



[REDACTED]

**DEPARTMENT OF THE NAVY**  
**CARRIER AIRBORNE EARLY WARNING SQUADRON**  
**ONE HUNDRED SIXTEEN**  
**FPO SAN FRANCISCO 96601-6404**

**DECLASSIFIED**

5750  
 Ser 10/C 07  
 14 MARCH 1985

[REDACTED] UNCLASSIFIED UPON REMOVAL OF ENCLOSURES (3) AND (4))

**From:** Commanding Officer, Carrier Airborne Early Warning Squadron ONE HUNDRED SIXTEEN  
**To:** Chief of Naval Operations (OP-05D2)

**Subj:** COMMAND HISTORY FOR CALENDAR YEAR 1984 (OPNAV REPORT 5750-1)

**Ref:** (a) OPNAVINST 5750.12C

- Encl:** (1) Command Mission and Command History  
 (2) The Officers and Men  
 (3) AEW Excellence Award Submission  
 (4) 1984 Westpac End of Cruise Report ( Separate folder )

1. In accordance with reference (a), enclosures (1) through (4) are submitted.

*P. A. Shepard*  
 P. A. SHEPARD

**Copy to:**  
 CINCPACFLT  
 Director of Naval History

*Reg # 164 595 583*

3-20-85

*Legyer*

**DECLASSIFIED**

[REDACTED]

**DECLASSIFIED**

### COMMAND MISSION

Carrier Airborne Early Warning Squadron ONE HUNDRED SIXTEEN (VAW-116) is a four plane, Airborne Early Warning (AEW) squadron under the command of Commander, Carrier Air Wing TWO.

VAW-116 operates the five place, twin turboprop E-2C "Hawkeye" which is capable of all-weather carrier and shore-based operations. The E-2C is 57 1/2 feet long, has an 81 foot wing span and weighs 52,000 pounds when operationally loaded. Its most distinguishing physical characteristics are its four vertical stabilizers and its 24 foot diameter, dish-shaped rotodome mounted 6 feet above the fuselage.

The five man crew consists of a pilot, co-pilot, Combat Information Center Officer (CICO), Air Control Officer (ACO) and a Flight Technician/Radar Operator. This highly skilled crew, when working as a coordinated team, can perform the following missions.

1. Airborne Early Warning (AEW), the detection of unknown air contacts closing the Task Force.
2. Tactical Aircraft Intercept Control (AIC).
3. Strike flight following/control.
4. Surface/Subsurface Surveillance Coordination (SSSC) (includes interface with S-3A via voice and Link-11).
5. Helicopter control.
6. Aerial mining control.
7. Tactical reconnaissance aircraft control.
8. Secondary approach assistance for carrier aircraft.
9. Communication relay (automatic and manual).
10. Airborne Search and Rescue Coordination (SAR).

**VAW-116 OPERATIONAL SUMMARY**

01 January 1984 to 31 December 1984

1. (U) Achievements in Combat Readiness (1 JAN 84-15 DEC 84)

a. Flight Hours

(1) Total Flight Hour Grant: (at 352.0/Hr)	2,042
(2) Total Hours Flown:	2,124.6
(a) Day:	1,571.3
(b) Night:	553.3

b. Ship Landings

(1) Total Carrier Arrested Landings:	485
(a) Day:	298
(b) Night:	187
(2) Overall Boarding Rate:	95%
(a) Day:	97%
(b) Night:	93%

c. N/A

d. N/A

e. N/A

f. N/A

g. N/A

h. N/A

i. Not Conducted.

j. Evaluated September 1983.

2. (U) Achievements in Weapons System Readiness (1JAN-30NOV84)

a. (C) Aircraft Availability

CLASSIFIED BY: OPNAVINST 5510.2A  
DECLASSIFY ON OADR

Encl (1)

- (1) Full Mission Capability (FMC) Rate: 34.1%
- (2) Mission Capable (MC) Rate: 63.4%
- b. (C) Cannabilization rate per 100 Flight hours: 21.1
- c. (C) A799 Rate: 8.0 ML-1  
4.1 ML-2
- d. (U) Material Condition Inspections:  
 Precruise: A/C SAT/Overall SAT  
 Midcruise: A/C Excellent/Overall SAT  
 Postcruise: A/C Excellent/Overall SAT

3. (U) Achievements in Combat Exercises

- a. (U) ORE - N/A
- b. (C) Competitive Exercises:

