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# HISTORY OF THE 6994TH SECURITY SQUADRON

July – December  
1969



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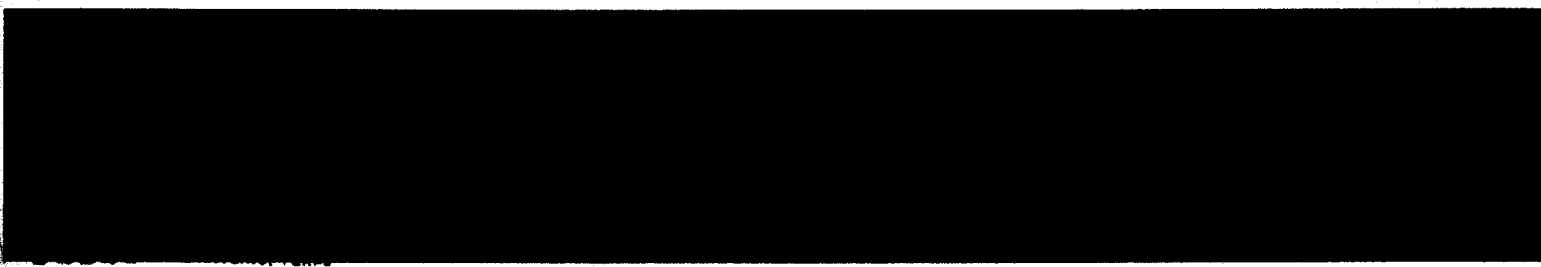
HISTORY  
OF  
THE  
6994TH SECURITY SQUADRON  
1 JULY - 31 DECEMBER 1969  
RCS: USS-D3



31 MARCH 1970



TAN SON NHUT AIR BASE, VIETNAM



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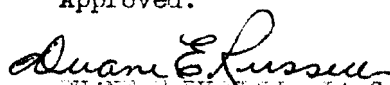
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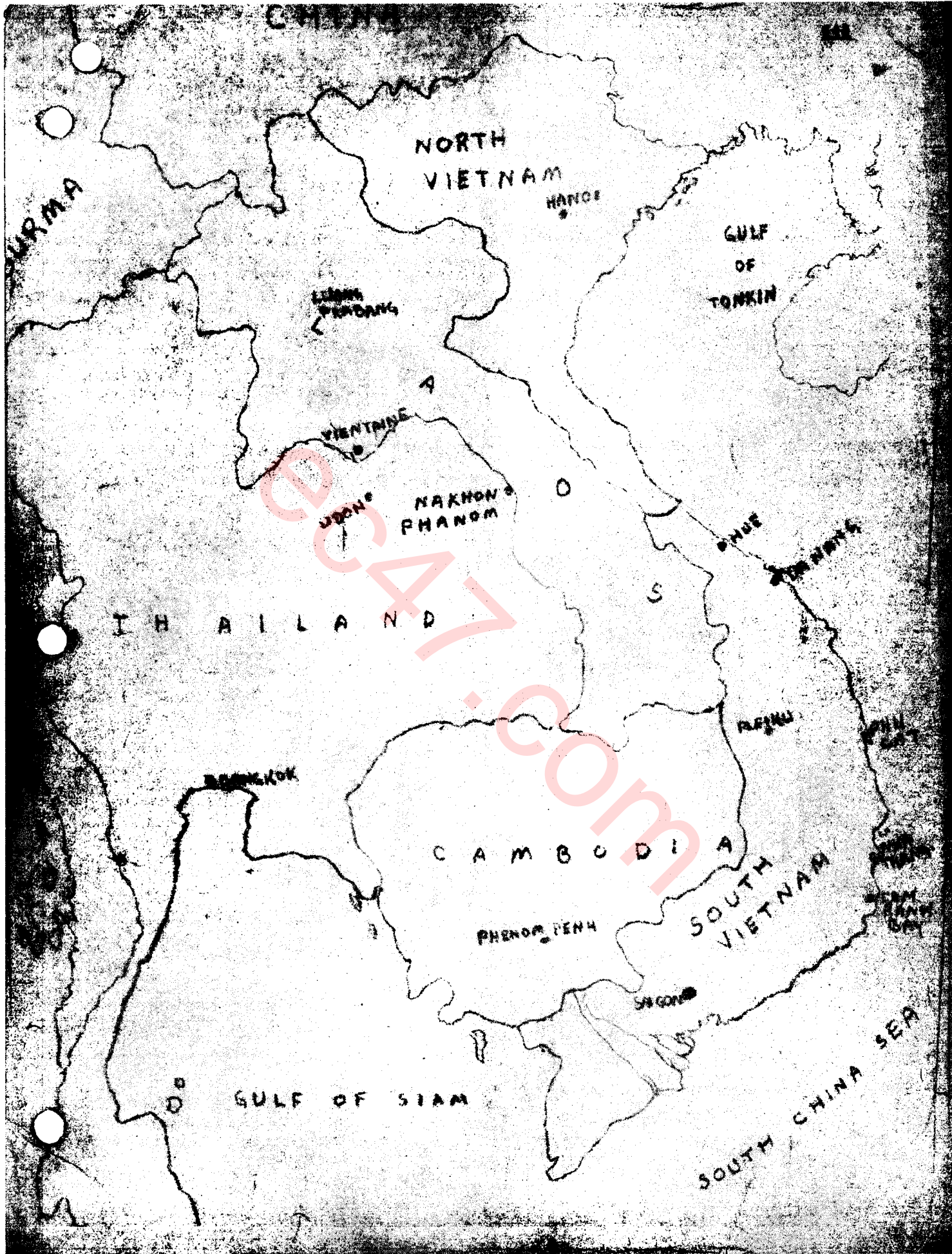
Prepared by:

FELICE FOTI, MSgt, USAF

Squadron Historian

Approved:

DUANE E RUSSELL, Lt Colonel, USAF  
Commander



## FOREWORD

The war in Southeast Asia has resulted in a continuing evolution of military concepts and policies. New strategies and tactics were needed to cope with this unconventional war. One of the most important concepts to evolve from this need, was the operational development of the Airborne Radio Direction Finding (ARDF) program. Too often, because of security, lack of glamor or expediency, valuable techniques such as ARDF "get lost" in the aftermath of a conflict. This history is dedicated to preventing this occurrence. It covers the operational activities of the 6994th Security Squadron during the period 1 July 1969 through 31 December 1969. The histories of the detachments are presented in separate volumes.

The research and writing of this history was accomplished by MSgt Foti. All suggestions and comments pertaining to it should be directed to the Commander, 6994th Security Squadron.

BIOGRAPHICAL SKETCH

Lieutenant Colonel Duane E. Russell

Duane Elliott Russell was born in [REDACTED] He graduated from Libby High School in Toledo in 1941. During his final high school years, he worked for the Chesapeake and Ohio Railway, continuing as a traffic rate clerk until December 1942, when he prepared for entry into the U.S. Army.

Serving as an infantryman and an aviation cadet, he graduated from pilot training in December 1944. Separated from active duty in the fall of 1945, he reenlisted in the U.S. Army Air Corps in early 1946. He served in Germany, California, and Brooks AFB, Texas as a MSgt, and was returned to commissioned status in late 1950. After a short tour as commercial transportation officer at McChord AFB, Wash., he re-entered language training at Syracuse University. Completing the school in March 1952, he reported to Brooks AFB, and then to Germany. From June 1952 to July 1956, he served in the 6910 Radio Group Mobile and the 6901 Special Communications Group, where he spent the last year as assistant to the group OPS officer.

From 1956 through 1959, he served at HQ USAFSS, (ODC), as a Planning Project Officer, and Chief of Plans Review Division. In 1960 he became Commender, Det 1, 6988 Radio Squadron Mobile, Yokota, Japan. In January 1962 he moved to the 6989 Radio Squadron Mobile, Misawa, Japan, where he became Chief of Operations. It was during this period that he was ordered TDY to Det 42-2, 2nd ADVON. By May 1963, he rotated to Muncie, Indiana, where he served at Ball State University, as a professor of Aerospace Studies.

In August 1966, he was assigned to Eielson AFB, Alaska, where he assumed command of the 6985th Security Squadron, and in May 1969 he departed Eielson AFB, Alaska and assumed command of the 6994th Security Squadron, Viet Nam.

He is married to the former [REDACTED] of Forestville, Michigan and they have two sons, [REDACTED]

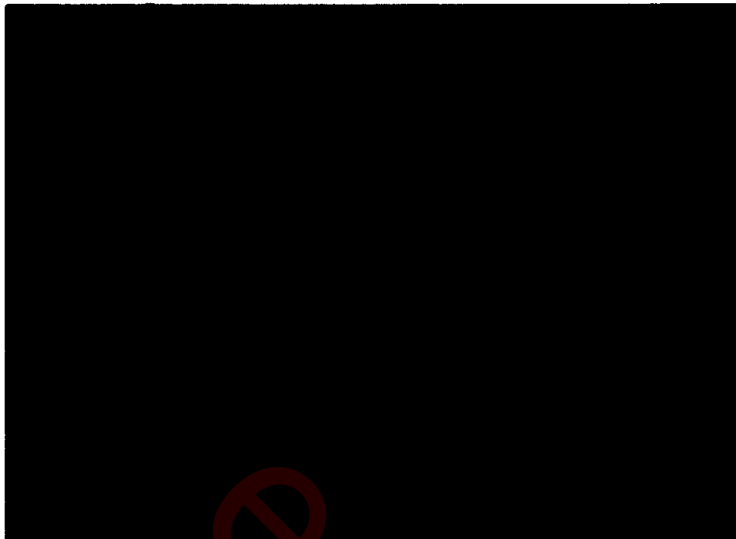
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## FACT SHEET

A.



## B. Education:

1. Graduated Libby High School, Toledo, Ohio - 1941
2. Completed Air Tactical School Course - 1951
3. Completed Air Command and Staff School Course - 1957
4. Received Bachelor of Science degree, University of Maryland - 1961
5. Completed Industrial College of Armed Forces Course - 1962
6. Received Master of Arts degree, Ball State University - 1966
7. Completed Air War College Associate Program - 1969

## C. Service Dates:

1. January 1943 - December 1944 - Infantryman and Pilot Trainee
2. December 1944 - November 1945 - Pilot
3. February 1946 - August 1950 - Air Operations Specialist, (MSGT)
4. August 1950 - October 1950 - SRSM, Brooks AFB
5. November 1950 - March 1951 - Commercial Transportation Officer  
McChord AFB, Wash.
6. April 1951 - March 1952 - Language School, Syracuse University

7. April 1952 - June 1952 - USAFSS, Brooks AFB
8. June 1952 - July 1956 - 6910 RGM, 6901 SCG, Germany
9. August 1956 - August 1959 - Plans Officer, ODC, USAFSS, Kelly AFB
10. August 1959 - March 1960 - Student, Ohio State University
11. March 1960 - December 1961 - Commander, Det 1, 6988 RSM, Yokota, Japan.
12. December 1961 - May 1963 - Operations Officer, 6989 RSM, Misawa Japan
13. May 1963 - July 1966 - Assistant Professor of Aerospace Studies, Ball State University, Muncie, Indiana
14. August 1966 - May 1969 - Commander, 6985 Security Squadron
15. May 1969 - Present - Commander, 6994th Security Squadron

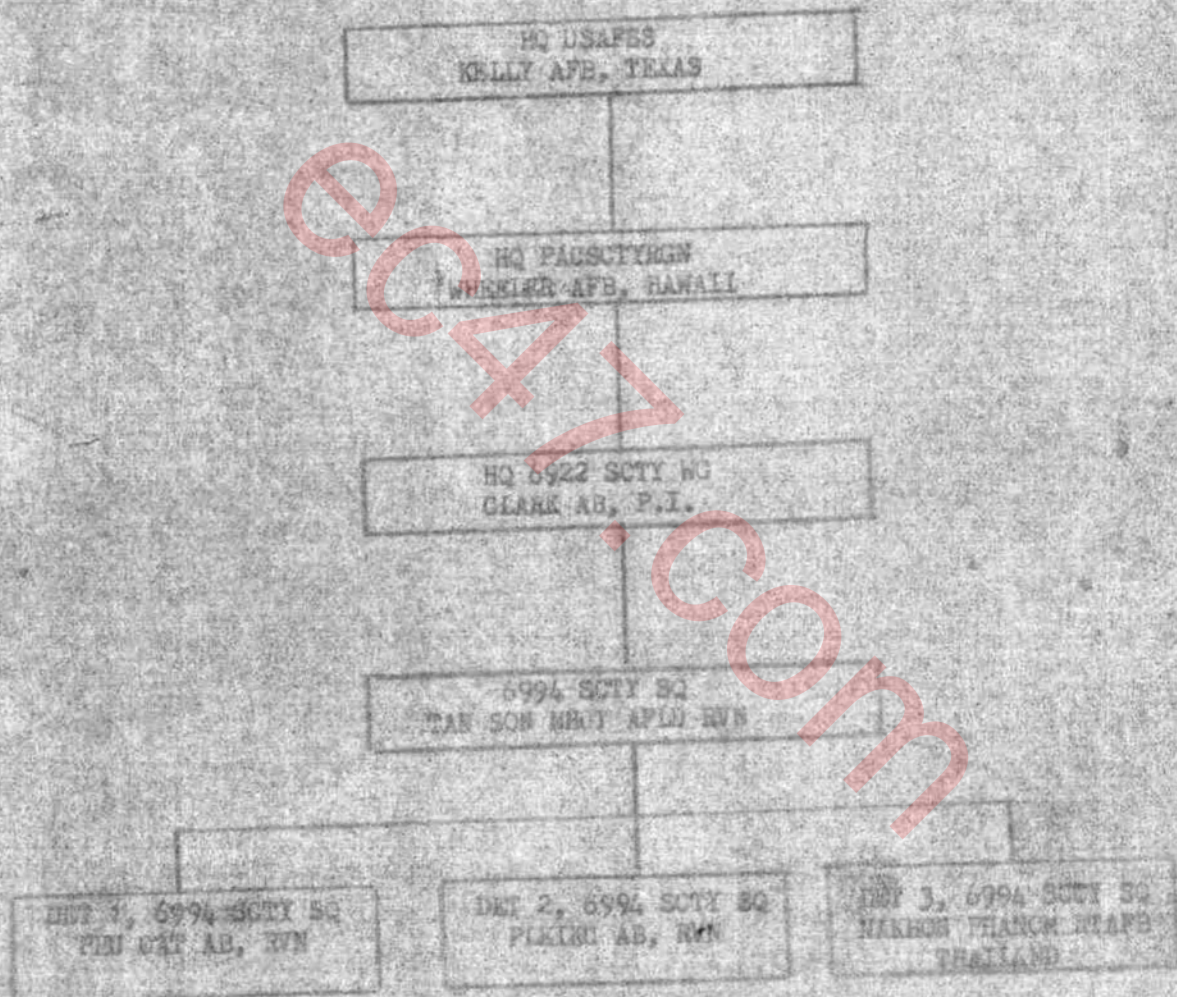
D. Decorations and Medals

1. Meritorious Service Medal
2. Air Medal (2 OLC)
3. Air Force Commendation Medal (1 OLC)
4. Air Force Outstanding Unit Award
5. Good Conduct Medal with two loops
6. American Campaign Medal
7. World War II Victory Medal
8. Army Occupation Medal
9. National Defense Service Medal
10. Viet Nam Service Medal with 1 BSS
11. Air Force Longevity Service Medal

E. Promotions:

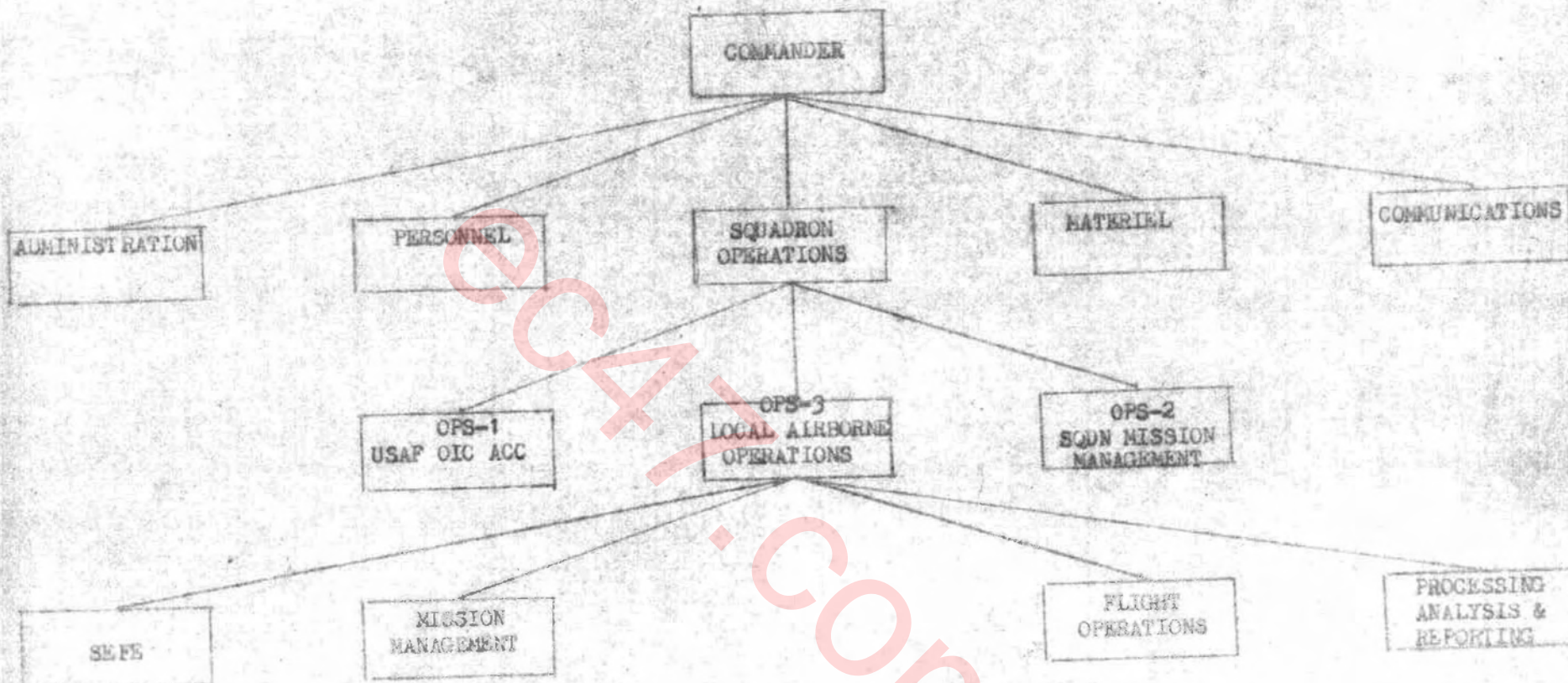
<u>Rank</u>	<u>Temporary</u>	<u>Permanent</u>
1st Lieutenant		31 October 1950
Captain	15 April 1954	31 October 1957
Major	3 February 1961	31 October 1964
Lt Col	30 July 1966	

