UNITED STATES MARINE CORPS Marine Attack Squadron 311 Marine Aircraft Group 13 3d Marine Aircraft Wing, FMFPac MCAS El Toro (Santa Ana) California 92709

1:RMK:ab 5750

From: Commanding Officer To: Commanding Officer, Marine Aircraft Group 13 (Attn: S-3)

Subj: Command Chronology for period 1 July 1982 to 31 December 1982

- Ref: (a) MCO 5750.1E
 - (b) **FMFPacO 5750.8**C
 - (c) WgO 5750.2A
 - (d) Gru0 5750.1H

Encl: (1) VMA-311 Command Chronology

1. In accordance with the provisions of reference (a) through (d), enclosure (1) is submitted.

M. D. SMITH

UNITED STATES MARINE CORPS Marine Attack Squadron 311 Marine Aircraft Group 13 3d Marine Aircraft Wing, FMFPac MCAS El Toro (Santa Ana) California 92709

COMMAND CHRONOLOGY

1 July 1982 to 31 December 1982

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PART I

ORGANIZATIONAL DATA

1. Designation

Commander

Marine Attack Squadron 311

Lieutenant Colonel H. Gary ROSER 1 July 1982 - 7 December 1982

Major Michael D. SMITH 8 December 1982- 31 December 1982

SUBORDINATE UNITS: NONE

ATTACHED UNITS: NONE

Reporting Unit Code: 01311 Table of Organization number: 8852R 2. Location 1 July 1982 - 31 December 1982 MCAS EL TORO Bldg. 295 3. Staff officers Executive Officer Major Richard L. BARION 1 July 1982 - 5 August 1982 Major Thomas R. CARSTENS 6 August 1982 - 9 August 1982 Major Michael D. SMITH 10 August 1982 - 7 December 1982 Major Thomas R. CARSTENS 8 December 1982 - 31 December 1982 Administrative Officer Captain Robert L. DOMINA 1 July 1982 - 31 December 1982 Intelligence Officer Captain Richard W. GHIGNA 1 July 1982 - 26 July 1982 Captain Richard M. KEANE 27 July 1982 - 31 December 1982 **Operations** Officer Major Russell V. DUDLEY 1 July 1982 - 31 December 1982 Logistics Officer Captain Michael J. LYDEN 1 July 1982 - 22 October 1982 Captain Eugene J. RICHARDSON 23 October 1982 - 31 December 1982 Aircraft Maintenance Officer Major Thomas R. CARSTENS 1 July 1982 - 7 December 1982 Major Michael R. HAFEN 8 December 1982 - 31 December 1982

ASO	Captain Hobart M. HARMON 1 July 1982 - 24 September 1982
	lstLt Raymond F. ACKERMAN 25 September 1982 - 31 December 1982
NATOPS Officer	Captain Thomas B. WHITE III 1 July 1982 — 28 November 1982
	Captain Robert F. DIETRICH III 29 November 1982 - 31 December 1982
Staff Historian	Captain Richard W. GHIGNA 1 July 1982 — 26 July 1982
	Captain Richard M. KEANE 27 July 1982 - 31 December 1982
Sergeant Major	Sergeant Major Billy H. GRANT 1 July 1982 - 31 December 1982

Personnel and Administration

During this period there were no significant personnel changes that affected the overall strength of the squadron. However, the total compliment of pilots assigned to the squadron continues to be at an all time high of 29. In July, the squadron deployed to MCAS Yuma, AZ., from 8-14 July. In September, the squadron received a Naval Technical Proficiency Inspection which resulted in an overall grade of satisfactory with outstanding comments. This was followed in November with the squadron deployment to CFB Cold Lake Alberta, Canada from 7 -22 November 1982.

Promotions: The following promotions were effected:

To PFC	1
To LCPL	13
To CPL	7
To SGT	11
To MSGT	1
To CAPT	1

Officers Joined:

rade	MOS
MAJ	7501
CAPT	7501
LT	7500
LT	7598
WO	6002
WO	6302
WO	6502
	rade MAJ CAPT LT LT WO WO WO

Officer Dropped:

Grade	MOS	Reason
1 LTCOL	7501	Intra-Group
1 MAJ	7501	Intra-Wing
2 CAPT	7501	Intra-Group
2 CAPT	7501	PCS
1 CWO-2	6302	Intra-Group

Enlisted Joined: 48

Enlisted Dropped: 35

Average Non-effective (TAD):

July66August63September65October61November64December60

Reenlistments Effected: 18

Legal Action:

SCM - 0 SPCM - 3 GCM - 0 NJP - 9 JAG's - 10

PART I

MAINTENANCE

Equipment

Type: A-4M Skyhawk (McDonnell - Douglas)

Number:

MONTH	ASSIGNED	ON HAND	SDLM	REMARKS
July	21	14	3	5 A/C SPINTAC
August	20	18	2	2 A/C REWORK
September	22	19	1	2 A/C TRANSFERRED
October	20	. 20	0	N/A
November	24	21	0	3 A/C WTI
December	24	21	0	3 A/C Transferred

The maintenance department supported the deployment to MCAS Yuma AZ, in July. Upon our return, the maintenance department supported the Naval Technical Proficiency Inspection in August and participated in this squadron's safety standdown. September brought an A&M inspection followed by a COMNAVAIRPac inspection in October. Both inspections were successfully completed and preparations began for this squadron's CFB Cold Lake Canada Deployment in November. December brought two " FIRSTS" in the history of VMA-311. The "Tomcats" began installation of the AJB-3B all attitude indicator system - the first operational A-4 squadron to do so. Having successfully passed flight testing in Yuma, AZ., the AJB-3B system represents a marked improvement over the AJB-3A system. The improved reliability of this system will give the "Tomcats" more available man-hours to spend on other maintenance.