Exercise	E	Q	NQ
A-2-CI	60	2	2
A-3-CI	8		
A-5-CI	2		
A-7-CI	1		
A-8-CI	5	1	
A-9-CI	2	1	
A-10-CI	1		

- c. (U) N/A
- d. (U) N/A
- e. (U) N/A
- f. (U) N/A
- g. (C) Major Exercises:

BGAREM (January) - Extended ASW operations in the Western operating areas of Hawaii. BGAREM was a week long exercise with two SSN's locating, tracking, and attacking the Battle Group. An all out effort was made to utilize TACAIR assets to counter the submarines. The E-2 provided active radar flooding of the area and ESM support with excellent results. Effective integration of TACAIR assets in support of ASW operations was successfully demonstrated.

"During previous fleet exercises of this nature and scale, we at PMRF have never witnessed such a high

[REDACTED]

level of cooperation and professionalism as we have seen from the "SUN KINGS" of VAW-116. The constant airborne surveillance of the warning areas and associated airspace proved invaluable to ensuring range safety. This was noted particularly when PMRF instrumentation was utilized to its limits and range safety standards might have caused the operations to be scaled down or delayed. Equally outstanding was the quick and professional communication liaison provided between operating units and PMRF, by the "Sun Kings". This communication and coordination provided rapid execution of passenger transfers, medevacs, data transfers and other unscheduled "spur of the moment" evolutions which normally cause delays in operations of these ranges. These operations continued unhampered by such delays. PMRF would like to see this support continue in future operations whenever possible."

PACMISRANFAC BARKING SANDS 062058Z FEB 84

Kernal Blitz 84-1 (January): Amphibious operations with E-2's exercising interoperability functions with Marine Corps assets. Over-the-Horizon control was provided for Helo's carrying vertical envelopment elements ashore through the Amphibious Operations Area.

SOUTHWIND 84-1 (February): This PASEX with the USS RANGER gave Battle Group Bravo an opportunity to exercise long range scouting, opposed strikes, and several Vector Logic scenarios.

TEAM SPIRIT 84-1 (March): This exercise was planned as a multinational exercise, with participating units from the USAF, USA, USMC, USN, and ROK Air Force, Army and Marines. Battle Group Bravo, as the only carrier assigned to participate, received tasking intended to integrate our capabilities with those of the USAF and USMC. From a MODLOC position off the eastern coast of Korea, adjoining an AOA, E-2 air ops were planned for 72 hours of around the clock flying, 19 through 21 March. Then a high speed covert transit was planned south, through the Tsushima Straits, and up to a position in the Yellow Sea, where air ops were to continue with DACT, MAS, and CAS.

During the SOJ exercise period Soviet aircraft conducted 43 flights into BG airspace requiring escort and many more flights about the perimeter. This provided VAW-116 an excellent opportunity to evaluate increased flexibility provided by 5 E-2's in a single carrier. As a result, Team Spirit 84 was a valuable training experience for the Sun Kings. The number of bogies, the chaff and jamming employed, and the confining sea area between Korea and Japan presented a serious challenge to the crews striving to insure maximum system utilization with minimum

[REDACTED]

degradation.

BEACON FLASH (May): The month of May began with a 2 day "BEACON FLASH" exercise. A Sun King representative, along with other airwing reps, conducted advance liaison in Thumrait. Although a short evolution, valuable training was obtained as Sun King aircrews controlled the following: an AAWEX defending against SOAF raids on BG Bravo, strikes on Thumrait and Masirah (simultaneously), DACT between F-14's and Jaguars/Hunters, air intercepts with Omani aircraft, and control of Omani aircraft as strike group bogies. Coordination with Thumrait for low level DACT and strike clearances was also accomplished. As usual, the Omani's were thoroughly professional and a pleasure to work with. CVW-2 received high praise from the Omani's for their successful performance during the exercise.

INDIAN OCEAN BATTLE GROUP READINESS EXERCISES (May):

AAWEX Sun King aircrews participated heavily in the planning and execution of several AAWEXs. Using air wing assets as bogies simulating various threat profiles, Alpha Whiskey, Kitty Hawk, and air wing AAW readiness was enhanced and refined, particularly regarding the administrative management of the VL grid.