ORGANIZATIONAL CHART  
 6994A SECURITY SQUADRON  
 COMMAND RELATIONSHIP



ORGANIZATION OF THE 6994th SECURITY SQUADRON

CHART 2



## List of Key Personnel (U)

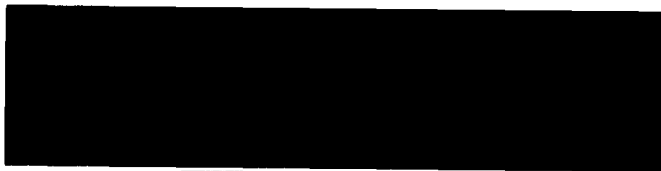
		DUTY/HOME PHONE
<u>Commander (CC)</u>	Lt Colonel D. E. Russell	4437/5163
First Sergeant	TSgt C. W. Hankins	4437/2843
Operations (OPS)	Lt Col J. W. Johnson Jr. Major M. Holmes CMSgt J. L. Norwood SMSgt C. W. Miller	4891/5163 4891 4891/2261 4891/923-4970
ACC (OPS-1)	Major W. E. Dorffi	923-2435/923-2485
Mission Management	Capt R. T. Osborne MSgt F. Foti	4641 4641/923-4970
Local Operations	Capt M. T. Christy MSgt L. Maness	3706/5218 3706/923-4970
Materiel (MAT)	Capt B. James	3164 3445
Maintenance (MAT-M)	MSgt R. G. Fitz	3164/2843 3445
Supply (MAT-S)	Capt G. H. Lewis MSgt A. J. Edwards	3164 3164/2843
Communications (COM)	Capt CC Yahnke SMSgt E. J. Puro	4455 4455
Administration (ADM) Security (SP)	TSgt W. Worrell, Jr. TSgt N. L. Shelton	3623/2843 3623/2843
Personnel (PER)	MSgt E. A. Zalis	3261/2843

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Chart 1 - Organizational Chart 6994th Security Squadron Command relationship

Chart 2 - Organization of the 6994th Security Squadron

Figure 1 - SEA ARDF Areas effective 27 September 1969

Figure 2 - SEA ARDF Areas prior to 27 September 1969

Table 1 - Basic Combat Cougar Configuration

Table 2 - Combat Cougar Zulu Configuration

Table 3 - Combat Cougar Zulu Mini-Mod

Chart 3 - Tasking Cycle

Figure 3 - Target Intelligence

Table 4 - 6994th Security Squadron Collection Resources



[REDACTED]

CHRONOLOGY

05 July SEATS test concluded. DIRNSA requested continued SEATS reporting by this unit and its detachments.

10 July Headquarters PACAF issued orders requiring Detachment 1, 6994th Scty Sq to move from Nha Trang to Phu Cat.

10 July Detachment 2, 6994th Scty Sq recommended OPS Stops at Da Nang be substituted for OPS Stops at Hue/Phu Bai.

19 July Dual Frequency Test commenced in III and IV CTZs.

25 July Dual Frequency Test completed.

22-23 August Squadron DURMIS Conference held at Tan Son Nhut. Recommendations forwarded to USAFSS.

28 August PACSCTYRGN authorized move of 4th aircraft to NKP.

28 August Chief of the Aerial Reconnaissance Division MACV J211 proposed the reorganization of ACC.

30 August 460th TRW directed the deployment of a fourth aircraft to NKP.

30 August 6994th Scty Sq senior aircrew members billeted at the Merlin Hotel.

02 September 6994th Scty Sq requested TEMPO authority for Detachment 3.

03 September Colonel Bradley, 509th RRG, disagreed with MACV J211 proposal to reorganize ACC.

05-06 September [REDACTED] ARDF Conference [REDACTED] aired differences on Commando Forge concepts.

06 September PACSCTYRGN directed the 6994th Scty Sq to seek a reduction in fraged time for CCZ missions.

09 September Detachment 1, 6994 Scty Sq moved from Nha Trang to Phu Cat.

10 September Project Above Board postponed because of the late arrival of test equipment.

11 September 6994th Scty Sq recommends closing of ARDF Calibration site at Cam Ranh Bay.

11 September PACSCTYRGN approved removal of COMJAM positions.

[REDACTED]

13 September Mini-Mod Test begun at Detachment 2.

19 September Mini-Mod Test ended at Detachment 2.

19 September DIRNSA expressed desire to have AVN units prepare EMR.

20 September MACV requested evaluation of Mission 999.

20 September All CCZ missions fraged for 5 hours.

22 September 460TRW rescinded regulation requiring mandatory wear of survival gear aboard aircraft. Aircraft commanders were given authority to determine survival gear policies for their crews.

25 September Project Above Board 15 day test commenced.

27 September New SEA ARDF Areas became effective. As per MACV directive 19 September 1969.

30 September Aircraft 43-48959 crashed and burned on take off from Hue/Phu Bai.

02 October MACV approved removal of COMJAM positions.

02 October PACSCTYRGN proposed new UDL for 6994th Scty Sq.

03 October 460TRW directed discontinuance of OPS Stops at Hue/Phu Bai pending investigation into flight safety hazards.

04 October Dual Frequency System implemented in III and IV CTZs (SEA Areas 1-2-3-4).

08 October 7AF acquiesces in 460TRW action in discontinuing Phu Bai OPS Stops.

08 October Aircraft 43-49100 crashed in jungle area near Phu Cat.

09 October USAFSS published Annex C T-9810.

09 October PACSCTYRGN tasked 6994th Scty Sq with the Weekly Combat Cougar Report.

15 October 6994th Scty Sq proposed the elimination of all OPS Stops by CCZ aircraft.

20 October 6994th Scty Sq requests waiver of water soluble paper requirements.

25 October New DURMIS format implemented.

[REDACTED]

- 28 October USAFSS denies waiver of water soluble paper for Cherry Sheets.
- 28 October DIRNSA issued guidelines for EMR preparation.
- 29 October 7AF directed relocation of 1 CCZ aircraft plus 1 additional and complete set of 2 consoles from Phu Cat to TSN.
- 30 October Det 1 carries out deployment of ARDF resources as directed by 7AF.
- 13 November PACSCTYRGN directed 6994th Scty Sq to implement EMR in accordance with DIRNSA **guidelines**.
- 14 November DIRNSA authorized Detachment 3 to issue TACREPS.
- 21 November PACSCTYRGN directed turn in of A/G/A communications facilities.
- 22 November Transcribe Test commenced at Detachment 2.
- 24 November One additional CCZ aircraft transferred from Phu Cat to Tan Son Nhut.
- 26 November Detachment 3 begins issuing TACREPS.
- 28 November Pre-Mission briefings standardized.
- 30 November 46OTRW directs TEWS to remove 5 gallon water can from aircraft. 6994th Scty Sq asked for waiver of water soluble paper requirements based on 46OTRW action.
- 04 December First TECHWECAP issued by 6994th Scty Sq.
- 05 December DIRNSA disapproves TEMPO authority for Detachment 3.
- 05 December 6994th Scty Sq presented its concept for Vietnamization of the USAF ARDF program.
- 15 December First Commando Forge Operations/Exploitation Summary issued by 6994th Scty Sq.
- 19 December USAFSS disapproved waiver of water soluble paper requirements for 6994th Scty Sq.
- 20 December Enemy COMINT unit captured as a result of an ARDF fix by 6994th Scty Sq on 19 December.
- 24 December [REDACTED] advised that the [REDACTED] had approved a temporary increase in the cryptologic ceiling for 120 days effective 27 December 1969.



[REDACTED]

CHAPTER I

MISSION AND ORGANIZATION

MISSION STATEMENT:

[REDACTED] Headquarters for the 6994th Security Squadron was located at Tan Son Nhut Air Base Republic of Vietnam. Its operational mission was to conduct Airborne Radio Direction Finding (ARDF) and specified Communications Intelligence (COMINT) collection against enemy targets in the III and IV Corps Tactical Zones (CTZ) in direct support of the Military Assistance Command, Vietnam (MACV). In addition to its own operational mission, the 6994th Security Squadron provided operational and administrative control for its subordinate units which were Detachment 1 at Phu Cat,<sup>1</sup> Detachment 2 at Pleiku and Detachment 3 at Nakhon Phanom, Thailand.

[REDACTED] The Command, Administration, Personnel, Communications and Operations Branches were located in the AFSSO 7th Air Force Compound within the 7AF Headquarters complex at Tan Son Nhut Air Base. The Squadron Materiel Branch was located on the flight line adjacent to the 360th Tactical Electronic Warfare Squadron (TEWS). In performing its operational mission, the 6994th Security Squadron was assisted by the 360th TEWS which provided the necessary aircraft and front end crews. The 360th TEWS was subordinate to the 460th Tactical Reconnaissance Wing (TRW) whose subordinate units, 361 TEWS, 362 TEWS and Detachment 2, 460 TRW supported Detachment 1, Detachment 2 and Detachment 3 of the 6994th Security Squadron respectively.

[REDACTED] The 6994th Security Squadron performed its operational mission aboard EC-47 aircraft. There were three types of mission tasked: Combat

[REDACTED]

Cougar, Combat Cougar Zulu Primary ARDF, and Combat Cougar Zulu Primary Collection.<sup>2</sup>

ORGANIZATIONAL STRUCTURE:

[REDACTED] The 6994th Security Squadron was administratively subordinate to the 6922nd Security Wing, Clark Air Base, Republic of the Philippines, however, operational control was nominally exercised by Headquarters 7th Air Force, Tan Son Nhut Air Base, Vietnam. Because of the inter-service involvement in the ARDF program in South East Asia (SEA), general operational control was exercised by MACV (J2).

ORGANIZATIONAL CHANGES:

Detachment 1 Moves to Phu Cat:

[REDACTED] On 12 January 1969 the Commander of 7th Air Force approved a proposal to relocate USAF flying units from Nha Trang AB, Vietnam.<sup>3</sup> The decision was based on a 7AF study which recommended deployment to four permanent USAF bases in the same general area and return of Nha Trang to the Vietnamese Air Force (VNAF). Principal considerations in this decision were:<sup>4</sup>

1. Planned VNAF expansion and modernization in conjunction with the "Vietnamization" of the war necessitated release of ramp and facility space to the VNAF.
2. 7AF anticipated difficulty in justifying and securing funds necessary to continue operations from Nha Trang.
3. The need to relieve chronic South Vietnam (SVN) headroom problems. Immediate and long term advantages of the move to the USAF were:<sup>5</sup>
  1. A saving of 1000 military headroom spaces and the elimination of 400 civilian spaces with attendant dollar savings.

[REDACTED]

[REDACTED]

2. Capital invested in the four relocation bases would be capital invested in bases for which the USAF was the sole proprietor.

3. Cancellation of approved Nha Trang construction projects resulted in a savings of approximately 7.4 million dollars to the 7AF budget.

4. Return of Nha Trang to the VNAF enhanced the process of "Vietnamization".

[REDACTED] On 10 July 1969 Headquarters Pacific Air Forces (PACAF) issued orders which required Detachment 1, 6994th Security Squadron to relocate to Phu Cat.<sup>6</sup> Details of this relocation were formalized by USAFSS in Programmed Action Directive (PAD) 69-8. Relocation took place on 9 September 1969. No missions were flown on relocation day. This was the only interruption. Normal mission activity was resumed on the following day.

Joint Operating Agreements With 460th TRW:

[REDACTED] From the time that USAFSS became involved in the ARDF program in SEA the 460th TRW has been providing the aircraft and front end crews for tasked missions. Though 6994th Security Squadron units have been involved daily in flying missions with units subordinate to 460th TRW, no written agreements between the two units had ever been undertaken.

[REDACTED] Both the 460th TRW and the 6994th Security Squadron have been performing their missions together as tasked by 7AF.<sup>7</sup> The close working relationship between them has always been marked by very friendly relations and close cooperation. However, because most of the mutual problems have been resolved by verbal agreements, interpretations of procedures and responsibilities have varied with the turn over of personnel in each units' staff sections. Furthermore operational actions taken by one of the units, even when the actions were clearly under the specific jurisdiction of a subject unit, frequently had an impact on the other.

[REDACTED]

[REDACTED]

(U) In September 1969 it became obvious that the mutual relationship which had evolved between the two units needed to be formalized in written agreements. The first such agreement was negotiated and drafted during the closing months of 1969<sup>8</sup> to become effective in January 1970. This Joint Operating Agreement outlined specific responsibilities of each unit toward areas of mutual interest, and set up the framework for establishing future Joint Operating Agreements. This agreement, a milestone in the history of both units, is expected to inaugurate an era of improved operational relationships and cooperation between them in production of a better mission product.

Location of SEA ARDF Resources:

[REDACTED] As was reported in the previous history,<sup>9</sup> contingency planning for deployment of some Detachment 2 aircraft to Hue/Phu Bai was already in progress. On site inspection of Hue/Phu Bai was made at the end of the last historical period. It was discovered that austere living conditions, the possibility of maintenance problems, and the inadequacy of existing facilities made Phu Bai an undesirable location from which to conduct ARDF operations.<sup>10</sup> The feasibility of deploying to Da Nang was suggested.<sup>11</sup> This unit's position was indorsed by 7AF in correspondence with MACV which stated that: "...we view any transfer of existing ARDF resources to Hue/Phu Bai as contrary to the best interest of the overall ARDF program."<sup>12</sup>

[REDACTED] In August 1969 MACV seized the opportunity given by the impending move of Detachment 1, 6994th Security Squadron to Phu Cat to press for co-location of ARDF/Airborne Collection aircraft with the analytic facility doing the processing. MACV's suggestion was to alter the existing CMA/Aviation unit relationship so that aircraft based at Pleiku would cover targets tasked to

[REDACTED]

[REDACTED]

USM-604 (Pleiku CMA) while aircraft soon to deploy to Phu Cat (September 1969) would cover targets tasked to USM-808 (Phu Bai CMA). MACV requested AFSSO 7AF to conduct a feasibility study on the matter. The MACV proposal was rejected by this unit because it would entail relocation several aircraft within which equipment configurations differed, thereby creating a situation where this units maintenance capability would be seriously taxed beyond resources. The matter however was rendered academic when 7AF announced its intention to close Pleiku.

[REDACTED] The Pleiku closure proposal resulted in a series of discussions and numerous proposals still not resolved at the close of this historical period. The proposals included:

1. Split Detachment 2 resources between Detachment 1 and Detachment 3. This proposal would result in Detachment 1 having 27 aircraft and Detachment 3 having 10.
2. Colocate all Detachment 2 resources with Detachment 1 at Phu Cat.
3. Split Detachment 2 resources between Da Nang and Nakhon Phanom.
4. Relocate Detachment 2 to Da Nang, while Phu Cat would be closed and Detachment 1 relocated to Cam Rahn Bay.
5. Relocate Detachment 2 to Da Nang.

[REDACTED] Complicating matters was the uncertainty of future developments in SEA. In depth studies based on the eventual attainment of 62 ARDF aircraft led PACSCTYRGN to recommend to USAFSS the following distribution of aircraft:

1. Da Nang 15 aircraft
  2. Tan Son Nhut 18 aircraft
  3. Phu Cat 17 aircraft
  4. Thailand 12 aircraft
- [REDACTED]



[REDACTED] Uncertainty concerning the cryptologic ceiling in Thailand and crowded facilities at Da Nang coupled with postponement of the Pleiku closure left the outcome of projected relocation of Detachment 2 resources obscure.

NKP Buildup:

[REDACTED] Since the establishment of Detachment 3 at Nakhon Phanom in April 1969,<sup>21</sup> its service to consumers was of such quality that a third aircraft was deployed on a TDY basis. Because of increased enemy activity in Laos, tasking requirements continued to increase. Consumers urged deployment of additional aircraft to Thailand. Three major problems however continued to complicate the pattern of any buildup at NKP. These problems were

1. The desire of non-Air Force agencies to have ARDF collection resources co-located with the CMA.
2. The reluctance of the [REDACTED] to provide permanent increases in the cryptologic ceiling.
3. The limited maintenance capability for servicing mission aircraft based at NKP.

