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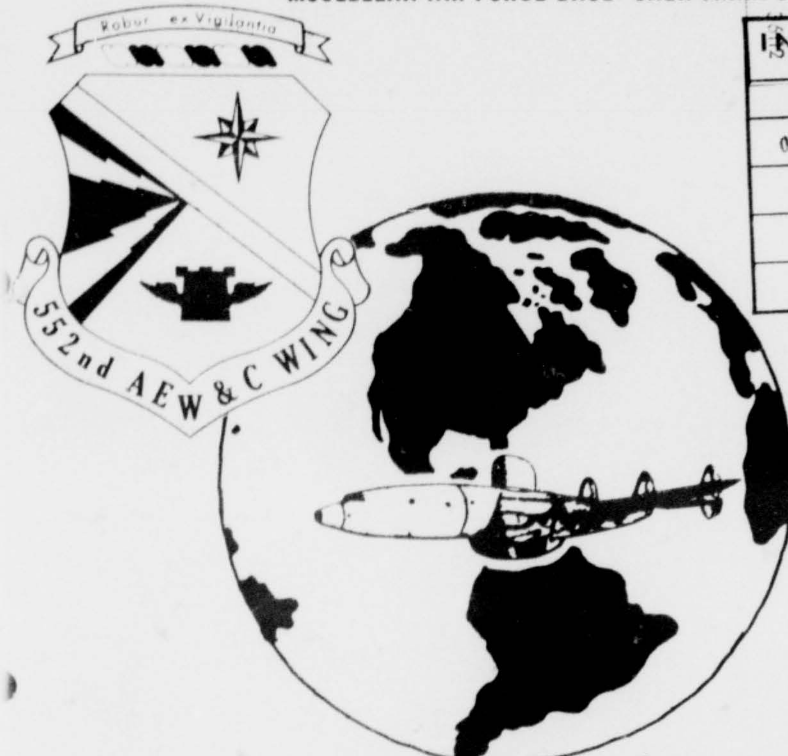

APRIL 1969

A HISTORY OF THE BIG EYE/COLLEGE EYE TASK FORCE

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A HISTORY OF THE BIG EYE/COLLEGE EYE TASK FORCE

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FOREWORD

This report was prepared in response to tasking by the Aerospace Defense Command, to tell the College Eye story from its dynamic, human aspect, to "formulate testimonials to the people and machines that were the College Eye Task Force" in such a way as to complement the CHECO report which had previously been prepared. In various meetings on the subject, it was conveyed that the objective of the report would be to "tell it like it was." In one such meeting, Lt Gen Agan was quoted as having a desire for the report to "read like a novel -- interesting enough that one would want to continue reading it to the conclusion."

To this end, the report is organized as a chronological narrative, with minimum projection or flash back to disturb the continuity of events, as one relives the daily development of the Task Force and shares the entire range of emotions experienced by the people involved in the evolution of the Task Force. In this respect, the report is unique as a history, since it is not only a documentary of events and hard facts, but also an attempt to capture the historic value of the spirit, mood, morale, or beliefs related to each incident. It most certainly can contain errors in fact, where the errors are beliefs that were widely held within the unit, since it is a history of the Task Force as seen by the Task Force. A history as seen by the other headquarters, the typical fighter pilot, or another command control agency would be quite different, and in some cases, diametrically opposed. It is regrettable that such studies cannot be written, since only in the integration of all would the true value of the Task Force emerge.

Although the basic chronology was heavily drawn from existing documentation, the report could not be merely a compilation and editing of these sources, since diplomacy, tact, omission or other "hedging," especially when discussing shortcomings, seldom allows original representative documentation. To overcome this deficiency, it became necessary to draw from personal experience, hopefully in the form of written, previously unrecorded, first-hand experience, which would augment the available data and support the conclusions drawn. It was quickly discovered that while many personnel would be completely candid "off the record," or would vouch for the accuracy of an account, they were unwilling to allow themselves to be identified as the source of specific information. Therefore, much research and verification has been concurrent with the writing process, and the report in large measure draws on unrecorded first hand interviews with personnel directly associated with each incident. Using this methodology, the report itself has become, in many cases, the only written expression of an event. If the report is to be valuable as a history, this possible cause for challenge must be removed, and it can be done only by a careful review by all available individuals knowledgeable of actual events who will make affidavit to this effect, allowing the anonymity of "off the record" contributions.

To this end, the author has attempted to coordinate each item with more than one of the principles involved, and the final draft of each phase has been subjected to detailed review by a panel of experts to validate the author's product, both factually and subjectively, and to insure that conclusions drawn are projected in the proper tone. The

integrity of the report thus becomes the integrity of the body involved with this review process. The signature elements below are those of personnel who served in this capacity, and represent an expression of faith that this document has accurately captured the spirit of the Task Force "the way it was." Each of these individuals is identified either in Atch 1 or within the narrative, showing his relation to the Task Force.

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INTRODUCTION

The Contemporary Historical Evaluation of Combat Operations (CHECO) Report on the Big Eye/College Eye Task Force is considered an excellent documentary, and is generally complimentary to the Task Force. However, as an objective report concerned with the organization's impact on the total command control responsibility of all interfacing units in the theater of operation, it necessarily does not expand on the circumstances internal to the Task Force that produced the particular favorable condition. To have a completely valid history, capable of being used as a guidebook for similar future operations, it is considered vital to capture these important elements while the personnel who were the embodiment of the Task Force are available to reflect on its many unique facets. Toward this end, the following report is intended to complement the CHECO Report by telling the personal achievements which elevated the Task Force to its current level of recognition as a vital command control element.

Most of us have observed a child as he first learns to crawl, transitions through stages of creeping, toddling, walking, running and skipping, while maintaining the achievements on a continuum by increasing proficiency and adding stamina to his performance at each plateau.

This experience is analogous to the Task Force's development from an unwanted, condescendingly tolerated, rag-tag orphan outcast of the Second Air Division to a highly respected, vital autonomous element of the command control responsibility in Southeast Asia, widely known at the highest defense levels and offering services actively competed for by various theater commanders.

This development too was on a continuum, reaching from the Task Force's inception in early 1965 to the present with the peak considered to be well in the future, perhaps resting with the AWACS follow-on to AEW&C.

Unit achievement is irrevocably limited to the aggregate of individual accomplishment, and the astounding progress to date is a direct result of the personal achievement of those charged with the responsibility for the Task Force, often characterized by intense belief in the mission capability and personal sacrifice in subordinating all else to its advancement.

The individual items which form this body of achievement can be roughly categorized in the following pattern:

1. Tactical, On-station achievement.
2. Achievement in direct support activity.
3. Responsiveness to assigned mission responsibility.
4. Contributions to Command Control procedural discipline.
5. Proven mobility/versatility.
6. Validity of the Task Force organizational/employment concept.
7. Advancement of state-of-the-art technology.
8. Conceptual advancement for a global autonomous airborne command control force.

The organization above is arbitrary and not intended in any manner to ascribe relative values.

While achievement provided the impetus for advancement internal to the Task Force, it often took external recognition and official tasking or permissiveness to allow expanded capability to become an integral part

of the unit mission responsibility. Unfortunately, it often seemed a serious incident, excessive or unusual combat loss was required to precipitate intensive tactical evaluation of the status quo in that area. Once attention was directed to these areas, the field inputs or outcome of tactics meetings held, usually resulted in significant improvement to tactical doctrine. Therefore, these turning points or milestones in the Task Force development will be identified when possible.

It is difficult to tell a story solely by weaving the threat of achievement, since there are weaknesses inherent to our methodology of documentation. Our system of recognition gives immediate credit to some acts which are universally accepted as meritorious. However, our process of identification is geared to recognize accomplishment well above the norm or beyond the scope of normally associated operational responsibility. Since the Task Force operated in SEA, where mean achievement is characteristically high, much was lost which at the time went unnoticed in the daily routine, or for other reasons.

The actual attempt at a study of this nature serves as a great lesson to those who have endeavored to compile RCS-type Unit Historical Reports as the lack of comprehensive reporting is unveiled. We are further hampered by the fact of normal administrative actions which result in destruction of records that could be of value in reconstruction.

When, in retrospect, areas of significant developmental value are identified, one avenue remains. Since we are dealing with contemporary history, we can turn to responsible individuals still in the organization for their reflections of the period. While it may be argued that this approach makes the compilation highly subjective, we must consider that

the line of distinction is often fine. A subjective judgment expressed formally today in a manner that becomes a matter of record, will be footnoted in tomorrows work, lending credence to the author's objectivity. We are further protected by the personal integrity of the professional career Air Defense experts tasked to provide this after-the-fact analysis.

We can accept as an incontrovertible fact that Big Eye/College Eye Task Force recognition increased on a value scale, measured against almost any indicator selected. If we then accept as our hypothesis that such favorable image improvement must necessarily be the spontaneous product of a recognized qualitative advancement to command control responsibility resulting from Task Force involvement, we have established the framework for study in relation to other prefacing remarks.

As stated, this report is intended to complement the CHECO report by providing a very readable insight to the various unique aspects of the Task Force and the relation of unit accomplishment to the men and machines that formed and sustained its operation. To this end, footnoting throughout the text has been purposely avoided, with a listing of source information provided as an attachment.

PART ONE - A HISTORY OF THE BIG EYE/COLLEGE EYE TASK FORCE

INCEPTION - THROUGH DECEMBER 1965 - BIG EYE ESTABLISHED

1. (U) The exact conception of the Southeast Asian contingency operation supported by the 552d Airborne Early Warning and Control Wing, and its point of origin are lost to the Wing. The initial alerting however, was an on-again-off-again situation, starting in February 1965. A Headquarters USAF message directed the Wing to prepare a plan for possible SEA deployment, identified at that time only as "Project 4.25." This notice was subsequently cancelled, with little work having been accomplished. On 18 March 1965, the requirement was re-established by USAF, tasking the Wing to prepare for possible JCS-directed deployment of a Task Force.

2. (U) The project was subsequently designated "Big Eye" -- a most imaginative title, and a point of pride to those who ultimately monitored the "big eye" of the radar equipped EC-121D, or were otherwise associated with its mission. Later, in accordance with change G to AFR 205-1, which assigned standardized first words by command for use as nicknames, it was changed to College Eye after an unsuccessful token resistance in the form of waiver request. The term Big Eye has lived on through the adoption of an informal motto for the unit -- "College Eye, the Big Eyes of SEA." In recent history, for the purpose of gaining numbered unit status, primarily to meet a prerequisite to establishing a supply system priority (1-7) and to allow PCS of the Commander for equitable crediting of SEA time, ADC established Det 1 (Rotational), Hq 552 AEW&C Wing at Korat RTAFB, Thailand. Thus, 30 October 1968 ended an era of the Task Force as a "non-unit." This designator did not replace College Eye as the official designation of the project, but merely allowed TDY personnel to be

attached to a unit-controlled activity while deployed, thus clarifying chain of command. As we will see, this elusive Task Force status worked both to the advantage and disadvantage of the operation, depending on the circumstances. Therefore, thoughout this document, the terms Project 4.25, Big Eye, College Eye, Task Force and Det 1 552 AEW&C Wing can be thought of interchangeably.

3. (U) The background of tactical call sign also has historical significance, since to many outsiders, ETHAN is more significant than the unit identifier. ETHAN was the 552nd call sign for several years, and was carried to SEA by the initial deployment. An air traffic control problem, identified by the 966th AEW&C Sq at McCoy AFB, precipitated action to change the unit call sign. Co-located with Orlando Municipal Airport servicing Eastern Air Lines, McCoy was experiencing a real danger of mistaken instructions intended for EASTERN or ETHAN. YEN became the new call sign, but Seventh Air Force secured authority to retain the ETHAN call sign in SEA, to avoid confusion associated with call sign change of a primary control agency. Thus, the favored ETHAN call sign has been perpetuated in the tactical environment, and as we will see, is recognized almost universally by fighter/recce pilots, who display widely varying reaction to it depending upon their experience.

4. (U) It was under a cloud of secrecy that all initial preparation was made. Five EC-121D aircraft were identified for the deployment. They were given a double phase inspection, allowing 300 hours utilization before the next numbered phase, so maintenance owuld have time to establish themselves in theater before assuming workload of the inspection cycle. All outstanding TCTO's were completed on these tail numbers, all electronic equipment was tuned to peak performance, in-flight spare bins were

restocked to a 100% fill, and the aircraft were withdrawn from normal AAD scheduling.

5. (C) The supply function was tasked to assemble a mobility kit, consisting of an "A" and a "B" kit for transport by UE aircraft, and a "C" kit to be delivered by MATS (now MAC). The C kit, previously assembled for Blue Straw (now Seek Straw) was diverted to project 4.25. The Wing's immediate headquarters, 28th Air Division (now 4AF) gave blanket authority to use War Readiness Materials (WRM) to insure 100% fill of all kits. The level of parts in these kits are anticipated requirements to support five 121's for 500 flying hours or 30 days. A 1-7 priority was authorized for deployment requisitioning and AFLC authorized STAR (Speed Thru Air Resupply) procedures to support the project - an authorization which still stands. The task was eased considerably by the fact of joint tenancy on McClellan by both the user and the prime depot for the Weapon System. MATS airlift for the kit, AGE and other cargo was put on standby, with a requirement estimated at 115,900 lbs and 12,500 cubic feet. Operationally ready aircraft do not just happen, so along with the selection of known reliable airframes, 50 equally reliable maintenance technicians, supervisors and superintendents were identified for deployment to sustain the unknown flying hour program.

6. (U) Operations immediately entered 228 personnel into training upon receipt of the alert. Training included let down procedures, T-4 simulation, M-16 weapon familiarization, survival, use of the back pack parachute and one-man raft seatpack. A basic mobility plan was formulated from the vague information available. All personnel identified were put on a 72-hour alert status for deployment.

7. (C) These actions naturally had impact on the primary West Coast mission responsibility of the Wing. Withdrawal of airframes affected availability rates in tail number scheduling, and the extensive drain on supplies and component spares to fill kits significantly hampered the turnaround maintenance capability for those aircraft flying the NORAD mission. As a result of the preparations, Wing capability to greatly exceed its random station manning commitment was significantly reduced.

8. (U) The secrecy, and lack of precise guidelines and time frames, created an air of apprehension among the working level troops, but perhaps this was of positive value during this period, which is documented in histories as an outstanding performance, with the fullest cooperation and support of agencies and individuals, allowing successful completion of all committments.

9. (S) The Deputy Commander for Operations, Colonel Weiser, who was to become Task Force Commander for the initial deployment, and two staff officers, Captain Banning and Major Rice, spent three days at PACAF in February resulting from the false start notification, developing concepts and gaining insight to the mission responsibility PACAF desired the Task Force to assume. Though no deployment had been ordered, PACAF talked of it as a foregone conclusion and envisioned tactical employment in the Gulf of Tonkin to extend the radar coverage northward, augmenting that provided by PANAMA, the GCI site on Monkey Mountain, adjacent to Da Nang. Particular emphasis was given to coverage of the Red River Delta, that familiar pie shaped sector of land with vertex to the Northwest of Hanoi, broadening out to the irregular coast line stretching from 106 East to Haiphong harbor (see Fig 1). There was no determination made as to where the station

FIGURE 1

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should be located, but it was evident that a low altitude technique would have to be employed for the mission profile. This procedure had been developed and refined in the Gold Digger (now Allay Digger) operation initiated during the Cuban crisis. Essentially, it is a technique to overcome inherent design limitation of the APS-95 Search Radar, thereby allowing a measure of usefulness in over-land surveillance. This radar's design, developed against operational requirements for an overwater surveillance role, was optimized to that environment, and therefore lacks even the full amount of ground clutter rejections that could have been realized with the state-of-the-art at that time, had a full overland or dual requirement existed. Flying at altitudes as low as 50 feet above the water put the horizon between the platform and the land mass, thus avoiding the massive clutter from ground returns which the system was incapable of rejecting. With ground returns removed by line-of-sight consideration, a partial surveillance of the over-land airspace is realized. Naturally, more and more low altitude coverage is lost the farther from the coast you are concerned with when employing this technique. A diagram of this is provided in Figure 2. The theory is also advanced that the high altitude coverage is increased and signal strength of returned radar energy is multiplied by an undetermined factor due to an additive effect of energy reflected from the waters surface -- a crude sort of diversity, also diagrammed. Optimum altitude varied with the sea state - the calmer the lower.

10. (U) On a Friday, 2 April 1965, the 552 Wing received a JCS-directed movement order for 4 April 1965 -- 17 days from initial alerting. The deployment was classified, as was the entire project for over a year. Dependents of those deploying knew only that their loved ones were going overseas on orders cut for 90 days TDY. Personnel remaining at the Wing

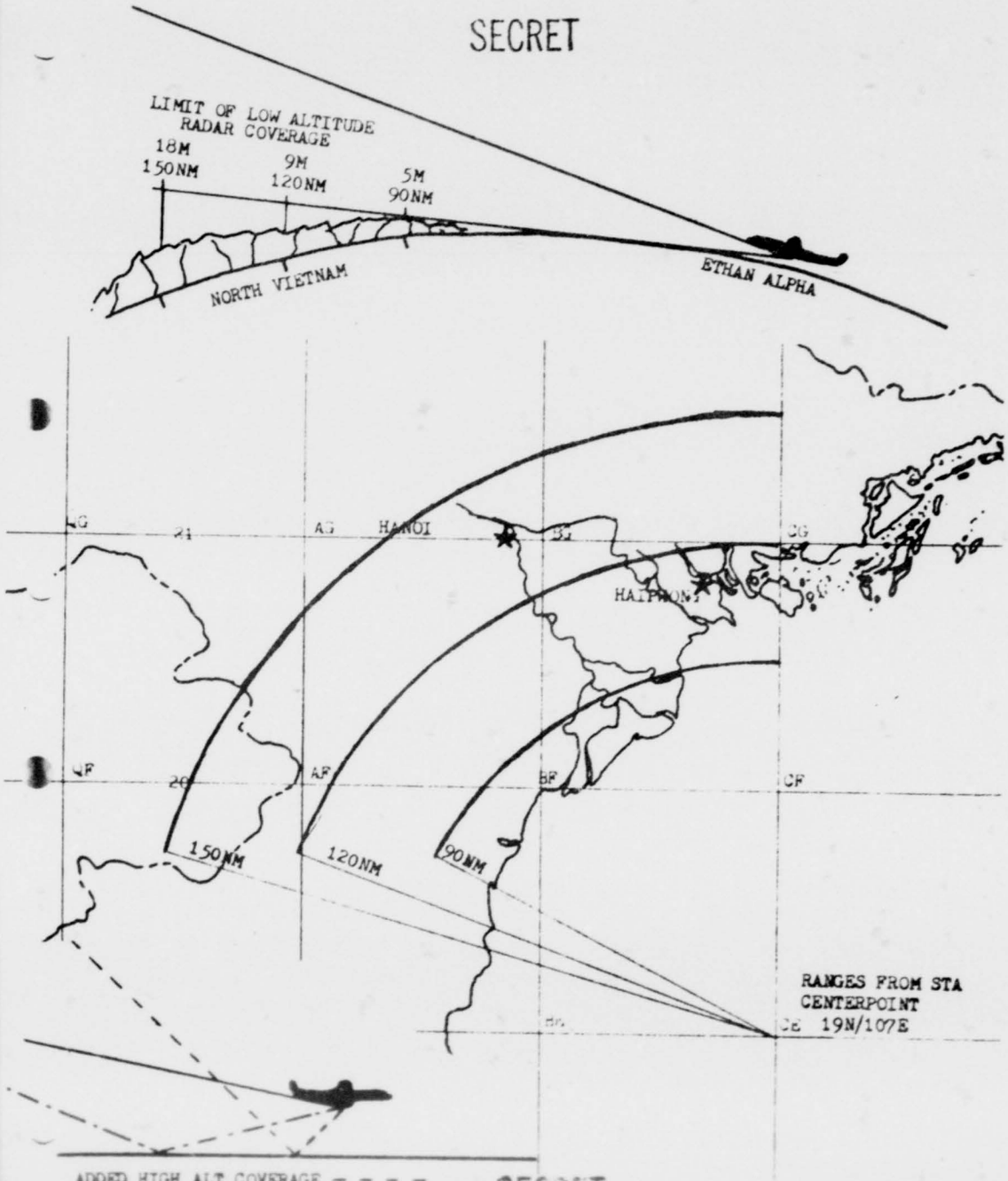

FIGURE 2.

had the information only on a strict need-to-know basis.

11. (U) An incident early Sunday morning was the only defect in an otherwise flawless operation. Humorous in retrospect, it may have unnerved some who were already keyed up over the impending deployment to the unknown. A sprinkler system in the main hangar had released and soaked all personal equipment, which consisted of full field kits. All personnel were called out and assisted in moving the equipment and then were released to telephone alert in quarters. At this late date it was rumored that the deployment was again cancelled. About two hours later, personnel were recalled and though many thought it was for the same reason, they came bag-and-baggage for what was to be the actual deployment. The five aircraft take offs were staggered by approximately one hour throughout the afternoon, and passed across the demarcation line which divides NORAD and CINCPAC areas of responsibility.

12. (C) The five UE aircraft departed with flight crews, crew chiefs, and maintenance specialists. Enroute kits were on each aircraft to see them successfully through to Tainan AB, Taiwan. Ground power, towing equipment and the mobility kits followed on C-124 and C-130 aircraft. "Back-end" crews, maintenance and other support personnel were to be the first to see Tainan, going by C-135. The crew complement for the deployment was as follows:

1*	Aircraft Commander	2	Radar In-flight Technicians
1*	First Pilot	2*	Weapons Controlelrs
2*	Navigators	2	Intercept Control Technicians
2	Flight Engineers	6	Radar Operators (273X0)
1	Radio Operator		
7	FLIGHT CREW	12	RADAR CREW

TOTAL = 19 6 Officers (*) and 13 Enlisted

This was the standard West Coast AAD crew with one additional man in each of the Weapons Controller and Intercept Control Technician specialties.

Thus the flight crews accounted for 95 personnel on the movement. A staff of three officers and two enlisted brought operations to an even hundred, with the balance equitably distributed among the various maintenance specialties.

13. (U) The Commander and his staff officers stayed behind in Honolulu for an additional two day meeting with PACAF representatives to firm up the role in Southeast Asia, while the balance of the resources went on Westward. Still unsure of a beddown point, this party worked its way through the PACAF chain of command for operational control. This was prior to the reactivation of Seventh Air Force, thus the chain was PACAF/Thirteenth Air Force/Second Air Division/Big Eye.

14. (U) Throughout the life of the Task Force, PACAF remained a staunch supporter, recognizing both its capabilities and limitations, and has continually emphasized the urgency of existing requirements, programmed for additional resources to meet newly identified requirements, and given strong backing to necessary programs designed to enhance the Weapon System's ability to meet the tactical situation. Unfortunately, this same feeling did not permeate the entire PACAF family of units. Thus, direction/support by organizations who had roles of intermediate headquarters, hosts, or users of our tactical services has ranged the entire spectrum, dependent primarily on individual personalities filling positions with delegated or assumed responsibility for the Task Force liaison in a poorly defined structure.

15. (U) Various exchanges by message between 13AF-2AD and PACAF-552 had set the tone, indicating the former elements were very much against the deployment. It is believed it was this resistance that caused the original

cancellation of the contingency planning alert, and that ultimately, a USAF or higher authority directed action over protest which reinstated the requirement. The first face-to-face confrontation with the resistance came at 13AF, when the Commanders party was presented with all the reasons why the Task Force couldn't do its job. These were subsequently dismissed point-by-point, but no change of heart was indicated by the headquarters reluctant approvals.

16. (S) The primary reason presented was survivability -- with 13AF contention that the EC-121D would immediately be shot down if it ventured North of 17° N. A test was proposed in which Big Eye aircraft would operate off the Phillipine coast in a simulation of the North Vietnamese ground environment and hostile fighter commitment against our platform.

17. (S) Characteristic of most key staff to follow them, this group was more aggressive than diplomatic and took violent exception to this proposal, countering that:

a. Since the missions profile was designed to eliminate line-of-sight with the ground, it necessarily followed that the NVN ground environment would lack line-of-sight with the Airborne Radar Platform (ARP).

b. Fighter cover or CAP under Big Eye control and employment authority must be an integral part of the employment, and would provide adequate self-protection should enemy fighters be committed.

c. This proposed test would cut into deployment time, in opposition to PACAF's emphasis for station manning NOW.

With Task Force elements continuing on toward an unknown destination, decision on this matter was deferred while a bed down point was established.

18. (U) Big Eye requested Da Nang AB, RVN since it provided a suitable runway closest to the proposed station, thereby giving the most favorable ratio of productive to total flying time. It was not even actively considered since it was already too overcrowded. Other considerations were Clark, Bangkok and even Okinawa. These were unacceptable for various reasons, primarily excessive enroute to station times. Finally, and most reluctantly, the go-ahead was given for two aircraft at Tan Son Nhut, with the stipulation that a second base would have to be utilized for heavy maintenance. Tainan was chosen for this due to availability of sufficient ramp space and proximity of the Air Asia facility. Opposition to fragmenting the already limited resources was fruitless, since there was no alternative offered. Thus was born the split-base concept of operation for the Task Force that has remained in principle despite studies and counter-proposals, increased unit strength, added mission responsibility and three subsequent relocations of the Forward Operating Base.

19. (U) With bed down decided, necessary action was taken to secure diplomatic in-country clearances from the Nationalist Chinese government, and allow movement of forces from Guam where they were holding, pending this decision.

20. (U) The equipment and supplies began arriving at Tainan on 8 and 9 April 1965. Maintenance personnel remained on 24 hour standby to allow unloading of aircraft as they arrived. Then began the long task of assembling AGE and returning it to service. A "hangar" was allocated to the Task Force, but for use only as shop and warehouse space, since it was incapable of accepting an EC-121D. Rundown, with few lights, broken windows, leaking roof and no water, it must be put into perspective. The requirement was levied overnight, and one would expect the availability facility to be the

least desirable. The base assets offered were not extremely below the standard of other tenants, and relations between Task Force and host base at Tainan were considered to be generally good and have remained so throughout the entire period.

21. (S) With settling-in at the Main Support Base underway, the test decision remained before any tactical missions could be executed. In joint meeting with representatives of 2AD and 13AF, a compromise was reached on the Big Eye Test requirement. It was agreed that a test would be run below the 17th parallel off the Republic of Vietnam, to insure communication compatibility with Monkey Mountain (PANAMA) and to see if the 50 foot platform could indeed pick up returns over land.

22. (U) The commander rejoined his contingent at Tainan carrying this valuable information with him. Regardless of personal feeling about the result, there was certainly relief from the suspense, as the initial cadre began to understand the parameters of their mission responsibilities and the geographic factors which would impact on its accomplishment.

23. (U) He found his personnel gainfully employed fabricating work benches, storage bins, painting guidelines on the aircraft parking ramp, requisitioning necessary office equipment and supplies, unpacking, arranging and generally well on the way to accepting the impending workload.

24. (U) Two aircraft were readied, people selected, crews briefed, airlift tasked, parts and spares segregated into two groups and the two EC-121D's were flown South to establish themselves at Tan Son Nhut. The Task Force manning was not predicated upon a split-base operation, thus there were no provisions for staffing the Main Support Base (MSB). The Tainan operation was therefore left to the senior Aircraft Commander on station

until adjustments could be made. This was later resolved by replacing a hard-crew pilot from stateside resources and designating him the MSB Commander. Additional staff officers were later added in the areas of administration and maintenance as requirements were identified.

25. (S) The aircraft were parked near the Base Operations building at Tan Son Nhut, on the periphery of the Transient Alert area, which was to remain the Big Eye parking area for the duration of operation from Saigon. With the moving in process little more than finding a bunk, an empty desk and a place to get a bite to eat, the first mission was launched on 14 April 1965. It, and a similar mission the following day, were flown South of 17N to satisfy the evaluation requirement. Communication with PANAMA proved satisfactory, as did over-land target detection, and therefore on 16 April 1965, Big Eye was fragged to provide radar surveillance in the Gulf of Tonkin above the forbidding 17th parallel.

26. (C) To say that fear existed on these initial missions would be an understatement. It was not a topic of conversation at the time, nor is it readily admitted to by all today, after a four year history of extremely safe operation in the Gulf. While the select crews were confident of their own ability, they had no way of knowing what type of reaction force might be employed against them. With all briefings keyed to escape and evasion, issue of full field kits with the M-16 rifle, and statements by headquarters that survivability was doubtful, the seed of doubt was firmly implanted in each individual's mind, and it is a credit to their self discipline that they performed under this pressure without incident.

27. (S) The first several missions quickly dispelled the fear of enemy engagement when none materialized, and the remaining fears were attributable

to the profiles of the mission itself. With the platform operating at altitudes where one would swear the props were churning the tops of the waves, only confidence in the flight crew and the airframe dispelled visions of a highspeed ditching. It is an established fact that this mission profile shared one characteristic trait with Naval operations in the Gulf -- namely a beautiful broad wake behind the "vessel." An occasional glimpse of the hostile territory of Hainan Island or North Vietnam appearing on the horizon also had its unnerving effect on these early participants.

28. (C) There was fear, too, that one might be overcome by heat exhaustion. The air conditioning system of the EC-121D, capable of cooling an airliner at medium altitudes, was already heavily overtaxed by the many heat-generating electronic systems on the aircraft. Forced to operate in the tropics at sea level plus fifty feet, with extreme ambient temperature and a diabolical sun imposing additional radiant thermal load through the minimum cloud cover at this time of year, the interior temperature reminded one of a closed auto left in direct sun for several hours. The problem was not only environmental, with temperatures in crew position often documented in the 115-125°F range, but also caused many extra equipment failures. Additional cooling was one of the first operational requirements identified for the weapon system's utilization on this mission, and has been the subject of several in-house modifications and specialized techniques, which slightly improved but did not alleviate the conditions. Relief will be realized with delivery of the SEAOR-62 modified aircraft, which include an additional refrigerated air conditioning system.

29. (C) In addition to the environmental considerations, the very nature of the mission was demanding and fatiguing. Unlike a higher altitude

operation in controlled airspace where a pilot's attention can be divided between casual VFR surveillance and monitoring of all systems while autopilot maintains flight control, on the low altitude orbit it was mandatory that one pilot always have his hands on the yoke, ready to react to an autopilot break-lock, necessary avoidance of surface vessel, or other situation. That the aircraft had to climb prior to banking for turns further substantiates the minimum altitude often flown to provide the best radar propagation. Navigators, already in the hottest position aboard, were handicapped by lack of navigational aids in the Gulf, and thereby had to utilize the demanding process of radar mapping for their solution to the sensitive radar stabilization problem.

30. (C) Since the nature of surveillance responsibility knows no beginning and end, whenever in the Gulf with an operational weapon system, the radar crew members were occupied with the continual process of detection and identification of air traffic. With the APS-95 Search Radar and APX-49 IFF/SIF Recognition Set the only system available, this involved correlation of Radar skin paints with an offset SIF display - a never ending process.

31. (C) The early missions were flown on experimental orbits to determine the best position from which to perform the surveillance and fighter escort control mission. The basic concept of operation was to provide a primary station plus an airborne spare, extending through both the pre/post time-on-target (TOT) period for the Air Force strike. The primary station was designated Alfa or Alpha (as it was more often spelled by Big Eye in conflict with the frag), and the secondary station Bravo. These identifiers were retained, though actual station tracks, altitudes, mission responsibility and other factors were altered several times, which eliminates their

value for calling out a specific operating procedure. Figure 3 shows the approximate Alpha and Bravo track originally settled on and the relative position of the Mig CAP and their refueling points.

32. (S) The Air Force TOT was shifted slightly each day, and the Task Force mission was adjusted accordingly, based on the first TOT of a Rolling Thunder strike flight (Rolling Thunder is the name of 7AF Operations Order 100-XX, which is the primary directive against which all NVN air operations were fragged). A typical profile was:

Alerting	1st TOT - 15 Hours
Brief	1st TOT - 5 Hours
Take Off	1st TOT - 4 Hours
On Station	1st TOT - 30 Minutes
Off Station	Last TOT + 30 Minutes
Recover	Last TOT + 4 Hours

33. (C) Almost immediately after Big Eye established its stations, the Air Force adopted the two TOT alfa day strike, supporting it whenever it could without over extending aircraft availability, which as the build up continued, increased to the point that it was the day-in-day-out standard package. This extended the liability period of 30 minutes pre/post strike beyond the maximum station endurance of Big Eye aircraft on single sortie profiles, and therefore the recycle at Da Nang was instituted. The original recycle was a fuel stop at Da Nang following a maximum endurance mission, with subsequent recovery at Tan Son Nhut. Both the cause (extended liability) and the effect (recycle) added flying time on the airframes and crew duty time to aircrew personnel as well as reducing the time available to maintenance personnel to perform the necessary turn-around maintenance. It was obvious that two crews and two aircraft at the Forward Base could not stand this accelerated pace, and the Big Eye commander finally convinced 2AD that three aircraft were required at Tan Son Nhut to support the flying program.

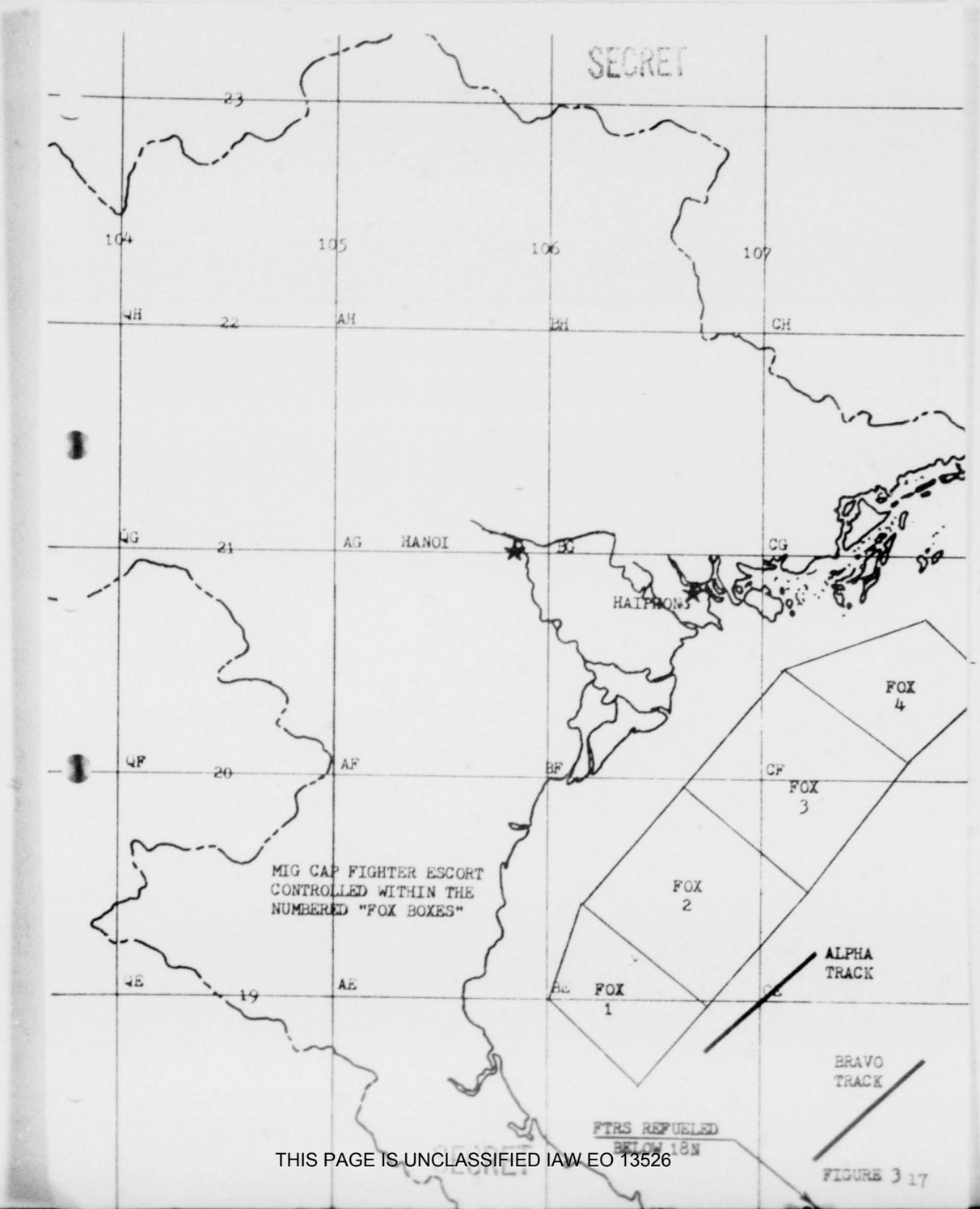

FIGURE 3 17

34. (U) Concurrent with the approval forthe third aircraft at the FOB, two more crews and airplanes were requested from stateside. These two were approved, and on 30 April, only 16 days after the first combat mission and less than a month following initial deployment, an additional two aircraft and 42 personnel were deployed to augment the Task Force. Plans were developed to assure that deployed aircraft were replaced in accordance with the IRAN and modification schedule. The solution was to replace them on a 21 day cycle, allowing complete turn over of the SEA fleet of 7 aircraft in 4½ months. In this way, receiving a carefully prepared bird from the states, it was envisioned that Big Eye could enjoy a lower than average rate of unscheduled maintenance. The two additional crews were quickly worked into the schedule and the extra aircraft at TSN slightly relieved the impossibility of the FOB maintenance task.

35. (C) There was experimentation in this early period on other possible roles for Big Eye. One common one, and a carryover from West Coast procedures was replacement of a ground radar. One such mission was flown to replace PANAMA within the first 15 days, while it was "down" for scheduled maintenance. Also, three test missions were flown with 2AD staff members participating, to investigate feasibility of utilizing the AEW&C resource as an Airborne Command Post for directing air support of ground forces (an in-country operation strictly). This employment proved unsatisfactory due to lack of VHF or FM radio equipment, which allowed only partial interface with other elements.

36. (C) Despite this experimentation directed by 7AF, Big Eye was still not well received, and some thought of these requirements as an exercise to prove how many things the EC-121 couldn't do. The unit was tolerated

because of higher headquarters directive, and on occasion, was stood down by 2AD, who refused to frag the mission. One such stand down was 9 days, and was ended again by higher headquarters, who realized they weren't receiving a Big Eye mission summary. There was some credibility to their excuse in not flying the Task Force since some of the agreements and directives made reference to support of air operations against NVN, and strikes during these periods were often being diverted to other targets due to heavy seasonal weather in NVN. Therefore, 2AD inattention to the Task Force could have been a sincere attempt not to override their authority in employing Big Eye tactically except in support of out-country activity, though little support can be gained for this theory.

37. (S) Some training missions were flown during slack periods, using 13, 14 and 15 North in place of 17, 18 and 19 North, to provide experience for newly rotated replacement crews.

38. (C) The inactivity reached the extreme in August 1965, when only 5 days were flown in support of Rolling Thunder, and the remaining 26 were stood down at the direction of 2AD.

39. (S) In another type special, Big Eye observed the first B-52 saturation bombing drops in July Northwest of Saigon. Fragged to provide radar support in the event of possible failure of PARIS(TSN GCI), the mission degenerated into a visual observation platform for 2AD staff. The ETHAN aircraft was about ½ mile and 1500 feet, paralleling the drop zone while the B-52's made toothpicks out of a jungle forest. That the mission was never repeated is proof that the EC-121D was poorly suited to the real intent of this mission due to lack of sufficient window area.

40. (C) When there were strikes to cover in the North, confusion reigned in the Gulf with respect to total radar control. The Navy and Air Force ran strikes simultaneously with little if any exchange of information at the working level. Big Eye was "attacked" many times in the Gulf during this period, but most turned out to be non-squawking Navy fighters coming off target. If the track was first detected "popping up" over NVN (due to lack of low altitude coverage previously discussed) the non-squawking Navy plane, gaining altitude as he came off target, was impossible to distinguish from an enemy flight. Since they were returning to carriers operating in the same area of the Gulf, it often appeared they were on a direct intercept of the AEW&C platform.

41. (S) The fighter escort would then be committed against the unknown, broken into two flights of two to perform the ID and firing passes in quick succession, with a head-on tactic. Luckily, the F-104 pilots had a good eye for the high speed ID required, and no Navy plane was ever fired upon to Big Eye's knowledge. The Navy wanted no part of our services, thus we supported only Air Force missions. This continual generation of unknowns by the Navy undoubtedly created a certain air of complacency, as unknowns that were not identified were likely dismissed as Navy non-squawkers by most. On occasion though, the ID revealed MIGS in the Gulf, though their incidence of penetration was low, and decreased as the war progressed. On one such occasion, an escort F-104 under ETHAN ALPHA control, had a visual at 4 miles and was properly positioned, when he went BINGO fuel and had to break off.

42. (C) The first of several "solutions" to this problem was a time division between Navy and Air Force. As remembered by former Big Eye staff

personnel, Air Force had two daytime periods and every-other-night (a factor to have considerable impact on Big Eye).

43. (S) The surveillance mission was clearly tied strictly to the Air Force out-country operation, by virtue of the fact that we were fragged or stood down in direct relation to the targeting of the Alfa day strikes. Though there were statements made that this surveillance was an extension of ground radar for a defensive early warning screen too, this logic was refuted by the method of employment, and the fact that we were occasionally given this type responsibility as a special requirement based on current intelligence. The surveillance provided was for one primary purpose -- MIG alerts for the warning of other Air Force activity and control of fighter screen to protect AF assets in the Gulf. At the inception, the NORAD Form 4 format was carried over for this forward tell process, slightly modified to the situation. Since only unknowns were told, there was no need to give Track classification, normally the first item. The track designator was simply a sequentially assigned number. Positioning was given in GEOREF, abbreviated to minor GEOREF only, thus an unknown over the gulf Southeast of Hanoi for example, might have been called BF4020. Zulu time of position being told, heading, flight size, altitude and speed of the target if known completed the tell format. PANAMA would attempt an ID based on other inputs, and if none was made (which was most often the case due to little real-time input from beyond their actual radar range) would back-tell Big Eye, who would attempt ID with its MIG CAP. This forward/back-tell was primarily informational, and did not limit in any way Big Eye's authority to employ the CAP. The tell and fighter control were both on discreet frequencies, but were of course, unsecure.

Later, as we shall see, coded formats were introduced as interim attempts to conceal the information, general Mig Alerts were issued, Radio Relay Aircraft entered the picture, and finally, secure voice communications through Radio Relay were realized.

44. (S) During September 1965, there was growing concern over intelligence analysis of a possible IL-28 Soviet type bomber threat to Da Nang. Second Air Division examined its entire air defense capability and found their ground radar, then operational, did not allow sufficient warning and reaction time to permit adequate defense of facilities in RVN against such a threat. The only land-based radar which could have supported this requirement was the Dong Ha site 30 NM South of the DMZ. This site was under construction and due to become operational on or about 15 November, (Call sign WATERBOY, later to become primary Tanker Control). Therefore, 2AD directed Big Eye to assume night surveillance responsibility effective 5 October 1965. It was to be flown every other night, to coincide with the time period division between Navy and Air Force.

45. (U) The split base concept had made regular rotation flights necessary, with many factors determining the frequency of rotations. Among them were:

a. Need to rotate aircraft into phase inspections.

b. Requirement to perform heavy maintenance that could be defered without jeopardizing safety of flight.

c. Need to rotate crews for equitable distribution of flying time on monthly/quarterly basis and to provide periodic relief from the tremendous strain of back-to-back flying schedule (two 10-hour sorties every three days by each crew, if maintained would exceed 200 hours per month).

d. To provide airlift of supplies and reparables between TSN and the Air Asia complex at Tainan.

An every other day rotation was selected as most suitable.

