

~~DECLASSIFIED~~

MAIL ROOM
HQ, USAF
MAXWELL AFB, AL 36112

~~TS 994~~

K717,0413-44

PROJECT

Contemporary
Historical
Evaluation of
Combat
Operations
REPORT

Tracings:
1. Title
2. K717,0413-44
3. College Eye

COLLEGE EYE

1 NOVEMBER 1968

For Draft Copy w/Supporting Documents see T.S. 8254

HQ PACAF

**Directorate, Tactical Evaluation
CHECO Division**

~~SPECIAL HANDLING REQUIRED
NOT RELEASABLE TO
FOREIGN NATIONALS
The information contained in
this document will not be
disclosed to foreign nationals
or their representatives~~

**Prepared by:
CAPTAIN CARL W. REDDEL
Project CHECO
7th AF, DOAC**

2-9704-1A

~~DECLASSIFIED~~

COPY 58 OF 153 COPIES

68-DOTE-00029

~~TOP SECRET NOFORN~~

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
APO SAN FRANCISCO 96553



REPLY TO
ATTN OF:

DOTEC

1 November 1968

SUBJECT:

Project CHECO Report, "COLLEGE EYE" (U)

TO:

SEE DISTRIBUTION PAGE

1. Attached is a TOP SECRET NOFORN document. It shall be transported, stored, safeguarded, and accounted for in accordance with applicable security directives. Each page is marked according to its contents. The information contained in this document will not be disclosed to foreign nationals or their representatives. Retain or destroy in accordance with AFR 205-1. Do not return.
2. Reproduction of this document in whole or in part is prohibited except with the permission of the office of origin.
3. This letter does not contain classified information and may be declassified if attachment is removed from it.

FOR THE COMMANDER IN CHIEF

A handwritten signature in cursive script, appearing to read "Warren H. Peterson".

WARREN H. PETERSON, Colonel, USAF
Chief, CHECO Division
Directorate, Tactical Evaluation
DCS/Operations

1 Atch
Proj CHECO Rpt (TSNF),
1 Nov 68

~~TOP SECRET NOFORN~~

~~SECRET~~

DISTRIBUTION

HQ USAF

AFAAC.....1Cy (1)
AFAMA.....1Cy (2)
AFBSA.....1Cy (3)
AFCCS-SA.....1Cy (4)
AFCHO.....2Cys (5&6)
AFGOA.....2Cys (7&8)
AFIDI.....1Cy (9)
AFISI.....3Cys (10-12)
AFISL.....1Cy (13)
AFMSG.....1Cy (14)
AFNINA.....1Cy (15)
AFNINCC.....1Cy (16)
AFNINDE.....3Cys (17-19)
AFOAPS.....1Cy (20)
AFOCC.....1Cy (21)
AFOCE.....1Cy (22)
AFOMO.....1Cy (23)
AFOWX.....1Cy (24)
AFDPD.....1Cy (25)
AFPMRE.....1Cy (26)
AFRDC.....1Cy (27)
AFRDR.....1Cy (28)
AFRDQ.....1Cy (29)
AFSLP.....1Cy (30)
AFSMS.....1Cy (31)
AFSME.....1Cy (32)
AFSSS.....1Cy (33)
AFSTP.....1Cy (34)
AFXOP.....1Cy (35)
AFXOPS.....1Cy (36)
AFXOSL.....1Cy (37)
AFXOSO.....1Cy (38)
AFXOSN.....1Cy (39)
AFXOPR.....1Cy (40)
AFXOTZ.....1Cy (41)
AFXPD.....9Cys (42-50)
AFXDOC.....1Cy (51)
AFXDOD.....1Cy (52)
AFXDOL.....1Cy (53)

SAFOI.....2Cys (54&55)
SAFLL.....1Cy (56)
SAFAA.....1Cy (57)

MAJCOM

AU(ASI-HA).....2Cys (58&59)
AU(ASI-ASAD)...1Cy (60)
AU(AUL3T-66-7).1Cy (61)
AU(ACSC).....1Cy (62)
ADC(ADODC).....1Cy (63)
ADC(ADOOP).....2Cys (64&65)
ADC(ADLPP).....2Cys (66&67)
TAC(DO-O).....1Cy (68)
TAC(DPL).....2Cys (69&70)
TAC(DOTS).....1Cy (71)
TAC(DORQ).....1Cy (72)
TAC(DI).....1Cy (73)
MAC(MAFOI).....1Cy (74)
MAC(MAOID).....1Cy (75)
MAC(MAOCO).....1Cy (76)
AFSC(SCL).....8Cys (77-84)
AFSC(SCO).....2Cys (85&86)
AFLC(MCO).....1Cy (87)
AFLC(MCF).....1Cy (88)
ATC(ATXDC).....1Cy (89)
SAC(DO).....1Cy (90)
SAC(DPL).....1Cy (91)
SAC(DXI).....1Cy (92)
SAC(DIX).....1Cy (93)
SAC(OA).....1Cy (94)
USAFA(DFH).....1Cy (95)
USAFE(OPL).....2Cys (96&97)
USAFSO(BIOH)...1Cy (98)
USAFSS(ODC)...1Cy (99)
USAFSS(COI-5)..1Cy (100)

OTHERS

9AF(DO).....1Cy (101)
19AF(DA-C).....1Cy (102)
12AF(DI).....1Cy (103)

USAFAGOS.....1Cy (104)
USAFSAWC(DO)...1Cy (105)
USAFTAWC(DA)...1Cy (106)
USAFTARC(DI)...1Cy (107)
USAFTALC(DA)...1Cy (108)
USAFTFWC(CRCD).1Cy (109)
FTD(TDPI).....1Cy (110)
AFAITC.....1Cy (111)
SRAFREP(SWC)...1Cy (112)

PACAF

DP.....1Cy (113)
DI.....1Cy (114)
DO.....1Cy (115)
DPL.....1Cy (116)
DXIH.....1Cy (117)
5AF(DOP).....1Cy (118)
7AF(DOAC).....9Cys (119-127)
13AF(DOP).....1Cy (128)
13AF(DXI).....1Cy (129)
834AIRDIV.....1Cy (130)
3TFW.....1Cy (131)
8TFW.....1Cy (132)
12TFW.....1Cy (133)
14SOW.....1Cy (134)
31TFW.....1Cy (135)
35TFW.....1Cy (136)
37TFW.....1Cy (137)
56SOW.....1Cy (138)
315SOW.....1Cy (139)
355TFW.....1Cy (140)
366TFW.....1Cy (141)
388TFW.....1Cy (142)
432TRW.....1Cy (143)
460TRW.....1Cy (144)
483TAW.....1Cy (145)
553RECONWG.....1Cy (146)
6400TESTSQ.....1Cy (147)
DOTEK.....6Cys (148-153)

~~SECRET~~

~~SECRET~~

TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	vi
INTRODUCTION	vii
CHAPTER I - ORIGIN OF THE TASK FORCE	1
Formation of the Unit	1
Moves of Forward Operating Base	3
CHAPTER II - MISSION	10
Original Equipment	11
Mission Development	13
QRC-248: Increase Mission Effectiveness	18
SEAOR-62	20
RIVET GYM	26
CHAPTER III - ORGANIZATION AND COMMAND RELATIONSHIPS	28
COMBAT LIGHTNING	31
CHAPTER IV - OPERATIONAL ACTIVITY	34
ROLLING THUNDER	34
Gulf of Tonkin	37
Laos	42
Korea	48
CHAPTER V - SUMMARY AND ASSESSMENT	55
Summary	55
Assessments	56
Observations	58
FOOTNOTES	
Chapter I	60
Chapter II	62
Chapter III	65
Chapter IV	66
Chapter V	69

~~SECRET~~

SECRET

APPENDIXES	<u>Page</u>
I - CETF Personnel Strength	71
II - EC-121D - Table of Communications and Associated Electronic Equipment	73
III - COMMAND LIGHTNING System	75
IV - CETF Flying Time History	77
GLOSSARY	83
FIGURES	<u>Follows Page</u>
1. Major COLLEGE EYE Stations	vi
2. EC-121D	2
3. EC-121D - Typical Antenna Location Diagram	12
4. Weapons Controller	14
5. Organization, Hq & 7AF	28
6. COLLEGE EYE Task Force Organizational Chart	30
7. COMBAT LIGHTNING	32
8. COLLEGE EYE in COMBAT LIGHTNING System	32
9. COMBAT LIGHTNING System	32
10. Out-Country Operations	34
11. EC-121D - Typical Search Radar Operator's Station	36
12. EC-121D - Typical General Arrangement	36
13. COLLEGE EYE Communications	38

~~SECRET~~

FOREWORD

This special CHECO report provides a brief survey of the major activities of the COLLEGE EYE Task Force during its deployment to Southeast Asia, on 4 April 1965 until 30 June 1968. Special attention is given to the development of increased equipment capabilities and the evolving mission of the unit, with a summary of initial efforts to assess the task force's potential usefulness in Korea. There is also a brief survey of the unit's formation, as well as a review of organizational and command relationships.

~~SECRET~~

~~SECRET~~

INTRODUCTION

The COLLEGE EYE Task Force was brought into being in the spring of 1965 as a result of more aggressive MIG activity. The potential usefulness of an airborne early warning and control system (AEW&C) was recognized and the task force was deployed to Southeast Asia, with a forward operating base at Tan Son Nhut AB, Republic of Vietnam, and the main operating base at Tainan AS, Taiwan.

The unit's primary mission was initially a MIG warning mission, but in mid-1966 it was changed to include a border warning mission as a result of alleged U.S. violations of the Chinese Communist Border. Subsequent equipment changes were a significant part of the unit's history, in that they greatly increased the capability of the unit to perform its mission effectively.

The operational activity of the unit centered, for the most part, around the stations it flew during its history--orbits over Laos and the Gulf of Tonkin. The history of these stations was closely related to the task force's increasing capabilities. (Fig. 1.)

The TDY status of the unit throughout its history created some unique organizational and command relationships, with its attendant advantages and difficulties. Because of recurring assignments to the parent organization (the 552d AEW&C Wing) and to the task force, however, there appeared to be greater continuity among task force personnel over the three years and four months of its deployment than among some related

~~SECRET~~

~~SECRET~~

offices and organizations with personnel assigned to Southeast Asia on a PCS basis.

The history of the task force was a story of evolution and change, giving it an increasingly greater capability to perform its mission effectively. In view of this increased capability, the initial efforts in the spring of 1968 to assay the usefulness of the task force in Korea were of special interest. These efforts pointed toward the potentially great value of the task force and its experiences during the transitional stage leading to the final development of the Air Force Airborne Warning and Control System (AWACS).

~~SECRET~~

~~SECRET~~

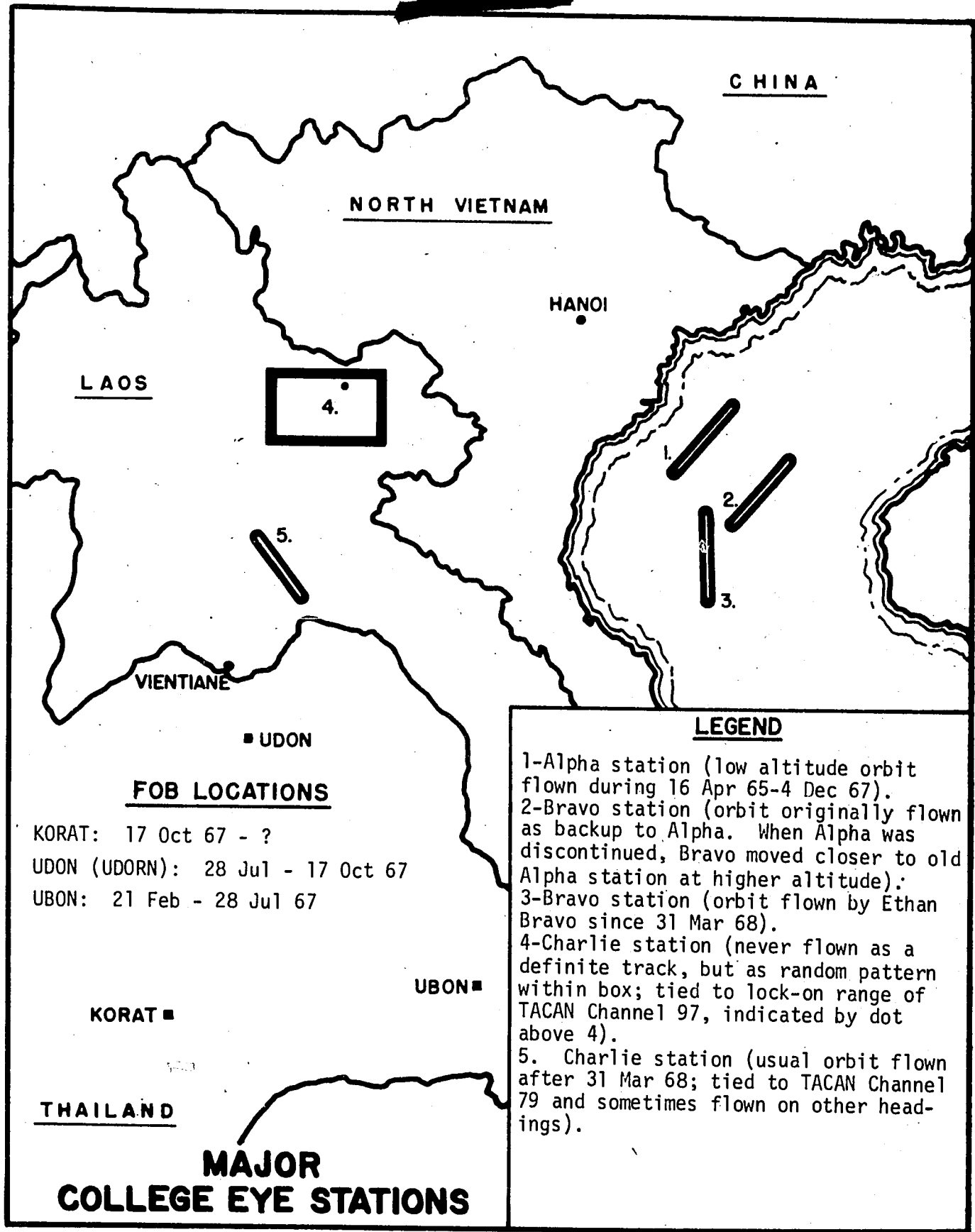


FIGURE 1

~~SECRET~~

~~TOP SECRET NOTORN~~

CHAPTER I

ORIGIN OF THE TASK FORCE

Formation of the Unit

Originally designated the BIG EYE Task Force (officially changed to COLLEGE EYE on 13 March 1967), the organization was brought into being as the result of increased MIG activity in early 1965. With U.S. attacks into North Vietnam beginning in February 1965, it became apparent that protection from enemy fighters would be needed. Apart from the protection offered by use of a MIG Combat Air Patrol (CAP), the advantages of timely warning through extended radar coverage were evident.^{1/} These factors were given added thrust by evidence of an enemy ground-controlled intercept (GCI) capability. The difficulties posed by enemy capabilities were stated in an analysis of air operations in April 1965:^{2/}

"Commitment of MIG CAP against enemy aircraft engaged in a determined attack against our strike force is extremely difficult. In the Hanoi Complex, for example, he has the advantage of GCI support plus the element of surprise. Moreover, he is able to initiate his attack with an advantageous speed differential over our MIG CAP aircraft that are in orbit...."