[REDACTED] The 7AF decision to base aircraft at NKP instead of Udorn failed to really satisfy NSA Representative Vietnam (NRV) [REDACTED], [REDACTED], Army Security Agency (ASA) and MACV as well as the principal consumer of data processed from the Detachment 3 collection effort, Confidential American Source Vientaine (CAS Vientaine). Their position was that co-location of collection unit and CMA would result in a better product. With the projected build up of ARDF resources in support of CAS Vientaine, the issue of co-location of collection unit and CMA surfaced again at the [REDACTED] ARDF conference

[REDACTED]<sup>23</sup> 5-6 September 1969. [REDACTED]

[REDACTED]

[REDACTED] The USAFSS policy has been to oppose moving all or part of Detachment 3 resources to achieve co-location with the CMA (USA 29/USM 7) (at Ramasun Station). Further, USAFSS has rejected the principle of co-location based on the fact that:

"...in South Vietnam today we cannot find where one single aircraft is permanently co-located with CMA (either Army or Air Force). Have informal info there are approx 180 plus such aircraft assigned. This provides some indication the Army did not consider such deployment essential in their ARDF/Airborne Collection programming."<sup>24</sup>

Other significant reasons for USAFSS opposition were:<sup>25</sup>

1. Even if NKP effort were relocated to Udorn there would still be 10 miles between Detachment 3 and the CMA.
2. Accepting the principle of co-location of ARDF unit with CMA would probably result in reduction of this unit's mission to "...one of pure ARDF and eliminate entirely the requirement for an analytical capability to do the vital first echelon analysis and reporting."

[REDACTED] Seventh Air Force continued to support the USAFSS position even though they conceded that aircraft operating from Udorn would achieve fifty minutes more time over target (TOT) than NKP based aircraft in Northern Laos (Barrel Roll Area). This disadvantage was offset by the fifty minute TOT advantage NKP based aircraft achieved in Southern Laos (Steel Tiger Area). The principal factor in favor of basing additional aircraft at NKP vice Udorn was that NKP already possessed the basic support necessary to handle EC-47 aircraft, while Udorn lacked such facilities.<sup>26</sup> Increased enemy activity in the "Barrel Roll" Area during the late summer and fall of 1969 led to increased pressure to stage some ARDF flights from Udorn. At the close of this historical period solution to the question of placing an ARDF collection capability at

[REDACTED]

[REDACTED]

Udorn or increasing existing collection capability at NKP remained part of the overall settlement of the redistribution of ARDF assets throughout SEA.<sup>27</sup>

On 26 September PACSCTYRGN clarified the USAFSS position thusly:

"Our objectives should be to place ARDF resources where they can best fulfill the MACV stated requirements. Appears that to accomplish this goal it is highly desirable that capability be established at Tan Son Nhut, Phu Cat, Da Nang, NKP and eventually even possibly Udorn."<sup>28</sup>

[REDACTED] At the beginning of this historical period, three aircraft were performing ARDF missions from NKP. Aircraft were assigned on a TDY basis primarily because it was not economical to maintain a complete maintenance facility for less than ten aircraft. The military situation in Laos continued to require additional ARDF missions. On 28 August 1969 PACSCTYRGN authorized this unit to support the move of the fourth aircraft to NKP providing both the cryptologic and Program VI ceilings were raised.<sup>29</sup> On 30 August 1969 the 460TRW directed the deployment of a fourth aircraft to NKP for 120 day TDY period.<sup>30</sup> On 12 October MACV directed 7AF and this unit to make necessary arrangements to operate five EC-47s on a sustained basis from Thailand prior to 1 January 1970.<sup>31</sup>

[REDACTED] In response to the MACV directive this unit requested [REDACTED] to secure a permanent increase of twenty spaces in our cryptologic ceiling.<sup>32</sup> [REDACTED] reply stated that there were 1278 authorized Program VII spaces for cryptologic units in Thailand and that there were 1259 cryptologic personnel in Thailand against Program VII spaces. Though 19 spaces existed, programmed CCP increases would absorb them. Therefore:

"It is the position of both the AMEB and MACTHAI (By JCS Direction) that there can be no rpt no increases in currently authorized program VII spaces for Thailand, thus the increases required to accommodate a total of five FCS EC-47 acft must be on a trade-off basis."<sup>33</sup>

[REDACTED]

[REDACTED]

Thus the fifth aircraft was sent to NKP on a TDY basis. In late December 1969 there was some question whether the [REDACTED] would approve extension of the temporary cryptologic ceiling increase. Failure to approve the extension would result in reducing the NKP EC-47 fleet to three aircraft. On 24 December 1969 [REDACTED] advised that 120 day extension had been approved commencing 27 December and extending through 27 April 1970.<sup>34</sup>

[REDACTED] Political pressures within Thailand have caused [REDACTED] [REDACTED] to move slowly and carefully scrutinize requests for increases in the cryptologic ceiling.<sup>35</sup> It was obvious that developments in U.S. - Thailand relations must be carefully calculated in planning any substantial increase of ARDF resources in Thailand.

[REDACTED] The third major obstacle in the NKP buildup was the lack of adequate ARDF maintenance and materiel resources. Primarily this problem was a function of the previous two. It is neither economically feasible, nor even possible for that matter, to provide phase maintenance facilities at NKP for less than ten aircraft. Any additional aircraft based at NKP would have to be drawn from existing resources in SEA. Making necessary aircraft available is therefore dependent on the outcome of discussions concerning future locations of ARDF resources in SEA,<sup>36</sup> and in particular the disposition of Detachment 2 ARDF assets after Fleiku's closure.<sup>37</sup> Finally, any permanent build-up at NKP is inextricably bound to the [REDACTED] willingness to acquiesce in raising the cryptologic ceiling. Therefore some important decisions concerning the future role of NKP in the SEA ARDF effort are to be expected during the forthcoming historical period.

[REDACTED]

[REDACTED]

Proposed Reorganization of ARDF Coordination Center (ACC).

[REDACTED] The mission of the ARDF Coordination Center (ACC) was to provide for the coordination of all functions connected with the ARDF program and schedule ARDF and Airborne Intercept collection missions as directed by MACV.<sup>38</sup> The ACC was established on 1 July 1966 by agreement between the 509th Radio Research Group (RRGP) and the 6994th Security Squadron.<sup>39</sup>

[REDACTED] The ACC functioned under the supervision of two OICs, one from the Army and one from the Air Force, both considered equals in direction of operations. Routine matters were handled by either. Major decisions, changes or new items were coordinated and mutually agreed upon. Each of the OICs came under the direct supervision of the respective Operations Officers of the 509th RRGF (for the Army OIC) and the 6994 Security Squadron (for the Air Force OIC). Each was rated by his respective service supervisor.<sup>40</sup>

[REDACTED] On 28 August 1969 the Chief of the Aerial Reconnaissance Division, MACV J211 submitted for coordination a proposal to reorganize the ACC.

Principal features of the proposed reorganization were:<sup>41</sup>

1. Establishment of a "Joint Special Operations Center" (JSOC) under the direction and operational control of MACVJ2 to replace ACC.
  2. Designation of the JSOC as a Joint Cryptologic Activity by DIRNSA.
  3. The JSOC was to consist of an OIC, deputy OIC and other officers and enlisted personnel to be determined jointly by MACV-J2, 509th RRGF and the 6994th Security Squadron.
  4. The billet of the OIC was to be filled on a 6 month rotating basis by the 509th RRGF and the 6994th Security Squadron. The deputy OIC would be rotated on the same basis and would be from the unit not furnishing the OIC.
- [REDACTED] [REDACTED]

[REDACTED]

5. During the tenure, the OIC was to be responsible to, under the direction of and rated by MACV-J2.

6. The JSOC was to be manned jointly by personnel of the 509th RRGF and 6994th Security Squadron. Where possible, a balance of strength between services was to be maintained.

7. JSOC personnel were to remain assigned to and under the command of their parent unit.

[REDACTED] PACSCTYRGN immediately took exception to several of the features of the MACV J-211 proposal. The PACSCTYRGN position was:<sup>42</sup>

1. That this unit should attempt to have the term "Joint" eliminated from the new functional title. USAFSS preferred maintaining the "collocated" status of equal Army/Air Force elements and elimination of any connotation of "Joint" operations.

2. It did not concur with assigning a cryptologic unit designator to the ACC because it would lessen its effectiveness as an operation under control of MACV-J2 by placing NSA in a predominant position to infringe on MACV prerogatives in providing tactical support to field commanders.

3. It did not concur with having MACV-J2 rating the OIC of JSOC. PACSCTYRGN concurred with the idea of attempting to balance Air Force strength vis a vis the Army on the JSOC, but felt that the increase in Air Force personnel necessary to achieve this must be satisfied from existing resources.

[REDACTED] At the 3 September 1969 Weekly ARDF Meeting with MACV, Colonel Bradley from the 509th RRGF took exception to the MACV-J2 proposal. His objection was based on the fact that MACV-J2 was outside the SIGINT Community, and consequently members of the SIGINT Community (6994th Security Squadron and 509th RRGF) should study the problem and make proposals. MACV J-2 agreed to

[REDACTED]

let 509th RRG<sup>43</sup>P and 7AF work out the problem.

█ In subsequent meetings held by the 509th RRG<sup>44</sup>P between Air Force and Army representatives (Lt Col Johnson represented this unit at these meetings). The 509th RRG<sup>44</sup>P insisted that the OIC and Deputy OIC should remain under the control of, and be rated by, their respective units. 7AF favored the original MACV J2 proposal contending that it would allow individuals to be more objective in regulating and evaluating the overall ARDF<sup>45</sup> program. At the close of this historical period it appeared that the basic structure of the ACC would remain relatively unchanged. MACV J-2114 was preparing a new MACV Directive 381-23 which was expected to be placed in coordination sometime during the next historical period.

Disposition of the Calibration Facility:

█ On 11 September 1969 this unit recommended to PACSCTYRGN closing down the ARDF Calibration Site at Cam Ranh Bay because it was determined that there was not sufficient utilization of its facilities. During the period 13 October 1968 through 7 February 1969 seven aircraft were recalibrated, none required any significant change to calibration curves. No further recalibrations have taken place since 7 February 1969, nor are any envisioned in the foreseeable future.<sup>46</sup> PACSCTYRGN advised that USAFSS was rewriting post mission test procedures, and that a staff study was in progress for determining requirements for a calibration facility.<sup>47</sup> A decision on the disposition of Detachment 1, 6994th Security Squadron Operation Location 1, Cam Ranh Bay ARDF Calibration Facility was therefore postponed pending further guidance from USAFSS.

█ █

[REDACTED]

### Phase Out of 6922 Security Wing

[REDACTED] In the later part of 1969 USAFSS decided to discontinue its overseas operational wing headquarters not later than 1 April 1970. Details of the Command reorganization became available with receipt of PAD 69-12, Region Reorganization (U). Projected organizational changes which will affect this unit in the coming historical period included the deactivation of the 6922nd Security Wing (expected date 31 March 1970)<sup>48</sup> and the assimilation of Detachment 5, 6922 Security Wing into the 6994th Security Squadron (expected date 1 April 1970)<sup>49</sup>. The former action would place this unit under PACSCTYRGN. The latter action would assimilate the TRANSEC function of the deactivated unit into the 6994th Security Squadron Operations Branch.

### INTERNAL ORGANIZATIONAL CHANGES

[REDACTED] On 9 October 1969 USAFSS published Annex C to TECHINS 9810. This Annex standardized the overall operational and organizational structure of ARDF Operations. Accordingly, the local operations section was re-organized to conform with organizational structure contained in the USAFSS directive. Functional areas of local operations now included: Standardization Evaluation Flight Examiners (SEFE), Mission Management, Flight Operations and Processing, Analysis and Reporting.

### SUPPORT ACTIVITIES

(U) Though personnel quarters and recreational facilities on Tan Son Nhut still left a lot to be desired, it was generally recognized that facilities at Tan Son Nhut were still considerably better than those of other USAF installations in Vietnam.

[REDACTED]



[REDACTED]

(U) To relieve overcrowded conditions in the barracks, billeting space for 20 enlisted personnel was secured at the Merlin Hotel in the Saigon/Cholon sector of town. These quarters were occupied on 30 August 1969 by Squadron flying personnel in enlisted grades TSgt and above. Quarters consisted of two man air-conditioned rooms with shower and toilet facilities in each unit. Messing facilities were available in the Montana Bachelor Enlisted Quarters (BEQ) within short walking distance from the Merlin. Twenty-four hour a day bus service from the Merlin to Tan Son Nhut AB was provided by the base motor pool.

(U) Arrangements were made with Base Civil Engineers to air-condition two of the three barracks housing personnel of this unit. The target date set for this project was February 1970.

(U) During November 1969 a Squadron recreation facility, the Cougar's Cavern, was opened in the barracks area. The facility, built by members of the Squadron as a self-help project, included a television set, card tables, lounge chairs, an outdoor patio with picnic tables and a barbeque grill. The recreation room is open 24 hours a day. The NCO Club operates a beer and soft drink concession in the Cougar's Cavern from 1400 through 2300 hours daily.

Survival Training:

[REDACTED] At the close of this historical period nearly all flying personnel assigned to this unit had completed PACAF Jungle Survival School. However, in July 1969 additional survival training requirements were levied as PACAF stated that PACAF Life Support School (PLSS) was a mandatory requirement for all aircrews in SEA. <sup>50</sup> Immediate action was taken to comply with the PACAF requirement. This unit requested quotas to accommodate training for 358 officers

[REDACTED]

51

and enlisted personnel within 90 days. However, 5AF replied that no increase in class quotas was possible before calendar year 1970.<sup>52</sup> Meanwhile USAFSS acted to ensure that aircrews enroute to this unit in January 1970 and thereafter would receive life support training prior to departure from continental United States (CONUS).<sup>53</sup> Members of this unit were scheduled to attend PLSS at Kadena, Okinawa beginning in February 1970.

SUMMARY:

The mission of the 6994th Security Squadron was to conduct ARDF and COMINT collection against enemy targets in III and IV CTZs in support of MACV. It was subordinate to the 6922nd Security Wing, however operational control was nominally exercised by Headquarters 7AF. Because of the inter-service involvement in the ARDF program in SEA general operational control was exercised by MACV.

During September 1969 Detachment 1, 6994th Security Squadron was relocated from Nha Trang AB to Phu Cat AB. The working relationships between the 6994th Security Squadron and the 460th TRW was formalized by drafting of a Joint Operating Agreement which made provision for future Joint Operating Agreements to cover areas of mutual interest. Protracted discussions continued throughout the period concerning the location of SEA ARDF assets. The impending closure of Pleiku AB in 1970 makes a re-distribution of these assets inevitable, but what the resulting distribution will be is still not certain. Though all agencies concerned would like to see an increase of ARDF assets in Thailand to provide additional coverage of the "Barrel Roll" and "Steel Tiger" areas of Laos, three major problems stand in the way of any build-up. These problems are:

1. The desire of non-Air Force agencies to have ARDF collection resources co-located with the CMA.

[REDACTED]

2. The reluctance of the [REDACTED] to provide permanent increases in the cryptologic ceiling.

3. The limited maintenance capability for servicing mission aircraft based at NKP.

[REDACTED] MACVs attempt to re-organize the ACC as a JSOC met with opposition from USAFSS, ASA and 7AF. Discussions continued with the objective to work out a solution which would be satisfactory to all concerned. It was believed that the outcome would be an ACC structure which is relatively unchanged.

[REDACTED] PACSCTYRGN delayed action requested by this unit to close the ARDF calibration facility at Cam Ranh Bay pending USAFSS rewrite of post mission test procedures and the results of a staff study on determining requirements for calibration facilities.

[REDACTED] USAFSS planned to phase out overseas operational wing headquarters. This unit was expected to become subordinate to PACSCTYRGN. As a result of the impending de-activation of the 6922nd Security Wing, this unit will assimilate Detachment 5, 6922nd Security Wing's TRANSEC function.

[REDACTED] The only internal organizational change which took place during this historical period was the reorganization of Squadron local operations in accordance with TECHINS 9810 Annex C.

(U) Congestion in Squadron barracks facilities was relieved by assignment of 20 billeting spaces for aircrew members at the Merlin Hotel. Arrangements were made with Civil Engineers to air-condition two of the Squadron barracks.

[REDACTED] Almost all personnel in this squadron had completed PJSS training. A new requirement for attendance at PLSS was levied, but because of 5AF's inability to provide quotas during this historical period, members of this organization were not scheduled to attend until calendar year 1970.

[REDACTED] [REDACTED]

[REDACTED]

## Chapter II

### SIGINT TASKING AND COLLECTION

#### SIGINT TASKING

##### Basic Missions

[REDACTED] The 6994th Security Squadron Local Operations was tasked with flying ARDF missions in SEA Areas 01, 02, 03 and 04.<sup>1</sup> (See figure 1). The objective of these missions was to fix the location of Viet Cong (VC) and North Vietnamese Army (NVA) forces in South Vietnam, and to collect target communications data in order to derive exploitable intelligence therefrom.