46. (S) The impact of this night surveillance was somewhat lessened by combining it with the existing rotation flight. The crew launched from TSN, flew the night mission maximum endurance for Da Nang, recycled for fuel and went on for recovery in Tainan. Thus the sortie, on the every other day it was supported, was added at "half price" and at no increase to FOB maintenance, since the sortie was generated with or without this mission, and turnaround was provided by Tainan. While no threat materialized -- a pattern for all future specials of this type -- the mission was readily accepted, since the concern was genuine, the flying hours could be supported within existing resources despite handicaps, and the requirement was programmed for only 40 days until Dong Ha became operational.

47. (S) An extremely significant event at about the same time was to add additional committment to the flying program, and provide the first major turning point in Big Eye History. During one of the then common stand-downs, two F-104's were flying escort over the Gulf of Tonkin for some Rolling Thunder forces. One fighter lost his electrical power, and as a consequence, his navigational aids. The pilot became disoriented, and overflew Hainan Island where he was subsequently shot down and captured. The Communist Chinese made the effort to extract every ounce of propaganda value from this. In the course of events in the ensuing State Department-initiated investigation, the Joint Chiefs of Staff sent a message to the Commander, 2AD which said in effect: "Was Big Eye on station, and if not, why not?" Big Eye was never privileged to the answer, but is assumed the answer was more lengthy than the question in its explanation of why Big Eye was stood down.

48. (C) As a result, starting on 25 October 1965, ETHAN ALPHA and BRAVO were fragged for between eight and ten hours of daylight on station time every day, a utilization Big Eye had itself requested in the past. Over the next 3½ years, Big Eye/College Eye was to stand down only five times, three for weather and twice during various holiday truce periods. Coupled with the night mission which had been in effect 20 days, this increased the months flying program to 1050 hours, an obvious over committment, even to those unfamiliar with C-121 operations, nearly equaling the entire previous quarter. It may be more graphically displayed below:

PREVIOUS MISSIONS (if fully executed and flown)

Alpha & Bravo	22	(2 eleven hour missions per day)
Rotation	+ 6	(2 six hour rotations, every other day)
	28	Average hours per day
	x 30	Days
	840	Flying hours per month

NEW MISSIONS

Alpha & Bravo	28	(2 fourteen hour missions per day)
Rotations	6	(as above)
Night Surv	+ 4	(8 hr station and recycle time added to each rotation North)
	38	Average hours per day
	x 30	Days
	1140	

More significant than the months total, is the rate, which if allowed to continue over a full month would require a minimum of 1140 hours to be generated. The abort rate doubled almost immediately. However, an impressive percentage of fragged time was provided despite the aborts due to a long standing policy of Task Force maintenance. An abort was never seen as a short relief from over commitment, but rather an obligation to redouble effort to spare the abort. Thus it was not unheard of to have

more aborts in a day than possessed aircraft, as successive attempts were made to launch the same or different aircraft or both to cover as much of the mission as possible.

49. (C) Experiencing the results of over extension, accurately forecast by Big Eye, 2AD called a special meeting on 9 November 1965 to review the Big Eye flying hour program. In this meeting, there was a decision to drop the night surveillance requirement (only a few days short of original plan), to limit Big Eye to 800 hours (tactical, rotations brought total to 980) and approval to bring a fourth aircraft and crew to the FOB.

50. (C) A common planning exercise in equipping a unit is balancing the programmed flying hours against a theoretical maximum utilization factor for the weapon system. Over many years experience, this figure for "Connie" (EC-121D - derived from the Lockheed Super-Constellation) had established itself at four hours per day per possessed aircraft. With seven aircraft assigned, the Task Forces schedule would not have been expected to exceed 28 hours per day or 840 hours per month. These standards, of course, are predicated on normal manning, normal organizational, electronic and field maintenance facilities, and normal base support in areas such as supply, and transportation. In the 22 months operating from TSN, this standard was to be surpassed nine times despite the lack of these conventional standards. In one case the over fly was 130 hours. The original contingent of 153 personnel had grown by this time to 233 by the addition of the two crews, added maintenance personnel for the additional aircaft, and a few minor adjustments. Of these, 134 were aircrew, officer and enlisted staff overhead accounted for about 10 and therefore, 90 maintenance personnel split between the two bases were responsible for generating this remarkable flying load.

51. (U) The constant source of amazement as personnel reflect on the conditions at that time, is the fact that the Task Force was able to fly at all - to say nothing of generating sorties enough to produce this overfly. The most common singular recurring statement of personnel who experienced the early operation from Ton San Nhut is the deplorable living conditions, followed closely by the primitive methods necessary to produce mission ready aircraft. The achievement was the result of a superhuman effort by a hand-picked body of experts, who were commonly characterized by fierce dedication to their involvement in a vital war effort. They drove themselves beyond any schedules that could be ordered or even hinted at. It was performance that could not be duplicated in a normal unit, or even in the Task Force at a later date. The key to this was the unknown duration of the contingency. The original tasking called for preparation based on 30 days or 500 hours. Orders had been cut for 90 days, and there was no indication the unit would become a permanent fixture in the theater. Other short-lived contingencies had become almost a way of life for these men, and being involved in a real shooting war provided the stimulus for each individual. At the field working level, and perhaps higher, there was a general feeling that the massive concentration of air power being assembled would bring a swift end to the conflict. This belief did not disappear overnight, even when the action continued on, as the victory was always seen with the lifting of the seasonal weather, or some other equally elusive factor. Personnel, operating under this premise undoubtedly overextended themselves, and "made do" with conditions that could not be tolerated if known to be a semi-permanent arrangement. The real disadvantage, however, was to the program of

improvement to hardware. Had it been realized in March 1965 that the deployment being readied would be a five or ten year commitment, most certainly action would have been initiated at the earliest moment to upgrade the weapon system and better adapt it to this new tactical environment.

52. (U) The seven day work week should go without saying, since it was almost universal. There were no working hours established, per se, as people responded to only two factors -- completed workload and complete physical exhaustion, giving in to which ever came first. Due to the normal aircrew/maintenance rivalry in any unit, it is significant that aircrew members are the first to heap praise on the maintenance effort, as they remember incidents where individuals worked 18 hours per day for extended periods, or when the clock was worked around several times to complete a major repair. Insight to the method of operation is graphically provided by this reflection of a Chief Master Sergeant on the times:

> "One thing was obvious. The specialist system of maintenance would have to be abandoned if our aircraft were to meet the flying schedule required by 2AD. All personnel were to assist each other regardless of the specialty required. Night alert crews were set up. Crew chiefs were also included in assistance of maintenance over and above their crew chief duties. This type of operation was met with enthusiasm by all the airmen. They worked together as a unit. Regardless of the problem or the length of the repair required, they worked until the job was complete. They assisted each other in resolving problems of maintenance and utilized their ingenuity to make repairs when the item was not available for exchange. They completely forgot the "remove and replace" concept. Only when it was beyond any possible fix would they replace, since supplies were very limited, and once introduced into the reparable cycle, the asset was lost for many months. They worked long hours seven days a week without complaint and volunteered services for any number of jobs. An extended no-NORS rate during this period under these conditions is proof of the job accomplished. I will never cease to wonder how the maintenance people at the forward operating base managed to maintain the aircraft. They lived under the most primitive conditions. At this

time, it was almost impossible to get a hot meal at the mess hall. No space was available. Many of our people subsisted on crew lunches left behind on the aircraft by crew members who couldn't stomach meals during flights due to the extreme heat on the low level missions. There was no base support on maintenance activity at Tan Son Nhut. Many times I thought we were in a completely different Air Force. What was accomplished at the FOB was through sheer guts and determination. Everything had to be begged, borrowed or stolen."

53. (U) Another senior NCO who participated in the early Task Force history provided his recollections, which complements the above:

"It soon became apparent that due to the constant rotation of personnel from the deployment site that adherence to any long range schedule or policy was implausible. A decision was made to deploy selected maintenance personnel on a long staff tour to provide the necessary control and supervision. The most serious problem was at the forward base where no permanent supervision had been in effect. With the assignment of a line chief, there, the operation was vastly improved. Some problems remained however. One of these was the strained relations of the base toward the Task Force. We were considered an unwelcome guest. Even common hardware was not common when it was Big Eye requesting it. The Task Force was required to take care of itself. All supply items were provided from the Main Support Base (Tainan) and turn-ins were returned there for repair. This cycle was supported by our own airlift on the normal MSB-FOB rotations. Working conditions were austere; no buildings, no telephones and no ground support. Base transient was the only source available for tugs to move aircraft, and it was not unusual to wait for several hours before an aircraft could be moved. All AGE, both powered and non-powered, was provided by the main base, and it was a common occurence to report for duty in the evening and find that all stands and equipment had been "borrowed." All maintenance personnel became experts at locating and returning misplaced equipment. The Navy detachment at the FOB also operated C-121 type aircraft. This Det became a valuable source of tools and parts. The maintenance NCO's quickly established working relationships with the Navy personnel and were thus able to trade and borrow many vital parts. All support received from the base was gained through personal contact of the NCO's with their counterparts on base or in the Navy Detachment. Many times that was the difference between having an aircraft mission ready on time and a non-delivery or abort."

54. (U) This fact of lateral support on the basis of friendship established between NCO's is not one to be underestimated. While it played

an important part in the Task Force history, especially due to the requirement to establish themselves at four bases, it is certainly not a phenomenon that was peculiar to Big Eye. Every commander should be acutely aware that these liaisons often are more valuable to his operation than a formal AFR 11-4 agreement or similar memorandum of understanding.

55. (U) Billeting was, in a word, deplorable. For the first six months, the Task Force was allocated two 18-man "hutments" to house 51 airmen from aircrew and maintenance specialties. These units were two miles from the flight line, and feet were the principal mode of travel. Besides overcrowding, comingling these personnel with incompatible working hours brought additional hardship. There was considerable relief then in September 1965 when a third building allowed separation of crews and maintenance and overcrowding was reduced to the extent of that shared by all units who occupied this type of cramped quarters.

56. (C) Though we have shown the hardships that the maintenance personnel thrived on, it is not to say others had good times. Crew members had an extremely fatiguing mission, long crew duty days and minimum time before they did it all again. The other ground support personnel were no better off. Understaffed for the administrative and tactical workload, their duty day extended well into the night. No one could feel safe in the Saigon area. Viet Cong terrorism was in the budding stage, and the intelligence prognosis for the Air Base complex was particularly grim. Bomb scares were routine. One staff member provided a very graphic account:

> "The very important work of mission planning, briefing, aircraft and crew scheduling, debriefing and administration was done in a green partitioned space about 20' X 14'. It

occupied the southeast corner of the second floor of the 2AD building at Tan Son Nhut. Screened louver windows made up the one outside wall. The other was solid on a stairwell. If the wind was moving at all it was reasonably comfortable, but generally it blew too hard or not at all. Dirt from the ever increasing flow of foot and vehicle traffic passed through the screens so everything was pretty dirty. Our sweat plus the dirt made paper work a dirty word. A uniform lasted about two hours. Classified papers were just so much paper since everything was Top Secret. Strict accountability controls were unknown -- material was protected by shoving it in a safe drawer and locking it. The strike section was the next partition down, and TS frags floated back and forth without being signed for. Once to twice a week we would have a bomb scare. An unidentified package would start it off, when someone would scream bomb. People ran. If you were in the office, you'd put the classified in the safe, close it and run to the bunker. This took too long, so the next time you tried carrying it with you, only to have it rain and the classified came back unclassified blur. After several such scares you learned to stay in the office and work. I think of all my recollection of the early days in Saigon, the most frustrating was getting through to people. Faces changed not just overnight, but in hours. The big people stayed, but the workers were constantly changing. The fellow you coordinated with in the morning was transferred or had a new boss over him by afternoon, so you started again."

57. (C) The statement that everything was Top Secret is close to being a fact, and this over-classification is a common item of reflection on the period. Certainly it was recognized officially as a problem too, since most routine recurring type material has since been downgraded, and in some cases, declassified. Personnel who in many instances had never seen a Top Secret document were now charged with administrative control of over 3,000 TS documents per month. Most were frag orders for the days strikes. Big Eye needed copies of each activity's frag in order to extract callsigns, Mode II SIF codes, frequencies, Ingress/Egress routes, TOT's, etc., in order to be most responsive to any emergency that might develop. No one seriously believed the enemy was not fully aware that ETHAN had an airborne radar capability, took

station in the Gulf each day just prior to the AF Strike, or where that station was located. Nonetheless, the frag directing it to station each day at a specific time was Top Secret. All mission logs and other operational residue from the mission was also classified Top Secret, and couriered to the 2AD Command Post after each debriefing.

58. (C) Ingenuity was demonstrated by operations personnel as well, as inhibited thinking associated with the original transfer of the West Coast mission was overcome, and the mission began to develop a unique character. One seemingly small problem in retrospect was the inability to accurately relate the Air picture to the Ground reference. Since previous missions of the EC-121D had been seaward extension of land-based radar surveillance, this over-land aspect was almost a totally new concept. The plotting boards were an arbitrary scale on which targets were plotted as told from the scope positions in azimuth and range, to give the senior director an enlarged view of the tactical air situation. In this new environment it was necessary for the Senior Director to be able to visually relate an aircraft's position to geographical landmarks as well, to see for example, if a hostile being tracked had penetrated the coast into the Gulf. Initially, the crews constructed the basic grid (latitude and longitude) in relation to the stabilization point and attempted to approximate the land mass by an "eyeball" technique of drawing it freehand. This crude method proved highly inaccurate. A target could be accurately positioned as being 315° at 90 miles from the stabilization point, but determining if this put him over land or over the gulf depended on the accuracy of the artist who had drawn in these features on the plotting board. The solution, changing the range scale of the plotting board to 1 to 1 Million, thus

allowing direct overlay on ONC-series aeronautical charts from which to trace the land reference, seems too simple to fully appreciate the breakthrough it represented. From this point on, positioning error in the ground reference was as accurate as the stabilization tolerance of the radar. Soon after this, as additional workload made delegation of responsibility more important, a technique was implemented that allowed each operator position to accurately recreate key landmarks on the face of the scope.

59. (S) On an early mission, ETHAN ALPHA tracked an unknown aircraft from North Vietnam to Hainan Island. When the Senior Director initiated an intercept against it with two F-100 Super Sabres which were under his control, the target accelerated, giving an apparent ground speed of 1200 knots, the first indication of a possible MIG-21 threat. This information was provided to 2AD in the nightly debriefing, and resulted in considerable interest. Additional reconnaissance flights were directed over the NVN airfields, which shortly thereafter confirmed MIG-21's in the NVN order of battle.

60. (C) One of the greatest morale boosters to the Task Force during the entire 22 months that Big Eye operated from Tan Son Nhut came on 10 July 65, when two confirmed kills were made by F4 pilots of the 8TFW, Ubon RTAFB, Thailand. The event was extremely significant since it was the first Air Force kill of the Vietnamese Conflict, and the first ever with an assist from an airborne control agency.

61. (S) Big Eye was manning station Alpha during the strike. The platform was approximately 40NM Southwest of Haiphong at 50 feet, when an unknown was detected 15-20NM North of Hanoi. The bandit was in a left turn, moving toward the strike force, which was hitting targets

Northwest of Hanoi. The Senior Director, Capt Reboli, issued a formal MIG Alert on guard, and followed immediately with a call to the MIG Cap flying high cover, giving range and bearing from Cap to the hostile on the flight's discrete frequency. The flight turned toward the target on a cut off tactic, and made immediate contact which resulted in the kill. The flight was in-flight refueled and diverted for recovery at TSN, where the pilots were decorated on the spot in a ceremony presided over by one of the general officers.

62. (S) In the ensuing celebration at the officers club, the pilots had a chance to meet with the Big Eye crew members who had alerted them to the airborne threat, and were liberal in their praise for the accuracy and timeliness of the Big Eye information. No official correspondence was generated at the time which credited the Task Force or the individuals involved for this achievement. The very presence of the EC-121D was still classified, and therefore, no release was made to preclude compromise of its airborne control capability. Eight months later, in the first public release mentioning Big Eye involvement in the Southeast Asian conflict, the long awaited confirmation was made. Prepared by the Second Air Division Directorate of Information and cleared for release by the Military Assistance Command, Vietnam, the story was datelined 23 Mar 66, Saigon and was headlined: AIR FORCE'S "BIG EYE" WATCHES COMMUNIST MIGS, HELPS U.S. PILOTS. It read in part:

> "For the first time in the history of aerial warfare, a task force of Air Force EC-121 Warning Stars and radar crews are showing pilots their way to targets. In Vietnam, Warning Star crews are directing fighter pilots against military targets and Communist MIG fighters.
>
> The modified Lockheed-built Super Constellation has proven its adaptability to a combat environment. The aircraft and

> crews are the first units of the Air Defense Command to be deployed in the Republic of Vietnam.
>
> This Air Defense Task Force assisted U.S. Air Force fighter pilots in their first Communist MIG Fighter "kills" in Vietnam last July. On the powerful radar scopes within their EC-121, radar operators tracked the MIGs while weapons control officers vectored F-4C Phantom fighter pilots in for the kills.
>
> Known as "Big Eye" this unique Air Defense Unit in Vietnam is commanded by Lt Col James Q. McColl of San Diego, Calif. Home base for McColl's 132,000 pound aircraft is McClellan AFB, Calif. He and his men belong to the 552nd Airborne Early Warning and Control Wing, which is a unit of the 28th Air Division located at Hamilton AFB, Calif.....
>
> ....Although aircraft in the unit are unarmed, they carry equipment that seeks out and finds the enemy's hiding places. The enemy knows what happens after being discovered by the Air Force's "Big Eye."

It was not a milestone, per se, since there was no change in mission concept. Big Eye was authorized to give MIG information to CAP on their discrete frequency, and this authority continued.

63. (S) It is important to recognize the difference between MIG CAP that accompanied the strike force and that which provided fighter escort in the Gulf as well as Big Eye's responsibility to both. The fighter escort was an integral part of the Big Eye mission from the first sortie and was primarily for commitment against possible threat to Big Eye and other Air Force missions in the Gulf. It was under close control of ETHAN. Due to increase in MIG activity, it becase more and more a standard practice to send MIG CAP with each wave of strike aircraft to provide defensive engagement of MIGS. Control agencies detecting possible threat used a coded format to give MIG Alerts, allowing all strike forces in the general area identified to assume a "heads up" posture of increased visual surveillance. CAP flights had discrete frequencies assigned for inter-flight chatter, which were known to the control agencies. While there was not

a true control responsibility, Big Eye could go to that frequency and give specific information to a single CAP flight, as in this case. While in-the-blind warnings could be issued on any unknown, additional information to a specific CAP flight could be provided only when Big Eye had SIF decode and radio contact with that flight as well as information on the unknown that could be used to tactical advantage -- conditions that did not always exist.

64. (S) This assist did however, lend believeability to the control capability of the AEW&C platform. Had this kill received attention beyond the immediate circle of personnel and units involved, it might have offset some of the distaste for ETHAN that was to develop over assumption of the misunderstood border warning role. Most importantly, it proved the validity of the Task Force belief that a true offensive/defensive anti-MIG capability under airborne control could be realized. To achieve this posture, it would be necessary to have the best possible:

a. Enemy Detection System.

b. IFF/SIF Recognition and Decode System.

c. Reliable two-way communications with the strike force.

d. Forward/back/lateral tell capability.

e. Tactical directives and procedural discipline.

All subsequent efforts of the Task Force were channeled toward achieving these goals.

65. (S) Another CHICOM allegation provided the stimulus that resulted in the formation of the Border Warning concept, a mission which eventually surpassed all others in importance for the Task Force, though certainly not the most popular. In mid-October 1965, there was a maximum effort strike to knock out a bridge on a key artery linking China and NVN. The

Senior Director on ETHAN Alpha instructed his crew to make track overlays of each flight of friendly and enemy traffic operating near the China border. At the time it was not standard practice for the Task Force, although this crew had adopted their use. While the scale of the strike was large, there was nothing particularly unusual about it, and the debriefing was routine. However, at 0300 the following morning, he was awakened by the Big Eye Operations Officer, and told that they had to prepare a briefing of the previous day's activities for the 2AD general staff. The Operations Officer, in recalling the incident, stated:

> "This was the start of Border Warnings. The big one was when a phone call from the Washington DC Command Post got me out of bed in a downtown Saigon hotel. The reason I emphasize downtown is that in that day, it was impossible to call the base from downtown, and here I had a call from half a world away."

The Senior Director and the Operations Officer took the track overlays and forward tell logs from the previous day's mission and consolidated them. The tracks were drawn on an aeronautical chart, to illustrate the briefing. There was still little specific information on what was wanted from Big Eye, since conversations to that point had only established the fact that Big Eye had been on station during a specific time period. When they arrived at the Second Air Division Command Post, they were ushered in by a Colonel, and the Director was put on a ciphony telephone circuit, to find him self talking to the duty officer at the JCS Command Post, or National Military Command Center. It was then they learned that the Communist Chinese had formally protested an alleged violation of their sovereign airspace by U.S. warplanes, and that they were deeply involved in investigative proceedings attempting to identify if there had in fact been a violation, so that the appropriate position could be taken in the

diplomatic reply by the State Department. The Controller was able to relate the flights he had observed, and state that while he had not seen friendly aircraft violate the border, he had in fact seen aircraft, first detected inside Red China, cross the border into NVN and subsequently return to China. No engagement was reported by the strike forces. This evidence allowed the United States to refute the allegation, and the realization that Big Eye could provide such data started a chain of events which established the Border Warning mission and an elaborate after-the-fact reporting procedure when violations were detected.

66. (S) Buffer zones were established along the entire NVN/CHICOM border. The inner buffer was "red," and was 20 miles wide. The outer buffer was "yellow," and was 10 miles, making a total buffer zone of 30 miles. The exception was East of 108°E, where there was a 12 NM Red buffer only. A codeword which changed each day was established which would indicate penetration of the buffer or border. Positioning was limited to a quarter GEOREF block, with quarters numbered starting upper left, rotating clockwise. Thus an aircraft in the Red buffer zone over LangSon NVN would have been warned by a call such as: Toledo Red BRAVO GOLF 2 at 0936Z which, to the pilot would mean, Penetration of the Red Buffer zone in the upper right quarter of minor GEOREF block BG at 0936. The warning was made in-the-blind and needed no acknowledgement. If possible, the plane was identified by Mode II SIF decode. If successful, subsequent warnings could be made to the flight, by callsign, if considered necessary to prevent crossing of the actual border. If the aircraft did actually cross the border, the "Red" in the format became a "Red-one" and changed to a "Red-two" when the plane returned from CHICOM airspace. This required an in-flight report via HF radio in special format which in turn was transmitted directly to CINCPACAF

by Flash message. All such warnings and identification made became a matter of formal record in the surveillance and Weapons Controllers logs and were turned over to 2AD after each mission.

67. (S) This procedure proved extremely unpopular with the fighter-bomber pilots, who came under heavy criticism whenever they were cited for a buffer (or border) penetration. Considerable distaste for ETHAN and its "big eye" was the result. An anecdote which characterizes this was not long in coming, when, on a mission during which many border warnings had been called, an anonymous source transmitted the following threat on Alpha's UHF frequency. "ETHAN, if you don't shut up, I'm going to shoot you down!" Not scared by the threat, Big Eye crews were nonetheless unhappy about their unfortunate position. They whole heartedly sympathized with the fighter pilot, yet understood the United States could not afford to give the Red Chinese any more propaganda ammunition by accidental or deliberate penetration of CHICOM air space. Obviously, there are no Task Force records which indicate reasons for border violations. However, if hearsay evidence can be permitted, personal association of Big Eye crew members with the individuals flying these missions provided insight. Most were not deliberate, but rather inability to keep precise navigation as a primary consideration when coming off a heavily defended target, the result of spontaneous MIG engagement, the most tactically advantageous flight path against a particular target, or the result of an almost automatic reflex to fly around observed flak, without thought to the buffer zone. Of course, some were deliberate, in hot pursuit - though strictly forbidden - and some for reasons as stupid as self gratification of saying one had been there.

68. (S) The fighter pilots intent on violating the border were quick to learn that if they stopped squawking, Big Eye could not identify them as a friendly flight, even if they were detected by radar skin paint. Thus began a long hassel over the squawk/non-squawk policy. This controversy was not limited to potential border violators however, with other support for not squawking from those who believed the North Vietnamese were exploiting the Mark X SIF system with their own defenses. To squawk or not to squawk, despite the official directive of the moment was to become largely a squadron level policy, though reversals of the official position were made at levels as high as PACAF.

PART TWO

1966 - A YEAR OF GROUNDWORK AND DISAPPOINTMENT

69. (U) 1966 was to be an important year for the Task Force although there were no sweeping changes in mission concepts, no advancement in hardware, no change in manning, organizational conept or geographical location. However, the complexion changed from one of a transitory unit to a semi-permanency, groundwork was done for weapon system modification, long range tactical concepts were developed, and day-in-day-out accomplishment of the assigned mission provided a hard core body of knowledgeable, experienced personnel and record of achievement on which to stand in the subtle art of gaining support for necessary approvals, fundings, priorities and tactical authority.

70. (S) In January 66, there was a "Peace Offensive" with a lengthy pause. Big Eye, in line with policy established following the F-104 loss over Hainan, continued to fly daily, providing escort MIG Cap control in support of SILVER DAWN (a Security Service mission) and other activity in the Gulf. Eight special missions were flown in support of Steel Tiger (name of the Ops Order under which air strikes in the panhandle region of Laos are fragged), and the months flying time was 882 hours. The abort rate dropped from 20% to 1.6% with release from the overcommitment of the previous month.

7. (C) On 31 January 66, bombing was resumed, and Big Eye changed its concept of operation by staggering Alpha and Bravo Take Offs. The time period between morning and afternoon TOT's was even longer, and by staggering the two stations, it allowed continuous coverage by at least one of the aircraft. With the fuel stop type recycle remaining in effect,

both aircraft provided six hours on station, with overlap coverage by both dependent on the time between first and last TOT. When this liability period was later extended to as much as 11½ hours, the recycle procedure was changed so that both aircraft returned to station following a staggered recycle between AM and PM TOT's. This allowed both aircraft to be on station during the critical strike period, and at least one during the entire time frame.

72. (S) On 14 February 66, a meeting of all elements of the command control function was hosted by PANAMA and resulted in revision of the MIG Warning format and procedures for initiating the alerts. To this time, many formats had been tried, but none were considered satisfactory. It was decided to use the same format as had been adopted for border warnings, with only the daily code word to differentiate them. Although this system was not considered optimum, it did standardize the two, resulting in fewer reference systems to be remembered by tactical aircrews. Procedurally, unknowns would be forward told to PANAMA, and if no ID was made, PANAMA would initiate the MIG Alert on UHF Guard within 2 minutes. Since the Radio Relay Aircraft with its high powered real-time relay capability was nearly a year away, these alerts had to be manually reinitiated by Big Eye, to extend the warning's range into NVN beyond PANAMA's UHF limit. Normal delays between detection and forward tell, PANAMA's delay for ID and the manual relay of warnings put these alerts 2½ to 4 minutes behind real-time. Because of this, the 30 by 30 mile square identified by the warning format was more appropriate than an exact position of several minutes prior. Big Eye could still give real-time information to CAP flights if contact could be established.

73. (S) On 1 April 66, Second Air Division became Seventh Air Force. The same day, responsibility for strikes in NVN was divided geographically, with establishment of the "Route Packages." (See Fig 4) Package I, V and VIA were designated Air Force areas. This included "downtown" (Hanoi) and roughly all NVN west of a line extended through Hanoi, Kep and Lang Son, in addition to the area directly above the DMZ. This area presented the extremes in range for detection and communications equipment of the existing D model configuration. Therefore, Big Eye future responsibility was tied to the V and VIA area.

74. (S) The 12th of April found Big Eye participating in the first B-52 raid over NVN. The assigned task was surveillance for MIG advisories, and it was a successful mission although no threat materialized.

75. (C) The following day, 13 April, will long be remembered by those who were at Tan Son Nhut. Approximately midnight, the base came under mortar attack, with some recoilless rifle fire which resulted in 162 American and Vietnamese casualties. Big Eye contributed a disproportionate share, with eleven casualties within its own ranks. Nine of these occured in the barracks area, which received several direct hits. Sergeant Turner, who was wounded in the attack remembers that, inexperienced in combat, they mistook the first explosion for a Claymore mine, downtown, a common occurrence stemming from the Viet Cong terror campaign. Seven in his building, asleep at the start of the attack, were wounded. It seemed to him only seconds later when the barracks was hit. He started toward the door nearest the bunker when a second hit was scored, causing him to take cover under the end bunk. He realized he was wet, then realized it was from his own blood. Though he does not remember, he has been told he ran outside toward the bunker when a third explosion literally blew him

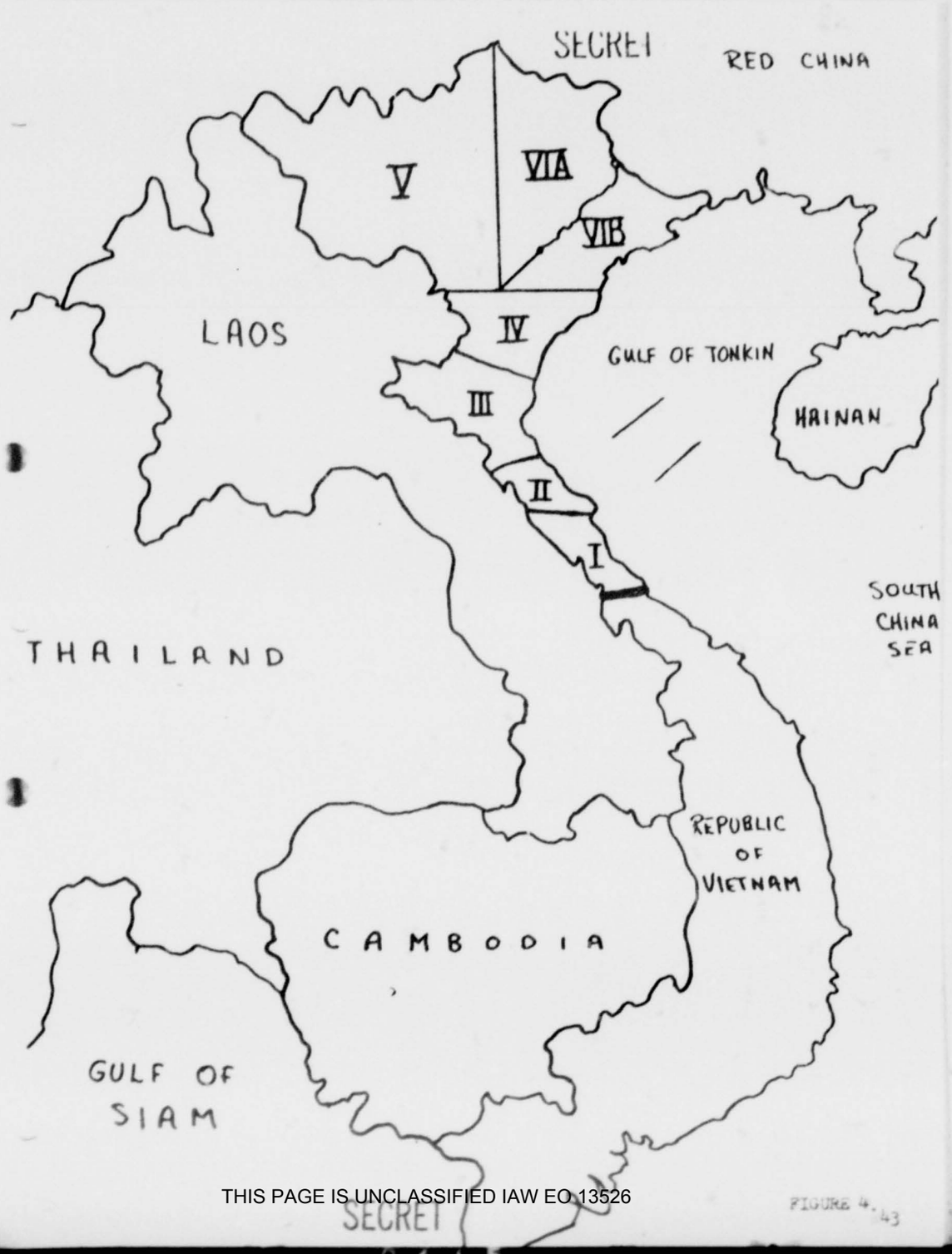

FIGURE 4.43

into the bunker. He was in shock from loss of blood resulting from the multiple shrapnel wounds and remembers only brief periods of consciousness, first on the floor of the bunker, next on the floor at the Dispensary and finally at a field hospital in downtown Saigon. Maintenance personnel on the flight line readying the morning launch were pinned down by the attack. Two who sought refuge in a Conex became casualties. Alertness by Big Eye personnel and the timeliness of medical attention was the key to limiting the human suffering. Sergeant Skinner, who was one of three awake in another Big Eye billet remembered the night clearly. They heard the first explosion, and immediately saw that the fuel dump was burning. They realized they had wounded, and insured that everyone got into the bunker. When the attack subsided, a man was detailed to find a Medic. It was less than three minutes from then that ambulances started to arrive. Luckily, the Purple Hearts resulting from the attack were able to be presented to eleven whole men, with no serious disabilities or disfigurements. The Big Eye parking apron had been backed with homemade blast fences, constructed from pierced steel planking (PSP). A recoilless rifle shell which burst through this PSP was primarily responsible for the minor fragmentation damage to three of the EC-121D aircraft. When the threat lifted, aircraft were quickly readied, and both sorties were launched in time to fulfill the majority of their fragged time on station. Structural damage to the area had all been repaired two days later. It is a sad reflection on conditions to realize that other than the human suffering, the greatest lament was for a Big Eye van-type vehicle that was heavily damaged in the shelling. Beyond organizational resources, capability and authority to accomplish repairs, its loss to the Task Force represented a serious long term handicap. The two miles between billets and flight line was

duplicated between flightline and the maintenance/supply building, and now one less vehicle from the authorization was available to accomplish these and all other necessary transportation requirements.

76. (S) The station track which had provided the best compromise in the past was less than optimum once all Air Force activity requiring AEW&C service was concentrated in Route Packages V and VIA. Big Eye realized the need to move closer to this area of responsibility. The proposal was made to the Vice Commander and DO of 7AF during the first week in May, approved, and implemented with the next sortie launched. The new Alpha track was centered on 20/107, with Bravo at 1930/10730 as shown in figure 5. Stabilization of the radar remained at 19/107. This 60NM move increased the northern extremities for surveillance and communications. Low altitude coverage, just as maximum range, remained absolute with respect to distance from the aircraft, but with resultant gains over the land mass in the delta area. At the new coordinates, an aircraft at Alpha centerpoint was exactly 90NM miles from the center of Hanoi, and within 30 miles of the coast.

77. (S) These tracks, as well as the ones they replaced were only established norms -- the position that the frag order announced, and were not absolute limitations on ETHANs area of operation. The ability of the Navigator's Ground Position Indicator (GPI) system to maintain radar stabilization when the aircraft was "within counter limits" of the stabilization point (up to 150NM on the N-S or E-W axis or both) gave the flexibility needed to tailor the track to changing daily requirements. Deviations from the normal track remained an acceptable practice, and could be generated by any of a number of factors. Moving to provide optimum coverage of a specific concentrated target area, to avoid shipping on the

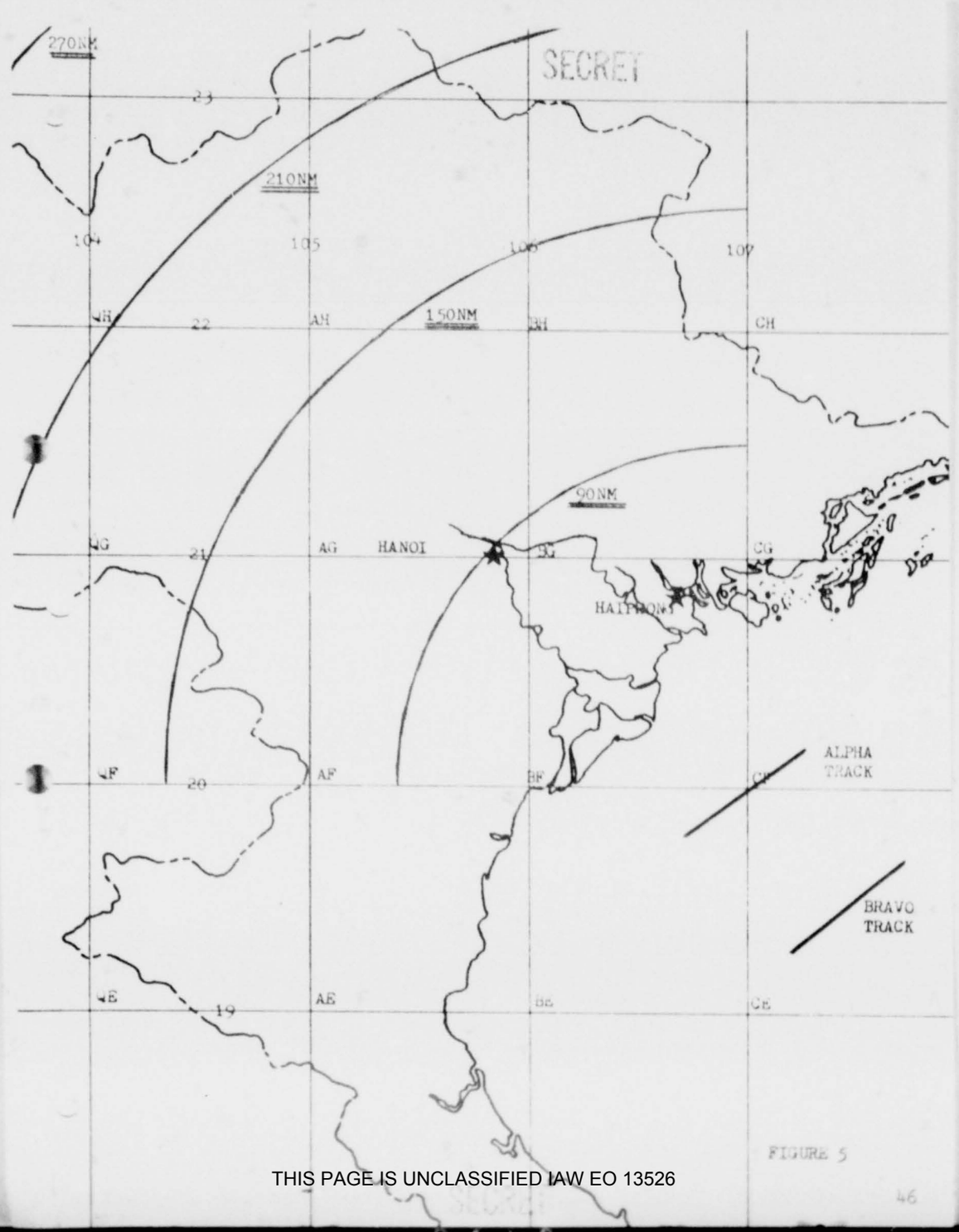

FIGURE 5

normal track, to avoid heavy weather or squall lines, or extending a leg to avoid a turn during critical periods are all common examples. Thus, the 20N center point was not a totally new experience, as many flights had operated in this area while the track was ostensibly centered at 19N.

78. (C) Special missions in support of Steel Tiger were ordered again in May. The requirement to provide a Communications Platform for the ABCCC function was satisfactorily met with eight missions, without any aborts. This mission required a double recycle at DaNang, before and after the on-station period, and extended the crew effort time in excess of 20 hours.

79. (U) Individual on-station achievement is extremely difficult to document during the entire period the Task Force operated from Tan Son Nhut. Some of the reasons were as stated in the prefacing remarks to this report, but beyond this, the Task Force was isolated, and seemed to work in a vacuum. As a result, little knowledge of mission results were learned. Quartered at Tan Son Nhut, there was only infrequent contact with those personnel flying the out-country missions that used the services of Big Eye, and there was virtually no lateral unit exchange, other than that actioned as a 7AF staff office. In this regard, the symbol 7AF/DOBE often appeared in older documentation, having been used by the Task Force as an office symbol. It stood for Seventh Air Force Director of Operations, Big Eye. Out-country mission debriefing reports that identified ETHAN would find their way to the Task Force - usually for an answer or resolution, since it is characteristic of debriefings to stress the negative aspects of lateral unit support. This did not amount to the close mutual exchange that builds confidence and tactical discipline. As the Task Force was later to learn when it colocated with these tactical units, the

overwhelming majority of pilots had no idea of what ETHAN was, or even that it was Air Force -- to say nothing about understanding its daily mission responsibility, or the capability that could be utilized on an as-requested basis, or in an emergency.

80. (C) In the real-time situation, too, there was little feed back on the impact of the mission, since so many actions were taken in-the-blind. Therefore there is only token qualitative data on the Task Force. A typical month's success might be documented as having issued 250 MIG Warnings and 75 border warnings, with no relation to how these primary mission products served the needs of the fighter pilots in the high threat area. In accordance with the procedures in being, these were most often called on Guard, with not so much as a "Roger" required. When a call alerted a pilot to a threat and possibly saved his life, there was seldom a thank you passed over the air, nor credit given in forward or lateral reporting. Without this necessary feed back, crew members did not always develop the deep sense of pride and personal accomplishment in their daily work that would have been possible if they had been more aware of particular situations in which their information served as the difference between life and death, capture or rescue, uneventful mission or international incident.

81. (U) Certainly the individual pilot who received a call in a critical situation will never forget it. Such an instance is characterized by an event which took place in Tainan in 1968. In a meeting of the Central Base Fund committee, a motion was on the floor to give College Eye equal rights with PCS organizations. There was a temporary silence, and it looked as though the motion would not have the necessary support, when the commander of a classified flying detachment at the base rose and said:

"I was flying over Southeast Asia a couple years ago and got a warning call from a College Eye aircraft. They warned me of an enemy directly behind my F-105. I managed to pull out of his line of fire, and I doubt I would be here if it were not for the Task Force. I vote for the motion." That the motion passed is secondary to the significance of this unsolicited praise which is taken by the Task Force as symbolic of the manifold thanks of many who were assisted and in turn never found opportunity to express their gratitude.

82. (U) It is perhaps an understatement to say that in the Vietnam conflict no one seems to work with more purpose than when a crew member is downed. ETHAN, with its many electronic subsystems, was often able to play an important, if non-heroic, role in effecting these rescues, and perhaps in no field of endeavor is there more gratification derived than in being contributory to a successful rescue. This is borne out by an input submitted for this study by a controller who had served several tours with the Task Force. Though his experience undoubtedly included almost every facet of the Task Force mission, it was characteristic that in choosing a highlight, he recounted his involvement in a SAR effort. Naming a fellow crew member and indicating with pride that they were both lieutenants at the time, he reflected how, on two separate occasions in early 66, they had been able to participate in rescue operations for downed pilots. "CROWN (the USAF C-130 On-scene Rescue Coordinator) was calling a bearing to a survivor. Using the Direction Finder on UHF #6, we obtained a bearing on a beeper andpplotted the position against CROWN's bearing for trianglization. We relayed the indicated position to CROWN, and in each case the pilot was recovered at the position we

had calculated. CROWN gave us verbal acknowledgement for the rescue assistance."

83. (U) This particular account is typical of daily performance, yet its selection by this individual as a highlight is evidence supporting the beliefs that SAR assistance was a most rewarding part of the mission and that direct knowledge of mission impact (in this case CROWN's verbal acknowledgement) is highly desirable to motivate continuing high standards of mission performance. Rescue assistance actions often went far beyond the minimal participation in this case as we shall see in other accounts. Action taken to extend Big Eye on station to cover a SAR effort was unnecessary, since it was standard policy to remain beyond fragged time until suspension/completion of the SAR or maximum endurance to the nearest airfield.

84. (S) The Owens Board of Inquiry, which started proceedings at Tan Son Nhut 21 May 66, was later to make recommendations which represented the most singularly important turning point in the Task Force history. Named for the Marine General who headed the body, the board's formation grew out of a serious Red Chinese allegation that on 12 May, a USAF aircraft had violated CHICOM airspace and had shot down a MIG 17 over the communist controlled mainland. The allegation had been denied by the Air Force. While the Owens board had investigative responsibility on the specific allegation, they went far beyond, concerning themselves deeply with the total command control system. While the actual findings of the board are in fact unknown to the Task Force, and presumed to be sensitive information, the recommendations were to have profound effect on the tactical employment and mission responsibility of the Task Force for the duration of the conflict.

