, the surveys should be accomplished on the initial exercise sorties.

(b) Altitude Restrictions.

Day - 25 feet AGL.

Night - 300 feet above highest obstacle within 1/2 mile of aircraft.

(c) The above altitudes are minimums. Few exercise situations will require the entire route to be flown at 25 feet AGL.

(3) Infiltration/Exfiltration.

(a) Airland will be the primary method.

(b) Alternate methods (hoist, rope ladder, stabo, and rappelling) are strongly discouraged for safety reasons. If required, select only those areas that will permit an emergency landing with minimum damage in case of an aircraft malfunction. Hover height will be as low as possible and hover time will be kept to an absolute minimum.

(c) Aircrews can use any suitable landing zone during daytime that meets the following criteria:

1. Cleared area is at least twice the roter diameter of the helicopter (125' for CH-3).

(c) NVG missions should not be planned for the period of one hour preceding sunrise or following sunset; and 1/2 hour preceding moonrise and after moonset. These periods of time present specific illumination problems.

(d) LZs should meet the minimum requirements stated in REDCOM M 10-3, however no specific LZ lighting is required.

(3) When using NVG within the above illumination criteria, aircrews can conduct all day tactical maneuvers at night. If illumination is less, at least 300 feet AGL will be maintained until on final approach for landing where an additional light source is required such as AC-130 IR illumination.

1 Atch
CH-3 Weight Carrying Capabilities

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EMPLOYMENT MISSION DATA

FOR

UH-1N

HELICOPTER

23 February 1979

Prepared by:

1st Special Operations Wing
Operations Plans Division
Hurlburt Field FL 32544

(Captains Merriott/DeMeyer)

UNCLASSIFIED

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(d) The 2.75 FFAR can be equipped with the following warheads:

1. High Explosive (HE).

2. Flechette.

3. White Phosporus (WP).

b. Dual Purpose Weapons. Dual purpose weapons, such as the .50 cal mechine gun and the 2.75 FFAR, fire ammunition that is designed to be effective against personnel and light-armored material.

6. Types of tactical patterns. Normally, specific patterns cannot be preplanned. However, certain considerations apply to all patterns. The Aircraft Commander (AC) will adjust each attack to take advantage of the terrain and weather, exploit enemy weaknesses, and employ his aircraft to gain the maximum advantage.

a. Entry from rocket passes will normally be low level.

b. Types:

(1) Dogbone pattern (Figure 1) is an effective pattern designed to place continuous protective fire between friendly forces and pursuing hostile forces.

(a) Attacking helicopters are mutually supporting and control is easily maintained during the attack.

(b) The pattern may be modified to adapt to terrain and number of firing passes required.

(c) Length of time of firing pass is quite long.

(d) Maneuvering places aircraft in position to cover friendly forces without firing into friendly positions.

(e) The loops of the basic Dogbone should always be made away from the target position.

(2) Figure "8" pattern (Figure 2) is an effective pattern for LZ/DZ security, Prep, and attack. The helicopters are positioned so that each is in position to attack as the other helicopter disengages the target. Timing is important and care must be taken to vary the attack over the ground.

(a) Continuous fire on target prevents the enemy from setting up fire in anticipation of subsequent attacks.

(b) Provides continuous "over the head" observation and coverage of friendly positions.

(c) Permits delivery of large volume of fire in a short period of time.

(3) Random/modified (Figure 3). This pattern affords the aircraft the capability of delivering rocket fire as well as side fire and may be entered from either the Figure "8", or Dogbone. This pattern will normally be employed when two or more enemy positions are detected.

(4) Racetrack Pattern (Figure 4). The racetrack pattern is the basic attack pattern from which the others are derived. This pattern may be used on any direct fire support mission, or may be modified as the situation dictates. Integrated weapons will be used to suppress hostile fire long enough for the helicopter to break contact. Direct hits are not necessarily a requirement in suppressing hostile fire. Often the sound of the helicopter's weapon being fired is sufficient to momentarily silence hostile fire. This is particularly true of the 2.75 FFAR which has a significant psychological affect that is derived from the noise of firing alone.

(a) Any number of helicopters may be used in the pattern.

(b) The helicopters are mutually supporting by fire and observation.

(c) Continuous fire may be placed on the target.

(d) Engagement range, disengagement range and timing are flexible.

equipped. Upon boarding the aircraft, the jumpers take seats (if installed) and fasten their safety belts. Once airborne,the jumpmaster converses with the pilot/copilot over the intercom to insure that they both are satisfied with the aircraft's heading, speed, and altitude, as well as the drop zone conditions. As the aircraft approaches the drop zone, the jumpmaster, using standard airborne hand signals, orders the jumpers to "get ready, stand up, check equipment, and stand in the door" (at which command the first jumper sits in the door). When the drop zone is reached, and if the jumpmaster is satisfied with all conditions (among them, that the aircraft is not exceeding a height of 20 feet or a speed of 20 knots), he taps the first jumper and gives a command, "go." When he receives the command, the jumper reaches out and grasps the bar protruding from the doorway. He then leaves the cabin, and hangs, facing forward, from the bar. He swings his body, and, with his body angled slightly forward, releases the bar.

(b) Pickup. At the time for pickup, the jumpmaster hangs the rope ladder from the helicopter door, and the helicopter proceeds down the line of swimmers at a slow speed keeping the end of the ladder a foot or two from the water. As the ladder reaches each swimmer, he grabs the ladder and climbs up into the aircraft.

e. Resupply:

(1) Resupply can be accomplished by airland or airdrop procedures. In the event that terrain prevents airlanding of equipment or supplies, delivery can be accomplished by the free fall method. Due to the limited cargo space and the hazard of having parachute rigged bundles tied down near an open door, only free fall bundle drops are recommended. Drop altitude and airspeed will be as low as possible, but will not exceed 200 feet AGL.

(2) Sling operations will normally be employed to expedite loading and offloading of prepacked loads. The ideal weight of a sling load should not exceed 1,000 pounds, however, heavier loads can be carried under certain conditions. Premission planning is mandatory prior to any sling operation.

f. Psychological Operations:

(1) Leaflet drop. Agencies requesting a leaflet mission must furnish the helicotper unit with material to be dispersed, the location and confines of the objective area. Methods of dispersal will depend upon the requesting agency. Two methods most suitable are:

(a) Delayed Opening Leaflet System (DOLLS), allow for higher altitude drops.

(b) Dropping by hand can be effective if hostile action is not a factor.

(2) Loud Speaker Operations. Loud speaker missions are very effective in civil action work or in disaster areas. Organizations requesting loud speaker operations should provide required equipment or allow sufficient load time for 1 SOW to acquire and install required equipment.

g. Flare Operations:

(1) Use: To illuminate areas for landing, base defense, Gunship Operations, dropping of supplies, or for rescue operations at a disaster scene.

(2) Types: Aircraft are capable of carrying LUU-2A/B airborne illuminating flares.

9. The UH-1N with its short combat radius, is limited to areas where POL support is available. Prepositioning of fuel at Forward Operating Locations (FOL) or shipboard static - - hot refueling (engines running) operations are essential. Helicopters can be used in any role that requires quick reaction ground alert. However, they have a limited airborne alert capability due to fuel loads. Armed helicopters used in support of ground troops or employed in other roles are extremely effective due to their flexibility and ability to deliver ordnance very close to friendly positions.

10. Exercise Operations.

a. The following guidelines are consolidated for use when employing 1 SOW helicopters in a special operations role during joint training exercises.

(1) Minimum Weather Criteria.

(a) Ceiling - 700 feet.

(b) Visibility - 1 mile.

(c) Winds - 35 knots maximum or 15 knot gust spread.

2. Ground parties must be taught the importance of proper LZ selection and markings for night operations. They must be aware of aircrew reliance on them for wind direction, minimum size of the landing zone and touchdown area, obstacle free approach and departure paths, etc.

3. It is especially important that the marking system be oriented into the wind and as far as possible from all tree lines.

(d) The aircraft commander is ultimately responsible for deciding whether the approach and departure can be completed safely.

1. If necessary, all available lights (landing, search, and floods) may be used to ensure that the minimum criteria have been complied with.

2. If there is any doubt about wind directions; obstacles, LZ size, power reserve, or authenticity of the ground party, the aircrew will abort the operation and return to the airfield.

b. Use of Night Vision Goggles (NVG).

(1) Aircrews utilizing AN/PVS-5 Night Vision Goggles (NVG) can perform at night all tasks normally accomplished during the day.

(2) Operational limitations.

(a) Terrain flight is permitted at 200 feet AGL.

(b) Minimum moon illumination is 20 percent. The moon must be at least 30 degrees above the horizon unless additional light sources are available.

(c) NVG missions should not be planned for the period of one hour preceding sunrise or following sunset; and 1/2 hour preceding moonrise and after moonset. These four periods of time present specific illumination problems.

(d) LZs should meet the minimum requirements stated in REDCOM M 10-3, however no specific LZ lighting is required.

(3) When using the NVG within the above illumination criteria, aircrews can conduct all day tactical maneuvers at night. If illumination is less, at least 300 feet AGL will be maintained until on final approach for landing where an additional light source is required, such as AC-130 IR illumination.

5 Atch
1. Fig 1 - Dogbone
2. Fig 2 - Fig "8"
3. Fig 3 - Random/Modified Fire
4. Fig 4 - Racetrack Pattern
5. Fig 5 - Range/Load Data

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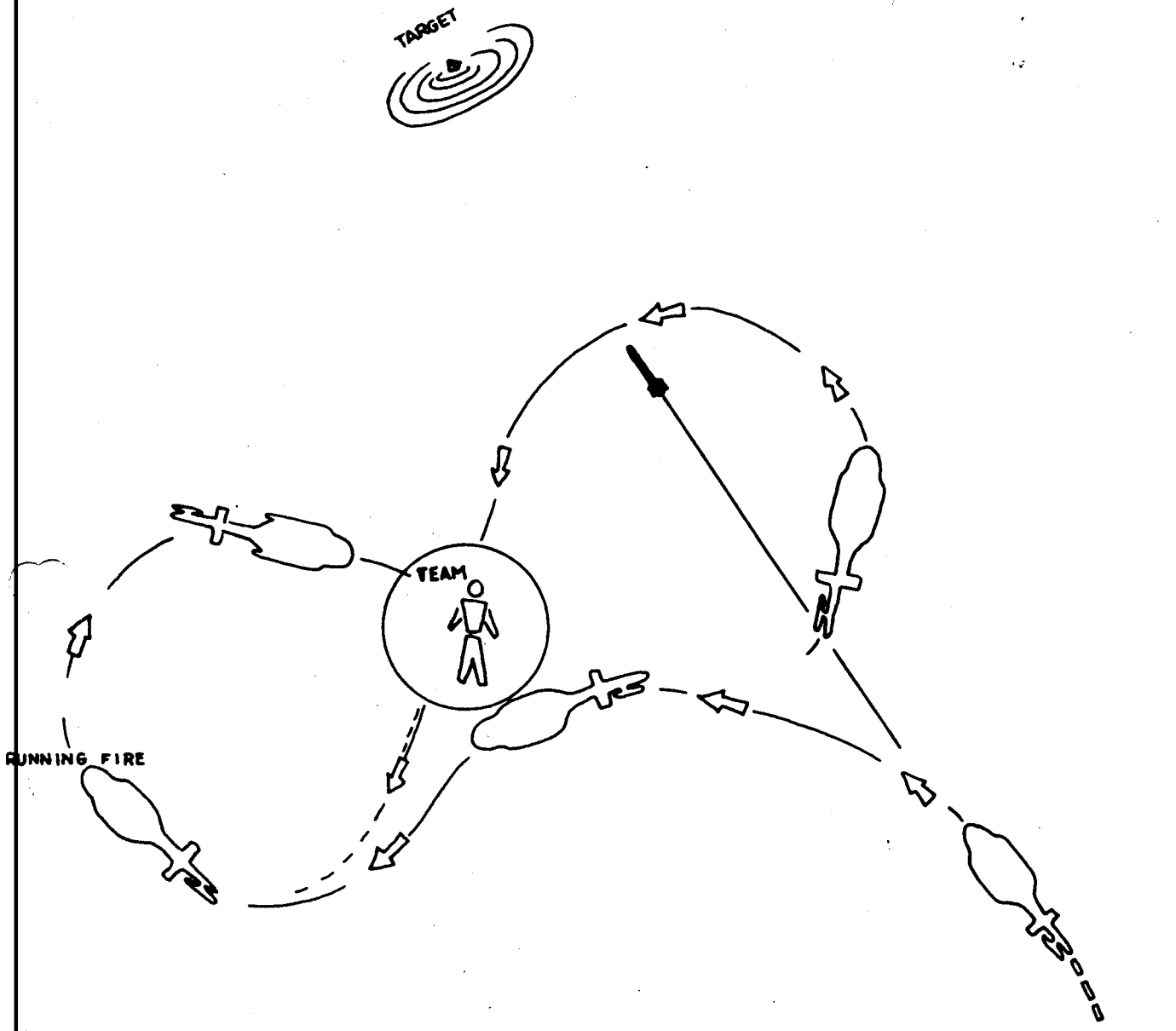