[REDACTED] Basically there were three types of mission tasked:

1. Combat Cougar - A mission whose primary objective was to fix targets on intercept assignment. Aircraft utilized on this mission were configured with an "X" and "Y" console. The "X" console was the ARDF position utilizing ALR-34 or ALR-35 equipment. Its frequency range was 2 MHz through 16 MHz. The "Y" console was used to provide support intercept copy for targets being fixed on the "X" console and also to collect COMINT for continuity and development. The frequency range of the "Y" console was .5 MHz through 30 MHz. (See Table 1).

2. Combat Cougar Zulu Primary Collection - A mission whose primary objective was to collect exploitable traffic on intercept assignment and to fix these targets as required. In addition to the "X" and "Y" consoles, Combat Cougar Zulu aircraft were configured with "Z1" and "Z2" consoles. The "Z1" position was capable of HF/VHF intercept collection. Frequency range on this console was .5 MHz through 30 MHz and AM/FM 10 MHz through 260 MHz. The "Z2" console had a frequency range of .5 MHz through 30 MHz. (See Table 2)

3. Combat Cougar Zulu Primary ARDF - This type of mission differed

BURMA



SEA AND LAND AREAS  
EFFECTIVE 27  
SEPTEMBER 1969

FIGURE 1



CHINA

19

BURMA

HANOI

BARREL ROLL AREA

SIENTHONG

MISSION AREA

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THAILAND

CAMBODIA

PHNOM PENH

SAIGON

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DA NANG

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PHU CAT

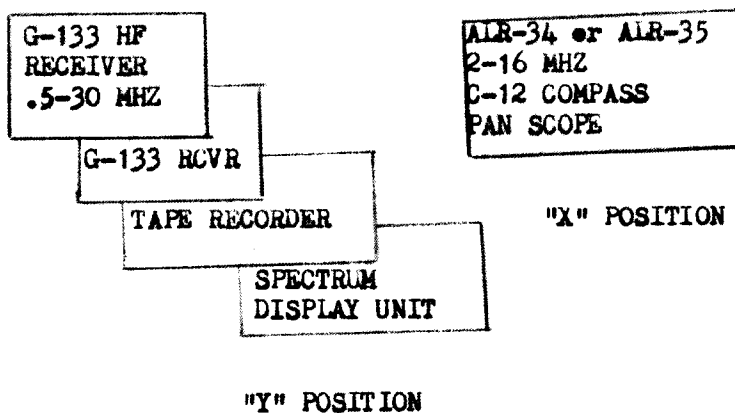
PHU CAT

SEL ANDP AREA  
PRIC 10 27  
SEPTEMBER 1961

FIGURE 2

[REDACTED]

BASIC COMBAT COUGAR CONFIGURATION



Capability: "X" Position= ARDF, "Y" Position= Target Acquisition.

Flight Time: 7 Hours

Cruise Speed: 120 Knots

Crew: Pilot, Copilot, Navigator, Flight Mechanic and 2 Operators.

Communications Radios: 1 VHF Radio, 1 FM Radio, 1 HF Radio and 1 UHF Radio.

Navigation Equipment: TACAN, Weather Radar, and Doppler.

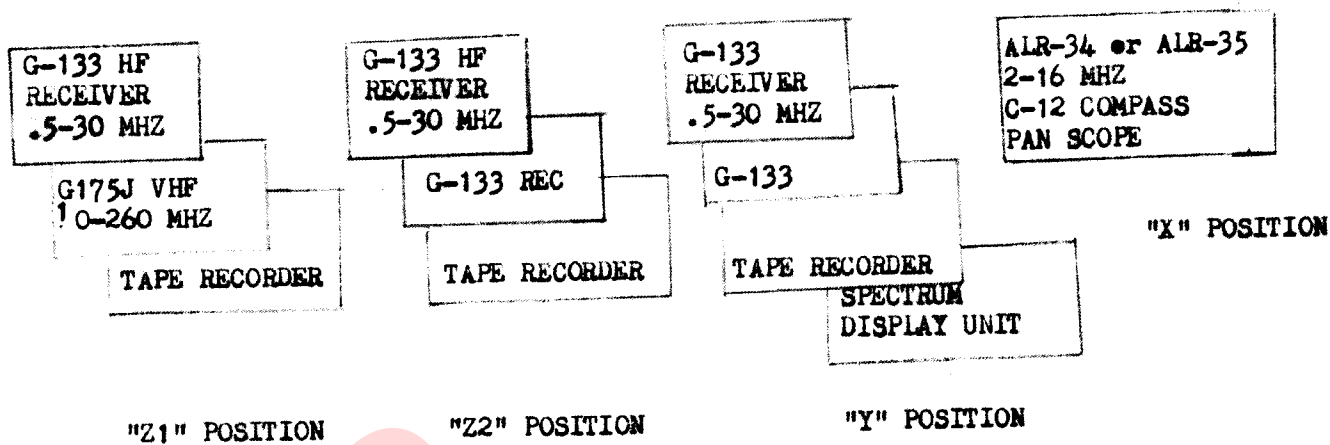
Navigator's Position Includes: Plotting table and Franklin Printer that provides fix data readout.

The ALR-35 system differs from the ALR-34 in that it is coupled with a data processor. The processor converts the target magnetic bearings to true bearings, calculates target location relative to the selected doppler set point and determines the circular error of the fix. In the ALR-34 system these functions are performed manually by the navigator.

TABLE 1

[REDACTED]

## COMBAT COUGAR ZULU CONFIGURATION



Capability: "X" Position= ARDF, "Y" Position= Target Acquisition/intercept,  
"Z1" Position= Intercept, "Z2" Position= Intercept.

Flight Time: 5 Hours

Cruise Speed: 120 Knots

Crew: Pilot, Copilot, Navigator, Flight Mechanic, 4 Operators and 1 Airborne Analyst.

Communications Radios: 1 VHF Radio, 1 FM Radio, 1 HF Radio and 1 UHF Radio.

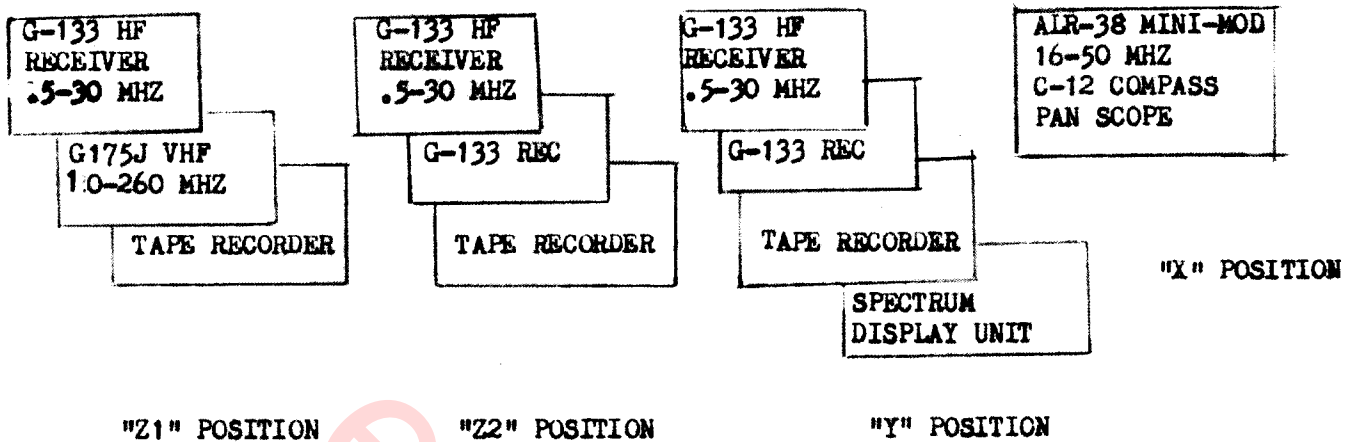
Navigation Equipment: TACAN, Weather Radar and Doppler.

The ALR-35 system differs from the ALR-34 in that it is coupled with a data processor. The processor converts the target magnetic bearings to true bearings, calculates target location relative to the selected doppler set point and determines the circular error of the fix. In the ALR-34 system these functions are performed manually by the navigator.

TABLE 2



## COMBAT COUGAR ZULU MINI-MOD



Capability: "X" Position= ARDF, "Y" Position= Target Acquisition/Intercept,  
"Z1" Position= Intercept, "Z2" Position= Intercept.

Flight Time: 7 Hours

Cruise Speed: 140 Knots

Crew: Pilot, Copilot, Navigator, Flight Mechanic, 4 Operators and 1 Airborne Analyst.

Communications Radios: 1 VHF Radio, 1 FM Radio, 1 HF Radio and 1 UHF Radio.

Navigation Equipment: TACAN, Weather Radar and Doppler.

The ALR-38 system is basically the ALR-35 with the directional finding capability expanded to include the VHF portion of the frequency spectrum.

TABLE 3

[REDACTED]

from other Combat Cougar Zulu Missions only in the priority of its objectives. In this type of mission the primary tasking was fixing targets and the secondary tasking was collection.

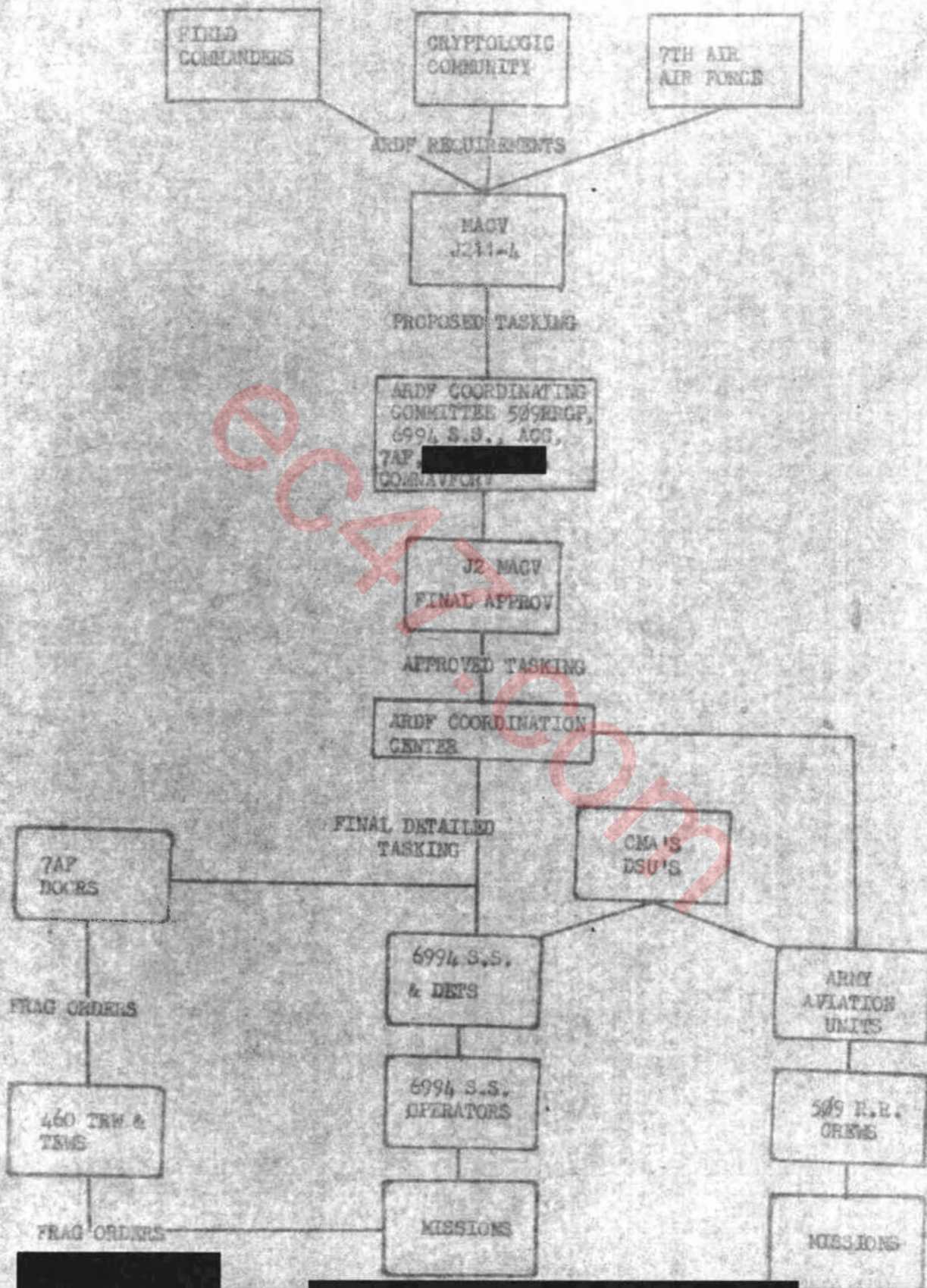
#### Tasking Cycle

[REDACTED] The tasking cycle by which the 6994th Security Squadron was assigned missions was unique for a Security Service unit in that it was designed for tactical support in a fluid combat situation. Targets were highly mobile, and targets fixed one day frequently moved the next or could have been eliminated through action of friendly forces.

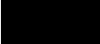
[REDACTED] The tasking cycle began with Army Field Commanders, the cryptologic community and 7AF submission of their ARDF requirements to MACV J211-4 (See Chart 3). On Wednesday of each week MACV J211-4 submitted the proposed tasking to the ARDF Coordinating Committee. This committee consisted of representatives of the 509th RRGF, 6994th Security Squadron, ACC, J2 MACV, 7AF, [REDACTED] and Commander Naval Forces Vietnam (COMNAVFORV). The ACC then passed its recommendations to J2 MACV for final approval. J2 MACV then forwarded the approved tasking to ACC. During this time 460th TRW had made available to ACC an aircraft capability forecast for the tasking week. ACC then assigned missions to fulfill the tasking. The mission data was then forwarded to the 6994th Security Squadron which scheduled back end crews to meet assigned missions. Meanwhile, ACC also issued mission data (sanitized version) to 7AF (DOCRS) which issued frag orders for each mission.


[REDACTED] Tech support for each mission was provided by the appropriate CMA. Once the missions were airborne, Direct Support Units (DSU) received fixes and exploitable messages from mission aircraft and passed tip-offs ground to air.

[REDACTED] [REDACTED]

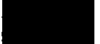



  
Target Entities

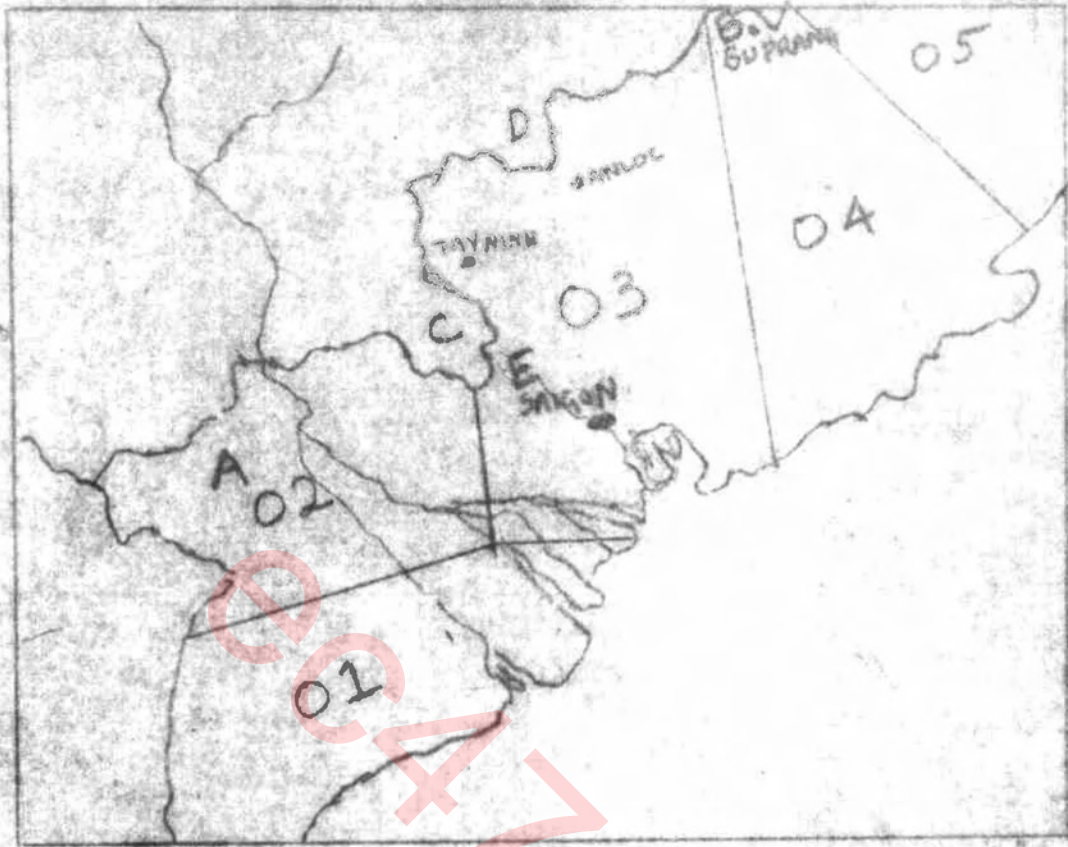
 During the months of July through October 1969 enemy activity in III Corps (SEA Areas 3 and 4 see Figure 1) and IV Corps (SEA Areas 1 and 2 see Figure 1) was low. The lull was not unexpected since lulls have consistently marked the monsoon rains in these areas.