Secondly, in December, VMA-311 entered the world of state-of-the-art technology as the first A-4 squadron to begin the installation of the Angle Rate Bombing System (ARBS). Three technical teams from NWC, China Lake, CA., NARF, Pensacola, Fla., and Hughes Aircraft Company from Tucson AZ., began doing system checks on all ARBS configured Aircraft. Averaging 4 hours per aircraft, the three teams completed the necessary system checks on Dec 21 leading to the eventual installation of the operational ARBs in January, 1983. The efforts of the "Tomcats" in the maintenance department were reflected as VMA-311 was unsurpassed by any other A-4 squadron in the Marine Corps for flight hours during this period while attaining 87% of the 3rd MAW goal of 70% Mission Capable Aircraft.

PART II

NARRATIVE SUMMARY

The last half of 1982 has been a period of diversity and operational excellence for the "Tomcats" of VMA-311. During this time, the "Tomcats" conducted two deployments under dramatically different climatic extremes and distances, and adapted quickly and smoothly to the tempo of tactical operations. With an average compliment of 28 pilots, the squadron flew 2,725 flight hours on 1641 sorties and conducted quality training for junior pilots seeking their combat ready MOS.

During July, the squadron spent ten days on deployment in the summer heat of Yuma, AZ., conducting three deep air support and close air support combined strikes involving Marine F-4's and USAF F-15 fighters from Luke AFB. The "Tomcats" conducted 310 sorties flying 457 hours and gained valuable tactical experience for all squadron pilots and support personnel. VMA-311 also supported VMFP-3 by providing adversary air for a strike conducted in the Edwards AFB complex. Additionally, four pilots achieved their combat ready MOS during this month.

The month of August reflected the "Tomcats" dedication to operational safety. An extensive safety stand-down was conducted during this month and the tempo of operations was slowed in order to catch a "breather" in preparation for upcoming commitments. The squadron flew 397 hours of flight time and 232 sorties during August.

During the month of September, the squadron underwent a Naval Technical Proficiency Inspection. The resulting grade of satisfactory was the highest possible grade and the outstanding comments were the rewards earned by the team who demonstrated "Tomcat" efficiency at its finest. Additionally, several sorties were flown this month in support of NORAD interceptor aircrew training excercises conducted off the California coast. September closed with the squadron attaining 420 flight hours, 252 sorties and one newly qualified combat-capable pilot.

October saw the "Tomcats" plan, coordinate and participate in "Operation Comfort Level -I". The squadron successfully conducted an airstrike into the north/south TAC area of R-2301 in conjunction with tanker, fighter and attack aircraft while avoiding USAF F-15 aggressor aircraft. The squadron qualified one pilot with his 7500 MOS and flew 309 sorties accumulating 528 hours.

In November, the squadron supported MAWIS WII class 1-83 with two aircraft, one pilot and a full compliment of maintenance personnel. On 7 November, the "Tomcats" became the first Marine squadron to deploy to CFB Cold Lake, Alberta, Canada, independent of any joint exercise. In anticipation of the upcoming Trans-Pac in 1983, the deploying aircaft were flown non-stop from southern California to East-Central Alberta, utilizing 3d MAW KC-130 tanker aircraft. For 14 days, the squadron underwent training and operations in sub-zero temperatures and occasional blizzard-like conditions. Contrasting Cold Lake to July's Yuma. AZ deployment, the "Tomcats" gained valuable experience operating "in every clime and place". The Canadian Forces, flying CF-104s, proved to be outstanding hosts, participating in numerous CAS and DAS training sorties with us, acting as aggressor aircraft. Canadian heliborne forward air controllers were utilized and the lessons learned combined with the hospitality of our Canadian allies made our deployment to Cold Lake a memorable one in the annals of "Tomcat" history. November finally closed with the squadron flying 241 sorties, 438 flight hours and one pilot receiving a combat - capable MOS.