Figure 2 . Figure "8" Pattern Entered from Diving Fire

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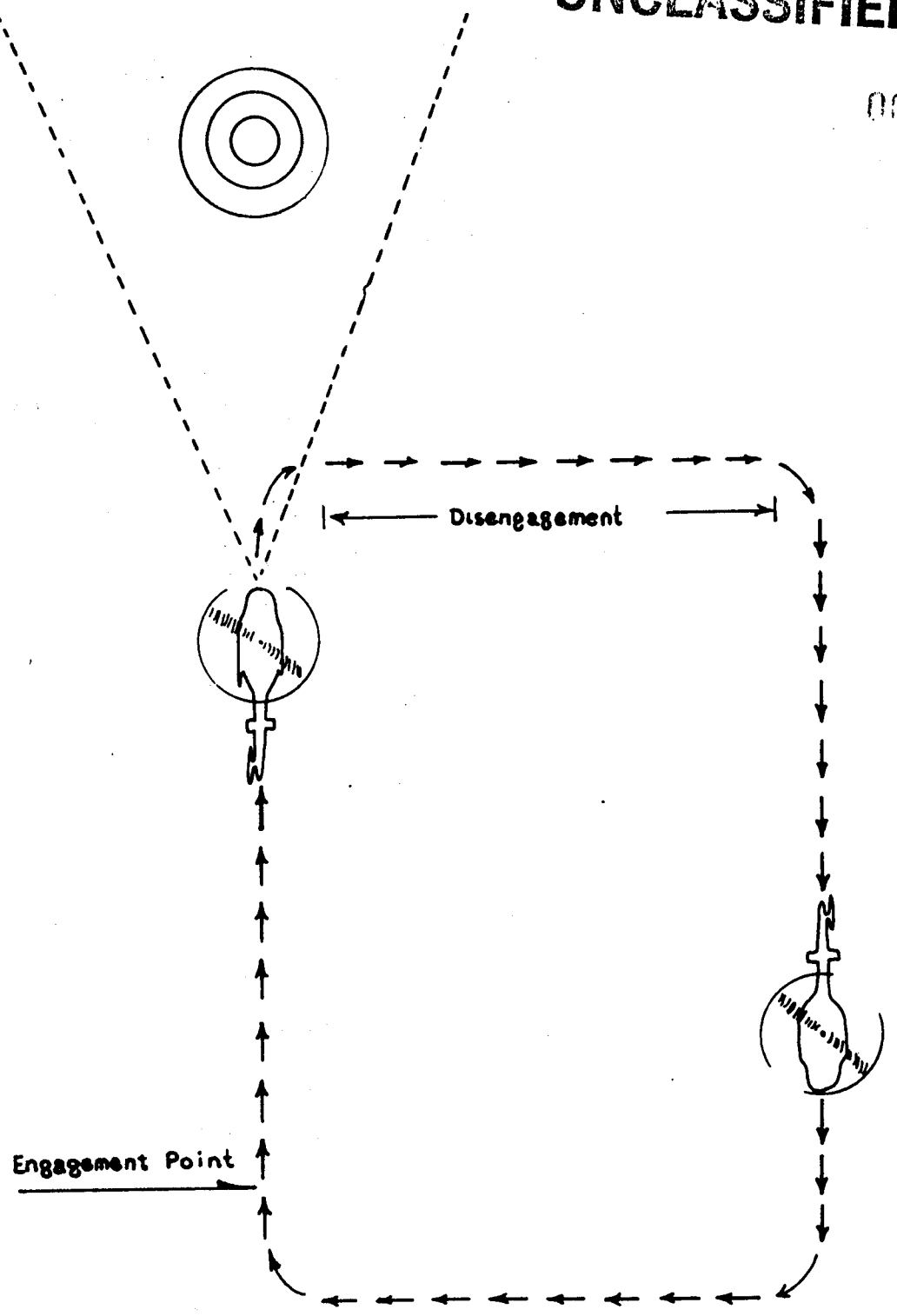


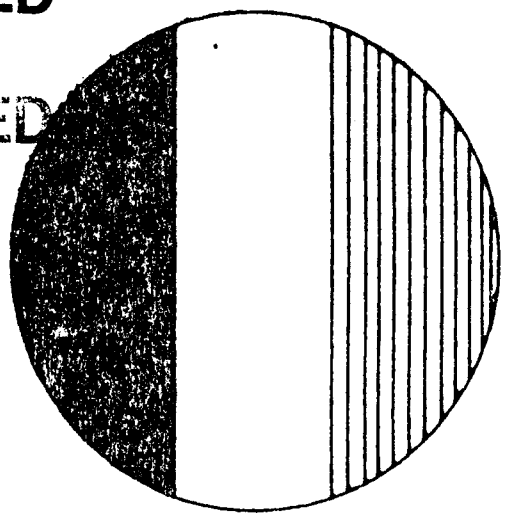
Figure 4 . Race Track Pattern

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J-CATCH

TACTICS DEVELOPMENT AND EVALUATION OF JOINT COUNTERING ATTACK HELICOPTERS

PHASE II, ANNEX B

AUGUST 1978

Distribution is limited to US government agencies only because this document covers the tactics development and evaluation for military hardware (August 1978). Other requests for this document must be referred to HQ TAC/DO, Langley AFB, VA 23665.

UNITED STATES AIR FORCE
TACTICAL AIR COMMAND
TACTICAL FIGHTER WEAPONS CENTER
NELLIS AIR FORCE BASE, NEVADA

UNITED STATES ARMY
TRAINING AND DOCTRINE COMMAND
COMBINED ARMS CENTER
FORT LEAVENWORTH, KANSAS

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TAC PROJECT 77X-010F

TRADOC FO 167

TACTICS DEVELOPMENT AND EVALUATION (TD&E)

OF

JOINT COUNTERING ATTACK HELICOPTERS (J-CATCH)

PHASE II

August 1978

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Distribution is limited to US Government agencies only because this document covers tactics development and evaluation for military hardware (August 1978). Other requests for this document must be referred to HQ TAC/DO, Langley AFB, Virginia 23665.

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TAC PROJECT 77X-010F/TRADOC FO 167

TD&E of Joint Countering Attack Helicopters (J-CATCH), Phase II

1. INTRODUCTION

a. Background: The increasing numbers and technological advances of threat attack helicopters in recent years have been dramatic. Recognizing this, the U.S. Department of the Army (DA) and U.S. Air Force (USAF) staffs directed Training and Doctrine Command (TRADOC) and Tactical Air Command (TAC) to conduct a joint study and evaluation of U.S. ability to counteract this threat. HQ TAC and HQ TRADOC directed the USAF Tactical Fighter Weapons Center (TFWC) and the Combined Arms Center (CAC) to conduct a joint study and Tactics Development and Evaluation (TD&E). The TD&E is titled Joint Countering of Attack Helicopters (J-CATCH) and was directed to the USAFTFWC by TAC Project Order 77X-010F, dated 22 July 1977. The project order was amended on 16 February 1978 and again on 18 April 1978. The project has a TAC priority of 1C. Phase II of J-CATCH is a tactics development and capability evaluation of friendly helicopters versus generic threat attack helicopters. It will be conducted by CAC with aggressor helicopter support from the USAF.

b. Description of Hardware:

(1) The threat attack helicopters flown during Phase II will be simulated by CH-3 and UH-1N helicopters operated by the 1st Special Operations Wing (SOW) at Auxiliary Field 9, Eglin AFB, FL. The aircraft will be modified to permit video-taping of certain flight parameters, as well as gun and missile presentations. A flexible, forward firing gun will be simulated in the CH-3 and UH-1N by using the MINI TAT Turret System. The turret will be mounted to the belly of the helicopter and will be capable of firing ± 65 degrees in azimuth from the nose. The missiles used by the threat helicopters will be infrared (IR) seeker equipped missiles. Time code generators (TCG's) will be installed in all aircraft to allow for time correlation of the events recorded on the installed video-tape recorders (VTR's). A transmitter-transponder system will also be installed to permit measurement of ranges between threat and friendly aircraft (Mini-Ranger III System).

(2) The friendly helicopters in Phase II will consist of three AH-1S Cobras and two OH-58 Scouts, to be provided by the U.S. Army Aviation Center (USAAVNC) at Ft Rucker, AL. They will be instrumented to allow video-taping of flight parameters, gunsight presentations, and missile presentations. The Cobras will be equipped with a turret-type gun and both the 20 millimeter (mm) and 30mm guns will be simulated to determine which has the better capability. One of the two Scout helicopters will be armed with the Stinger missile. All Cobra helicopters will simulate carriage of the Stinger missile. Friendly aircraft will have TCG's

and VTR's installed as on the threat aircraft. The friendly helicopters will have the master stations (Mini-Ranger III System) for the range measuring equipment for recordings of ranges between aircraft. The USAAVNC will provide the OV-1D Mohawk aircraft at random during the test to determine its capability to detect the threat. It will be equipped with side-looking airborne radar (SLAR).

(3) Red Force and Blue Force controllers will provide evaluation and safety control from positions aboard two UH-1M helicopters, to be provided by the USAAVNC.

(4) A minimal ground air defense array, provided by the Army, will consist of a forward area alerting radar (FAAR) and two Redeye sections consisting of five Redeye ground-to-air missile teams each. The FAAR and one Redeye section will be assigned to the Blue Force and one Redeye section will be assigned to the Red Force.

c. Employment Concept: The primary mission of the attack helicopter is anti-armor and its use in an anti-helicopter role is secondary. However, Phase II of J-CATCH is strictly a test of helicopter versus helicopter capabilities in a limited air defense environment. As a result of the J-CATCH preliminary study, a scenario was developed in which the air-to-air capability of the attack helicopter team would be examined. The following three scenarios will be used during Phase II:

(1) Enemy Daring Raid (EDR). It will be assumed that the test area lies some 30-50 kilometers behind the FEBA, in friendly territory. The friendly forces will be on the ground on two minute alert. They will be notified of a FEBA penetration occurring eight minutes earlier. Information passed will include number of aircraft, direction, and time of crossing of the FEBA. Aircraft will be positioned to preclude intercept within five minutes of receipt of mission. Control aircraft may simulate Stand-Off Target Acquisition System (SOTAS). The enemy mission will be to attack one of three or four predetermined positions on the opposite side of the test area from the perimeter crossing. These positions will simulate corps command post headquarters, corps support command (COSCOM), etc. The friendly mission will be to intercept and prevent this attack or to stop it in progress if the intercept fails.