85. (C) By unfortunate circumstance, a radar abort had caused an early RTB by the Big Eye aircraft covering station on the day in question, and the station was unmanned during the period of the allegation. Therefore, Big Eye could provide no direct evidence in the inquiry.

85. (S) On 23 and again on 26 May, 7AF attempted to recreate the tactical air picture of 12 May over North Vietnam. A complement of strike, ECM and fighter escort aircraft flew identical missions to those on the date of the allegation. With Big Eye on station, these missions were flight followed to insure there were no border violations, and more importantly, to establish the ability of the Task Force to maintain continuity of tracking. Big Eye was successful in the tracking effort, providing track overlays which faithfully represented the flight paths. These were backed up with scope photos taken of each individual sweep of the radar. Although lacking the ground stabilization which required a lengthy after-the-fact expert analysis, when correlated with the navigation log, these photos could be utilized as positive proof that the overlays were accurate, and thus demonstrated Big Eye's ability to provide documentary evidence in future cases of similar nature.

87. (S) Immediately, there was a subtle shift in emphasis on the Big Eye responsibility. Previously, though it was often done as the easiest means to an end, there had been no requirement to flight follow each strike element. Since forward tell was made on unknowns only, the major preoccupation was the continual correlation of radar and SIF "blips" to detect unknown non-squawking tracks. Identification of specific flights was an attendant function, necessary only to pass MIG or Border Warning information in other than the general format over Guard. It now became

standard practice, insofar as possible, to maintain flight following of each separate call sign operating in NVN above 20N.

88. (S) The Owens Inquiry board published its report on 18 June 1966, with a recommendation that a station over northern Laos be established by Big Eye. In response to this recommendation, Big Eye launched a test program, flying its first mission on the new station five days later. The track was designated Charlie, and for the tests was flown as a double recycle at DaNang. With crew effort exceeding 20 hours, only six hours productive on station time could be realized on a maximum endurance mission DaNang to DaNang, due to the excessive enroute time and terrain factors which forced operation at higher, less efficient altitudes than other missions. Station altitude of 16,000 feet proved the most effective compromise between surveillance and fuel economy considerations. Stabilizationspoint was 20N/103E, and the early tests were flown with this same point as the center of the track, directly north of the "Plain de Jars" -- the suspected high threat triple A area East of 103E between 1920 and 1940 North.

89. (S) Due to the obvious inability of the Task Force to support this mission, the plan lay dormant following the first several tests, which proved the feasibility of an IFF/SIF flight following platform in Northern Laos. It is a paradox that a message from the Chief of Staff to Seventh Air Force requesting that Big Eye capability be reevaluated (Quoted in CHECO report) was dispatched the day before the alleged violation that triggered formation of the select Owens panel. This message spawned the action that eventually gave form to the SEAOR662 program.

90. (S) With this shift to a major flight following role, the Bravo profile was changed to a medium altitude station. Since flight following was

dependent only on SIF, the low altitude technique to avoid radar ground clutter was unnecessary, since raw radar returns did not have to be monitored to perform this mission. Raising the Bravo platform increased the low altitude coverage of friendlies, thus decreasing the time they were lost when making their actual bomb run to pull-out altitude. Since the overall Bravo capability became somewhat less than when flown low level as Alphas back up, several minor changes were made to crew complement and tactical employment concepts. Alpha was designated the primary station, and was manned whenever only one aircraft was on station due to recycle or abort of the other aircraft. The original crew complement of 19 had previously reduced to 18 by elimination of one enlisted radar operator, found unnecessary to handle mission requirements. Since Alpha retained close control responsibility for the fighters as well as the entire MIG Warning function, the workload had now increased to the point that another Weapons Controller was necessary. Action was initiated to form a pool of four "Roving Controllers" at the FOB. These officers worked in rotation as duty/briefing officers and augmented the Alpha mission by one controller each day. To keep the advantages of "hard crew" integrity, these controllers usually were given sole responsibility for escort control -- an exacting job, but one requiring minimum interface with the rest of the crew. This new concept in the Gulf also decreased the lost station time from radar aborts, since with operational SIF, an aircraft on Alpha could trade responsibility with Bravo and perform the flight following despite a radar malfunction.

91. (S) In conjunction with the Navy/Air Force division of responsibility in NVN which had been implemented in April, the Navy assumed overall responsibility for the Gulf of Tonkin, and many meetings were held to iron

out PIRAZ procedures (Positive Identification Radar Advisory Zone). The Navy radar ship with the PIRAZ responsibility was to be known as RED CROWN, and the procedures were implemented 19 June. It was the joint service agreement on these procedures that established the mandatory radio check-in-out procedure. Mandatory is really not descriptive, since there was little adherence to the directive -- a condition that only slightly improved after several years of continual pressure by the Task Force. In theory, all Air Force aircraft that were destined for missions above 19N would report "feet wet" (in the Gulf of Tonkin PIRAZ) to ETHAN. This in turn, was cross-told to RED CROWN.

92. (S) On egress, a similar radio checkout was to be made by each flight to report leaving the PIRAZ and to pass mission results through the use of code words. When compared with state-of-the-art command control or ground environment systems, it is easy to miss the significance of this crude reporting. It provided Seventh Air Force invaluable assistance, when one realizes the only alternative was to wait for each flight to recover, debrief, file an OPrep to be transmitted by teletype to Saigon, received, processed and analyzed -- clearly a 8-12 hour delay. It gave Seventh Air Force ability to better manage tactical resources. Support aircraft such as tankers, ECM, Rescue forces, CROWN and Big Eye could be withdrawn orderly with RTB's rather than tied to station for arbitrary time periods designed to cover the longest imaginable circumstances. Early knowledge of diversion to alternate targets or unsuccessful mission results provided the necessary lead time to retarget the objective in the frags being prepared at a days saving. Advantages in the real time mission accomplishment afforded by the verbal check included the ability of ETHAN to have

positive accounting for each aircraft rather than on a by-flight basis achieved through SIF identification. In cases where losses had occured, it allowed checking on fuel states, armament, etc., that were necessary before authority to form a Rescap could be granted. These serve only as examples of the almost limitless advantages to be derived from the check in/out procedure. That it was not followed is characteristic of the general lack of tactical discipline that Big Eye encountered in every new command control role.

93. (C) To be objective, it must be admitted that some reasons for reluctance of pilots to make the "required" call are understood. It came at a time when the fighters were making their tanker rendezvous and reforming into the standard strike force configuration with minimum delay to allow hitting the IP on time with maximum fuel reserve. This necessarily required multiple radio calls: GCI to fighter, fighter to tanker, as well as inter and intra flight chatter. Check in attempts were almost simultaneous by all flights, and the saturation would necessarily leave some calls unanswered. Big Eye, too, had notoriously poor communications capability with its obsolete, underpowered AN/ARC-27s, and instances of negative contact which can quickly sour a pilot's best intention, would not be classed as a rarity.

94. (U) In the summer of 1966, there was a major turnover by key Seventh Air Force staff. At the same time, command of the Task Force passed from Lt Col McColl to Lt Col Peck. Realizing the lasting nature of the contingency and cognizant of the need to establish continuity within the Task Force, the policy of manning key staff positions on a short tour basis was abandoned. Still TDY, the concept was changed so personnel filling these positions would serve three consecutive TDY tours,

to give approximately one year on the job. Crew proficiency was much less hampered by the rotation between CONUS and SEA since there was no radical departure from standard airborne radar practice, the mission was learned quickly and most importantly, a year into the program, there were now Big Eye returnees on every incoming crew which provided excellent guidance during the transition between environments. The previous reluctance, antagonism and outright hostility toward the Task Force seemed to de-escalate concurrently with these several changes, and the Task Force began to receive token backing from 7AF. Naturally, there were still many misconceptions about the unique AEW&C resource, but with this new spirit of cooperation, many of these were to be overcome as Big Eye set forth to overcome the resistance that was developing within the other Rolling Thunder forces.

95. (C) As stated in the lead in to 1966, concepts were developed and ground work lain which were to have great impact on the Task Force. In the conduct of tactical operations, however, the Task Force was restrained from exercising its full capability, to say nothing of exploitation or the study of previously unexplored roles. Asked the question, "Would you say that, as far as tactical employment and responsibility, the Task Force was wasted in 1966 due to inability to interest 2AD/7AF in more aggressive roles in command and control and attendant functions?" a key staff member of that era replied, "Yes, most definitely." He expanded on this answer, the substance of which follows: The Task Force saw any number of ways it could provide invaluable service, and the staff was highly motivated to see AEW&C employed in a way to realize latent capabilities that had been dreams since original conception of the airborne early warning and control

capability. We were young, low ranking officers, volunteers in the positions, motivated by our intense belief in the EC-121D and extremely anxious to "sell" our program. As such, we did not command a large audience, and it seemed that everything fell on deaf ears. For some time, the Task Force had in its file (it is no longer available), a copy of a letter from a Lt Col on the 2AD staff to the 2AD DCS/Ops. He recounted his previous association with AEW&C as a former member of the 552 AEW&C Wing, and was completely derogatory, denying any practical value to be derived from its presence in the theater, and recommending that action be initiated to return the Task Force to the CONUS. This letter was typical of the thinking that existed in the headquarters, which made each minor mission change a crusade, each concession a major victory.

96. (S) An example was our involvement in the Steel Tiger mission. The C-130s from DaNang which flew this mission (ABCCC) were down for heavy repair, and the Big Eye was selected to substitute on several occasions, primarily due to the quantity of UHF equipment aboard. A minimum radar crew was carried, with primary mission responsibility under the direction of the ABCCC personnel, who we picked up and returned to DaNang for each mission. The basic mission seemed to be coordinating with Forward Air Controllers on lucrative targets, directing strike assignments and monitoring strike handover to FAC control. While the radar was usually on for use by the navigator, ABCCC actively resisted Big Eye personnel who attempted to monitor the air picture from the scope positions. On one mission a heavy local weather condition was preventing the FAC/Strike handover. The Big Eye Senior Director, an extremely well qualified controller, had a complete video display of the extent of the frontal system as well as paints on the aircraft, and saw how easily, through

radar control, the two could be safely joined in the target area which was clear. He requested permission to take control of the strike aircraft to vector him around the major weather disturbance and complete the rendezvous. He was denied, and the strike aircraft was directed to jettison its ordnance and return to base. It is ironic that the control that "was impossible" in this situation was identical to the mission responsibility that College Eye was charged with in Barrel Roll following the geographical restriction on bombing in April 1968. The "ability" of CETF to later assume this role was solely due to established reputation through continual self assertion, and in no way predicated on hardware improvements, since the subsystems used in execution of this responsibility were in identical configuration.

97. (C) It seemed that every effort was seen by someone else as infringement on their "piece of the action," and there was no sympathetic higher authority to which appeal could be made. A similar case was in the area of air rescue. Though it was practice to help when possible by providing a "last known position," or a DF bearing on beepers, etc., there was no Ops Order or other tasking document that defined our responsibility in this area. We saw a much broader role, and because of our continual insistance, the Air Rescue Headquarters was given action to study the Task Force and formulate a workable plan to interface ETHAN into the total SAR plan. They made motions in token coordination, but filed a report which disavowed any significant value of the EC-121D in providing assistance to existing rescue forces. This was belied by the fact that in almost every case where the troubled aircraft had time to squawk emergency mode, Big Eye had the most accurate if not the only position on the downed pilot. In other cases, wingmen often would squawk flash or emergency while making

a quick orbit of the area, allowing Big Eye to mark the position with greater accuracy than could be obtained by the visual reference, or reliance on nav systems that had not been updated since ingress.

98. (C) Of course the fighters, other than those perhaps who had been saved by a MIG Alert, hated us because of the Border Warnings. If we were guilty in one area, it was for not having gone out on the road and educating all these fighter people to the positive aspects of our mission. With an aggressive enough sales technique, we might have been able to enlist their support to have desired procedures implemented. This was a lesson learned later when colocation did pay dividends.

99. (C) With the change of faces at 7AF, there was born a general interest or curiosity in Big Eye. We developed the standard command type briefing which showed our unusually fine operationally ready rate, high flying hour program, exemplary sortie success rate and percentage of fragged time successfully flown, our responsiveness to special requirements and the statistics on the number of MIG and Border Warnings issued in our fulfillment of the assigned mission. What we did not portray accurately is that the assigned mission was garbage -- totally inadequate in relation to the pressing requirements. Under new management, the headquarters became more aware of the deficiencies, more responsive to the input from the field, and by the time my tour was completed, Big Eye had advanced to the threshhold of the reputation they enjoy today, largely through sheer determination.

100. (U) It was extremely frustrating to the individuals who daily had to work in this atmosphere, but the most difficult task was confronting the crews and attempting to explain the "whys" of obvious shortcomings. With less contact with the "big picture," they could not fully appreciate even those vital functions that were being accomplished. Whereas

maintenance could see the results of their efforts as they launched aircraft, crews often felt useless. Faced with disappointments themselves, the staff could not always inspire highly motivated performance without a credibility gap. To bolster morale, a practice of routing the northbound rotation through Bangkok, Thailand was initiated after approval of the many applicable agencies. The procedures allowed a constant level of four aircraft at Tan Son Nhut, and the only impact on the Task Force was the slightly compressed time frame for phase inspection and other repairs at the MSB, which now recovered the aircraft a day and a half later due to the short "R&R." This slight handicap was readily accepted by all concerned. Maintenance personnel as well as crews split their tours between the MSB and FOB, and since all personnel movement was by UE aircraft, everyone in the Task Force received the benefit of these side trips to Bangkok.

101. (U) New enlisted billets were allocated to the Task Force, and the move was a slight improvement. As in every move to follow, the task of building wall lockers fell to Big Eye -- a seemingly minor requirement, but nevertheless a real source of irritation when the frequency of movement is considered. Geographic stability was unknown to the Task Force, not only between bases, but within the confines of any base. At Tan Son Nhut alone, the Operations office was moved several times within one building and several times to other locations on the base. It is impossible to establish the exact number of times, but it is believed to be as high as seven. Only the Operations building at Tainan has remained assigned throughout the life of the Task Force. In view of this, one might wonder if there was meaning to this latest move in which the Task Force occupied 700 sq ft of a 1200 foot room shared with the Base Chaplain's office.

102. (U) A large scale series of self-help programs were initiated to upgrade living conditions in the new enlisted area, which also helped morale. A concrete slab was poured, screened walls erected, a roof framed and the resultant patio was furnished with stateside luxuries such as a carpet, comfortable lounge furniture and refrigerators. A Bar-B-Que pit was constructed by the same self-help method. Not to be outdone by Big Eye, a neighboring barracks of Air Commandos matched the effort with a similar addition to their billet, and soon the idea had swept the contonement area. These improvements were doubly important since Saigon was increasingly dangerous and personnel were staying close to "home." Bombings were becoming commonplace. Big Eye officer crew members lived in downtown hotels, but luckily were not in the two that were extensively damaged in terrorist attacks. The staff officers, who spent their entire time at the FOB had leased a villa in Saigon, but even this did not offer immunity, as a nearby bus stop was the target of a bombing attack. This was also the period of Buddhist uprisings with angry mob action, self sacrifice by burning, anti-American demonstrations, burning of vehicles and looting. The curfew was extended to 1900-0600 except for direct transit to/from the base. Military personnel were advised to remain off streets, not to travel alone, to avoid public gatherings and to observe off-limits areas, such as the entire Cholon district. Despite this great civil unrest and Viet Cong activity, Big Eye maintained civic involvement through its program of support to a nearby orphanage.

103. (S) An interesting sidelight to the Villa leased by the Big Eye staff was the fact that they shared it with the officers from the Air Force Systems Command Liaison Office for Southeast Asia (7AF/DAFSC).

Also in the theater TDY, these men were from the headquarters of each major division of AFSC and had direct two way reporting with their parent units such as the Aerospace Systems Division (ASD), Foreign Technology Division (FTD) and Electronic Systems Division (ESD). Functionally, they worked with the 7AF requirements office which had responsibility for the SEAOR programs. Their close personal friendship was invaluable to the Task Force in its efforts to upgrade the Weapon System, and was to continue after Big Eye moved to Thailand. Big Eye realized the need to improve its detection and communications, but was unable to give definite form to the requirements. The Systems Command people were immediately able to envision hardware in-being and in late developmental stages that would be applicable to the airborne environment. Through this association, Big Eye became knowledgeable of the GPA-122, the various Enemy IFF systems and other capabilities which eventually became operational within the Task Force, largely because of the support of this office.

104. (C) The "first blood" drawn from "Connie" during the mortar attack at Tan Son Nhut was not to be the last. An aircraft letting down into the DaNang approach pattern on recycle 21 Jun 66 took four hits from small arms ground fire. As if setting the precedent for future encounters, no one was injured and no damage critical to flying safety was incurred. The aircraft was able to return to the normal flying schedule after replacement of the right tip tank.

105. (C) Four hits seemed to be the maximum number the enemy could accurately place into the EC-121, as several months later another Big Eye aircraft took the like amount of ground fire, this time from Tigre Island while holding in an orbit awaiting arrival of the fighter escort. A

recheck of position put the aircraft at coordinates 1709N/10721E when hit. Again no injuries or serious damage resulted.

106. (U) O'Hare field in Chicago claimed the title of the busiest airport in the world, but the evidence clearly indicated that Tan Son Nhut should have the honor, with a monthly total in May of 47,000 take offs and landings with a daily high of 1893. A second parallel runway was programmed, but this was not to become operational until after the Task Force had departed. The problem was really larger than the figures, since almost all activity was between 0600-1900, with extreme concentration in several one hour periods. Big Eye had a tactical priority, but this did not provide real relief, since there was not sufficient room on the taxiway or run-up pad to squeeze past aircraft awaiting take-off clearance. Big Eye representatives at several meetings on these problems learned the facts which confirmed their observations as pilots. On some occasions, in excess of 50 planes were waiting to take off while another 50 were waiting to land. In an attempt to relieve some problems in control, the approach pattern was "stacked." Big Eye was directed to fly a 1500 foot, 150 knot downwind leg as part of this plan -- a non-standard configuration, but one easily within the capability of the men and machines. Recovery at Tan Son Nhut at the conclusion of a maximum endurance profile sometimes became a matter of concern, as additional holding for high traffic or emergencies ate into reserves, but no serious incident ever resulted. The high density traffic made error free air traffic control an impossibility. On one occasion, a rapid series of events degenerated a normal approach into an extremely dangerous situation, and an almost certain accident was turned into a close call only by the unshakeable skill of an aircraft commander with many hours of experience in the airframe. Tan Son Nhut had

a cross field runway which was utilized by C7 Caribou's, O-1 Bird Dogs and other aircraft with a short take-off/landing capability. The sight of another plane landing on an apparent collision course was unnerving enough, but in this case, the action on the cross runway nearly proved disasterous, when compounded by a control error. In the terminal phase of approach, the ETHAN Aircraft Commander, a Task Force Operations Officer, suddenly observed an aircraft entering the approach end of the runway to begin its take-off roll. The rate of closure clearly indicated collision, and the AC prepared to make a missed approach, climb out. However, at almost exactly the same time, he realized an aircraft on the cross runway had executed a missed approach, and would pass over and in front of the EC-121. Any deviation from the normal approach would invite the danger of a mid-air with this aircraft, so the aircraft commander became committed to landing, despite the danger. The aircraft which had entered the active was now rolling, but overtake was certain if a standard technique were used for the touchdown and roll out. At approximately 50 feet and short of the runway, the AC ordered his copilot to manually over-ride the reverse pitch lock out. He applied reverse thrust on all four engines while still in flight, and upon contact with the runway maintained maximum reverse thrust and braking action, barely avoiding overtake of the other aircraft, which was totally unaware of the emergency. So skillfully was this accomplished, that the compression devices on the landing gear struts did not even register it as a "hard" landing.

107. (U) This air traffic control problem, overcrowded base conditions and especially the vulnerability of the high concentration of tactical aircraft at the Saigon base were all evidence of the tactical necessity

to disperse units throughout the Southeast Asian area, and studies were generated to develop a workable plan. Proximity to the tactical mission, and co-location of common airframes were primary considerations. It became a general assumption that the Task Force would move, with where and when the only remaining questions.

108. (U) It became apparent that even with the softening line toward Big Eye in 7AF, the Task Force was not going to be given authority in areas where capability was not fully demonstrated. The standoff was obvious, since without authority, it was difficult to exercise these capabilities to build a convincing case. Authority here is meant as blanket authority, such as given in an Operations Order or similar directive, since in the actual daily conduct of tactical operations, authority was often delegated on an ad hoc basis in lateral coordination. The Task Force therefore began an aggressive campaign to give assistance in any form that it could, with or without the authority, when in the opinion of the Senior Director, the assistance attempt could be fully followed through and actions taken would not unnecessarily jeopardize other forces.

109. (C) The area most fertile for exploitation was emergency refueling. There was an extremely high incidence of fuel emergencies. These were caused primarily by spontaneous MIG engagement which extended time in the target area as well as the consumption rate, and by battle damage resulting in fuel losses. The primary objective of the pilots with these emergencies was to reach the "safe haven" of the Gulf where they could "punch out" with reasonable assurance of expeditious recovery by on-scene SAR forces. Many first line aircraft, and on occasion, pilots lives were being lost in this manner solely for lack of fuel. These losses were needless, in the opinion of Big Eye. The Task Force envisioned a tanker dedicated to its control

on a more northerly orbit for exclusive use by BINGO fuel aircraft. If this was impossible, the best alternate solution would be to allow hand off of an existing tanker to ETHAN for northward extension above the 19th parallel in emergency situations, to allow it to "meet the emergency half-way." These recommendations were disregarded for the moment, but were later to receive favorable action, when a mid-air collision brought the necessary attention to the tanker control problem.

110. (C) The new personnel at 7AF realized that little had been done to implement recommendations of the Owens Inquiry Board. It was rumored that a follow up investigation was pending. Seventh formed an ad hoc committee to take the necessary action. The Big Eye Commander, Lt Col Peck, and Operations Officer, Major Gores, were appointed to this body. In this capacity, they were given Sensitive Information Clearances (SSIR Billets).

111. (S) It was meeting with this body that Big Eye first became familiar with the overall command control system being programmed, later code named SEEK DAWN. The key element of this with respect to Big Eye was a modified BUIC II configuration for MOTEL (Monkey Mt. DaNang). Some preliminary study had been accomplished on the SEAOR 62 requirement, and it became apparent that the thinking to this point had completely subordinated any upgrade of the manual operation to an automated input to MOTEL. The Big Eye representative made the traditional arguments for retaining and improving the autonomous capability, and received strong PACAF backing. Big Eye was completely satisfied with the position on SEAOR 62 finally adopted by this committee, though subsequent development of the specifications was again to severely limit the autonomous capability, requiring another PACAF reversal.

112. (S) This committee also decided additional study should be made of the station in Laos that the Owens Board had recommended. The original tests had shown the feasibility of the overland orbit, but there had been no concentrated effort to develop optimum parameters or explore a possible expanded role. A Lt Col from ABCCC was given action to fly the missions with Big Eye and report to the committee. A series of five tests were flown with excellent results, and the report listed the following recommendations: establishment of a northern TACAN to allow Big Eye to maintain radar stabilization on a track above 20N; authority for Big Eye to take control of tankers from the Red and Orange orbit and extend them to 20N for emergency refuelings; and to frag strike aircraft to make a radio call to ETHAN with strike results, fuel states, battle damage reports, downed aircraft, etc. (This was an OPLAN procedure, but as discussed previously, was not followed). The report also referenced the desirability of this station being supported by EC-121 aircraft relocated to Udorn, which would allow 8-9 hours on station with a single maximum endurance sortie. Big Eye made its own formal report to 7AF requesting that the station be established as a permanent orbit, and outlining the additional requirements to support it full time. On 24 August, Seventh forwarded the proposal for Charlie to PACAF, with recommendation for the necessary augmentation of aircrews and aircraft. Since any augmentation would necessarily take some time, it was decided to fly Charlie to the extent that it could be supported from existing resources. It was initially flown every third day in lieu of the Bravo mission. On the other two days, both Alpha and Bravo would fly as in the past. Areas which only Charlie could "see" effectively were targeted on days Charlie was on station insofar as possible to insure maximum flight following effectiveness. The station

was flown within the units of the box shown on figure 6. Figure 7 shows overlap coverage of the Gulf and Laos station.

113. (S) The SI clearances granted to the two Big Eye members were deemed invaluable, and lack of the same by all key staff members for this short period prior to 1968 was felt to be a definite handicap. With this clearance came a fuller understanding of the Security Service missions, such as SILVER DAWN (later COMMANDO LANCE), and the desirability of having an SI capability on the EC-121D, either through cross-tell or an internal capability. This was talked informally "across the table," but was never fully explored since 7AF made it clear that while they realized it would be a tremendous benefit, there was no feasibility in such a proposal, since the input was not available. Later, the establishment of Rivet Top was to disprove this and provide the justification to gain the capability, coded RIVET GYM, for the Task Force on a crash basis.

114. (C) With establishment of the PIRAZ in the Gulf, and overall Navy responsibility for aircraft identification, the Navy became acutely aware of the problem with non-squawking aircraft which had plagued Big Eye since its first mission. In mid-August 66, a joint Navy/Air Force meeting was held to resolve this and other problems. One suggestion was to have common frequency check-in between Navy and Air Force (ETHAN and RED CROWN) thereby eliminating cross-tell. Proposed by the Navy, it was discarded when they learned that Big Eye already was saturated with check-in (on days that the Mission Commander briefed his flights to make the "required" call). An outcome of the meeting was a message to all tactical units stressing the necessity to comply with existing directives to leave transponders operational at all times.

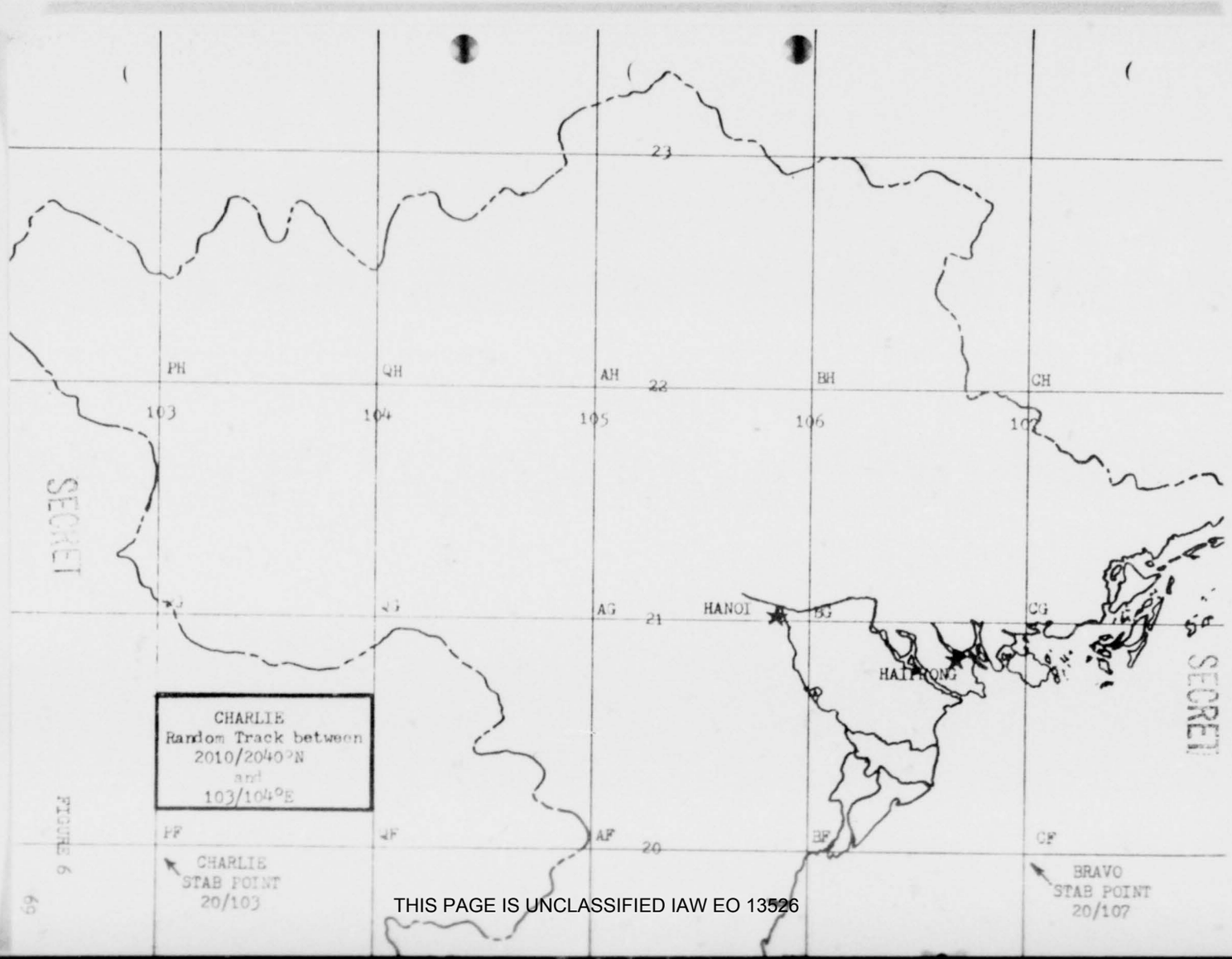

FIGURE 6

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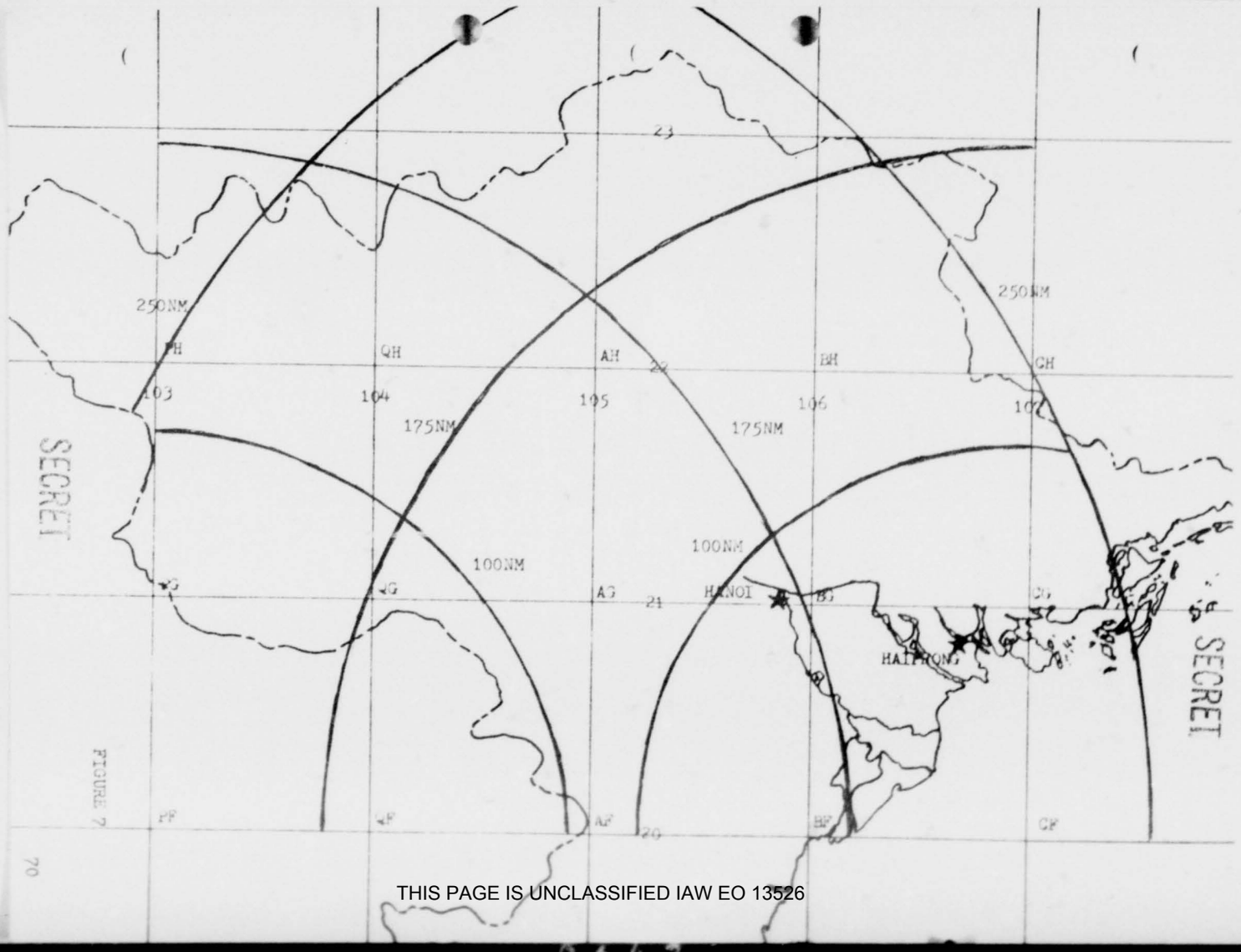

FIGURE 7

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115. (S) On 20 Sep 66 the SAC EC-135 Radio Relay Aircraft (RRA) was successfully tested. Flying an orbit in the Gulf, radio transmissions on a discrete input frequency would trigger the relay, for real-time retransmission on the aircraft's powerful UHF Guard transmitters. Flying at high altitude, the transmission from the 250 watt units on this aircraft could be heard throughout the NVN area with unbelieveable clarity. The short test proved so successful that RRA became permanent almost at once, although there was a critical shortage of modified airframes, since production had only started. Eventually, there were to be six RRA aircraft, and coverage during the entire liability period for Air Force strikes was provided with remarkable reliability. The aircraft itself used the call sign LUZON, but the relay function was designated WAGER. This capability deleted the requirement to manually reinitiate each warning made by PANAMA. The RRA was programmed to eventually have secure voice compatibility, which would allow Big Eye to voice tell all track data on secure voice, as an interim phase to the automated tell under SEEK DAWN. While this would be valuable, Big Eye saw additional relay channels as a means of overcoming its own limited communications range -- one of the prerequisites previously identified for assumption of a true close control responsibility for the MIG Cap flying escort with the strike force. Impossible at the time, with limited existing equipment dedicated to the UHF Guard Warning channel, the idea was kept active by the knowledge that the RRA was to receive additional relay channels in the future.

116. (S) In mid-August, the expected move was first announced, by way of directing the Task Force to study the possibility of moving to one of four bases in Thailand -- Udorn, Ubon, Korat or Don Muang RTAFB. The Task Force Commander visited each of these bases, and found Ubon was the

only one that could provide the necessary ramp space -- the single most limiting factor, since by now the second Task Force augmentation was planned to allow support of the Laotion station which would require six aircraft at the Forward Operating Base. He reported this to Seventh Air Force, but in preliminary correspondence, the 8TFW, host unit at Ubon, rebutted the Task Force claim that there was sufficient ramp space. Col Peck was sent back to Ubon to again study his selection. Armed with the applicable regulations and manuals, he made drawings of the ramp and redesigned the parking plan in accordance with the established F4 criteria. This report was accepted as final, and the move was directed by 7AF, with a tentative date of 1 Nov 66. The Task Forde was authorized direct liaison with the 8TFW to determine requirements.

117. (S) The 1 November date was extremely optimistic, and was almost immediately slipped to 1 Dec, concurrent with a request that in-country clearances be established for the Task Force. In Oct 66, the office of the Chief of Staff, Air Force rendered its decision on the third station proposal, and directed ADC to augment the Big Eye Task Force to a level of eleven aircraft/aircrews. Meanwhile, PACAF was informed by 7AF that Ubon would be capable of supporting a six aircraft EC-121 fleet by 1 Dec -- a date which was subject to considerable slippage. Based on this information, PACAF ordered the Laotion station to be manned daily effective 13 Oct, believing the over extension would be only a 45 day requirement.

118. (S) From previous experience, 7AF was aware that a long over extension of the Task Force resources would be paid for by a higher abort rate with associated lost station time, and therefore established realistic guidelines for the Charlie station. Charlie would not be executed unless the strike force was fragged above 21N. Six such cancellations occurred in

the first half month of operation in this new posture. Bravo was temporarily suspended, pending augmentation of the Task Force. These measures made good on the Second Air Division decision of a year prior, not to frag Big Eye in excess of 800 hours.

119. (S) In preparing for the move, the visits to these Thailand bases where the primary out-country strike elements were located, provided the first real insight to the depth of resentment that existed due to Big Eye's borderwwarning role. This was brought home most forcefully in a direct confrontation between the Task Force Commander and an F-105 Tac Fighter Wing Commander, at which Big Eye was severely criticized for its "spy" role, having just recently violated several of the unit's aircraft for red buffer penetrations. The Big Eye Commander personally evaluated his host as an extremely fine commander, but was deeply concerned over the lack of understanding that existed with respect to ETHAN. The capabilities that could provide benefits to offset the distaste for border warnings had not been exploited, and indirect assistance such as provided in a SAR was seldom known to the real benefactor. These capabilities were therefore unknown to the majority of the tactical fighter/recce pilots. The Commander returned to TSN dedicated to a program of winning good lateral unit relations through a process of education, and daily building confidence and trust by further asserting the Task Force in roles directly beneficial to the strike forces. The paradox is in the fact that crews were extremely eager to learn the impact of their mission. Had they learned the true feeling for Big Eye at that time by the other tactical forces, they would have suffered an unhealthy ambivalence.

120. (S) The Rolling Thunder Operations Order, under which Big Eye had originally operated, was now complemented with publication of Seventh Air

Force Operations Order, Combat Lightning (468-XX), which incorporated all command control and other support elements of the out-country air war. It gave form to the previously fragmented directives, spelling out the existing procedures and responsibilities for Border Warnings, MIG warnings, forward tell, SAR assistance and flight following. In it, MOTEL was established as the Tactical Air Control Center - North Sector (TACC-NS). Big Eye's forward tell responsibility was shifted to MOTEL. PANAMA remained as a GCI and provided key input to MOTEL for the southern area of the Gulf and adjoining land mass. In addition to these agencies, Big Eye and the Radio Relay Aircraft, the entire program included an alternate TACC-NS (MOTEL ALPHA) colocated with the GCI BRIGHAM at Udorn RTAFB and interface of additional inputs from the NTDS (Navy Tactical Data System) and sensitive sources. Since hardware was in various stages of development and acquisition, the document had several interim phases to the final SEEK DAWN mode of operation.

121. (S) Combat Lightning was implemented 1 Nov 66, with MOTEL operating from a temporary modular facility in basically a manual mode. Big Eye was maintaining flight following of all Air Force flights above 21N, and in addition to unknowns, crude position reporting on friendlies was now added to the forward tell responsibility. A voice tell format with 5, 2 or 1 minute moves depending on track priority was planned upon realization of a secure voice capability. This information was too valuable to be told in the clear, so a series of reporting points, A-E were employed as an interim procedure. They were designated to mean:

A = pre strike tanker hook up
B = crossing 21N on ingress
C = Time on Target
D = crossing 21N on egress
E = post strike tanker hook up

No actual positioning was given, and MOTEL plotted this tell based solely on the pre-planned flight path. Upon initial implementation, Big Eye was responsible to tell all 5 points on each flight. Points A and E were soon deleted since they generated workload solely for the purpose of forward tell and could be more easily introduced by the agency with tanker control.

122. (S) Emergency refueling requirements began to attract other attention and on 28 Nov 66, a meeting of all organizations involved was held. The Combat Lightning plan had given token acknowledgement of Big Eye emergency refueling authority, and this was thought to be the big breakthrough. However, it was not, as other agencies took this only to mean vectoring an emergency aircraft toward an available tanker, and coordinating with tanker control to insure priority handling of the flight. SAC's Third Air Division refused to budge from its position that tankers would not fly above 19N. Tankers were squawking Emergency War Order (EWO) Mode II codes, which were not made available to Big Eye. Thus the Task Force could not selectively identify one specific tanker, but was limited to monitoring them only as "raw" IFF paints. SAC remained firm on this policy also. They did not want close control, but rather general positioning, prefering to effect the actual rendezvous with their on-board equipment. Because of this opposition, Big Eye was unable to "sell" any of its proposals at this meeting. Several procedures involving the other agencies were ironed out, and a discrete emergency refueling frequency was established. All Combat Lightning forces were required to monitor it full time, and all fuel emergencies were to be called on this frequency. Additionally, it was mandatory that this frequency be on channel 8 in all tactical aircraft with preset channelization. UHF Guard was already saturated, and this

was expected to alleviate part of the tactical load on guard, as well as providing a clear channel to control the BINGO fuel aircraft on. In actual practice, it proved disappointing, since the great majority of fuel emergencies were still called on Guard or the flight's tactical frequency. Because of the mandatory monitoring requirement, it tied up one of the EC-121's eight UHF sets full time, with little productive value.

123. (S) Communications disciplinewas extremely deficient if not non-existent throughout the entire spectrum of the out-country air operation. As one Task Force officer reflected, "Vietnam may be remembered as the war that was fought exclusively on Guard." The extent to which this is true, and the confusion that resulted cannot be fully appreciated by those who did not experience it. Simultaneously, Guard might be in use in a SAR effort, for MIG Warnings, Border Warnings, a tower emergency at a northern South Vietnamese Air Base, a fuel emergency and various sets of inter/intra flight chatter. The multiple transmissions so saturated 243.0 Mhz that it was rendered nearly useless. The problem was accentuated when radio relay became operational, since Guard was always considerably stronger than the audio on discrete frequencies. Redundant warnings on the same situation by the several command control agencies also compounded the problem. As a result, some vital warnings were not given, issued warnings often were not received, emergency calls went unanswered, vectors were missed, and all tactical forces suffered the handicap. An attendant problem with the general warning procedure and the saturation on Guard was the undue tension and anxiety it created in the strike forces. There was concern that MIG Warnings often caused needless jettison of ordnance with expectation of immediate hostile engagement. It was also speculated that feints for this exact purpose were among the tactics used by the MIG Interceptors. Th[illegible] override the audio

of tactical frequencies being used to coordinate flight maneuvers in setting up the actual bomb runs, with resultant loss of precision. In some cases, bomber pilots were known to shut off Guard receive for this reason, and with this action they became vulnerable to attack without benefit of warnings which might be successfully passed. The problem was universally recognized, but despite continued emphasis, there was no immediate resolution, primarily for lack of alternatives. Big Eye became an early champion of the crusade for tactical discipline, and later successes in this field are believed to be the greatest single achievement of the Task Force, since the lessons learned transcend time in their value.

124. (C) On 4 Dec 66, Tan Son Nhut Air Base again came under enemy attack during the early morning hours. The base was penetrated by two Viet Cong suicide platoons. Maintenance and aircrew personnel preparing to launch the day's missions were pinned down on the flight line by heavy automatic weapons fire as mortar shells rained down. Fortunately, the Task Force suffered neither casualties nor aircraft damage, and both aircraft were airborne within thirty minutes of the all clear.

125. (C) The movement date was passed, and the Task Force was still in the Republic of Vietnam. Required support had not materialized, in-country ceilings had not been granted by the Royal Thai Government, Ubon was still attempting reclama of the decision, and there was considerable interplay between various headquarters'. Among those involved were: 8TFW, 552 AEW&C Wg, 7AF, 13AF, 4AF, 7/13AF, PACAF, ADC, MACV, MACTHAI, American Embassy Bangkok, CINCPAC, USAF and JCS. Big Eye received only partial information on the status of the move and the augmentation. With movement uncertain and dates even less clear, Big Eye filed its completed mobility plan for ready reference and assumed a posture of watching and waiting. The terrorist

activity had somewhat subsided in Saigon since the elections. The curfew was relaxed and a liberty pass system had been implemented which allowed up to 1/3 of a units strength off base at one time. The M-16's held since original deployment had been turned in for several months in favor of new survival vests which included a .38 calibre revolver. Now the remainder of the field kits were turned in and TSN began to take on a civilized look. A new sustained activity Air Medal criteria was in effect which, on a point system, would qualify Big Eye personnel for the award upon completion of 20 Combat Missions (above 17N but not over NVN -- 5 points), 35 combat support missions (2.86 points) or any combination thereof adding to 100 points.