Dramatic evidence of the enemy's ability to strike down U.S. aircraft was shown on 3 April 1965, when two F-105s were shot down by MIGs as the result of a careful plan of attack. A description of the enemy attack follows:^{3/}

"...The attacking flight of USAF F105s, Zink Flight, had been in the orbit area three or four minutes and completed nearly 180 degrees of turn when Zink 03

~~TOP SECRET NOTORN~~

~~TOP SECRET NOFORN~~

spotted four aircraft making a diving, high speed pass toward the flight. At the time of sighting, these aircraft were some 3,000-4,000 feet behind the flight. Two were set to attack Zink 01 (Zink Leader) and Zink 02 while the other two were positioned to attack Zink 03 and Zink 04. Zink 03 made several radio calls to Zink Leader, telling them they were under attack and to break. Other radio calls were being made by friendly aircraft giving the enemy aircraft positions. Zink 04 also tried to contact Zink Leader. Neither Zink Leader nor Zink 02 reached in any way to these calls. The attacking MIGs closed in at high speed on Zink 01 and Zink 02 and continued firing until it was obvious that both planes were hit. They then stopped firing and continued straight ahead at high speed."

The MIG CAP did not respond to these attacks, primarily because of the MIG's speed. Debriefing indicated that the attacking MIGs may have been under GCI control. This possibility, in the eyes of Col. Ross Davidson, Task Force Commander after 26 September 1967, was an important motivation in the formation of the task force. He stated:^{4/}

"Early in the Vietnam war we experienced difficulty over North Vietnam in that the enemy had a GCI capability and was able to give radar warnings to their own aircraft. We did not have such a capability over North Vietnam. The action that brought all of this into focus was the loss of two U.S. Air Force aircraft over North Vietnam. They were shot down by MIGs that came in from the sun through a haze, were not sighted visually by our fighters, but were very effectively vectored into our fighters by the North Vietnamese GCI system. It became apparent to the Joint Chiefs of Staff that we in turn needed some sort of warning capability in those areas beyond that which our own ground based radar could provide with their limited coverage...."

The potential usefulness of an airborne early warning and control system was recognized and the BIG EYE Task Force was deployed by the Joint

~~TOP SECRET NOFORN~~

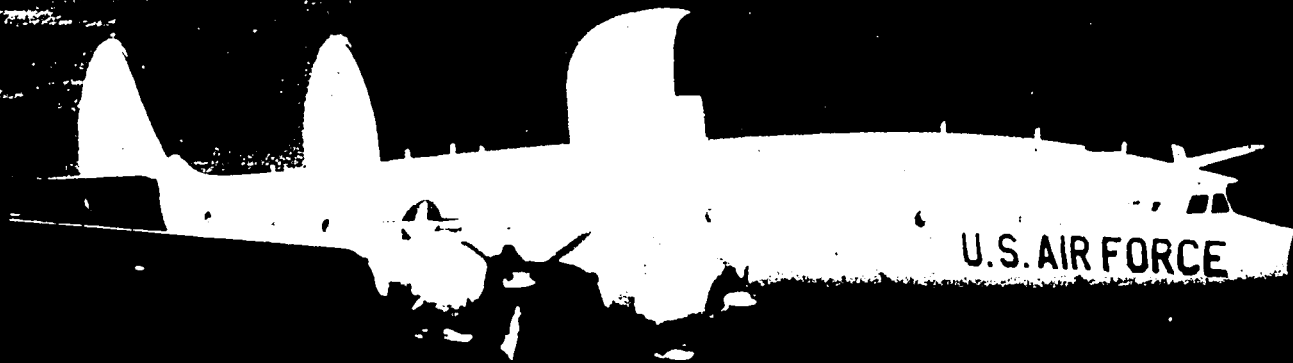
UNCLASSIFIED



10-1010
Figure 7

UNCLASSIFIED

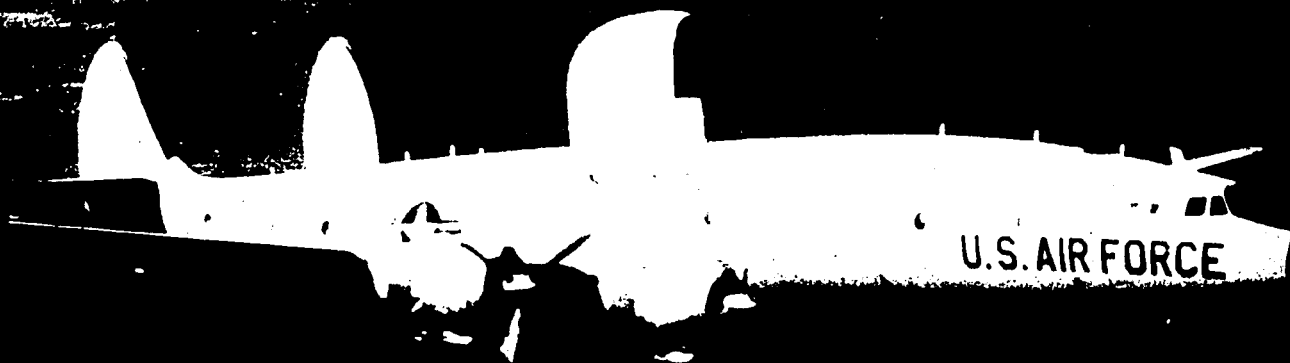
UNCLASSIFIED



12-1011
11-19-61

UNCLASSIFIED

UNCLASSIFIED



REF ID: A66011
Page 1

UNCLASSIFIED

~~TOP SECRET NOFORN~~

Chiefs of Staff (JCS) on 4 April 1965.^{5/} Implicit in the potential usefulness of the three EC-121D aircraft, which were first deployed to Tan Son Nhut AB, were several other considerations. The line-of-sight limitation of the ground-based radar rendered it incapable of adequately performing the MIG warning function, let alone the border warning function which developed later. Although the flanking radar site at Nakhon Phanom in Thailand provided some coverage, it had a limited potential for tracking enemy CAP operations.^{6/} Furthermore, the need for flight-following information on friendly aircraft on strike missions into North Vietnam became greater as the strikes moved farther north. Also, the Air Force was aware of Navy efforts along these lines, and it moved to develop its own capability.

The deployment of men and aircraft to Southeast Asia by the task force's parent organization, the 552d AEW&C Wing of the Air Defense Command, was accomplished without any major problems. A main operating base (MOB), later changed to main support base (MSB) for consistency with Thirteenth Air Force terminology, was set up at Tainan AS on the island of Taiwan, where it has remained throughout the task force's history. The forward operating base (FOB) was established at Tan Son Nhut AB in South Vietnam and later was moved to other locations shown in Figure 1.

Initially, the task force was under the command of Col. Gus Weiser, who remained in this position until his rotation to the United States on 18 June 1965. By 10 July 1965, the task force was assigned a total of seven EC-121D aircraft, 226 men--55 officers and 171 airmen--(See Appendix I), and their equipment.^{7/} Although initially deployed on a thirty-day basis as

~~TOP SECRET NOFORN~~

~~TOP SECRET NOFORN~~

something of an experimental effort, the assaying and employment of the task force's capabilities in an expanding war continued on an indefinite basis, until they became an essential part of the Air Force effort in South-east Asia.

The general division of the task force into a main operating base and a forward operating base remained the same throughout its history, although there has been periodic consideration of the consolidation of the two bases in Thailand. Despite the fact that there was no evidence to show that it seriously affected mission effectiveness, a point of change and of some difficulty was the relocation of the forward operating base. It was moved three times: from Tan Son Nhut AB to Ubon RTAFB (17-21 February 1967), then to Udorn RTAFB (27-28 July 1967), and finally to Korat RTAFB (16-17 October 1967).

Moves of Forward Operating Base

The forward operating base of the task force was located at Tan Son Nhut AB for a longer period of time (13 April 1965 to 21 February 1967) than at any other location. Operationally, it probably was the poorest of the locations in relation to the developing mission. The orbits flown by BIG EYE tended to move north, along with the air war, and this increased the amount of time spent in getting to the station. Moreover, the administrative and maintenance facilities at Tan Son Nhut AB were very limited, with the commander and his staff initially working out of a single room (35' x 15'), and with maintenance often being performed directly at the aircraft due to a lack of facilities.^{8/} There was some improvement in this specific

~~TOP SECRET NOFORN~~

(This page is SECRET.)

~~SECRET~~

situation, but the general condition of limited space and facilities continued throughout the stay of the task force, and in some respects worsened.

As a result of the increasing pressure of the growing number of men and equipment at Tan Son Nhut AB, Seventh Air Force made a concerted effort to relocate some of the organizations assigned there. On 12 May 1966, 7AF asked BIG EYE to prepare a new mission profile for operating from Nha Trang AB.^{9/}

In meeting the criteria established for the profile, it was found that the aircraft would be able to remain on station over the Gulf of Tonkin only one hour and fifty-three minutes. This factor, and the narrow safety margin, which was the result of meeting the new profile, prompted the Task Force Commander to recommend that it was unsafe and operationally not feasible for BIG EYE to operate from Nha Trang AB.^{10/}

In mid-August 1966, Seventh Air Force again contacted BIG EYE concerning the possibility of moving to another location, provided adequate support facilities were available. All of the bases now being considered as possible new locations for the forward operating base were located in Thailand: Udorn, Korat, Don Muang, and Ubon RTAF bases.^{11/}

In early September 1966, Seventh Air Force directed Lt. Col. Waldo W. Peck, who became BIG EYE Commander on 28 July 1966, to make a preliminary survey of Korat and Ubon Air Bases. After making this survey, the Commander decided that operationally, Ubon would be the better base. It was clear that the move from Tan Son Nhut AB to Ubon RTAFB, would greatly reduce nonproductive,

~~SECRET~~

~~SECRET~~

en route time for all missions. In his report to the Deputy Chief of Staff (Plans) at 7AF, however, he recommended the move should not be undertaken before the programmed completion of adequate support facilities on 1 December 1966.^{12/}

As a result of the BIG EYE Commander's survey and recommendations, Seventh Air Force, in October 1966, asked CINCPACAF to concur in the deployment of the task force to Ubon RTAFB on 1 December 1966. Seventh Air Force further requested that CINCPACAF initiate action to obtain in-country clearances for the BIG EYE move to Thailand. After these actions, the BIG EYE Commander made a staff visit on 22 October 1966, to Ubon RTAFB and briefed Col. Robin Olds, Commander of the 8th Tactical Fighter Wing (8th TFW), on the proposed move of the BIG EYE Task Force. The 8th TFW Commander indicated that the ramp space available, and then under construction, would be insufficient to accommodate BIG EYE aircraft. Other BIG EYE requirements could apparently be met by various compromise measures. The 8th TFW was to make a detailed progress report on the task force's requirements by 10 November 1966.^{13/}

After his trip to Ubon, the BIG EYE Commander briefed the 7AF Deputy Chief of Staff for Operations and the Deputy Chief of Staff for Plans on the results of the staff visit. They felt that despite 8th TFW reservations, ramp space would be available for accommodation of the BIG EYE aircraft. During the second week of November 1966, BIG EYE personnel became apprehensive about meeting the 1 December date, largely because of reports that Ubon RTAFB ramp space was saturated and that in-country clearances for the

~~SECRET~~

SECRET

move into Thailand had not been completed. On 15 November, the BIG EYE Commander advised 7AF of reports of saturated ramp space at Ubon RTAFB, and of failure to receive a status report from the 8th TFW.^{14/}