MULTIPLEX This 4 day exercise was conducted to practice operations in various mission areas (i.e. MAW, ASUW, ASW, STK) and to perform interoperability training between U.S. and allied ships. Sun King involvement was generally limited due to real world tasking, however some participation and training AAWEX, WASEX, and SAREX training was accomplished.

ASUWEX Multiple WASEXs and coordinated HARPOONEXs were controlled during this exercise. Sun King participation in conducting SSC efforts to locate and target hostile ships provided valuable training to aircrews in the problems and considerations involved in anti-surface warfare and SAV.

PASSEX (July): Inchop training provided for Enterprise Battle Group in area of Guam. E-2 provided long range strike targeting and control of Bogey's against VL defenses from CVW-11.

NNBIS (September - December): During this period numerous sorties have been flown to support the Vice Presidential Task Force against drugs. Areas surveilled have been from 300 miles west of San Diego to New Mexico.

MAWTS-1 WEAPONS TACTICS INSTRUCTOR COURSE 1-84 (September - October): One aircraft, maintenance detachment, and ten aircrew were deployed to Yuma to support VAW-116 participation in the WTI 1-84. C3 interoperability training with Marine Corps assets was conducted in depth.

HEY RUBE (October): Provided Orange & White E-2 services for extensive EW/VL training involving CVW-9.

COMPUTEX (October): Provide Orange control of EW and Bogey assets for Constellation Battle Group workups.

KERNAL USHER 85-1 (December): Provided Orange control services for subject exercise. Extremely critical for Safety of flight and effective employment of limited assets.

TOPGUN GRADEZ (December): Participated in planning and execution of TOPGUN Gradex. In addition to Bogey control in the target area, coordination with FAA for communications and clearance through LA Center was provided.

STRIKE WARFARE SCHOOL (October): Attended the inaugural 3 week course of instruction at the Navy's Strike Warfare School in Fallon.

4. (U) Achievements in Aviation Safety

a. (U) Total continuous hours accident free: 17, 137.6

"Congratulations to all the "Sun Kings" on the attainment of another accident-free milestone. The completion of nine years and more then 16,900 accident-free flight hours could not have been achieved without an outstanding safety program and dedicated professional performance by every member of the squadron. All hands may indeed take pride in your accomplishment, which has made a significant contribution to the Navy's readiness and safety goals. Well done. CNAP 3750/W/P C3503/SLC/SER 80/8690 dtd 19 November 1984.

b. (U) Major accidents: None

c. (U) Minor accidents: None

d. (U) Ground accidents/incidents:

(1) Class C Ground Mishap Vaw-116 040030Z FEB 84:

QAR slipped on wet surface of ladder to E-2C main entrance hatch and injured back. Cause factors: Material failure, environmental, and personnel error.

e. (U) UR/incident reports:

- QA/Safety reports: 0
- Explosive incident: 0
- TPDR: 22
- QDR: 3

f. (U) Significant NATOPS changes: Pilot: 4  
NFO: 53

5. (U) Contributions to Weapons System Development.

a. (U) VAW-116 has submitted 10 changes for recommended E-2C software improvements. These are included as Exhibit (1).

"Your command leads the VAW community in making numerous contributions to the design and improvement of E-2C software. Your extensive flight testing of experimental A5 program tapes insured that a reliable product was delivered to the fleet. Your comments and suggestions are always appreciated and welcomed."  
FCDSSA 332:J5:jb,3500,Ser 672 10 APR 84 C. G. FARNHAM

6. (U) Contributions to Tactics Development

a. (U) TACMAN changes submitted: 8

b. (C) Carrier Air Wing TWO TACPRO: Proposed and validated Anti-Terrorist ROE Execution TACPRO (VAW-116/VF-2) in May 1985.

c. (U) Contingency Planning Teams's supported JO/SO Contingency Planning Teams for CVW-2 with team leaders and team members. Execution of contingency plans conducted during Indian Ocean period of cruise.

d. (U) TAC D & E Projects:

(C) BUSY OBSERVER (January): This was an exercise to examine the effectiveness of various counter-targeting techniques used in a coordinated manner against USAF B-52's. Counter-targeting methods included the use of two types of air dropped chaff, active ECM and deceptive grouping of Battle Group Bravo's assets. Initial tipper information provided a heads-up on the inbound aircraft, and the Battle Group sensors provided initial tracking of the inbound aircraft. Sly Fox was used for the intercept. The intercept took place beyond the maximum targeting range of the inbound aircraft. The counter-targeting took place beyond the maximum targeting range of the inbound aircraft. The counter-targeting was successful in delaying targeting of the USS Kitty Hawk from the inbound aircraft.