126. (S) The QUICK LOOK series of tests were started in late December as the first step in developments which were to bring about a greatly enhanced MIG detection capability. The series was a feasibility study of employing the QRC-248 in Big Eye's EC-121D. Developed under the Air Force's Quick Reaction Capability (QRC) concept by Rome Air Development Center (RADC), Griffis AFB, on a requirement generated during the Cuban crisis, the QRC-248 was an enemy IFF system capable of interrogating the Soviet SRO-2 type airborne transponder. It had first been discussed as a possibility by Big Eye and Systems Command officers who shared a Saigon villa previously mentioned. The program was in response to SEAOR-44, which had formalized the requirement. In the feasibility test, the active use of the interrogator was withheld. In the passive mode, the receiver is open, and if a SRO-2 equipped aircraft is interrogated by a compatible ground radar site, the reply can be observed as a non-synchronous video display giving detection and azimuth information only. The purpose of the test was to prove the aircraft installation, validate belief that

SRO-2 squawking "bandits" were flying in SEA, and to determine if the system could be used operationally in a passive mode by correlating cross told azimuth indications between two Big Eye stations.

127. (S) Big Eye became operational as the first airborne user of the KY-8 ciphony equipment in SEA on 22 Dec 66. This secure voice input was transmitted thru the two AN/ARC-85 UHF radios, which had received a broad-banding modification. A significant hardware development, it could not be employed tactically at the time, since ETHAN was flying beyond UHF range of other operational users. However, it was checked against ground sites each day enroute to station, and thus had been throughly "de-bugged" by the time it was used for operational encryption.

128. (C). Routine post-flight maintenance inspections on the 7th and the 15th of December uncovered small arms inflicted damage which had gone unnoticed in flight. Additional debriefing of the crews failed to give any evidence of where the ground fire might have occurred, though it undoubtedly again happened in the approach pattern either at DaNang or Tan Son Nhut.

PART THREE

1967 -- THE YEAR OF BREAKTHROUGH AND ACHIEVEMENT

129. (S) Whereas 1966 had provided intense disappointment to the perceptive leadership of the Big Eye Task Force who found constraints at every turn, 1967 was to bring advancement on every front beyond their wildest dreams. Crews were to become genuinely excited about their mission, and lateral units were to do a 180° reversal and actively seek out Task Force participation in tactics meetings and similar conferences. As 1967 approached and arrived, there was little indication that Big Eye was at the threshold of a new era as they did a repeat performance of flying thru the Christmas and New Year's truce periods. On the other days, total Air Force activity was light due to heavy weather. Charlie was often cancelled, when weather kept strikes in the southern part of NVN. USAF policy remained in effect not to commit the strike force in Northern Laos or Northwest NVN North of 21N or West of 104E unless ETHAN Charlie was on station.

130. (S) With both the Gulf of Tonkin and Laotion stations beyond UHF range of other AF agencies, HF communication was primary for all forward/cross-tell and coordination. A common frequency of 8615 Khz was in use, and despite a continual background of CW transmission and occasional oriental music which made constant monitoring very irritating, it was satisfactory to the skilled radar and radio operators who could successfully "read thru". The problem with the HF net was the fact that BRIGHAM (GCI, Udorn) was not on it. They had control of the tankers operating South of the Charlie station, and without communication, coordination of fuel emergencies was impossible. Big Eye recognized this as a handicap and applied pressure thru its daily activity reports to have BRIGHAM become

operational on HF. Seventh Air Force directed this action thru the 505th Tac Control Group, but it took many months to become a reality. This same lack of communication proved to be a tremendously important door opener, allowing Big Eye to demonstrate its emergency refueling capability. By virtue of its far Northern location, ETHAN often had considerable advance notice of fuel emergencies. They were unable to pass the information to BRIGHAM and were completely helpless, within existing authority, to aid the egressing aircraft with fuel requirements. Big Eye thus began to "steal" tankers. Although SAC's 3rd Air Division was firm in its official policy, it was discovered that most individual aircrews were extremely responsive to emergencies, and would fly far North of their stabilized orbits to off-load their life sustaining fluids. Big Eye had the Strike/Tanker assignments in their mission information. When an emergency was declared, the tanker assigned to the flight involved would be contacted on UHF, advised of the emergency and asked if they would extend Northward. If they would, and most did, ETHAN would notify flights assigned that tanker of its new position. The emergency aircraft was serviced first and the others on the tankers return trip to the normal orbit. The news spread quickly by word-of-mouth, and soon Bingo fuel calls were being personally addressed to ETHAN by callsign. These actions were at first documented cautiously in activity reports, with narrative such as "ETHAN Charlie provided emergency refueling assistance to DODGE flight who had battle damage", with no mention of where or how the action was accomplished. The headquarters reaction, if there was any, was unknown to the Task Force, but there was never a challenge to these actions, or official reprimand for this unilateral over extension of assigned mission responsibility. Acquiescence by higher headquarters served as authority under which Big Eye

continued this operation. The same technique was used only occasionally in the Gulf, where tankers under WATERBOY or PANAMA control were harder to "steal". One of the earliest such actions, and one of the more dramatic, took place on the Charlie mission. Strike Aircraft were beginning their egress, when an emergency IFF return was monitored. The Senior Director went out on Guard thru the Radio Relay, and asked the aircraft squawking emergency to identify itself and the nature of the emergency. The call was immediately acknowledged by the flight leader stating that one aircraft was badly battle damaged, loosing fuel and unable to transmit. The Senior Director, Capt DiCarlo, rogered, stating he would attempt to secure a tanker for emergency refueling. Meanwhile, the other weapons controller had established identification on a tanker in the Red Anchor orbit, closest to the emergency. This tanker was contacted on Guard and given a heading, with the request to extend northward. As vectors were given to establish the shortest head-on intercept, radio contact was lost. Believing the problem to be radio failure, and with insufficient time to re-establish contact with radios available to him, the Senior Director immediately moved to the Radio Operator's position where he knew there was a functional Guard transceiver. Now physically seperated from a scope, he designated a "runner" to bring him the information from the ACO 2 scope position manned by the other controller as he passed the vectors for the terminal phase of the rendezvous. Though it was later established that the radio "failure" was an unannounced station departure by the RRA, the save was no less evidence of the responsiveness and adaptability of Big Eye crews in these emergency situations.

131. (S) Unknown to Big Eye personnel with exception of the two Sensitive

cleared staff members, a special mission had been in planning, and its execution on 2 January proved extremely effective. One officer stated:

> "SI access was of great value. For example ... 2 Jan 67 MIG kill planning could not have been done without SI information ... Crews (Big Eye) on the 2 Jan MIG Sweep could not be briefed on SI Information and were simply instructed what to do and not to question their instructions. Needless to say, this caused concern..."

Significant as this mission was, the Task Force Unit History for the period contains only brief mention of it, stating that Big Eye provided flight following and radar surveillance protection. Questioned on this, one former staff officer admitted that some tactical operations were completely omitted from Histories because even association of terms was often considered Top Secret, and the Unit History was always kept at a Secret level. Radar personnel who flew the sortie remembered that the two controllers received a separate briefing from the rest of the crew. Memories are often dulled by three years elapsed time, and especially when thousands of additional hours flying time accrued have blended the many dramatic events witnessed in the interim into general impressions rather than specific detail. In this case the precautions on the sensitivity that accompanied the briefing certainly had some effect on retention, as the Senior Director is unable to recall any specifics of the briefing or the mission other than to acknowledge he was aware that the mission was a special MIG sweep. Having since held an SI access himself, he could vouch for its value to a Director, but without knowledge of what pre-mission information was available vs what was told, could make no assessment of how it might have helped. The mission produced seven MIG kills. The kills were all MIG 21's, and there was no loss to friendly forces. The success of this mission was given wide release in the public news media. A briefing from the Seventh Air Force Director

of Intelligence provides insight on the MIG threat during this period:

> "Prior to August 67, the North Vietnamese could find no MIG strategy or tactic which would give them a consistant edge. Nearly all attempts to disrupt U. S. strike missions during this period resulted in disproportionate MIG losses. During April, May and Jun 67, when large numbers of non-GCI controlled MIGS reacted to our strike force, 43 MIGS were shot down while nine U. S. aircraft were downed by MIGS. Throughout this entire period (1965 through 1967), the MIG kill ratio was four to one in our favor."

A similar mission on 6 Jan resulted in two more MIGS destroyed.

132. (C) On 8 January, the Task Force received a message from PACAF stating that the Joint Chiefs of Staff had approved the move to Ubon RTAFB, however, a firm date was still unavailable pending successful negotiation of the in-country ceiling with the Royal Thai Government. On this same date, still another Big Eye aircraft was hit by small arms fire at TSN.

133. (S) The Systems Development Corporation (SDC) held a USAF contract in the SEEK DAWN program, and solicited Big Eye assistance in planning the BUIC facility at MOTEL. This proved to be another case where lack of SI access prevented full involvement. The Big Eye Radar Staff Officer, Major Mulherron, was prevented from attending several conferences on the TACC-NS, and was denied full knowledge of the MOTEL operation. Because of this, he could provide only minimum guidance to SDC concerning the Big Eye input and MOTEL interface, lacking knowledge of how the inputs were to be used, what other inputs they would be interfaced with etc, which might have allowed him to identify future problem areas.

134. (C) The mission of 20 Jan 67 started routinely enough, if the conduct of aerial warfare may be classified as routine. Capt Long was on the ETHAN ALPHA mission, controlling the refueling of the F-104 fighter escort. At 0303Z, he witnessed an emergency squawk, and identified it as

a KC-135 Tan[illegible] in [illegible] BROWN ANCHOR [illegible]t which was on its way to relieve the tanker he was c[illegible]olling. It [illegible]xperienced a mid-air collision with a Navy F-8. The tanker was ass[illegible]ed to ETHAN to refuel the MIG Cap, but was under ground radar control at the time. Capt Long immediately directed the fighter escort to intercept the stricken aircraft, and released them to provide a visual escort to DaNang, where the KC-135 safely recovered. Emergencies always have a way of doubling up, and less than 15 minutes later when the two F-104s had returned to the Fox area of control, one experienced his own emergency. Capt Long had committed them on a non-squawking unknown and was talking to them on the discrete control frequency. A visual contact was made on the unknown, but its identity had not been established when the wingman of the two-ship formation announced he had problems. There was no other declaration of emergency, but radar contact was almost immediately lost. RED CROWN then cross-told to Big Eye the fact that the unknown was a Navy aircraft. The pursuit was stopped, and the lead aircraft was given instructions to make a descending turn and attempt to make contact with his wingman. He acknowledged, stating he had a "Tally-ho" on a "chute". The plane landed within sight of the RED CROWN vessel, though their operations personnel were unaware of the loss. Upon receiving the cross tell from ETHAN, they launched rescue helicopters which had the pilot out of the water less than 10 minutes from his complete electrical failure which had led to the loss. Several months later, the pilot and controller met, and it was learned that this particularly hectic mission had been the pilots first mission in SEA. He kidded about what he had contemplated looking forward to the other 99. The Big Eye aircraft itself had diverted to the point of loss, and though it became unnecessary, had established visual

contact with the downed pilot. A return to station and several border warnings later, the days work was considered done, but just as ETHAN ALPHA was to leave station, a MAYDAY was heard from FALSTAFF, a flight of F-105's who needed emergency refueling. The director alerted the Big Eye flight crew to the emergency, and station was held despite diminishing fuel reserves. A tanker was immediately contacted and extended Northward. Radar contact had not yet been re-established with FALSTAFF, but their approximate position could be extrapolated from the point of lost contact, their fragged target assignment and the time elapsed since last contact. Based on this dead reckoning position, they were given a snap heading to the rendezvous point. When contact was made, a minor course correction completed the join-up, and another "illegal" emergency refueling was accomplished under ETHAN control without incident. (illegal since Big Eye was still several days from receiving authority to take over tanker control, with this mission providing key justification). FALSTAFF expressed their appreciation on the radio for the assistance, stating it probably would have been necessary to eject without the refueling. The Task Force seldom knew if these acknowledgements were forwarded in mission debriefing reports, since info copies were not made available. Big Eye was therefore in the awkward position of "assuming credit where credit was due". In this instance, upon a submission by the Task Force, Hq 7AF awarded the director with a Distinguished Flying Cross for his extraordinary achievement which contributed materially to the safe recovery of 5 aircraft and 6 aircrews.

135. (S) The mid-aid collision was due to a break down in the control function of providing aircraft separation, and did not actually relate to the employment of them or division of responsibility in control authority. However, the accident provided the necessary stimulus to bring about review

of the entire concept, and almost immediately a meeting was held to identify and correct the deficiencies. Big Eye made its proposals at the meeting:

a. Regular tankers in the color-designated orbits would remain under positive control of ground radars, PANAMA and WATERBOY, with appropriate division of responsibility between them. These tankers would not go above 19N.

b. Tankers would squawk Mode II codes known to all (rather than EWO codes), which would allow Big Eye to simultaneously decode Tanker on Mode II and a specific emergency aircraft on Mode III, the assignment of which could be directed by the controller (Mode II was not good identification on the fighter, since entire flight had same Mode II).

c. Tankers for use by the F-104 escort would be handed over to Big Eye at 18N and remain under Big Eye control. These tankers would be used above 19N to decrease transit time for the MIG Cap.

d. An extra emergency tanker would be provided in the cell under Big Eye control for use as far North as necessary to service emergency requirements.

e. If additional tankers were required, or if emergency tanker could not be provided, Big Eye could request hand off of tanker anywhere between 18-19N from ground site and extend it above 19N for emergency purposes. PANAMA and WATERBOY would be responsible for refueling remainder of flights with remaining tankers.

There was considerable discussion at the meeting, but no agreement between agencies. The Tanker's headquarters would not indorse operation above 19N. The GCI's could not "see" much beyond 19N. Therefore they could not conduct emergency refueling above 19N, yet did not want to have Big Eye control

the tankers. Tankers did not want hand over procedures, but rather wanted to stay under control of one agency. Tankers did not want close control, prefering to effect the actual rendezvous with on-board equipment. The Commander, 7AF, General Momyer, was an observer at the meeting. As the hour grew late and no agreement had been reached, he rose and made a statement to the effect that only Big Eye had presented a proposal in positive terms. He then stated, before leaving, "If we don't have a solution in one hour, I will give the whole thing to Big Eye". This support -- in no way considered to be an idle threat -- immediately brought the agencies to agreement. PANAMA and WATERBOY divided their responsibility. ETHAN ALPHA was given full-time positive control over the tankers for the MIG Cap, and the hand-over procedure for emergencies was adopted and written into the governing directives. The use of EWO codes continued for a time after this major victory, but with tankers now assigned to Big Eye, continual pressure in this area soon caused them to yield. When the EWO codes were abandoned, the Mode II's adopted were ideally suited for ease of control, incorporating the callsign into a standard format of 7X7X. For example, a tanker with callsign BROWN ANCHOR 32 would squawk Mode II Code 7372 and Mode III 32. This eliminated the need to cross reference written mission information for code assignments, saving valuable seconds of control time. It took even more time to realize establishment of a dedicated emergency tanker. When it finally came into being, Big Eye had seen its entire proposal on tanker employment and procedure thru to fruition.

136. (S) The QUICK LOOK test team had completed 12 combat missions in evaluation of the QRC-248, and submitted a report recommending full implementation of the SRO-2 identification device in all Big Eye airframes.

This finding had been expected, and approval was almost immediate. The various agencies set about preparing material and technical data for field installation of the components. The test had also included attempts to exploit the Soviet SOD-57, or "Cross-up" system. This portion of the test was of value, but inconclusive. It was believed to require an "S" band radar to "unlock" the enemy transponder, and none was available on the EC-121D. CINCPAC and the JCS, in approving the go-ahead on the QRC-248, directed intensive action to realize detection capability with the "cross-up" system, since the radar transmissions to unlock this system could not be identified as unique signals, thereby eliminating the constant danger of compromising the fact of enemy IFF system exploitation. This same concern caused establishment of a "discrete interrogation" policy when the QRC-248 became operational. Development of the additional EIFF systems continued under SEAOR-44.

137. (C) The existance of the Big Eye Task Force had been made public by the news release in Mar 67, previously quoted, but very little additional information had filtered out. A Sacramento, California TV station had carried a short film clip shot on the West Coast and featured an interview with Lt Col Merrill who had served as Operations Officer in early 66. In response to a CBS request, the Department of Defense authorized CBS photographers and newsmen to fly on the Task Force aircraft between 22-28 Jan 67 to prepare a film report. Since the scopes and plotting boards reveal station location (which was, and still is, classified) when drawn up for a mission, simulated missions were flown off the coast of the Republic of Vietnam for this requirement. The documentary film was produced and released, but there was a long lag before it was shown. Personnel who remember seeing it state it was shown in conjunction with a public release

about another alleged CHICOM border violation. The prefacing remarks indicated Big Eye, as one of the on-scene command control agencies, had responsibility in these matters, and that the allegation only pointed up the chance for human error. This report addressed the fact that Big Eye did not have a string attached to each aircraft that they could use to pull back aircraft in danger of crossing the border.

136. (U) In the very closing days of operation from Tan Son Nhut, Big Eye experienced its first aircraft accident. Major Huggins let down on return to TSN from station in ETHAN 33 (Acft 53-0550), when he experienced a faulty nose gear. It began to collapse at a steady rate, allowing him to maintain directional control. The aircraft did a long skid to a stop, and the crew made an emergency evacuation of the tail-high aircraft. One minor injury upon evacuation was the only casualty, and investigation identified materiel failure in the down-lock mechanism as the cause. It was a sad looking aircraft indeed, but was readily returned to daily operation by the maintenance personnel, finished its SEA tour and was later returned in normal rotation cycle to the CONUS, thru a coincidence, by this same aircraft commander.

139. (C) Establishment of a movement date came on 2 February by message from CINCPACAF approving 18 Feb 67. Heavy construction at both Udorn and Takhli RTAFBs had caused a temporary in-country dispersal of forces and the resultant overcrowding of Ubon RTAFB had caused this final delay. On 15 February an Advon was deployed to prepare the beddown at Ubon, and the move was executed 19-21 Feb 67. The commander for this period, Lt Col Peck, stated:

> "The move to Ubon was strange in that there was no PAD (Programmed Action Directive) for the move, nor was there ever an execution order. I had no documentation against which to task airlift, but I managed to get some lined up and we just moved."

As brought out in the CHECO report on the Task Force, it is a point of pride that with this move and in all subsequent moves, not a single sortie was dropped from mission requirements. That the Task Force was not welcomed with open arms at Ubon is no secret. However, Col Peck was quick to set the record straight:

> "The 8TFW Commander hated me for that -- always will (for redesigning the parking plan to show room for 6 EC-121's). However, though he was in violent opposition to our moving there, once it was directed and we came on board, he demanded that his people support us -- which they did, with a result of conditions about 1000% (one thousand percent) better than Tan Son Nhut."

The reason for this support was clear. Ubon was a small base and could not have an "invisible" unit, unlike Tan Son Nhut. The 8TFW could not allow lack of support to hamper the Big Eye operation, without incurring disfavor on itself. There is no intent to describe support as optimum -- only superior relative to that received in Saigon. The physical organization also lent itself to better internal management of Task Force resources, and following the first several weeks of almost round-the-clock work "putting out fires", the operation at Ubon stabilized most satisfactorily.

140. (U) Tan Son Nhut had been completely cleared by this time, and only one open item remained. For some time, an aircraft mobile refrigeration unit had been "missing in action". Search of the base, both officially and unofficially, had failed to recover it, and the necessary Report of Survey had been initiated. The missing "Reefer" was to become a "family joke" within the Task Force, and periodically, up to as much as two years later, messages would be received stating that new leads had been discovered, only to fail in uncovering the whereabouts of the missing unit. Humorous now, it caused considerable concern to those charged with its accountability, and a handicap to those who had to work without it. The fact that it was "spirited away" is indicative of the mood which prevailed in the early

periods of the build up -- reminding one of the scrounging often comically depicted in movies.

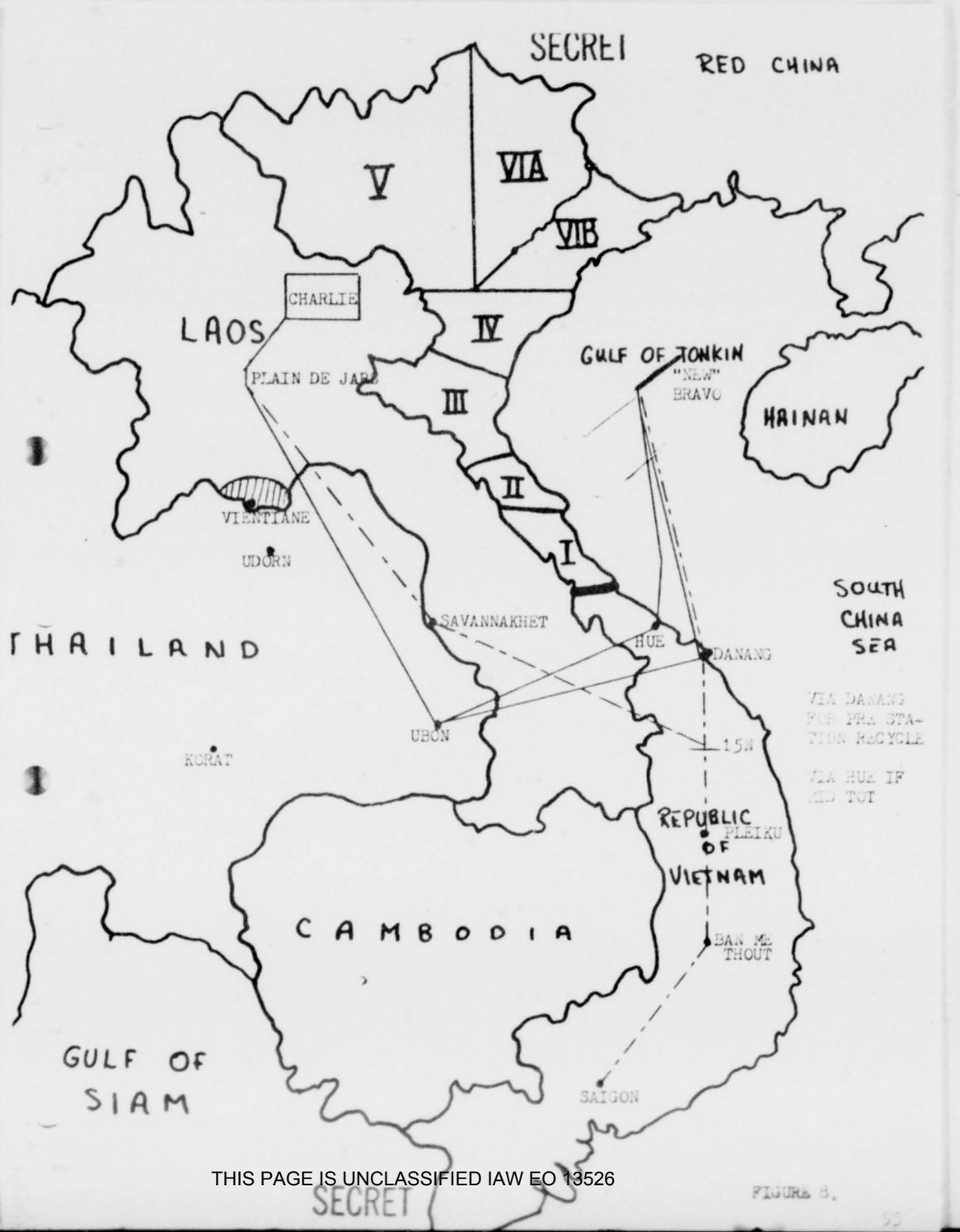
141. (U) At Ubon, Operations and Maintenance were consolidated directly adjacent to the aircraft ramp in a metal prefabricated "Butler" building. Aircraft parking was tight, but adequate, and greatly reduced travel time by maintenance/supply and aircrew personnel. Office space was tripled and there was a separate room for secure storage of the survival vests and weapons. Maintenance had room for warehousing their supplies and bench stock as well as a place for bench work. The area was serviced twice hourly by buses to the cantonment area. The building was airconditioned and comfortable except during the almost daily failure of the generating unit which provided all the electrical power. Enlisted men lived in three tin-covered screened hootches and officers were billeted on a hard crew concept, 6 Task Force crew members along with two transients per room equipped with 4 bunk beds and 8 wall lockers, a few dressers and desks. The single 18,000 BTU airconditioner per room was the only item that made it look beautiful. The clubs and mess halls were good and the base had luxuries such as a pool, movie, bowling alley and hobby shops all centrally located. Living was soon to become quite civilized.

142. (C) The SILVER DAWN mission had been renamed COMMANDO LANCE, on 15 Feb, and if anyone wondered why, the answer wasn't long in coming. On 9 March the Task Force was notified by ADC that henceforth any reference to the unit would use the project nickname College Eye, in accordance with the prescribing directive AFR 205-1 previously mentioned. There was the immediate resistance to change that would be expected, and a certain amount of frivolity such as the phone call to the Operations Officer who in response to his saluation of College Eye Task Force was asked by the unidentified

caller if he could speak to the Dean of Women. A clean break was difficult, since personnel who had previous experience on Big Eye were becoming the majority on "new" crews, but two years later there is only an occasional reference to Big Eye.

143. (S) The most important impact of the move tactically, was the great reduction in unproductive enroute time, which can be seen most easily on figure 8. From Ubon, the flights to and from stations saved 6 hrs per day over the time from Tan Son Nhut for the round trips. This time, in turn, could produce longer station coverage, without the need for multiple recycles. The Gulf mission was now about 14 flying hours. It normally launched about 0300 local, climbed to the medium altitude necessary to clear the mountains, and stopped at DaNang prior to assuming station to top off its fuel load. From DaNang, it could fly the necessary 8-10 hours on station to cover both TOT periods and return to Ubon without additional refueling. If Alpha was extended on station, an additional two hours could be achieved by flying a maximum endurance profile for DaNang. The aircraft usually recovered by 1830, a significant reduction in the crew effort day. The Charlie mission could launch an hour later with its shorter trip to station track. After covering the AM TOT, it would recycle at Udorn RTAFB and return to station for the PM TOT. An Inflight Kitchen had been part of the preparation for the Task Force, and now crews were receiving individual box lunches -- a far cry from the bulk items that had been the only offering at Tan Son Nhut. Frozen "foil packs" were on order, and later would provide a hot lunch option.

144. (S) Lateral unit briefings were launched, and the members of the 8TFW, who flew practically the entire MIG Cap mission in addition to a strike role, learned first hand the capabilities and limitations of College



Eye. There was no sudden reversal of thinking toward the Task Force, but the previous vacuum was at least partially filled. The QRC-248 was close to becoming a reality, and several perceptive members of the 8th in the Tactics Division, always looking for ways to increase the MIG Kill score of the "Wolf Pack", began to seriously consider the possibility of an offensive MIG Hunter/Killer mission under College Eye control when it became operational. The College Eye Radar Officer began to be invited to tactics conferences. College Eye was in a rather precarious position. There was always the danger of an "oversell". Anxious to expand its control and assistance roles, ability to fully support some of the desired procedures was contingent upon optimum conditions, a fact of life until various modifications that were being planned became operational. The strike forces had to be made to realize that College Eye would do everything it could for them, but that the information had to be accepted on an as-available-for-what-its-worth basis, and not in a state of blind reliance. In the area of MIG warnings for example, it was extremely hard to make the pilots realize that CETF couldn't see ALL the MIGS. Hearing MIG calls for other areas by ETHAN, and suddenly being engaged by MIGS that hadn't been called made them feel like College Eye had let them down. It was stressed and restressed that while the Bandit warnings given were valid, one should not be lured into a false sense of security in the absence of warnings. Therefore, in these lateral briefings, it was perhaps the details of limitations that became most important. While pilots still hated the border warnings, they began to realize it was not the Task Force's sole purpose for existence, nor was it anything personal, and they learned of other capabilities they could benefit from. Presented with an honest evaluation of the limitations, there was a gradual tendency to take ETHAN at face value.

145. (U) At Ubon, the FOB consumated its first 11-4 host/tenancy agreement. It was said that such an agreement was unnecessary to cover support arrangements at TSN, since there was no support. Told as a joke, this statement was not so far from the truth. One particularly spirited part of the negotiation involved aircraft washing arrangements. The base had a wash contract, and a wash rack facility. Designed to accomodate the F4 aircraft, it was totally unacceptable to College Eye requirements, and the Task Force maintained a firm position that the necessary support could be fulfilled only by a separate contract to provide partial washing of the EC-121's in their assigned parking spots, as well as washing of the ramp and AGE. While not unprecedented, the existence of two wash contracts on a base is somewhat less than common, and it was with a deep sense of accomplishment that the agreement signed included aircraft washing to be provided by contracted Thai National labor, dedicated to the Task Force and under the direct control of the College Eye maintenance personnel. The service was expected to start in April. The existence of this support on paper was to have little softening effect on the major blow about to be struck the Task Force.

146. (U) General Ryan, CINCPACAF, made his first acquaintance with College Eye on 3 April 67 by visiting the MSB facility at Tainan AB, Taiwan. He was to become a frequent visitor and staunch supporter, who augmented the information learned on visits by demanding that key Task Force staff members debrief him in Hawaii on their return trips to McClellan AFB. Had he formed lasting opinions on first impressions, it is unquestionable that the Task Force would not have fared so well from his personal support, as he was not at all pleased with College Eye when he departed that day. A College Eye briefing had been included in his schedule at Tainan, and it was most ably given by Lt Col Rice, the MSB Commander, who had also been the Operations

Officer at the FOB for the original deployment period. General Ryan was very interested by the briefing, and asked to see an airplane. He was escorted to a static display, and given a comprehensive on-board briefing of the major equipment subsystems and the manning and procedures of the radar crew. As he started down the exit stand, his gaze fell upon the number one and two engines, and he remarked on how dirty they were. The untimely and ill-chosen remark of a well-meaning NCO told it like it was, as he said in effect, "Oh yes sir, they're always like that". The Commander in Chief, Pacific was visibly upset, and made it perfectly clear to his entourage of lesser Generals that neither College Eye nor any other unit was going to be allowed to fly aircraft with Air Force markings in his theater that looked that bad. As he left the base in his gleaming executive aircraft, there was little doubt but that he meant what he said. The aircraft were dirty. The facts cannot be altered. There were any number of reasons, excuses and rationalizations, but in the end, the Task Force had a sorry looking fleet. There were no wash facilities at the FOB, and only a limited capability to perform them with Air Asia contract assistance at Tainan on the same frequency as the phase inspection cycle. Task Force manning was predicated on the minimum essential number to perform the mission, and a full scale wash program could not be supported by GI's who were already grossly overworked. In between the infrequent washes at Tainan, the R3350-93A engines, prime offenders in this problem, leaked their usual amount of oil, dust collected on it and caked to the wing, carbon build up behind the power recovery turbines and it was accepted as a fact of life. The frame of mind carried over to the interior, which was rather dismal, and characterized by torn headlining, upholstery, ragged floor covering -- conditions which were accepted as necessary evils and which did nothing to

instill any unit pride. After all, one might ask, aren't we working beyond all reasonable schedules just to produce operationally ready aircraft -- how can we expend extra time we don't have to dress up our fleet? They were soon to learn, as the matter came to a head before the salvation expected by realization of the FOB wash contract. The "showdown" came on 17 April 67, when Lt General Wilson, Commander 13AF, made a tour of Ubon. The following is extracted from an account by SMSgt Rauback, Maintenance NCOIC for over a year, who in this pre-augmentation period, was the senior maintenance representative:

> "In April 67, going to the flight line, I was told there was a General on Acft 548 who wanted to see the Commander. The Commander was in Saigon, the Ops Officer was flying, the Asst Ops Officer had been on duty all night, and I was the only available staff member. I entered the aft section of the aircraft and recognized Col Olds (Commander 8TFW), Lt Gen Wilson with two Maj Generals, three Brigadiers and four eagles all crowded in the radar compartment. I reported to him, stated the situation, and he looked me straight in the eye and told me that Big Eye's fleet of aircraft were the sorriest, raunchiest, dirtiest, most disgraceful looking machines he had ever seen. He made mention of the oil on the nacelles, carbon buildup behind the PRT's, and pointed out needed repairs on the interior and several dirty spots. He told me we would have it cleaned up spotless upon his return in less than a week. Explanations of the lack of a wash rack, absence of cleaning facilities or materials and insufficient personnel made little impression, though he did turn and tell Col Olds to give me everything I needed."

It was clear College Eye's very existence might be at stake. It is believed that only the confusing line of command in this JCS-directed "non-unit" prevented people from being 'fired' over the incident. The "everything we needed" was satisfied by "whatever was available", and a collection of rags, buckets, laundry soap and scrub brushes was assembled. Cleaning solvents and many other necessary items were non-existent in supply channels. Panic requests went out to the home base to send these items as well as floor matting, pressure sensitive tape, glue and other materiel needed to to perform this rehabilitation of the fleet. The urgency of the situation

dictated drastic action, and every Task Force member "volunteered" to pitch in. Rank had no privilege. The Commander, Ops Officers, Aircraft Commanders, pilots, navigators, controllers, senior radar NCO's, administrative clerks, maintenance supervisors, specialists down to the lowest airman learned the fine technique of removing grime from an aircraft wing with a vegetable brush together. Exteriors and interiors alike were scrubbed and re-scrubbed. The material needed to fix the interior had little supply priority since it was a "not-required for flight" item, and therefore makeshift repairs and patches were made on the existing interiors to make them as presentable as possible. Personnel who had never seen a spray gun had a chance to try their skill, and many of the pressurized type spray cans were also used up, painting "black boxes" in the various equipment racks. By the day of the generals promised return, the fleet looked almost presentable, the ramp and AGE had also been cleaned. The best looking aircraft was stood down and others launched on the day's missions in an understandable display of hypocrisy. As he drove by, it was evident that the ultimatum had produced the desired effect, and he did not even stop to inspect. In a later follow-up visit, he did go aboard an aircraft and told the operations officer who escorted him that he was quite pleased, asking only if all the birds looked that good. He was looked right in the eye and told "No sir, this is the best, but we're really trying". Never again was the Task Force to come under fire for the appearance of its fleet, although the topic became sort of a standard salutation to some of the Generals, who on several occasions have countered an introduction of a College Eye officer with a remark inquiring about the status of the "dirty airplanes". Personalities being what they are, there was widely varied reaction to this short but critical period in Task Force development. Some enjoyed it, some rolled

with the punch, some tried to find a scapegoat on the Task Force staff for their resentment, and others felt it was completely degrading and were deeply embittered. It was done, and no official protests were ever lodged. A staff member from the period reflected:

> "The effect of the clean up/paint up/fix up campaign was 100% positive. The results could actually be felt. It was the start of unit pride. There was a change from Big Eye as a yearly punishment tour imposed on Wing members, to a separate and new unit identity with College Eye. People no longer said, I'm 963rd or I'm EW Squadron, but began to say, I'm College Eye", and they said it with pride. It was concurrent with the transition to the greatly enhanced living conditions in Thailand, which helped. The mission was becoming more meaningful too, with great effect, but this one incident caused what might have been a gradual evolution to occur overnight. The process of counting days till CONUS return was now a less typical remark than "I wish we could take the College Eye mission back to the West Coast". In flying with different crews, I would observe the change in attitude, noting how careful they were about not putting their feet on the bulkheads, removing boots before climbing into a bunk, and how carefully the plane was swept out after the mission. People who had complained the loudest when "volunteered" to participate in the clean up now would really get on someone for improperly stowing the life support equipment or similar act. It was a complete overhaul of the Task Force spirit -- not a minor clean up of aircraft, and it was most important that it happened, because I seriously doubt we would have scored the successes we did in the following year without this transformation."

147. (C) The augmentation force was deployed from the 552d AEW&C Wing at McClellan during the third week in April, but were unable to proceed beyond Tainan because the in-country ceiling had not been adjusted to allow this expanded manning at the FOB. This group of four crews had a slightly different make-up, as for the first time, the 966th AEW&C Sq at McCoy AFB provided a crew to the College Eye Task Force. Despite the new level of eleven crews and aircraft, the FOB was temporarily forced to continue the two daily sorties from their four crew/four aircraft resources. Eleven aircraft possessed does not tell the true story, since now another aircraft accident had taken an aircraft out of the daily flying schedule. Aircraft 53-0543, commanded by Major Banks had experienced

an in-flight fire in the number three engine nacelle, and additional damage caused by the blow out of one of the two right main gear tires which fold into this area. The aircraft was safely recovered at TSN, with no injury to Task Force personnel, and it stayed there for repair by several detached Task Force maintenance specialists. Aircraft 550 was just four days from being operational again when this second aircraft dropped from the system. Thus the augmentation fleet of four aircraft was a welcome sight at Tainan, even though they preceded the assumption of a three station posture by over a month. Investigation of this accident proved that the fuel fed fire and all subsequent damage resulting from the tire explosion had been caused by an improperly installed gasket on a fuel system component. The buckled gasket had provided a seal for some time with only a small portion of it properly positioned between the mating surfaces. Finally, failure of it allowed the 115/145 avgas to be pumped directly onto hot engine surfaces, starting and sustaining the fire. This aircraft was several months in repair, finally joining the Task Force at Udorn.

148. (C) May 1967 began a period marked by its high incidence of emergency assistance. No more spectacular than previous efforts, they were now authorized, and were better documented. The increase in emergency assistance by College Eye was due to several reasons. First the seasonal break in weather had increased the number of strikes in the route package V and VIA area and the North Vietnamese defenses had become increasing more successful, producing more emergencies. Secondly, College Eye had a more positive role in emergency assistance authorized, and pilots were becoming more and more aware of what ETHAN was and seeking assistance in situations that in earlier times would have caused an ejection with little more than notice to a wingman. A standard debriefing emergency assistance checklist form was even developed

to insure that complete information would be recorded for daily mission reporting. The volume of paperwork associated with the tactical mission was on the rise. In the past when 2AD/7AF paid little attention to the Task Force, mission reports were turned in nightly, but it was generally believed they were never read beyond the lowest level, since there was never a response. By this time, with the new interest at 7AF, and the fact that the PACAF Command Post had been made a direct addressee on College Eye reports, College Eye forward reporting took on new meaning. PACAF had directed the reporting, stating that it must be received by 0500 Hawaii local (2200 Thailand time) for inclusion in CINCPACAF's morning briefing. This was a genuine requirement, since many times when a report was dispatched late, PACAF called College Eye directly on the secure telephone and had the report read to them verbatim. There was a secondary "wrap up" report to 7AF, which allowed in-house airing of problems without revelation to PACAF. Reports that cited a deficiency often were followed up with requests from 7AF for recommended solutions, and it was at this time, that College Eye began to "write the book" on command control procedures. Aware that the mission reports were receiving attention, and often being actioned by the higher staff levels, the Task Force staff employed them to rally support for necessary procedural changes, tighter tactical discipline and needed weapons system improvement. Unfortunately, the daily reports were only retained 90 days, due to the administrative practices of the Task Force, and with their destruction was lost an invaluable source of documented achievement. The accounts that remain are those that were significant enough or unusual enough to be written into a unit history, a recommendation for decoration, an OER/APR justification, in the form of a thank-you or congratulatory note or info copy of mission report from a

lateral unit, or in the memory of the individuals involved.

149. (C) Starting with a successful SAR assist on 1 May 67, the five month period ending in Sep remains unequalled for the number of emergency assists given. This 1 May assist was unusual, in that the recovery of the downed aircrew was accomplished before the aircraft was reported missing, to the knowledge of the Task Force. On egress of the strike force, ETHAN ALPHA detected an emergency IFF return, but no MAYDAY was heard, nor did any flight report a downed aircraft. MIG engagement or SAM avoidance techniques often split up the fighters into individual ship or two element formations, and the rejoin was usually made by tanker hook-up. Apparently no one had observed this loss and the aircraft had not yet been missed. Alpha's fighter escort was directed over the site of the last contact, and a smoke flare was spotted. The director then coordinated with SAR forces and vectored the SAR helicopters to the scene and a successful recovery was made. On 3 May, a flight of four F4 aircraft, callsign WABASH, declared a fuel emergency while egressing toward the Charlie station. A tanker hand-off was effected, and the flight was successfully joined well north of the normal rendezvous point under ETHAN control with only 300 pounds of fuel remaining. It was only two days later that two College Eye aircraft were principles in the action which saved seven civilians shipwrecked in the South China Sea by deployment of the MA-2 survival kit and remaining on the scene to direct a Search and Rescue amphibious aircraft to the survivors. A most dramatic assist was rendered to a flight of two F-105s by Major Perry, a Senior Director flying his first combat mission. Monitoring a request for emergency refueling, he acknowledged and in the established procedure, called the information to BRIGHAM. The information was acknowledged with the reply "they would handle it". About 7-10 minutes later there

was a call on Guard from the same callsign again requesting assistance by anyone who could "read". Major Perry answered the call and told them he would get a Tanker. He was told to forget it, as they were too low on fuel to make a hook up. He followed thru despite this, and the pilot began to believe he might make it if the first attempt at join up was perfect. It was, and the controllers job was done. There was no "cry of wolf" in this emergency, since the battle damaged aircraft actually experienced flame out just as hook up was accomplished. The tanker matched the rate of descent and a successful restart was made and the refueling completed. ELGIN 4 (an F4) suffered severe battle damage on its 20 May mission and was afforded similar service by ETHAN CHARLIE.