(2) Forward Edge of the Battle Area Defense (FEBA DEF). One friendly attack helicopter team will be assigned to support friendly forces in defensive positions. The friendly forces will be assumed to be under attack by elements of a motorized rifle regiment (MRR). The MRR will be supported by enemy attack helicopters and by its organic air defense (simulated by one Redeye Section). Redeye Section vehicles will simulate potential targets for the friendly helicopters. Eight FEBA's have been selected in the test area.

(3) Enemy Penetration. The Blue helicopter force will attack the flanks of a simulated threat force which is penetrating any one of the eight 5 to 7 kilometer FEBA positions. The threat helicopter force will be supporting the simulated ground force penetration. The scenario will begin with a launch of the Blue helicopter force from an assembly area behind the FEBA.

2. PURPOSE AND OBJECTIVES

a. Purpose: Evaluate the capabilities, determine the coordination requirements and develop the tactics of attack helicopter teams in a counter-air role against the threat helicopter force during both primary anti-armor missions and secondary (defensive) counter-air missions.

b. Specific Objectives (SO's):

(1) SO1: Evaluate the capability of the attack helicopter team to counter the generic threat helicopter force.

(a) Evaluate various weapons mixes for the attack helicopter team to counter the generic threat helicopter force.

(b) Evaluate the role of the air-to-air missile as a weapon system for the attack helicopter team.

(c) Evaluate the role of the 20mm and 30mm cannons as weapon systems for the attack helicopter to counter the generic threat helicopter.

(d) Evaluate the role of the TOW Missile System as a weapon system for the attack helicopter to counter the generic threat helicopter.

(2) SO2: Evaluate tactics and coordination requirements for the attack helicopter team to defend against the generic threat helicopter force.

(a) Develop and evaluate tactics for the attack helicopter team to use in countering the generic threat helicopter force.

(b) Develop and evaluate tactics for scout helicopter use as a member of the attack helicopter team countering the generic threat helicopter force.

(c) Develop coordination requirements between friendly attack helicopters and air defense elements.

(3) SO3: Evaluate the command and control function of the attack helicopter team against a threat helicopter force.

(a) Evaluate the role of the scout helicopter in command and control of the attack helicopter team operating against the generic threat helicopter force.

(b) Evaluate the role of the attack helicopter in command and control of the attack helicopter team operating against the generic threat helicopter force.

(4) SO4: Evaluate generic threat helicopter tactics and determine those tactics which prove most effective against US Army attack helicopters.

(5) SO5: Evaluate the effectiveness of the enemy air pointer in directing attacks against friendly attack helicopters and ground elements.

(6) SO6: Evaluate the capability of enemy attack helicopters to avoid acquisition and engagement by limited friendly air defense elements.

(7) SO7: Evaluate the capability of friendly attack helicopter teams to avoid detection and engagement by limited enemy air defenses.

(8) SO8: Evaluate the effectiveness of the OV-1D Mohawk SLAR to acquire enemy helicopters and provide early warning.

3. METHOD OF ACCOMPLISHMENT

a. General:

(1) J-CATCH Phase II will be conducted in the Fort Rucker, AL training area and will be limited to helicopter force versus helicopter force. The 1st SOW will provide the threat helicopter forces; the U.S. Army will provide the friendly attack helicopter teams, control helicopters, limited air defense arrays, and FAAR.

(2) This evaluation will assess the effectiveness of current and anticipated weapons systems, tactics, and capabilities of friendly and threat forces. Detection, range, engagement range, probability of hit (P_H), and probability of kill (P_K) for various tactics, weapons and ordnance combinations will be assessed. Air defense acquisition and engagement ranges will be estimated since precise ranging is not possible.

(3) A friendly attack helicopter team will conduct 48 simulated tactical events based on the three tactical situations previously described. Evaluation design requires at least two iterations of each event if results are to provide sufficient data. A total of 15 flying days of three-hours per aircraft per day are required to complete the basic events. Five days of pre-evaluation training will take place at Fort Rucker. In the event of weather days or other unanticipated delays, weekend flying may be required. Terrain flight modes and weapons subsystem selection will be determined by the attack helicopter team based on the tactical situation. Terrain effects will be randomized by using eight different routes throughout the test area so that terrain features are mixed evenly among the independent variables and the pilots. Pre-evaluation training will minimize learning effects. Data will be gathered during pre-evaluation training to

train the data handlers and to provide information on learning effects. The FAAR will be included in all test events. Red and Blue air defense elements will be included in all FEBA DEF events. Red air defense elements will be included in the enemy penetration event. No Redeye elements will be involved in the EDR event. The OV-1D Mohawk will be included in selected scenarios.

(4) Threat force helicopters will fly flight profiles which replicate those of the generic threat helicopter force. These profiles and the threat data package are classified and are available upon request from the USAFTFWC/SA or US Army Combined Arms Combat Development Activity (USACACDA).

(5) Flight parameters recorded on the AH-1S and OH-58 helicopters will include airspeed, altitude, heading, and roll. The intercom and radio communications will be recorded.

(6) Weapons performance data on the AH-1S will be collected through video cameras mounted in the telescopic sight unit (TSU), the M-38AIE1 turret, and on a wing station. In addition a video camera will be boresighted to the Stinger Missile System and seeker pointing signals will be used to drive a reticle pattern to indicate the Stinger tracking point. As the crew selects a specific weapon system, the camera simulating that system will be switched automatically to the video recorder. Turret and TSU azimuth and elevation angles will be recorded and all data channels will be time coded.

(7) Range interval between the friendly and threat aircraft will be measured by a transmitter-transponder system and the data will be time coded and recorded.

(8) The Stinger Missile System will be evaluated on the OH-58 in the Scout role using the boresighted camera.

(9) Threat force helicopters will have VTR's installed to record airspeed, altitude, heading, and roll, as well as weapons performance data.

(10) Weapons performance data will be gathered, reduced and analyzed by the Air Warfare Division of the US Army Materiel Systems Analysis Activity (AMSAA). TFWC will conduct a parallel threat analysis. These data will be used to determine weapons lethality in terms of P_H and P_K to postulate weapons systems performance.

(11) Mission briefings will be conducted prior to each flight period. A continually updated terrain hazards map will be used by each pilot participating in the tactical events.

(12) For flight safety, the safety control helicopters will announce impending hazards and insure that helicopters have a positive identification of any hazard. If required for flight safety, either of the safety control helicopters may terminate a test event.

(13) Post flight debriefings will be held at the end of each flight period to gather subjective comments from aircrew members through a post-flight questionnaire. Video-tape data will be reviewed at the end of each day.

(14) Air defense acquisition and engagement data will be recorded on data sheets. Air defense elements will be closely synchronized in time with the aviation elements. Redeye tracker head trainers and XM-76 simulators will be used to engage both friendly and enemy aircraft. Range, azimuth, and weapons effectiveness will be subjectively evaluated.

(15) The US Army and USAF test managers will determine, on a daily basis, if sufficient Red Force and Blue Force helicopters are operationally ready to participate. As much as possible, the same numbers of helicopters (and the same mix) will be maintained throughout the test.

b. Test Methodology:

(1) SO1: Evaluate the capability of the attack helicopter team to counter the generic threat helicopter force.

(a) See paragraph 3a.

(b) Data requirements:

1. Log of test events.

2. Time test event commenced.

3. Time test event terminated.

4. Time of detection(s).

5. Helicopter range(s) at detection(s).

6. Helicopter altitude, heading, airspeed, and roll.

7. Range from the helicopter to target during firing.

8. Weapons subsystem fired.

9. Time of weapon subsystem firing.

10. Duration of firing (cannons and machine guns).

11. Video tapes from AH-1S and OH-58 cameras simulating the weapon system employed.

12. Video tapes from UH-1N and CH-3 weapons systems cameras.

13. Completed flight crew debriefing sheets.

14. Results of analysis of weapons effectiveness.

15. List of any out-of-coincidence occurrences.

16. Meteorological conditions for each event.

(c) Data Reduction and Processing:

1. Flight crew debriefing forms will be completed at the conclusion of each sortie. The USAAVNBD, TFWC, and 20th SOS project officers will conduct post flight interviews to obtain any data not available on the debriefing forms. The USAAVNBD and TFWC project officers will annotate key events with comments as appropriate.

2. Raw data gathered from flight parameter data panels and weapons subsystems video tapes will be reduced on a daily basis for use in the master data log and in debriefing aircrews on tactics effectiveness. Data will then be transferred to a Hewlett-Packard 9825 computer tape cassette for sorting and storing. The AMSAA project engineer and USAAVNBD and TFWC project officers will maintain copies of the master data log.

(d) Data Analysis:

1. The data will be analyzed to determine its statistical significance as a function of the two independent variables, i.e., tactical situation and weapons mix. The analysis of variance technique will be the analytical tool used. In addition, the same information will be categorized according to the tactics used in each situation. Since tactics will vary from day to day, the nature and extent of the analysis of tactical effectiveness cannot be specified in advance.

2. The time interval between detection and weapons system firing will be statistically analyzed by the USAAVNBD for each gunner and weapons system.

3. AMSAA and TFWC personnel will analyze ballistic and weapons performance data to determine lethality in terms of P_H and P_K. These data will be used to postulate AH-1S and threat weapons systems performance. The following criteria will be used to determine the results of air combat engagements. (ΔP_K is defined as the difference in average probabilities of kill of the engagement participants):

$0.5 \leq P_K \leq 1.0$ = clear win for participant with higher P_K

$0.3 \leq P_K < 0.5$ = probable win for participant with higher P_K

$0.0 \leq P_K < 0.3$ = draw

(2) SO2: Evaluate tactics and coordination requirements for the attack helicopter team to defend against the generic threat helicopter.

(a) Method. See paragraph 3a.

(b) Data Requirements:

1. Log of test events.

2. Video tapes from AH-1S and OH-58.

3. Video tapes from UH-1N and CH-3 weapon systems cameras.

4. Completed flight crew debriefing sheets.

5. Results of AMSAA analysis of weapons effectiveness.

6. List of any out-of-coincidence occurrences.

7. Aircrew comments on tactics used.

8. Aircrew comments on tactics not used.

9. Suggestions of aircrew members for future tactics.

10. Aircrew comments on the impact of weapon system hardware operation on tactics.

11. Aircrew comments on coordination requirements for the attack helicopter team.

12. Aircrew comments on the role of the OH-58 helicopter in command and control.

13. Aircrew comments on the role of the AH-1S in command and control.

14. Meteorological conditions for each event.

15. Air defense data sheets.

(c) Data Reduction and Processing. Same as SO1.

(d) Data Analysis. Evaluation results will be closely scrutinized by participants and test managers for apparent strengths and vulnerabilities in tactics, equipment or training, upon which to base substantial conclusions.

(3) SO3: Evaluate the command and control function of the attack helicopter team against a threat helicopter force.

(a) Method. See paragraph 3a.

(b) Data Requirements. Same as SO2.

(c) Data Reduction and Processing. Same as SO1.

(d) Data Analysis. The data will be analyzed to determine the best roles for the attack and Scout helicopters in the command and control function while countering a threat helicopter force.