 In August 1969 a gradual buildup of forces was noted in the Seven Mountains (See A Figure 3) area of SEA Area 2. The buildup continued throughout the historical period. This unit flew an average of between two to three Combat Cougar Zulu Primary Collection missions per day in this area underscoring the consumers' interest in the buildup. At the close of this historical period the enemy's intentions were not clear. Two strong possibilities existed. They were:

1. The enemy wanted to use the Seven Mountains as a base of operations against ARVN forces gradually taking over defense of the Mekong Delta from the U.S. Army.
2. The enemy was using the Seven Mountains as a secure redoubt from which he could rest after conducting operations in other areas.

 Along the Cambodian Border in Areas 3 and 4 the enemy staged a rapid buildup during November as a prelude to a series of attacks on Special Forces Camps and Fire Support Bases in December 1969. Three enemy units (66th NVA Regiment, 28th NVA Regiment and 40th NVA Artillery) moved from the Pleiku area southward through Cambodia. They participated in an attack in force in the Bu Prang and Duc Lap areas (See B Figure 3). Intensive fighting followed in which the enemy sustained heavy losses as a result of continued pounding by B-52 raids. What was left of these units withdrew into Cambodia. During this period enemy units have tended to cluster inside Cambodia in the Parrot's Beak and Fish Hook areas (See C and D Figure 3).





TARGET INTELLIGENCE

- A Seven Mountains
- B Ba Prang
- C Parrot's Beak
- D Fish Hook
- E Site of captured enemy COMINT unit  
December 1969

FIGURE 3

[REDACTED]

[REDACTED] One of the most significant contributions made to the war effort by this unit was the capture of an enemy COMINT collection unit which resulted from two ARDF fixes made on 19 December 1969. Not only did this action provide convincing proof of the ARDF program's value in tactical military operations, but it also revealed the enemy's effectiveness in exploiting U.S. military communications. MACV commented on the matter to all subordinate units:<sup>2</sup>

[REDACTED]

#### Projected Vietnamization of the SEA ARDF Program

[REDACTED] On 5 December 1969 this unit, in response to a verbal requirement made by 7AF Director of Intelligence, presented its concept for Vietnamization of the USAF ARDF Program.<sup>3</sup> Concepts were based on the assumptions that:

1. VNAF forces would have to expand their ARDF Program with the withdrawal of U.S. forces from Vietnam.
  2. The Department of Defense would authorize delivery of EC-47 aircraft and ARDF equipment to the VNAF.
  3. Approval for the VNAF to participate in the ARDF Program would be given by the Senior U.S. Cryptologic Agency.
- [REDACTED]

4. VNAF requirements would be consistent with those of the USAF in relation to geographical considerations.

Recommendations presented included:

1. The VNAF be equipped with from 30 to 35 C-47 aircraft configured similar to the ALR-34 system.
2. Suggested location of VNAF ARDF units at Da Nang, Nha Trang and Tan Son Nhut.
3. Stationing of a USAF advisory technician at each location which possesses full maintenance capability.
4. Allowance of one year for crew training and turn over of the program to the VNAF with specific phasing to be determined at a later date.

#### SIGINT COLLECTION FACILITIES

##### Aircraft Collection Resources

On the whole this unit's materiel resources remained relatively stable during this historical period. (See Table A) In July the entire Squadron collection capability (including subordinate detachments) consisted of 57 EC-47 aircraft. This figure was reduced to 55 as a result of two crashes. Aircraft 43-48959 based at Detachment 2 crashed and burned on take off on 30 September 1969 after making an OPS Stop at Hue/Phu Bai. Equipment lost to Squadron resources as a result of the crash included one each "X", "Y", "Z1" and "Z2" positions. Equipment was recovered from the crash site and shipped to the depot. Aircraft 43-49100 based at Detachment 1 crashed on 8 October 1969. One "X" and one "Y" position as well as all other mission equipment aboard was destroyed beyond recognition.

##### Loss of COMJAM Capability

As was reported in the last history approval was received to remove COMJAM equipment (QRC-346). Equipment was removed on 24 April 1969 on condition that it could be replaced within 48 hours. Consoles were left aboard the aircraft so that the aircraft could be utilized with a limited "Z" capability.

## 6994TH SECURITY SQUADRON

## COLLECTION RESOURCES

UNIT	Nr of Act Assigned	ALR-34	ALR-35	ALR-38	CC	CCZ
6994 Scty Sq	21	15	6	0	15	6
Det 1	18	18	0	0	16	2
Det 2	16	0	13	3	4	12
TOTALS	55	33	19	3	35	20

Detachment 3 has no permanently assigned aircraft. Generally 5 aircraft are based at NKP on a TDY basis. Usually, two aircraft are provided by the 6994th Scty Sq, Tan Son Nhut, and three by Detachment 1, Phu Cat. Three of these 5 aircraft are normally CCZ configuration.

The two CCZ configured aircraft assigned to Detachment 1 have been on TDY loan to the 6994th Security Squadron at Tan Son Nhut since November 1969.

TABLE 4



[REDACTED] On 11 September 1970 PACSCTYRGN stated that USAFSS advised that "...the 'Q' Jamming equipment could be removed from the five (5) EC-47s. These aircraft would then revert to a primary mission of ARDF only, with no Z collection capability.<sup>8</sup>" Justification for this action was the fact that it would add about 1½ hours per sortie.<sup>9</sup> Accordingly, the matter was coordinated with 7AF and MACV.<sup>10</sup> On 2 October 1969 approval was received from MACV. Because of the stipulation that this unit be capable of reinstalling COMJAM equipment within 48 hours, arrangements were made with 460th TRW to ensure that five aircraft wired for Q-equipment were retained at Tan Son Nhut where the equipment was offloaded and stored.<sup>11</sup> The aircraft concerned were: 43-16055, 43-16123, 42-10513, 43-15603 and 42-10984. They were off-loaded on 5 October 1970 with the result that they were configured for Combat Cougar Missions only.<sup>12</sup>

#### Increased Collection Capability

[REDACTED] Ten days after the removal of the Q equipment consoles NSAPACREP Vietnam [REDACTED] became very concerned about the resulting drop in airborne collection missions, particularly in view of the enemy buildup in the Seven Mountains area.<sup>13</sup> (The removal of Q-consoles which had been performing with a limited Z-capability reduced this unit's potential for Combat Cougar Zulu (CGZ) missions from eight aircraft to three). Though NSAPACREP Vietnam [REDACTED] was made aware of our intention to remove the equipment and its affect on the collection effort, they were unable to state their position since MACV J2 failed to coordinate the matter with them.<sup>14</sup> MACV expressed the opinion that they had misunderstood the affect on the collection effort thinking that the request concerned only the jammer and not the entire position.<sup>15</sup> On 14 October it was noted with much concern that only one collection mission had been flown in three days. It was obvious that action was necessary to increase this unit's collection capability.

[REDACTED] [REDACTED]

[REDACTED] To resolve the problem discussion took place which included MACV, 7AF (DOCR), 460 TRW, 6994 Scty Sq and Detachment 1, 6994 Scty Sq concerning the relocation of two CCZ configured EC-47 aircraft from Phu Cat to Tan Son Nhut. These discussions resulted in MACV requesting that 7AF authorize realignment of ARDF resources by relocating two CCZ configured aircraft from Phu Cat to Tan Son Nhut, and one CC configured aircraft from Tan Son Nhut to Phu Cat. It was expected that this relocation would definitely improve this unit's collection capability without appreciable loss in Detachment 1's collection effort, since collection missions flown from Detachment 1 had been relatively unproductive. These missions had been fraggd for effective area coverage in search of low level exploitable communications. The majority of copy produced however, was high level communications with unreadable traffic. Detachment 1, 6994th Scty Sq therefore concluded that CCZ missions were not effective in their tasked areas. On 29 October 1969 7AF directed the relocation of 1 CCZ configured aircraft plus one additional and complete set of Zulu console equipment from Phu Cat to Tan Son Nhut thereby satisfying the MACV request. Detachment 1 dispatched the spare Z console with the TDY aircraft to Tan Son Nhut on 30 October 1969. Equipment was installed on aircraft 42-24300 on 4 November 1969. On 24 November 1969 a net gain of one additional CCZ configured aircraft resulted from a 460th TRW directed redeployment.

#### Reduced Frag Time for CCZ Missions

[REDACTED] Prior to 20 September 1969 all Combat Cougar and Combat Cougar Zulu missions were fraggd for seven hour missions by 7AF DOCR. The Combat Cougar missions fulfilled their fraggd time with little difficulty. The Combat Cougar Zulu missions, on the other hand, frequently returned to base because of low fuel reserves prior to completing the seven hour fraggd time.

The disparity between the two types of mission was the result of the added load require to accomplish CCZ missions. (CCZ missions required two "Z" consoles and three additional back end crew members to man the "Z" consoles and the analyst position, thus adding considerable load to the aircraft.) (See Table 2)

On 6 September 1969 PACSCTYRGN directed this unit to seek a reduction in fraggd time for CCZ missions based on an authoritative statement concerning the impact of take-off weight restrictions on EC-47 cruise duration.<sup>22</sup> The matter was once again broached with 7AF and MACV. As a result of these discussions, all CCZ missions were fraggd for 5 hour missions beginning 20 September 1969.<sup>23</sup>

#### Loss of Local Air/Ground Communications Capability

In response to PACSCTYRGN correspondence concerning our operational requirement for unit A/G/A KY-8,<sup>24</sup> this unit attempted to justify continued retention of the equipment for the following reasons:

1. Projected expansion of the analytic effort could necessitate use of secure A/G/A communications facilities in local operations. (E.g. "We plan to pass all exploitable msgs/fixes to the local analysis section for immediate exploitation and relay to the CMA."<sup>25</sup>)

2. Local AFCS expended less than three maintenance hours per month servicing the equipment.<sup>26</sup>

On 21 November 1969 PACSCTYRGN directed this unit and Detachments 1 and 2 to turn in their A/G/A communications facilities.<sup>27</sup> In a last ditch effort to retain the equipment this unit in an impassioned plea asked PACSCTYRGN to reconsider its action based on the fact that:

"Feel the 6994th complex, after nearly four years of effort, is well on its way to obtaining a sanctioned analysis and reporting effort.... If/when Det 2 relocates to Da Nang they will be in the

[REDACTED]

necessary geographical location to accept A/G traffic from the larger majority of their area of responsibility; the 6994th is already in that position and currently has the analytical capability of TACREP reporting. However, without A/G/A coms, we would never hope to justify a fully sanctioned analysis and reporting effort. On the basis of the potential of acquiring a timely reporting function it would appear that USAFSS should be exerting effort to obtain better A/G/A comm facs rather than directing the removal of those facs presently processed. (sic)<sup>28</sup>

This plea however, failed to reverse the decision, and this unit lost its A/G/A communications capability.

Manpower Resources

[REDACTED] On 2 October 1969 PACSCTYRGN proposed the following UDL author-  
29  
izations for operational AFSC:

AFSC	6994 SCTY SQ TAN SON NHUT	DET 1 PHU CAT	DET 2 PLEIKU	DET 3 NAKHON PHANOM	TOTALS
292X1	74	66	84	21	245
203X1	22	14	24	5	65
202X0	25	13	15	12	65
TOTALS	121	93	123	38	375

After careful study of these figures this unit developed a counter proposal  
30  
based on the concept of providing 40 missions per day using four men per  
31  
CCZ mission.



AFSC	6994 SCTY SQ TAN SON NHUT	DET 1 PHU CAT	DET 2 PLEIKU	DET 3 NAKHON PHANOM	TOTALS
292XI	91	64	84	21	260
203XI	18	9	17	5	49
202XO	32	9	13	12	66
TOTALS	141	82	114	38	375

These figures included the retention of twelve R202XO analysts at ACC, (four 292XIs and six 202XOs) for Squadron Mission Management. It was emphasized in the counter proposal that proposed manpower figures were minimum requirements based on 100% manning. It was felt that less than 100% manning would result in mission degradation. Any increase in number of missions per day would require augmentation of manning. Using the PACSCTYRGN proposal as a basis for comparison the following differences were noted in what we needed in relation to their proposal:

AFSC	6994 SCTY SQ TAN SON NHUT	DET 1 PHU CAT	DET 2 PLEIKU	DET 3 NAKHON PHANOM	NET DIFFERENCE
292XI	+17	-2	0	0	+15
203XI	-4	-5	-7	0	-16
202XO	+7	-4	-2	0	+1
TOTALS	+20	-11	-9	0	0

Planning and projection of figures for the new UDL became complicated by the uncertainty concerning overall location of ARDF resources in SEA. Numerous proposals had been put forward by all concerned or involved with the program, so that the final outcome of the new UDL remained inextricably bound to a settlement of the disposition of ARDF assets in the coming calendar

year. This unit prepared three sets of UDL figures based on three different alternatives for ARDF aircraft deployment. A summary of these figures is depicted below. (For complete UDL requirement figures see Support Documents 47 and 48 of this History.)

ALTERNATIVE 1

6994th Security Sq., Tan Son Nhut (TSN) 22 aircraft (10 CC - 12 CCZ)

Det 1, 6994th Security Sq., Phu Cat (PHU) 13 aircraft (13 CC)

Det 2, 6994th Security Sq., Da Nang (DNG) 15 aircraft (4 CC - 11 CCZ)

Det 3, 6994th Security Sq., Nakhon Phanom (NKP) 5 aircraft (5 CCZ)

Based on this aircraft alignment manpower requirements would be: <sup>33</sup>

<u>AFSC</u>	<u>TSN</u>	<u>PHU</u>	<u>DNG</u>	<u>NKP</u>	<u>TOTALS</u>
R202XO	10	12	0	0	22
A202XO	26	0	14	20	60
A203XIMD	22	0	20	9	51
A203XIMU	0	0	0	2	2
A292XI	106	52	79	34	271
R291XO	12	5	0	5	22
<u>TOTALS</u>	<u>176</u>	<u>69</u>	<u>113</u>	<u>70</u>	<u>428</u>

ALTERNATIVE 2

6994th Security Sq., Tan Son Nhut (TSN) 22 aircraft (10 CC - 22 CCZ)

Det 1, 6994th Security Sq., Phu Cat (PHU) 22 aircraft (17 CC - 5 CCZ)

Det 2, 6994th Security Sq., Da Nang (DNG) 6 aircraft (6 CCZ)

Det 3, 6994th Security Sq., Nakhon Phanom (NKP) 5 aircraft (5 CCZ)

34

Based on this aircraft alignment manpower requirements would be:

<u>AFSC</u>	<u>TSN</u>	<u>PHU</u>	<u>DNG</u>	<u>NKP</u>	<u>TOTALS</u>
R202X0	10	0	0	0	10
A202X0	26	20	6	20	72
A203XLMD	22	9	11	9	51
A203XLMU	0	0	0	2	2
A292X1	106	98	35	34	273
R291X0	12	5	0	5	22
TOTALS	176	132	52	70	430

ALTERNATIVE 3

6994th Security Sq., Tan Son Nhut (TSN) 10 aircraft (10 CC)

Det 1, 6994th Security Sq., Phu Cat (PHU) 28 aircraft (17 CC - 11 CCZ)


Det 2, 6994th Security Sq., Da Nang (DNG) 12 aircraft (12 CCZ)


Det 3, 6994th Security Sq., Nakhon Phanom (NKP) 5 aircraft (5 CCZ)


Based on this aircraft alignment manpower requirements would be:


<u>AFSC</u>	<u>TSN</u>	<u>PHU</u>	<u>DNG</u>	<u>NKP</u>	<u>TOTALS</u>
R202X0	10	0	0	0	10
A202X0	26	20	6	20	72
A203XLMD	22	9	11	9	51
A203XLMU	0	0	0	2	2
A292X1	106	98	35	34	273
R291X0	12	5	0	5	22
TOTALS	176	132	52	70	430


  
Mini-Mod Test

 The Mini-Mod system (ARDF) was designed to fix transmitters within a frequency range of 2 MHz to 50 MHz (well above the 16 MHz limit of the ALR-35, but below the expected 180 MHz limit of the full ALR-38 system). The ALR-38 Mini-Mod system was deployed to SEA in January 1969 as an interim bridge between the ALR-35 and ALR-38. The equipment was installed aboard three EC-47 aircraft based at Pleiku. (See Table 3)

 From the beginning the Mini-Mod failed to live up to expectations particularly in the HF band, 2-16 MHz. These HF problems were overcome through a series of modifications which took place during March through June 1969. After modification however it was noted that VHF results were erratic. Though it was recognized that weather, friendly artillery, aircrew experience and operating restrictions in fringed areas were limiting factors, none-the-less the basic capabilities of the system were being questioned. Headquarters USAFSS expressed a desire to conduct operational tests, and in coordination with 7AF and MACV the test was scheduled to begin on 13 September 1969.

 The test extended through 19 September 1969. It was conducted in two phases. Phase I, Sensitivity, was designed to determine the relative sensitivity of the Z1 position as compared with the Mini-Mod DF position in the VHF range on voice. Phase II, Accuracy and Performance, consisted of a series of tests designed to determine the accuracy of the Mini-Mod with voice in the VHF range. Accuracy was determined by computing the distance in meters between the fix location given by the system and the known target location.