150. (C) The long-awaited in-country clearance was confirmed by PACAF message, and on 29 May the augmentation force arrived at the FOB. The Task Force now had 7 crews and 6 aircraft at Ubon. Manning at the FOB was as shown:

OFFICER		ENLISTED	
42	aircrew	84	aircrew
6	Cmdr & staff	3	staff
4	duty off/controllers	52	maint
52		139	

TOTAL = 191

151. (U) The much contested parking plan is shown in Figure 9. After the augmentation, when the six aircraft level was reached, maintenance became as much a game of timing aircraft movement as repair. As shown by the taxi lines, the F4 aircraft had to taxi thru the ramp. No EC-121 could be out of position during the pre-launch period for the strike force. Ideally, the College Eye missions were launched in order from parking spots 1, 2 and 3, reducing the danger of a taxi accident since wing tip clearance was minimal if necessary to taxi between the front and back row. As aircraft

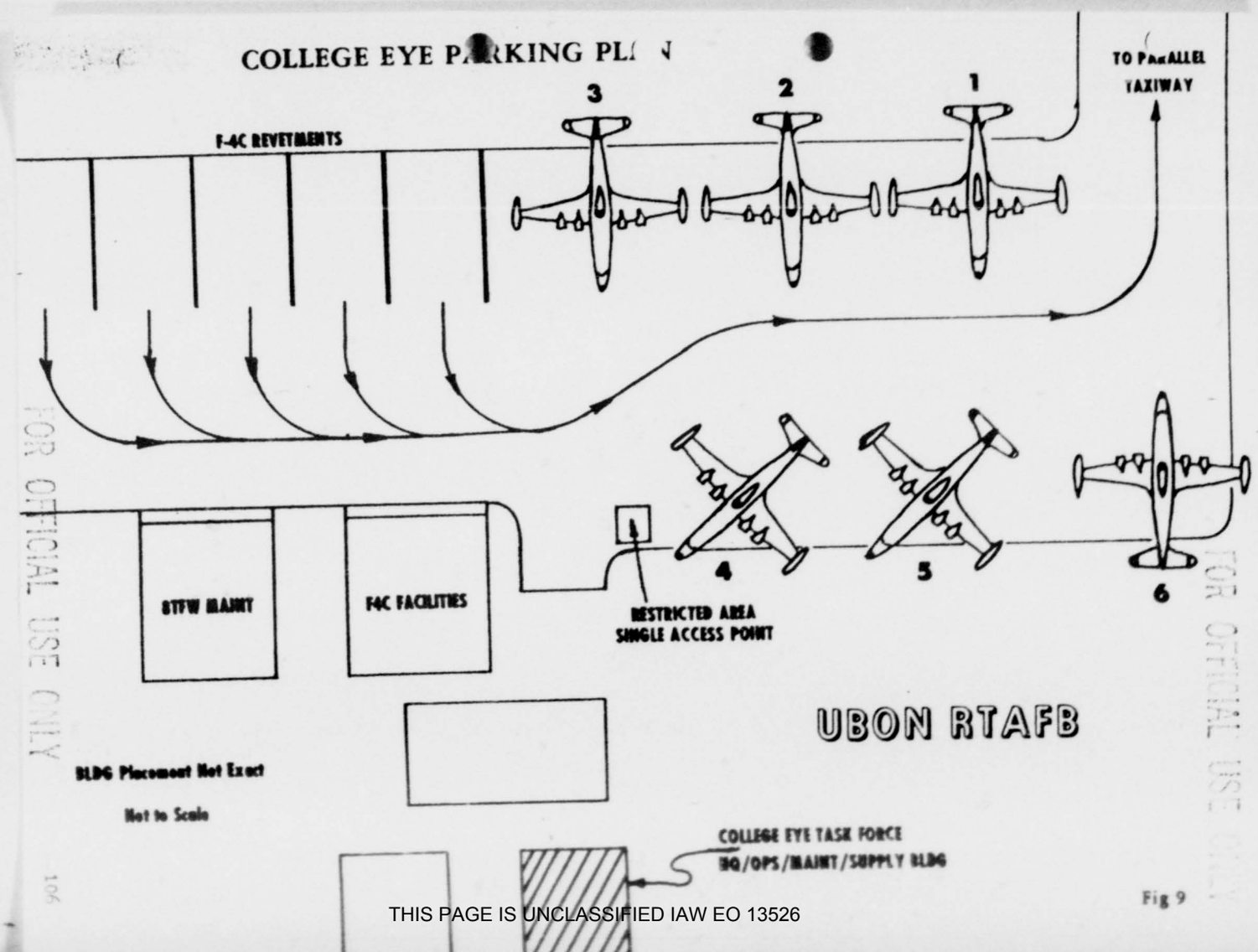


Fig 9

in spots 4, 5 and 6 became mission ready, they would be moved to spots 1, 2 and 3 in the order of their station assignments for the following day. Aircraft were recovered by taxiing in on spots 4 and 5, while the last aircraft shut down after making a 90° right turn between the two rows and was positioned on spot 6 with a tug. This plan was compounded by a requirement to fly an aircraft on two successive days, or a ground abort which caused an out-of-sequence launch, or use of an aircraft in the front row.

152. (S) With the augmentation came the capability to support the three mission per day program, and the medium altitude Bravo station was re-established. Alpha, which had been flown as a morning recycle since the start of the Charlie mission was returned to a mid-TOT break, alternating with Bravo in the pattern that had been used previously when both Gulf stations were manned. The Laotian station remained the same, with a mid-TOT recycle at Udorn. Under the three station concept, total monthly flying time increased to an average of 1185 hours. The schedule developed after the augmentation has remained in effect to this date. It is difficult to appreciate the impact something as seemingly routine as a schedule could have on operations. A product of many hours joint effort by the Task Force staff, this schedule proved to satisfy the many problems related to aircrew scheduling. The paramount criteria addressed by the officer who produced the final schedule were meeting the 15 day continuous SEA duty requirement for accrual of SEA time, and stability in relation to the tactical schedule, MSB/FOB rotation and CONUS/SEA rotations. These and other considerations which guided its development are listed below:

a. Schedule which would allow crediting of SEA time.

b. Schedule which was stable, that could be interfaced with

CONUS/SEA rotations.

c. Rotation cycle which would meet phase inspection input requirements.

d. Rotation often enough to allow expeditious exchange of aircraft under the deferred maintenance concept, and effective utilization of UE aircraft for MSB/FOB transfer of personnel, reparables, mail, etc. and allow flexibility in tail number scheduling.

e. Aircrew schedule meeting AFM 60-16 requirements of crew rest, crew duty day, etc.

f. Schedule allowing equitable flying hour distribution on quarterly basis (monthly if possible).

g. Schedule which would allow flexibility for special missions, crew member replacement, non-flying duties.

h. Minimum flying hours required to support the rotation.

The resulting schedule is reproduced as Figure 10. The crews were to be rotated between the CONUS and SEA in blocks of three except every fourth rotation which would be two. Hard crew integrity was maintained, and the schedule allowed crews to remain in numbered order while fulfilling equal responsibility. Crew tour length was established at 133 days, which allowed six complete 22 day rotation cycles with 36 tactical missions and 12 rotations flown. The schedule allowed the CONUS/SEA exchange of crews without any impact on the FOB. Referring to Figure 10, assume that crews 5, 6 and 7 are to be replaced. On day 5 they are all North, which is their 132nd day in theater. On day 6 the MAC rotation flight brings in the new crews and the old crews depart. The first of the new crews still has days 7 and 8 for processing and training before rotating South into the tactical schedule. With this program, MAC airlift requirements could be established six months in advance with certainty that no last minute schedule rearranging with the attendant inequities would be required to insure old crews were in place at Tainan on their scheduled departure date. The largest single morale problem to ever face the Task Force or the 552 Wing had just come to light.

COLLEGE EYE CREW ROTATION SCHEDULE

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
TO FOB	1		2		3		4		5		6		7		8		9		10		11		1		2		3	
ALPHA	8	1	9	2	10	3	11	4	1	5	2	6	3	7	4	8	5	9	6	10	7	11	8	1	9	2	10	3
BRAVO	7	11	8	1	9	2	10	3	11	4	1	5	2	6	3	7	4	8	5	9	6	10	7	11	8	1	9	2
CHARLIE	9	6	10	7	11	8	1	9	2	10	3	11	4	1	5	2	6	3	7	4	8	5	9	6	10	7	11	8
TO MSB	5		6		7		8		9		10		11		1		2		3		4		5		6		7	

INDIVIDUAL CREW SCHEDULE

1 Rotate to FOB
2 Alpha
3 Crew Rest
4 Bravo
5 Duty Day
6 Crew Rest
7 Charlie
8 Crew Rest
9 Alpha
10 Crew Rest
11 Bravo
12 Duty Day
13 Crew Rest
14 Charlie
15 Rotate to MSB
16 Duty Day
17 Duty Day
18 Free
19 Free
20 Free
21 Free
22 Crew Rest
Repeat 6 times

FIGURE 10.

Air Force regulations stipulate that SEA credit will be accrued only for duty periods of 15 days or longer. Throughout the 2 year existence prior to augmentation, crewmembers had not received any SEA credit, despite the fact that some had already spent as much as a year on the project, including high aggregate SEA day totals that did not fulfill the consecutive criteria. This time could be honored by the Major Air Command against internal reassignment, but afforded no protection against normal MPC withdrawal for Air Force levies. Thus personnel who had combat hours numbering in the thousands, accumulated while bearing all the hardships of life that Vietnam could offer were now finding themselves vulnerable for full tour length PCS assignments to SEA with other units. Although it was generally agreed the intent of this provision was to preclude crediting of SEA time stemming from incidental travel to the combat area, no special recognition of this time served in actual aerial warfare was allowed, and it remains uncredited. The new schedule produced 13 full days in SEA and 2 partial days while rotating, which satisfied the 15 day criterion. The 6 FOB tours therefore began to credit 90 days SEA time for each 133 spent overseas, and improvement, but a situation which continues to have considerable impact on Wing personnel management and individual morale. The flying hour program generated eight phase inspections per month. With 15 rotations per month, there was adequate flexibility to exchange aircraft not yet due for phase that had deferred maintenance requirements. The "extra" crew at the FOB allowed a schedule incorporating a two day break after two of the six missions flown per cycle. Each day, the crew on the first day of this break provided the resources for those ever necessary "GI" duties such as CQ, housekeeping details, training sessions, as well as any necessary crewmember replacement, or as additional crew members flying with new crews, to provide necessary training in the

new tactical environment.

153. (S) The intelligence concerning security of the Thai bases became less optomistic shortly after the Task Force relocated at Ubon. Reports included those of unidentified helicopter flights off-loading troops near several bases, which caused re-evaluation of base defense plans. The first actions taken in this regard by College Eye was the construction of sand bagged bunkers next to the flight line. These proved extremely useful a short time later when a non-combat accident on the base endangered the lives of Task Force personnel. An F4 loaded for a nighttime strike mission experienced a fire warning indication on the take-off roll and rejected, coming to a stop at the 3,000 foot point -- directly opposite the College Eye ramp. As the aircrew evacuated, the aircraft burst into flame. The fire detonated much of the ordnance, causing shrapnel to be thrown around a large area, and blasting a large hole in the runway. The line chief, Sergeant Bell, immediately recognized the danger at the start of the emergency. He quickly directed his personnel to safety in the bunkers and ignoring the danger to his own person, quickly went to each aircraft to be sure they were evacuated, disconnected external power, shut off light plants and all similar machinery to reduce the chance of fire should a fuel leak result from a direct shrapnel hit. Miraculously, no College Eye aircraft were damaged, a fact that was difficult to believe the next day when the amount of debris that fell on the ramp area was collected to reduce FOD danger. Another result of this intelligence was implementation of a base policy on restricting the use of navigational and landing lights on approach to reduce chances of taking ground fire. Although the procedure tested the adaptability of Task Force pilots who now did not turn on landing lights until over the base perimiter, no incident ever resulted, and the value

of the exercise is one that will never be known.

154. (C) Living under the relaxed atmosphere that existed in Thailand, and receiving base support for the first time, the Task Force began to realize that the move had not been a cure-all. Some problems which had been attributed to unalterable conditions at TSN persisted, and the Task Force now realized that an agressive self-examination was required to eliminate any in-house problems. This introspection covered the spectrum of operations, administration, security, discipline, maintenance and supply. Standard Air Force Regulations and policies that had been universally waived or simply overlooked for expediency in Vietnam were closer to the stateside standard in Thailand, and becoming increasingly so. The control of classified was one area that had to be upgraded to the new local standard. The VD rate in Ubon was among the highest in the Air Force, and College Eye saw its rate edging toward that of the other units. With the continual rotation of crews between Taiwan and Thailand, this problem took on international significance, with Taiwanese Public Health officials extremely anxious to keep this stronger strain of infection from becoming prevalent within their domain. An agressive indoctrination and follow-on training program was initiated, and though VD was not eliminated, the upward trend was significantly checked. In maintenance, problems were identified in the Reparable Processing Cycle, a carry over from days when units were hoarded for later subcomponent cannibalization to allow in-aircraft repairs. Working much closer to the concept of AFM 66-1 maintenance techniques, this practice now threatened to empty the supply pipeline. Mr. Bruce, the Task Force Weapons System Logistic Officer, who in performing continuous duty since joining the Task Force in late 65 is now its "oldest" member, corrected these deficiencies with sweeping changes which included a formal due-in-from-

maintenance (DIFM) account being established at the FOB. The STAR (Speed Thru Air Resupply) procedures that had been authorized the Task Force also came under close review in view of apparent failure of the system to meet College Eye requirements. This had been pointed out when material urgently needed in the aircraft clean-up campaign failed to arrive despite applying STAR procedures. The review dispelled misconceptions about the process, as it was learned that STAR authorization in no way insured priority of shipment. Materiel such as the solvents, pressure sensitive tape, floor matting and upholstery items that had been ordered had a very low priority since they were not items required for flight. Judicious use of STAR followed, with a proportional increase in utilizing the CONUS/SEA UE aircraft replacement rotations to obtain the "essential" but low priority items. Maintenance reporting was reviewed, mission kits were reaccomplished, files were reorganized, and on every front the Task Force began to benefit from this internal process. Maintenance, while still subject to emergency requirements, became by-and-large a scheduled operation with a day off on occasion. The crews had a schedule that they could depend on, and after meeting duty requirements and required crew rest restrictions, found a little time left to their leisure.

155. (C) College Eye continued its tradition as a "can-do" organization. With the damage to the runway resulting from the aircraft accident mentioned above, College Eye adjusted its fuel loads to the allowable limits with the shortened available runway, and added extra recycles where necessary to provide the full station coverage. Another example is found in a message from the 552 AEW&C Wing in answer to a Task Force message that requested concurrence in their intent to pursue a zero/zero launch authorization to meet operational commitments. It said: ..."This headquarters considers it

imperative that the Big Eye Task Force Commander be authorized to launch aircraft during periods of zero/zero weather to meet operational commitments in SEA. If current PACAF regulations are too restrictive, advise." Although every possible effort was made to man the stations, once on station, crews were still limited to the capability of the EC-121D configuration originally deployed. SEAORs 44 and 62 had been originated to upgrade the weapons system. Of all these proposed modifications in these requirements, only one (QRC-248) had been approved, and it was now being installed, although operational use of the active mode had not begun. A program had been initiated by 7AF to divert SEAOR 44 assets (GPA-122) into additional engineering to adapt them to College Eye's airborne environment. The programs were moving, however, only partial information was available to College Eye, and there was a feeling of frustration in being uncertain of what capability would be realized and in what time frame. Largely ignored in the past, the Task Force was entering a period marked by a 180° reversal, with Distinguished Visitors from all levels seeking briefings from the Task Force, and often participating in the mission. Requirements were discussed with anyone who would listen, in the belief that support at any level could not be without some value. A message from CSAF to ADC following review of College Eye requirements recommended:

a. SEAORs 62 and 53 be stated as individual requirements due to mission differences.

b. SEAOR 44 requirement be installed on EC-121 aircraft as equipment become available.

c. "Rate-Aided-Tracking" systems with semi-automatic data transmittal systems be procured ASAP to fulfill requirement of SEAOR-62.

The Best Preliminary Estimate (BPE) for SEAOR 62 was still in preparation stage at this time, which showed how far away operational use of this new

hardware was. The recommendations also made no reference to any actions to improve the existing manual capability, as the program began to drift away from the position that had been established by the committee formed to action the Owens Inquiry Board recommendations.

156. (S) Seventh Air Force had detailed a member of the Tactical Air Analysis Center under the DCS/Operations to prepare a study on the Task Force. Maj Carter, a former member of the 552 AEW&C Wing conducted the study during the period Feb-May 67. He worked closely with CETF on the project, and generally indorsed CETF's view of future employment roles. It was one of the first 7AF staff projects that presented the Task Force favorably overall while objectively identifying deficiencies. The degree to which this paper guided future actions is unknown, but the knowledge alone that could be gained in reading it would have certainly been of benefit to College Eye. Portions of this paper are extracted below:

> "1. (U) This evaluation is based on data and observations accrued during the period February through May 1967. Unit mission reports were reviewed, the mission was discussed with crew members as well as key supervisory personnel. Observations were also gathered by the evaluation team during participation in eight airborne sorties.
>
> 2. (C) During the period of evaluation, the situation was characterized by constant change. The unit had just completed a move from Tan Son Nhut to Ubon, Thailand when the evaluation was begun. While the move created numerous administrative problems, it also changed the unit personality from a "cats and dogs" operation to one seeking a degree of stability. This led to reappraisal of operating methods and increased desire to improve operational capability. As a result, several suggestions for improvement were acted upon as they were brought out.
>
> 3. (S) Because of the operational evolution and the number of equipment modifications in progress, evaluation of College Eye effectiveness and capability must be considered in both present and future tense. ...This paper is submitted at this time to provide a basis for later comparison because a milestone has been reached with the recent installation of the QRC-248 EIFF. This equipment should significantly alter capabilities. This evaluation will be resumed after a short "break in" period for the new equipment."

The report then described the stations, the concept of operation and equipment limitations.

"...8. (S) IFF Manual Readout: Present IFF decoding equipment imposes one of the most severe restrictions on overall capability. With manual decoding, identification of friendly aircraft is nearly impossible, unless aircraft arrive on schedule and in the sequence fragged"

Crew Quality and Training, Communications and Maintenance followed, and paragraph 14 (S) identified Present Capabilities:

"...b. (S) Overall Present Performance: Under present limited requirements, performance is generally acceptable. Specifically, the capability to provide border warnings and flight following is excellent depending on the willingness of friendly aircraft to squawk IFF. The capability to provide emergency assistance to distressed aircraft and to coordinate rescue efforts is also excellent. The capability to provide MIG alerts is marginal due to inherent unpredictability of radar, limited capability for identifications and communications saturation.

NOTE: Informal discussions with tactical fighter pilots who have flown in RP V and VI reveal a belief that operation of IFF is an aid to enemy radar - especially Fan Song. Unofficially, some pilots admit turning off IFF while over the hostile areas. This is substantiated by instances where pilots have attempted post-strike tanker hook up with IFF in standby. Since non-operational IFF hampers radar tracking capability, emergency assistance and refueling operations, a technical study should be accomplished to confirm or deny a relationship between IFF and enemy tracking radars."

The report then listed SEAORS that had been written and discussed the implications of modifications to future capability:

...c. "Enemy IFF Interrogator will allow positive identification of hostile aircraft. With the combination of Enemy IFF and automatic decoder, and a communications link between orbits, College Eye aircraft could provide MIG alerts to specific strike aircraft.

The report was closed with Recommendations; paragraph 17 (S):

"...b. Consideration should be given in these plans to the implications of manual inputs to the Tactical Air Control System. At least until Automated Data Link becomes a reality, more authority should be delegated to airborne Weapons Directors for autonomous operation especially in regard to providing emergency assistance such as post-strike join up of strike flights, and emergency refueling assistance to include vectoring tanker and strike aircraft.

c. Increased emphasis should be placed on procuring equipment and modifications. The requirement for altitude information should be evaluated. Height finder modifications should be justified or an alternate method of altitude measurement should be developed, if the information is required."

..."e. The feasibility of consolidating the entire task force at a single base should be examined. Consolidation should result in sufficient resources from current SEA authorization to provide 24 hour station coverage.

This last recommendation is one that did receive subsequent study several months later, by 13AF on tasking from PACAF. College Eye too studied the matter, but presented only the facts without recommendation. The prediction that consolidation would allow great increases of tactical flying time were overly optomistic, failing to account for the fact that the number of possessed aircraft and not their location was the key to hours available. Co-location of all assets would ease the maintenance workload, but the only significant gain in flying time available would be that saved from the rotation itself (180 hours/mo. maximum), which under the concept of operation at that time could not produce an additional full sortie per day. The benefits derived had to be weighed against the intangible benefit of being co-located with Air Asia in Tainan. Beyond these operational considerations, higher authority had to be concerned with construction costs, additional base support personnel and facilities, and increased in-country levels of aircraft and personnel for the Task Force.

157. (S) In conjunction with his first visit to the Task Force's Forward Operating Base, General Ryan flew an Alpha mission with the Task Force in mid-June 67. On this actual combat mission, he witnessed both the capability and limitations of the equipment, and was given a detailed briefing in flight of how each proposed modification would enhance the warning and control that could be extended to aircraft flying over NVN. His reaction to the

flight was assessed by Task Force personnel who accompanied him as extremely favorable, and he left Ubon with the pledge to put his full support behind the necessary improvements in enemy detection, friendly identification and communications.

158. (S) College Eye had now assembled a small, but dedicated following of "believers" within the tactical units, and with this support, the lateral unit briefings and College Eye participation in tactics conferences, changes in command control procedures were beginning to be implemented to make them more responsive to fighter requirements. The GEOREF format for MIG warnings had been discarded in favor of the "Bullseye". A 15NM radius around Hanoi was the reference bullseye, and MIG threat in that area would be announced as "Bandits Bandits Bullseye, Time, Callsign of agency issuing the warning". Beyond 15NM, rough positioning would be given in eight compass point and range. Heading and altitude were given if known. Thus a MIG Warning for a hostile over Nam Dinh would be issued as: "Bandits Bandits South Forty-two at Zero Five Heading Two Seven Zero ETHAN ALPHA out". Pilots, familar with the geography of NVN could make faster calculation of the relative position of the bandit in this format. The positioning was still rough, and the meaning of S, SE, W, etc became even less precise as distance from "Downtown" (Hanoi) increased. However, since all agencies did not have a real-time capability, exact positions, or the "personalized" service envisioned by CETF would not be implemented by 7AF. Though subsequent calls on the same hostile were limited to five minutes on paper, there became an ever increasing trend for agencies to "parrot" each others MIG warnings, with each agency accusing the others of being the offender. Guard was saturated beyond belief with Bandits, Bandits... Undoubtedly College Eye crew members were on occasion guilty of this same practice, despite the

official policy on strict adherence. Since College Eye DID have real-time warning, a never ending cycle seemed to be set up. College Eye would call a bandit and simultaneously the track would be forward told. Based on this input, MOTEL, after correlation process, would make a call on the same bandit, several minutes behind real time. If there was still contact with the bandit, ETHAN would realize this "old" position (although identified with as "as of" time) could be misleading, and this would lead to the issue of another updated call, which would repeat the cycle. Because of these deficiencies, experimentation on an individual basis was attempted to prove the feasibility of discrete MIG warning to the MIG Cap. Individual members of the 8TFW desirous of this information would often coordinate with College Eye crews giving callsign and Mode II of the flights they were flying and request any supplemental information on MIGS be passed to them on their flights discrete frequency. This process was hampered by lack of continuous comm, but the 8TFW and CETF attempts to secure a radio relay channel dedicated to this purpose were unsuccessful to this point. This experimentation was curtailed with the move of the Task Force to Udorn, which prevented the necessary close personal coordination. No kills ever resulted in this time frame, and since it was not an authorized procedure, few results are documented. It did prove the validity of close control to the few who remained "faithful", and later in the year, faced with more aggressive MIG encounters, the procedure was reestablished, produced a kill and subsequently was adopted as proposed by College Eye for mandatory use.

159. (S) Korat RTAFB, Thailand had by now been established as CETF's final beddown point. ADC action in mid-Jan 67 on Air Force project "Practice Nine" had produced another "College" plan -- College Mine. Eventually to emerge at Korat in October as the 553d Recon Wing, the EC-121R equipped unit,

mysteriously shrouded by ever-changing code names, was designated for Korat primarily due to that base's ability to acquire adjacent land for the necessary expansion. Co-location by College Eye was consistent with policies on common bed down of like airframes and reasonable proximity to mission assignments. However, a complicated series of other tactical unit moves, and lead time for construction at Korat made an intermediate move to Udorn necessary. If remembered correctly, the following pattern describes the sequence:

a. F-104's leave Udorn for the states
b. College Eye replaces F-104's at Udorn
c. Stateside F-4 unit deploys to Ubon occupying space left by CETF
d. College Eye moves to Korat when support ready
e. 13TFW designation (only) leaves Korat, assumed by new F-4 unit arriving at Udorn from states, occupying space vacated by College Eye.

With each action dependent on the other and programmed only hours apart, timing was critical and College Eye's mobility was to be proven beyond all doubt in this severe test of two moves in 81 days.

160. (S) The F-104 return to the states had been programmed for some time, and to the knowledge of the Task Force, F-4's were to have assumed the escort MIG Cap function in the Gulf under ETHAN ALPHA control. However, on 20 July, exactly a week before College Eye displaced the F-104's at Udorn, Air Force fighter cover in the Gulf was withdrawn, with the protection responsibility assumed by Navy BAR CAP (Barrier Combat Air Patrol) under RED CROWN control. This took the Task Force by surprise, and the reason never was learned. Speculation ran several courses, including the impact of heavy F-4 loss at DaNang in a mortar attack and the possibility of a higher level role and mission shift as a follow-on to establishment of the PIRAZ as Navy responsibility. Regardless of the reason, this action significantly reduced the workload of the Alpha station, and marked the

beginning of the end for Alpha, since the very next day, 21 Jul 67, was to see the QRC-248 Enemy IFF Interrogation system employed in its active mode for the first time. This development almost immediately overshadowed any value derived from the "skin paint" radar mission of Alpha.

161. (S) The Group A modification for the QRC-248 was still being accomplished on the last of College Eye's fleet, and only a partial level of "black boxes" and ancilliary test equipment had arrived. The employment of this system had been strongly opposed by the Navy at the JCS level, and a detailed employment criteria had been developed prior to the NSA/JCS approval. Each intermediate headquarters (CSAF/PACAF/7AF) had been deeply involved as the requirement for the plan, the plan, and the answer to it had been actioned up and down the chain of command. The plan, written by College Eye but drawing heavily from recommendations in the QUICK LOOK test report, had been approved by the JCS with the qualification that "all other possible means of identification be exhausted prior to use of this system". The key to the problem was that there were almost no other means in this "all other possible means" category. ETHAN had only its limited skin paint potential. If passive returns were received, indicating an airborne SRO-2 squawking hostile, and there was no radar contact with unknowns, College Eye could consider "all other means exhausted". However, the message had made reference to the possibility of ETHAN/MOTEL and ETHAN/Navy cross tell (RED CROWN/DEEP SEA) as possible means. Without secure voice capability in the RRA, the ETHAN/MOTEL link was impossible. In coordination, it was learned that the Navy had a KY-8-compatible secure voice system, but that no contact was possible, since different Crypto keylists were employed. College Eye stated this as an operational handicap, with later result of the KAK-3002 keylist being directed for use by all agencies involved in command control of

Rolling Thunder and Barrel Roll forces. The secure voice link with RED CROWN that resulted has been of considerable benefit since, though it is maintained on a "call up" basis only. No cross tell could ever be accomplished with other Navy agencies. Each headquarters announced the parameters of the JCS approval, but seemed reluctant to come right out and say College Eye could push the button now. There was therefore a week or so delay between the time College Eye was first capable of sustaining daily operation, and the time such action was initiated. With no unequivocable directive expected as forthcoming, College Eye finally picked the message that came closest to giving a directive to employ the active mode, and began operation. The SEAOR 44 "Community" had directed that a minimum of the first 15 missions be reported in detail. Therefore, this first mission, citing the "authority" was reported by College Eye and the acquiescence of all addressees upon receipt of this message, which follows, was taken as indication that College Eye had acted appropriately.

"PART I: The QRC-248A was utilized in the active mode for the first time 21 Jul 67 on the College Eye Bravo mission (Gulf of Tonkin -- high altitude), per authority in 7AF Secret msg DOB-67-S-17604 16 Jul 67. This mission was the first in a series of fifteen designed to explore the possibilities of the system and point out needed technical changes, before final operating procedures are established and attempts are made to take greater tactical advantage of the new capability. Consistant with the concept of discrete interrogation, the following rules are being observed during this testing period. Active interrogation will be limited to the periods when the Air Force strike force is over hostile territory. Active interrogation is accomplished only in those azimuth sectors where passive responses have been observed, and must be made on the next sweep of the PPI scope (within 12 seconds at 5 RPM). Successive interrogations within the same azimuth sector are limited to one minute apart, and only then if passive detection is still observed. Areas with confirmed MIG activity, once interrogated, are dropped and emphasis placed on areas from which passive returns are being received, but no MIG warnings have been called for. Evaluation can then be made of the real-time advantage enjoyed with this system over present cross-tell procedures. Onetime deviations from this procedure are made

when it is deemed consistent with discrete interrogation concepts and would serve to exploit system capability. Example: The initiation on an unknown skin paint passed by secure voice between ETHAN ALPHA (Gulf of Tonkin - Low Altitude) and ETHAN BRAVO. Area of interest is established by the cross-tell information and subjected to a single interrogation. It is hoped to show if lack of passive detection is due to lack of enemy ground site interrogation or the possibility of non-squawking enemy aircraft.

PART II: Mission results. During the morning strike period between 21/0020Z and 21/0048Z, twenty active interrogations were made. Each of these was on an azimuth sector from which passive returns were being received. Active responses were observed for fourteen of the interrogations. Twelve of these were single returns, while two showed two distinct aircraft responding. Therefore, sixteen returns were actually elicited from enemy transponders. On the six tries when no synchronous return was noticed, because passive returns were received from the same azimuth, it was assumed that failure to obtain an active response was due to the enemy interrogation triggering the aircraft unit slightly ahead of us. Range of the responses varied from 128NM to 166NM, with the average at 145NM. There were many MIG warnings being issued at this time by other controlling agencies to substantiate the validity of the synchronous returns. ETHAN BRAVO initiated 6 warnings on the basis of their returns. Antenna was tried at all available speeds (2, 4 & 5 RPM). The six tenths (.6) will occur over 7.2, 14.4 and 18 degrees of azimuth respectively at these speeds. Two RPM was deemed unsatisfactory. Video is not updated often enough, and it is believed that interrogating a seven degree segment thirty seconds after passive detection lessens the chance of getting a "hit". Four and five worked equally well for the QRC-248A, with five preferred for the overall mission responsibility. No "spotlighting" was attempted, due to requirements to scan for other mission responsibility. Replies were strong and easily read. Often the response seemed to fill the entire azimuth sector that was interrogated, which may point to a wider antenna beam pattern than was anticipated. No side lobes were experienced. Only one time was there a good indication of azimuth discrimination, and this occurred on one of the simultaneous returns. Two aircraft were ranged at 128NM and 166NM. On this return, the blips seemed separated by several degrees. Successive test will take extensive data on width of returns. Inflight checks of frequency, power, time-gate, count down and trigger delay circuitry were made and no maintenance was required. The only possible technical problems indicated at this early date are the antenna beam width and the possible need to alter the PPI presentation so it will be even more readily apparent in a mixed environment. From an overall standpoint, this test was considered very successful..."

The discrete interrogation concept not only applied to operational considerations, but to the parameters of the equipment. In the message,

there is reference to 6/10ths second. This was the maximum "on-time" of the equipment allowed for each interrogation, and was insured by an automatic shut off device. As stated, at 5RPM, this allowed 22 degrees of azimuth to be interrogated. The output power and receive sensitivity were checked, to insure that there would not be repeated unsuccessful attempts, while putting out signals that would subject the system to compromise. Similarly, the frequency had to be set to an extremely narrow tolerance in an effort to avoid compromise of this pulse train, which could readily be identified by its triple pulse characteristic as an attempt to exploit the Soviet system. The "count down" was reference to the lower rate at which the unit was triggered. The established count down was 6:1, which meant for 6 radar or Mark X IFF pulses transmitted, only one QRC-248 pulse train was _____ transmitted. Even the minor problems indicated in the first test were disallowed in subsequent testing, and the system almost overnight became the most highly reliable piece of electronic equipment on the aircraft. It received special maintenance consideration within the Task Force. A position of "QRC Monitor" was established, which was to last the first year of its use, allowing optimum support while the remainder of the radar technicians rotating between SEA and CONUS had the opportunity to gain experience with the system. Filled by highly qualified personnel, the men in this position installed the equipment in aircraft, moved it from aircraft to aircraft since "black box" supply was always less than assigned aircraft, performed all maintenance including periodic preventive check out and calibration, accomplished all maintenance training and assisted heavily in operational training. Supply support was outside normal supply channels, being accomplished by direct exchange of reparables with the contractor in New Jersey. These unique

arrangements as much as the excellent design of the unit contributed to the tremendous successes enjoyed. With 100% back-up aboard the aircraft, it is seldom if ever, that a mission has lost the use of the QRC-248 system. Operationally, the impact was even larger. College Eye had attained the first goal in its drive to assume close control by the expanded detection capability. On this first day, six warnings were given on the basis of returns from this equipment. This must be compared with only 84 for the entire previous quarter. In the Jul-Sep quarter, with limited use of the QRC-248 for over 2/3rds of the period, 311 MIG warnings resulted. As part of the evaluation of the new equipment, a correlation was run between all QRC-248 returns and all unknowns painted by Alpha. In this process, it was realized that Alpha's radar had detected less than 1/3 the number of bandits that had been identified by use of the QRC-248. Further, Alpha could only classify these as unknown, whereas the 248 return gave almost 100% assurance that the return was an airborne hostile. There is not a single case remembered in which Alpha had radar contact with a bandit that was not also held on the QRC-248 system. With responsibility for the fighter cover gone and a complete overshadowing of its radar capability, Alpha's days were numbered. College Eye immediately made known these facts, and attempted to shift this valuable flying time to other, more productive, missions. This was taken by some to be an admission that Alpha had served no useful purpose. Nothing could be further from the truth. In the time when nothing else was available, Alpha filled a gap. Also, the radar requirement remained valid in theory, since the enemy could go to a non-SRO-2-squawking mode of operation at any moment. The information given by Alpha was "good", though it could now be seen just how small a portion of the entire picture it had been. Then too, there has always been

speculation on the deterrent value of the EC-121. Daily orbiting on station, pulsing radar energy over their land mass may have deterred certain enemy action, not knowing the full extent of its capability. To this same end, many think that allegations have often been subtle tests of the command control capability, to see if response conformed to fact, in order to evaluate the true surveillance capability of the Task Force and other agencies. As additional components arrived, the Task Force was able to assume a two-station posture with use of the system on 3 Sep 67, and all three stations by 20 Sep.

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162. (U) The day following this major milestone, an ADVON team was deployed to Udorn RTAFB to prepare for the movement. Again, lack of formal movement orders required unorthodox procedures, and the Task Force finally arranged for airlift to be provided on a "gentleman's agreement" by "BLIND BAT" the C-130 flare drop organization at Ubon. This unit had been friendly with College Eye in what most resembled a "mutual defense pact" of tenant multi-engine flyers against the opposition of an extremely aggressive collection of Phantom II advocates. Less critical items to the initial capability at Udorn were shipped in a Thai contract truck convoy -- a development much regretted after the fact, when much of the material was damaged due to the complete absence of any packing discipline. All items to be moved had been pre-assembled, palleted in the case of airlift, identified and given priorities consistent with their urgency to sustain operations at the other end. This work, of course, was done by Task Force members over and above full duty schedules. As with most plans, there was a weak link, and it proved to be the lack of follow thru by the Thai mover at Udorn in delivering the material. It got completely fragmented. Some was delivered at BEMO, some at the aeriel port, some to the maintenance area, and it was several days before it could all be rounded up. Fortunately, the aircraft again "behaved" well during the move, and no major failures occured which demanded use of the as yet unavailable supplies, tools or AGE. The mission aircraft were recovered at Udorn on 27 and 28 July, ending five months at Ubon and starting less than three at Udorn.

163. (U) Within the first several hours of operation at Udorn, the Task Force duplicated an incident that had given an embarassing first impression at Ubon RTAFB. Taxiing an EC-121D onto the unfamiliar ramp, a corner was cut too short, and the left main gear slowly sunk into the soft earth to a depth of 18 inches

as it traveled 15 feet forward on the grass. Fortunately, in compliance with standard SEA procedure, the inboard engines had been shut down, and the static position of the prop allowed several inches clearance. The outboard engine, benefitting from the dihedral of the wing also cleared, and the only damage was to the image of the Task Force as a large crowd gathered to watch the extraction of this strange "new" aircraft. Applying the lessons learned at Ubon when another plane had become mired attempting to taxi back to the ramp to clear a minor ignition problem the aircraft was quickly towed out backward, with PSP giving the added support. A retraction test confirmed that no damage to the strut had resulted. This test, and any other operation which involved jacking the aircraft was one always feared by the Task Force since the "required" hanger for this operation had never been available. Precariously perched on jacks with gear retracted, one could envision a sudden wind springing up which would result in an aircraft on its belly. Only the extreme caution in monitoring the weather, often requiring many days successive delay, preciuded this fear from becoming a reality. On this ramp there was additional danger, should someone fail to "get the word" despite closest coordination, and allow one of the RF-4s to be started, directing its jet blast across the flight surfaces of the College Eye aircraft. This blast was extremely powerful at the short range, and has been observed to support a line chief leaning nearly 30° from the vertical into it as he directed the parking of Task Force aircraft, which had to add unusual power to turn onto their spots into this RF-4 generated "headwind." The heat associated, when added to the 100° day, is indescribable. Three days following the move to Udorn, one of the most dreaded maintenance tasks became necessary. An engine had failed on recycle at DaNang, and aircraft and aircrew

were out of commission until an engine and maintenance team could be airlifted to make the necessary change. With six aircraft to support three daily missions, losing one even temporarily greatly reduced the odds of meeting mission requirements. Similarly, substitution had to be made in the flying schedule until the crew was returned. The Sixth Aerial Port detachment was notified of the tactical emergency airlift requirement. Their authority extends to off loading almost any cargo and diverting aircraft as required, which in other similar cases had always resulted in shipment within two or three hours. College Eye may have been too new on the base to be recognized as a tactical unit, or the oversight may have been an administrative error, but the necessary airlift was not made available for 21 hours from first notification. Upon learning of this in nightly mission report, 7AF sent a stinging message to the Aerial Port which left no doubt that future requirements would be actioned with the highest priority. The engine, two engine mechanics and a prop specialist arrived in DaNang about 1100 hours. The engine and tools were loaded on a fork lift, the men climbed on and were driven to the far end of the base near the runup area where the engine had failed. Sergeant Chambers was in charge of the maintenance team and he remembers he had doubts they would even get to the aircraft successfully. The base had been shelled on the day before, and they were forced to find their way between the debris. He was told another attack was expected, and since its position made the aircraft very vulnerable, they should work straight thru until the job was complete. The aircrew was at the aircraft and had done some preliminary work in stripping cowlings and other items. Surveying the situation, the crew was given a list of items necessary to complete the repair, which they set about to secure. Substitution of many

items was necessary, since some of the Transient Alert AGE had also been destroyed in the attack on the base. Most items were finally made available by the First Marine Air Wing. The team ate in-flight rations (IFs) at the aircraft to save time, and working continuously, completed the change at 2300 hours, bettering the time for many routine engine changes despite "make do" working conditions and intense heat. The crew had been given an estimated time in commission and had returned to quarters in an attempt to take the required crew rest which nearly impossible due to the heat, noise and anxiety caused by the expected attack on the base. They were notified when the job was complete and the maintenance team lay down under the aircraft wing to rest. A transportation delay allowed them to catch two hours sleep before having to assist in the necessary engine run and subsequent launch. The crew was finally airborne at 0400, about 40 hours after their engine failure. The maintenance men were required to return the borrowed equipment, clean the engine that had been removed and see that it was delivered to the Air Freight Terminal. They finished just in time to catch a College Eye aircraft which was recycling, and flew the afternoon portion of the combat mission before returning to home base. The extreme hardships experienced by all concerned on this and several other similar expeditions became widely known and contributed to a tight, but unwritten, crew discipline of returning all aircraft to home base for repair except when impossible within safety of flight considerations. The enlisted men had new two story billets -- by far the best quarters they had experienced. They occupied 2 1/2 buildings, all in a common area. The officers also had the best accommodations of any yet offered, and were located directly behind the officers club. Four crews (six officer members each) and the staff were billeted in air conditioned, three man

per room hootches. The two remaining crews were forced to live off base in a government leased hotel in downtown Udorn, about 2 1/2 miles or 25¢ away by taxi. Every crew rotating south lived off base four days, then took over quarters vacated by the northward rotation, a practice which insured equitable distribution of the hardships associated with living off the base. It was in this contract facility that two Task Force officers, Capt Buckingham and Lt Heinze saved the life of a Thai national. On a "two o'clock get up" for a 0500 takeoff, the officers smelled smoke. Investigating, they discovered it was coming from an adjoining room, which they entered to find a mattress smouldering -- the result of a careless smoking accident. The concentration of acrid smoke was extremely dense, and they were nearly overcome in their brief exposure as they carried the man to safety. They re-entered the room, dragged the bed from the dangerous atmosphere to the hall, and extinguished the fire.

164. (U) Unlike Ubon, where all Task Force resources were colocated, the Task Force was extremely spread out at Udorn. The operations area was in a building directly adjacent to the host 432TRW Tactical Unit Operations Center (TUOC) near one end of the runway. The flight line was two thirds of the way to the other end of the runway, and consisted of the back row of an RF-4 ramp between two taxi-ways, barely sufficient to park six aircraft side-by-side, with considerably less than required wing tip clearance. Flight line personnel worked out of two small wooden hootches at the forward corner of this ramp, about 250 yards from their farthest aircraft. The supply warehouse was two blocks from the flight line, another 250 yards from the maintenance building, on a dirt street that [illegible] mud or dust depending on

the precipitation. The contonement area was at the other end of the runway, reached only by leaving the base, driving on a Thai road following the base perimeter at the approach end and re-entering at an access point. Thailand is one of the few countries remaining which clings to the practice of driving on the left side of the road, introducing additional hazards, especially in normal government left hand drive vehicles which placed the driver next to the outside shoulder, unable to see properly when attempting to pass.

165. (C) It has often been said by personnel who experienced operation from several bases in SEA that, if the best could be picked from each base, the result would be outstanding. At Udorn, the first item selected would have been the support given by the TUOC (Tactical Unit Operations Center). Their intelligence section was extremely cooperative and would help in any way possible, tailoring their material to CETF requirements. Whenever briefing times did not conflict, they encouraged use of their briefing room, with its large roll out briefing charts, maps and overlays. Intelligence officers would give Task Force aircrews a briefing on all pertinent current intelligence and the weather section gave a most professional presentation of enroute, station and recovery forecasts. The Task Force duty officer would brief on the day's strike activity. He was allowed to work in the Frag Section of the TUOC to extract this data -- a tremendous benefit in itself which reduced the volume of classified documents controlled by College Eye by several thousand per month. The TUOC Comm Center provided the expeditious release of nightly mission reports, which greatly reduced the frequency of late arrivals at PACAF. The current operations center (call sign STAGECOACH) provided invaluable assistance including monitoring launch and

recovery of UHF and passing necessary "words" to College Eye and BLUE CHIP (7AF Command Post). The base single sideband station, NARCOTIC, would certainly have been selected also. The high quality phone patches provided to on-station aircraft allowed a more effective control of resources when faced with changing mission requirements. In some areas, support was not so easily obtained, despite the official policy of the base which was favorable toward College Eye. In some cases, lacking support was due only to circumstances in which all units shared alike, while in others there was individual resistance. One common remark was to the effect -- "Oh, yes, College Eye. Aren't you the unit that's moving in a month or two." The Korat RTAFB move was a hard fact and apparently well circulated prior to the move to Udorn. An initial survey of Korat was even accomplished as early as 31 July -- before the Task Force had settled at Udorn. Some individuals chose to ignore formal operational requirements that had been identified in premovement coordination, believing that College Eye could be stalled off until the movement deleted the requirement. When this attitude was identified from among other genuine reasons, it became a personal test of will between several members of the staff and the support agency, and strong if somewhat unorthodox techniques were often employed. One such encounter was with the Chief of Maintenance in the Comm Squadron. At this time, the Charlie mission aircraft preflight was being completed up to engine start and the crews were returned to quarters. If the latest weather indicated the strike could go in the northern area, BLUE CHIP would execute ETHAN CHARLIE with minimum time to assume station. The College Eye reaction time (execution to takeoff) had been established as 45 minutes. With an aircraft which [illegible] takeoff, only 15 minutes

of this was allowed for notifying and assembling an 18 man crew and associated flight line launch crew. Telephone communications in billets were considered essential to insure this reaction. No telephones were available in the new quarters occupied by the enlisted men due to lack of cable into the area. In early coordination, College Eye had been assured they would be forthcoming, pending completion of a cable installation "in progress" and no specific request for the service was necessary. On each follow up a new excuse was produced. In the third confrontation directly with the Chief of Maintenance, he was asked to provide an interim capability of at least one circuit, by any means available. He refused, taking subterfuge behind the lack of formal paperwork stating the requirement. The same day a letter was drafted to him, with a copy to the Squadron Commander, fully outlining the requirement, the justification, documenting the actions taken, the resistance met and closing with the following statement:

> ". . . Therefore, the attached AF Form 1070 (Telephone Service Request) is submitted to document this requirement and is to be considered as an emergency request in support of tactical operations. Until it is completed or suitable interim measures are taken, any explanation to 7AF and CINCPACAF of late takeoffs on ASAP executions will list non-support by the 1973 Comm Sq as a contributory factor."