On 21 November 1966, 7AF received a status report on the 8th TFW's ability to accommodate the task force. Although the status report was generally positive, it suggested that the relocation take place on 1 January 1967, because of inadequate ramp space. Seventh Air Force, in turn, requested the task force to cancel all actions for airlift and PACAF to defer the move until 1 January 1967. Subsequently, various pressures moved 7AF to request PACAF to change the relocation date of BIG EYE to 20 December 1966. On 13 ~~December 1966~~, Seventh Air Force directed BIG EYE to initiate airlift requirements, but, on 16 December 1966, the airlift request was cancelled because the in-country clearance for Thailand had not been received.^{15/}

Prospects for the relocation brightened considerably in early 1967, and by 8 January, the task force received a message from PACAF citing approval of the move to Ubon RTAFB by the Joint Chiefs of Staff, dependent upon final approval by the government of Thailand. A message received by the task force from CINCPACAF on 2 February 1967, approved 18 February as the relocation date. On 15 February, the task force deployed an advance party to Ubon RTAFB, and the bulk of the move was carried out during 17-21 February. The last man cleared remaining accounts and departed on 25 February 1967.^{16/}

The move itself was anticlimactic in view of the apparent difficulty involved in establishing the relocation date, receiving appropriate command

~~SECRET~~

approval for the move, and obtaining in-country clearances from the Thailand government. The relocation was carried out without any major problems and the orbit in the Gulf of Tonkin was flown without interruption. ^{17/}

Once the forward operating base of the task force was located in Thailand, subsequent moves were carried out with fewer complications. The task force resisted the move to Udorn RTAFB, because they knew that Korat RTAFB had been established as the base for the 553d Reconnaissance Wing, and that eventually all EC-121s would consolidate there. Space had been made available at Udorn by the return to CONUS of the F-104 unit that had been providing escort in the Gulf of Tonkin. COLLEGE EYE moved into this space knowing that a move to Korat was imminent. In turn, their space at Ubon was programmed for the arrival of an F-4 fighter squadron from CONUS. ^{18/}

The support facilities were generally poor at Udorn, but there was the advantage of less time en route to the Laos station (the gain in time for the Gulf of Tonkin stations was negligible), and the move was completed with a minimum of difficulty. On 22 July 1967, an advance party arrived at Udorn RTAFB to make arrangements for the relocation. Two mission aircraft were launched at Ubon RTAFB on 27 July, and were recovered at Udorn RTAFB on the same day. On 28 July, the remaining aircraft completed the same action and the move was finished. A distinguishing factor in this move was the use of a 13-truck convoy to move administrative furniture and support equipment. ^{19/}

Shortly after the move to Udorn, arrangements were begun for the move to Korat RTAFB. This was the last move made by the task force and was the

~~SECRET~~

site of their forward operating base until after 30 June 1968. On 5 September 1967, a staff visit was made to Korat to coordinate plans for the relocation. Directed by PACAF and Thirteenth Air Force, the move was carried out on 16-17 October 1967, without any standdown or loss of scheduled missions. There were few additional operational advantages in being located at Korat, except in comparison with the Tan Son Nhut AB location, which had a low ratio of time-on-station to total mission time. However, the base support received by the task force at Korat was superior in every respect to the support received at previous locations. This was an important contribution to mission accomplishment.^{20/}

In surveying these moves, it is clear that they did not affect the mission in any significant way. In fact, it was a point of pride for the task force that they did not standdown from their missions, but carried them out successfully and without interruption. An appreciation of the scope of the effort involved in these moves can be gained from the mobility plan used for one of the moves. The organization and execution of the moves at the unit level were carried out with relative ease and a minimum of complication. This fact was facilitated by the stable location of the main operating base at Tainan AS (later Tainan AB). The difficulties associated with the moves appeared to be problems of coordination and decision.^{21/}

~~SECRET~~
(This page is SECRET.)

~~TOP SECRET NOFORN~~

CHAPTER II

MISSION

Although the predeployment concept of the task force's role was a broad one, viewing the EC-121D as an airborne extension of the Tactical Air Control System with functions as a communications center, communications relay, and as an extension of the MIG CAP interceptor and fighter control,^{1/} actual employment of the BIG EYE aircraft developed in a more limited fashion. Furthermore, the transition from the air defense mission performed on the West Coast of the United States to the largely tactical role envisioned above required some adaptation. In contrast to the air defense environment of the United States, the tactical air control system in Southeast Asia was almost entirely manual in an offensive environment.^{2/} Although the task force personnel from the 552d AEW&C Wing were perhaps better equipped than many ADC personnel to make the transition to the Southeast Asian tactically oriented environment, by virtue of their previous experience with a manual control capability, it was nevertheless a question of adaptation, some experimentation, and equipment modifications to provide increased capability. The equipment modifications were designed, in part, to meet ad hoc requirements, the most important of these modifications taking place since mid-1967.

Initially, the mission of the task force was built around the capability of the EC-121D to provide MIG warning information. The success of this effort was qualified by the limitations of electronic equipment that was designed for use in defense of CONUS against the threat of subsonic bombers.

~~TOP SECRET NOFORN~~

~~TOP SECRET NOFORN~~

In spite of these limitations, there was no question about the usefulness of the task force's aircraft in serving as an extension of the land-based radar coverage available. From the beginning of the task force's employment in Southeast Asia, this extension of radar coverage, and the flexibility inherent in the airborne platform, was a key capability on the part of the task force.

Throughout its history, the task force flew an orbit over the Gulf of Tonkin to give the Air Force a MIG warning and flight-following capability for friendly aircraft. Because of differing tactical requirements and changes in equipment capabilities, the location, altitude, and number of orbits flown have changed. An orbit was flown over Laos, beginning in May 1967, with the addition of a significant task to the unit's mission, the provision of border warnings to friendly aircraft in danger of straying over the border of Communist China. (See Chapter IV.) Mission planning for the task force since that time has been based on a capability for flying three stations, two over the Gulf of Tonkin and one over Laos.^{3/} Since late December 1967, only two stations have been flown on a regular basis, one over the Gulf of Tonkin and the other over Laos.

Original Equipment

The equipment on the original EC-121D aircraft to arrive in Southeast Asia included the two major pieces of radar gear which were still installed on the airframes on 30 June 1968. These were the AN/APS-95 Search Radar and the AN/APS-45 Height Finding Radar. The APS-95 was a high power, long-range search radar which had a theoretical range of 250 nautical miles, but

~~TOP SECRET NOFORN~~

~~TOP SECRET NOFORN~~

its reliable range was approximately 160 to 180 nautical miles. This radar was designed to operate over water, and therefore its usefulness over land was negligible, because mountains, weather, and other phenomena seriously degraded the radar picture. The APS-45 was used to obtain the altitude of detected targets and had a theoretical range of 120 nautical miles. A more detailed survey of the use and limitations of this equipment was given in the "PACAF Tactics and Techniques Bulletin", Number 35 (8 February 1966).^{4/}

The next most important piece of equipment aboard the original EC-121D was probably the AN/APX-49 Recognition Set. This Identification Friend or Foe/Selective Identification Feature (IFF/SIF), Interrogator system was credited with a maximum theoretical range of 288 nautical miles and a reliable range of 180-200 nautical miles. The reliable range was further reduced when the decode feature was used. The time-consuming manual operation put severe limitations on its usefulness and on the original EC-121D's capability.^{5/} Although still aboard the aircraft, its capability has been far surpassed by the AN/GPA-122, an IFF/SIF automatic decode device, which gave the weapons controller the capability to decode six tracks and to selectively stretch one return for identification purposes. By 15 June 1968, sufficient GPA-122 equipment was available to equip each mission aircraft.^{6/}

There was no clear measure of the effectiveness of the original equipment discussed here (See Appendix II and Fig. 3.) and there was no study of the mission effectiveness of the task force available for their

~~TOP SECRET NOFORN~~

(This page is SECRET.)

~~UNCLASSIFIED~~
~~UNCLASSIFIED~~

EC-121D - TYPICAL ANTENNA LOCATION DIAGRAM

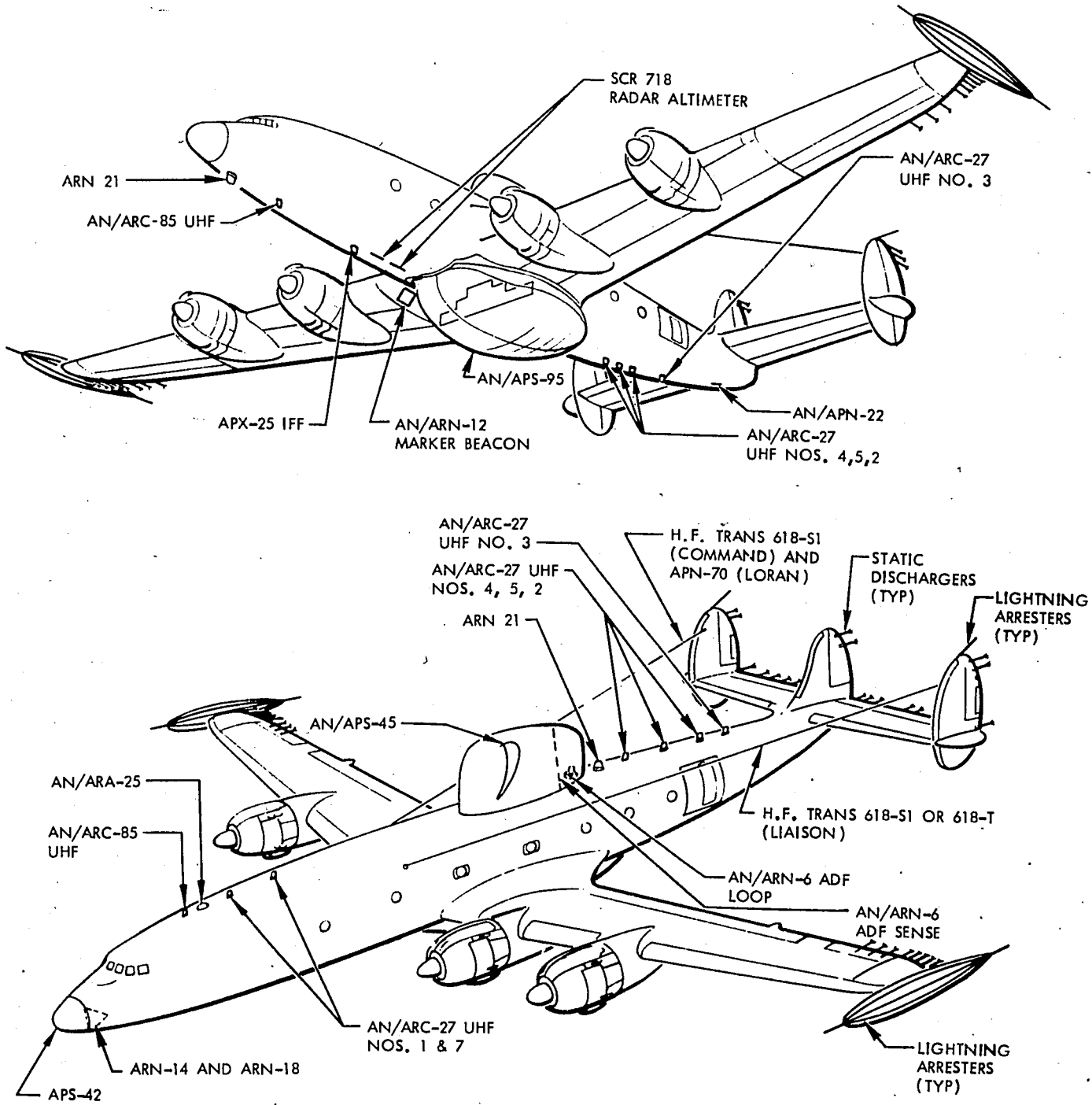


FIGURE 3

UNCLASSIFIED

~~SECRET~~

activities before July 1967. However, with the passage of time it became clear that equipment modification would significantly improve EC-121D capabilities. Before these modifications were made, BIG EYE capabilities were tried out in a variety of situations.

Mission Development

The task force stated its mission in its first historical report:^{7/}

"Provide an Airborne Radar Platform (ARP) employing standard configured EC-121D aircraft plus VHF (communications) capability to extend early warning ground-based radar coverage and continual air defense fighter CAP during strike missions in Vietnam and adjacent areas. Provide airborne operations center (AOC) support where required and augment search and rescue operations when directed. Perform other specialized tasks as directed by the theater commander."

The part of this mission which dealt with the capacity of the EC-121D to serve in airborne operations center support was never thoroughly tested. Tests of the aircraft as an airborne command post in June 1965 were inconclusive. This was due to several factors, including the lack of adequate communications equipment.^{8/} This aspect of the task force's mission was not further developed, in part because of equipment limitations, and also because of its employment in other roles with clearer effectiveness.