On December 8, VMA-311 received a new "Skipper". LtCol H. G. ROSER turned over command of the "Tomcats" to MAJ (LtCol Selectee) M. D. SMITH. LtCol H. G. ROSER had served as Commanding Officer of VMA-311 since May of 1981-a period of 19 months. On 10 December VMA-311 participated in "Operation Comfort Level III". Flying CAS with simulated ordnance into Hunter Ligget AAF complex, the "Tomcats" received airborne briefs from OV-10's acting as FAC(A)/TAC(A). F-14's from NAS Miramar acted as aggressor air and KC-130's assumed the duties as aerial refuelers. Also in December, VMA-311 welcomed aboard three new lieutenants from VMAT-102 in MCAS Yuma, AZ. These three newest "Tomcats" have begun training flights towards their combat-capable and combat-ready MOS. December closed with the squadron flying 436 flight hours and 297 sorties.

PART III

SEQUENTIAL LISTING OF SIGNIFICANT EVENTS

- 6-15 July 1982 Squadron Deployment to MCAS Yuma This deployment proved very successful in the training received by all pilots. Three deep air support and close air support strikes were conducted, with support from Marine and Air Force aircraft.
- 28 July 1982 Aggressor Support for VMFP-3 VMA-311 provided aggressor air for a strike conducted by VMFP-3.
- 3 Sept 1982 Maintenance A&M Inspection. Successfully completed
- 13 Sept 1982 <u>Navy Technical Proficiency Inspection</u> An inspection was conducted to determine the proficiency of the Squadron concerning Special Weapons. The results were outstanding.
- 14 Sept 1982 NORAD Exercise Support VMA-311 provided support for NORAD interceptor aircrew training.
- 1 Oct 1982 Operation Comfort Level VMA-311 planned and conducted a successful Wing strike into the N/S TAC area of R-2301.
- 7 Oct 1982 COMNAVAIRPAC Inspection Successfully completed.
- 1 Nov-18Dec 1982 WTI Participant VMA-311 sent a pilot, two aircraft, and support personnel to WTI class 1-83.
- P1 Nov 1982 Squadron Deployment to Cold Lake Canada weather operations at Cold Lake Canada. The squadron conducted cold supporting aircraft from Canadian Forces were extensively used.
- 8 Dec 1982 <u>Squadron Change of Command</u> Major M. D. SMITH received command of the squadron from LtCol H. G. ROSER.
- 10 Dec 1982 Operation comfort level III VMA-311 participated in a wing strike into Hunter Ligget AAF complex.
- 8-31 Dec 1982 Installation of AJB-3B system All squadron aircraft.
- 10-21 Dec 1982 Final Wiring Checks Performed for installation of ARBS in January 1983.

UNITED STATES MARINE CORPS Marine Attack Squadron 311 Marine Aircraft Group 13 3d Marine Aircraft Wing, FMFpac MCAS El Toro (SA), California 92709

PART IV SUPPORTING DOCUMENTS

- Encl: (a) After action report from MCAS Yuma, AZ. Deployment from 6-15 July 1982.
 - (b) After action report from CFB Cold Lake, Alberta, CANADA Deployment from 7-21 November 1982.

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JUI 30 1982

From: Commanding Officer To: Commanding General, Third Marine Aircraft Wing (Attn: G-3) Via: Commanding Officer, Marine Aircraft Group 13 (Attn: S-3)

- Subj: Deployment After Action Report; submission of
- Ref: (a) WgO 3550.31
- 1. Marine Attack Squadron 311
- 2. MCAS Yuma, Arizona
- 3. 6 July 1982 14 July 1982
- 4. Commanding Officer Executive Officer Operations Officer Maintenance Officer Administrative Officer Logistics Officer Safety Manager
- 5. Personnel Deployed
 - a. Tactical NA's 29
 - b. N/A
 - c. Augment NA's 3
 - d. Augment NFO's 1
 - e. N/A
 - f. N/A
 - g. Aviation Ground Officers 0
 - h. Flight Surgeon 1
 - i. N/A
 - j. Total Officers: 41

LtCol H. G. ROSER Maj R. L. BARTON Maj R. V. DUCTEY Maj T. R. CREATENS Capt R. L. DOMINA Capt M. J. LYDEN Capt T. B. WHITE III

PART IV

ENCLOSURE a.)

	κ.	Marine En 🍽				
	1.	Navy Enlisted - 1				
	m.	Total Enlisted - 167				
	n.	N/A	·			
	0.	Tota	l Deployed			
		(1)	subparagraphs 5 j,m VMFA-323 Pilots 4 VMFA-323 NFO's 4			
6.	0pe	ratic	n Statistics			
	a.	13 A	-4M			
	b.	(1)	Hours Scheduled: 223.1			
••		(2)	Sorties Scheduled: 207			
		(3)	Hours Flown: 219.1			
		(4)	Sorties Flown: 166			
		(5)	Syllabus Hours Flown: 213.8			
		(6) Syllabus Sorties Flown: 162				
		(7)	Syllabus Credits (X's) Completed: 79			
		(8)	Syllabus Support Hours Flown: 2.0			
		(9)	Admin/Log Sorties Flown: 3.3			
	ł	(10)	Support Sorties Flown by Other Units:			
			(a) TAC(A): H&MS 31			
			(b) Tanker: <u>1</u> VMGR-352 1			
			(c) Adversary			
			<u>1</u> 425th TFTS 2			
			<u>2</u> VMFA-323 4			
			(d) Miscellaneous:			
			1 VMGR-352: 1 Logistical			
			2 MCAS El Toro: 2 Logistical			