(4) SO4: Evaluate generic threat helicopter tactics and determine those tactics which prove most effective against US Army attack helicopters.

(a) Method. See paragraph 3a.

(b) Data Requirements. Same as SO2.

(c) Data Reduction and Processing. Same as SO1.

(d) Data Analysis. The results of the air combat will be scored in terms of win, loss, or draw criteria as described in paragraph 3b(1)(d)3. These will be combined with the subjective comments to determine the best training methods and tactics of the threat force.

(5) SO5: Evaluate the effectiveness of the enemy air pointer in directing attacks against friendly attack helicopters and ground elements.

(a) Method. Enemy air defense elements will be simulated by US Army elements. The enemy air pointer will be simulated by 1 SOW Combat Control Team element. The effectiveness will be evaluated during the FEBA DEF and FFA events only. Upon acquisition of the attack helicopter team, the enemy air pointer will provide the threat helicopters with target information and intercept guidance.

(b) Data Requirements. Air defense and air pointer elements will complete data sheets, found in Appendix B-1, following each event.

(c) Data Reduction and Processing. Data sheets will be collected daily and the information will be manually processed and collated. Pertinent information will be entered in a master data log.

(d) Data Analysis. The use of an air pointer is peculiar to the generic force and will be analyzed to determine the extent his guidance influenced the outcome of engagements.

(6) SO6: Evaluate the capability of enemy attack helicopters to avoid acquisition and engagement by limited friendly air defense elements.

(a) Method. See paragraph 3a.

(b) Data Requirements. Data sheets as seen in Appendix B-1 will be completed by each air defense data collector and the aircrews.

(c) Data Reduction and Processing. The data will be manually processed and collated and recorded in a master data log.

(d) Data Analysis. The analysts will determine the amount of elapsed time between early warning as provided by the FAAR and acquisition by the Redeye team who receives the early warning. The number of acquisitions and engagements by air defense gunners will be assessed.

(7) SO7: Evaluate the capability of friendly attack helicopter teams to avoid detection and engagement by limited enemy air defenses.

(a) Method. See paragraph 3a.

(b) Data Requirements. Same as SO6.

(c) Data Reduction and Processing. Same as SO6.

(d) Data Analysis. Same as SO6.

(8) SO8: Evaluate the effectiveness of the OV-1D Mohawk SLAR to acquire enemy helicopters and provide early warning.

(a) Method. The Mohawk will be inserted into 15 of the Phase II events on a selected basis, and will fly a standard mission profile to determine the distance at which it can acquire enemy helicopters. An evaluation will be made of the warning time for friendly forces once acquisition occurs. For test purposes, an evaluation control helicopter will act as a ground element contacted by the Mohawk to provide early warning.

(b) Data Requirements. Data sheets as seen in Appendix B-1 will be completed by the OV-1D aircrew for events flown.

(c) Data Reduction and Processing. The data will be manually processed and collated and entered in the master data log. For the events on which the Mohawk participates, the data will be added to other event data in the Hewlett-Packard computer.

(d) Data Analysis. The data will be analyzed by personnel from the USAAVNBD and test participants, and will include considerations of how often the threat is detected accurately, whether the detection can be communicated with position information, and the amount of time taken by the warning process. The analysis of the role of the OV-1D will not be in-depth but rather an investigation into possible future uses of the aircraft.

c. Flight Parameters:

(1) Summary of Test Events. Table 1 gives a breakdown of test events. The events which occur two per sortie, will not be conducted in the exact order shown. The 20 test days will be spread over a four week period, with 5 test days each week. This will allow for make-up flying to be conducted on weekends if necessary. The first five days will be practice and will be conducted identical to normal testing. This is to bring test participants to a nominal level of experience and to ensure that those performing data reduction are able to accomplish the task.

(2) Flight Profiles. For each of the three scenarios described in paragraph 1c, eight routes or areas have been selected. Sixteen events will be flown using each scenario, resulting in each route or area being used twice. The grid maps of the area, showing specific details, are in the possession of the TFWC and USAAVNBD project managers.

4. TARGET DATES. The target dates for Phase II of J-CATCH are as shown in Table 2.

5. REQUIRED USAF RESOURCES

a. HQ TAC Resources: HQ TAC project officer will assist TFWC personnel with data reduction and analysis.

b. Ninth Air Force Resources:

(1) Personnel. The 1st SOW will provide six aircrews to man the four UH-1N and two CH-3 helicopters. The 1st SOW will also provide ground support personnel and four aircrew members daily to assist in data reduction.

(2) Operational. The 1st SOW will provide four UH-1N and two CH-3 helicopters.

(3) Special Facilities. None.

(4) Maintenance. None.

(5) Supply. Sufficient video tapes for 48 test events plus the five days of practice will be required for the instrumented USAF helicopters.

TABLE 1. J-CATCH Phase II Flight Profiles

EVENT	FRIENDLY ATTACK MISSION	HELICOPTER TACTICS: THREAT	HELICOPTER TACTICS: FRIENDLY
EDR (Airmobile)	Intercept Enemy Force Enroute to Objective	RF	RF w/AS (4 trials); w/UAS (4 trials)
EDR (Airmobile)	Ambush Enemy Force Enroute to Objective	RF	HF w/AS (4 trials); w/UAS (4 trials)
EDR (Airmobile)	Ambush Enemy in the Vicinity of Objective	RF	HF Against Enemy Lead Element w/AS (2 trials); w/UAS (2 trials)
EDR (Airmobile)	Ambush Enemy in the Vicinity of Objective	RF	HF Against Enemy Main Element w/AS (2 trials); w/UAS (2 trials)
Enemy Penetration	Attack Enemy Force at the Penetration	RF	HF w/AS (4 trials); w/UAS (4 trials)
FEBA DEF	Defend Against Enemy Ground and Helicopter Elements	HF	HF w/AS (4 trials); w/UAS (4 trials)
FEBA DEF	Defend Against Enemy Ground and Helicopter Elements	RF	HF w/AS (4 trials); w/UAS (4 trials)

NOTES:
1. Two trials will be flown on each sortie.
2. Aircraft sorties for each set of two trials will be two CH-3 (threat), four UH-1N (threat), three AH-1S (friendly), one armed OH-58 (friendly), one unarmed OH-58 (friendly), and two UH-1M (control). Total sorties for Phase II will be 58 CH-3, 116 UH-1N, 87 AH-1S, 29 armed OH-58, 29 unarmed OH-58, and 58 UH-1M.
3. Days 1 through 5 are training; days 6 through 20 are record trials.
4. The sequence of record trials will be randomly generated.

EDR - Enemy daring raid.
FEBA DEF - Forward edge of the battle area defense.
HF - Hovering fire.
RF - Running fire.
AS - Armed Scouts.
UAS - Unarmed Scouts.

TABLE 2. J-CATCH Phase II Target Dates 0000340

EVENT	DATE
Start of Active Testing.	TBD
End of Active Testing.	TBD
Submission of Phase II Interim Report to TAC/TRADOC.	30 workdays after completion of data reduction.
TBD - To Be Determined.	

(6) Munitions. None.

(7) Other Support and/or Services. Two video-tape playback units will be required.

c. USAFTFWC Resources:

(1) Personnel. The TFWC will provide a project manager, assistant, two operation analysts, one programmer analyst, and a missile simulator technicia

(2) Operational. None.

(3) Special Facilities. None.

(4) Maintenance. None.

(5) Supply. None.

(6) Munitions. None.

(7) Other Support and/or Services. Three Grey Rock IR missile simulators and two table top computers will be provided.

6. REQUIRED U.S. ARMY RESOURCES

a. Personnel:

(1) CAC will provide a project manager and an assistant.

(2) USAAVNBD will provide a project officer, operations analysts, and aircrews for the three AH-1S, two OH-58 and two UH-1M helicopters and the OV-1D Mohawk aircraft.

(3) USAAVNC will provide six people to accomplish data reduction tasks during the TD&E.

(4) The U.S. Army Air Defense Center (USAADC) will provide two air defense officers.

(5) The USAAVNC will provide an audio visual team to document Phase II of J-CATCH.

(6) The U.S. Army Aircraft Development Test Activity (USAADTA) will provide maintenance support for the Army aircraft supporting the test.

(7) AMSAA will provide two data analysts and two aircraft instrumentation specialists.

(8) U.S. Forces Command will provide a FAAR section and ten Redeye teams.

b. Operational. The USAADTA will provide three AH-1S, two OH-58, and two UH-1M helicopters and one OV-1D Mohawk aircraft. One of the OH-58 helicopters will be in the armed configuration and both the AH-1S and OH-58 helicopters will be instrumented to record test parameters. The U.S. Army will provide sufficient air defense equipment, including FAAR, Redeye, and XM-76, in the test area to provide test realism. Also, refuel facilities will be available at the Louisville stage field.

c. Special Facilities. The Louisville test area, located approximately 30 nautical miles north of Ft Rucker, will be utilized.

d. Maintenance. The U.S. Army will provide required instrumentation on their helicopters and will maintain their instrumentation as required.

e. Supply. Video tapes for the duration of Phase II will be required for the instrumented helicopters.

f. Munitions. None.

g. Other Support and/or Services. TBD by the U.S. Army.

7. PROJECT MANAGEMENT, ORGANIZATION, AND RESPONSIBILITIES

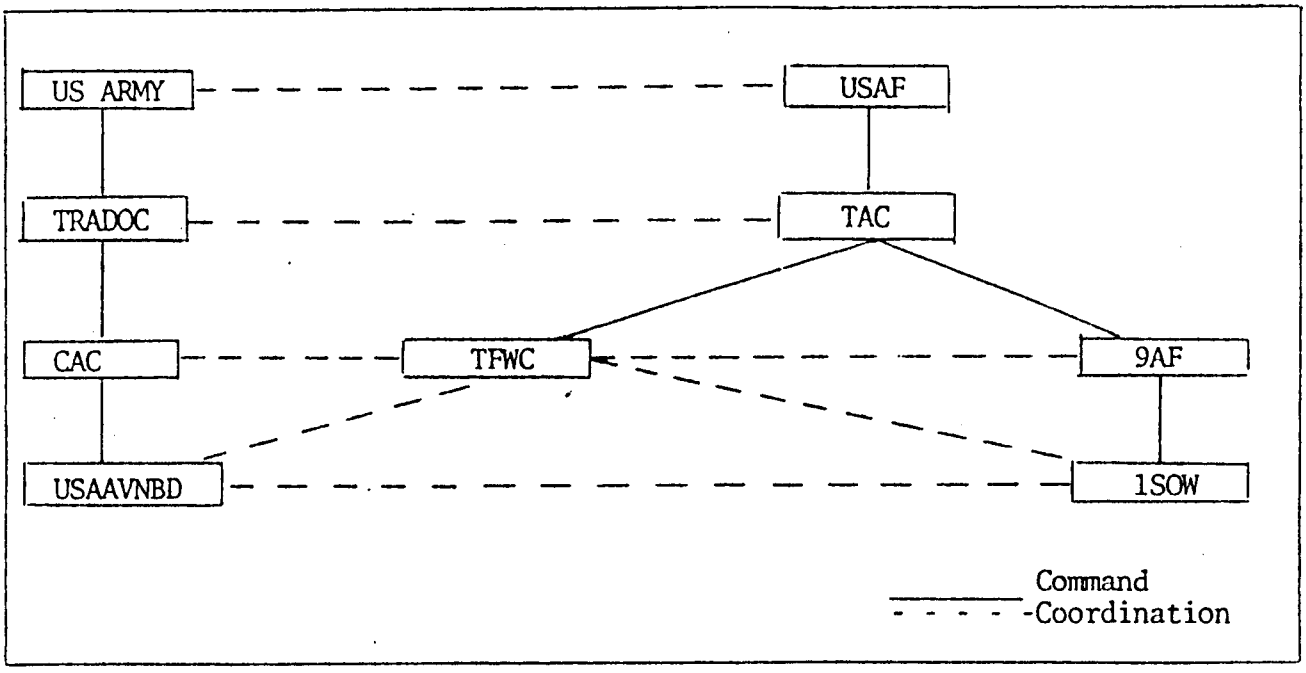
a. Management. This project will be jointly managed by the TFWC and CAC. Active testing will be conducted by the USAAVNBD at Ft Rucker, AL. Unit project officers and data analysts will assist the project managers in preparation of the interim report for Phase II of J-CATCH. Key personnel are listed in Table 3.

b. Organization. The organization chart for Phase II is shown in Figure 1.