The air defense aspect of the task force's mission has been a continuing one, and was perhaps the chief motivating factor in the formation of the task force. After deployment of the task force to Southeast Asia, a concept of operations was devised and implemented which provided for control of a MIG

~~SECRET~~

~~SECRET~~

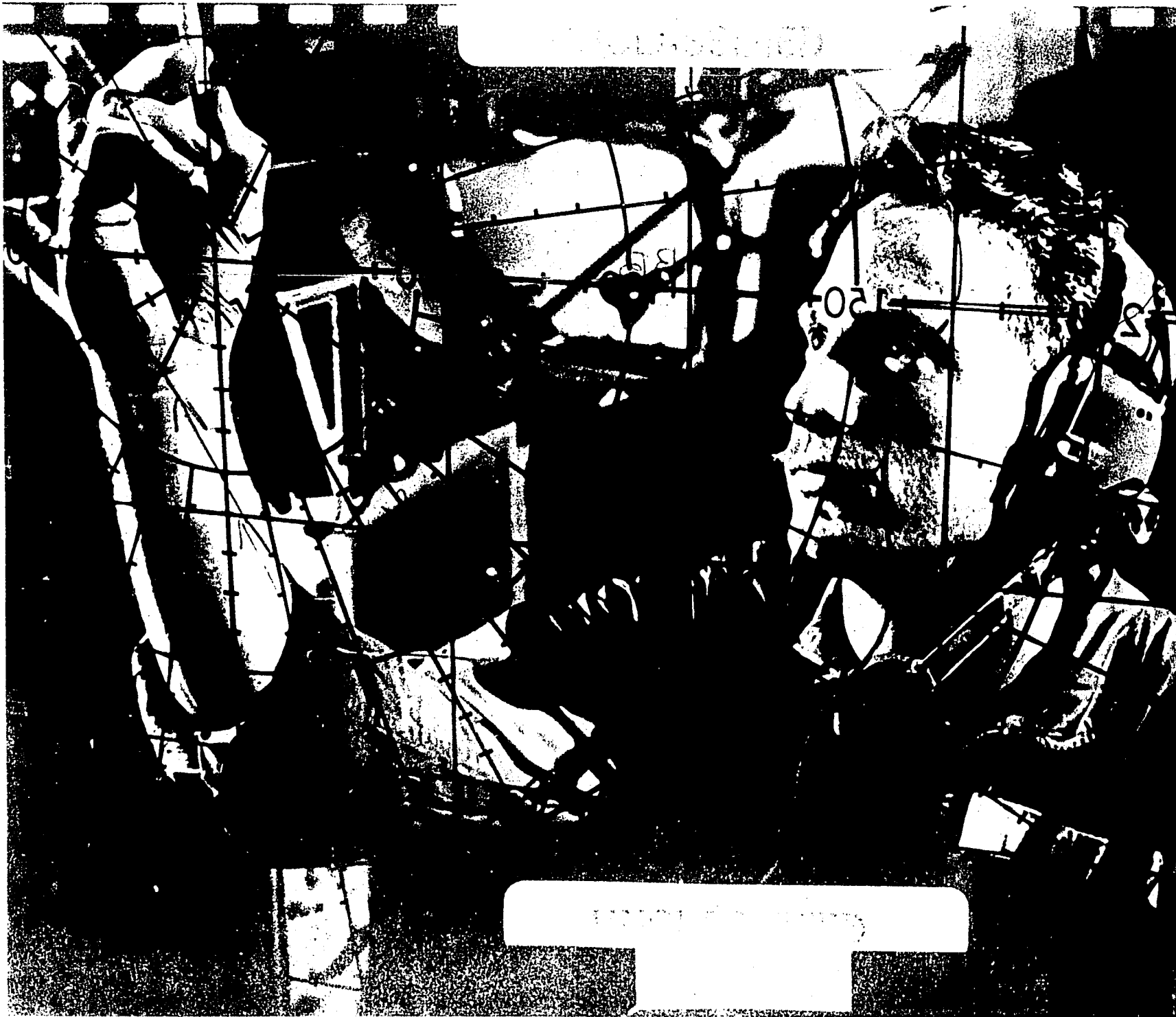
CAP by the EC-121D. The Air Defense Weapons Staff Officer (Directorate of Operations, Plans and Requirements Division) of Hq 2d Air Division described the concept on 1 July 1965:^{9/}

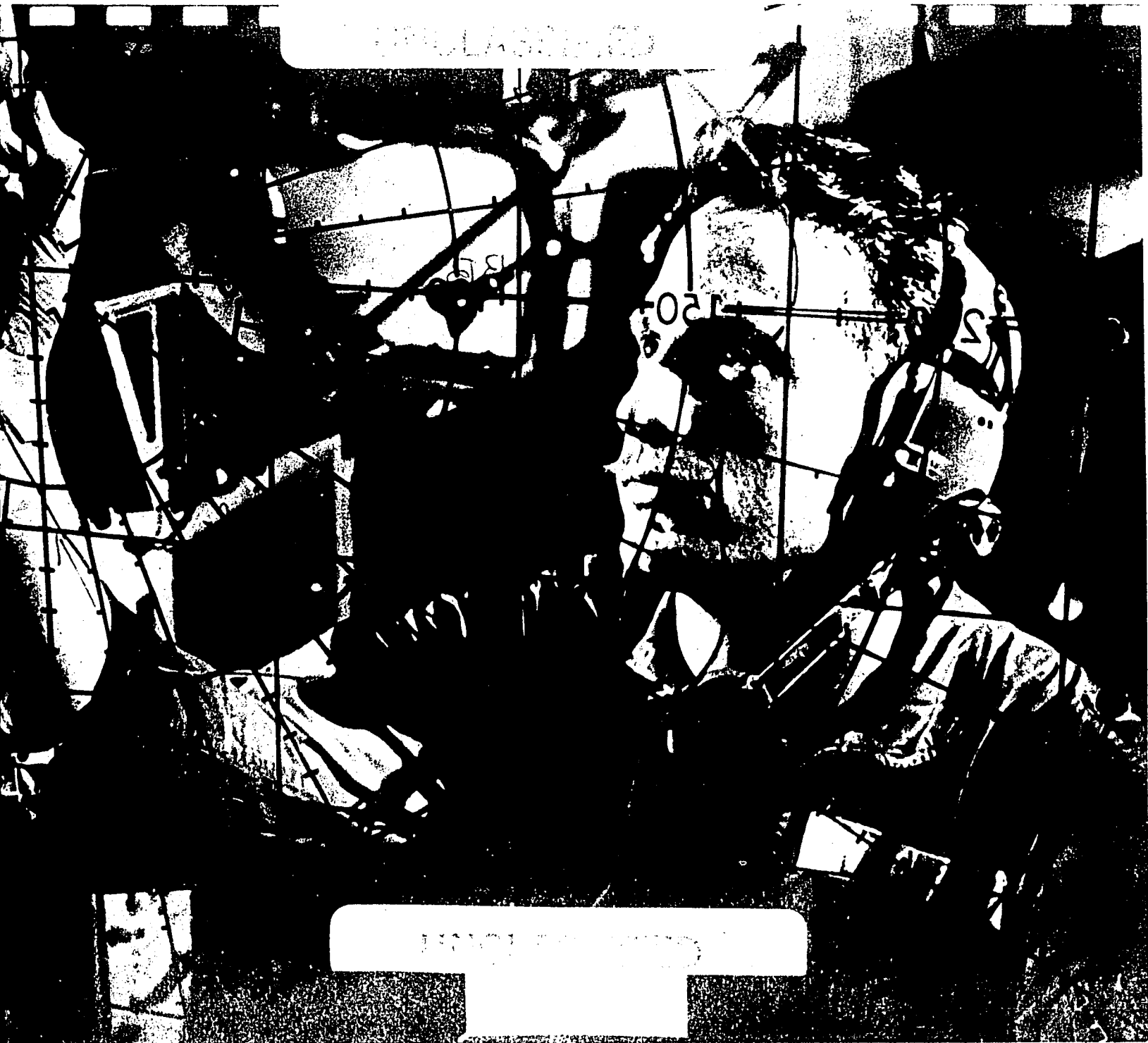
"...the concept of operations basically provided for sufficient escort for the EC-121D to safely position it far enough north to provide surveillance of the Hanoi area and limited MIGCAP/screen control capability in addition to control of its own escort. Fighters were tasked for MIGCAP/screen operations during this period and were positioned generally in two east-west screening positions, a forward screen just south of the 20th parallel, a screen midway between the forward screen and the target, plus a MIGCAP in the immediate vicinity of the target strike force to provide visual and immediate response to end running tactics of a back door threat. The EC-121 was able to provide close control for the forward MIG screen and the center screen should the forward screen become engaged...."

During the time this tactic was employed, there was relatively little MIG activity. The reason for this was not clear and it appeared to be a matter of speculation. Consequently the aircraft configured for air defense were reallocated to strike roles and, without interceptors under its control, the function of the EC-121D was reduced to that of a MIG warning platform.^{10/} Later, in the fall of 1967, and lasting until the bombing restrictions issued by President Lyndon B. Johnson on 31 March 1968, fighter aircraft were once again placed directly under the EC-121D's control. The tactic this time achieved a more measurable degree of success.

An example of the success achieved with the close control of an offensive MIG CAP occurred during February 1968. On 6 February 1968, two F-4C aircraft (Buick 2 and Buick 4) from Ubon RTAFB jointly shot down a MIG-21.

~~SECRET~~





UNCLASSIFIED

UNCLASSIFIED

~~SECRET~~

Captain Edney, a Weapons Controller on the Ethan Charlie flight, was credited with an assist in destroying the enemy aircraft. A letter sent to the task force by the 8th Tactical Fighter Wing on 19 February stated: ^{11/}

"On 6 Feb 68, an 8th TAC FTR WG aircrew shot down a North Vietnamese MIG 21. Prior to the engagement, the CAP flight received several calls from ETHAN aircraft, giving magnetic headings and distances to the MIG flight. The calls were accurate and timely. After turning into the MIG's, they were acquired and one was destroyed. The success of our CAP missions is largely dependent upon the information received from warning agencies, therefore, we share the credit for success with your personnel. The 8th Wing Wolf Pack extends their appreciation to the COLLEGE EYE Task Force for work well done."

Six days later, a Weapons Controller on the Ethan Bravo flight, Captain Starbranch, provided information on MIGs to F-4s (Buick Lead and Buick 3) from the 8th TFW, resulting in a MIG kill and a probable MIG kill. Using this information, each aircraft closed within three miles, made a positive identification, and fired its weapons. Both MIGs went into uncontrolled spins, smoking heavily. In debriefings, the fighter pilots gave high praise to the COLLEGE EYE controllers for the service they provided. ^{12/} Later the same month, the prototype aircraft, RIVET TOP used the same close control procedures to provide direct assistance in the downing of two more MIGs. ^{13/}

Apart from these specific successes, there was an overall increase in activity for the task force before the bombing limitations of 31 March 1968. The amount of traffic handled preceding these limitations was described by a COLLEGE EYE staff officer: ^{14/}

~~SECRET~~

~~SECRET~~

"...In a standard Alpha day strike package which was known prior to the strike limitations, we often had eighty or ninety aircraft in basic elements. One strike, either the morning or afternoon strike, was usually made up of two waves of aircraft. The first wave would contain four flights of strike aircraft, F-105s, led by two Iron Hand aircraft for flak or SAM suppression...and escorted by a MIG CAP of F-4s. This F-4 escort is considered a defensive cap and would be employed only against an actual threat to the strike force...The second wave of aircraft would be basically the same, again having Iron Hand strike, and a defensive MIG CAP. Usually there was only one flight in the offensive MIG CAP and they would come in with the first wave. As you review this makeup of a strike force you see that you have basically seven groups of aircraft--Iron Hand, strike, CAP (in the first wave, again in the second wave), plus a flight or two flights of offensive MIG CAP. Each flight is composed of four aircraft and with a specific call-sign. This would make about seventeen or eighteen flights of four with seventeen or eighteen different call signs and Mode 2 SIF squawks. All of these aircraft might occupy as ~~small an area~~ as fifteen miles of airspace."

For the task force, this was the period of time in which they felt they achieved a fuller measure of mission effectiveness than in some earlier periods of their history. ^{15/} Apart from the "hunter-killer role of offensive MIG-CAP close control" which they filled, ^{16/} there was the increased capability provided by the Enemy IFF Interrogator (QRC-248), installed in the summer of 1967, and later, the IFF/SIF Interrogator (AN/GPA-122), which was installed on all mission aircraft by 15 June 1968. These factors, in part, led the task force to propose the reestablishment of an offensive MIG CAP for COLLEGE EYE control in the spring of 1968. A wrap-up message to Seventh Air Force summarized the proposal: ^{17/}

~~SECRET~~

~~SECRET~~

"...MIG activity increased during last half of the month, and the pattern of southerly ranging MIGs prompted CETF to propose establishment of a MIG-CAP for offensive employment by COLLEGE EYE. Latest word was acknowledgment by Col Stewart, stating proposal under study. Excellent information has been available to CETF controllers from both video and Rivet Gym source. Most hostiles have not posed immediate threat to friendlies, and warnings have been held to a minimum consistent with 7AF policy to prevent needless compromise of new capability aboard CETF aircraft."

In addition to these activities the task force was also called upon to fulfill special warning functions as directed by Headquarters 2d Air Division and later, Hq 7AF. For example, in October 1965, concern over an IL-28 (Beagle) low level threat to Da Nang caused 2d Air Division to direct the task force to fly surveillance missions. This action was taken largely because the Dong Ha radar site was not yet operational and could not provide the necessary coverage.^{18/} Similar missions, usually to provide coverage not available from ground radar sites, were flown in anticipation of low altitude bomber attacks during 6-8 December 1967 and in February 1968.^{19/}

Another occasion, which pointed out the special requirements to which the task force became subject, included special missions flown in support of the Tan Son Nhut AB radar. The radar had gone off the air because of wind damage, and the task force flew support missions during 29 July - 1 August 1965. After this incident and similar requirements, the capability of BIG EYE aircraft to back up ground radar facilities was considered and subsequently included in the concept of operations for employment of these aircraft.^{20/} The task force remained a flexible warning resource throughout its history,

~~SECRET~~

~~SECRET~~

including such truce periods as the December 1966 Christmas holiday, the 1 January 1967, and Lunar New Year (4-8 February 1967),^{21/} when it continued to fly its regular missions.