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c. Ordnanc 👔 🗄 🗄 :

(1)	MK-82 CON HE:	43
(2)	MK-81 SE HE:	95/54
(3)	МК-77:	12
(4)	2.75"Rocket (I):	53
(5)	MK-45 Flare:	20
(6)	20mm GunPod:	100
(7)	20mm (HEI):	100
(8)	20mm (I):	150
(9)	MK-76:	548
(10)	MK-106:	24

d. Range/Target Utilization:

(1) Air-to-Air:

RANGE	HRS SCHED	HRS UTIL	SORTIES SCHED	SORTIES FLOWN
			; ; . ~	
R2507	15	14	5 5	26
R2301	10	8	17	15
PANEL STAGER	12	11	33	28
RAKISH LITTER	२ 6	5	11	11
BRISTOL MOA	1	1	2	2
QUAIL MOA	1	1	2	2

7. Comments and Problems Encountered

a. TRAINING

(1) General. In view of the short time frame of the deployment, the training was intense but relatively basic with emphasis placed on completing syllabus requirements for the 7501 MOS. Training included; CAS and DAS missions to local targets, raked range ordnance delivery, DACT, air refueling, and a three phase integrated strike to the LUKE East TAC Ranges.

(2) CAS. The CAS evolutions were highly productive with (2) H&MS-13 OA-4's deploying with the squadron to provide TAC(A)/ FAC(A) support. R2507 was the primary CAS Range.

(3) DAS. An integrated strike was flown to the LUKE East TAC Range utilizing VMFA-323 F-4's as CAP; and 425th TFTS F-5's as agressors. This strike involved the entire squadron and proved to be an overwhelming success with all aircraft hitting their assigned targets on time. The 's ach evolution went particularly well with maintenance of ring credit for their timely preparation of the aircraft. The relatively unfamiliar

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section of AUKE Bost in a gram ad encodert repression egal training for a light readers.

(4) Training Accomplished. The squadron improved the overall CRP 1.2%. Although this was considered significant for so brief a period, several factors impacted on the squadron not realizing the full potential of the deployment.

(a) Air Refueling. The loss of the Buddy Store and lack of KC-130 air refueling support had a detrimental effect on the integrated DAS strikes and the qualifying of non-MOS pilots in day and night tanking.

(b) Electronic Warfare. The unavailability of EW range time during the deployment was a hinderance to the completion of 7501 MOS designations.

b. LOGISTICS

(1) Supply. No comment

(2) Refueling Support. MCAS Yuma provided excellent refueling support. Notification of cancellations or changes to the flight schedule should be given to the Fuel Farm as soon as possible.

(3) Billeting. The officer and enlisted billiting were adequate. Closer supervision of enlisted barracks by S-4, the Sergeant Major, and the Squadron Duty Officer is imperative, and deployment policy has been changed accordingly.

(4) Messing Facilities. The enlisted messing facility was satisfactory.

(5) Motor Transport. Any drivers assigned to work in the bomb buildup area should be ordnance qualified and licensed to operate the appropriate vehicles.

C. EMBARKATION

(1) All gear was transported via commercial truck to and from MCAS Yuma as scheduled.

(2) Ensure that items needed immediately upon arrival ie; toolboxes, boarding ladders, etc. are embarked on the first truck to depart; not following trucks as was the case.

(3) Retrograde of all ordnance-related GSE should be scheduled at least 36 hours following the securing of local flight operations. This will allow sufficient time for the ordnance build-up crew to turn-in any unexpended ordnance. (4) Always assign a lit f NC to the budget k beam.

(5) Alway's publish a retrograde timetable at least two days prior to movement, then follow through and ensure all details are in order.

d. MAINTENANCE

(1) General. The short nature of the deployment necessitated a high tempo of operations be sustained from the first day to the last. This rapid buildup of flight operations and the manner in which it was scheduled caused problems in certain areas.

(2) First Day Operations. The attempt to fly sorties from the deployment base on the same day that the squadron arrived placed an excessive demand on the maintenance department. The squadron pack-up did not arrive until the afternoon with a percentage of personnel required to break down gear and set up the shop spaces. This hindered the turn around of the aircraft for the afternoon launch. In the future, such a conflict can be avoided by scheduling the aircraft with an interim stop at bases other than the deployment site.

e. ÔRDNANCE

(1) Heavy Ordnance. If heavy ordnance is required early in the deployment, H&MS ordnance personnel should be sent with sufficient lead time so as to draw and build up the necessary stocks. Ordnance-related GSE must also be sent at least 2 days prior to the start of flight operations.

f. AVIONICS No comments.

g. ANALYSIS No comments.

h. PUBLIC AFFAIRS No comments.

i. <u>DEPLOYMENT SITE SUPPORT</u>. The support was satisfactory. MCAS Yuma is an excellent site for an attack squadron deployment. Special thanks go to the MCAS Yuma crash crew and arresting gear operators for their prompt and professional response to this squadron's requests for assistance. Additionally, VMAT-102 provided excellent PEB and GSE support for unusual situations. AIND willingly provided needed NDI support in the inspection of two squadron aircraft.