There was no reply and phones were completely installed within 24 hours, without any apparent hardship. There were similar "go arounds" in the area of billeting. Forty Task Force officers in TDY status were paying $2400 per month in BOQ fees, but the most minor requests for service went unanswered until pressure was applied. In another case, house girls, previously paid the suggested rate by the occupants, had earned slightly more than $50.00 per month. When the billets changed to a VOQ status for College Eye, the billeting office reduced the "salary" below their own suggestion to an equivelant of about $35.00. A work stoppage resulted [illegible] made up the difference

out-of-pocket or wore wrinkled uniforms. The "last straw" was added when a crew arriving from Tainan was turned away, dirty sheets in hand, with the explanation there would be no clean ones to exchange until the contract laundry service delivered the next day. A call to the base commander suddenly reminded personnel of a whole Conex full of sheets, and also produced a new billeting officer. The Alpha missionwas launched for many days without ice in their water jugs until the mess hall personnel could be brought to the understanding that if sacrifices had to be made due to ice shortages, it would not be by aircrews flying combat missions of 14 hours duration. "Aircrew member" to the Mess Sergeant brought to mind an officer, and another meeting of the minds was necessary to insure that enlisted crew members were able to receive adequate meals both pre and post flight, regardless of standard operating hours for the facilities. The dirty water often encountered was seldom mentioned, due to conditioning which had taken place in Ubon but was found to be the result of impure ice purchased off base. Unlike Ubon, however, water was plentiful and a long hot shower was a luxury that could be enjoyed without violating a water conservation regulation. Undoubtedly, the greatest irritant was transportation. This problem was never solved, because it was not one of attitude or misunderstanding, but rather lack of resources. The Task Force staff sympathized with the Motor Pool Officer, but in an expression which became common at this time, "That was not good enough," and did little to pacify an aircrew at debriefing, angry at having stood under the Wing of the aircraft 45 minutes in the rain awaiting transportation that never came. The language barrier, with 100% Thai national drivers was one of the primary problems. The red dust from never [illegible] detours around

base street paving and repaving jobs were base trademarks, as was the outdoor movie which caused a greater than usual reliance on the weatherman's product. Challenging as this experience was to those who were charged with "putting out the fires," in all fairness, Udorn must be rated as a very pleasant base overall, and the tactical mission seldom suffered as a direct result of any problems encountered. The fact that personnel griped was a healthy sign. Still on a demanding schedule, far surpassing the standards on which PCS unit manning was based, personnel actually had enough time to become familiar enough with their surroundings that they identified shortcomings. Conditions were being judged on their own merit rather than against the standard of Saigon, as constant crew rotation produced new faces who had never experienced the Tan Son Nhut operation. The "R&R" to Bangkok that had been incorporated into the rotation schedule at TSN and continued upon arrival at Ubon had been discontinued, but the short distance, and availability of daily scheduled in-country C-130 airlift allowed the side trip to be made on an individual basis.

166. (S) The effect on the development of the mission resulting from the move is difficult to conclude. Newly operational with the QRC-248, leaving the MIG Cap base certainly slowed development of tactics which could have been jointly proposed. Offsetting this to an unknown degree, the unique requirements of the Recce pilots would not have become known without the colocation on their base. Geographically, the base was the best suited of any utilized as an FOB, although maintenance assumed extra workload by having to accomplish the recycle turn-around of Charlie themselves. Crews benefited from this home base recycle, actually allowing them a hot meal and an hours rest in their own bunk prior to launch fof the PM TOT. Joint tenancy with the AIE's (SANDY/FIREFLY), the

JOLLYGREENS, ABCCC (ALLEYCAT/CRICKET), F-102s (JERSEY), BRIGHAM and the 7/13 Command Post (HEMLOCK) broadened Task Force understanding of operations in Barrel Roll and of SAR activity on the overland ingress/egress routes, and helped to clear their misunderstanding of ETHAN. The NVN air war was entering a new phase, which also accounts for inability to draw conclusions. Insight to this shift is provided by quoting from the previously referenced 7AF DIO briefing:

> "The North Vietnamese normally employ MIG-17s and MIG-21s in different combat roles -- taking advantage of the areas where their aircraft have a performance superiority over U.S. aircraft. Generally speaking, MIG-21s have employed hit-and-run missile firing tactics under close GCI control at medium altitudes, while MIG-17s tend to engage in cannon firing dog fights at low altitudes.
>
> Prior to August 67 . . . the MIG kill ratio was four to one in our favor. Beginning in late August 67, however, the MIG success rate began to improve. MIG reactions to our forces became limited in numbers, with the attacking aircraft generally under close GCI control. Since August 67 the number of MIG kills compared to our losses to MIGs has stayed roughly one to one.
>
> MIG-17s have most recently been employed almost exclusively in flights of four aircraft, and used primarily in an area defense role around Hanoi and Kep. These aircraft usually orbit at low altitudes where they can maximize their maneuverability advantage over our heavier aircraft. They appear to follow preplanned battle plans and rely almost entirely on mutual protection. This area defense tactic accounts for approximately 90 percent of all MIG-17 reactions. These aircraft normally stay in their areas and only attack when our aircraft penetrate their defense zones. The Kep based MIG-17s normally perform a defensive type orbit within 20NMs of the airfield and historically have shown little aggressiveness. These MIGs generally operate at altitudes between 1,600 and 3,300 feet, and remain in close proximity to the AAA concentration West of Kep along the Northeast rail line and on occasion they have attempted to lure our aircraft over this threat area.
>
> The MIG-17s at Hanoi/Gia Lam are usually noted performing barrier type defensive orbits at altitudes of 6,000 to 16,000 feet, covering the larger area from Hanoi/Southwest to the Ha Binh area, and North to Phuc Yen. They also stay in their areas and generally only react when our aircraft enter their area of responsibility.

Another general pattern entails MIG-17s and MIG-21s being vectored to the intended intercept area on the same general heading. The MIG-21s are usually at an altitude higher than the strike force, and the 17s are at a co-altitude or lower. The flight with the immediate tactical advantage will attack first. After the initial attack, the MIG-17s engage directly with dog fight tactics, and the 21s employ hit-and-run tactics to pick off aircraft when they judge the tactical factors to be in their favor.

Although MIG-19s are not deployed in North Vietnam, a large number of these aircraft are deployed at three airfields in South China near the DRV border. Reports indicate that four to eight of these MIGs frequently react to U.S. strike missions and that they patrol adjacent to the NVN border during the time that we are in the area -- particularly when we strike targets in the buffer zone. USAF pilots have reported seeing these MIG-19s across the border, and one Navy aircraft was shot down by a MIG-19 five NMs inside NVN in August 67. Another Navy aircraft reported that a MIG-19 fired four Alkali missiles at him while inside NVN eight NMs from the border during August 67. Additionally, there have been two U.S. aircraft which strayed over Hainan Island and were shot down by CHICOM MIG-19s.

MIG-21s are usually employed in flights of two aircraft in a point intercept role at medium altitudes. The MIG-21s almost always attack from a slightly higher altitude and make a single hit-and-run firing pass. MIG-21s represent the most formidable air threat to U.S. aircraft operating over North Vietnam and have been noted in engagements from the Lang Son area to as far South as Vinh, and from East of Haiphong to Western RP-V. Although it has become increasingly difficult to predict the nature of MIG-21 reactions, two basic intercept patterns have been isolated during reactions to our strike missions, between August 67 and April 68.

The most frequently observed pattern during this period has been reconstructed from a large number of reports and sightings and seems to use a clockwise intercept against our strike missions penetrating from Laos. This intercept strategy seems to be timed for an attack on our aircraft just prior to the Yen Bai turn point or in an area between Yen Bai and Thai Nguyen.

The initial leg of this pattern is a climb out from Phuc Yen, generally on a heading between 240 and 270 degrees as our strike force is crossing the Laotian/DRV border. Speeds on this leg range between 400 and 460 kts, with a gradual climb to approximately 16,000 to 19,000 feet. During this Westward leg, the GCI controller apparently selects the intended target based upon flight separation and positioning. The most lucrative target in most cases has been a flight which is separated from the main body of the strike force; however, [redacted] Cap, these

MIGs have, on occasion, been vectored against the main force. This first leg of the intercept profile takes from five to nine minutes.

The second leg of this pattern entails a gradual turn to a heading of approximately 330 to 360 degrees to gain a tail chase position on the intended target. The MIGs increase altitude to between 20,000 and 23,000 feet and gradually increase their speed to about mach one plus for the actual attack. During this most critical portion of the intercept, the MIGs seem to be vectored to the point of visual acquisition behind the target, quartering in from the right and using their altitude advantage to escape detection. A descent is made to target altitude or slightly higher and one high speed (mach one plus) attack is made from the six o'clock position. At the time of the attack, the leading MIG is usually one to three miles behind the target aircraft, while the second MIG is in trail covering the lead MIG's tail position. The lead MIG fires one or two Atoll missiles. This attack may then be followed up by an attack by the second MIG, depending on the reaction of the strike and CAP aircraft.

After the attack, the MIG-21s usual and most successful method of disengagement has been a maximum performance climb to between 26,000 and 33,000 feet. Although they seem to generally break away to a heading of approximately 150 degrees, they have been observed disengaging on headings toward China, between 30 and 90 degrees, when they are aggressively pursued, and other U.S. aircraft are between them and Hanoi. Speeds believed to be in excess of mach 1.4 have been observed during this break off procedure. Total flying time for this intercept pattern seems to average approximately 30 minutes.

A similar configured pattern has been conducted against our penetrations from the gulf. This pattern entails a hold orbit South of the Hanoi-Haiphong axis with attacks being conducted on different occasions against both ingressing and egressing aircraft. Altitudes and speeds for attacks against ingressing aircraft are much the same as described for use against aircraft ingressing from Laos. The initial leg on headings between 120 and 160 degrees, turning to 360 degrees just before attack, and breaking off generally on headings between 330 and 360 degrees. MIG-21 attacks in this area are not nearly as frequent as those West of Hanoi, probably because of our strike force's shorter exposure time and the relatively smaller operating area.

Although the two major MIG-21 intercept patterns just described are those which have proven to be the greatest threat to our strike aircraft operating over North Vietnam, another pattern has been noted involving an orbital pattern at altitudes above 26,000 feet

in an area East of Thai Nguyen. Rather than running a precision timed point intercept, these aircraft appear to simply orbit at a comparatively high altitude until there is a target of opportunity such as a straggler or a flight that has been separated or disrupted by AAA, SAMS, or other MIGs. These aircraft are not committed to attack unless it is judged they have a decisive advantage.

One final MIG-21 attack variant has been noted in attacks against USAF peripheral support aircraft in the vicinity of the RP-IV/ Laotian border. Two MIG-21s fly due South from Phuc Yen to approximately 2000N and then turn West to the point of attack. Again, the attack is from an altitude slightly higher than the U.S. aircraft. A single high-speed hit-and-run missile firing pass is executed and the MIGs then return directly to Phuc Yen."

This intelligence briefing gives an excellent account of what radar personnel were to see unfold daily on their "big eye." With the GCI tactic, the North Vietnamese improved their kill ratio, but in doing so became committed to the use of IFF, which in turn allowed detection with the QRC-248. The ability of 7AF Intelligence to establish the classic attack patterns was materially aided by a new addition to College Eye nightly mission reporting. The time and geographical coordinates for each active SRO-2 return elicited was now included in the reporting format. Continuing reference will be made to the above quote as developments in command control during the period July - December are discussed.

167. (S) MIG warnings issued during the July - Sept quarter increased to 311, while Border warnings reduced to 70 compared with the previous quarter figures of 84/275 respectively. The great difference was due to the increased MIG reaction, higher detection rate with the EIFF and an increasing respect for the border restrictions. Throughout the period of operation at Udorn, the primary on-station achievements remained in the area of emergency refueling and SAR assistance. Twenty-seven aircraft were refueled under the emergency procedures during this quarter [illegible] agencies themselves,

but were diverted on egress to provide fighter cover for a massive SAR effort. The day was 5 July 1967 and the first word of the loss came to ETHAN at 0840Z when the CICO, Sergeant Kinsella, monitored a call from an F-105 flight stating that one member of their flight, BEAR, was down. Though the facts are not known in this case, BEAR was most commonly used as the lead flight callsign by the 355th TFW at Takhli RTAFB. College Eye passed the emergency to the on-scene SAR commander and MOTEL, while checking fuel states and armament of egressing flights and coordinating for tanker handover, in anticipation of forming a Rescap. Controlling the tankers far north saved 20 minutes of vital enroute time for each refueling. The Rescap was ordered and tanker assignments and a refueling schedule was worked out to insure an orderly flow of Rescap to the rendezvous point without a break in the fighter cover provided. CROW and LOREDO flights were serviced without incident upon declaring Bingo fuel on 12 August and on 13 September, fuel emergencies of BISON 1 and 3 were controlled simultaneously with CLEVELAND who had battle damage. A member of MARLIN flight ejected in the Gulf on 19 July and ETHAN BRAVO orbited the position maintaining visual surveillance until a rescue helicopter arrived for the recovery.

168. (S) The tactical reconnaisance pilots had perhaps the least glamorous mission in SEA. Exposed to every danger of the high threat areas, they were experiencing heavy losses. Most were from SAM and AAA, but they were also engaged by MIGs. They received little in the way of warnings, which reduced the effectiveness of their only defensive capability -- high speed avoidance. The pilots were eager to learn of assistance that might be available to them, and lateral briefings were [illegible] several close personal

friendships produced insight in "bull sessions" or "shop talk" that went beyond this formal input. Many recce missions were during times when College Eye was not on station. At other times UHF warnings were often missed, especially when the mission profile called for extremely low altitude runs. The problems had been accepted as facts of life. The reconnaisance aircraft had HF radios, a feature not shared by the fighters. College Eye requested that 7AF authorize an HF warning be added to command control procedures and the proposal was adopted at once. Most agencies were limited to a single HF frequency capability, and tactical coordination on HF was an established routine. In the new procedure, recce pilots tuned in on this frequency. College Eye aircraft, primarily ETHAN CHARLIE, would rebroadcast MIG warnings on the HF radio whenever recce aircraft were in NVN. The procedure added very little load to the frequency, since only applicable warnings were introduced to the HF net. With the line-of-sight consideration removed, recce forces began to hear the warnings. One of the easiest changes ever implemented, the effect to the recce pilot was assuring, and they began to feel less "alone - unarmed - unafraid" as their motto stated. The recce pilots were encouraged to adopt the same radio check in/check out procedure that was so strongly resisted by the strike forces. In the attempt, they realized that ETHAN CHARLIE was seldom on station during the periods for their assigned missions. In the absence of any unfavorable comments in the past, no review had been made by College Eye to realize the number of scheduled recce flights outside the Charlie station liability period. Since College Eye had a firm fragged on and off station time, mission flimsies included only the missions scheduled during the station coverage period. As a hold over from when College Eye flew Charlie from Tan Son Nhut at considerable handicap, the mission was

still fragged for minimum coverage, and executed only when strikes were reasonably sure of going above 20N. Attuned to these previously overlooked requirements, College Eye also received approval for daily execution of Charlie and an extension of station time with a minimum ground time recycle. This provided dawn to dusk coverage with the exception of the 1 1/2 hour recycle time which was scheduled to be compatible with the recce missions whenever possible. The flights from Udorn by RF-4 and RF-101 aircraft to RPV and VIA were nearly 100 percent overland ingress, and Charlie provided much better coverage than the distant Bravo or Alpha. With this longer station coverage in Laos, the number of recce missions provided adequate flight following and warning services climbed several hundred percent. College Eye re-evaluated its entire station manning concept, and concluded that Alpha was too expensive in terms of flying hours against the mission product. With loss of escort control and success of the QRC-248 from the Bravo platform, Alpha served basically as a back up to Bravo and provided coverage during Bravo's recycle. This matter was discussed with Col Beckham, Chief, Command Control Division of 7AF. He was a strong College Eye supporter, but saw this as premature, since abandonment of the "Primary" Alpha station was a rather radical departure from the mainstream of thinking. The Navy/Air Force control of fighter escort was still an open issue at higher levels though the Navy exercised the responsibility at the moment, and loss of Alpha would degrade Air Force control capability for this mission should it be reinstated. He did concur in the basic logic, however, and thus the seed was sown. College Eye wished to apply this time on the more productive Charlie mission, further extending station coverage with two maximum endurance sorties which could eliminate the station break for recycle as well as providing greater total station coverage. In the meeting, Col Beckham did agree

that the Bravo station could be considered primary, and could be implemented in-house. Previously, when aborts, recycle or other reasons left onlyone aircraft in the Gulf, the remaining aircraft always flew in the low level radar surveillance posture. Now the priority was exactly reversed.

169. (S) Additional channels were being installed in the RRA, with the modifications to be complete in the late fall for support of MOTEL in the computorized mode and for COMMANDO CLUB, a ground radar controlled bombing system being prepared to support Rolling Thunder forces. Some of these channels were also to be secure voice compatible. As new channels became available, they were often put to interim use. A UHF relay link between College Eye and MOTEL therefore existed which had no real purpose, since in their manual mode, the only tell requirement remained points B/C/D and this was accomplished on HF. Following the pattern first known at Ubon, experimentation began between individual parties on the use of the Radio Relay to contact flights over NVN. Recce pilots would tune to the MOTEL half of the duplex channel and ETHAN could establish two way communications with the range and clarity that existed on the Guard Relay, but without the saturation problem. Proven in this way, College Eye and the 8TFW presented joint proposals for use of the RRA in MIG Cap control at every conference attended. The resistance was too great. The channels had a dedicated function in the SEEK DAWN program and other use would not be authorized. The discouragement is expressed by the following account by Major John, Task Force Radar Staff Officer at the time:

> "The Radio Relay Aircraft was my big failure in SEA. I tried to get use of these powerful radios for 10 months, but to no avail. The people at Ubon and I brought up this RRA subject at every conference, meeting or debriefing during a six month period. Many people agreed, but no solutionwas ever found. I remember one day when I call[illegible]

giving them range and bearing. The MIGs cane in trail and shot down one F4 with the Atoll missile. One of the F4 flights had, as its flight leader, one of my biggest fans for the use of the RRA. They never heard the call. One F4 was lost. The front seat pilot was rescued and the GIB captured. Black Rivet's success was primarily its ability to be heard, since they had less real control capability than we did. The successes when we finally did win approval in November prove my contention."

170. (S) The BLACK RIVET call sign mentioned above was the tactical call sign for the specially configured EC-121 testbed deployed to SEA with the project nickname of RIVET TOP. Formally constituted as Det II, Tactical Air Warfare Center, the single aircraft unit arrived in Udorn about 10 days after College Eye and shared the same operations building. The program had originally been called SEA TRAP, and was not a complete surprise to College Eye, since the 552 AEW&C Wing had provided several inputs during its planning and several staff members had received limited information on it during PACAF briefings. Early relationships between the organizations were rather strained, due primarily to individual personalities rather than any professional jealousy, unit rivalry or other sense of competition. The unit was manned and equipped first class. A shiny fleet of rental vehicles, a complete net of non-tactical radios and other visible items naturally made individuals of the Task Force envious. In maintenance alone, 122 specialists were authorized to maintain their one aircraft in comparison with the 52 FOB maintenance men for the fleet of six D models. Their "kit" contained twice the line items of the Task Force supply inventory, and their position in seeking lateral support was often one of demanding. Every member of their deployment force was SI cleared, and at the beginning theyoverplayed the mystery, extending the super-secrecy into even unclassified matters. All exchange of information was expected to be

one way. With limited 121 or SEA experience represented in their numbers, they sought College Eye guidance in establishing themselves both operationally and in maintenance, but would not divulge the slightest fact about themselves. To the working level personnel who were expected to provide this lateral support, the position was very irritating. These barriers fell quickly once Rivet Top became operational, and many close personal friendships were made between these same people who were at first only coldly cordial. It took them almost a month to settle in, shake down the aircraft and begin flying operational sorties, but when they did they were an instant success, and their capability was widely acclaimed in the anti-MIG role by everyone. College Eye had stiff competition, yet their success made the liaison even more necessary, since both units were fighting the same war and had common objectives in changing command control procedures. Rivet Top, as a test program, was given much wider latitude in performing its mission. It was not tied to specific geography or mission responsibility and never incurred the wrath of fighter pilots by giving a border warning. They were free to exploit what they could do best. The anti-MIG role was their money maker, and the additional interest generated by their success served as a clear demonstration of the pressing requirement for equipment and techniques College Eye was on record for. BLACK RIVET and ETHAN had exactly the same Mark X IFF/SIF recognition system. They had identical QRC-248 components except for a variant in the antenna system. The system interface within the test aircraft was entirely different, and in College Eye's opinion very limited. Each subsystem was monitored at a separated station and told manually to a single Tactical Air Coordinator (TAC) who worked strictly from a grease penciled plotting board. Under the limited

North Vietnamese MIG reaction, it lacked the flexibility of the five radar scope positions on the College Eye aircraft which could be manned with up to five controllers as necessary to avoid saturation, or to perform other mission responsibility in addition to and without interference with the anti-MIG role. Thus in the Enemy Detection/Friendly Identification/Communications criteria needed for close control procedures, College Eye was outperformed largely in the communication area. It should go without saying that this was enough, since the best information in the world was useless if it couldn't be provided to the fighters on a reliable basis. Cases such as quoted above, when losses were incurred simply because vital warning information did not get through, were a bitter pill, and no relief was in sight. No communications improvement had been included in the long range relief originally expected from the SEAOR-62 program as the autonomous capability and the equipment necessary to it had been subordinated to the automated forward tell. Attempts to overcome the deficiency by use of RRA had also failed. The Security Service positions provided BLACK RIVET's TAC with communications reconnaisance information which could greatly refine the warning and control process. These positions were exactly what Big Eye members of the ad hoc committee formed to action the Owens report had been told were virtually impossible to obtain. The statement has been voiced that College Eye resented Rivet Top. Nothing could be further from the truth, and evidence will be presented to dispell this myth. The only resentment in the Task Force was for those in SEA, who in ignorance of the facts, held the attitude, "Rivet Top is better than College Eye -- Get more Rivet Top and send College Eye home." College Eye, faced with this attitude from many quarters, had to impress people with the fact that it was capability that was needed -- not more

or less of one unit, and that with the addition of a few subsystems, College Eye control capability would far exceed Rivet Top's and could be realized with considerably less lead time. The soundness of this logic prevailed in the end, and it is often wondered if College Eye would ever have received modifications without Rivet Top having generated so much interest in this area by giving graphic demonstration to self-identified limitations of CETF.

171. (S) In its continuing effort to upgrade the weapons system, College Eye had made two significant "sales pitches." A team of four colonels and two GS-15s representing ASD and USAF had visited units with SEAOR's pending to discuss their status. They met with College Eye 6 Aug 67 and were fully briefed on the urgency of the GPA-122 which had been proposed by diverting SEAOR 34 assets. It is not known if this meeting was the key to approval, but in early Oct, College Eye learned that funding had been released for this program. The second visit was a return by General Ryan. It was his first visit since having flown with College Eye and in the interim QRC-248 had become operational. He arrived 24 Sept, a period when movement planning for Korat was in its final process. A message from College Eye to the 552 AEW&C Wing, partially extracted below gives the account of the visit:

> ". . . General Ryan led with a question on how our move was shaping up. He was told we were awaiting orders for a firm date, but that messages seemed to indicate the middle of the month. His casual remark tended to substantiate this belief. He asked specifically the status of our obtaining the GPA-122 SIF decode system (a capability he has displayed great interest in our acquiring since flying with us) and was told that System Command's latest information indicated lack of funding approval at Hq USAF level. General Ryan stated that our aircraft "looked great" without further elaboration. He did not go through an aircraft, his inspection being limited to a quick tour of the line. Conversation led to the QRC-248, another area which deeply interested both Generals Ryan and Vogt. They were shown two recent scope photos containing active returns and the MIG warning proc[illegible] they were interested in

statistics on use. Figures were readily available on the last eleven missions. It was explained figures were currently being compiled into a final test report which would recap the entire two month initial test phase and that they would be made individual addressees. . . "

The message does not do justice to the account, as it does not capture the degree of enthusiasm the party of five generals (C, DO, DM, DI and DP) showed for the QRC-248 information and the explanation of how it was being used and proposed employment. An anecdote which proves that College Eye was at least an active subject with the PACAF General staff will long be remembered by this writer who presented the briefing on the EIFF. Upon conclusion, General Ryan carefully phrased a question so that the answer would clearly illustrate the real time nature of this information when acted upon autonomously by College Eye. Upon hearing the answer, which he knew first hand from his previous inflight briefing, he announced to the entire group that an argument had just been settled and that General Vogt owed him a small sum of money that hehad put against the Task Force. With the interest being displayed on every hand, it was true that smart money was on the Task Force and the College Eye staff could sense that the break through was near.

172. (S) It is not known how much interest was spontaneous, how much was reaction to a changing tactical situation, how much was generated by past and present field inputs from 8TFW and CETF, how much was the result of Rivet Top's first month of operation, and how much was a transfer between headquarters, but directly following this visit, 7AF quickly adopted one proposal after another, until by the end of the year, all available capability of the EC-121D weapon system was being fully exploited, and additional refinement became dependent upon realization of pending modifications. To follow this subject thru, we will violate

the chronology on this one point and later return to the Udorn/Korat redeployment. A complete account of the next few weeks events is contained in a College Eye message to the 552 AEW&C Wing. The message is dated 22 Oct, but describes the earlier part of the month, the delay due to the move which occured on 16-17 Oct disrupting all but essential tactical requirements. It is quoted below in its entirty:

"Subj: (U) NEW COLLEGE EYE MISSION CONCEPT AND DV VISITATION: This message in three parts. Part I: Because of increased losses due to MIG activity, 7AF has authorized College Eye to implement procedures which have been formulated and actively "pushed" by the College Eye staff for some time. The basic concept is to eliminate the blanket MIG warnings in the eight compasspoint/range format and issue advisories to individual aircraft by flight call sign in clock-code/range/heading and altitude. This capability has been discussed at all levels, from General Ryan's two visits on down, and has helped immeasurably in gaining approval/funding/accelerated work schedules for the GPA-122 which has always been identified by CETF as a necessary item to effectively accomplish this type of mission, in conjunction with a more liberal employment criteria for the QRC-248. The significant losses to an increasingly aggressive enemy in the first part of Oct precipitated a series of meetings to determine how the existing capabilities of College Eye and Rivet Top could be exploited to tactical advantage. On 6 Oct, Major John, the Radar Staff Officer, was requested to brief General Sweat (7AF DOC) and Col Hill at TSN on the CETF capability and what was required to provide control of a MIG Cap. The above QRC-248 and GPA-122 considerations were discussed in addition to possibility of using Radio Relay Aircraft frequencies to improve communications to the strike force. On the following day, Major John traveled to Ubon RTAFB to confer with Lt Col Collins and Major Moore from the Tactics Division of the 8TFW. Details for a MIG Cap mission of the 9th were worked out, with the 8TFW being advised of our limitations (comm, restrictions on QRC and inability to take ground environment into account when giving vectors, etc.) The special MIG sweep mission was fragged on the 8th for 9 Oct and the crews to fly them were fully briefed on the mission. This mission resulted in no MIG kills but was considered successful as it proved the concept. Bravo called vector information to the MIG Cap who "committed" themselves on the hostiles. On 11 Oct, Major John returned to TSN and met with General Momyer, Gen Blood, and Col Hill. Gen Momyer had gained approval to use QRC with fewer restrictions (explained below). Col Burns of the 8TFW debriefed Gen Momyer on the 9 Oct MIG sweep and expressed need for better UHF [illegible] how good

their info on MIG traffic was and how fast the information could be told to the MIG Cap aircraft. The first question was answered to his satisfaction but he wanted to know why MOTEL could not tell in real time like we could. This part of the conversation got into "SI" information and the CETF representative was excused. As a result of this meeting, the General gave an extra flight of F4Cs to the 8TFW to use as MIG Cap under College Eye control, after being satisfied that we could provide accurate and timely info to the MIG Cap. Portion of 7AF message (S) DO 02615 is quoted. . . When tactical requirements necessitate, use of the active mode of the QRC-248 for immediate identification and tracking to prevent loss of friendly aircraft and/or aid engagements of MIGs by friendly aircraft is authorized. CETF and Rivet Top will use this authority as necessary when aiding in avoidance/intercept of hostile aircraft. Unquote. The present criteria for QRC-248 employment is outlined in SEAOR 44 mission report eleven. This new authority is directed primarily at Bravo when controlling the MIG Cap and is interpreted to authorize the following exceptions from established criteria: (1) Extending the time gate from .6 to 2 1/2 seconds to allow sweeping up to 75 degrees if required before automatic shut off. (2) Waiver of the one minute limitation between successive interrogations when absolutely essential to provide updated information during close control. (3) Waiver of requirement to first receive passive detections if other sources indicate a MIG threat to friendlies (visuals called by fighters or other agencies calls which place hostiles close to friendlies). This mission has been run six times. Three were unsuccessful for poor communications. Two were excellent and one good. Out of the six missions we have had two commits. One was unsuccessful because the MIG-21 ran for home, the other due to low fuel state of F-4 which had to break off. A visual contact was made on this attempt however. The primary mission of the MIG Cap is protection of the strike force, with any MIG kills considered as an added benefit. It is significant to note that in terms of this stated objective, the missions have been 100 percent effective, as no strike aircraft have been lost to MIG activity since its inception. Major Moore of the 8TFW is scheduled to brief all staff and weapons controllers on F-4C and MIG-21 tactics. Standardization of procedures is good between units but a monthly meeting of this nature is planned to compare notes and benefit new personnel with both organizations. Part II: On 16 Oct 67 Brig Gen Dale S. Sweat visited Udorn and requested a flight with College Eye. Major Mack made all the necessary arrangements to extend the courtesies on the flight commensurate with his rank and position. Major Mack accompanied Gen Sweat on the 17 Oct 67 Bravo mission which launched from Udorn and recovered at Korat on the second day of relocation. The following items were discussed in respect to the new MIG advisory concept: (1) Operations of the QRC [illegible] liberal

usage as authorized by 7AF. (2) The requirement for a control frequency to be installed in the Radio Relay Aircraft to insure continuous comm with the MIG Cap when under CETF control. (3) The need for SI clearances so that we may coordinate with other agencies on secure voice and obtain information advantageous to the controlling of MIG Cap. This would also allow CETF to meet at conferences with all agencies providing services to the strike force. (4) Urgent requirement for the GPA-122 SIF decode capability for the "personalized" MIG advisories. (5) Limited range of the AN/APS-45 that makes it impossible to provide accurate height data on bandits beyond 120NM from platform. He was briefed on the secure voice capability of College Eye and the agencies included presently in the secure net. He expressed the desire that we have SI clearance so that we could start talking with Commando Lance/Combat Apple. A thorough briefing on all aircraft equipment capability was extended to Gen Sweat. He expressed considerable interest in the newly initiated concept and pledged continuing support of 7AF to improve and expand the control/advisory role of College Eye. Part III: In conjunction with the new concept, the CETF staff is considering a realignment of station manning and mission profiles. The proposals are being initiated to provide more effective coverage for strike and recce missions. Better utilization of total flying hours will also be realized. The possibility also exists that we may be tasked for expanded mission responsibilities in the future (ref 13AF msg (S/NF) DPL 01528). Details of proposal will be forwarded when firm."

The clock-code/range format mentioned in the message was discarded in favor of magnetic bearing/range in the coordination visit of the 8TFW tactics personnel. The message to the parent organization naturally tells primarily the College Eye role, though it does mention that Rivet Top attended the 6 Oct meeting which resulted in the special 9 Oct mission. On this test, College Eye and Rivet Top were both given specific areas of responsibility. The day before the mission was flown, a situation developed which exemplifies the Task Force position of putting support of the strike forces above any other consideration. BLACK RIVET called in to their operations office on HF phone patch late in the afternoon reporting that they were returning from station and had an azimuth drive failure on the AN/APS-45 pedestal. Det II maintenance personnel did not have one in supply and as [illegible] item was not

on hand which released College Eye from any further obligation under the "fill or kill" supply concept for lateral supply requests. Within a few minutes, the Det II operations officer entered College Eye's office (one room apart) to reveal the extent of his problem. He explained that on 184 (last three digits of tail number) the QRC-248 antenna was mounted on the APS-45 (height finder) pedestal. This was a complete surprise to the two staff officers he "confessed" to, who had just assumed the installation to be on the search radar antenna like the EC-121D modification. Therefore, without the azimuth drive assembly, Rivet Top would be unable to fly the special mission the next day. The senior of the two College Eye officers was also the senior ranking staff member on station during this period, and without a moments hesitation he telephoned maintenance, requesting the NCOIC report to his office. The instruction was given to cannibalize the azimuth drive from the aircraft that was scheduled to rotate to Tainan the next day. He was told that it too was broken, and the order was changed to remove an azimuth drive from ANY aircraft and give it to Rivet Top. The next statement only got to the words "Air Force Manual 66-1". In a tone one could not mistake, the Sergeant was told that this problem was larger than any consideration of a maintenance directive, that he was being ordered to see it accomplished if it took all night and that any repercussions would be fully assumed by operations. It was done, and Rivet Top successfully participated in the test mission. The debriefing of this mission caused General Momyer to authorize the additional flight of MIG Cap on a continuing basis. In Part III, the study being written was the formal request to drop Alpha and the College Eye input to a 13AF study on consolidation, both previously mentioned. Submission of these plans occurred in Nov. [illegible] extreme difficulty in

providing General Sweat any sort of VIP treatment on the flight which launched on the second day of relocation. The line ". . . to extend courtesies commensurate with his rank and position. . ." is humorous to those who witnessed the event and wondered at the time what horrible impressions the General might have from this first visit. It would have sounded strange, however, to report that "General Sweat was briefed for the mission sitting on a 'Coke' case stood on end while the rest of the crew lounged on the floor watching the day's mission being unfolded by an extremely tired looking duty officer making grease pencil marks on a ratty old plotting board map." Strange perhaps, but not untrue. To fully understand the manning of this particular time period and the in-progress execution of the mobility plan must be examined.

173. (S) A preliminary survey of Korat was made several days after arriving at Udorn, and as one of his last official acts as Commander, Lt Col Peck released a message to 13AF/388TFW outlining support requirements on 12 Aug. An extremely grim picture was painted by Korat, who in answering this message stated:

> ". . . Facilities and support capability will be austere and limited during the next few months due to increased base activity. . . Airmen will be billeted in tents. . . inflight feeding will not be available until inflight kitchen is built. . . no operational/maintenance facilities are available to earmark specifically for College Eye. Suggest joint usage of operations and maintenance facilities with Dye Marker to extent practicable. Remainder will of necessity be in tents. . . ramp space contingent on construction of additional 15,000 sq yds on east end of Dye Marker ramp. . . Request an officer from the Task Force be transferred to Korat NLT 15 Sep 67 to coordinate preparations for the orderly transition to Korat. Officer should be knowledgeable in overall requirements and be in position to speak for the commander."

It was difficult to believe that support was really that critical, and a team was sent for a second look on 5 Sep 67. "Dye Marker" was the code-of-the-day

under which the soon to be 553RW was being identified. In this second visit to the base, the "nuts and bolts" personnel were talked with and it was realized that no one even knew about College Eye. All support requirements had been lumped together and an EC-121 was an EC-121 regardless if it was a D, M or R model. No facilities were identified for College Eye (or Rivet Top) and the base looked for the completion of Dye Marker facilities to solve all the problems, in effect asking a tenant Wing to play host to other tenants. In view of the problems indicated and the specific request that College Eye have a representative on base NLT 15 Sep the Task Force staff manning took an unusual turn. Colonel Davidson had been designated to become commander, relieving Lt Col Knutty who had acted in this capacity following Lt Col Peck's departure. Lt Col Knutty moved to Tainan to take over command of the MSB. Colonel Davidson arrived late in September, bringing with him Lt Col O'Hagan, the new Operations Officer. They went directly to Korat to insure the best CETF bargaining position in bed down negotiations. The Radar Staff Officer returned to McClellan immediately after the 9 Oct mission to get new orders for his third consecutive TDY, which left the entire Task Force at Udorn to the Assistant Operations Officer, the Comm/ Electronics Officer and the Aircraft Maintenance Officer. The "new" mission was creating a larger than normal workload in itself, and all movement preparations were on top of this. The "normal" 100 hour staff work week was abandoned by necessity for an almost continuous duty schedule. Thus by the second movement day, the several hour notice that General Sweat would fly with the Task Force did not allow for any planning that would normally precede receiving a VIP, nor could he even be escorted by an officer who had slept within the past 24 hours, since none was available.

174. (C) The deciding factor on College Eye's movement to Korat RTAFB finally became the "cure" date for the newly poured concrete parking ramp. The date for the "upper" or west end of the ramp was established as 15 Oct, and CETF movement was programmed for 16 and 17 October. College Eye was the first of the three EC-121 units to arrive at Korat and the first aircraft to recover was 555 on the Charlie recycle 16 Oct. The host 388TFW turned out a reception committee to welcome the unit and the brief flight line ceremony was concluded by College Eye's presentation to the 388th of an oil painting of the aircraft which was subsequently hung in the officers open mess dining room. The "triple nickle" aircraft was to figure predominately again eight days later. There were some problems at Korat, however, those originally identified in the areas of billeting, inflight meals, vehicle support, operational and maintenance space had been greatly minimized. A message from CETF to McClellan on 19 Oct contained the following remarks:

> "The CETF moved on schedule 16-17 Oct 67 with no loss of missions. Reaction to the new FCB has been enthusiastic. After initially disapproving Vehicle Authorization List (VAL) change, PACAF Materiel Assistance team approved increase in GP vehicles from six to nine. Six vehicles on loan from Korat pending arrival of permanent vehicles. NF-2 floodlights remain serious problem critical throughout PACAF . . .13AF. . . directed permanent possession of present Ops/Admin building (Security Police Pass and ID Bldg). We have adequate supply space in a Base Supply Warehouse. Maintenance is operating out of three corrogated metal flight line shacks built for us. Power and telephones have been installed. . . . Quarters are adequate - no tents. All officers in VOQ until hootches completed. Ramp completion estimated 1 Nov 67. Weiser arrived 18 Oct. 553d now has seven aircraft. . . Relationship with 388th exceeds all original expectations."

"Weiser", of course, was Colonel Weiser, the same officer who had been Task Force Commander for the original deployment, now 553RW Commander, bringing his second command to Southeast Asia. College Eye broke the tradition estab-

lished at Ubon and Udorn of taxiing an aircraft off the ramp, and introduced Korat to the EC-121D by recovering an emergency within the first few hours of operation. The Bravo mission had experienced hydraulic failure in both the primary and secondary systems. This eliminated the hydraulic boost for flight control surfaces, flap and gear extension and brakes. Not an extremely dangerous emergency due to the redundant manual back up systems on the 121, boost out landing with manual emergency braking only is nonetheless not for the beginner. Thus the first aircraft recovered (not counting the recycle) was an emergency, and the landing was most skillfully executed by Major Johnson. The Korat runway has a hump in the middle which actually allows an aircraft to go completely out of sight. The personnel who were on hand to witness the landing held their breath to see if the aircraft would be rolling or skidding as it crested this rise. The same uphill slope caused a reduction in endurance, as full loads had to be reduced to keep takeoff weight within performance data of the dash one.

175. (S) The message explaining the new MIG Cap control procedures had announced that a tactics briefing would be given to CETF by representatives of the 8TFW. Major Kirk and Major Moore arrived at Korat on 23 Oct and briefed all available controllers that afternoon. Major Kirk departed that evening for return to Ubon, since he was scheduled to fly the lead MIG Cap flight on the 24 Oct PM TOT. Major Moore remained to fly the Bravo mission, so that he could observe this same mission on the "big eye" to more fully understand the capabilities and limitations of College Eye control. The results of this mission were forwarded to the Wing by message:

> "... ETHAN BRAVO was flown with the Wing's old reliable triple Mickle, commanded by Major Sanders with Capt McGrath as Senior Director and Lt Plopper as Intercept Controller. During the morning strike numerous enemy IFF returns were received by Bravo. Under our new concept of issuing vectors to the MIG Cap Aircraft, Capt McGrath committed FALCON flight against a hostile.

Contact was made by FALCON and a "Probable Kill" resulted. During the afternoon strike, with Major Moore observing over his shoulder, Capt McGrath again vectored the MIG Cap, led by Major Kirk, into position for contact. BUICK LEAD (Major Kirk) engaged a MIG 21. An AIM 7 missile was fired. It is believed that the hostile was damaged at this point. After several hard maneuvers and turn reversals, BUICK LEAD acquired full system lock-on and at approximately 1 mile range fired two AIM 7 missiles. One tracked well and exploded very close to the tail of the MIG. Major Kirk was able to overtake the MIG rapidly after that and closed within gun range, tracked and put an estimated 50 rounds of 20MM in the middle of his fuselage. The MIG pilot bailed out and the MIG crashed. The evening's OPREP 4 sent to higher headquarters (including PACAF and CSAF) by the 8TFW made the following statement. Quote: ETHAN BRAVO did an outstanding job of telling the flight exactly where the MIG was prior to initial contact. Unquote. Major Kirk personally called College Eye and stated that he acquired the hostile as a direct result of the vectors given by ETHAN BRAVO..."

This MIG Kill received wide syndicated news service release, with College Eye given credit for the assist. For a month, letters to Task Force personnel from the "hometown folks" included clippings from local papers all over the states describing this mission, which was the first to give real public insight to the type of service the Task Force was providing. The effect on crew morale was tremendous. Capt McGrath perhaps expressed it best when he stated to the effect that he would be anxious to return on his next tour in light of the new turn the mission had taken. The significance of this remark is in the fact that it was said as he was completing his fifth TDY crew tour with the Task Force, already making him "high-time" man in the Wing. He had been on the original deployment and, in fact, flew

the very first Big Eye tactical mission in the Gulf of Tonkin.

176. (S) In positioning the F-4 for this kill, the controller had utilized the QRC-248 for enemy detection. In every other way, however, the equipment and techniques were the same as had been used over two years before in aiding the first Air Force kill in SEA. While Big Eye had gone almost unnoticed for that achievement, this one brought considerable attention. The timing was much better. Seventh Air Force was much more responsive to new tactics than 2AD had been. The impact of the "radar assist" aspect of the July 1965 kill had been overshadowed by the fact that it was the first Air Force kill. The first one was more by chance. The pilots were flying in primarily a visual escort role--a position was passed, contact made and a kill resulted. In this latest achievement, the emphasis was on control. The pilot himself had briefed the controller the previous day, and another member of his organization was aboard the controlling ETHAN aircraft observing. He was waiting for information, and when it came he was responsive to the commit. A member of the tactics division, the pilot was a "believer" in CETF control, and realized the significance in "credit where credit was due" to strengthen relationships and for use in leverage for future advancement in MIG killing. The 4 to 1 kill ratio of the past had vanished and the even

odds against an increasingly aggressive enemy, himself under strict GCI control, increased recognition of the need for control. It was fulfillment of a promise. Seventh had extended extra Cap flights to the Eighth and authorized CETF procedures on their faith in the units. Within less than a month, a kill had resulted and undoubtedly some losses had also been checked in the process. Thus this success served to strengthen the CETF bargaining position for the other needed changes in tactical procedure and equipment modifications. To get the authority, College Eye had put its reputation on the line and said: "We will do it this way." The old position of "We'll give it to you when we have it" was not good enough. Thus with this authority had come considerable responsibility. There was danger of an "oversell." The EC-121D still had many of the original limitations, which could render control impossible or ineffective on many occasions in the SEA environment. It was realized that you could "ride high" only from continued success, and that breakdown of control would only have to occur a few times before the faith in these procedures would be broken. Due to rapid changes in both enemy and friendly tactics, 7AF had planned a tactics conference for 11 Nov 1967 for all organizations involved with the out-country air war, to insure everyone was up-to-date, and iron out difficulties with the new procedures. College Eye "did its homework" for this meeting, and decided there must be success in correcting

the weakest link--UHF Communications--by securing the use of the radio relay channel for MIG Cap control. Besides this primary objective, College Eye carried many other significant proposals to the meeting. The outcome of this meeting is reported in the following CETF message:

> "...Representatives were from every fighter unit operating in NVN and every support agency of that mission. It was determined that excessive warnings on guard channel (as presently being issued) were detrimental to the safe operation of the strike force, and that the MIG warning format referring to the MIG position relative to Hanoi had an adverse effect on the fighter pilot who was forced to calculate his position with respect to MIGS instead of concentrating on his bomb run. The fighter pilot wanted a more personalized control such as the new vectoring procedures employed by College Eye and Rivet Top. The outgrowth of this request changed the operational roll of College Eye and will enhance the effectiveness of the strike forces in NVN. New 7AF procedures are as follows:
>
> (1) College Eye and Rivet Top will control MIG Cap aircraft on a discrete frequency, operated through the Radio Relay to insure two-way communications. Combat Apple/Commando Lance will also monitor this frequency and supplement CETF vectors with information obtained through their sources.
>
> (2) All vectors will be magnetic heading and distance from the MIG Cap to the Hostile, and CA/CL will supplement items such as altitude, fuel states, etc.
>
> (3) The MIG Cap aircraft will monitor the strike force he is protecting on his aux receiver so the constant vectoring information will not distract, or be cut out by the strike force.
>
> (4) If the hostile becomes a threat to the strike force, College Eye or Rivet Top will issue a position to the bandit in magnetic heading and distance in relation to the strike force leader. All other aircraft in the strike force will know their position from him and this will make it a valid warning to all. This call will be issued on the strike discrete frequency.
>
> (5) The only call that will be issued on Guard is one by other than CETF indicating that a flight of

bandits is airborne. This will insure that all agencies are aware of the existing threat. A format example of that call would be: Two Red Bandits airborne, Phuc Yen. The color code indicates the type of Bandit (BLUE MIG-21, RED MIG-17)..."