TABLE 3. KEY PERSONNEL FOR J-CATCH PHASE II

NAME	TITLE	OFFICE	PHONE
Capt S. Boyd	Project Officer	TAC/DOAA	432-7552
Capt M. Cavato	Project Officer	TAC/DOOOW	432-7931
Maj M. Cox	Project Officer	9AF/DOOT	465-3490
Capt D. Gaw	Operations Analyst	TFWC/SAA	682-4066
Maj J. Glance	Deputy Project Manager	USAAVNBD	558-6083
LTC P. Grace	Project Manager	USACACDA	552-2603
Mr. J. Haile	Chief Analyst	TFWC/SAA	682-4066
Maj M. Husson	Project Manager	TFWC/TAS	682-2660
Maj K. Lord	Assistant Project Manager	TFWC/TAS	682-2660
LTC S. Neuwien	Project Mahager	USAAVNBD	558-6407
Mr. W. Pibil	Operations Analyst	USAAMSAA	283-5762
Maj W. Rader	Project Officer	TAC/XPJ-ALPO	432-2985
Maj J. Swinehart	Chief Analyst	USAAVNBD	558-6407
Capt G. Weikel	Unit Project Officer	1SOW/DOW	872-6106

FIGURE 1. J-CATCH PHASE II ORGANIZATION CHART



c. Responsibilities.

(1) HQ TAC will:

(a) Accomplish responsibilities IAW TACR 55-133.

(b) Appoint a project officer in DOO.

(c) Appoint a project officer in XPJ to coordinate planning with preliminary study results.

(d) Provide command guidance and assistance.

(e) Authorize direct communication with participating agencies as deemed appropriate.

(f) Issue specific security guidance regarding tactics development disclosure.

(g) Approve required waivers for low-altitude helicopter flying.

(h) Establish rules of engagement (Appendix B-2).

(i) Review and approve the interim Phase II report.

(2) HQ TRADOC will:

(a) Accomplish responsibilities IAW TRADOC 71-9.

(b) Establish a point of contact for matters concerning this project plan.

(c) Provide command guidance and assistance.

(d) Authorize direct communication with participating agencies as deemed appropriate.

(e) Issue specific guidance regarding tactics development disclosure.

(f) Review and approve the interim Phase II report.

(3) USAFTFWC will:

(a) Manage this TD&E IAW TACR 55-133 and TFWCR 55-1.

(b) Appoint a project manager.

(c) Complete a joint interim report for Phase II with the U.S. Army.

(4) USACACDA will:

(a) Manage this TD&E IAW TRADOCR 71-9.

(b) Appoint a project manager.

(c) Develop, in conjunction with TFWC and AMSAA, a letter of agreement for data analysis and management.

(d) Assist in preparation of the interim Phase II report.

(5) Ninth Air Force will:

(a) Appoint a project officer to coordinate appropriate actions with the TFWC manager.

(b) Support the J-CATCH Phase II TD&E as required.

(c) Provide one evaluation controller.

(6) USAAVNBD will:

(a) Manage this TD&E IAW TRADOCR 71-9.

(b) Appoint a project manager (Field Test Officer).

(c) Acquire and maintain a data library as required for accomplishment of this evaluation.

(d) Provide operations analysis and data reduction support.

(e) Provide evaluation controllers.

(f) Assist in the preparation of the interim Phase II report.

(g) Reserve primary and secondary frequencies on FM, UHF, and UHF for the Red and Blue forces.

(7) AMSAA will:

(a) Be the lead agency for development and fabrication of DA aircraft instrumentation systems.

(b) Conduct data reduction and analysis.

(8) U.S. Army Aircraft Development Test Activity will:

(a) Provide all Army test aircraft and maintenance support.

(b) Engineer, fabricate, and install selected aircraft systems.

(9) HQ Air Force Systems Command is requested to perform required modifications to the USAF helicopters to support this TD&E.

8. SAFETY

a. The 1st SOW/SE (Safety Office) will provide the USAF safety officer for the Phase II flying. A comprehensive safety review encompassing all aspects of this phase, including rules of engagement, will be conducted prior to start. Certification of this review will be made a permanent part of the project file. A guide for this review as well as a sample certification letter is at Appendix B-3. Detailed premission safety briefings will be conducted prior to each mission. The safety officer will ensure adherence to safety procedures established by USAF, TAC, and the 1 SOW, and that flying and ground safety will not be compromised.

b. USAAVNBD safety will be IAW appropriate U.S. Army regulations. U.S. Army flight safety officers will monitor conduct of this project to ensure established safety procedures are met.

9. ENVIRONMENTAL IMPACT. Phase II will be conducted over the Louisville test area in the vicinity of Ft Rucker. There will be no impact on the environment other than that resulting from normal military operations in this area.

10. SECURITY. Conduct and results of this project will be classified IAW DOD Directive 5200.1 K, AFR 205-1, and U.S. Army regulations.

11. INFORMATION. No news releases are authorized concerning this project without direct approval of HQ TAC and HQ TRADOC.

APPENDIX B-1

POST-EVENT DATA SHEETS

THREAT HELICOPTER DATA CARD

_____
Date

I. Background Information:

A. Crew (AC/CP/FE/AG) _____

_____

B. Event Code _____

C. Time Event Began _____ L

II. TACTICS:

A. Briefly describe the pre-briefed tactics: _____

_____

_____

B. Describe any tactics variations that occurred: _____

C. Rate the above:

A: _____

B: _____

1. Poor
2. Fair
3. Average
4. Good
5. Excellent

D. Describe and rate the Blue Force tactics used: _____

_____

Rating: _____

III. Tactics Recommendations:

A. Red Force _____

B. Blue Force _____

0000348

IV. Miscellaneous Data: (Circle or fill in the blank)

A. Which crewmember detected the target? _____

B. Was camouflage a factor? (Yes/No).

C. Target flight mode at time of detection (Hover Fwd Flt).

D. Your flight mode at time of acquisition (Hover Fwd Flt).

E. Approximate range of the target when detected _____

F. Weapons employed in order _____

G. Crew estimate on the effectiveness of side firing weapons (High Moderate None Unknown).

H. Comm/Interphone problems (Yes/No). Explain _____

_____

I. Briefly describe the contribution made by the Air Pointer to your effectiveness. _____

_____

0000349

AH-1S FLIGHT DATA CARD -- J-CATCH PHASE II

NAME _____ DATE _____

EVENT CODE _____

PILOT _____ GUNNER _____

HELICOPTER SERIAL NUMBER _____

CALL SIGN _____

I. TACTICS EFFECTIVENESS:

A. Friendly Tactics -- Rate the tactics you employed during this event to the best of your ability using the scale provided below the tactics description line. Include prebriefed tactics and any variations that occurred.

Tactics description: _____

_____

_____

_____

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

B. Threat Tactics Effectiveness -- Rate the threat tactics used against you in the event to the best of your ability using the scale provided below.

Tactics description: _____

_____

_____

_____

Rating: _____

UNCLASSIFIED

0000350

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

II. TACTICS RECOMMENDATIONS:

A. Please describe in the space below any tactics you feel you would have employed differently: _____

B. Please describe in the space below any weakness or strong points in threat tactics: _____

III. WEAPON SUBSYSTEM EFFECTIVENESS:

A. Range

1. Which crewmember detected the target? Pilot/Gunner.

2. How was the target detected? Unaided/TSU.

3. If you detected the target helicopter, did you feel the target was in range of on board weapon systems at initial detection? Yes/No. (Count simultaneous detections as your own).

B. Weapon Selection

1. Select the description from the list below that best describes your reasons for the weapon subsystem you selected to engage the target. Please place these letters in the block indicated. (Note: This block may contain up to six letters).

Description Letter/Letters [ ]

Comments: _____

Letter	Description
A	Weapon was fast to employ
B	Weapon is accurate
C	Weapon offers crewmember ease of employment
D	Weapon offers long range kill capability
E	Weapon offers high probability of kill
F	Other: Specify in comment block

2. Rate the weapons system with which you engaged the target, to the best of your ability, using the scale provided below. (This rating should be based on the tactical situation and tactics used.) Please place this rating in the space provided.

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

3. Do you have any change to recommend to either the AH-1S helicopter or its weapon systems as a result of the experience you had in today's simulated engagements? _____

_____

_____

_____

_____

_____

IV. TARGET DETECTION:

A. Which crewmember detected the target? (Pilot/Gunner) _____

B. Was the detection made by eyeball contact or telescopic sight unit (TSU)? _____

C. The weapon systems sight which you used most often, if a gunner? (helmet or TSU) _____

D. If you fired the on board weapon systems, pick the reasons that best describe any waiting time between target detection and weapon systems firing. (May contain up to six letters and comments.)

_____

_____ Comments: _____

_____

_____

Letter	Description
A	Target hand-off problem between crewmembers.
B	Lost target.
C	TSU problem (describe) e.g., crewmember inability to see TSU, etc.
D	Waited 'til target was in range of fire.
E	Weapon system switches difficult to set-up while tracking target.
F	Other: Specify in comments.

E. Rate your ability to use the TSU to search for aerial targets.

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

F. Rate your ability to detect target with the TSU.

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

0000354

OH-58 FLIGHT DATA CARD -- J-CATCH PHASE II

NAME _____ DATE _____

EVENT CODE _____

PILOT _____ OBSERVER _____

HELICOPTER SERIAL NUMBER _____

CALL SIGN _____

I. TACTICS EFFECTIVENESS:

A. Friendly Tactics -- Rate the tactics you employed during this event to the best of your ability using the scale provided below the tactics description line. Include prebriefed tactics and any variations that occurred.

Tactics description: _____

_____

_____

_____

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

B. Threat Tactics Effectiveness -- Rate the threat tactics used against you in this event to the best of your ability using the scale provided below.

Tactics description: _____

_____

_____

_____

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

II. TACTICS RECOMMENDATIONS:

A. Please describe in the space below any tactics you feel you would have employed differently: _____

B. Please describe in the space below any weakness or strong points in threat tactics: _____

III. WEAPON SUBSYSTEM EFFECTIVENESS:

A. Range

1. Which crewmember detected the target? Pilot/Observer.

2. How was the target detected? Eyeball/Binoculars.

3. If you detected the target helicopter, did you feel the target was in range of on board weapon systems at initial detection? Yes/No. (Count simultaneous detections as your own.)

B. Rate the weapons system with which you engaged the target, to the best of your ability, using the scale provided below. (This rating should be based on the tactical situation and tactics used.) Please place this rating in the space provided.

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

C. Do you have any change to recommend to either the OH-58 helicopter or its weapon systems as a result of the experience you had in today's simulated engagements? _____

IV. TARGET DETECTION:

A. Which crewmember detected the target? (Pilot/Observer)

_____

III. WEAPON SUBSYSTEM EFFECTIVENESS:

A. Range

1. Which crewmember detected the target? Pilot/Observer.

2. How was the target detected? Eyeball/Binoculars.

3. If you detected the target helicopter, did you feel the target was in range of on board weapon systems at initial detection? Yes/No. (Count simultaneous detections as your own.)