8. RECOMMENDATIONS

a. It is highly recommended that every effort is made to provide tanker support for deployed squadrons. The lack of such support impacts directly on the benefit deployments afford to the training syllabus. nanger a divide a gramadian granica afr ative relate from the Jaly 1 at.

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> 3:EVD:b11 3121 0 0 DEC 1982

From: Commanding Officer
To: Commanding General, Third Marine Aircraft Wing (Attn: G-3)
Via: Commanding Officer, Marine Aircraft Group 13 (Attn: S-3)

Subj: Deployment After Action Report; submission of

Ref: (a) WgO 3550.3I

- 1. Marine Attack Squadron 311
- 2. CFB Cold Lake, Alberta, Canada
- 3. 7 November 1982 21 November 1982
- 4. Commanding Officer Executive Officer Operations Officer Maintenance Officer Administrative Officer Logistics Officer Safety Manager
- 5. Personnel Deployed.
 - a. Tactical NA's 23
 - b. N/A
 - c. N/A
 - d. N/A
 - e. N/A
 - f. N/A
 - g. Aviation Ground Officers 4

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- h. Flight Surgeon 1
- i. Chaplain 1
- j. Total Officers 29
- k. Marine Enlisted 137

LtCol H. G. ROSER Maj M. D. SMITH Maj R. V. DUDLEY Maj T. R. CARSTENS Capt R. L. DOMINA Capt E. J. RICHARDSON Capt T. B. WHITE III

PARTINE ENCLOSURE b.)

- 1. Navy enlisted 2-
- m. Total enlisted 139

n. N/A

- o. Total deployed 168
- 6. Operation Statistics
 - a. 12 A-4M
 - b. (1) Hours Scheduled: 399.7
 - (2) Sorties Scheduled: 256
 - (3) Hours Flown: 272.0
 - (4) Sorties Flown: 150
 - (5) Syllabus Hours Flown: 207.5
 - (6) Syllabus Sorties Flown: 122
 - (7) Syllabus Credits (X's) Completed: 157
 - (8) Syllabus Support Hours Flown: 22.6
 - (9) Admin/Log Sorties Flown: 0
 - (10) Support Sorties Flown by Other Units
 - (a) TAC(A): 408 SQD CF 1
 - (b) Tanker: VMGR-352 2
 - (c) Helo Trans: 0
 - (d) Adversary:
 - 1 419 TAC Fighter SQD CF 3
 - (e) Coordinated Strike:
 - 1 417 TAC Fighter SQD CF 9
 - 2 419 TAC Fighter SOD CF 3
 - (f) Miscellaneous:
 - 1 VMGR-352: 4 Logistical
 - 2 H&MS-13: 8 Logistical
 - 3 MCAS El Toro: 4 Logistical

c. Ordnance Expended:

(1)	MK-81	SE(I)	RET:	238	

- (2) MK-76: 144
- (3) 20mm TP: 74
- (4) CHAFF: 58

d. Range/Target Utilization:

(1) Air to Air:

Range	Hrs Sched	Hrs Util	Sorties Sched	Sorties Flown
CYR 204 ACMR	19.6 7.5	16.0 4.5	49 4	26 4
(2)	Air to Grou	nd:		
Range	Hrs Sched	Hrs Util	Sorties Sched	Sorties Flown
CYR 204 J. L. R.	28.8 1.0	17.0 1.0	123 2	82 2

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7. Comments and Problems Encountered:

a. TRAINING

(1) General. Despite the environmental constraints of operating in cold weather, the training at CFB Cold Lake was outstanding. With its proximity to the CYR 204 target complex, CFB Cold Lake provides a superb deployment site with an abundance of targets located within 60 nautical miles of the airfield. VFR routing to the target complex enables flights to go directly to their targets or to choose low level points for ingress into and egress out of the complex. Training included CAS and DAS missions, raked range ordnance delivery, air refueling, DEFTAC on the newly constructed ACMR and 2 major deep air strikes.

(2) Inflight refueling - Twelve squadron aircraft refueled with two C-130 aircraft on the flyaway to CFB Cold Lake. Three aircraft unable to receive droptank fuel diverted to Fairchild AFB.

(3) CAS. The CAS evolutions were very challenging with a Canadian. Forces helicopter providing TAC(A)/FAC(A) support on one occasion. The nature of the Central European-like terrain and the associated difficulties with target acquisition were most enlightening to pilots accustomed to desert operations. The lack of colored smoke marks for targets in the snow made identification during the pop-up maneuver extremely difficult.

(4) DAS. Two integrated strikes were flown utilizing squadron devised low level routes on ingress and egress. A variety of targets which include numerous FEBA's, personnel carriers, tanks, aircraft, airfields and various SAM sites provided realistic training for all who participated. Canadian CF 104's and CF-5's added to the realism of the operation by performing as adversaries. Navigation using 1:250:000 scale maps was satisfactory although 1:50:000 scale maps of the target area were helpful during planning. The A-4 buddy store was used extensively for low altitude tanking.