MOTEL had become operational in the computorized mode only a week prior to this meeting, and their long awaited secure voice tell between ETHAN and the TACC-NS was now a reality, with actual positions being input to the computor in near-real-time. CETF's primary objective at this meeting was to reallocate use of the RRA channel for MIG Cap control, which would necessarily mean the TACC-NS would be forced to give this up. Commando Lance/Combat Apple had the valuable sensitive information that College Eye lacked. Rivet Top had proven the value of this information, and shown the extent of information available that could be used to augment that derived from video alone. Rivet Top at best, however, could support only one TOT per day, and periodically would go down several days for phase maintenance. College Eye envisioned an input from CL/CA that would provide the same quality information when Rivet Top was not available. Despite the authority to give MIG Cap information in personal format, the blanket MIG warnings in Bullseye format were still in effect, with all the attendant problems previously discussed. College Eye therefore wished to extend the personalized format to all forces, but had no idea if fighter/bomber units were in favor. College Eye had expected much more resistance than

was encountered. Major Mack, who represented CETF with Colonel Davidson, remembered:

> "The conference was very successful and,surprisely enough, most everyone was basically in favor of the changes. Combat Apple volunteered to supplement CETF with information that would enhance our capability and align us more nearly to Rivet Top. Obtaining the RRA frequency was a fight, however. TACC-NS was standing alone except for the Navy which felt it could fight the war without help from the Air Force. The arguments were that the only remaining channel on the KC-135 was devoted to SEEK DAWN for ETHAN Tell. They were overuled by the masses, however, and with the help of Colonel Beckham, CETF experienced a sweeping victory. The only regrets voiced by the other conferees was that CETF and other controlling agencies did not have enough frequencies, people and scopes to provide absolute individual attention to all users. One of the greatest outshoots of this meeting was the decision to hold a tactics conference each month. I think these conferences opened the door to unilateral understanding."

The changes resulting from this meeting were published by message as an interim change to the Combat Lightning OPlan. The procedures College Eye had suggested to implement discrete warning were tailored to the EC-121D. The five UHF radios in the AOC were used for:

Korat (388th TFW) Strike Primary
Takhli (355th TFW) Strike Primary
Guard Relay input frequency
MIG Cap Relay input frequency
MIG Cap Relay output frequency

Listening watch on SAR, Emergency Refueling, Mission Results frequencies could be performed by the radio operator and the pilots on the three UHF radios available to the flight crews. Most past plans (or lack of plans) had overcommitted College Eye on radios. Each

problem solving session would cause generation of another frequency, yet everything was done on Guard. Now College Eye could actually monitor all the frequencies that were being used in the conduct of tactical operations. It was found necessary to monitor both "sides" of the relay channel since two agencies, out of UHF range to each other, but within range of the RRA, could interfere with simultaneous transmissions if the output was not monitored. Monitoring Guard for the same purpose did not tie up a radio since three of the five (those not secure voice equipped) had a separate guard receiver. The frequencies being monitored by flight crew could be handed back to radar if SAR or refueling requirements developed. These requirements were almost always post-strike, at which time, the strike primaries could be dropped, so no shortage of radios resulted. The resistance of MOTEL at the meeting carried over into daily operations, as they failed to realize or chose to ignore the fact that exclusive for MIG Cap control by College Eye/Rivet Top/Commando Lance/ Combat Apple, precluded MOTEL from using the frequency. MOTEL continued to insist that ETHAN pass them track data on it in the secure voice tell format. In non-TOT periods when there was no MIG Cap to control, ETHAN complied with this demand. When Cap was over NVN, ETHAN suspended telling and used the channel for discrete frequency to MIG Cap. MOTEL continued to use the channel, blocking the

frequency, and on many occasions, jeopardized the strike force as a result. Lateral coordination failed to solve this problem. As the situation continued, a message was drafted to 7AF entitled "Communications Discipline," requesting they convince TACC-NS that exclusive meant exclusive. Though there was some debate that the message was too strongly worded, the problem was acute and release was made. Seventh Air Force retransmitted the message verbatim, adding their comments at the end. This problem was solved, but few friends were made at MOTEL as a result.

177. (S) As a side meeting on this same trip to Saigon, College Eye presented its recommendations for realignment of the AEW&C resources. The proposal was taken favorably at this time, and it was requested that the entire proposal be submitted in writing for command consideration. The proposal was submitted by message, justifying the requirement to delete the Alpha mission in favor of a second Charlie sortie daily:

> "1. Operational changes and equipment improvements have precipitated a need for realignment of CETF station manning. These changes have left ETHAN ALPHA with insignificant mission responsibilities, all of which can be accomplished by other agencies.
> 2. It has become increasingly evident to College Eye that more station coverage is required in Laos. This has been brought about basically because Navy Bar Cap is seldom airborne at times other than during the TOT, causing College Eye aircraft to withdraw to 1900N and fly an East-West orbit. Essentially, this means that any RECCE or weather aircraft entering NVN overland is penetrating at the maximum radio reception and IFF/SIF decode range of the Gulf orbits. This severely hampers the ability to provide them with flight following, MIG advisories and border warnings.
> 3. With ETHAN CHARLIE on station, these aircraft are continually within IFF/SIF and radio range. Since RECCE and weather flights are scheduled for

non-TOT periods, to provide continuing service to these aircraft, a realignment of station manning to insure complete daylight coverage from Charlie is considered essential to the best interest of the Air Force.

4. Since the loss of fighter escort control responsibility in the Gulf of Tonkin, Alphas has been an expensive luxury, in terms of flying time to mission accomplishment, that cannot be afforded. RED CROWN maintains radar responsibility in the Gulf (PIRAZ and Fighter control). Alpha remains primarily as a back-up to this capability, and has as its only unique function, a limited search capability for non-squawking traffic over land. This capability is seriously degraded when withdrawn to 1900N. The value of detection capability for non-squawking traffic, which can only be classified as unknown, has been greatly surpassed with the assimilation of the QRC-248 into the College Eye environment, and similar capabilities of other Gulf Agencies..."

The message continued with an outline of the station profiles that could be supported, showing that should the enemy go to a non-squawking mode, the Alpha mission could be resumed in minutes by descending Bravo to Alpha altitude, sending the second Charlie aircraft to Bravo and recycling the Charlie station aircraft. It was under this condition of keeping Alpha alive on paper, though not executing it, that Seventh Air Force accepted the proposal and on 4 December College Eye assumed a total IFF/EIFF role from the Bravo and Charlie station.

178. (S) A conference was convened at TSN on 30 November with the stated purpose of deciding on the future of Rivet Top. The proposal under discussion was to build a fleet of seven Rivet Top aircraft, incorporating the changes that had been indicated in operation of the test bed aircraft.

College Eye, Rivet Top, 8FTW, and the 7AF/PACAF General Staff were the primary attendees. All realized the value of Rivet Top's integral EIFF/Security Service positions for autonomous control in the anti-MIG role, and there seemed to be general support for the proposal, which needed formalization as a 7AF requirement to get favorable consideration in the approval/funding stages. The program would take a minimum of 18 months. College Eye made a very short presentation, in no way detracting from Rivet Top, but showing how, with a crash program for a few minor modifications, the 11 aircraft fleet of College Eye could fulfill this urgent requirement in minimum time. Further, it did not have to be an either/or situation, and if decisions were made to develop other platforms, College Eye could fill the gap during their development. General Ryan was given a complete briefing on the newly adopted tactical procedures. He agreed that College Eye should have Security Service positions on 4 December--the first such high level indorsement.

179. (S) Encouraged from the results of this meeting, College Eye completely re-evaluated all pending modifications. The SEAOR-62 modification was now under contract, and in its finalized form, would do almost nothing to enhance the manual mode, with the subsystems designed toward the end of providing the automatic forward tell to TACC-NS. College Eye had always believed strongly in

the autonomous real-time operation, but had previously tempered its judgment believing that this was biased in natural reaction to a program that would take current authority away from the unit. Now the whole complexion had changed. Headquarters were actively looking for ways to exploit all possible autonomous capability, and were considering undertaking long range programs to develop more. SEAOR-62 was not responsive to current needs and looked increasingly farther off as slippages began to develop. The realization of the complete SEEK DAWN program seemed so far away that improvement of the manual mode now seemed a valid course even if only as an interim measure should SEEK DAWN prove out successfully in the long range. Thus in early December, College Eye announced to the "world" a "shopping list" of items that had been identified as possible solutions to the immediate requirement. The nomenclature of specific items was much less important than announcing the requirements themselves, but served as a point of departure:

> "(1) COMLINT. Security Service Comm Recce positions to provide real-time communications intelligence from enemy GCI, etc. Most immediate requirement, this capability would provide invaluable information to the Weapons Controller to augment MIG detection and control of the MIG Cap aircraft. General Ryan is on record as agreeing (4 and 9 December 1967).
> (2) LORAN C/D WITH DOPPLER BACKUP. Improved navigational system long identified as requirement to insure accuracy of radar stabilization. The LORAN C/D proposed as a part of SEAOR-62, still a year away, may well be inadequate by itself. LORAN D ground

sites are not operational, program is slipped for additional research and development, and other users of LORAN C indicate problems. Rivet Top claims dependence on the Doppler system in their installation. Suggest a Doppler backup be incorporated into the navigation package requirement and that installation be expedited.

(3) TAPE RECORDERS. Amount of data transmitted/received is staggering. Handwritten logs are grossly inadequate to record this data. College Eye is continually asked by 7AF and PACAF to amplify/clarify/confirm/deny information reported to them by CETF and other organizations. Tape recorders on UHF and HF radios would provide complete, accurate source reference for this requirement, plus eliminate some log keeping, allowing greater attention to real-time tactical operations.

(4) AN/APS-111 RADAR. While Alpha was discontinued for lack of significant mission responsibility, requirement for a true radar capability at our strategic orbit point still exists. Alpha provided a stopgap measure of coastal radar defense, but was never able to provide offensive information. Its requirement to fly low altitude to overcome the ground clutter necessarily limited the low altitude capability inland where most engagements are occurring now. A true overland radar capability could provide radar tracking on aircraft identified by QRC-248, overcoming limitations of active interrogation criteria and allowing continuation of present tactics if enemy should switch to non-squawking mode in future. The APS-111 radar was primary equipment of the unsolicited proposal by Lockheed for IBIS (Improved Battle Information System). Developed by G.E. to fulfill a Naval requirement, the equipment would be available for joint service use. The success of this equipment in clutter rejection when operated overland has proven the feasibility of overland radar to the satisfaction of the AWACS project office, resulting in deletion of a feasibility study requirement from AWACS radar contractor proposals. We do not know whether this radar would be compatible with the NORAD mission.

(5) UHF RADIOS. AN/ARC-85 and AN/ARC-27 radios do not provide the high reliability of communications required for controlling the MIG Cap. While Radio Relay offers some relief, the number of channels is extremely limited and could never handle all communications requirements. West Coast operation has also pointed out need for better UHF Comm. Suggest a requirement be generated to provide EC-121D with most reliable off-the-shelf UHF capability compatible with

the aircraft.

(6) ALQ-91. A Navy developed system for Friendly/Enemy IFF detection, the ALQ-91 combines capability to interrogate Mark X IFF Modes I, II and III, as well as enemy SRO-1, SRO-2 and Cross-up. Originally configured for the F4B, Navy has adapted it also to the Search Radar of the PIRAZ ship and is equipping the EC-121M with a 200NM range version. AF Systems Command indicates availability for Air Force use. Suggest determination be made at appropriate level on the requirement for the additional EIFF systems, and the ALQ-91 considered as a possibility to augment the QRC-248 capability.

(7) GPA-122. Passive and active SIF decode capability. Ability to instantly decode SIF is vital to our requirement to issue all warnings on a "by flight call sign basis." Continued emphasis should be given this project to insure early operational date and subsequent realization of proper level of Group B components.

(8) SEAOR-62. With the exception of the air conditioning, navigation package and the SIF decode capability (satisfied by GPA-122), SEAOR-62 will not materially enhance College Eye capability or role, and will further subordinate it to the TACC-NS for forward tell of track data only, thus adding a middle man. This is inconsistent with the current trend toward providing forward operating elements with the best available equipment for real-time control of the tactical air battle, and improvements/standardization of tactics, procedures, and better delineation of responsibility. As previously stated, it is College Eye's opinion that the money/weight/space could be better spent on other equipment. Suggest that SEAOR-62 be re-evaluated at the appropriate level of command to ascertain whether the requirement is considered valid two years following its inception in light of developments in the interim. Cancellation of SEAOR-62 would not significantly degrade the SEAOR-62 part of the TACC-NS since secure voice tell to manual inputs would continue--a method proven effective by AEW&C/SAGE. Its revision would, however, allow funding, physical space and weight within the EC-121D to be utilized for equipment with resultant benefit to TACC-NS in quantity/quality of data forward told, if not in the actual mechanics of telling procedures.

(9) AN/APS-45 HEIGHT FINDER RADAR. Present height finder has average reliable range of 90NM which renders it unusable on CETF mission in most cases. Height information can be extracted by COMLINT, and by standard trends in enemy tactics and is somewhat less

critical in view of Phantom II Radar/fire control system, with its wide altitude capability. A new height finder should be coupled with any improved radar. However, for the current CETF mission, there is apparently no great requirement for a height finder and the presently installed AN/APS-45 could be sacrificed to provide weight/space for more critical needs.

Eight of the nine items would cause little controversy, and were merely a unit's evaluation of its own requirements. Of those listed, Comlint, UHF, and GPA-122 were vital to the real-time operation, and tape recorders for after-the-fact analysis. These were the items College Eye hoped to "sell." However, in Item 8, SEAOR-62, College Eye had attacked the "sacred cow." The Task Force had never believed in the program, but no one had ever asked. It was now so big that it was self-perpetuating. College Eye hoped they could win approval for a review of the entire program, but seriously doubted its course could be altered appreciably. Several major decisions were now pending at higher headquarters level. Inputs on the CETF consolidation study were nearly all in, and in CETF presence on 9 December, CINCPACAF had told his Deputy for Material that they should make a decision on it soon after their return to PACAF. No decision had been made on the disposition of Rivet Top, which undoubtedly was heavily interrelated to the third consideration--what, if any, modifications to authorize for College Eye, and in what time frame. The Task Force Commander was scheduled to

return to the CONUS to attend a SEAOR-62 meeting at LTV. Before leaving Korat, General Ryan asked him to include a briefing of the PACAF Staff in this trip.

180. (S) The total flying time for November was 1276 hours, including over 1000 hours of tactical time which established a new record. Intelligence had indicated a threat of low level bomber attack in the DaNang area, with the attack expected within a very narrow time span. Thus, the 3 December Alpha did not prove to be the last low level mission as on 6 and 7 December, College Eye was fragged to provide low level night surveillance against this expected IL-28 bomber threat. Flying the second of these missions, the College Eye aircraft logged 18½ hours of flying time, believed to be the record for a single mission, though many of the double recycle missions flown from Tan Son Nhut exceeded this in crew effort time.

181. (S) Even the best procedures cannot always run smoothly from the first day, and it can only be hoped that all personnel will "get the word," that problems will be identified and resolved without the need for serious losses to point out deficiencies. A mission 12 December 1968 which degenerated into chaos brought about the necessary review and resulted in improved tactical discipline. The following account of the mission is as remembered by the Senior Director on the Bravo station. The strike was fragged for a target north of Hanoi. The ingress was

over water with penetration of NVN at about 21N, following the range of mountains running west from the coast. In standard Alpha-day configuration, the package consisted of four Iron Hand flights, eight Strike flights, and four MIG Cap flights, divided equally into two forces about 10 minutes apart. As the force ingressed, Red Bandits were announced as airborne at Kep in accordance with the new procedures. The MIG Cap positioned themselves to the north of the strike force in anticipation of these bandits. One Cap flight made visual contact and went after the bandits. The other Cap flight stayed behind and to the north of the strike force. ETHAN BRAVO then received QRC-248 returns over Phuc Yen, indicating bandits--probably MIG-21s. The relay channel which had been used, suddenly developed interference and it became necessary to attempt direct contact with the MIG Cap to turn them toward this new flight of enemy aircraft. As they were closing, the strike force aborted over the target and made a left 180° turn to engress over the same route. The second wave of aircraft was on ingress, now over land, and four sets of aircraft were converging on point NE of Hanoi. The aborting strike force was now coming from the West, the second wave from the East, MIG Cap from the North and MIGs from the South. In addition, the MIG-17s that had launched from Kep airfield were thought to be in the general area, but were "sleepers" (not squawking SRO-2).

In the after-the-fact analysis, it was realized that any number of minor actions by many individuals could have resulted in a more orderly mission, but the situation was new, several procedural rules had been violated, and events compounded so rapidly that they became impossible to reverse. Capt Carle could not remember the exact words he used to advise the MIG Cap of the changing situation on what would have been the terminal phase of their intercept, but it was to the effect that the merge included multiple friendlies. For reasons no one yet understands, despite multiple engagements, neither side lost an aircraft, and the most serious damage was to a fighter that crippled back to DaNang, recovering with a Soviet missile lodged in the aft section. The College Eye crew learned of this first hand on the mid-TOT recycle. Everybodies mission reports that night must have reflected the confusion and undoubtedly the finger of guilt was pointed in many directions. Brigadier General Sweat was made responsible for investigating the mission and came to Ubon the next day where representatives from all units who participated in the mission assembled to reconstruct the mission. In addition to the procedural breakdown, there had been several material failures as missiles failed to fire. The basic problems College Eye had encountered were:

(1) "Failure" of the Radio Relay Aircraft
(2) Failure of many friendly flights to keep IFF operational. Without the SIF to ID, warnings in the

"personalized" format could not be given to the strike forces. Friendlies and enemy were so close together that general format warnings with the rough positioning were nearly meaningless, though many agencies were giving them in desperation.

(3) Failure of the aborting flights to notify the controlling agencies or the other half of the strike force. It was observed after-the-fact, which proved too late. This caused half the friendlies to expose themselves needlessly on their way to a target which could not be hit, as well as the simultaneous ingress and egress of equal forces over the same route.

The problems were not unique, but they never before had compounded in such a manner. The mission was extremely dangerous just from the air traffic control standpoint of aircraft separation--without the added threat of enemy aircraft. It was ironic that at the exact time the mission was being flown, the College Eye Comm Officer was at U-tapao RTAFB briefing the Radio Relay operations personnel on a problem solving visit. Lt Williams flew a RRA mission that afternoon, and returned to Korat on the 13th, just as General Sweat arrived to conclude his investigation by asking a few more questions of the ETHAN BRAVO Senior Director. He was briefed on this problem, and the results of this visit were forwarded to 7AF and all other tactical units:

> "..."For: DOCC/DOE ATTN: Gen Sweat. Info Comdrs and Ops Ref your (S) DOCC 13/0201Z DEC Subj: (U) 12 Dec 67 AM Alpha Mission. (NOTAL - Det II TAWC, 4258 (StratWg) and subsequent meeting of College Eye personnel and Gen Sweat at Ubon and Korat regarding this incident. One of the reasons cited as a contributory factor was inability to effect radio relay comm on the F4 discrete frequency. It is believed this problem has been resolved, and the following amplfying information is forwarded to clarify the

problem that existed. Radio Relay is a known quantity as evidenced by WAGER's long history of successful relay over guard channel. When continued problem was experienced with the newly established F4 MIG Cap discrete warning channel, College Eye sent a representative directly to the 4258 Strat Wing in an attempt to isolate the difficulty. Originally programmed and installed in their aircraft to provide secure relay channel from Gulf Contol agencies to MOTEL, as a result of the 11 November conference at 7AF, it was redesignated as a Rivet Top/College Eye to MIG Cap discrete control channel (235.8/254.8). WAGER was not represented at the meeting and consequently did not realize the full significance of the change on receipt of your secret 7AF DOCC 17/0445Z NOV message, SUBJ: MIG/BORDER/SAM Warnings. As a result, the input frequency (235.8) for this channel was often removed from link operation (automatic relay) to be used for coordination and frag verification with the COMMANDO CLUB Contol Site, using the KAK 3275 key list. Made aware of the problem, 4258th personnel made immediate changes in written procedures, establishing this as a priority link, available for clear relay during all strike periods and moving required coordination to different equipment/frequencies. It is assumed that future operation utilizing radio relay will be as successful as in the past, limited only by periodic equipment malfunction and range limitation (to ETHAN CHARLIE) when lack of fighter cover forces them to a fall-back orbit in the Gulf. Recommend continued close unit-to-unit coordination on problems of this nature."

This problem was solved, and after a few minor instances where an individual operator had "failed to get the word," Radio Relay in this mode became as reliable as the Guard relay had always been--one of the most dependable factors in the whole Combat Lightning plan. The message above to 7AF stated they did not have a representative at the 11 November meeting, which could have precluded this entire problem. In the fuller truth, they were not even invited to attend. It was not the last time that a serious

"mission malfunction" was directly attributabe to a lack of coordination, nor could it really be expected in the size operation that was being undertaken. The monthly tactics meetings went a long way toward solving these type problems, and it is only too bad they were not instituted two or three years sooner. The problem of non-squawking friendlies was one not so easily solved. The official policy was still to keep IFF/SIF on over NVN. In every lateral briefing, College Eye stressed the importance of squawking, showing how without knowing an aircraft position, or even of its presence, absolutely no services could be rendered. This was not quite true. Bandits could still be called in the Bullseye format on the assumption they might be a threat to an Air Force flight at an unknown position. From the College Eye viewpoint, the investigation was very healthy and seemed more a learning experience than an exercise to establish "guilt." College Eye, like all others, was not blameless in the events that led to the utter disorganization, and the "Monday morning quarterbacking" showed room for improvement. New internal procedures were developed on the division of responsibility between Charlie and Bravo stations and in the suggested techniques for dividing responsibility between the two weapons controllers on each aircraft. Everyone learned lessons from the mission, and no one suggested that the procedures be changed. Despite this one bad mission,

everyone realized the procedures were superior to the old techniques and they had been in effect less than a month. Like amounts of internal training undoubtedly took place in each unit, and as tactical discipline tightened, daily operations increased in efficiency. The investigation had proven that despite the skepticism, with a concerted effort, an entire mission almost down to the last radio transmission, turn made, and bandit sighted, could be faithfully reconstructed with the information available for after-the-fact analysis. This was to be the future pattern. Whenever a fighter was lost to MIG engagement, 7AF expected all reports in the minutest detail, and a day later would often follow up with specific questions needing further clarification. Although it would often take 20 or 30 man-hours to debrief, reconstruct and analyze a mission to prepare the necessary reports for 7AF and PACAF, this process proved invaluable to the Task Force. In the past, mission logs and debriefing reports had all been sent to 7AF and analysis, if any, had been accomplished there. Even though untrained formally in analysis, in the process of reconstructing the flight paths of strike forces and MIGS, adding time references and warnings or vectors given, the reason for the loss often became crystal clear. This allowed "real" material for training/briefing sessions both within the unit and in lateral visits that far exceeded any feed back provided as a result of the 7AF analysis. The three pages quoted

from 7AF briefing material in paragraph 166 are a case-in-point. The quoted material was published 20 May 1968. Reviewed for the first time by former College Eye staff members who had served through the November 1967 to April 1968 period, the quote was immediately recognized as an almost exact duplicate of material developed and used within the Task Force for training/briefing purposes as a result of preparing these detailed accounts. The classic MIG-21 clockwise intercept against strike forces penetrating from Laos described in the quote reminded all of the loss of the 388th Iron Hand aircraft BOBBIN, though the pattern had been seen on many occasions. The attack variant against USAF peripheral support aircraft in Laos had also been witnessed several times including attacks on the College Eye platform itself, but reminded all of the loss of the EB-66 PREVIEW. Both these missions are discussed later. Their relation here is that they were two specific missions that were especially involved in this after-the-fact analysis, and therefore, vividly recalled. The fact that the independently developed material in use by the Task Force in this time frame was later validated by a 7AF Intelligence Briefing, shows that College Eye had developed a reasonably efficient analysis capability, which allowed minimum lead time response to a changing tactical environment.

182. (S) The 13AF study on feasibility of CETF consolidation was complete through the preliminary estimates, which indicated approximately three and one-third million dollars for facilities including one nose dock, land acquisition, extension of the ramp, new CETF Ops/Administration building and expansion of 553RW shops. Manning in Base support functions and maintenance would require a 45-man increase to offset support lost from Air Asia and the Tainan Air Base. Little change would be required to Task Force manning, but the critical Thai in-country ceiling would have to be raised to accomodate the approximately 160 Task Force personnel who would move from Tainan. Since the consolidation study had been initiated, the realignment of stations had produced dawn to dusk coverage from the Charlie orbit, and the benefit of a fourth sortie that might result from consolidation was less attractive than before, especially in view of these new cost and in-country manning figures, which far surpassed previous coursory estimates. This report arrived at PACAF just prior to 19 December when the Task Force Commander and Assistant Operations Officer arrived to give the briefings that had been requested. At these briefings, PACAF indicated comm-recce positions would be installed in College Eye aircraft. Seventh Air Force had already started processing to give three College Eye staff members sensitive clearances. PACAF indicated that seven additional SSIR

billets could be provided to form a pool of "cleared" Senior Directors and that emphasis would be placed on meeting this requirement within 30 days to six weeks.

183. (S) A common pitfall in previous histories of the Task Force is the failure to recognize the exceptional defensive control that was being provided by College Eye throughout this time frame, and to dwell on the several missions for which College Eye received credit for MIG Kill assists. Just as pilots are certainly frustrated when they engage and fail to get a kill, the College Eye controllers shared this emotion. On countless occasions, most of them unrecorded, vectors given by College Eye led directly to MIG engagement by the Cap forces. When the interceptor pilot called a "Judy" on a bandit, the controllers job was complete and he could only anxiously await confirmation over the UHF that a kill resulted. When no such call was forthcoming, the individual achievement is in no way diminished, nor was the mission in any way unsuccessful, since the engagement itself was providing the necessary defensive protection for the strike forces. An example of such a mission was provided by Capt Ferrera, an Intercept Director:

> "On 20 December 1967, while flying station Bravo, I controlled three flights of F4Cs as my MIG Cap and six flights of F-105s from Takhli. As the strike force progressed toward Hanoi, the MIG activity increased. They jumped the strike force as soon as it left the Gulf and entered North Vietnam. The MIG

activity increased to such an extent that it became difficult to distinguish the QRC-248 returns from those of our strike and cap aircraft. I directed the F4C cap aircraft under my control against the MIGs coming from Kep airfield. The air battle that resulted enabled the strike force to get through to Hanoei with no losses to the force. After the TOT, two emergency tanker hook-ups were made for F-105 aircraft that were low on fuel. The MIG Cap leader, who had to RTB due to expended ammo, called College Eye to say E. THAN had given excellent control information and that there were at least fifteen flights of MIGs airborne during the TOT. He fired all his missiles and 20MM but could not get a hit. The F-105s from Takhli claimed two MIG kills during their strike over land.

The acknowledgement of "excellent control" by the Cap forces was becoming an ever increasing post script to the daily missions, and produced the highest state of morale the Task Force had ever known. Crews looked forward to the actual TOT period of the mission and began to envision an offensive Cap in a hunter/killer role in addition to the defensive Cap. This dream was soon to be fulfilled.

184. (S) The arrival of the Bob Hope show at Korat reminded everyone that the holiday season was at hand. He joked about the water tower under construction--a massive structure of reinforced concrete, poured in stages, supported by an intricate maze of lumber substituted for bamboo but nonetheless in the classic oriental manner. The jokes brought less response than they might have, had it not been for a Radio Hanoi broadcast that included a warning to the people at Korat, telling them that "the water tower will never be finished--it will be bombed to the ground by Christmas."

The 388th Wing Commander and Deputy for Operations who had welcomed College Eye to the base had subsequently been shot down and were now reported to be at the "Hanoi Hilton" along with many lesser ranking flyers who had made one way missions. With the IL-28 bomber included in the NVN Air Order of Battle, there was growing concern that NVN might attempt to score a propaganda victory by a bomber penetration to a selected airbase, and the threat, therefore, could not be completely dismissed as idle propaganda.

185. (S) President Johnson was also visiting the troops, and included Korat in his itinerary, arriving in Air Force One in the late afternoon of 23 December 1967. That night in the officers club, he spoke first hand with aircrew members flying the various missions Korat RTAFB supported, and was given a "Go to Hell Hat" in memory of his visit. The hat, worn locally by many as an on-base optional head-gear, is styled after the Austrailian bush hat and was adorned with patches identifying the base. He later returned an autographed photo wearing the hat which hangs in the "longest bar in Southeast Asia." The airfield was closed during his visit, and for the first time in many months, College Eye did not launch its two early morning sorties. Before dawn, the majority of the base population was on the flight line to witness a presentation of awards by General Momyer and a most encouraging speech by the President. He departed just as the sun was coming up, and tactical

operations were resumed. That afternoon, 7AF announced that College Eye would stand-down on Christmas--the first time in three years.

186. (C) Compaigning desperately to obtain equipment modifications, College Eye now learned it had fallen heir to an unwanted "improvement." SEAOR-111 involved installation of reticulated polyurethane foam in the aircraft fuel tanks. On 26 December 1967, the 552 AEW&C Wing took strong exception to the pending modification for the following reasons:

a. Reduction of operational capability
b. Additional maintenance requirements
c. Doubtful requirement
d. Excessive cost

Projected to cost 1 1/2 million dollars, the foam would require additional manhours for each repair to a fuel cell or internal components and require additional AGE. While it undoubtedly would be a safety factor, it was not a true operational requirement. The aircraft had collected very little ground fire in over 2 1/2 years of operation, and none of these had caused any safety of flight problems. The impact on endurance was the most unacceptable factor. Pending modifications totaling 5500 pounds would already reduce endurance by 2.1 hours on a typical SEA mission. The 3,000 additional pounds for SEAOR-111 would further reduce this by 1.4 hours. Operating from Korat in the hottest weather, the maximum endurance for the 14,000 foot

Charlie station often figured less than 10 hours. Programmed modifications would reduce this to 7.9. Any further loss would seriously degrade unit capability and would have to be justified by an offsetting increase in capability. The EC-121 was deleted from the SEAOR-111 program.

187. (S) At the first of the monthly tactics conferences that had been initiated in November, College Eye, Rivet Top and the 8TFW had jointly discussed the possibility of establishing an offensive MIG Cap. On 29 December, 7AF called a meeting at Udorn RTAFB to develop procedures for such a mission. College Eye was asked to record the meeting and publish the outcome, which would then be indorsed by 7AF as a binding directive. This message, which was sent to all tactical units, follows:

> "The following is College Eye's understanding of procedures governing employment of the special MIG Cap, as formulated in meeting at Udorn 29 Dec 67, chaired by Col Bee, (Ref 7AF DOCC 28/0320Z Dec 67).
>
> (1) Effective immediately, the action addressees are subject to fragged requirement by 7AF to support an additional flight of four F-4 aircraft over the normal Strike/MIG Cap package, to be employed by College Eye Weapons Controllers in an offensive role against any MIG force that presents a reasonable opportunity--threat not being a prerequisite criteria. Present procedures for issuing advisories to strike force or employing normally assigned MIG Cap against hostiles posing a threat are unchanged. The ingress with of this special cap will be the strike and normal cap forces. Concept of Operation follows:
>
> (2) Total Air Force warning capability varies with availability of Det II, TAWC aircraft on station to augment capability of ETHAN BRAVO and ETHAN CHARLIE. When Det II is on station, they will be primary source of MIG information to all cap flights, giving airborne calls, bearing and range from Cap lead, altitude,

heading and speed to all Cap aircraft utilizing the 235.8/254.8 Discrete Warning Channel of the Radio Relay Aircraft (WAGER). ETHAN BRAVO will establish communication with special cap flight on ingress and will passively monitor all Det II/MIG Cap transmissions until such time as they take control of the special Cap against MIG Force that presents a reasonable engagement opportunity. At this time, BRAVO will pass the special Cap flight the initial information in the following format: This is ETHAN BRAVO (required to distinguish this call to the Cap as initial call for offensive employment) Cap callsign, Bandits, Mag bearing, range, heading, altitude, vector. Example: This is ETHAN BRAVO. Killer, Bandits 360 at 40, heading 090, Low, Vector 030. Follow on information will be similified to: Killer, Bandits 010 at 30, Vector 030. This information will continue until the flight calls a Judy (made contact-taking over intercept), Blanket or King (words used by 8th and 13th to indicate leaving frequency to go discrete). After any of these calls, BRAVO will monitor for a call "Famished" (meaning fighters back on frequency and require new info). The only info passed during an engagement will be any serious new threat which develops, this info to be called on Guard. Upon completion of engagement, the special Cap will be committed on other threat, rejoined with the strike force or given general egress vector toward their tanker as appropriate.

(3) Fighters will be responsible for monitoring their own fuel status. BRAVO will have the callsigns/ Mode II's of the designated Emergency Tanker and will coordinate with BRIGHAM/MOTEL as applicable for its northward extension if required and provide vectors to the Tanker to the Cap as necessary.

(4) The back-up frequency for special cap flight will be 284.2

(5) When Det II is not on station, procedures will be the same as above with BRAVO assuming the responsibility designated for Det II. In this posture, airborne calls, differentiation of red and blue bandits and altitudes will be provided by other sources to augment BRAVO transmissions. ETHAN CHARLIE will also assume this function when conditions warrant.

(6) College Eye vectors will be to set up the optimum intercept exclusive of ground environment consideration other than the CHICOM border. Therefore, if any areas exist over which the MIG Cap cannot fly, they will be responsible for their own separation. If a vector for example of 030 would turn a pilot directly over an active SAM site, he should acknowledge

the transmission and advise unable to comply in following or similar manner; Roger, Unable, going 050. When clear of SAM threat he could come back and state "Taking up 030" from which point BRAVO would resume passing vectors.

(7) The success of this exploit is hinged largely on the availability of Discrete Relay Channel 235.8/254.8 for MIG Cap control to insure constant communication. Request 7AF take appropriate actions to insure other agencies mission responsibility are not contingent upon use of this channel when special Cap flights are fragged.

(8) As stated previously, these procedures are College Eye's understanding of those agreed on in referenced meeting. Any changes, additions, deletions or clarification required by any addressees prior to implementation should be immediately messaged to all concerned. Request the 7AF issue directive concerning these procedures upon receipt of all inputs."

The establishment of this special Cap was a tremendous breakthrough, allowing true offensive engagement for the first time. Previously, MIG pursuit by the Cap had left the Strike Force vulnerable to attack by other bandits. Authority to use the Emergency Tanker for this mission would allow longer endurance, and reduce the number of intercepts broken off for Bingo fuel. The Task Force controllers could hardly contain themselves with the exuberance over these new procedures that had for so long seemed like an unattainable dream. While Det II figured predominately in controlling the Defensive Cap, when both College Eye and Rivet Top were on station, the authority to employ the offensive Cap belonged to ETHAN alone--an extremely significant show of confidence. This authority was never held sacred however, and forces were on several occasions handed off to Rivet Top control when they indicated Bandits College Eye did not "hold" on

its weapon system. This spirit of cooperation in the Gulf increased daily, and within a few months, even the Navy ship RED CROWN handed its BAR Cap over to Air Force control under similar circumstances. The tactful remark in item (7) was directed toward MOTEL, who in their continual violation of procedures, had not yet "placed the last straw," which resulted in the stronger message previously mentioned.

188. (S) As the year closed with notification of another stand-down for New Years Day, it was almost inconceivable that so much progress had been made in 365 days. The Task Force of a year past would not be recognized by anyone who not lived it, and even for those it was hard to believe. To describe it in a sentence defies the rules of grammar: From a dirty fleet of seven aircraft launched on tactical missions by the sheer determination of the maintenance crew at supportless TSN, and flown by a seldom properly crew rested but dedicated Air Defense team whose primary mission was shouting unacknowledged warnings and whose response from their customers was universal hatred, the Task Force had polished its aircraft, its image, increased its size, toured Thailand making lasting friendships with personnel in each primary out-country tactical unit, "sold" new tactical procedures over bitter resistance from some quarters, withstood the test of stiff competition, received approval for meaningful modifications to its weapons system and become a truly viable source of command and control providing a

a paradox of stability with their TDY rotational manning unequalled by any PCS organization, highly respected by most, hated by a few, but treated indifferently by no one. Significant tactical achievement would follow, hardware would come into being, procedures would be refined, lessons would be learned, mission responsibility would change with new phases of the air war, new geography would be explored and new records would be compiled, but most often as a direct result of actions during 1967, and never so dramatically. Truly, this was their finest hour.

PART FOUR

1968 EQUIPMENT CATCHES UP--OPERATIONS ADAPT TO NEW PARAMETERS

189. (S) Characteristic of the new spirit of cooperation, one of the first events of the new year was a visit by the Task Force Operations Officer to the USS Chicago which was serving on station in the Gulf of Tonkin in the Navy PIRAZ capacity. Whereas Air Force fighter cover had been continuous, with in-flight refueling, the Navy's BAR Cap had station breaks during non-TOT periods, during which aircraft were merely on ready alert for scramble against any threat. When fighter cover was not available for ETHAN, the procedure was to fall back to 19N and orbit East-West. Problems had been encountered in getting accurate status on the BAR Cap. Flying 190 knots on station, the 60 miles between orbit points represented nearly 20 minutes flying time. BRAVO would attempt to time its withdrawal and return to the BAR Cap schedule, to provide maximum surveillance range without becoming unnecessarily vulnerable. With a constantly changing estimate for BAR Cap airborne times, received only on request, College Eye often found themselves rapidly transitioning from one orbit point to another. Direct Air Force/Navy exchange of messages was all but prohibited at the organizational level, and with such minor problems, first hand coordination provided an excellent means of solution. A similar problem had developed after the PIRAZ had first been established. RED CROWN had

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arbitrarily changed BRAVO's station altitude several times daily, which had considerable impact on endurance times. The 7AF/Task Force 77 coordination that finally established 11,000 as a firm altitude assignment had dragged on for several months. Identified as a problem directly to the personnel responsible, this new problem by-passed this "red tape," and the status reporting on BAR Cap became more reliable.

190. (S) There was no doubt in any controllers mind that the enemy's GCI coverage over and surrounding his own land mass was excellent. This was demonstrated daily as the air battle unfolded, not only in their successful intercept, but in their reaction to changing US tactics. Whenever the pattern of the Strike Force seemed to be the least bit out of the ordinary, the MIGs would "watch and wait," often in a holding orbit rather than chance an engagement with a suspect force configuration. Certainly they must have been quick to realize that the "extra" flight they were observing was an offensive MIG Cap. Therefore, at the onset, few engagements were made by the special Cap as the North Vietnamese cautiously studied the situation, many of their launches resembling more of an "airborne flush" than a defensive reaction force. From the same source quoted in paragraph 166, the narrative to accompany a briefing slide states:

"Set out on this slide are the main factors contributing to the improved effectiveness of the NVN interceptor force. It must be realized that these factors are highly interrelated. Improved communications, more and better GCI radars and an increased experience level have permitted the development of a system which can selectively assign and control weapons--and do this in a way which will maximize the opportunity for surprise and minimize the chance of loss... The NVN have demonstrated a capacity for quick analysis of U.S. Operational patterns in order to gain the surprise advantage..."

Several deceptions were experimented with to lure the MIGs into advantageous position for a kill. To this time, call-signs had remained as a unit assignment. Thus, the F-105 and F-4 flights could be readily differentiated by those familar with the respective units call sign list. On occasion, a MIG Cap flight would be substituted in the Strike Force package and assume a F-105 call sign to mask identity to any possible monitoring during the check-in/ check-out process. Since it never seemed to work, the saying was that the enemy's radar was so sophisticated that it could "paint" the difference between the two type aircraft. An enemy in the terminal phase of his intercept could never have been fooled, since much to the dismay of those who flew it, the Phantom II left a much more visible smoke trail than did the Thunderbird. Any reference to aircraft characteristics by a121 crew member however, would likely bring a response that "ETHAN should be careful, since the Soviets had developed a new missile guidance system that homed on oil!" a reference to the characteris-

tically leaky reciprocating engines on the Super Constellation. In this jest, however, is shown the change of attitude toward ETHAN that had developed. On 12 January 1968, another deception was attempted by a specially fragged mission jointly developed by College Eye/ Rivet Top. A non-squawking aircraft ingressed and set up a low level orbit inside NVN in a valley Northeast of ETHAN CHARLIE. It was hoped that the radio silence and terrain masking would prevent early warning detection. Complete electronic silence was to be maintained until hostiles appeared in the normal clockwise attack from Phuc Yen against the over land ingressing Strike Force, at which time ETHAN CHARLIE would direct the "pop up" MIG Cap aircraft in for the kill. The F-4 did establish its orbit, but not a single MIG became airborne. No intelligence information, if there was any, was provided on the possible reasons, or if it was believed that the orbit was established inside NVN without detection, but the mission was never rescheduled.

191. (U) Since the move from Udorn, College Eye had again been without aircraft washing facilities at the FOB. A wash rack was programmed for the 553RW maintenance complex which would be used to satisfy all EC-121 washes under control of the 553rd Chief of Maintenance. College Eye objected, since this would not allow in-place washing, and the time in moving and washing aircraft would reduce

available turn around time as well as expend maintenance manhours. The request for a separate wash contract had been overruled. Problems had developed, and three months after the move, the wash rack was still not operational. The dust resulting from major construction projects accentuated the problem as again the EC-121 wings began to "cake-up." As an interim measure, an "in-place" wash contract had been let for the 552RW. In equipping the new EC-121 Wing, the ADC resources of the 551st and 552nd AEW&C Wings had been drawn on heavily, and therefore, there were many familiar faces and some close personal friends in the neihboring unit. These relations provided some support where there were no formal obligations. The officer in charge of the 553rd's advance party, Major Van Nest, was perhaps the greatest single source of support. A Quality Control/Test Flight Officer, he had served as the Big Eye Chief of Maintenance prior to his assignment to Otis AFB as the new reconnaisance unit was formed. He knew nearly all the Task Force personnel and obviously could not completely shake his allegiance for the grey bird with the ADC emblems he had so long been responsible for, despite the ramp full of sleek camouflaged EC-121Rs. He had rescued the Task Force with extensive loans of AGE when assigned equipment was damaged in transit. Now he saw that College Eye aircraft received a wash by their

contractor whenever possible. Thankful as College Eye was for this, it was not a satisfactory long range solution. Negotiations were again opened to get contract support. The same wash contractor who had won the bid at Ubon had followed the Task Force to Udorn. An ancedote which took place at Udorn made it clear he would "follow us anywhere" to continue the job. Predeployment planning was ostensibly classified, but difficult to hide to those present to see supplies being packed, AGE disassembled, etc. The acting Commander was approached on the flight line by the wash contractor one day and asked in broken English--"Me move with you to Korat, Ok?" A movement date had not yet been established and when this conversation was related to his staff, the Commander was chided for not having determined from this valuable source just when the Task Force was to move. Agreement was finally made with the new host base for a separate wash contract for College Eye/Rivet Top requirements, with wash scheduling under the direction of College Eye maintenance, and the first wash was made on 15 January.