B. Rate the weapons system with which you engaged the target, to the best of your ability, using the scale provided below. (This rating should be based on the tactical situation and tactics used.) Please place this rating in the space provided.

Rating: _____

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

C. Do you have any change to recommend to either the OH-58 helicopter or its weapon systems as a result of the experience you had in today's simulated engagements? _____

IV. TARGET DETECTION:

A. Which crewmember detected the target? (Pilot/Observer)

_____

B. Was the detection made by eyeball contact or binoculars?

_____

C. If you fired the on board weapon system, pick the reasons that best describe any waiting time between target detection and weapon systems firing. (May contain up to six letters and comments.)

Comments: _____

_____

_____

Letter	Description
A	Target hand-off problem between crewmembers.
B	Lost target.
C	Sighting problem (describe) e.g., crewmember inability to use sight, etc.
D	Waited 'til target was in range to fire.
E	Weapon system switches difficult to set-up while tracking target.
F	Other: Specify in comments.

AIR DEFENSE DATA CARD (FAAR)

EVENT CODE: _____ DATE: _____

OPERATOR NAMES: _____

_____

_____

EVENT START TIME: _____

EVENT TERMINATE TIME: _____ LOCATION: _____

TRACK	TIME DETECTED	AZIMUTH	RANGE	ID	NO A/C	TIME FADED
_____	_____	_____	_____	_____	_____	_____

RATE YOUR EFFECTIVENESS: _____

WHY?

RATING	DESCRIPTION
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

RATE AIRCRAFT EFFECTIVENESS: _____

WHY?

AIR DEFENSE DATA CARD (REDEYE)

TYPE AD UNIT _____ DATE _____

EVENT CODE _____ TEAM # _____

GUNNER _____ ASST GUNNER _____

EVENT START TIME _____

EVENT TERMINATE TIME _____ LOCATION _____

TYPE A/C	FAAR ALERTED	VISUAL DETECT	TIME OF DETECTION	EST RANGE	A/C ASPECT	IR ACQ	TIME OF FIRE	TIME TGT OUT OF VIEW

Rate your Effectiveness: _____

Why?

Rating	Description
1	Poor
2	Fair
3	Average
4	Good
5	Excellent

Rate A/C Effectiveness: _____

Why?

AIR POINTER DATA CARD

DATE: _____ EVENT NO: _____

DETECTION TIME: _____L

HOW BLUE FORCE WAS DETECTED:

SOUND _____ VISUAL _____ NOT DETECTED _____

BLUE FORCE FLT MODE AT DETECTION:

HOVER _____ FWD FLT _____

DESCRIBE BLUE FORCE APPARENT TACTICS (IF UNKNOWN, SO STATE):

_____

_____

DESCRIBE RED FORCE TACTICS:

_____

_____

_____

DID YOUR DETECTION/GUIDANCE INFLUENCE THE OUTCOME OF THE EVENT?
YES _____ NO _____

EXPLAIN:

_____

_____

OV-1D FLIGHT DATA CARD -- J-CATCH PHASE II

DATE: _____

PILOT: _____ OBSERVER: _____

EVENT CODE: _____ EVENT TIME (START) _____

(TERMINATION) _____

ACFT ALT _____

TIME OF DETECTION _____ RANGE OF DETECTION _____

INITIAL TARGET GRID _____ NR OF ACFT _____

LENGTH OF ACQUISITION _____ AZIMUTH TO TARGET _____

TIME REPORTED DETECTION _____

COULD CONTINUOUS TRACK BE MAINTAINED? YES _____ NO _____

TIME ACQUISITION LOST _____

RANGE ACQUISITION LOST _____

GRID ACQUISITION LOST _____

UNCLASSIFIED

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APPENDIX B-2

RULES OF ENGAGEMENT
J-CATCH PHASE II

1. Introduction: The purpose of J-CATCH Phase II is to develop and evaluate sound, realistic tactics to be used by friendly helicopters to engage and defeat enemy attack helicopters. The purpose of the Rules of Engagement (ROE) is not to stifle tactics development but to allow this TD&E to be conducted as safely as possible. Safety will be vigorously and continually stressed throughout the TD&E. Success will be based on adequate and thorough pre-mission planning, capable supervision, and strict air and ground discipline. TACR 51-2 will be the basis for the ROE except where modifications must be made due to helicopter flying characteristics and capabilities. ROE are developed as minimum guidelines and are not a replacement for good judgment and common sense.

2. Orientation: All aircraft commanders will receive a test area orientation flight prior to participating in any test events. As part of this orientation, aircraft commanders will be shown local area geographical landmarks and any hazards to low altitude flying operations. The USAAVNB will brief USAF pilots on Cairns AAF local operating procedures.

3. Briefings: A daily mass briefing for all crewmembers will be conducted before flight operations. Specific briefing topics will include weather, local operating procedures, rules of engagement, safety considerations, and the test events to be accomplished. Test objectives and maneuvers will be briefed face-to-face by Red and Blue force aircraft commanders. Individual force briefings will be attended by control helicopter pilots to insure that one control pilot is familiar with the profile of each test force.

4. Flight Plans: All aircraft commanders will file a VFR flight plan with Cairns AAF Base Operations.

5. Weather: All helicopters will maintain VFR at all times during test events. Minimum weather criteria for the test are 1500 feet AGL ceiling and three miles visibility. Wind restrictions will be IAW command directives.

6. Altitudes: Control helicopters will be limited to a maximum altitude of 3000 feet MSL and will remain well clear of Red and Blue force helicopters to avoid misidentification. Maneuvering helicopters will operate below 2000 feet MSL. Minimum altitudes will be IAW command directives except that 1SOW helicopters participating in J-CATCH have a waiver to operate to a minimum altitude of 25 feet AGL. This waiver is granted subject to the following limitations:

UNCLASSIFIED

a. Aircrews will receive ground and flight training prior to J-CATCH to insure proficiency in operations below 100 feet AGL.

b. Waiver is for daylight only.

c. During preparatory training for J-CATCH, altitudes below 100 feet AGL will be flown only on the surveyed 1SOW low level training routes.

d. J-CATCH operating areas will be air surveyed by a 1SOW helicopter instructor pilot and approved by 1SOW/DO prior to operation below 100 feet AGL.

e. 1SOW aircrews flying J-CATCH missions will be briefed on hazards to low level flight in the operating areas, i.e., power lines, towers, etc. A map depicting the hazard will be provided to each aircrew.

f. An experienced aircraft commander will be at the controls for operations below 100 feet AGL.

7. Command and Control: Two UH-1M helicopters will be airborne during test events and will provide aerial surveillance and control of each force. Control ships will direct individual helicopters when necessary and will call "KNOCK IT OFF" whenever flight safety is in question. The control helicopters will also relay "KNOCK IT OFF" calls initiated by the Red or Blue force helicopters. Each control helicopter will be piloted by an Army aviator with a USAF pilot flying as copilot. The Red force control helicopter USAF pilot will be a qualified helicopter pilot. Each control helicopter will be equipped with an operable transponder and one UHF, VHF, and FM radio. UHF will be used between the control helicopter and the force elements, VHF will be used between the control helicopters, and FM will be used by the Red and Blue forces.

8. Maneuvers: All aircraft commanders will consider individual capabilities of each aircrew and observe aircraft limitations and prohibited maneuvers as outlined in appropriate flight manuals and other directives. Opposing helicopters will remain well clear of each other at all times. A 500 foot "bubble" will be maintained around each participating helicopter during all maneuvers. Helicopters approaching head on will clear to the right and the higher helicopter will attempt to stay above the opponent. Maneuvering will be terminated upon satisfying valid weapon parameters for a "kill" or upon satisfying the particular test objective for that event. Extended tail chases will not be flown. Front quarter cannon attacks are authorized; however, the attack must be broken off in sufficient time to honor the 500 feet minimum range ROE. Any flight member or control ship member can terminate an engagement by transmitting "KNOCK IT OFF" at which time all participants will cease maneuvering and acknowledge with call sign, such as "RED ONE, KNOCK IT OFF; RED TWO, KNOCK IT OFF, ETC."

9. Termination: Termination (KNOCK IT OFF) will be accomplished when one of the following situations occurs:

a. If the battle drifts to the border of the authorized area.

b. If an unbriefed unscheduled flight enters the test area and is a factor detrimental to the safe conduct of the mission.

c. If visual contact is lost by the attacking aircraft within one nautical mile, and converging vectors exist or safe separation cannot be assured.

d. When the desired test objective is achieved.

e. If a stalemate occurs.

f. If any aircraft rocks its wings.

g. If Bingo fuel is reached.

h. If a dangerous situation is developing.

i. If minimum altitude or clouds are approached.

j. If radio failure occurs.

k. If communications deteriorate to a point that individual aircraft cannot receive all radio transmissions pertinent to the engagement.

l. At 500 feet slant range from the target.

m. If situation awareness is lost.

n. If any member calls "KNOCK IT OFF".

10. Emergencies: Helicopters experiencing an emergency will terminate any maneuvers and call "KNOCK IT OFF". The control helicopter will then direct all maneuvering to cease. The distressed helicopter will proceed IAW the applicable flight manual. Louisville Stage Field will be used for emergency recovery.

11. Directives: All flights and test maneuvers will be conducted IAW AFR 60-16, AR 95-1, AR 95-63, TACR 55-153 and TACR 55-41.

12. Other: No communications jamming will be used. No smoke will be used in the test area.

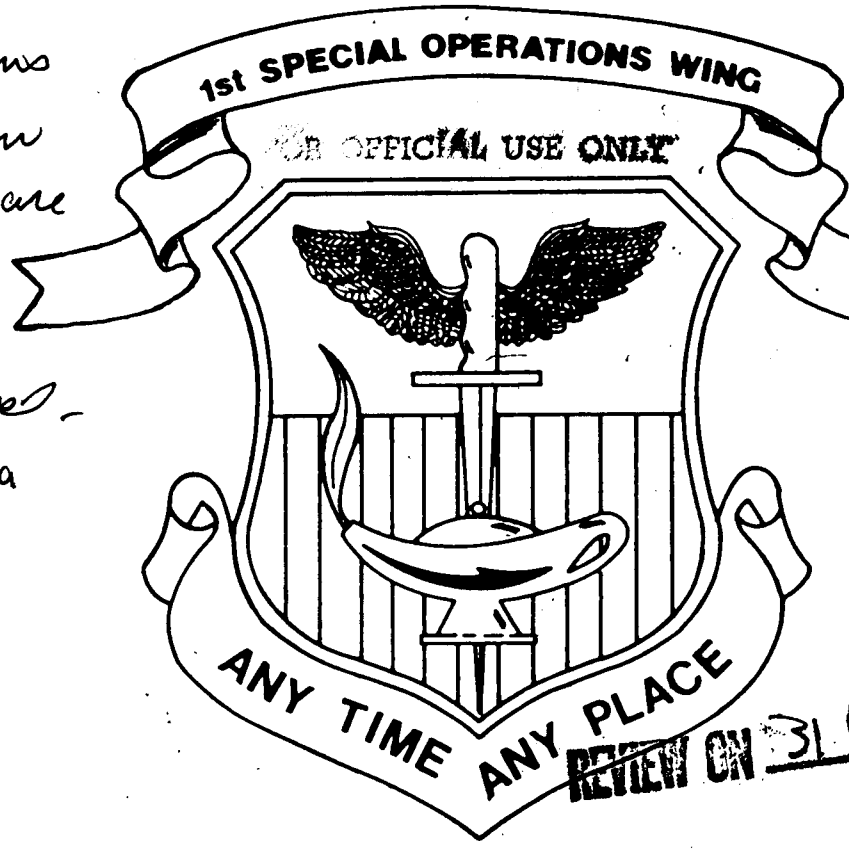
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HISTORY OF THE 1st SPECIAL OPERATIONS WING (U)