(5) Raked Range Ordnance delivery. Two day sorties were flown to the Jimmy Lake Raked Range. The under utilization of this range was the result of inclement weather and scheduling range safety officers from Canadian squadrons.

(6) Training accomplished. The squadron improved the overall CRP 0.5%. Several factors effected the training conducted at CFB Cold Lake:

(a) Weather. The squadron was fortunate to have good flying weather for the majority of the deployment. Heavy snow and low visibilities during the last three days made operations hazardous, especially during the landing phase. To sustain A-4 operations on snow or ice covered runways, a quick turn arresting gear must be a requirement. This was not available at Cold Lake.

(b) Climatology. The short duration of daylight and cold temperatures during the winter months tended to compress flight operations, resulting in fewer daytime sorties and long delays (up to 3 hours for turnarounds).

(c) Night Flying. Night tactical flying is limited due to the restrictions on the use of flares.

(d) Ordnance Restrictions. No live heavy ordnance was dropped during the deployment due to restrictions on their use.

(e) Target Availibility. The target scheduling activity at Cold Lake was extremely cooperative and flexible. Target availability as well as ACMR time was plentiful throughout the deployment.

(f) Cold Weather Flight Gear. The availability of personal cold weather flight gear was inadequate. The few winter flights suits available were shared by all the pilots which made proper fitting almost impossible. The standard steel toed flight boot is unacceptable for use during cold weather operations due to the real possibility of frost bite if the pilot has to eject. No other cold weather flying boots, such as those worn by Canadian Forces pilots, were available. A compact cold weather survival kit needs to be incorporated into seatpan or survival vest in order to increase the survivability of a downed pilot. The following list of cold weather survival items are used by the Canadian Forces and are incorporated into the seat pan of their aircraft.

- (1) aluminum foil (18"x25")
- (2) mittens wool(3) mittens leather
- (4) socks wool
- (5) sleeping bag nylon (83"x35")
- (6) food packet 4 food bars (800 calories)
- (7) food packet - survival supplementary (400kg calories)
- (8) fuel, compressed hexamine, tablet form
- (9) wire, low brass (25ft)
- matches(wood), safety 1 3/4" in length sealed in poly-(10)

ethylene packaged in a water tight screw cap container (11) bag plastic, polyethylene, 18"x15"

(g) Paint Scheme. Our Aircraft are easy to see when flying over forests and flying next to lakes.

(h) Training Summary. The deployment to CFB Cold Lake was a training milestone for the "TOMCATS". Although the overall sortie rate fell short of the projection, the exposure to cold weather, unfamiliar terrain, and especially working with our Canadian hosts was a highly productive and enjoy-able learning experience. With Canadian acceptance of the CF-18 Hornet, future interchanges between Marine Forces and our Canadian counterparts should be encouraged.

b. LOGISTICS.

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(1) Supply. Wing covering materials were required to protect the aircraft from snow and ice. The material requested was 8 mil vinyl with a cloth backing. This is the identical vinyl commonly found in flight equipment sections. To provide adequate covering for all twelve(12) squadron aircraft, 3700 sqft. of material was required. The supply system could not provide the required quantity in the allotted time frame. Instead, 6 mil plastic was substituted. This material was delivered to the squadron within 48 hours after requisitioning via "open-purchase". Upon arriving at CFB Cold Lake the plastic was found to be inadequate because there was no means of securing it to the aircraft surfaces. The cold temperatures prevented use of any tape and punching holes in the plastic to secure cords would only cause the plastic to rip when the wind blew. It is recommended that any aircraft squadrons planning deployments into similar environments investigate procurement of custom fitted wing coverings well in advance of the embarkation date.

(a) Cold Weather Clothing.

(1) Ground Personnel. All cold weather clothing that was requested from the Training Allowance Pool (TAP), Camp Pondleton, was provided with the exception of the "wool-watch caps". Squadron personnel provided their own; however, in some instances this detracted from uniformity. This item should be maintained by the TAP as it is essential for health and comfort in cold climates.

(2) Pilot's Clothing. Cold weather flight jackets and hoods were provided through the supply system for all pilots. Twenty-six cold weather flying suits were ordered; however, only twenty of the twenty-six suits were received. The suits not obtainable were of the medium long and large sizes. This necessitated pooling the available suits and issuing them on a flight by flight basis. These suits are a minimum requirement in cold weather flying areas where overnight temperatures with wind chill reached -31 degrees F. Canadian cold weather flying suits provide more protection, and should be examined for use by U.S. Marine aviators.

(2) Billeting. Billeting for all squadron members was adequate.

(3) <u>Messing</u>. Messing for all squadron members was very adequate and reasonably priced. Further, hot lunches were provided to squadron enlisted personnel during the work day. Three cooks were provided by VMA-311 to augment

CFB Cold Lake messing facilities. Recently and required to be agmented by the squadron. The officers mess was absolutely outstanding in all respects.