QRC-348: Increase Mission Effectiveness

The equipment change on the EC-121D, which had the greatest impact on mission effectiveness, was installation of the Enemy IFF Interrogator System (QRC-248). This system provided two of the most basic items of information necessary for command and control capability, the detection and positioning of enemy aircraft. The testing and installation of the system illustrated the procedures undertaken in a major modification of the task force's equipment capability.

On 21 November 1966, the task force received a message from the 552d AEW&C Wing stating that an EC-121D aircraft, temporarily configured with special test instrumentation, would be sent to the task force for feasibility testing. This testing in a prototyped EC-121D, took place under the code name QUICK LOOK, during a series of 12 missions flown from 15 December 1966 to 14 January 1967. The primary piece of equipment being tested during this flight series was the QRC-248.^{22/}

Although the QRC-248 modification was the subject of SEAOR-44, a SEAOR submitted by 7AF, which dated back to at least 31 March 1966, had already brought it to a fully engineered test-flown status. This was under the Quick Reaction Capability (QRC) concept as a result of the Cuban crisis under a NORAD requirement. This meant that a considerable amount of lead time had

~~SECRET~~

~~SECRET~~

been absorbed, before it was requested for the task force by the Commander-in-Chief, Pacific (CINCPAC). The success of the tests, according to the report submitted by the QUICK LOOK test team, showed that full implementation and use of the QRC-248 would allow BIG EYE aircraft to electronically interrogate and display signals emanating from the SRO-2 enemy IFF, thereby providing positive identification of enemy aircraft equipped with the SRO-2.^{23/}

After this successful testing, the task force staff recommended installation of the QRC-248 on task force aircraft. Subsequently, a requirement was given to the Weapons System Support Manager at Sacramento Air Materiel Area (SMAMA), McClellan AFB, California, to provide group "A" modifications of the task force fleet, so that it could accept the QRC-248. At the same time, the Rome Air Development Center (RADC), a sub-command of AFSC, began building the components. The system reached a mission-ready state in May 1967, and was actively employed under the discrete interrogation criteria approved by the National Security Agency (NSA) and JCS on 21 July 1967. The system not only provided a great operational breakthrough, but was an extremely reliable unit, with a low meantime between failures (MTBF).^{24/}

The first flight to actively employ the QRC-248 was the Ethan Bravo flight on 21 July 1967 over the Gulf of Tonkin. After the arrival of additional equipment, a two-station posture was assumed on 3 September 1967, when the Ethan Bravo flight and the Ethan Charlie flight (over Laos) were configured in the active mode. On 20 September 1967, the Ethan Alpha flight over the Gulf of Tonkin also gained the capability, but it was not used except for periods when the Ethan Bravo flight was not on station.^{25/}

~~SECRET~~

~~SECRET~~

The QRC-248 was originally viewed as an augmentation of the search radar system, the AN/APS-95. However, its ability to effectively detect enemy aircraft was perhaps even greater than anticipated. The task force commander after 26 September 1967 stated:^{26/}

"With the advent of the QRC-248 we were able to detect aircraft which we had not previously seen. It was somewhat frightening for us to realize that in the past there had been many aircraft that we had not seen....In fact it so far increased the ability of COLLEGE EYE to detect enemy aircraft, that we later recommended to 7th Air Force, and received approval, to discontinue the low altitude radar platform in favor of two, and later three, sorties, making almost exclusive use of the enemy IFF (the QRC-248)...."

The acquisition of this capability coincided with the period of increased activity for the task force which began in late 1967, and lasted until initiation of the bombing limitations on 31 March 1968.

SEAOR-62

Efforts to improve the overall capabilities of the task force under the SEAOR system date from as early as 11 May 1966, when a message to 7AF from the Office of the Chief of Staff requested: "...reevaluate the requirement for radar performance capability in BIG EYE aircraft. Contingent on findings, request (the) requirement be documented IAW SEAOR procedures provided requirement warrants attendant priority handling."^{27/} A review of BIG EYE requirements in a larger sense was subsequently presented in the "Best Technical Estimate (BTE) for Modification of Electronic Devices in Control and Radar Equipment (MEDICARE) of BIG EYE Aircraft", on 6 June 1966. After this estimate, and subsequent to various discussions on how best to handle

~~SECRET~~

~~SECRET~~

modifications to the equipment of the task force, Southeast Asia Operational Requirement-62-FY-67 QOR (BIG EYE Modification) was submitted on 22 November 1966.

After the issuance of the SEAOR-62, CINCPACAF concurred and validated the SEAOR with these comments:^{28/}

"BIG EYE as an element of Combat Lightning providing data to the TACC (North Sector), should receive all requested modifications at earliest possible date. Accordingly as equipment becomes available, it should be installed as rapidly as possible, rather than delay its incorporation until a more extensive modification program can be established."

Complications in fulfilling this directive resulted from the problem of working out the relationship between all SEAORs related to the task force, leading to their possible consolidation, and the question of possible inconsistency in the operational concept proposed for the task force aircraft. The SEAORs involved in February 1967 were: SEAOR-62-FY-67, modifications which involved improving the height finding radar, installation of secure communications, improved air conditioning, an enemy IFF readout capability, improved navigation, digital processing, and improvements to the air-to-ground surveillance radar. SEAOR-44-FY-66 was for installation of an enemy IFF/SIF readout capability in task force aircraft. SEAOR-53-FY-66, Tactical Airborne Fusion System, would install a complex of equipment for gathering ELINT information into the task force aircraft for consolidation to TACC via secure methods.^{29/} (Subsequently, SEAOR-53 was pursued as a separate development not necessarily related to task force capabilities.)

~~SECRET~~

~~SECRET~~

SEAOR-62 stated: "Surveillance data will be fed directly to the Tactical Air Control Center (North Sector), TACC (NS)." The implementation of this phase of SEAOR-62 carried with it the distinct possibility of limiting the autonomous capability of the EC-121D. A Best Preliminary Estimate (BPE) prepared in January 1967 spelled out the options ^{31/} which seemed available under existing conditions:

"This BPE is in response to SEAOR-62 and is the result of a joint effort between ASD/SEG, AFLC (SMAMA), and ADC. The original intent was to consider all outstanding SEAORs against the BIG EYE aircraft and come up with one complete modification plan. This has been impractical for a number of reasons. Lack of a complete operational concept defining the relationship of SEAOR-61 and -62 has forced us to make assumptions as to the command and control capability of the aircraft vs that at Monkey Mountain. Three options of varying degrees of capability are considered. The full capacity option assumes maximum command and control capability in the aircraft, duplicating some ground functions but by the same token would be a substantial back-up should the ground system fail. The reduced capability option provides a lesser command and control capability in the aircraft and passes only selected track data to the ground. A third option was also examined which considered the aircraft as a sensor only; i.e., an airborne extension of the ground (SEAOR-61) complex and all raw data collected in the aircraft would be passed to the ground without processing. This approach was rejected since it would inundate the ground system with data exceeding its track handling capability."

Whatever the alternative lines of development for the task force were, the final contribution to be made was an important one. The vital role to be played by COLLEGE EYE as a result of the proposed SEAOR-62 modifications was clearly described on 17 February 1968 in a memorandum to the 7AF Director

~~SECRET~~

~~SECRET~~

of Combat Operations. The emphasis was clearly on centralization and automation in an effort to attain a near real-time capability at the Tactical Air Control Center at Monkey Mountain (MOTEL), near Da Nang AB, and at the Seventh Air Force Command Center. The memorandum read, in part: ^{32/}

"...SEAOR-62 provides for the digital interface of the COLLEGE EYE aircraft with Motel (the BUIC consoles). This will result in the actual tracks of our aircraft being reflected in the consoles rather than projected tracks based upon where the frag said the flights were going to be. Our MIG warnings that are given relative to the force cannot be meaningful to Motel and the 7AF CC until this is accomplished. The importance of this provision to 7AF cannot be overemphasized."

Nevertheless, the value of retaining an autonomous capability on the part of the task force's aircraft was supported in a message from CINCPACAF: ^{33/}

"...Retention of improved control and surveillance capability aboard AW aircraft will increase overall system capability, provide operational flexibility and permit autonomous operation so necessary in fast developing tactical situations."

The need for an autonomous capability was further emphasized in a note, dated 21 April 1967, to Seventh Air Force (DO) from Gen. William W. Momyer, 7AF Commander, which stated, "We need to spell the concept very clear for the C-121 to be able to direct the air battle on the scene. Can't do this at MOTEL". ^{34/} However, the degree of autonomy to be maintained by the EC-121D, relative to ground-based facilities, remained a difficult question until after 30 June 1968, and General Momyer's overall objective remained as stated on 1 May 1968: ^{35/}

~~SECRET~~

~~SECRET~~

"It has long been my desire to centralize air resources, management, tasking, and decision-making at my Command Center. This will soon be a reality with the assistance of automated systems which will permit me and my staff to selectively monitor all air operations...."

The installation of the AN/GPA-122, an IFF/SIF Interrogator System used by ground-based radar, was an equipment modification which clearly took place under SEAOR-62. The equipment proved itself an effective complement to the QRC-248 discussed before. The AN/GPA-122 was an automatic decoding device which significantly increased the capability of the task force EC-121D to flight-follow friendly aircraft. Apart from the capacity of the device to decode six tracks and to selectively stretch one return for identification, the advantages of this new equipment over the old were described by Capt. Richard M. Williams, Communications-Electronics Officer for the task force: ^{36/}

"The GPA-122 avoided the multiple track saturation problem which would be associated with the APX-49 in the passive mode as well as adding a complete new dimension to SIF decode - that of the active readout system. In active, the code of a particular aircraft is identified, whereas in the passive system the code must first be known and set into the equipment. Using an example to show the significance of this, let us assume that a Navy aircraft was involved in a border penetration. With the APX-49 we would be unable to identify the aircraft since we are not provided with information about Navy strikes or Mode settings. With the active SIF readout, his Mode II could be identified for later correlation to a specific strike flight."

Action to amend SEAOR-62 to include the installation of the AN/GPA-122 on COLLEGE EYE airframes was initiated by Seventh Air Force in early May 1967.

~~SECRET~~

~~SECRET~~

This action was expedited as a crash modification and included the diversion to the task force of AN/GPA-122 systems scheduled for ground installation.^{37/}

In spite of this extra effort the installation of the AN/GPA-122, ostensibly a crash program, took "...eight months to materialize after (the) requirement was indorsed personally by CINCPACAF".^{38/} On 29 January 1968, an EC-121D partially modified for the GPA-122 arrived at Korat RTAFB. By 15 June 1968, enough equipment was available to provide each mission aircraft with this improved flight-following capability.^{39/}

An evaluation of the effectiveness of the overall SEAOR effort to improve the capabilities of the task force, was not within the purview of this study. However, it appeared that there were certain difficulties with the SEAOR approach to the improvement of COLLEGE EYE capabilities. These difficulties were wide-ranging and included equipment interface problems, the expediting of funding action, and slippages in the testing and development of the first of 20 prototype EC-121Ds which were to be developed under SEAOR-62.^{40/} From the task force's point-of-view, SEAOR usefulness was limited. The task force commander, stated:^{41/}

"We are not experts on the SEAOR system. However, it is my judgment that the SEAOR system has not resulted in helping the task force materially. SEAOR-62 for instance, was written, I understand, approximately two years ago and we don't have the first aircraft yet. So I would say that this system is not responsive to rapid needs. We have had more gratifying results through our own effort to reach the 7th Air Force, PACAF, ADC, and USAF staff, and impress them with our need for certain equipment and by giving them some idea of the urgency of the requirement. We have done this and we have received much, much quicker and more effective results from the direct approach rather than the SEAOR

~~SECRET~~

~~SECRET~~

approach. This is our own experience and it is very limited."

Apart from the SEAOR approach itself, and its attendant difficulties or advantages, there was a difference in how the various equipment modifications were being viewed. The task force regarded itself as eventually realizing "...a sophisticated real-time autonomous command and control capability for both offensive and defensive employment."^{42/} Headquarters, Seventh Air Force personnel, on the other hand, were looking ahead to a newer and faster aircraft which would contain a wider range of capabilities, such as that envisioned by SEAOR-53 (Tactical Airborne Fusion System). However, this proposed development would not be brought about for at least two years.^{43/} In the meantime, the COLLEGE EYE capabilities remained an important and necessary resource.

RIVET GYM

RIVET GYM was the code name for the most recent, and one of the most important additions to the task force's capabilities. The equipment was requested for the task force as a result of experience with the single prototype aircraft, RIVET TOP, which showed that in combination with the QRC-248, it greatly increased the capability to monitor MIG aircraft. The modification included four USAF Security Service (USAFSS) positions and provided extremely valuable information for offensive anti-MIG employment.^{44/}

The initial test flight of task force aircraft with the RIVET GYM configuration was made over the Gulf of Tonkin on 10 May 1968. On 12 May 1968, a similar test flight was flown over Laos.^{45/} By 30 June 1968,

~~SECRET~~

~~SECRET~~

the task force possessed six RIVET GYM modified aircraft.^{46/} The RIVET GYM modification, together with the QRC-248, provided the most important operational anti-MIG capability in Southeast Asia in mid-1968, a capability shared with RIVET TOP.^{47/}

~~SECRET~~

~~SECRET~~

CHAPTER III
ORGANIZATION AND COMMAND RELATIONSHIPS

The organization of the task force and its command relationships remained essentially the same throughout its history. The task force's parent organization, the 552d Airborne Early Warning and Control Wing (AEW&C Wg) of the Air Defense Command, McClellan AFB, California, had command responsibility for the task force and operational control of its travel to and from the theater.