 The Mini-Mod test gave conclusive evidence that the sensitivity of the DF position was extremely high and compared favorably with the ALR-34





[REDACTED]

and ALR-35 systems in the HF range. The demonstrated sensitivity of the Mini-Mod System indicated that performance problems experienced in mission areas were the result of unfavorable terrain, weather and limitations in the DF patterns that could be flown.<sup>35</sup>

[REDACTED] Phase II of the Mini-Mod test revealed that the Mini-Mod's accuracy was acceptable and generally compared to the ALR-34 and ALR-35 systems. The average miss distance of all targets worked was 1600 meters. Navigator judgement in detecting parallel bearings, improper tracking and compensating for doppler reduced the average miss distance to 830 meters, with a low of 200 meters and a high of 1800 meters. This was considered quite good by those conducting the test because of the "...number of variables at work."<sup>36</sup>

[REDACTED] Recommendations made as a result of the Mini-Mod Test were:<sup>37</sup>

1. The doppler and compass should be thoroughly tested during the operational test and evaluation of the ALR-38 system.
2. The ALR-38 should be specifically checked for ease of holding lock on and degree of difficulty in the threshold and fine tuning process.
3. Consideration should be given to changing the attenuator of the ALR-34 and ALR-35 to the values used with the Mini-Mod in order to provide the operator with more flexibility in working his targets.

#### Low Frequency Collection

[REDACTED] At the MACV ARDF Weekly Meeting of 19 November 1969 it was revealed that NVA/VC elements had been noted using communications in the 1.2 - 2.0 MHz range. The Army had conducted experiments with a trailing wire and found that it increased their capability to copy the signals. However, the Army's ability

[REDACTED] [REDACTED]

[REDACTED]

to fix signals below 3 MHz was severely limited. Combat Cougar missions were able to intercept signals as low as 200 KHZ, but in order to do so the aircraft had to be situated almost on top of the target to hear it. Since it was anticipated that this unit might be tasked to perform low frequency collection, a request was made to PACSCTYRGN to explore the possibility of installing additional antennas for the one to two MHz range.

[REDACTED] PACSCTYRGN stated:

"...Do not believe that requirement for LF collection has been adequately stated to justify modification of Cougar antenna system. It would seem that LF propagation characteristics would permit targeting by ground sites. In addition, installation of long-wire antenna EC-47 could change DF calibration."<sup>39</sup>

At the close of this historical period this unit requested PACSCTYRGN to reconsider its stand based on the fact that:

1. "...NVA/VC units actively engaged in combat against Allied Forces in Vietnam are known to be using radio communications operating in the 1.2 - 2.0 frequency range."

2. Tasking assigned to this unit has included the 1st NVA Regiment had the 7th NVA Regiment both known to have used 1.2 - 2.0 MHz portion of the frequency spectrum.

#### SIGINT COLLECTION POLICIES

##### New SEA Areas

[REDACTED] On 19 September 1970 MACV published an electrical change to MACV Directive 381-23 incorporating new SEA ARDF areas. SEA ARDF areas have been used in the past to provide a common geographical basis for stating requests for ARDF and airborne collection support. This squadron's tasked geographical areas remained the same but were re-numbered as follows: Old areas 11, 10, 9

[REDACTED] [REDACTED]

[REDACTED]

and 8 became new areas 1, 2, 3 and 4 respectively. (See Figures 1 and 2) The new areas became effective on 27 September 1969.<sup>41</sup>

#### Evaluation of Mission 999

[REDACTED] On 20 September 1969 this unit received a request from MACV to participate in an evaluation of missions flown by Detachment 2, 6994th Security Squadron off-shore north of the DMZ (Mission 999) (See Figure 1 and 2).<sup>42</sup> In our reply through AGC this unit stated the belief that, "From the stand-point of over-all productivity and activity level there does not appear to be sufficient reason to continue this mission."<sup>43</sup> Reasons for this belief were:

1. Radar monitoring of the mission had been severely downgraded because of storm damage to Dang Ha (Waterboy) radar facility. (Loss of this facility alone was considered sufficient justification for discontinuing the mission).

2. The need for rapid fixing of targets north of the DMZ was questionable since cessation of the bombing precluded military action against targets fixed.

3. Fuel and distance considerations when compared to productivity of the missions indicated that the aircraft could be more effectively used in other areas.

Though no official policy statements were made by MACV, no further tasking in the mission 999 area was received by Detachment 2, 6994th Security Squadron.

#### Operational Stops (OPS STOPS) At Hue/Phu Bai

[REDACTED] In order to avoid delay in the delivery of perishable exploitable traffic to the Collection Management Authority (CMA), missions flown by Detachment 2, 6994 Security Squadron were tasked to make operational stops (OPS STOPS) at Hue/Phu Bai. These OPS STOPS were required for all CCZ collection missions flown in CMA Phu Bai (USM-808) area of responsibility. On 10 July 1969 this unit received a proposal from Detachment 2, 6994 Security Squadron recommending

[REDACTED] [REDACTED]

[REDACTED]

that OPS STOPS at Hue/Phu Bai be discontinued and replaced by OPS STOPS at Da Nang. The following reasons were given to support the proposal:<sup>44</sup>

1. Improved courier service should result from the formation of the new Joint Courier Activity Da Nang (JCAD).
2. Lack of EC-47 maintenance facilities at Hue/Phu Bai. Aircraft grounded there for mechanical failure remained grounded until appropriate maintenance personnel and parts were flown in. Complete maintenance service was available at Da Nang.
3. Better runway and lighting conditions existed at Da Nang. No take-off could take place at Hue/Phu Bai after dark.
4. Weather minimums were more favorable at Da Nang.
5. Lack of adequate billeting for crews at Hue/Phu Bai.

MACV was approached on the matter, but they stated that JCAD was an experimental project. Accordingly, Detachment 2 was advised that their proposal would be reconsidered should JCAD be made a permanent operation.<sup>45</sup>

[REDACTED] On 8 October 1969 7AF acquiesced in the 460 TRW 3 October 1969 decision to discontinue OPS STOPS at Hue/Phu Bai pending investigation into flight safety hazards which existed there. 7AF directed that OPS STOPS be made at Da Nang instead of Phu Bai.<sup>46</sup>

[REDACTED] During the Weekly MACV ARDF Tasking Meeting on 15 October 1969 the 6994th Security Squadron representative proposed that the feasibility of eliminating all OPS STOPS be evaluated. Both the 460 TRW and this unit felt that elimination of OPS STOPS would reduce wear and tear on aircraft and increase time over target. MACV agreed with the proposal and requested [REDACTED] [REDACTED] in conjunction with 509th RRG, 7AF DOGR and the 6994th Scty Sq evaluate the necessity for OPS STOPS by Combat Cougar Zulu aircraft. MACV would consider any

[REDACTED] [REDACTED]

[REDACTED]

proposal the group would make providing the following conditions were met:

47

[REDACTED]

As a result of the ensuing discussions a six weeks transcribing test was proposed to MACV. If this test was successful, an adequate solution to the problem of OPS STCPS would have been found.

[REDACTED] The Transcribe Test was to be conducted by Detachment 2. The following procedures for electrical forwarding were agreed upon with MACV:

48

1. All material not previously passed air-to-ground would be forwarded as soon as possible upon recovery.
2. All tapes were to be transcribed immediately upon recovery, and all possible exploitable traffic forwarded electrically.
3. South East Asian Technical Summary (SEATS) and Airborne Recovery Reports (ARR) were to be prepared and forwarded on as they were before the test.
4. After full transcription, tapes and one copy of transcript were to be forwarded to the 330th RRCO VIA their courier service.
5. NRV [REDACTED] in conjunction with all concerned was to evaluate results of the test.

[REDACTED] The transcribe test was officially started on 22 November 1969. Midway through the test (13 December 1969) the outlook for its success was gloomy. An operations representative was sent to Detachment 2 and USM-808 in an effort to determine ways of improving prospects for success. His findings were:

49

1. Detachment 2 linguists lacked sufficient experience to provide full and accurate transcriptions.
- [REDACTED]

[REDACTED]

2. USM-808 was being overly critical in their feedback and evaluation since they were under the impression that the Air Force would move a contingent of aircraft to Da Nang if the test was unsuccessful.

3. USM-808 personnel expressed serious doubt that Detachment 2 could ever fully produce a reliable and accurate transcript because of the various regional dialects and jargons encountered in VC and NVA plain text. He suggested use of native linguists (Dancer) colocated with the Detachment 2 transcribe effort. NRV [REDACTED] agreed with the Dancer approach, but because of the extreme shortage of these personnel it did not seem likely that their assistance could be secured. At the close of this historical period the transcribe test was still in progress.

#### Dual Frequency Concept

[REDACTED] Since the ARDF and its associated collection program were a primary source of timely tactical intelligence, target emphasis had always been on those entities which could not be intercepted at ground based sites. A significant percentage of this perishable intelligence was passed via radio from the aircraft to the SIGINT Direct Support Unit (DSU) which in turn passed the information to tactical commanders for their action or information. In addition to these air to ground communications (A/G), the DSU often passed information concerning targets who were in the process of transmitting which the DSU desired the aircraft to fix (G/A Tip Off). Both the A/G report of perishable material (fixes and exploitable traffic) to the DSU, and the DSU G/A Tip Off were considered a vital part of the ARDF program.

[REDACTED] The A/G/A communications system however was judged unsatisfactory both from the point of view of perishable data passed to the ground and action

[REDACTED]

[REDACTED]

[REDACTED]

taken on Tip Offs passed to the aircraft. The problem appeared to center on the limited number of frequencies available for use by the aircraft. There were about 135 aircraft committed to the ARDF program in SEA, and only five frequencies were available country-wide for A/G/A use. To illustrate the significance of the "bottleneck" caused by this paucity of frequencies, if five aircraft had fixes to pass to two DSUs located in the same general area only one aircraft at a time would be able to pass his traffic because only one frequency would be available. Frequently perishable intelligence could not be passed to DSUs. To alleviate the problem attempts were made to secure more frequencies, but without success.

[REDACTED] From 19 through 25 July 1969 a test of a dual frequency system was conducted by units flying ARDF missions in III and IV CTZs. While its results were being evaluated, USM 626 released results of the analysis of ARDF Tip-Off operations in August and concluded:

[REDACTED]

As a result of this study the need for implementation of the Dual Frequency System became urgent.

[REDACTED] On 28 September 1969 ACC directed the implementation of the Dual Frequency System effective 4 October 1969 for all units in III and IV CTZs.

The frequencies were to be used as follows:

43.1 MHZ for Tip-Off (G/A) in III & IV CTZs

40.8 MHZ for Reporting (A/G) in III CTZ

42.7 MHZ for Reporting (A/G) in IV CTZ

[REDACTED]

Since DSUs had the capability of monitoring both frequencies simultaneously while the aircraft didn't, the aircraft was to monitor the Tip-Off frequency and change to the reporting frequency only to pass A/G traffic.

At the close of this historical period it was obvious that the Dual Frequency System was not enough to overcome the great congestion on the reporting frequency. Contributing to the congestion was the fact that there were eight active DSUs and eleven inactive DSUs (who frequently transmitted requesting repeats of missed traffic) as well as all of the ARDF aircraft both Army and Air Force competing to transmit. Nor was the situation any better on the Tip-Off frequency. USM-626's November evaluation of Tip-Off operations revealed that 3.4 fixes per day were being achieved from all Tip-Offs passed in III and IV CTZs, and though this was over double the 1.5 fixes per day achieved in August, it was still far below expectations as the number of Tip-Offs per day averaged 50 as opposed to 57 per day in August. Not all of the problems involved in Tip-Off operations could be attributed to frequency congestion. Other factors were:

1. Targets which ceased transmitting before the aircraft could receive the Tip-Off and perform the DF functions.
2. Lack of aircraft in the area at the time a target was active.

TEMPO Authority for Detachment 3 Disapproved

On 2 September this unit requested TEMPO authority for Detachment 3 claiming that the low ID rate was the direct result of the lack of assigned notations on a number of target nets. Their CMA, USM-7, (CMA Udorn) was reluctant to issue TEMPO on USA-564 developed targets. Since August 1969 continuity on a number of targets had been pointed out, but no action had been taken by the CMA or NSA to issue TEMPO. Despite strong USAFSS support, On 5 December 1969 DIRNSA disapproved TEMPO authority for Detachment 3.



[REDACTED]

### Survival Gear Policies

[REDACTED] Prior to September 1969 6994th Security Squadron aircrew members were required to wear their survival vest and parachute harness during flight in order to comply with provisions of 460th TRW Regulation 501-1. This made it very uncomfortable for them to perform their duties. After efforts by this unit to bring about a change in policy, 460th TRW rescinded regulation 501-1 effective 22 September 1969. Aircraft commanders were given the authority to determine survival needs of crew members on their individual flights.

### SPECIAL COLLECTION PROJECTS

[REDACTED] The only special collection project tasked during this historical period was Project Above Board. This project was conducted under the auspices of NRV [REDACTED]. Its intent was to test the feasibility of obtaining HF/VHF intercept through the use of specially equipped balloons, and compare the success of the balloon intercept with that of ARDF aircraft. Since the first test was to take place in the DMZ area, support for this project was assigned to Detachment 2, 6994th Security Squadron.

[REDACTED] Detachment Two's role in this project was to tip off the ground test site when HF voice, and VHF morse/voice targets were active. The test was scheduled to begin 10 September 1969 for an estimated 15 day duration, but because of the late arrival of test equipment the project was postponed. The first balloon was launched from Dong Ha on 25 September 1969. Selected missions in SEA Area 9 provided support for this project.

### Summary

[REDACTED] The 6994th Security Squadron Local Operations was tasked with flying ARDF missions in SEA Area 01, 02, 03 and 04. The objective of these missions was to fix the location of Viet Cong and North Vietnamese Army forces

[REDACTED] [REDACTED]

[REDACTED]

in South Vietnam, and to collect target communications data in order to derive exploitable intelligence therefrom. The three basic missions were:

1. Combat Cougar - Objective: Fix targets on intercept assignment.
2. Combat Cougar Zulu Primary Collection - Objective: Collect exploitable traffic and fix targets on assignment.
3. Combat Cougar Zulu Primary Collection - Objective: Fix targets on assignment and collect exploitable traffic.

[REDACTED] Enemy activity in III and IV Corps Tactical Zones remained light through most of the historical period. There was continued buildup of enemy forces in the Mekong Delta in the Seven Mountains area and along the Cambodian Border opposite Special Forces Camps and Fire Support Bases. Intensive fighting around Bu Prang and Duc Lap resulted in heavy losses by the enemy. On 20 December 1969 an entire enemy COMINT unit was captured as a result of two ARDF fixes made by this unit on 19 December 1969. As a result, dramatic and detailed evidence was revealed concerning enemy exploitation of U.S. communications.

[REDACTED] On 5 December 1969 this unit presented its concept for Vietnamization of the USAF ARDF program. This concept projected a VNAF ARDF Force of from 30 to 35 C-47 aircraft configured with ALR-34 system and ARDF acquisition positions situated at Da Nang, Nha Trang and Tan Son Nhut, a USAF advisory technician at each location with full maintenance capability and a one year phase in period for crew training and transfer of resources.

[REDACTED] Except for the loss of two aircraft (Detachment 2 on 30 September and Detachment 1 on 8 October 1969) unit materiel resources remained relatively the same. The down loading of the COMJAM equipment, which took place during the last historical period leaving the positions operational with a limited Z capability, was approved by MACV. The consoles were removed from the aircraft

[REDACTED] [REDACTED]

[REDACTED]

on 5 October 1969. With the resulting loss of 5 Z capable positions, NSAPACREP Vietnam [REDACTED] became concerned about the drop in collection missions. Collection capability was increased with the permanent transfer of Z consoles from Detachment 1 and the placing of two aircraft TDY from Detachment 1. On 20 September 1969 Combat Cougar Zulu mission frag times were reduced to 5 hours from the standard 7 hours because the additional weight of men and equipment required was resulting in many reduced missions.

[REDACTED] On 21 November 1969 PACSGTYRGN directed the removal of this unit's air to ground/ground to air KY-8 equipment. This capability was also lost by Detachments 1 and 2.

[REDACTED] Numerous studies on manpower requirements for this Squadron took place, but the final outcome was dependent on the relocation of ARDF resources in SEA, which at the close of this historical period was still uncertain.

[REDACTED] A test of the ALR-38 Mini-Mod system was conducted between 13 and 19 September 1969. Test results gave conclusive evidence that the sensitivity of the DF position was extremely high and compared favorably with the ALR-34 and ALR-35 systems in the HF range. The test also attested to the Mini-Mod's accuracy in relation to the other two systems.

[REDACTED] New SEA ARDF Areas were established by MACV and became effective on 27 September 1969. This unit recommended discontinuing missions flown off shore north of the DMZ because of lack of radar monitoring of the mission, and lack of any real need for rapid fixing of targets north of the DMZ. Furthermore, considering the expenditure of time and fuel in relation to the low level of productivity of these missions, it appeared that the aircraft could be more effectively used in other areas.

[REDACTED] Safety hazards at Hue/Phu Bai caused the 460th TRW to discontinue

[REDACTED] [REDACTED]

[REDACTED]

OPS STOPS there and substitute stops at Da Nang in their place. In an attempt to eliminate OPS STOPS all together, a six weeks transcribe test took place at Detachment 2, 6994th Security Squadron. Though the test was still in progress at the close of this historical period, the outlook for success was not promising.

[REDACTED] In order to relieve congestion on A/G/A frequencies, ACC directed the implementation of the DUAL Frequency System on 4 October 1969 for all units in III and IV CTZs. Despite the use of the additional frequency, congestion continued to plague the A/G/A frequencies.

[REDACTED] TEMPO Authority for Detachment 3 was disapproved by NSA despite strong USAFSS support.

[REDACTED] On 22 September 1969, 460th TRW rescinded their regulation 501-1, thereby allowing individual aircraft commanders to decide on when and how much survival gear should be worn by crew members on board the aircraft.