(4) Motor Transportation. Motor transport assets at CFB Cold Lake are extremely limited. Any units deploying there should come completely self-sufficient, to include the ability to obtain and amploy a small fleet of rental vehicles. All tactical vehicles must be completely winterized. The squadron's M54 and M880 vehicles experienced frozen batteries because the specific gravity of the water was not adjusted for cold climates. The transportation section at CFB Cold Lake provided minor maintenance to both tactical vehicles in the form of replacing the "blinker system" on the M54. CBF Cold Lake did provide a bus for morning and evening pickup of maintenance crews from billeting to work spaces; however, due to the flight schedule and location of aircraft hangars, it was necessary to maintain a fleet of five(5) 12 passenger vans. These vans were rented from a local company. Funds for fueling the vans were allocated as part of the rental authorization; however, the \$17.00/day/van was insufficient even after being converted to Canadian funds. Twenty dollars per day per vehicle is strongly recommended.

c. EMBARKATION.

(1) Embarkation from El Toro to CFB Cold Lake went smoothly except that the M54 was not accepted on it's scheduled flight due to fuel leaks that were traced to improper maintenance procedures. A duty maintenance crew from WIS-37 was dispatched to repair the vehicle. It was embarked the following day.

(2) Embarkation from CFB Cold Lake to MCAS El Toro was made very difficult due to a recent snowfall and sub-freezing temperatures. All selfpropelled GSE equipment became inoperative due to temperature related failures. The U.S. Air Force pallet loader and 10K forklift also froze making them impossible to use, until the Canadian's were able to provide a "Huffer" to thaw the equipment. Effective temperatures of -31°F limited outdoor working time to approximately 20 minutes before it was necessary to come inside for warmth. Several Marines complained of numb feet and had to be brought indcors. The rubber cold weather boots which were warm caused feet to sweat, the moisture would then freeze, creating frostbite conditions.

(3) C-141 aircraft number 3 and 4 arrived during hours of darkness on 21 November. It was also snowing and the squadrons M880 was down due to a frozen battery. Canadian 417 TFS maintenance personnel were instrumental in providing a prime-mover for VMA-311 and obtaining a "Huffer" to heat the Air Force equipment so that it would operate. Further, the winch on aircraft #3 became inoperative making it necessary to push all rolling stock on to the Cl41 aircraft. It is recommended that units operating in cold weather conditions be allowed more time to prepare and load aircraft. Further, in peace-time U.S. Air Force transports should plan day-time arrivals due to extreme cold night temperatures and the reduced ability of personnel and equipment to function in that environment.

d. MAINTENANCE.

(1) Personnel factors: Cold weather training of all hands prior to departure to Cold Lake was adequate and necessary. This training helped supervisors monitor their personnel, and definitely was responsible for the total lack of injuries brought on by the cold vertice, in accord odd souther gear in the Marine Corps inventory was bulky but cationations. Prever, improvements for face protection is necessary, particularly in the form of a full face ski mask. The other area that needs attention is hand protection when working on detailed jobs. The nomex flight glove could allow the technicians to perform detailed jobs and extend their ability to work longer in the cold; however, there is no easy way to procure a sufficient number of flight gloves for non-aviation personnel.

(2) The ability to prov de hot meals and liquids to personnel on the flight line was a definite "plus" in preventing any cold weather injuries and in increasing the morale of all personnel on the flight line.

Aircraft Maintenance:

(1) In cold weather conditions with high humidity, the danger of ice and frost development on and in the aircraft is high. There is no real guidance on deicing procedures for the A-4; the use of deicing fluids is not recommended due to the deicing fluids side-effects of being a dissolvent (ie. removes all lubricating fluids). Hot-air blowing devices were not effective in ice removal because water immediately refreezes at temperatures of -30°C.

Hangaring the aircraft became the most effective means of deicing; however, it requires approximately 2-3 hours in a heated hangar to allow ice to melt off and the aircraft to dry out. Hangar space was also a very limiting factor, and only overcome by superb cooperation from the Canadians. All aircraft were hangared at night. For future cold weather deployments, consideration must be given to the possibility that hangaring space will not be available when the Canadians have their full complement of F/A-18's.

(2) Basic maintenance procedures, with the exception of 14-day washes, were conducted in a normal fashion, but did require extra time to perform whenever cold weather gloves had to be removed to perform the task. This increased maintenance time by a factor of 3 or 4. Daylight hours were also a factor which had an effect on the daily maintenance effort. The temperature drop once the sun set required close supervision of the exposure time of each individual on the flight line.

(3) The aircraft held up exceptionally well in the cold weather with very few problems. Some of the problems encountered were: longer warm-up times for avionics gear, freezing/sticking micro-switches exposed to elements, jet fuel starter systems not maintaining their nitrogen charges, seatpan oxygen systems accidentally activated during daily preflight inspections by bulky cold weather clothing, and snow leaking under closed canopies and canopy covers. Most electrical problems were encountered shortly after start-up, and for the most part, could be eliminated by a long warm-up time of 10-15 minutes in the chocks. A-4 canopy covers do not sufficiently cover the break between the canopy and cockpit rails to keep out blowing dry snow. Problems with cabin pressurization system occurred when the dessicators, which remove moisture from the system would freeze on shutdown. This was partially remedied by going to temperature full-hot for 5 minutes prior to shutdown to blow out as much moisture from the system as possible.