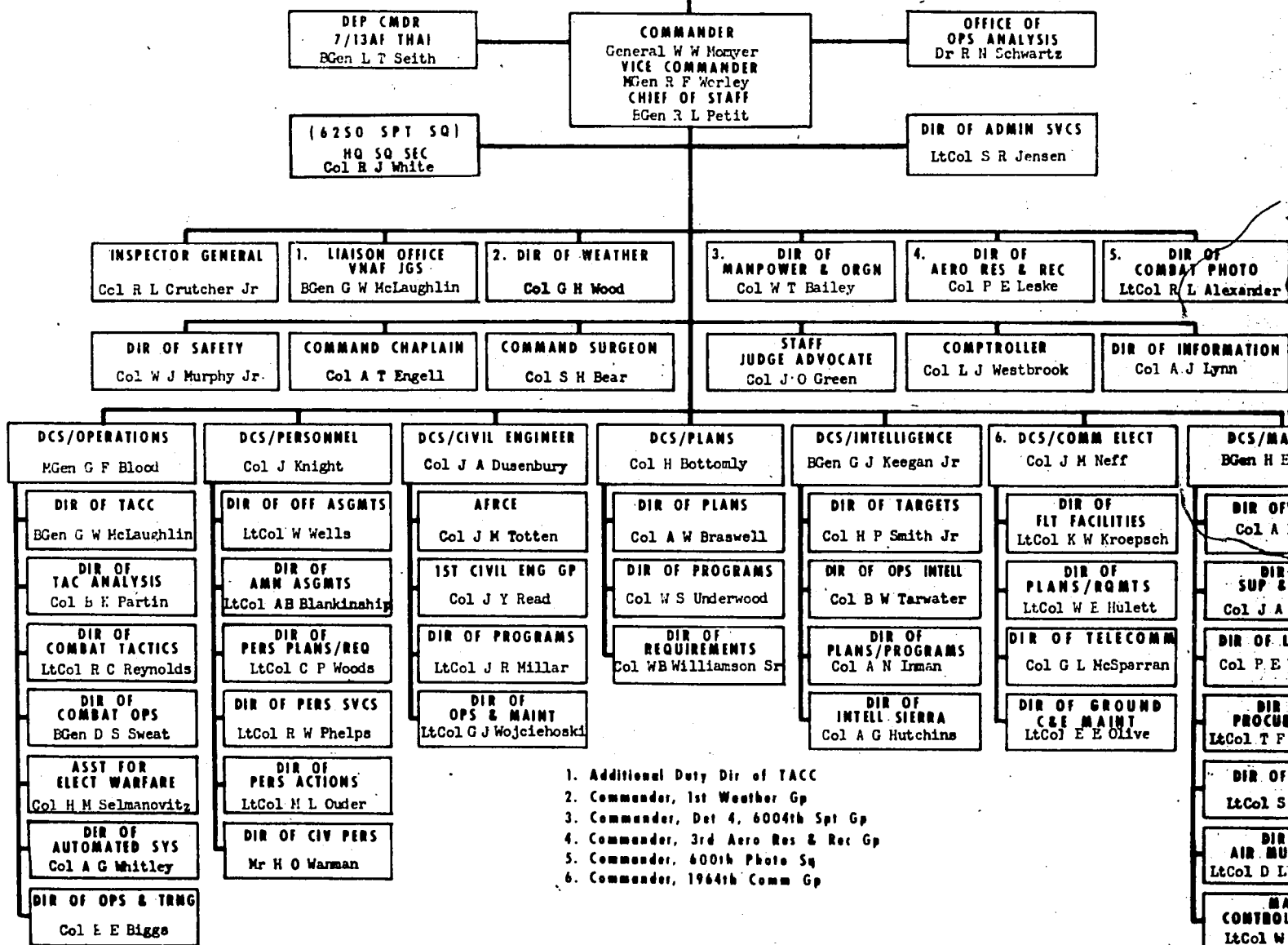
Throughout the existence of the task force, the crews and aircraft were on a TDY status from the 552d AEW&C Wing. Operation and maintenance of the aircraft and its equipment were performed by the task force's own TDY personnel. Responsibilities of the 552d AEW&C Wing, therefore, were extensive. They included: providing TDY personnel; training of crews; maintenance of the aircraft and its equipment; and the ferrying of men, equipment, and aircraft in support of the task force's total mission requirements.

The 2d Air Division, and after its redesignation on 1 April 1966, Seventh Air Force, maintained operational control of the task force within the theater. The office within Hq 7AF, which exercised this control was the Directorate of Combat Operations (DOC), and, more specifically, the Command and Control Division (DOCC).

Various offices within Hq 7AF were involved with monitoring different phases of the task force's activities. These offices included: Group Environment Division within the Directorate of Operations and Training (DOOG),

ORGANIZATION, HQ SEVENTH AIR FORCE

18 June 1968
PACAF



1. Additional Duty Dir of TACC
2. Commander, 1st Weather Gp
3. Commander, Det 4, 6004th Spt Gp
4. Commander, 3rd Aero Res & Rec Gp
5. Commander, 600th Photo Sq
6. Commander, 1964th Comm Gp

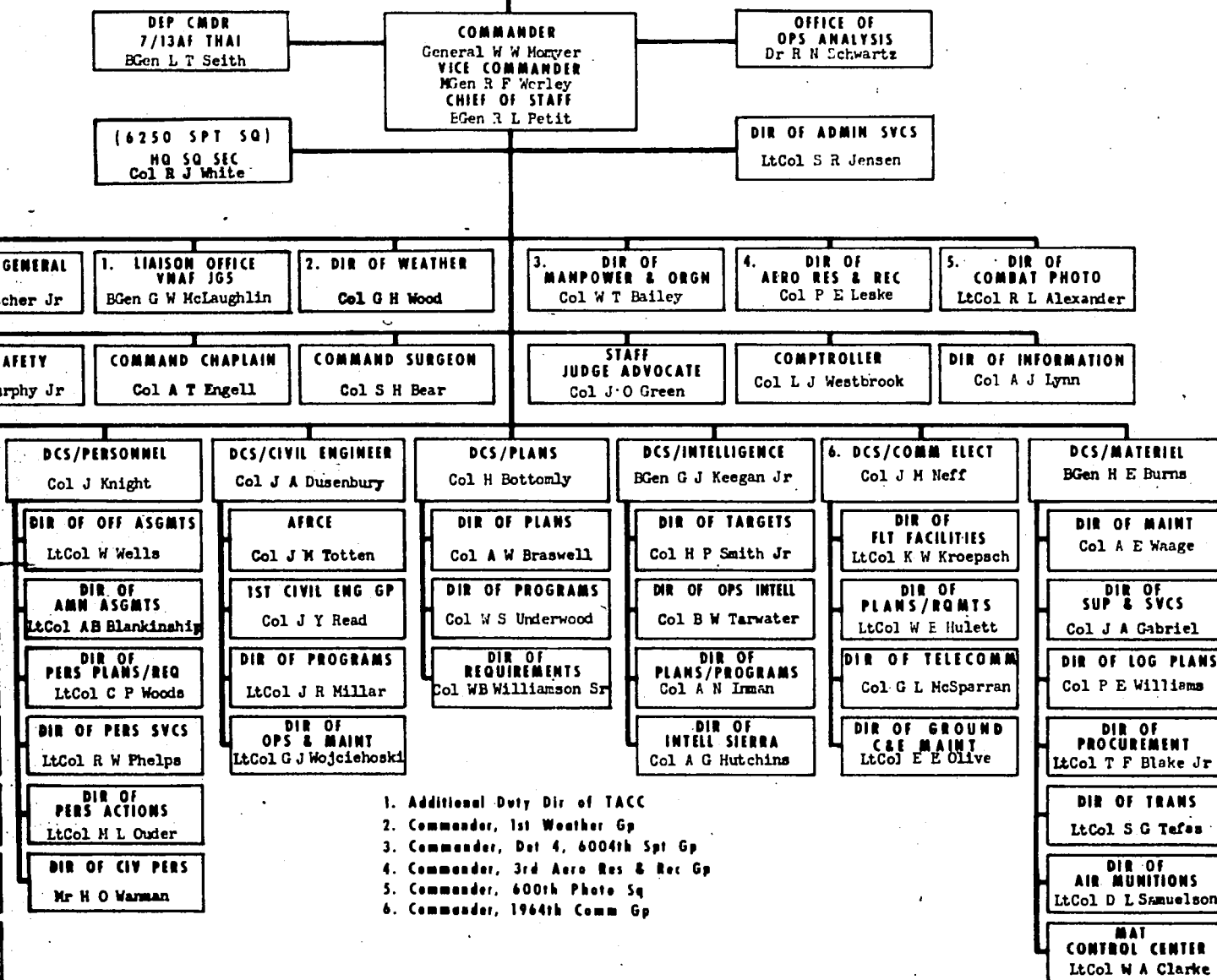
FIGURE 5

SOURCE: 1

UNCLASSIFIED

ORGANIZATION, HQ SEVENTH AIR FORCE

18 June 1968
PACAF



UNCLASSIFIED

FIGURE 5

SOURCE: 7 OMO DP

~~SECRET~~

the office responsible for combat operations planning for the task force, a responsibility held by Directorate of Plans (DPLP) before July 1967;^{1/} Special Assistant/Electronic Warfare (DOE), the office which monitored certain equipment modifications after September 1967, especially the QRC-248 and the RIVET GYM modifications;^{2/} and Directorate of Requirements (DPLR), which served as the monitor of planning for modifications to task force equipment, particularly as developed under the Southeast Asia Operational Requirement (SEAOR) program.^{3/}

There was no question about the task force being under the operational control of the DOC. It was more difficult to determine, however, for the full period of this report, the primary point of coordination and responsibility in Hq 7AF for COLLEGE EYE activities, as they were being monitored by various offices. This was apparently due in part to the functional staff organization of the headquarters. This organizational structure, plus the TDY status of the task force, necessarily made it difficult, if not impossible, to isolate a point of primary coordination. Nevertheless, this was of importance, at least to the task force, because its day-to-day business, as well as long-range planning, was facilitated when contacts and responsibilities were clearly delineated. Colonel Davidson, Task Force Commander, described the situation from the task force's point of view when he said:^{4/}

"Without any criticism whatever of 7th Air Force Staff I would have to say that it has been somewhat hazy. We, as a unique organization in SEA, are somewhat different from other organizations. There is not a great deal of knowledge on the part of individual staff people at any headquarters concerning the employment of EC-121D type aircraft.

~~SECRET~~

~~SECRET~~

Also contributing to this haziness is the fact that never have we been clearly placed in the 7th Air Force Organization. It is generally agreed that we are under the operational control of the Director of Combat Operations at 7th Air Force but, subordinate to the Director of Combat Operations, there is no one within any of the branches or divisions which is clearly, in my judgment, the OPR for COLLEGE EYE. On occasions we thought that this was so, but with the turnover of personnel we found that it was not so. The point of primary coordination at 7th Air Force has varied with time, the situation, and the individuals assigned to 7th Air Force. An example of this with respect to the commander of the task force may be found in the varying practice of writing letters of evaluation on the TDY performance of the task force commander's duties. Letters of evaluation have been written on one commander and at least one staff officer, but this has been done on an individual basis rather than being formalized. We have worked with people in TACC, DOC, DOE, and in many others. As best as I can determine, we work directly for General Sweat (DOC), but below that it has been somewhat hazy. However, they have been very cooperative and we have had a very harmonious, although hazy, relationship."