[REDACTED] In September 1969 Detachment 2 participated in Projected Above Board, a test of the ability of obtaining HF/VHF intercept through use of specially equipped balloons.

[REDACTED]

[REDACTED]

Chapter III

PROCESSING AND REPORTING

GENERAL DEVELOPMENTS

[REDACTED] During this historical period the Squadron as a whole continued to build data base files on all tasked entities. Pre-mission briefings were standardized Squadron-wide. The South East Asian Technical Summary (SEATS), Exploitable Message Report (EMR) and Technical Weekly Recapitulation (TECHWECAP) were established here and at the detachments. The Daily Unit Resource Management Information Summary (DURMIS) format was standardized by USAFSSM 200-4, Volume XV, and Detachment 3 was authorized by DIRNSA to issue TACREPS.

SIGINT PROCESSING

Water Soluble Paper

[REDACTED] On 20 October 1969 this unit asked USAFSS to waive the water soluble paper requirements of USAFSSM 205-7, Chapter 11 paragraph 11-3b for certain materials carried aboard mission aircraft. Waivers were asked for the following SIGINT technical support documents and materials:

1. Cherry Sheets (Compilations of technical data produced by the CMA).
2. NSA Call Sign Listing
3. Raw Traffic
4. Hestia Pads (One time encryption pads used as an alternate method for passing data air/ground when KY-8 encryption system was inoperative).
5. Scratch Books
6. NSA B-64 Working Aid 05-69 UTF and superseding documents (Used by Detachment only.)

Waiver was requested because it was felt that reproduction of these materials would consume an excessive number of man-hours and result in prohibitive costs.

[REDACTED] On 28 October, 1969 USAFSS stated that water soluble paper need not be used for raw traffic, Hestia Pads and scratch pads, but that Cherry Sheets would have to be compiled on water soluble paper. USAFSS reserved judgement on the NSA Call Sign Listing and NSA B-64 Working Aid 05-69 UTF, and concluded:

"It is realized that the costs in preparing tech support materials on water soluble paper, both in manhours and money are high; however, the time available to effective destruction of classified materials during an air emergency is also precious and the more tech materials that are on water soluble paper, the easier the task of ensuring that these materials do not fall into enemy hands."

[REDACTED] A further complication was introduced on 30 November 1969 when the 460th TRW directed their subordinate units to remove the five gallon jerry can of water normally carried on mission aircraft, because of the "...weight problems encountered...." As a result of this action this unit found it necessary to request another waiver of USAFSSM 205-7 paragraph 11-3b, since the only remaining source of water being carried was approximately one-half gallon used for drinking and making coffee. On 19 December 1969 USAFSS denied the waiver.

#### FM Interference

[REDACTED] One of the major problems encountered on all mission aircraft was the interference resulting from FM radio transmissions. This interference rendered all receivers inoperative during the period that the FM transmitter was being utilized for A/G communications. Research was begun in July 1969 in an effort to eliminate this interference. It was discovered that the FM622A antenna coupler (P/N CU-943) was the major cause of FM interference.

[REDACTED] In efforts to reduce it, the CU-943 was shielded to eliminate strong induction field around the coupler. This resulted in reduced interference

[REDACTED] [REDACTED]

[REDACTED]

but caused voltage standing wave ratio (VSWR) to increase, thereby reducing transmission range. Re-orientation of the antenna coupler and its antenna element provided a decrease in FM interference but also reduced the transmission range. The antenna element (AS-1703/ARC) length was increased from 2½ feet to 7½ feet. This provided a good VSWR, but did nothing to reduce interference. The antenna coupler was detached and operated from different positions on the aircraft surface. Even at distances of 25 to 50 feet from the aircraft, the signal emitted from coupler/antenna overloaded G133F receivers and completely blanked the DF system.

[REDACTED] A VHF/FM blade antenna (P/N 437S-1, S/N 5821-054-6374) was obtained from an Army unit. This antenna was mounted in the original coupler mounting hole where it provided 50% less interference. When mounted just forward of the main cargo door it provided 85% to 90% less interference than the CU-943. When the VHF/FM blade antenna was mounted 32 inches forward of the tail wheel well, only negligible interference resulted. The aircraft was then flown for 14 missions with very satisfactory results. These results were used to support Military Suggestion Number 70-94042. At the close of this historical period, tests were being conducted by Warner Robbins Air Materiel Area (WRAMA) with a filter which is expected to achieve the desired results. This unit's suggestion was also under consideration. Hopefully, the problem of FM interference will be overcome during the next historical period.

#### Standardization of Pre-Mission Briefings

[REDACTED] In order to ensure that all aircrew members were provided with as much current information as possible, provisions were made on 28 November 1969 to standardize pre-mission briefings Squadron-wide. This standardized concept provided for two separate briefings; one given by the Analysis and

[REDACTED] [REDACTED]

[REDACTED]

Reporting section within the 6994th Security Squadron Operations area and the other given by the Senior Ranking Radio Operator (SRO) as part of the crew briefing within the TEWS Operation area. Minimum requirements for pre-mission briefings given to Squadron aircrews included:

1. Review of previous day's mission results.
2. Technical SIGINT information pertaining to the current mission.
3. DSU information.
4. General intelligence picture of tactical activity in the mission area.

These items were to be presented in sanitized form by the SRO in the front end crew briefing in TEWS Operations.

#### SIGINT REPORTING

##### TACREP Authority at Detachment 3

[REDACTED] Probably the most significant change in the SIGINT reporting posture of this Squadron was the establishment of TACREP reporting authority at Detachment 3. Shortly after Detachment 3 was formed in April 1969 it was realized that because of the uniqueness of the intercept, the amount of exploitable messages intercepted and the time-sensitiveness of some of these messages, that TACREP authority might be desirable. As early as June 1969 DIRNSA recognized the potential value of Detachment 3 to the Cryptologic Community thusly:

[REDACTED]

Encouraged by these comments immediate steps were taken to obtain required code systems and appropriate TECHINS (T-4046), as well as developing the

[REDACTED] [REDACTED]



[REDACTED]

analytic capability at Detachment 3 to be ready for TACREP authority.

[REDACTED] In August 1969 6922 Scty Wg requested DIRNSA to include USA-564 in the COMINT catalogue for purpose of TACREP reporting. Other items requested were a distribution symbol for USA-564 and a product reporting designator to be reflected in TECHINS 1055 and TECHINS 4016.<sup>10</sup> In reply to this request DIRNSA stated "Delegation of authority to issue TACREPS is the responsibility of DIRNSA only. USA-564 has not been authorized to issue TACREPS."<sup>11</sup> After reviewing the concept of operations, DIRNSA felt that they "...see no need for USA-564 to issue TACREPS at the present time."<sup>12</sup> The DIRNSA position was predicated on the premise that USM-7 and USM-808 were effectively accomplishing the task, but added that reconsideration would be given if the situation should change.<sup>13</sup>

[REDACTED] The apparent contradiction in DIRNSA attitudes (See Support Documents 71 and 73) was quickly identified by the 6922nd Scty Wg which requested that USAFSS approach DIRNSA in order to resolve the conflicting guidance on TACREPS. In the interim preparations for establishing TACREP authority continued. On 14 November 1969 DIRNSA authorized Detachment 3 to issue TACREPS on GDRS (General Directorate Rear Services)/Infiltration activity and enemy activity in Laos.<sup>14</sup> On 26 November 1969 Detachment 3 was ready to start issuing TACREPS.<sup>15</sup>

#### Implementation of Exploitable Message Report (EMR)

[REDACTED] On 19 September 1969 DIRNSA expressed a desire to implement Exploitable Message Report (EMR) preparation by aviation units (USA-561, USA-562, USA-563 and USA-564 (this unit and its detachments)).<sup>16</sup> DIRNSA expected their proposal would increase the CMA potential for more timely processing and reporting, and through simultaneous transmission of the EMR to DIRNSA, elimination of man hours spent at CMA in EMR preparation. This unit and its

[REDACTED] [REDACTED]

[REDACTED]

detachments had already been routinely forwarding EMRs to their respective CMAs.

[REDACTED]

On 13 November 1969 PACSCTYRGN directed this Squadron to implement the EMR  
18  
following the aforementioned DIRNSA guidelines.

Responsibility for the Weekly Combat Cougar Report

[REDACTED] On 1 October 1969 PACSCTYRGN undertook an assessment of this Squadron's capability to compile the Weekly Combat Cougar Report. This report, previously produced by the 6922nd Security Wing, was a weekly recapitulation of mission results of all missions flown by this Squadron and its subordinate detachments. It also contained consumer feedback which consisted of a summary of military operations conducted as a result of this unit's collection efforts. This assessment was completed on 9 October 1969 when PACSCTYRGN tasked this unit with compiling the Weekly Combat Cougar Report effective with the tasking  
19  
period 25 through 31 October 1969.

South East Asian Technical Summary (SEATS)

[REDACTED] The 90 day South East Asian Technical Summary (SEATS) test was con-  
20  
cluded on 5 July 1969. Prior to conclusion of the test PACSCTYRGN had recommended  
[REDACTED]

[REDACTED]

21  
continuation of SEATS reporting for this Squadron and Detachment 1.

[REDACTED]

As a result of the SEATS test DIRNSA requested that this Squadron and its subordinate detachments be tasked with SEATS preparation on a permanent basis. Accordingly this Squadron and Detachment 1 continued their SEATS reporting. Detachment 3 began SEATS reporting as part of the 90 day test in May 1969. Detachment 2 initiated SEATS reporting on 1 September 1969.

Daily Unit Resource Management Information Summary (DURMIS)

[REDACTED] In further efforts to standardize evaluation of ARDF mission results and achieve optimum operational performance, USAFSS promulgated USAFSS Manual 200-4 Volume XV-ARDF Management (Provisional Draft). This volume was designed to formalize the procedures adopted in January 1969. Draft copies of Volume XV were received by this unit for review and comments. A Squadron DURMIS conference was held on 22-23 August 1969. Recommendations were forwarded to USAFSS through channels. On 25 October 1969 the new DURMIS format contained

[REDACTED]

in USAFSSM 200-4 Volume XV was implemented.

Commando Forge Operations/Exploitation Summary

[REDACTED] On 13 December 1969 the Director of Operational Intelligence, 7th Air Force requested this unit to provide inputs to their Weekly Commando Forge Operations/Exploitation Summary. This report, addressed to PACAF, USAF, PACSCTYRCN, USAFSS and others, was designed to provide a continuing evaluation of Commando Forge Operations. Features of this report were:

1. Statistics on the total ARDF/COMINT product provided by Commando Forge to 7AF, Task Force Alpha (TFA) and 7/13 AF.
2. Actions taken by the consumers regarding target development and exploitation.
3. Results achieved (Bomb Damage Assessments (BDA)) based wholly or partially on ARDF/COMINT inputs.

The first report submitted by this unit was on 15 December 1969 covering the period 6-12 December 1969.

TECHWECAP

[REDACTED] On 6 October 1969 6922nd Scty Wg announced its intention to have this Squadron and its subordinate detachments added to Annex Hotel TECHINS 1043. Accordingly input was made concerning technical reports produced by this unit and detachments. DIRNSA issued Annex Hotel T-1043 on 31 October 1969. In accordance with T-1043 this unit's first Weekly TECHWECAP was issued on 4 December 1969.

Summary

[REDACTED] During this historical period the Squadron as a whole continued to build data base files on all tasked entities. USAFSS disapproved this Squadron's request for waiver of USAFSSM 205-7 Chapter II paragraph 11-3b water soluble

[REDACTED]

[REDACTED]

paper requirements for certain materials carried aboard mission aircraft. However, a new waiver request was submitted when the 460 TRW directed their subordinate units to remove the 5 gallon jerry can of water normally carried on mission aircraft.

[REDACTED] Studies were conducted in efforts to reduce interference caused by A/G FM radio transmissions. This interference rendered all receivers inoperative during periods of transmission. It was discovered that the FM 622A antenna coupler (P/N CU-943) was the major cause of interference. When the VHF/FM blade antenna was mounted 32 inches forward of the tail wheel well, only negligible interference resulted. A military suggestion was submitted and was under consideration at the close of this historical period.

[REDACTED] Pre-mission briefings were standardized in order to provide aircrew members with as much current information as possible. On 14 November 1969, Detachment 3 was authorized to issue TACREPS by DIRNSA. On 28 October 1969 PACSCTYRGN tasked this Squadron with the responsibility for compilation of the Weekly Combat Cougar Report. This report consisted of a weekly recapitulation of all missions flown by this Squadron and its subordinate detachments.

[REDACTED] The 90 day SEATS test was concluded on 5 July 1969. The test was successful and DIRNSA directed this unit and Detachment 1 to continue SEATS reporting. DIRNSA also directed that Detachments 2 and 3 be tasked with SEATS preparation. The new DURMIS format outlined in USAFSSM 200-4 Volume XV was implemented on 25 October 1969. This unit also was tasked with the TECHWECAP and the Commando Forge Operations/Exploitation Summary. The reporting of the former was begun on 4 December 1969 and of the latter on 15 December 1969.

[REDACTED]

[REDACTED]

FOOTNOTES CHAPTER 1

1. Detachment 1 relocated to Phu Cat during September 1969. It was located at Nha Trang previous to relocation. See page 2 this History.
2. See Chapter II, page 17 this History.
3. PAD 69-8 Headquarters USAFSS 30 July 70 para 3.
4. PAD 69-8 Headquarters USAFSS 30 July 70 para 4.
5. Ibid
6. Movement Order 22, HQ PACAF 10 July 69. (Support Document 1)
7. 7AF OPORD 450-69, 15 June 1969 para 3f and 3l give execution responsibilities for the 460 TRW and 6994 Scty Sq respectively in relation to Combat Cougar missions.
8. 460 TRW and 6994 Scty Sq Joint Operating Agreement 2-1, 4 January 1970. (Support Document 2)
9. History of the 6994th Security Squadron 1 January - 30 June 1969  
RCS: AU-D5 (USS-1) Chapter 1 page 4.
10. 6994 Scty Sq MAT, Hue Phu Bai Trip Report (U), 4 July 1969. (Support Document 3)
11. Ibid
12. Message Hq 7AF 212325Z July 69, Subject: Redeployment of EC-47s to Hue/Phu Bai [REDACTED]. (Support Document 4)
13. Message SSO MACV 140952Z August 1969, Relocation of EC-47 acft. (Support Document 5)
14. 6994 Scty Sq OPS Ltr undated, Subject: Relocation of EC-47 Aircraft. (Support Document 6).
15. 6994 Scty Sq OPS 4 October 1969, Subject: Relocation of ARDF Resources From Fleiku AB, RVN. (Support Document 7)
16. Ibid
17. Message 6994 Scty Sq 060355Z (no subject stated). (Support Document 8)
18. Message PACSCTYRGN 010345Z November 1969, Subject: Disposition of ARDF Assets. (Support Document 9)
19. Ibid

## FOOTNOTES CHAPTER 1 CONTINUED

20. Message PACSCTYRGN 080600Z October 1969, Subject: Disposition of ARDF Assets. (Support Document 10)
21. History of the 6994th Security Squadron 1 January - 30 June 1969. RCS: AU-D5 (USS-1). Chapter 1 pages 2 and 3.
22. Ibid
23. 6994 Scty Sq OPS, 2 Oct 69, Subject: Report of TDY Visit. (Support Document 11)
24. Message 6922 Scty Wg 160230Z August 1969, Subject: ARDF for SEA. (Support Document 12)
25. Ibid
26. Message 7AF 231000Z Aug 69, Subject: Basing of EC-47 Aircraft in Thailand [REDACTED]. (Support Document 13)
27. See pages 4 & 5 this History.
28. Message PACSCTYRGN 260332Z September 1969 (Support Document 14).
29. Message 6994 Scty Sq 300805Z August 1969, Subject: Additional Aircraft at NKP. (Support Document 15)
30. Message 460 TRW 300220Z August 1969, Subject: NKP Deployment. (Support Document 16)
31. Message MACV 122352Z October 1969, Subject: Move of Additional EC-47s to Thailand (Support Document 17).
32. Message 6994 Scty Sq 140710Z October 1969, Subject: Move of Additional EC-47s RCS to Thailand. (Support Document 18)
33. Message [REDACTED] 180435Z October 1969. Subject: Move of Additional EC-47 Acft to Thailand. (Support Document 19)
34. Message [REDACTED] 240524Z December 1969, Subject: Extension of EC-47s at NKP RTAFB (Support Document 20).
35. 6994 Scty Sq OPS, 2 Oct 69, Subject: Report of TDY Visit. (Support Document 11)
36. See Chapter I pages 4 & 5 this History.
37. Ibid
38. ACC Working Aid 01-69, 12 May 1969, ARDF Program - General, Section II, para 1  
[REDACTED] [REDACTED]