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K-WG-1-HI(cmoo)
Oct-Dec 78
Vol. 2
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AFSHRC
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REVIEW ON 31 Dec 98

"READINESS IS OUR PROFESSION"

Volume Two - Supporting Documents

CLASSIFIED BY MULTIPLE SOURCES
REVIEW ON 26 JAN 1999

IF DECLASSIFIED, REVIEW UNDER
AFR 12-30 BEFORE RELEASE

MICROFILMED BY HOTM

HURLBURT FIELD, FLORIDA
(EGLIN AF AUX FLD #9)
1 OCTOBER - 31 DECEMBER 1978

12 NOV 1980

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HISTORY OF THE 1st SPECIAL OPERATION



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REVIEW ON 30 Sep 98

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"READINESS IS OUR PROFESSION"

Volume One - Narrative

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DECLASSIFY ON 31 DEC 2008

HURLBURT FIELD, FLORIDA
(EGLIN AF AUX FLD #9)
1 JULY - 30 SEPTEMBER 1978

[redacted]

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VOLUME ONE - NARRATIVE

HISTORY OF THE 1st SPECIAL OPERATIONS WING

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DECLASSIFY ON 31 Dec 2008

HURLBURT FIELD, FLORIDA

(EGLIN AF AUX. FLD. #9)

1 April-30 June 1978

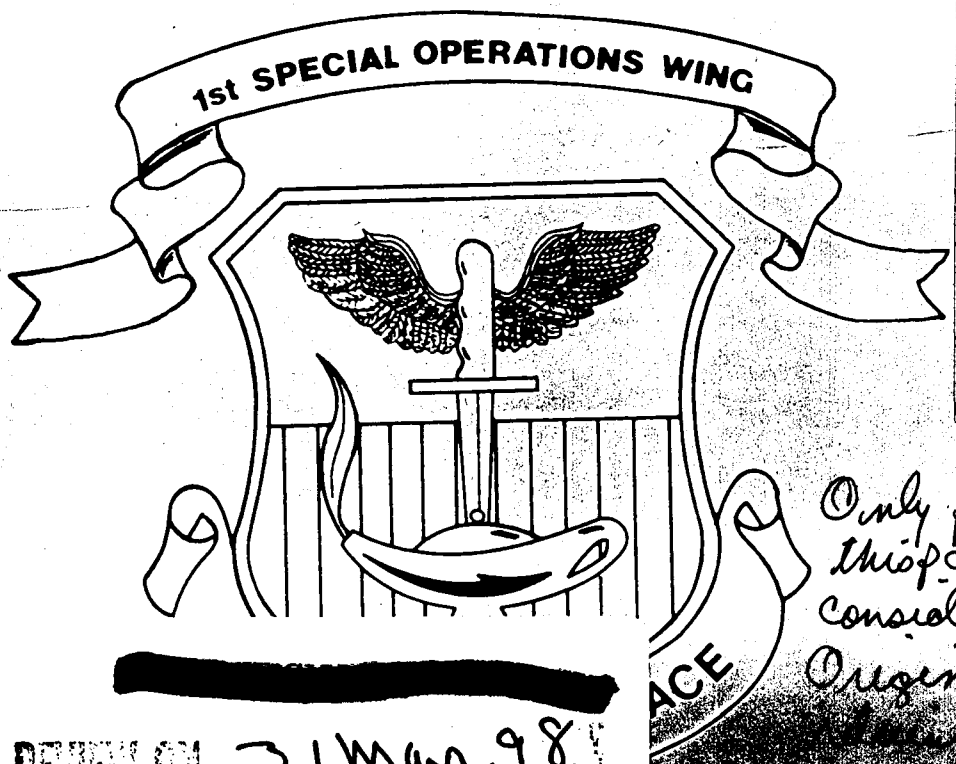
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VOLUME ONE - NARRATIVE

HISTORY OF THE

1st SPECIAL OPERATIONS WING

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EXEMPTION CATEGORY 3
DECLASSIFY ON 31 DECEMBER 2007

HURLBURT FIELD, FLORIDA
(EGLIN AF AUX. FLD. #9)
1 January-31 March 1978

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MAY 12 1978

Hurlburt's Roark gives TAC, wing another first

by Capt. Joseph C. Vallimont
20th SOS Unit
Information Officer

Steve Roark passed his CH-3E Sea King checkride this week and is now an aircraft commander. So! The 1st Special Operations Wing (SOW) has another aircraft commander, so what? Steve is a second lieutenant, that's what, the first and only second lieutenant aircraft commander in the 1st SOW, and according to Air Force Military Personnel Center, the only second Lieutenant aircraft commander of a crew served weapons system in TAC.

Becoming an aircraft commander required hard work, study, patience and skill. This is true for every one and when you have finally passed the checkride there is a tremendous sense of accomplishment.

For Steve, it was a particularly rewarding experience which began in April 1970 as an enlisted man in the U.S. Army infantry. Tired of his muddy and slow speed boots (burst speed of 15 knots forward and reverse), then private first class, Roark decided there were cleaner and faster ways of getting to and from the battle. In October 1971, he received his wings and bars through the Army Aviation Warrant Officer program. WO1 Roark flew 855 hours while in the Army with 555 combat hours in Southeast Asia, flying an AH-1G, Cobra Attack Helicopter. He amassed one Bronze Star, two Distinguished Flying Crosses, twenty-one (21) Air Medals and a Purple Heart.

Now CW2 Roark realized that if he really wanted to fly he should be in the Air Force. He left the Army and went to Embry Riddle Aeronautical University, in Daytona Beach, Fla., graduating with a Bachelor of Science degree in Aeronautical Studies and as a distinguished graduate of his Reserve Officers' Training Corp class.

Because of his distinguished flying record and background, the Air Force granted, now second lieutenant, Roark his aeronautical rating in July 1976.

Lieutenant Roark arrived at Hurlburt Field in December 1976 with his wife Violet whom he met while assigned to the 101st Airborne Division, at Fort Campbell, Ky. Since then their family has grown with the addition of their son David in November 1976.

Lieutenant Roark's unique status will end in July 1978, when he is promoted to first lieutenant.





HH-53 approaching for landing at Nellis AFB, Nevada, 1976. HH-53 was ordered in September 1966 specifically for USAF Aerospace Rescue and Recovery Service and became known as the "Super Jolly Green Giant." (Author)

HH-53 of the 81st TFW at Sembach AB, Germany. (USAF)



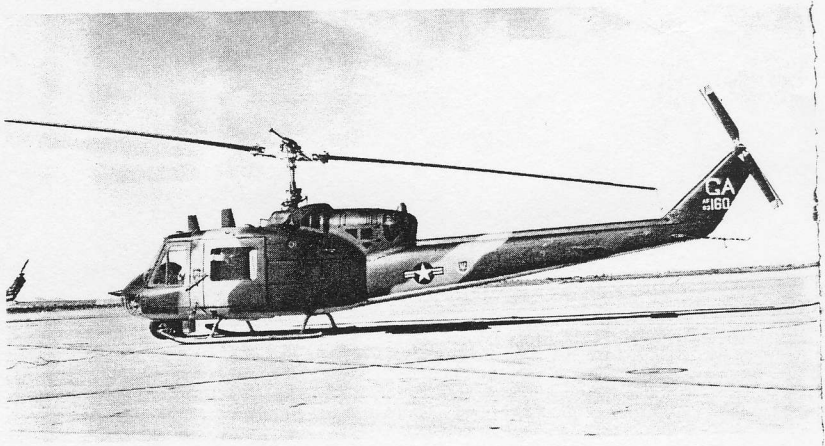
UH-1F of SOW at Hurlburt mounts rocket pod and minigun. Minigun is operated by gunner, while rockets are fired by pilot. (USAF)

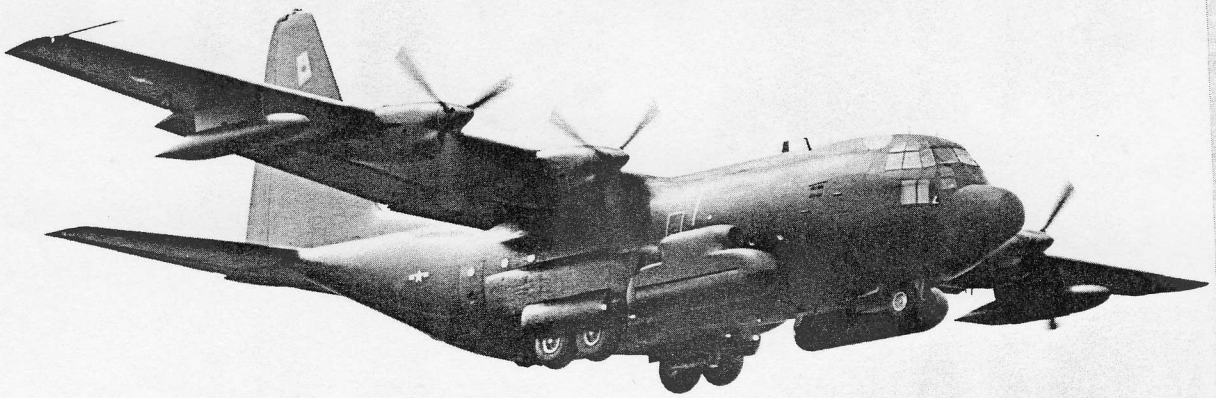


HH-53 Specs:

Built by Sikorsky Aircraft Division, United Aircraft Corp., HH-53 is larger and faster than the HH-3 which it was intended to supplant. It carries the same basic equipment as the HH-3. It is powered by two GE-64-GE-3 turboshaft engines of 3,080 shp each which give it a top speed of 186 mph, service ceiling of 18,400 ft., and max range of 540 miles. It is also equipped with in-flight refueling probe. HH-53s were used in the Son Tay Prison raid, and in the rescue of the Mayaguez crew. (All data for HH-53B. Follow on version, the HH-53C has larger T-64GE-7 engines which increase top speed to 196 mph and increase load to 18,500 lb.)