The task force was only one of many responsibilities of Hq 7AF, and the interests of the task force were necessarily viewed by the headquarters in a larger perspective. It was also true that a point of primary coordination and responsibility was being developed in the spring of 1968, with the transfer of some aspects of functional responsibility from DOOG to DOCC. This was an expansion of what had been largely an operational control responsibility on the part of DOCC.^{5/} As previously noted, the TDY status of the task force since April 1965 also contributed to the uniqueness of the organization's situation. With its chain of command going back to the 552d AEW&C Wing, Fourth Air Force, and ADC (Fig. 6), difficulties in coordination were perhaps necessarily magnified, or at least were different from those of

~~SECRET~~

COLLEGE EYE TASK FORCE
ORGANIZATIONAL CHART

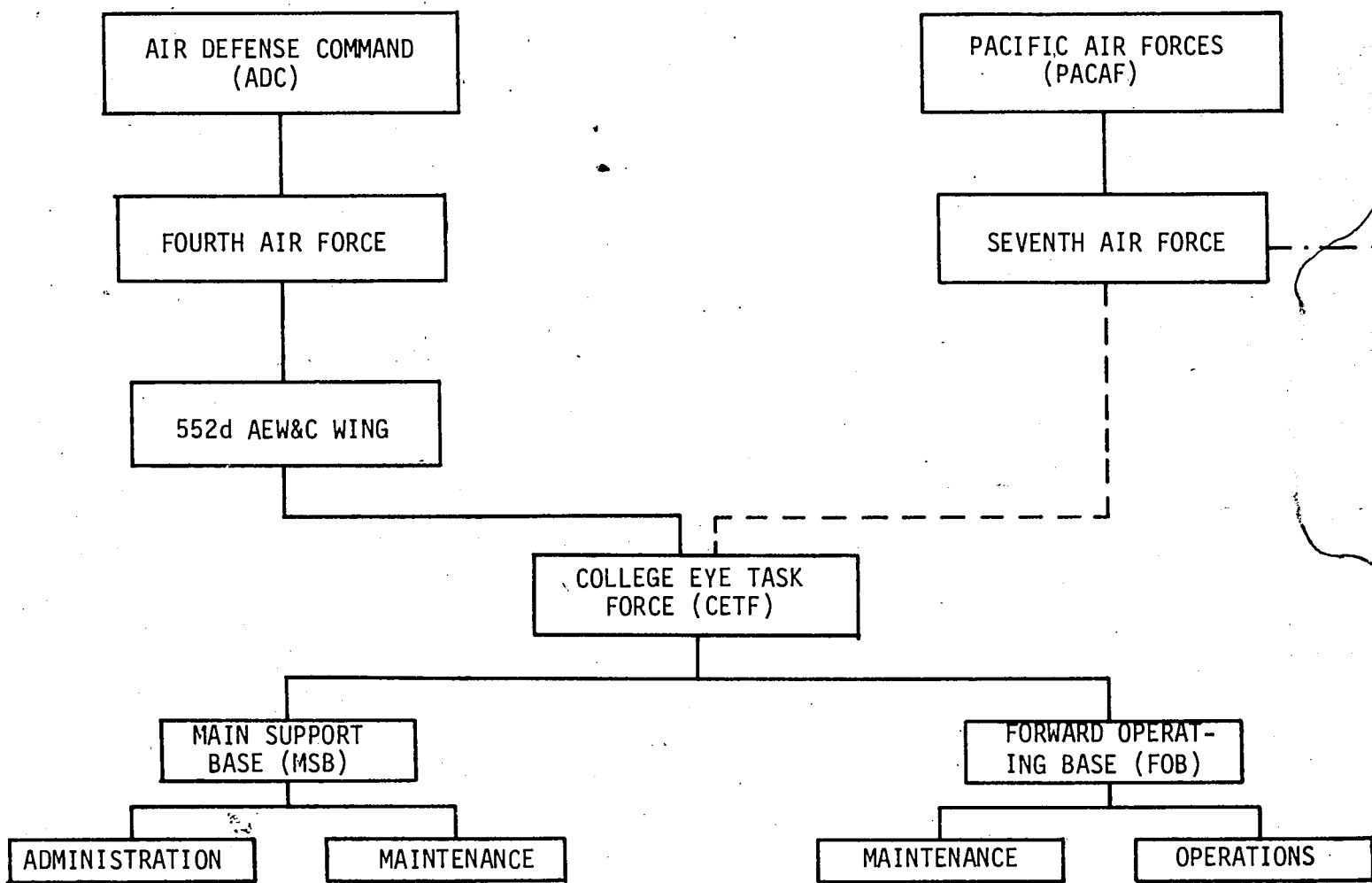


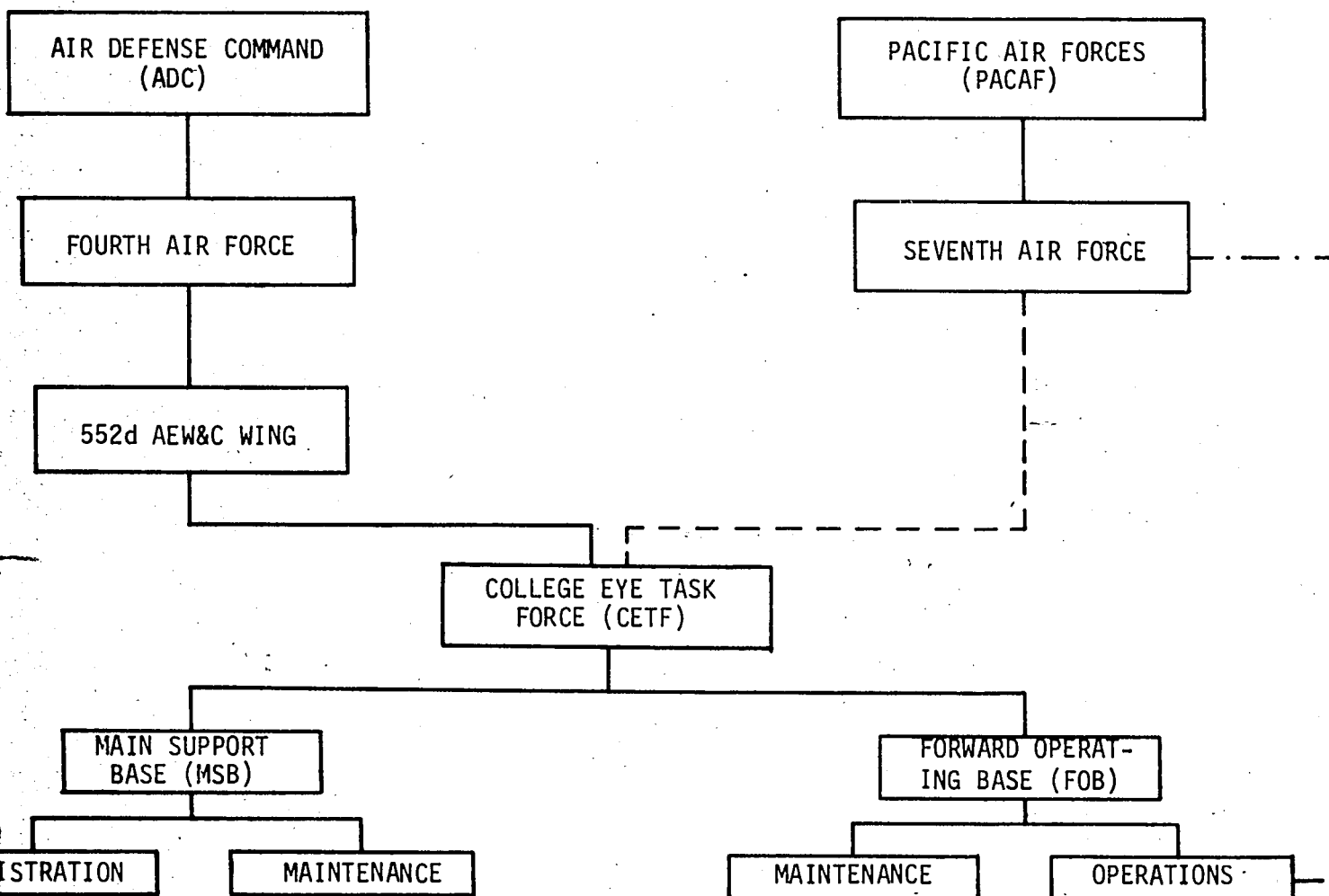
FIGURE 6

NOTE:

The Task Force Commander was also Commander of the Forward Operating Base, with Task Force Headquarters located at the FOB.

- Command
- - - Operational Control
- . - Liaison

COLLEGE EYE TASK FORCE
ORGANIZATIONAL CHART



NOTE:

The Task Force Commander was also Commander of the Forward Operating Base, with Task Force Headquarters located at the FOB.

- Command
- - - - - Operational Control
- · - · - Liaison

~~SECRET~~

the PCS organizations in SEA.

The proposal by Thirteenth Air Force on 16 January 1968 to consolidate the main support base and the forward operating base was based, in part, on the belief that if the task force became a PCS organization, "...this would provide better organizational command and control channels".^{6/} Although this was a possibility, there were nevertheless distinct advantages to be derived from the task force's TDY status. The advantages were built around the effort "...to provide a maximum service with a very minimum of resources in the theater".^{7/}

Men, equipment, and resources in the theater were kept to a minimum through various devices, most of them centering on the use of resources of the 552d AEW&C Wing at McClellan AFB, California. These included: (1) meeting all training requirements, including flight and basic military training in the United States; (2) using the Wing's resources in airframes, maintenance, and aircrews, as built up by the Wing in flying the EC-121 more than a million hours during a period of 15 years; (3) having all leaves taken in the United States; and (4) repeated tours in Southeast Asia.^{8/} Apart from providing continuity in the number of personnel having working contact with the task force, these measures also provided a means of maintaining flexibility, in that there would theoretically be a minimum of difficulty in redeployment to future areas of crisis in the world.

COMBAT LIGHTNING

In the summer of 1966, the Air Force Chief of Staff directed that dynamic

~~SECRET~~

~~SECRET~~

and aggressive action be taken to provide the required monitoring and control of USAF forces operating over North Vietnam. From the point of initial planning in compliance with this directive, task force capabilities were an important consideration. In fact, the SEAOR-62 improvements discussed in Chapter II were justified, in part, by Seventh Air Force in terms of their contribution to the plan for providing increased monitoring and control.^{9/}

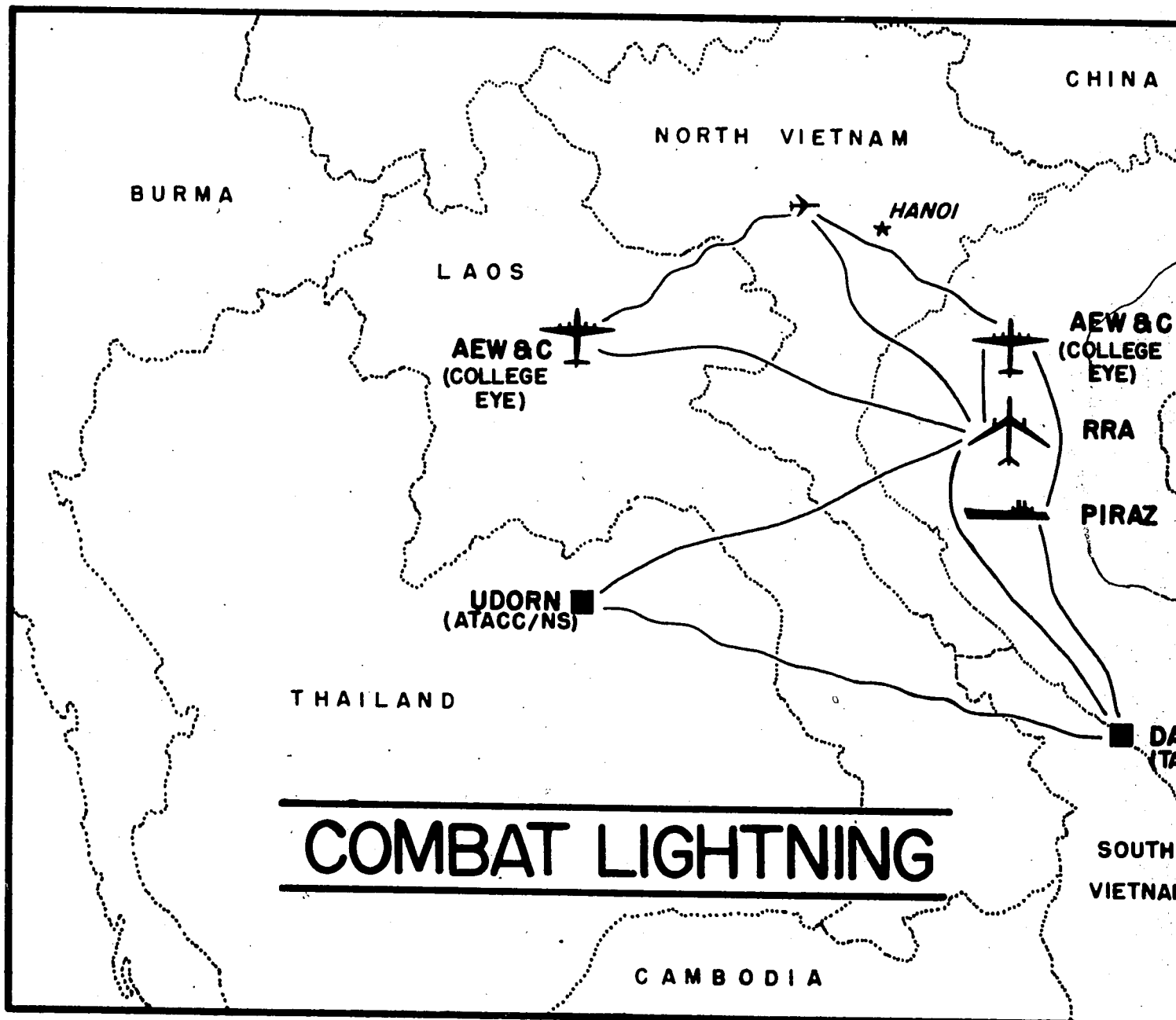
The plan, Project COMBAT LIGHTNING (Appendix III and Fig. 7), was originally developed to establish a command and control facility, which was identified as the Tactical Air Control Center, North Sector (TACC/NS). Located at Monkey Mountain, near Da Nang AB, as stated previously, the call sign of the TACC/NS was MOTEL. With implementation of this plan on 1 November 1966, the task force's responsibility was to provide data to the TACC/NS communications and display system.^{10/}