## FOOTNOTES CHAPTER 1 CONTINUED

39. ACC Working Aid 01-69, 12 May 1969, ARDF Program - General, Section II, para 2.
40. ACC Working Aid 01-69, 12 May 1969, ARDF Program - General Section II, para 8.
41. Message 6994th Scty Sq SSLO 290545Z August 1969, Subject: Reorganization of the ACC. (Support Document 21)
42. Message PACSCTYRGN 140630Z September 1969, Subject: ACC Reorganization. (Support Document 22)
43. Message 6994th Scty Sq, 250845Z September 1969, Subject: Discussion of Current ACC Situation. (Support Document 23)
44. Ibid
45. Ibid
46. Message 6994th Scty Sq 120807Z September 1969, Subject: ARDF Calibration Site, Cam Ranh Bay. (Support Document 24.)
47. Message PACSCTYRGN 162130Z September 1969, Subject: Requirement For Calibration Facility. (Support Document 25)
48. HQ USAFSS PAD 69-12, 9 December 1969, Subject: Region Reorganization. Paragraph 4b (2).
49. Ibid atch 2
50. Message CINCPACAF/DO 180538Z July 1969. (Message not in unit files)
51. Message 7AF 010145Z September 1969, Subject: PACAF Life Support School (PLSS); Training Quotas, paragraph 1. (Support Document 26)
52. Message PACSCTYRGN 060125Z September 1969, Subject: PACAF Life Support School (PLSS). (Support Document 27)
53. Message USAFSS 171945Z December 1969, Subject: Life Support TNG for 6994SS. (Support Document 28)



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FOOTNOTES CHAPTER II

1. New SEA Areas became effective 27 Sep 69. Areas were previously 11 - 10 - 09 and 08 respectively. (See figures 1 and 2 this History)
2. Message 6994 Scty Sq 310635Z, Subject: Capture of Enemy COMINT Collection Unit. (Support Document 29)
3. 6994 Scty Sq Ltr, CDR, 5 December 1969, Subject: Vietnamization of ARDF program [REDACTED]. (Support Document 30)
4. Message Det 2, 6994 Scty Sq 300822Z, Subject: Det 2, 6994 Scty Sq AIR 3-69. (Support Document 31)
5. 6994 Scty Sq OPS-2 Ltr, 29 December 1969, Subject: Master Program Review Board, Para 3b. (Support Document 32)
6. Ibid. Para 3a
7. History of the 6994th Security Squadron 1 January - 30 June 1969. RCS: AU-D5 (USS-1) Chapter II, page 10.
8. Message PACSCTYRGN 110307Z September 1969, Subject: Removal of "Q" Jamming Equipment Aboard EC-47 Aircraft. (Support Document 33)
9. Ibid.
10. Message SSO MACV 022341Z, Subject: Removal of "Q" Jamming Equipment. (Support Document 34)
11. 6994 Scty Sq OPS Ltr, 8 October 1969, Subject: Removal of the "Q" Consoles From Five EC-47 Aircraft [REDACTED]. (Support Document 35)
12. USA-561 Position Status Reports - 466, 470, 471, 472 and 473, 6 October 1969.
13. Message, NSAPACREP Vietnam [REDACTED], 150520Z, Subject: ABN Coll Mans. (Support Document 36)
14. Message 6994 Scty Sq 150848Z, Subject not listed. (Support Document 37)
15. Ibid
16. Message SSO MACV 272346Z October 1969, Subject: In-Country EC-47 Relocation. (Support Document 38)
17. Message, Det 1, 6994 Scty Sq, 280200Z October 1969, Subject: Redistribution of ARDF Aircraft. (Support Document 39)
18. Message 7AF 291040Z October 1969, Subject: In-Country EC-47 Relocation (U). (Support Document 40)

19. USA-562 Position Status Report Nr 177, 31 October 1969.
20. USA-561 Position Status Report Nr 569, 5 November 1970.
21. Message 460 TRW 120836Z November 1969, Subject: Movement of Aircraft (U). (Support Document 41)
22. Message, PACSCTYRGN 060041Z September 1969, Subject: Accomplishment of Scheduled TOT. (Support Document 42.)
23. Message, 460 TRW 161203Z, Subject: Aircraft Utilization (Support Document 43)
24. Message, PACSCTYRGN OPS/COM 120448Z September 1969. (Message not in files)
25. Message 6994 Scty Sq 180845Z September 1969, Subject: Opnl Requirement for Unit A/G/A KY-3 FOCS. (Support Document 44)
26. Ibid.
27. Message PACSCTYRGN COM-S 210018Z November 1969. (Message not in files)
28. Message 6994 Scty Sq 220902Z November 1969, Subject: Removal of 6994th Complex A/G/A COMM FACS. (Support Document 45)
29. Message, PACSCTYRGN OPS 020825Z October 1969, (Message not in files).
30. Message, USAFSS OPD 011846Z (Message not in files).
31. Message, 6994 Scty Sq 100955Z October 1969, Subject: ARDF Manpower Reduction. (Support Document 46)
32. See this History Chapter I pages 4 and 5.
33. Message, 6994 Scty Sq 080830Z November 1969, Subject: UDL, 6994SS After 703 Reduction. (Support Document 47)
34. Message, 6994 Scty Sq 180340Z November 1969, Subject: 6994SS UDL. (Support Document 48)
35. Det 2, 6994 Security Squadron, Mini Mod Tests 13 -19 September 1969, page 9, paragraph 1.
36. Ibid. Page 9, paragraph 2.
37. Ibid. Page 10, paragraph 3.
38. Message 6994 Scty Sq SSLO 210315Z November 1969, Subject: MACV ARDF Weekly Meeting 19 November 1969. (Support Document 49)

## FOOTNOTES CHAPTER II CONTINUED

39. Message, PACSCTYRGN 200223Z December 1969, Subject: Low Frequency Collection. (Support Document 50)
40. Message, 6994 Scty Sq 220857Z December 1969, Subject: Low Frequency ARDF Capability. (Support Document 51)
41. Message, SSO MACV 190318Z September 1969, Subject: Elec Chng to MACV DIR 381-23. (Support Document 52)
42. Message, SSO MACV 200716Z September 1969, Subject: Evaluation of MSN 999. (Support Document 53)
43. Message, 6994 Scty Sq 250834Z September 1969, Subject: Evaluation of MSN 999 (Support Document 54)
44. Message, 6994th Scty Sq 100545Z July 1969, Subject: Joint Courier Activity Da Nang (JCAD)/OPS Stops at Hue Phu Bai. (Support Document 55)
45. Message, 6994 Scty Sq 280441Z July 1969, Subject: Joint Courier Activity Da Nang (JCAD)/OPS Stops at Hue Phu Bai. (Support Document 56)
46. Message 7AF, 080450Z October 1969, Subject: Operations Stops - Hue. (Support Document 57)
47. Message, SSO MACV 260806Z October 1969, Subject: OPSTOPS at Phu Bai/ Da Nang by EC-47s. (Support Documents 58)
48. Message, USM-704 171220Z November 1969, Subject: Courier OPS Stop Da Nang by EC-47s. (Support Document 59)
49. Message, 6994 Scty Sq 130415Z December 1969, Subject: Detachment 2, 6994SS Transcribe Test. (Support Document 60)
50. Ibid
51. Message, 6994 Scty Sq 300430Z September 1969, Subject: SIGINT ARDF/ Collection Program. (Support Document 61)
52. Ibid.
53. Ibid.
54. Message USM-626, 111231Z September 1969, Subject: ARDF Tip-Off. (Support Document 62)
55. Message USM 704, 280155Z September 1969, Subject: Implementation of Dual Frequency System (U). (Support Document 63)
56. Message, USM-626, 151303Z December 1969, Subject: ARDF. (Support Document 64)

## FOOTNOTES CHAPTER II CONTINUED

57. Message, USM-626 111231Z September 1969, Subject: ARDF Tip-Off. (Support Document 62)
58. Message, PACSCTYRGN 042143Z September 1969, Subject: Det 3 TEMPO Authority. (Support Document 65)
59. Message USAFSS TAD/TAG 241545Z November 1969 (Message not in files).
60. Message DIRNSA B-561 051840Z December 1969. (Message not in files)

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FOOTNOTES CHAPTER III.

1. Message 6994 Scty Sq 211005Z October 1969, Subject: Waiver for Use of Water Soluble Paper. (Support Document 66)
2. Message USAFSS 281357Z 29 October 1969, Subject: (not listed) (Support Document 67)
3. Ibid
4. Message 6994 Scty Sq 300315Z November 1969, Subject: Water Soluble Paper. (Support Document 68)
5. Ibid
6. Message USAFSS/CSP-S 191735Z December 1969. (Message not in files)
7. Message 6994 Scty Sq 060740Z October 1969, Subject: FM Interference. (Support Document 69)
8. Message 6994 Scty Sq 280551Z November 1969, Subject: Pre-Mission Briefings. (Support Document 70)
9. Message DIRNSA 201708Z June 1969, Subject: Commando Forge Concept of Operations. (Support Document 71)
10. Message USA-57 290338Z August 1969, Subject: TACREP Reporting From USA-564. (Support Document 72)
11. Message DIRNSA 051746Z September 1969, Subject: TACREP Reporting For USA-564. (Support Document 73)
12. Ibid
13. Ibid
14. Message 6922 Scty Wg 110240Z September 1969, Subject: TACREP Reporting At USA-564. (Support Document 74)
15. Message DIRNSA 140026Z November 1969, (Subject not listed). (Support Document 75)
16. Message DIRNSA 192338 September 1969, Subject: Preparation of EMR by Aviation Units. (Support Document 76)
17. Message DIRNSA 281745Z October 1969, Subject: Preparation of EMR by Airborne Collection Units. (Support Document 77)
18. Message PACSCTYFGN 130218Z November 1969, Subject: EMR Preparation. (Support Document 78)

## FOOTNOTES CHAPTER III CONTINUED

19. Message PACSCTYRGN 092312Z, October 1969, Subject: Weekly Combat Cougar Report. (Support Document 79)
20. See History of the 6994th Security Squadron 1 January - 30 June 1969  
RCS: AU-D5 (USS-1) page 19.
21. Ibid
22. Message, DIRNSA 122122Z August 1969, Subject: SEATS Preparation by USAFSS Units USA-561/USA-562. (Support Document 80)
23. Ibid
24. Ibid
25. See History of the 6994th Security Squadron 1 January - 30 June 1969  
RCS: AU-D5 (USS-1) page 20-21.
26. Message, 6994 Scty Sq 250130Z August 1969, Subject: USAFSSM 200-4 Volume IV. (Support Document 81)
27. Letter Headquarters 7AF (DIOR), 13 December 1969, Subject: Commando Forge Operations/Exploitation Summary. (Support Document 82)

[REDACTED]

GLOSSARY

ACC - Airborne Radio Direction Finding Coordination Center

AMEB - American Embassy

ARDF - Airborne Radio Direction Finding

ASA - Army Security Agency

Barrell Roll Area - Northern Laos-Plaine Des Jarres

BEQ - Bachelor Enlisted Quarters

CAS - Controlled American Source

CC - Combat Cougar - nickname for ARDF Program in SEA

CCS - Combat Cougar Sulu - nickname for ARDF missions with collection capability.

CMA - Collection Management Authority

COMJAM - Communications Jamming

Commando Forge - A nickname for the ARDF missions flown in Laos

CONUS - Continental United States

CTZ - Corps Tactical Zone

DIRNSA - Director of National Security Agency

DOCRS - 7AF Deputy for Special Reconnaissance

DODSPECREP - Department of Defense Special Representative

DSU - Direct Support Unit

GDRS - General Directorate Rear Services

HF - High Frequency

JCS - Joint Chiefs of Staff

JSOC - Joint Service Operations Center

MACTHAI - Military Assistance Command Thailand

MACV - Military Assistance Command Vietnam

NKP - Nakhon Phanom, Thailand

NRV [REDACTED] - NSA PAC REP Vietnam [REDACTED]

NSA - National Security Agency

NSAPACREP [REDACTED] - NSA Pacific Representative

NVA - North Vietnamese Army

OIC - Officer In Charge

PACAF - Pacific Air Forces

PACSCYRGN - Pacific Security Region

PJSS - PACAF Jungle Survival School

PLSS - PACAF Life Support School

RRGP - Radio Research Group

RTG - Royal Thai Government

SEA - South East Asia

SEFE - Standardization/Evaluation Flight Examiner

SIGINT - Signal Intelligence

STEEL TIGER - Southern Laos-The Laotian Panhandle

SVN - South Vietnam

TECHINS - Technical Instructions

TEWS - Tactical Electronic Warfare Squadron

TFA - Task Force Alpha

TOT - Time Over Target

TRANSEC - Transmission Security

TRW - Tactical Reconnaissance Wing

USAFSS - United States Air Force Security Service

VC - Viet Cong

VHF - Very High Frequency

VNAF - Vietnamese Air Force

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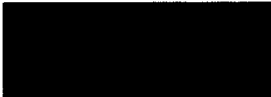
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2. Joint Operating Agreement (JOA) 2-1). Between 460th TRW and 6994th Scty Sq , 4 January 70.
3. 6994th Scty Sq MAT, Hue/Phu Bai Trip Report (U), 4 July 1969.
4. Message HQ 7AF 212325Z Jul 69, Subject: Redeployment of EC-47s to Hue/Phu Bai [REDACTED].
5. Message SSO MACV 140952Z August 1969. Relocation of EC-47 Aircraft.
6. 6994 Scty Sq OPS Ltr, undated, Subject: Relocation of EC-47 Aircraft.
7. 6994 Scty Sq OPS Ltr, 4 October 1969, Subject: Relocation of ARDF resources From Pleiku AB, RVN.
8. Message 6994 Scty Sq 060355Z (no subject stated).
9. Message PACSCTYRGN 010345Z November 1969, Subject: Disposition of ARDF Assets.
10. Message PACSCTYRGN 080600Z October 1969, Subject: Disposition of ARDF Assets.
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12. Message 6922 Scty Wg 160230Z August 1969, Subject: ARDF for SEA.
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27. Message PACSCTYRGN 060125Z September 1969, Subject: PACAF Life Support School (PLSS).
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29. Message 6994 Scty Sq 310635Z December 1969, Subject: Capture of Enemy COMINT Collection Unit.
30. 6994 Scty Sq GDR 5 December 1969, Subject: Vietnamization of ARDF Program [REDACTED].
31. Message Det 2, 6994 Scty Sq 300822Z, Subject: Det 2, 6994 Scty Sq AIR 3-69.
32. 6994 Scty Sq OPS-2, 29 December 1969, Subject: Master Program Review Board.
33. Message PACSCTYRGN 110307Z September 1969, Subject: Removal of "Q" Jamming Equipment Aboard EC-47 Aircraft.
34. Message SSO MACV 022341Z, Subject: Removal of "Q" Jamming Equipment.
35. 6994 Scty Sq Ltr, OPS, 8 October 1969, Subject: Removal of the "Q" Consoles from Five EC-47 Aircraft [REDACTED].
36. Message NSAPACREP Vietnam [REDACTED] 150520Z, October 69, Subject: ABN Coll Msns.
37. Message 6994 Scty Sq 150848Z October 1969, subject not listed.
38. Message SSO MAGV 272346Z October 1969, Subject: In-Country EC-47 Relocation.
- [REDACTED] [REDACTED]

- [REDACTED]
39. Message Det 1, 6994 Scty Sq 280200Z October 1969, Subject: Redistribution of ARDF Aircraft.
  40. Message 7AF 291040Z October 1969, Subject: In-Country EC-47 Relocation (U).
  41. Message 46OTRW 120836Z November 1969, Subject: Movement of Aircraft (U).
  42. Message PACSCTYRGN 060041Z September 1969, Subject: Accomplishment of Scheduled TOT.
  43. Message 46OTRW 161203Z Subject: Aircraft Utilization.
  44. Message 6994 Scty Sq 180845Z September 1969, Subject: Opnl Requirement for Unit A/G/A KY-8 FOCS.
  45. Message 6994 Scty Sq 220902Z November 1969, Subject: Removal of 6994th Complex A/G/A COMM FACS.
  46. Message, 6994 Scty Sq 100955Z October 1969, Subject: ARDF Manpower Reduction.
  47. Message 6994 Scty Sq 080830Z November 1969, Subject: UDL, 6994SS After 703 Reduction.
  48. Message 6994 Scty Sq 180340Z November 1969, Subject: 6994SS UDL.
  49. Message 6994 Scty Sq SSL0 210315Z November 1969, Subject: MACV ARDF Weekly Meeting 19 November 1969.
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  57. Message 7AF 080450Z October 1969, Subject: Operations Stops - Hue.
  58. Message SSO MACV 260806Z October 1969, Subject: OPSTOPS at Phu Bai/ Da Nang by EC-47s.
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59. Message USM-704 171220Z November 1969, Subject: Courier OPS Stop Da Nang by EC-47s.
60. Message 6994 Scty Sq 130415Z December 1969, Subject: Detachment 2, 6994 SS Transcribe Test.
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62. Message USM 626 111231Z September 1969, Subject: ARDF Tip-Off.
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73. Message DIRNSA 051746Z September 1969, Subject: TACREP Reporting For USA-564.
74. Message 6922 Scty Wg 110240Z September 1969, Subject: TACREP Reporting at USA-564.
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76. Message 6994 Scty Sq 192338Z September 1969, Subject: Preparation of EMR by Aviation Units.
77. Message DIRNSA 281745Z October 1969, Subject: Preparation of EMR by Airborne Collection Units.
78. Message PACSCTYRGN 130218Z November 1969, Subject: EMR Preparation.
79. Message PACSCTYRGN 092312Z October 1969, Subject: Weekly Combat Cougar Report.

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80. Message DIRNSA 122122Z August 1969, Subject: SEATS Preparation by USAFSS Units USA-561/USA-562.
  81. Message 6994 Scty Sq 250130Z August 1969, Subject: USAFSSM 200-4 Volume XV.
  82. Letter, Headquarters 7AF (DIOR), 13 December 1969, Subject: Commando Forge Operations/Exploitation Summary.

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