192. (S) In a terse message on 26 January 1968, General Momyer personally addressed all commanders concerning increasing hostile enemy aircraft aggressiveness and the resulting possibility of direct attacks on support aircraft. Not only was the enemy more aggressive, but flights were ranging greater distances from the home bases and the

endurance of some recent enemy flights had far surpassed that previously encountered. ETHAN CHARLIE had seen bandits dangerously close to their own platform, although it was impossible to know if it was a planned attack. Standard transport aircraft type evasive maneuvers were taken as precaution on several occasions. Udorn RTAFB hosted a detachment of F-102 Interceptors with the Callsign JERSEY. Each morning, JERSEY BLACK flew a weather recce into NVN before the strikes were executed. JERSEY WHITE and BLUE provided MIG Cap for the Thai/Laos Tanker orbits, and the alert aircraft was always designated JERSEY RED. When the Task Force moved to Udorn, the JERSEYs were flying south of the Plain de Jars without close control between "stop points," numbered the same as the latitudes. In lateral briefings, the ADC oriented "Deuce Drivers" realized that College Eye spoke their language, and soon began to fly more northerly orbits, voluntarily coming under ETHAN CHARLIE control. When mission activity was slack, it was common practice to sharpen techniques by splitting the flight of two into single elements and "bump heads." This relationship endured, even through a near-miss in the Udorn traffic pattern, and it was reassuring to have a well armed escort near by in light of this new threat to the Charlie track, which was well within enemy GCI coverage and interceptor range. The JERSEY aircraft were airborne from pre to post strike refueling, and ETHAN now adopted a

fall-back orbit within TACAN lock on range from Channel 79 (approx 1910N/10250E) whenever the JERSEYs were not available.

193. (S) The Task Force may have set a new precedent in actioning a CINCPACAF message of 3 February 1968. The message directed the Task Force to prepare a deployment contingency plan to provide radar surveillance in support of Fifth Air Force operations in the Korean area. It seemed ironic that a contingency operations was being tasked to develop its own contingency--as if to say the Task Force had come of age. The CHECO report on College Eye covers the early actions adequately and therefore, FRESH STORM as the contingency was coded, will not be addressed in this report for several reasons:

a. It is basically a 552 AEW&C Wing Contingency, with immediate reaction forces supplied by College Eye while additional resources are identified, readied and deployed from McClellan. The size of the operation is dependent on the required flying hours programmed to cover the missions fragged upon execution. Exercises and initial reaction would be satisfied from existing CETF assets by operating from a second forward location (Itazuke, Japan) designated NOL for Northern Operating Location, in addition to the present FOB/MSB. Organizational structure for sustained operations would be developed after-the-fact, when the many variables of the contingency plan became known.

b. It is not a Southeast Asian committment. A documentary of achievement in support of 5th ADVON requirements would complicate the process of drawing conclusions on the real value of the Big Eye/College Eye Task Force participation in the overall (SEA) war effort, a primary requirement of the tasking for this report.

c. The Korean involvement has not involved open conflict, but rather has consisted of paper planning, feasibility testing, experimentation and participation in exercises. The problems encountered in the new environment and the support received from the numbered Air Force actively seeking full time services of the Task Force have little commonality with the operation in SEA, where College Eye achievement under combat conditions was demonstrated, in many cases, despite overwhelming constraints and less than optimum equipment and support.

d. Discussion of Fresh Storm in any detail would necessarily introduce Top Secret subjects into an otherwise Secret report, which would necessarily limit the distribution with an attendant decrease in usefulness.

Task Force involvement in Fresh Storm has demonstrated achievement in seven of the eight categories set forth in the Introduction (no hardware has yet to be programmed against Korean requirements), and is especially valid in support of the one listed last: Conceptual advancement for

a global autonomous airborne command control force. A separate study of Fresh Storm should be initiated, with early identification of historically important documentation to be retained, precluding its loss through routine administrative records management action.

194. (S) Success with the offensive MIG Cap hit a high in February. As in the past, only a fraction of the missions impact ever became known to the Task Force. The new offensive tactic could be more readily measured than mission products of defensive value. Formal crediting of control assistance with or without resulting kill was the one tangible yardstick, and without it, events seldom became more than a memory to the participants. One such incident was recalled by a ve teran Senior Director, Capt Ertel:

> "During the first week of Feb 68, on a combat mission over Laos, I was directing the MIG Cap covering a bombing run into NVN. Detecting several MIGs, I directed two flights to the MIGs. As a result, two MIGs were shot down. No credit was forthcoming, since we had no recording equipment, and the pilots never acknowledged the assist. Air-to-air radio instructions were directed to the lead flight. When they did not "roger", another call sign was selected, and the vectors given to them. The lead flight was obviously receiving the instructions, since they turned accordingly, but did not acknowledge. This was typical at the time. All aircraft became involved in the dog fight, but only the lead flight shot down MIGs. My involvement was then impossible to prove.

In the same week, another crew faired better in similar circumstances, allowing Capt Edney to be credited with an assist on 6 Feb 68. An account of this mission was provided by his Intercept Director, Capt Zitel:

" During a Charlie Mission in Feb 68 while controlling two separate MIG Caps, Capt Edney and I committed on two sets of MIGS. Initial engagements involved direction of both MIG Caps to within 30 miles of Hanoi, during which Capt Edney skillfully directed his interceptors into a possible kill position. At the same time, I directed the MIG Cap under my control into a similar position, where they merged with the target, separated and merged again. Soon after the reattack, I heard the lead interceptor yell out a few comments indicating they had expended their armament. With the activity over, all MIG Cap were vectored for a tanker hookup. Upon landing, we were informed that one of the MIG Cap under our control had obtained a kill. Unfortunately, the call sign of the Cap which had been successful was unknown, so neither director could be cited for aiding in the kill. It was two weeks later, after much inquiring by our operations section, that Capt Edney was formally recognized with a congratulatory message from the Fighter Squadron for his valuable assistance in their interceptor obtaining a MIG kill.

In this follow up it was learned the interceptors credited with the kill were BUICK 2 and 4 which established the director responsible. All vehicle names being used as call signs belonged to the 8TFW, and like each unit, favorites developed. The most common MIG Cap call signs were: BUICK, OLDS, HONDA, KILLER and FALCON. Capt McGrath's assistance had been to BUICK Lead, this one to BUICK 2/4 and within 6 days, Capt Starbranch led BUICK Lead/3 into another kill situation resulting in one confirmed and one probable. The success with BUICK was more than pure chance. The call sign was primarily used to designate the lead MIG Cap flight or the offensive "special" cap when fragged. Thus the pilots for these key flights were the more experienced men, often drawn from the small group of dedicated "believers" the Task Force had built at Ubon. These pilots were very responsive to CETF/Rivet Top control information. Under the concept of operation and rules of engagement, MIG Cap actually committed itself, after assessing all available information, and thus were not obligated to follow vectors passed. Without knowing what caused each decision, the opinion is certainly biased, but College Eye controllers felt many kill

situations had been missed due to individuals refusing to take action on the information passed. An earlier incident in the Gulf of Tonkin in which an F4 with a fuel emergency failed to take vectors to his assigned tanker had "proven" the existence of this attitude to the Task Force. When the emergency was declared, ETHAN coordinated for extension of the assigned tanker and passed vectors to the fighter. Radio contact was excellent, but the F4 refused to respond to the vectors, attempting to find a closer tanker on his own. The one he found was "full", servicing a flight of F-105's who would not drop off for him. The second attempt to return him to his assigned tanker also was disregarded as the pilot called a "Tally ho" on another tanker. From the calls monitored on UHF, it is believed this tanker was equipped with the probe rather than the basket type delivery system. The crew was forced to eject as they flamed out. The College Eye crew was positive the assigned tanker could have been reached in the flight time before ejection had the pilot responded to the initial vectors. This incident was reported in great detail to 7AF with information copy to the unit suffering the loss. An immediate precedence message was received from Ubon several hours later documenting the compounding fuel emergencies that had caused the loss of the aircraft and nothing more was heard of the incident. It had been hoped that 7AF would take a stronger stand, removing the Task Force from an "advisory" capacity in such situations to one in which mandatory control could be assumed. Similar achievement by Rivet Top was applauded by the Task Force, since each success strengthened tactical discipline within the procedural framework that College Eye had been crusading for even prior to Det II's arrival in theater. Rivet Top was down for phase inspection and radome repair thru the 6 and 12 Feb missions, and on their first mission following return to an operationally ready status, assisted in two more kills,

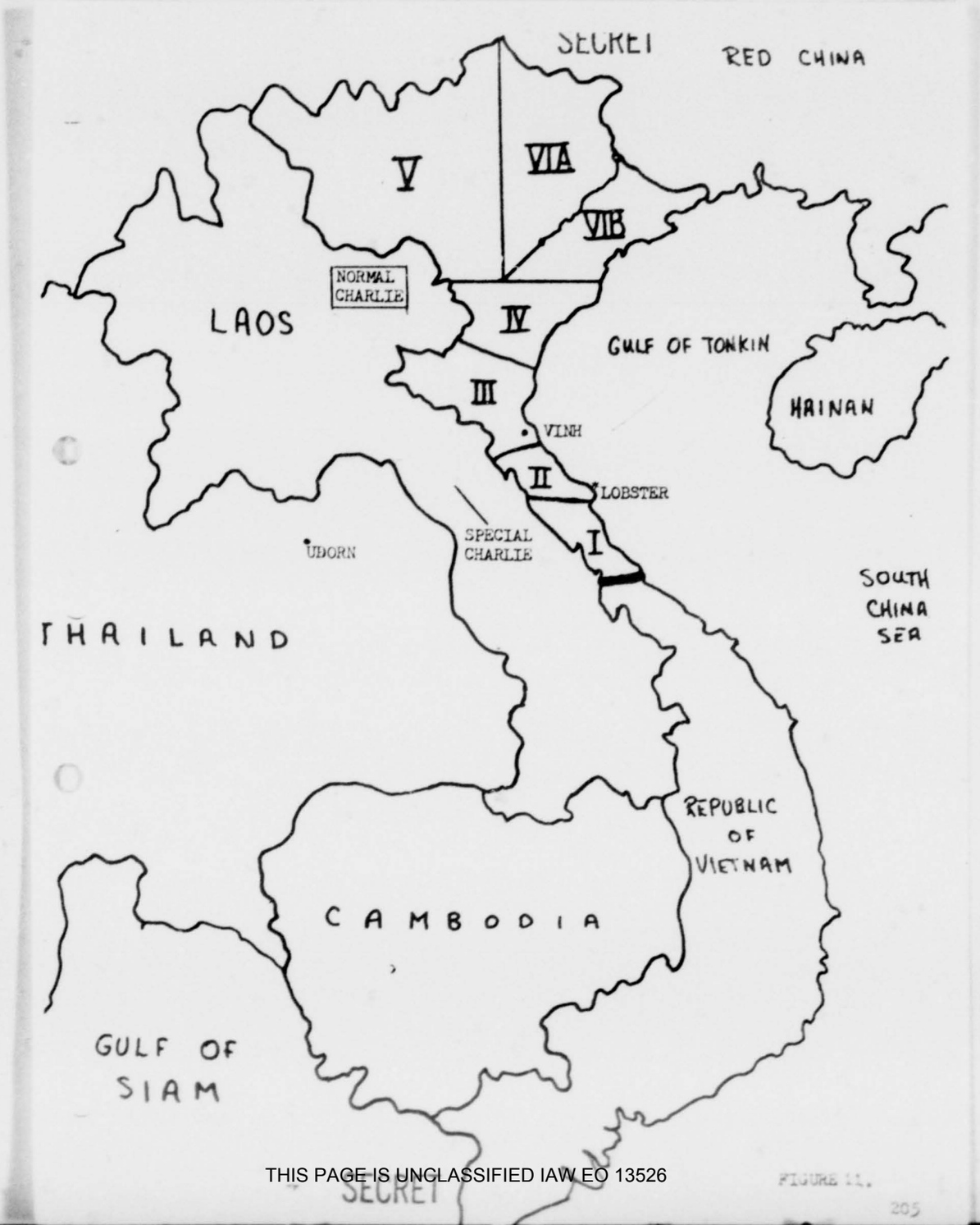
RAY combined with MTHAK in providing information for another several days later. Naturally, both units were keeping scores on themselves, and both claimed this assist. The value of tape recorders was demonstrated as College Eye was invited to listen to Rivet Tops tape of the MIG Warning channel for that mission. In the tradition of putting service to the strike force first, in this joint effort the College Eye director had made the first call, but when Det II broadcast additional information from sources not available to College Eye they were allowed to control the terminal phase of the intercept. Therefore the Task Force conceded credit for this assist, but was satisfied in their own mind that had BLACK RIVET not been on station the intercept likely would have been equally successful. The crew that had flown the less than perfect 12 Dec mission redeemed themselves by controlling a pair of fighters from the Wolf Pack into advantageous position. However, the kills could not be confirmed, remaining on record as one possible and one probable, to the mutual agony of the two Phantom and one Connie crew. In an inverse proportion to this marked increase in MIG Cap control, emergency refueling became almost a thing of the past. Since fighters carried the same fuel load, it could only be assumed that the lesser number of BINGO fuel emergencies was attributable to the greater effectiveness of the MIG Warnings, which greatly reduced the number of surprise engagements, a prime cause of low fuel states in the past.

1/5. (S) The threat of low level hostile aircraft penetrating the DMZ was substantiated by several reported sightings, and on 7 February 1968 another low level radar surveillance mission was initiated. The track was flown North-South opposite the coastal plain city of Dong Hoi. The level of activity in NVN forced 7AF to demand this mission be flown as a fourth sortie. It was a mid-afternoon launch direct to station. When

Bravo left its normally assigned station it relieved this special long enough to allow a minimum ground time recycle at DaNang. HOTEL usually passed the RTB authority between 0400-0500 the following morning. While adding considerable flying time, this special was more easily supported than many in the past. The afternoon-to-early- orning profile was ideally suited to the crew on two day break, allowing the extra sortie to be flown without any infringement on crew rest for the normally scheduled missions. Maintenance benefitted also, since in most cases the morning Charlie aircraft could be turned around for this additional sortie, allowing four missions to be flown with three tail numbers. The mission was flown 12 days, producing the highest monthly tactical flying hour total to that time. No significant activity was monitored by College Eye on these missions which would indicate threat to the Republic of Vietnam. The increasing presence of southerly ranging enemy aircraft pointed out the inadequacy of existing formats for giving MIG Warnings in the lower route packages. Individual warnings were possible for those aircraft which were identified, but the Bullseye for at for general warning lost all meaning at these distances. College Eye requested a new warning format be formulated for this area. Seventh indicated the Bullseye format would be maintained, with establishment of an additional reference point and solicited College Eye's suggestion. The coordinates selected for this "bullseye south" were 18004/10630E for the following rationale. Exactly 100 miles south of Hanoi, it would allow bandits to be called from one or the other reference without exceeding 90 mile range, and reach below the DMZ within the same limitation. The coordinates were easily visualized since the coast line jutted out at his point, a fact that would ease solution of the relative space relation problem always confronting the aircraft receiving general format warnings. The code word "Point" was

suggested for this reference, and it was also suggested that the 15NM radius that had applied to the Hanoi reference be abolished, with all calls made in absolute range from Bullseye or Point as applicable. Thus a hostile over Vinh would be announced as "Bandits, Bandits, Point North West 65", over Phuc Yen as "Bandits, Bandits, Bullseye North 10". The procedure was adopted 15 Feb, and while the 15NM radius was not applied to the new "Point", it remained in effect for Bullseye. Point was changed to Lobster even before it became effective, and subsequently to Crab as Lobster took on new meaning.

16. (S) The warnings that had been put out about possible attacks on support aircraft became more and more meaningful as it became quite common for the MIGS to be seen in the Vinh area and on occasion at 18N or below. While no intelligence is remembered within the Task Force which predicted a possible battle plan, it was a widely held opinion that the strategy might be to shoot down several over land tankers while the strike force was in NVN. In addition to the tankers themselves, this could likely result in the loss of many fighters from fuel starvation. It was not surprising then when College Eye received special instructions on several occasions to fly the Charlie station in the upper panhandle area of Laos. On one such mission, the Senior Director observed MIGS South of Vinh (see Fig 11) and began calling general warnings in the new Lobster format. The initial calls were Northwest, gradually changing to West and finally to South, with no apparent reaction. Theorizing people were not yet sufficiently familiar with the Lobster format to realize the significance, he changed his call to the effect "Bandits South of 18 North" and remembered that everyone seemed to come alive. BRIGHAM immediately scrambled JERSEY RED with intention of handing them off to ETHAN CHARLIE, but just as though it had been a test of the defensive reflexes, the MIGs did a 180° turn and



became a lost contact near Vinh. The date is lost, but it is known that it was on the first day Charlie was fragged for this Southerly orbit point that proved fatal to the JERSEY BLUE wingman. The JERSEY flight went North of 20N and attempted to check in with ETHAN CHARLIE. The College Eye aircraft, over 150 miles South of normal orbit point heard the call, but was unable to establish radio contact. RED CROWN answered JERSEY, advising them that ETHAN CHARLIE was not on normal station, and for them to stay on RED CROWN frequency for warnings. The subsequent warnings passed by RED CROWN were unacknowledged and JERSEY was completely surprised by the MIGs resulting in the loss. Following this, they were restricted from flying that far North without radio and radar contact by ETHAN CHARLIE. While Cap could fall back and still provide a barrier between the enemy and the aircraft being protected, the EB-66 aircraft from Takhli RTAFB were forced to operate as close to N/N as possible to provide the maximum ECM screen for friendly forces. The high power jamming equipment used for this mission created heavy electromagnetic interference around the aircraft which significantly reduced their ability to receive warnings. Reception of UHF was almost zero while jamming. The adoption of the HF warnings on the Recce requirement had also aided the ECM aircraft, as some HF was received during operation. The loss of the EB-66 PRUVIEW, more than JERSEY BLUE, brought the fact home clearly that the enemy was serious about support aircraft and that operation in Laos no longer provided immunity from MIG attack. The pity of the loss was the fact that there was more warning given prior to the firing pass than perhaps any other combat loss, but if any was heard it was too late. In the pattern previously described, the Blue Bandits launched from Phuc Yen and headed 180° to 20N. Here the flight split East and West. The bandits going toward the Gulf were engaged by MIG Cap under the control

of ETHAN Bravo. Multiple warnings were put out by all agencies on UHT and IT as the other Bandits headed West. As the Bandits moved within 30 miles of the AEW&C platform to the East of Charlie station, ETHAN CHARLIE was able to pick the Bandits up with the height finder radar. JERSEY WHITE was committed against one flight with a vector for a head-on pass, and in their first wartime intercept attempt, received a radar lock-on at 30 miles -- well beyond what had been expected. JERSEY reported "contrails high" shortly after this and began to climb. At this point, the MIGs broke to the North. The F-102 lost radar contact and as the College Eye Senior Director attempted to vector him for a stern attack, communications jamming was encountered which blocked the control frequency. The MIG flight had successfully disengaged, and returned to interior NVN. The other flight shot down PREVIEW with seven crew members. Following this loss, a MIG Cap was established inside NVN near Hoa Binh, flown by the F-4's of the 13TFS at Udorn. This was the organization which had displaced College Eye at Udorn and picked up the unit identifier of the deactivated squadron at Korat. This Cap could be employed by College Eye, but if they left their orbit, the EB-66's had to be notified to assume a fall back orbit.

17. (S) Northern Laos was becoming increasingly dangerous on the ground as well as in the air. The North Vietnamese had launched a "bomber" attack against one of the sites, temporarily knocking out the COMMANDO CLUB operation. The aircraft used was a 1947 vintage Soviet build biplane, manually dropping small iron bombs. The TACAN site, Channel 97, was over run by ground forces on 12 March, and with its loss, ETHAN CHARLIE lost its primary means of navigation on the Northern station.

18. (S) The message listing College Eye equipment requirements and the Commanders briefing tour in conjunction with the SEAOR 62 meeting had

produced results beyond what had been expected. The entire SEAOR 62 program had been reviewed. The result was universal indorsement for additional modifications to enhance the manual mode of operation, and establishment of priorities such that realization of these items would not be held up by any additional slippages in the automated systems. ADC had notified College Eye by message of the action they were taking:

> "...This headquarters convened a panel whose task it was to recommend, for expeditious procurement action, improvements in the EC-121 which will substantially enhance your capability to perform the total mission in Rolling Thunder. The panel's recommendations will be briefed to AFXOP on 18 Jan..."

The resulting College Eye Improvement Study dated 18 Jan was forwarded to CINCPACAF listing the capability to be gained thru SEAOR 62 and recommending additional modifications against the "new" requirement to upgrade the manual capability. All approval authority, funding, engineering and related matters was being accomplished stateside. This, and the lack of Sensitive Information access kept the Task Force from a full understanding of the status of the many proposals. The Security Service personnel attached to Rivet Top had been actioned to look at the College Eye aircraft and submit recommendations on how to achieve a Comm Recce capability in minimum time. Their NCOIC, [redacted] described the requirement: "They want us to put several receivers on orange crates and go to work NOW!". This action confirmed to the Task Force that this one proposal was likely to become operational on a crash basis. Seventh Air Force provided insight to other programs in a message 14 March:

> "...Part IV. The following is a resume of the modifications to College Eye aircraft which are either approved or are in process of being approved.

A. Installation of four SS positions.
B. Installation of 1 additional ARC-85/KY-8 to provide a secure link between EIHAN BRAVO and a "source" (SEAOR 62 Modification).
C. Replace three ARC-27 radios now installed in the radar compartment with three ARC-109 transcievers (field mod FOC Nov 68).
D. Add SRO-1 and SOD 57 exploitation in all College Eye aircraft (MST: Proto type June 68 - decision July 68 - Integration Feb-Jun 69).
E. AN/GPA-122 - FOC Apr 68.
F. Addition of Audio/Video tape recording (SEAOR 62).
G. Nav modification to include addition of the LN-15, Litton Inertial Navigation system. (SEAOR 62 Mod).

PART V. This Headquarters is interested in providing maximum support to the College Eye Task Force. Immediate action is taken with Higher Headquarters to provide any additional operational requirements that are requested. Request that all College Eye Task Force correspondence of an operational requirement nature be forwarded to this headquarters so that 7AF has the opportunity to comment on that considered appropriate for forwarding to PACAF."

The An/GPA-122 system was introduced in small quantity to the Task Force operational environment in March. Even with the limited amount of Group B components which prevented a complete installation (five decoders) in each aircraft, the system greatly expanded the SIF decode capability. Each scope position with a unit could passively decode six flights, with selective stretch on any of these for individual identification. Even without using the active decode feature, individual controllers were jubilant with the new system, and assessed it as having increased their identification capability 10 to 100 times that of the APX-49.

1/9 (C) The decision whether to squawk or not ultimately came down to the man in the cockpit, and no amount of paperwork could make him squawk if he did not want to. Individuals had to be shown the advantages and weigh in their own minds if it offset what they believed to be the disadvantages. As previously mentioned, some pilots would go to standby so that no flight following would be possible if he penetrated the buffer or CINCPAC border. The major reason, however, seemed to be the belief that the enemy exploited our own Mark X IFF system. There was no known evidence to support this

firm fighter pilot conviction and tests had been conducted by 7AF by shutting down all friendly interrogators to monitor for possible North Vietnamese signals. Slowly, some groups had been won over. In a lateral briefing at Udorn, the commander of the RF-101 squadron, in answer to the statement that his personnel seldom squawked, had stated; "We shut everything down -- we even turn off our oxygen and hold our breath during our run!". This squadron had a list of losses that seemed almost equal to those who had completed 100 missions. Shown how they could be successfully flight followed and provided with warning information, the commander directed his people to keep their transponders on, and the problem was seldom experienced with flights from the 432TRW again. The MIG Cap remained in an active mode, since no control information could be received without it. The two F-105 Wings had two schools of thought. The problem that had been identified officially in the 7AF Working Paper on College Eye a year before still existed. Lip service had been given the requirement at the 11 Nov tactics conference, since it was an absolute necessity to allow the personalized MIG Warning format that was adopted. The investigation of the 12 December mission had shown there was still individual resistance. The loss of BOBBIN, Iron Hand aircraft from Korat characterized the danger in not squawking, and resulted in better cooperation on this point from the 388th TFW. The Deputy Commander for Operations had flown one of the Iron Hand aircraft when BOBBIN was shot down. After debriefing he came directly to College Eye, visibly upset, in an attempt to determine why BOBBIN had not been given warning of the impending attack. No answer could be given until both Charlie and Bravo were recovered to allow analysis of their mission logs. In one of the most detailed reconstructions ever accomplished, the College Eye staff was puzzled when the friendly/enemy

flight paths did not fit together properly in time reference to have allowed an intercept at the point BOBBIN was lost. If the time reference for each plot was taken at face value, it appeared the MIG flight had made the standard clockwise GCI controlled high speed intercept against empty airspace in front of the Strike Force. When the 388th DO admitted that the aircraft had not been squawking and had pulled ahead of the main body of the strike force by about 15 miles, it became crystal clear. The controllers had seen an incomplete video display -- equal to the reconstructed plots on the chart in front of everyone -- and in the absence of the BOBBIN IFF, were completely unaware the flight was under attack. The lost aircraft was in the second wave of the Strike Force, and ingressed over the approximate Channel 97/ Yen Bai/Thai Nguyen route. The first wave was egressing roughly Southwest of Phu Tho. Original records have been destroyed and Figure 12 was drawn from the authors memory a year later, but is a reasonably accurate account. The MIGs launched from Phuc Yen and their flight path indicated possible attack on the egressing force as they approached the Laotion border. ETHAN CHARLIE had moved the defensive Cap accompanying the Strike Force to the left of the strike force, but before the expected engagement occurred, the MIGs went into a tight orbit as indicated. Then they took up the clockwise pattern against the second Strike Force. MIG Cap with this force was turned into the threat, which was extremely fast -- estimated at 1200 knots ground speed. The MIGs turned in identical fashion to their normal quartering stern intercept approach, but went in front of the strike force. It was believed that turning the MIG Cap into them had broken up the attack. In the reconstruction, adding BOBBIN flight 15 miles in front of the main body of the Strike Force, it was apparent that the attack had been a perfect execution of the enemy tactic. College Eye shared the units grief over

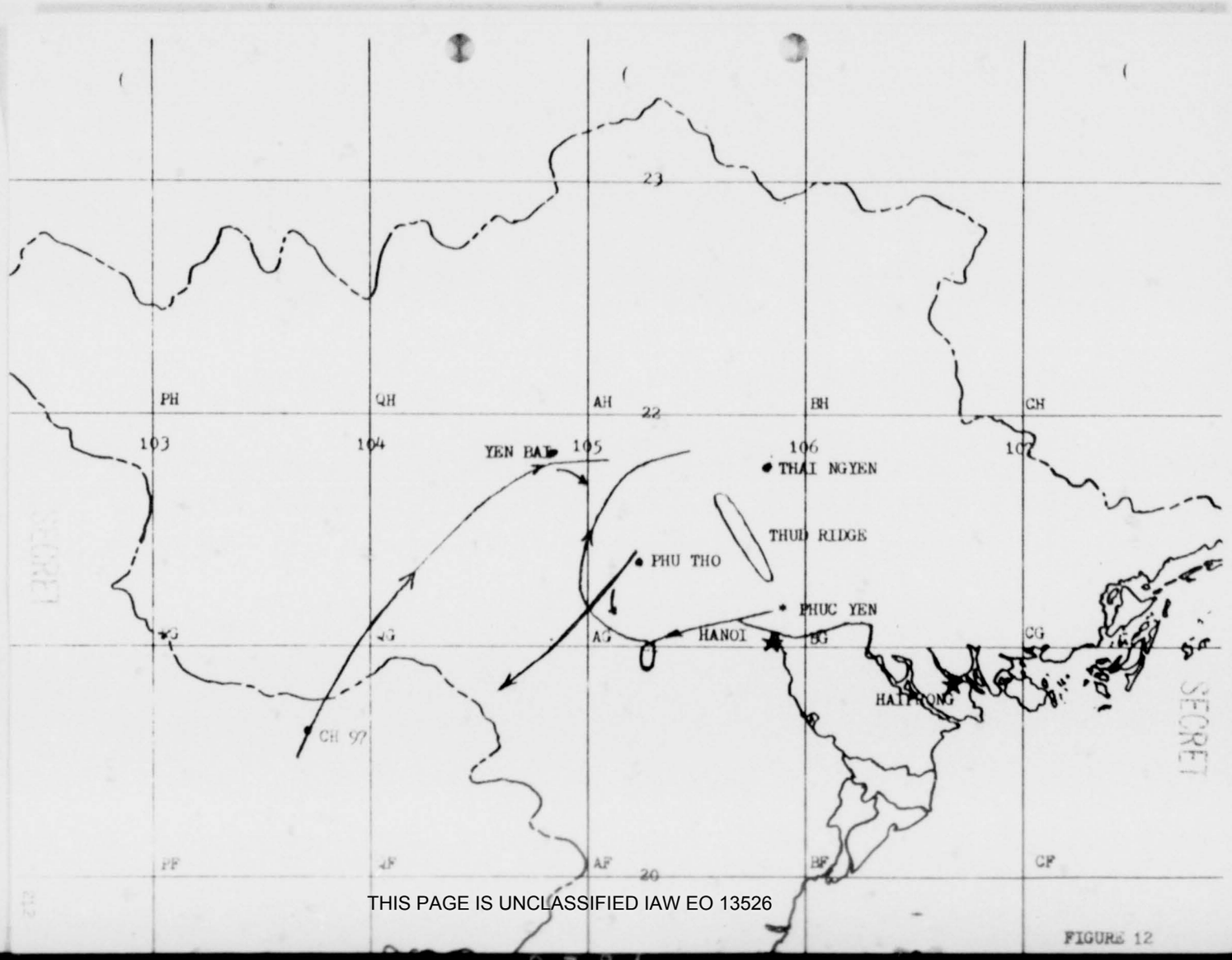


FIGURE 12

the loss, but was compelled to use it as a concrete example of why every flight must squawk. The MIGs had not posed an immediate threat to the Strike Force (as seen on the video display) and in accordance with established procedures, no warnings were necessary on the Strike frequency. Control information was passed to the MIG Cap on the discrete RRA channel and it was believed the attack had been thwarted. Had BOBBIN been seen on IFF by College Eye, he could have been warned about the rapidly closing MIGs. It was stressed that this same situation faced every non-squawking friendly -- threat could not be determined without knowledge of aircraft position. Finally, since the attack had been GCI controlled against a non-squawking aircraft, it illustrated that the enemy had no need for Mark X returns even if he was capable of triggering the aircraft transponder. Learning the reasons for the loss they had sought, another hard core of believers was formed.

200. (S) Just as most units had been convinced they must squawk, PACAF/7AF made a surprise reversal on the official policy. College Eye immediately responded with the following message:

"Subj: (U) Use of IFF by Alpha Day Strike Forces.
Ref: 7AF JPCCO/DOCA 26/0253Z Mar 68, Same subj.
The following limitations to the College Eye/Rivet Top capability are acknowledged based upon implementation of policy stated in ref message.
1. Loss of flight following of strike aircraft which will preclude College Eye/Rivet Top from providing the strike force with:
  a. Border Warnings -- primary mission of CETF
  b. Bandit information in AZRAN format as called for in 7AF OPORD 100-68.
  c. Navigational assistance as required (pre-post strike vectoring on request)
  d. Forward tell of Bravo and Charlie points to TACC (100-68)
  e. Record of flight path for after-the-fact analysis.
2. Significant procedural changes which must follow suspension of strike flights squawking Mark X SIF are:
  a. Most airborne Bandits must be presumed a threat since the dead reckoning position of the strike force will be uncertain.
  b. Calls must be referenced to Bullseye or geography with lack

of positive position of Strike Forces.

c. Calls must be initiated at shorter intervals to allow pilots to assess the threat.

d. Loss of the designed capability of AN/GPA-122 and SEAOR 62 modifications presently under way on CETF aircraft.

3. In short, this procedure will call for a regression to the posture of six months ago. Lack of positive ID on strike force will lead to many calls on Guard rather than on discrete Wing Strike Primary frequencies. Controllers will be unable to assess the threat, thus continual bandit warnings will have to be issued. Excessive Guard transmissions will degrade close control of MIG Cap. Pilots will lose confidence they now have in the MIG Warning agencies, lessening strike effectiveness.

4. Provided the Cap flights remain with the assigned strike force, the capability remains for passing MIG threats to the strike force referenced to the position of the Cap lead. This is undesirable, based on past experiences.

5. In view of past emphasis of CINCPACF on the (1) border warning, (2) MIG warning/advisory role of this organization, request CETF/Rivet Top mission responsibilities be reviewed and changed to incorporate the new limitations."

201. (C) The question became academic, since prior to any review of the decision, the President announced the geographical restrictions on the bombing. The date of his speech was 31 March, but to the personnel in SEA, across the International Date Line, it will always be remembered as 1 April. To the individuals involved in Rolling Thunder and Combat Lightning, the announcement was one of the several a person experiences in a lifetime for which he never forgets his surroundings or the circumstances at the time he learned the news. Everyone shared the President's hope that the de-escalation would trigger a series of reciprocal actions leading to an honorable settlement, and began to speculate as to what their new concept of operations might be.

The compilation of this report exceeded all estimates of the time required, and to be published within the established deadline must be suspended with an "as of" date. The geographical restrictions on the bombing of North Vietnam caused a major change to College Eye mission responsibility as the concept of Positive Control evolved during the early days of April. This change provides a logical cut off, allowing the history both before and after to stand independently. The 552 AEW&C Wing acknowledges the obligation to resume this history with narrative to the present. The completed report will draw the overall conclusions and state conceptual and doctrinal recommendations. These recommendations will encompass not only the Task Force as the key operational element, but the Wing and Major Air Command as well as suppliers of the resources and in-depth expertise necessary to further this advancement toward a global autonomous airborne command control force.

FOR OFFICIAL USE ONLY

LISTING OF KEY TASK FORCE STAFF PERSONNEL

TASK FORCE COMMANDERS

Colonel	Gus Weiser
Lt Col	James Q. McColl
Lt Col	Waldo W. Peck
Lt Col	Harold P. Knutty
Colonel	Ross Davidson
Colonel	James L. McCall

OPERATIONS OFFICERS

Major	Robert E. Rice
Major	Harold P. Knutty
Major	Orrin S. Merrill
Major	Kenneth J. Figeroid
Major	Vernon D. Gores
Lt Col	Harold P. Knutty
Major	Jerold R. Mack
Lt Col	Richard N. O'Hagan
Lt Col	George O. Anderson

ASST OPERATIONS OFFICERS (2 after Jan 68)

Captain	Charles Banning
Captain	Carl W. Olsson
Captain	Clarence J. Land
Major	Charles W. Scherwitz
Major	Jerold R. Mack
Lt Col	George A. Coe
Lt Col	Richard A. Wood
Lt Col	Richard N. O'Hagan

RADAR STAFF OFFICER (established Dec 67)

Major	John B. Mulherron
Captain	Victor F. John
Captain	Stephen H. Rice
Captain	James D. Speight

COMM/ELECTRONICS STAFF OFFICER (established Jun 67)

1st Lt	Richard M. Williams
Major	Dean C. Hall

STAFF NAVIGATOR (established Dec 68)

Major	Joseph P. Fouret

Atch 1

FOB MAINTENANCE OFFICERS (established Jun 67)

2nd Lt Don Mace
1st Lt Michael R. Brumble
CWO 4 John D. Allen

OPERATIONS NCOIC's

SMSgt Van E. Ratcliff
MSgt W. C. Garldand
TSgt Joseph H. Hall
MSgt Claud E. Turner
SMSgt Van E. Ratcliff
CMSgt George A. Goodwin Sr.
SMSgt Arden A. Mueller
MSgt John E. Kirkpatrick

MAINTENANCE NCOIC's

SSgt James M. Payne
MSgt Paul F. Goodwin
SMSgt Harold L. Rauback
SMSgt Teddy R. Owens
MSgt Wesley M. Trout

MSB COMMANDERS

Major William Seeliger
Major Robert W. Casey
Major William Adamson
Major Milton E. McEwan
Lt Col Robert E. Rice
Lt Col Harold P. Knutty
Lt Col Hobart E. Carter

CHIEF OF MAINTENANCE

CWO 4 John D. Allen
1st Lt Norman R. Falconer
1st Lt James Hall
1st Lt George G. Halstead
Major Richard L. VanNest
Captain Frank H. Randall
Captain Michael R. Brumble
Major Royce L. Reinhart

WEAPONS SYSTEM LOGISTIC OFFICER

Mr Alvin Coleman
Mr Robert Bruce

ADMINISTRATIVE OFFICERS

1st Lt	Howard Beagle
CWO 4	Albert V. Sangermano
1st Lt	Ben H. Walker
Captain	Dennie H. Dutschke
Captain	James R. Ledahl
1st Lt	Robert M. Penn
1st Lt	Donald P. Tallmadge

FIRST SERGEANTS

CMSgt	William H. Schuler
SMSgt	Eugene F. Farley
CMSgt	Earl E. Whitt
SMSgt	Eugene F. Farley
SMSgt	Roger H. Hutchinson
CMSgt	Thomas J. Gambino
MSgt	Carroll Shepard

MAINTENANCE NCOIC's

CMSgt	James Phillips
SMSgt	Waylen T. Montgomery
CMSgt	Clayton W. Holt
CMSgt	Kenneth Hameister
CMSgt	Robert J. Weldon

TIME FRAME FOR KEY TASK FORCE STAFF PERSONNEL

	1965				1966				1967				1968			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
COMMANDER	Weiser			McColl			Peck			Knutty	Davidson			McCall		
OPS OFFICER	Rice	Knutty	Merrill		Figeroid		Gores		Knutty	Mack	O'Hagan			Anderson		
ASST OPS	Banning	Olsson		Land		Scherwitz			Mack			Coe-Wood	Wood-O'Hagan			
RADAR OFF				Mulherron					John			Rice				
COMM/ELECT											Williams					
MAINT OFF.										Mace	Brumble	Mace	Allen			
NARCOTIC OPS	Ratcliff	Garland	Hall	Turner	Ratcliff				Goodwin					Mueller		
NARCOTIC MAINT				Payne		Goodwin			Rauback						Owens	
ASST COMMANDER	Seeliger	Casey	Adamson		McEwen					Rice	Knutty		Carter			
CHIEF OF MAINT		Allen	Falconer	Hall	Halstead		VanNest			Randall	Brumble			Reinhart		
U.S. LOGISTIC OFF			Coleman		Bruce											
ADMIN OFFICER	Temple	Cargermano	Walzer	Dutschke		Ledahl			Fenn					Tallmadge		
FIRST SERGEANT	Schuler	Farley	Whitt		Farley				Hutchinson		Gambino					
NARCO MAINT																

SOURCE MATERIAL

MESSAGES/LETTERS

1. Hq 7AF DIO Letter, 20 May 68, Subj: (U) Briefing on MIG Employment in SEA, w/atch.
2. 5520DC Message, 03157, Feb 67, Subj: (U) EC-121 Take-Off Minimums for SEA.
3. CSAF Message, AFXOPFN 75075, Mar 67, Subj: (U) SEAOR 62-FY-67.
4. CETF Message, 7AFDOBE 26214, Jun 67, Subj: (U) GPA-122.
5. Hq 7AF Working Paper 67/10, Subj: (U) College Eye Task Force.
6. CETF Message, 7AFDOBE 26423, Jul 67, Subj: (U) SEAOR 14 Test Report #1.
7. CETF Letter, undated, Subj: (U) Telephone Requirements - CETF Barracks.
8. AF Form 642, Recommendation for Decoration on TSgt Kinsella.
9. 2AD News Release 66-008.
10. CETF Message, 7AFDOBE 26766, Sep 67, Subj: (U) Distinguished Visitor.
11. CETF Message, 7AFDOBE 26882, Oct 67, Subj: (U) New CETF Mission Concept and DV Visitation.
12. 380TFW Message, DM 06146, Aug 67, Subj: (U) College Eye Support.
13. CETF Message, 7AFDOBE 26695, Sep 67 (Classified Subject).
14. CETF Message, CETF-OOP 26902, Oct 67, Subj: (U) 24 Oct Bravo Mission.
15. CETF Message, 17/1058Z Nov 67, Subj: (U) 7AF Conference.
16. ADC Message, ADOOT-D, 132354Z Mar 69, Subj: (U) College Eye Study.
17. CETF Message, CETF-ODC, 250811Z Nov 67, Subj: (U) Realignment of CETF Stations.
18. CETF Message, CETF-CCR, 09/1350Z Dec 67, Subj: (U) General Ryan.
19. CETF Message, CETF-CCR, 09/1351Z Dec 67, Subj: (U) CETF Reliability.
20. CETF Message, 15/1010Z Dec 67, Subj: (U) 12 Dec 67 AM Alpha Mission.
21. CETF Message, CETF-CCR, 15/1011Z (Classified Subject).
22. 5520RC Message, 26/2256Z, Dec 67 (Classified Subject).
23. 5520RC Letter, 26 Dec 67, Subj: (U) SEAOR 111.

24. CETF Message, 31/0803Z Dec 67, Subj: (U) MIG CAP Procedures.

25. CETF Message, CETF-CAS 09/1026Z Mar 69, Subj: (U) College Eye Study.

26. SOS Message, SOAD 08/1730Z Apr 69, Subj: (U) College Eye Study.

27. Hq ADC Letter, 18 Jan 68, Subj: (U) College Eye Improvement Study.

28. ADC Message, ADODC 22/1627Z Jan 68, Subj: (U) CETF 7AF Support.

29. CETF Message, CETF-ORC 09/0030Z Mar 68, Subj: (U) CETF Interim Capability.

30. Hq 7AF Message, 7AFDOCC 14/0900Z Mar 68, Subj: (U) College Eye Modification Program.

31. CETF Message, 27/0930Z Mar 68, Subj: (U) Use of IFF by Alpha Day Strike Forces.

HISTORIES

1. Project CHECO, Southeast Asia Report - College Eye, 1 Nov 68, Hq PACAF.

2. Historical Record of the Big/College Eye Task Force RCS: AU-D5 (1965-68).

3. Historical Record of the 552 AEW&C Wing. RCS: AU-D5 (1965-68).

ORIGINAL RESEARCH

Of the many inputs solicited for this report, the following list of names represents those who provided written documentation in the form of statements, letters, notes, transcripts of interviews, etc, on file at the 552 AEW&C Wing. In addition, as stated in the Foreword, there were countless unrecorded responses, both acknowledged and in confidence, which were used subject to confirmation by the reviewing committee. Individual contributors include:

Lt Col Waldo W. Peck	Major Vernon D. Cores
Lt Col Robert E. Rice	Major Theron M. Perry
Lt Col Harold P. Knutty	Capt Charles L. Schuette
Lt Col Richard N. O'Hagan	Capt Bernard R. Ertel
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