(4) Ordnance handling for the MK 76's and MK 81 inerts were easy to load on the MERS; however, the need for the ordnanceman to remove his gloves to tighten down swaybraces, install arming wires and cads, increased the man thours required by a factor of 3 to 4 times. This hand be further condicated if HE ordnance was used. The loading of the 20ter gaps were entropy band in cold weather, again because of the lack of suitable hand protection. Another problem associated with the 20mm guns was the inability to obtain sufficient amounts of nitrogen gas to operate the guns. High pressure air was used as a substitute but was unsatisfactory because the moisture in the air would freeze the servicing valves open, when serviced. The lack of operative SATS loaders also compounded the turnaround times.

(5) The use of other divisions to help out the line division in routine servicing requirements worked out well; however, training of those additional personnel prior to arriving at CFR Cold Lake would have saved manhours and would have also ensured a smoother flow during turnarounds.

(6) The performance of the ground support equipment was very poor. Although all GSE was RFI when it departed El Toro, its performance in cold weather was unsatisfactory. Some of the problems encountered were: the SATS loaders, and NC-10's spent more than 70% of their time in the down status; the TA-75 tow tractors performed better but usually only one, if any, was operable at any given time. Despite the efforts of VMA-311, and H&MS-13 GSE personnel, the equipment did not hold up well in cold weather. Maximum use of the heated facilities was used to store the GSE but did not appreciably help. If it were not for the support of the CFB Cold Lake, this would have had a detrimental effect on this unit's deployment. Another problem area of GSE was the lack of high pressure nitrogen. Two NAN-2 carts were embarked; however, this was not a sufficient amount of nitrogen and because the NAN-2 could not be serviced at CFB Cold Lake it had to be taken to Edmonton, Alberta for filling, a distance of 150 road miles. If we were able to use single bottles of nitrogen, they could have been exchanged with bottles at CFB Cold Lake. There were also problems with the adaptation of the Canadian Oxygen Spen Cart to service seat pans. This was overcome by locally manufacturing an adapter.

(7) Supply support for the deployment worked out well; primarily because the squadron supply officer was deployed. However, due to the limited number of items provided in the supply pack-up, this squadron had to cannibali. 50% of the repairable items requested in order to ensure a comprehensive pack-up. One other item that had the potential for creating a serious setback (if there had been a major malfunction with any aircraft) was the lack of logistical support. Even though two MARLOGS were originally scheduled they were cancelled after the squadron deployed. It is recommended that even though there may not seem an urgency to have one at times, it's important to still maintain a schedule. There were a couple of personnel shifts planned on each logistical flight which, because of their cancellations, never materialized.

(8) MAG-13 support for this deployment was outstanding. The Group's cooperation in ensuring that all the items requested were provided was excellent. This includes GSE, avionics test equipment, UHF radio's, MER/TER build-up's, SATS tents, and C-130 support. The SATS tents helped provide protected space for the "Tomcat" maintenance department. There were some problems with the SATS heaters due to the fact that the Canadian electrical power supply was not compatible with the standard Marine SATS heaters. This problem was overcome by using CFB Cold Lake heaters. The C-130 support, as a maintenance chase aircraft, was one of the biggest factors that made the fly off of squadren aircraft a success. Four of the twelve aircraft encountered problems on the way boxe; all were repaired by the C-130-embarked chase crew.

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(9) The augmentation of VMA-Duc personnel there are better key factor to making subject deployment a success. The AP's, provided from MCAS El Toro, helped smooth out any confrontations between U.S. Marines and Canadian Armed Forces personnel. The cooks, also provided by MCAS El Toro, helped to keep the meals and meal hours flexible to meet the "Torocats" needs. The flight surgeon and his assistants were able to treat the routine medical problems that were encountered. IMA personnel from H&MS-13 provided support for the "Torcats" that couldn't be matched anywhere. H&MS-13 ordnance personnel provided all the ordnance requested on time, despite the lack of support equipment, and the need to work outdoors in the extreme cold.

(10) On 10 November 1982. VMA-311 also held an all hands Marine Corps Ball complete with ceremony. The Canadian enlisted mess was used and they prepared a sumptuous roast beef dinner with all the trimmings including a 4'X5' birthday cake. The Base Operations Officer and Base Sgt Maj. were honored guests. A memorable evening for every "Tomcat"!

(11) Two other major items that made the "Tomcats" deployment to CFB Cold Lake a success were:

a. The liaison trip in mid-October. The personal contact by key supervisory personnel was invaluable in clearing up potential problems before they occurred and to paving the way for a successful deployment.

b. The hospitality of the Canadians was recognized throughout the deployment and cannot be emphasized enough. Their cooperation, positive attitude, generosity, and total willingness to assist in every area was the key ingredient in making this deployment a success.