UH-1F of 479th TFW, George AFB, Cal., 1975. (D. Kasulka via Norman E. Taylor)

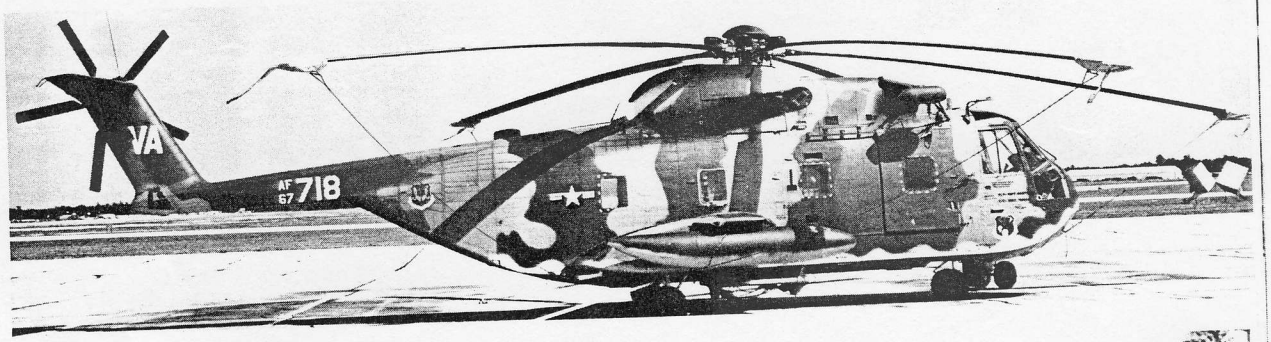




RC-130S Lightship on final for Shaw AFB. SC. Two C-130s were modified for search and rescue missions. They mount 28 highpowered lights, which put out 6.14 million candlepower. They were flown by the 446th TAW out of Ellington AFB, Texas. They are officially known as BIAS aircraft. (Battlefield Illumination Airborne System.) (Jim Sullivan)

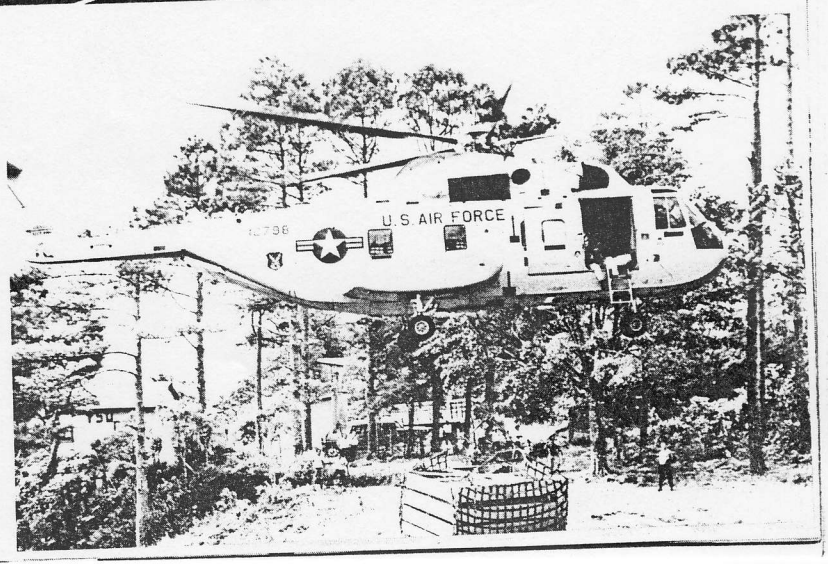
CH-3E of the SOF at Hurlburt Field. (USAF)





HH-3E of 703rd TASS, 363rd TRW, Shaw AFB, SC. 1972. (Norman E. Taylor)

CH-3E of USAF Southern Air Division, Albrook AFB, Canal Zone. (USAF)



CH-3E Specs

Built by Sikorsky Aircraft Division, United Aircraft Corp., the CH-3 is powered by two GE T-58 GE-5 gas turbine engines, of 1,500 shp each. **Dimensions:** Length 72' 10", width 17' 4", height 18' 1". Rotor: 62'. **Performance:** max speed 142 knots, average cruise 110 knots, ceiling above 12,000 feet, range over 630 NM, max gross takeoff weight 22,050 lbs. It can carry 25 passengers, 16 litter patients or a 5,000 lb. payload. It is fully amphibious, all-weather instrument aircraft, and the forerunner of the HH-3E Jolly Green Giant which endeared itself to combat pilots who depended on the Jolly Green to be there if they went down.

AIRMAN MAGAZINE APRIL 78

SERGEANT TO RECEIVE CHENEY AWARD. The 1977 Cheney Award for valor will be presented to SSgt. James T. Carter, 20th Special Operations Squadron, 1st Special Operations Wing, Hurlburt Field, Fla. SSgt. Carter voluntarily risked his life while on a helicopter mission near Eglin AFB, Fla., when he exposed himself to fire and exploding ammunition in the rescue of two downed F-4 pilots in April 1977. The Cheney Award is presented annually by the Air Force for an "act of valor, extreme fortitude, or self-sacrifice in a humanitarian interest performed in connection with aircraft" but not necessarily of a military nature.



WITH HONORS — SSgt. James T. Carter, 1977 Cheney Award recipient, from the 20th Special Operations Squadron, presents the colors of the 1st Special Operations Wing to Lt. Gen. Arnold W. Braswell, commander, Ninth Air Force, to receive the Air Force Outstanding Unit Award streamer. (U.S. Air Force Photo by Sgt. Willie J. Alexander)

editorial

20th flies tree-top level

By Col. Richard H. Dunwoody Wing Commander

"Flying in the trees" is a phrase that frightens me and my safety officers, but we have a unit at Hurlburt that flies tree-top level on a regular basis.

Equipped with CH-3E and UH-1N helicopters, the 20th Special Operations Squadron (SOS) aircrews brave the darkness and hug the terrain to perform a vital special operations role.

Bringing with them an illustrious past – which includes a Medal of Honor winner and three outstanding Unit Awards, the men and women of the 20th SOS have made their mark in special operations.

As in any reorganization, the beginnings were tough, but under the leadership of former squadron commander, Lt. Col. (colonel selectee) Bob Mayo, the unit survived its growing pains and jelled into a combat-ready squadron capable of meeting any contingency.

They proved it during the recent Red Flag exercise by successfully performing their mission in a high threat environment.

Lieutenant Colonel Mayo did a super job and has now passed the reins to another outstanding officer – Lt. Col. John Roberts.

Backed by many hours of helicopter experience, John has actively involved the 20th in many new and challenging roles. For example, the squadron just got its first taste of snow during the Empire Glacier Exercise – They really proved they could do it any time, any place. Additionally, the "Green Hornets" are scheduled to be active participants in many upcoming joint-training exercises.

The future of the 20th SOS looks bright. Aircrews are now evaluating tactics for new offensive and defensive roles. In addition, Generalized Operational Requirements (GOR's) have been submitted justifying the need for an advanced helicopter to replace our aging fleet – and that's just the beginning.

Although the aircrew members who fly our rotary wing aircraft are dedicated and capable professionals, let's not forget they are backed by some of the Air Force's finest maintenance and support personnel. They've made a home for themselves in special operations and I know the wing can count on them to get the job done either on an exercise or a real world situation.

So the next time you see the "Green Hornet" patch, remember what it represents.

Vol. 17, No. 10 Fort Walton Beach, Fla. March 17, 1978

Carter receives Cheney Award



SSGT. JAMES T. CARTER, an aerial gunner assigned to the 20th Special Operations Squadrons, performs a preflight inspection of a 7.62 millimeter minigun. Sergeant Carter is the recipient of the 1977 Cheney Award for heroism. (U.S. Air Force photo by SSgt. Cliff Nation)

A staff sergeant assigned to the 20th Special Operations Squadron here is the recipient of the 1977 Cheney Award.

SSgt. James T. Carter was selected for the award because he voluntarily risked his life while on a helicopter mission near Eglin AFB, Fla.

On April 25, 1977, Sgt. Carter was aboard a UH-1N Huey Gunship conducting an instrument training flight when Eglin mission control asked the crew to search for an F-4 Phantom which had disappeared from its radar moments earlier. The helicopter was sent to an isolated and heavily wooded region where the crew spotted smoke and small fires.

The crash of the F-4 had spread wreckage, fuel and 20 millimeter ordinance. The helicopter set down in a nearby clearing and Sgt. Carter worked his way through the burning brush to the wreckage. He located the first survivor and directed him toward the waiting helicopter.

With ammunition detonating all around him, he searched for the second pilot. A signal from the injured pilot, a faint whistle, helped Sgt. Carter locate him and administer first aid. Joined by his copilot, Sgt. Carter helped carry the injured pilot to the safety of the waiting helicopter.

"His action showed fortitude in a volatile situation and was in the highest humanitarian tradition. It is a pleasure to have an individual of his calibre in Tactical Air Command," commented Gen Robert J. Dixon, TAC commander, in a congratulatory letter.

The Cheney Award is presented annually by the Air Force Chief of Staff, for an "act of valor, extreme fortitude, or self-sacrifice in a humanitarian interest performed in connection with aircraft" but not necessarily of a military nature. The award was established in memory of 1st Lt. William H. Cheney, Air Service, killed in an air collision at Foggia, Italy, Jan. 20, 1918.

16 OCT 78

20th SOS receives Army radar, Captain designs training program

By Capt. John M. Graham
20th Special Operations Squadron

Captain Frank A. Gray, a CH-3E Jolly Green Giant aircraft commander with the 20th Special Operations Squadron (SOS), has designed a unique training program on the use of the AN/APR 39 radar warning receiver. The radar warning receiver system, new to the Air Force, is an Army system and the 20th SOS is the first Air Force unit to receive the system. Capt. Gray's program is being used to instruct aircrew members on the use of the system which is being currently installed on all of the 20th SOS helicopters. Previously no aircrew training programs were available to instruct aircrew members on use, operating parameters and limitations of the AN/APR 39 system.

Captain Frank A. Gray, drawing on his combat experience as a weapon system operator in F-4 Phantom and OV-10A Bronco aircraft, has designed a comprehensive training program. His program includes a ground school on the system components, operations and limitations. Two one-hour video tapes which present a visual and audio self-teaching presentation of various surface to air missile radars, anti-aircraft weapons and search radars.

In addition, he has designed a ground training simulator program which will give aircrew members need skills on the use of the new equipment.

The new radar warning receiver system furnishes the aircrews information on type, range and operation of both enemy and friendly radar controlled weapons. With this new equipment, 20th SOS aircrews are now provided with an measure of safety in high threat combat areas.

Earns Thanks, Award

SSAM Dec 78

Gunner Saves Pilots

A hot fighter gets too hot, crashes near the airfield, and bursts into flames. The fire is so hot the ammo cooks off—20 mm cannon shells powerful enough to detach an arm, a leg or a head.

You have a bird's eye view because you're a helicopter gunner on a nearby training mission. But your pilot diverts and lands as close as he dares to this shooting gallery inferno.

What do you do? Duck?

Not if you're Staff Sergeant James Carter, that Air Force helicopter gunner.

Once on the ground, he ran straight to danger—through shots and flames until he found the two fighter pilots.

He even had to search the area for one of them.

And then he administered first aid.

That all happened April 25, 1977, at Hurlburt Field, Florida. The pilots a long time ago thanked Sergeant Carter for saving their lives.

Recently, thanks came from the highest quarter—none other than the Air Force Chief of Staff. General Lew Allen had invited Sergeant Carter to Washington to give the entire Air Force point view.

It came in the form of the 1977 Cheney Award for valor and extreme fortitude.

1st SOW returns from country cold and Empire Glacier

Continued from Page 1

serve people saw 1st Special Operations Wing (SOW) aircrews shoveling snow from the runway lights to "keep 'em flying." Pleased Air Force Special Operations Base staff personnel saw these same aircrews voluntarily extending already long missions to guarantee the job was done right.

What did Empire Glacier 78 prove? It proved we're a team in the 1st SOW. A team of dedicated professional men and women who know how to get the mission accomplished in the most difficult of conditions. We took helicopters, gunships, and a Talon to New England this year, and left a mark of success everywhere we operated.

So go ahead and ask one of the 248 people who worked in Empire Glacier 78...ask any of the flyers, the fixers, the drivers, the cooks, the typists...ask any of them what Empire Glacier 78 proved, and you're likely to get just one answer..."Empire Glacier 78 proved the 1st SOW really can operate 'Any Time, Any Place."



WELCOME BACK!!! The 248 men and women of Hurlburt returned from Empire Glacier of Feb. 1 and 2



THE CH-3 CREWS worked hard and long. The return to home base was wet but welcome.