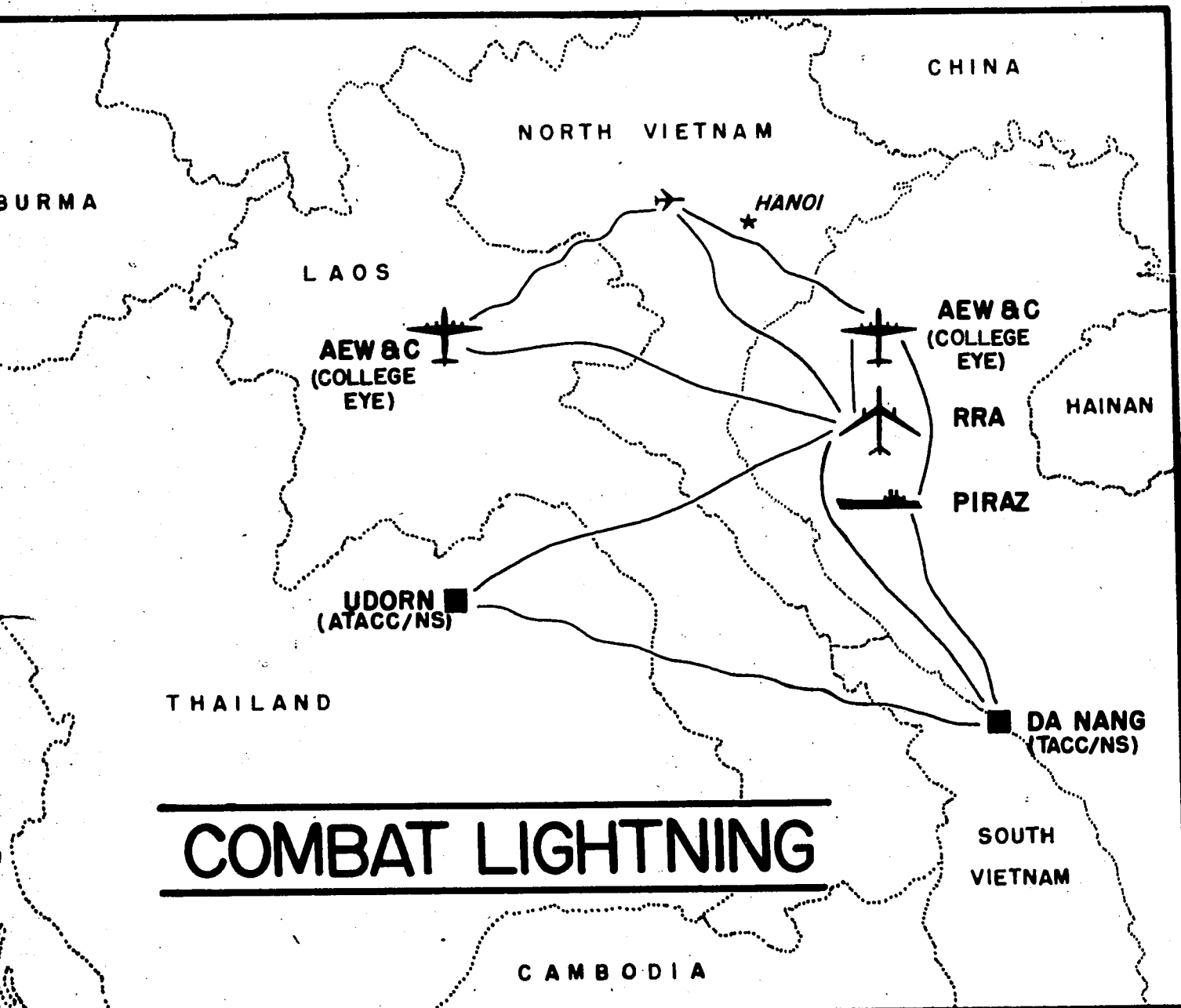
In a briefing given on 13 December 1966, Brig. Gen. Joseph J. Kruzel, Hq PACAF, DCS/Operations, described COMBAT LIGHTNING as a plan "...for the tactical control and airspace management system designed to correlate, direct, and monitor tactical air operations involving North Vietnam."^{11/} This encompassed the issuing of border warnings, SAM and MIG warnings, advising aircraft of current enemy defenses and coordinating overall air operations in North Vietnam. The proposed system included automated data processing and display equipments obtained from the ADC BUICK program, located at Monkey Mountain and Udorn RTAFB. At that time, it was envisioned that the task force aircraft would provide radar inputs to the sites at Udorn and Monkey Mountain from three stations: One over Laos, a high station, and a low one over the

~~SECRET~~

~~SECRET~~

FIGURE 7





COMBAT LIGHTNING

SECRET

~~SECRET~~
NOFORN

COLLEGE EYE IN COMBAT LIGHTNING SYSTEM (1966 VIEW)

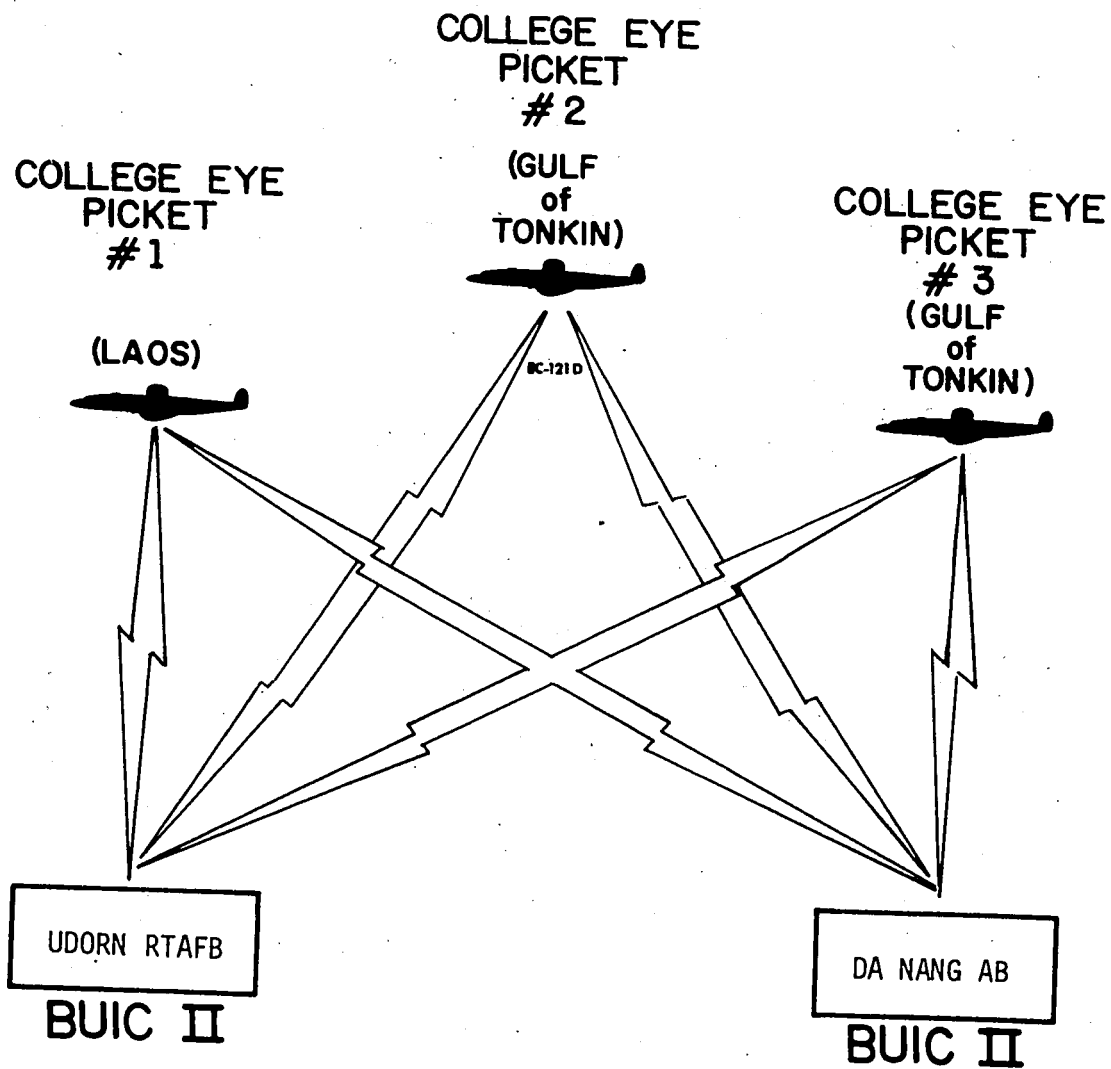


FIGURE 8

~~SECRET~~
NOFORN

~~SECRET~~

COMBAT LIGHTNING SYSTEM

(JUNE 1968)

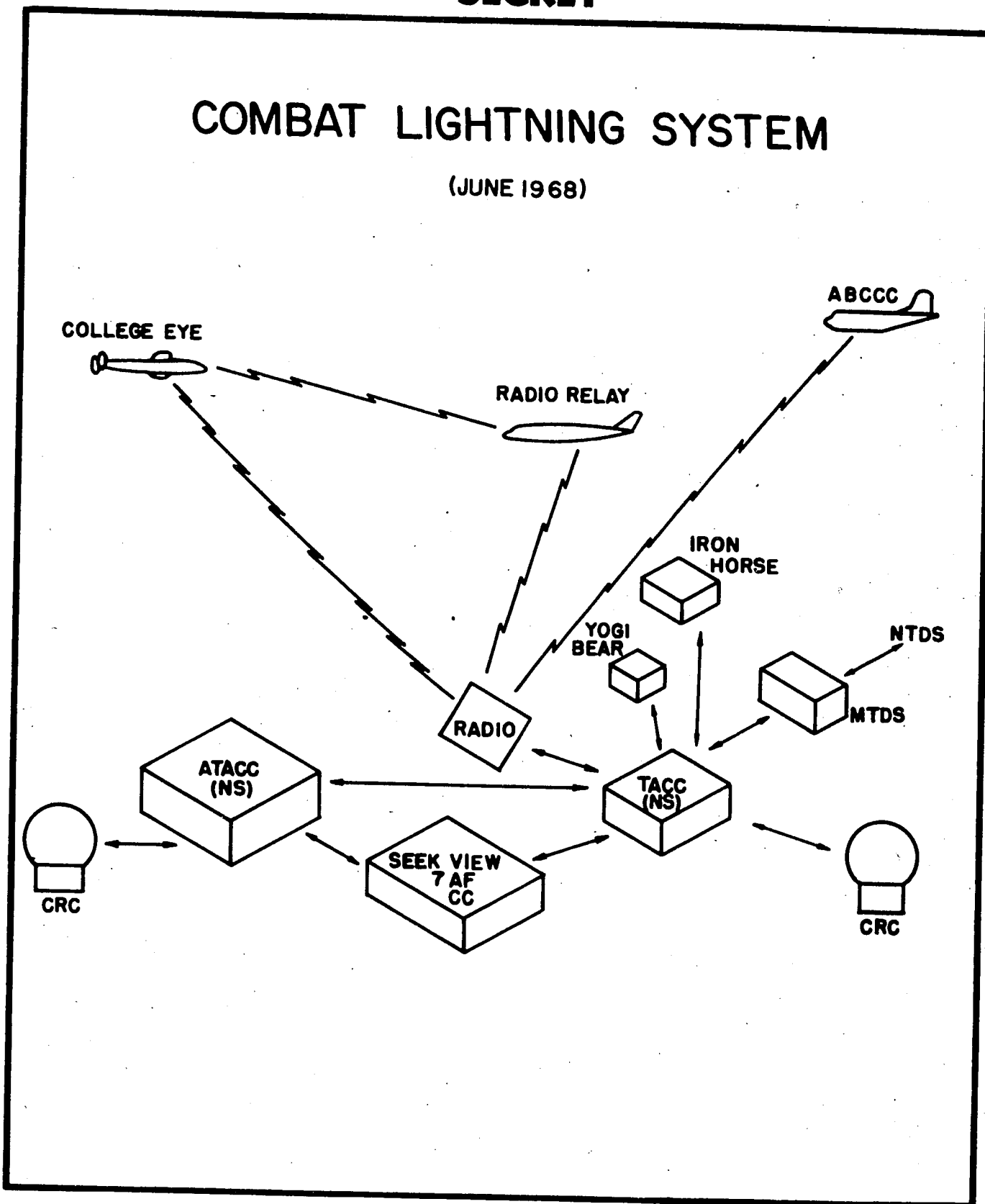


FIGURE 9

~~SECRET~~

~~TOP SECRET NOFORN~~

Gulf of Tonkin. (Fig. 8.) Radio Relay aircraft were to be used as a relay platform to allow ground facilities to communicate directly with tactical aircraft over North Vietnam. There were also to be inputs from other sources, such as from the Navy Positive Identification Radar Advisory Zone (PIRAZ), ship in the Gulf of Tonkin.^{12/}

As the task force developed greater equipment capabilities, particularly with the installation of the QRC-248 and the AN/GPA-122 (described in Chapter II), there were increasing problems in the interfacing of the new equipment with the various subsystems. Nevertheless, in a letter written to the Secretary of the Air Force on 1 May 1968, the Seventh Air Force Commander, Gen. William W. Momyer, expressed his optimism concerning the completion of the overall system:^{13/}

"...Project COMBAT LIGHTNING is designed to interface a number of automated subsystems to give me a near real-time command and control capability...The complete system is programmed to be fully operational in approximately one year."

There were important changes and additions (Appendix III) in the proposed overall system after 1 November 1966. Apart from the inputs and relationships excluded from Figure 7, such as IRON HORSE, YOGI BEAR, and the automated transmission of data to Tan Son Nhut AB (Fig. 9), the position of COLLEGE EYE in the proposed automated system as a source of input data for the TACC/NS stations remained as illustrated throughout the period of the report.

~~TOP SECRET NOFORN~~