(C) VHF Radio Utilization: CVW-2 TACAIR assets with UHF capabilities were limited to EW aircraft and the E-2. VAW-116 initiated reallocation of frequencies within 7th Fleet to utilize these radio's. A frequency plan was established for ESM reports, EW coordination, and squadron common UHF's. This flexibility allowed the E-2 to move effectively utilize its UHF communications package for BG C3 requirements.

(C) E-2 Measures of Effectiveness (March): To evaluate impact of introducing a fifth E-2C aboard a CV, E-2 measures of effectiveness (MOE) were developed. These provided a means of effectively comparing AEW performance under varying conditions and operational scenarios. (See exhibit 2 for more details).

(C) JUNKEX: Maintaining qualifications for operating in an EW environment is difficult while deployed. A cooperative effort was conducted with VF-1, VAQ-130, and VA-146 to maximize limited assets and time allotted for EW training with "JUNKEX". A-7's with ALQ-167's provided B-Band jamming and VAW/VF assets coordinated the resulting information to conduct operations against the bogey.

(C) Riffer Van: VAW-116 continues to exercise aircraft on a regular basis against the COMFIT's ALQ-108 stimulator. Valuable training and tactics development are conducted.

(C) TOMAHAWK: VAW-116 has provided tracking, C3, and safety of flight support to CNO project 251 on several occasions.

(C) Harpoon: VAW-116 provided C3 and targeting support of a PMTC/Thirdflt exercise evaluating Harpoon effectiveness in dense shipping areas.

"PMTC Harpoonex completed, apparent total success.... MSL scored a direct hit at waterline, holing Septar and rendering inop... For VAW-116, greatly appreciate participation in coordinated targeting." CTF Rep PMTC 262230Z SEP 84

(C) SAV: VAW-116 conducted briefings and a flight with VAQ-137's latest EA-6B with SAV. Initial indication are that this improved capability will provide increased integration of the E-2 and EA-6 systems.

(C) A-6 Harm SAV update: VAW-116 conducted a validation flight with a NAVWPCEN China Lake A-6 with an updated Harm INS navigation program. Initial results indicated modifications had affected ability of A/C to use SAV.

7. (U) General Contributions to VAW Community

a. (C) Validation of Fifth E-2 aboard a CV: During the 1984 deployment aboard the USS Kitty Hawk VAW-116 sought to evaluate the impact of embarking a 5th E-2 with an Air Wing. The following areas were addressed.

- (1) Comparison of 4 versus 5 effectiveness.
- (2) Maintenance Support Costs.
- (3) Operations Costs.
- (4) Manpower Costs.

This study provided VAW and Tactical aviation communities valuable data for planning and projecting future air wing compositions and capabilities. (Exhibit 3 is a copy of the 5th E-2 analysis).

b. (C) IREPS: IREP's have been used regularly in mission planning to minimize the impact of anomalous propagation on radar performance. VAW-116 worked closely with the USS Kitty Hawk Weather Officer to develop an IREPS product for use in ESM planning and employment of the ALR-59. The ALR-59 propagation loss profile provides a baseline detection estimate for surface and airborne emitters. Using these as a baseline, crews can predict maximum theoretical detection ranges with current meteorological conditions factored in the calculations. For planning purposes the E-2 is stationed at 20K and other airborne emitters are co-altitude. To help gauge the prediction accuracy, the SPS-10 is included as a baseline system. An example of the surface to air detection loss profile is included as exhibit (4).

c. (U) School Services: Support of LAWS and MAWS War-at-Sea training evolutions exposes these students to an E-2's capabilities at an early point. The net result is increased confidence in the E-2 and its ability to support and coordinate all Air Wing missions.

8. (U) Achievements in Personal Readiness

a. Retention Rate

- (1) Officers: 100%
- (2) Enlisted:

	Eligible	Ineligible	Reenlisted	% (Gross)
(a) First Tour	24	4	14	50%
(b) Second Tour	5	0	5	100%

[REDACTED]

(c) Career	6	0	6	100%
(d) Overall	35	4	25	64%
(f) 1 Fleet Reserve				

b. Advancement (enlisted)

- (1) Number Eligible: 97
- (2) Number Advanced: 24
- (3) Number PNA'd: 73

[REDACTED]