

# UNCLASSIFIED

## HISTORY OF THE 6994TH SECURITY SQUADRON AND ITS DETACHMENTS

July – December  
1968



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HISTORY  
OF THE  
6994TH SECURITY SQUADRON  
1 July - 31 December 1968  
RCS: AU-D5 (USS-1)

000076  
19 OCT 1970



PROJECT CORONA HARVEST  
DO NOT DESTROY  
0408052 - 0408054  
No 0408051

29 May 1969



TAN SON NHUT AIRFIELD, VIETNAM



[REDACTED]  
HISTORY OF THE 6994TH SECURITY SQUADRON

1 July 1968 - 31 December 1968

RCS: AU-D5 (USS-1)

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Prepared by:

TSgt JAMES E. WOODS, JR.  
Operational Historian

Approved:

  
DONALD A. LUTTRELL, Colonel, USAF  
Commander

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FOREWORD

This history covers the operational activities of the 6994th Security Squadron during the reporting period 1 July 1968 - 31 December 1968. The histories of the detachments are presented as the basic document is all inclusive. This was necessary to provide the reader with a complete account of the subject/activity.

This history has been presented in three chapters in accordance with the "Revised Format for USS-1 History," published by USAFSS. Also included in this history is a brief history of the activities of the Airborne Radio Direction Finding Coordination Center (ACC).

This history was prepared primarily from files, interviews and project folders available at the unit. Many of the messages used in preparing this history are to higher headquarters.

The research and writing was accomplished by TSgt Woods.

All suggestions and comments concerning this history should be directed to the Operations Officer.






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CHAPTER I - MISSION AND ORGANIZATION

Mission

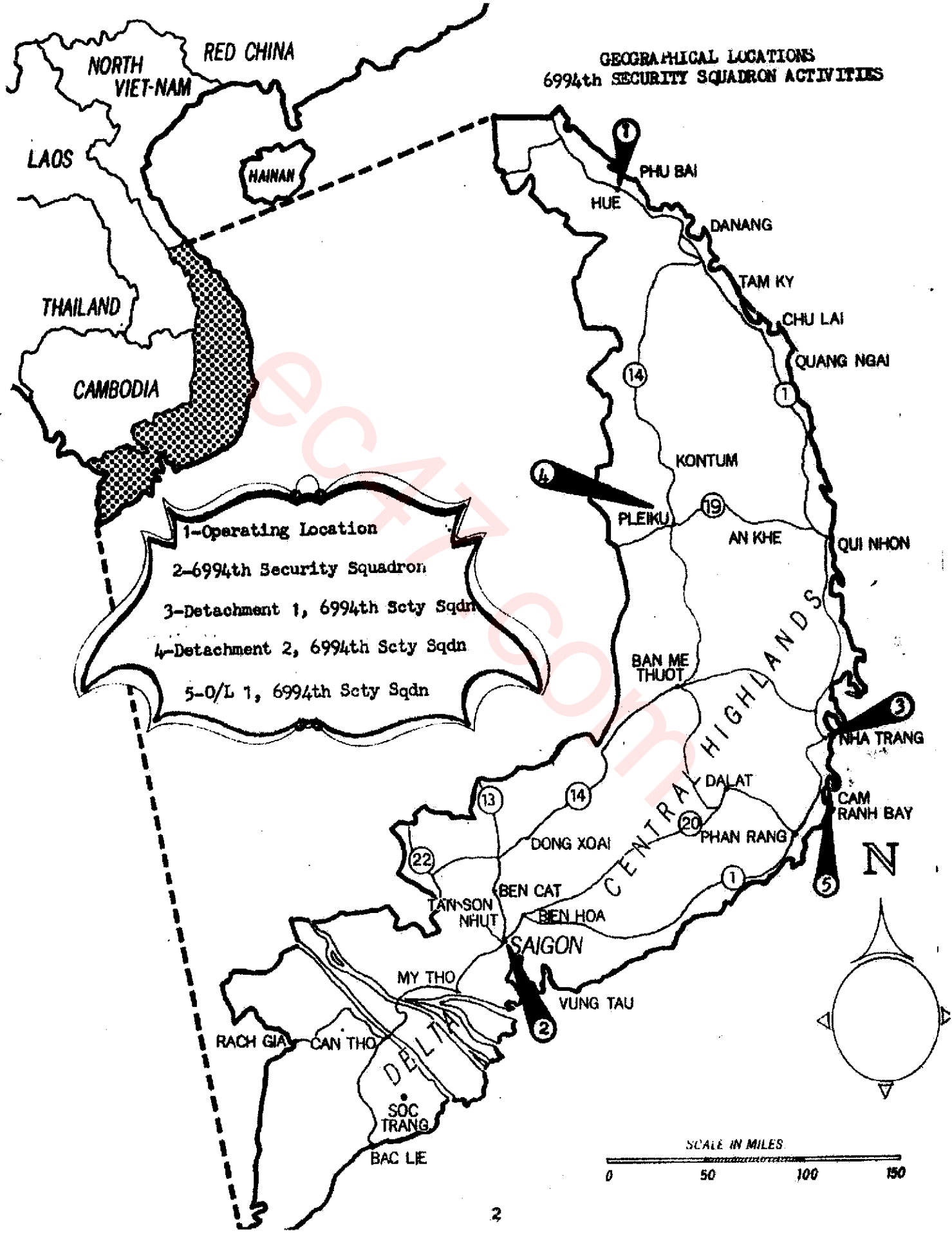
[REDACTED] The mission of the 6994th Security Squadron was to conduct Airborne Radio Direction Finding operations to provide direct support to the Military Assistance Command, Vietnam for the employment of tactical forces against enemy forces. The organization accomplished its mission through the resources of Projects Combat Cougar and Sentinel Sara.

Organization

(U) The 6994th Security Squadron was located at Tan Son Nhut Air Base, Vietnam. Its subordinate units were Detachment 1, Nha Trang Air Base, Vietnam and Detachment 2, Pleiku Air Base, Vietnam. The organization was administratively subordinate to the 6922nd Security Wing, Clark Air Base, Philippines.

[REDACTED] The organization was operationally subordinate to Headquarters, 7th Air Force, Tan Son Nhut Air Base, Vietnam. However, due to its mission and its inter-service involvement, operational control was generally accepted as being exercised by Military Assistance Command Vietnam (J2).

**GEOGRAPHICAL LOCATIONS  
6994th SECURITY SQUADRON ACTIVITIES**



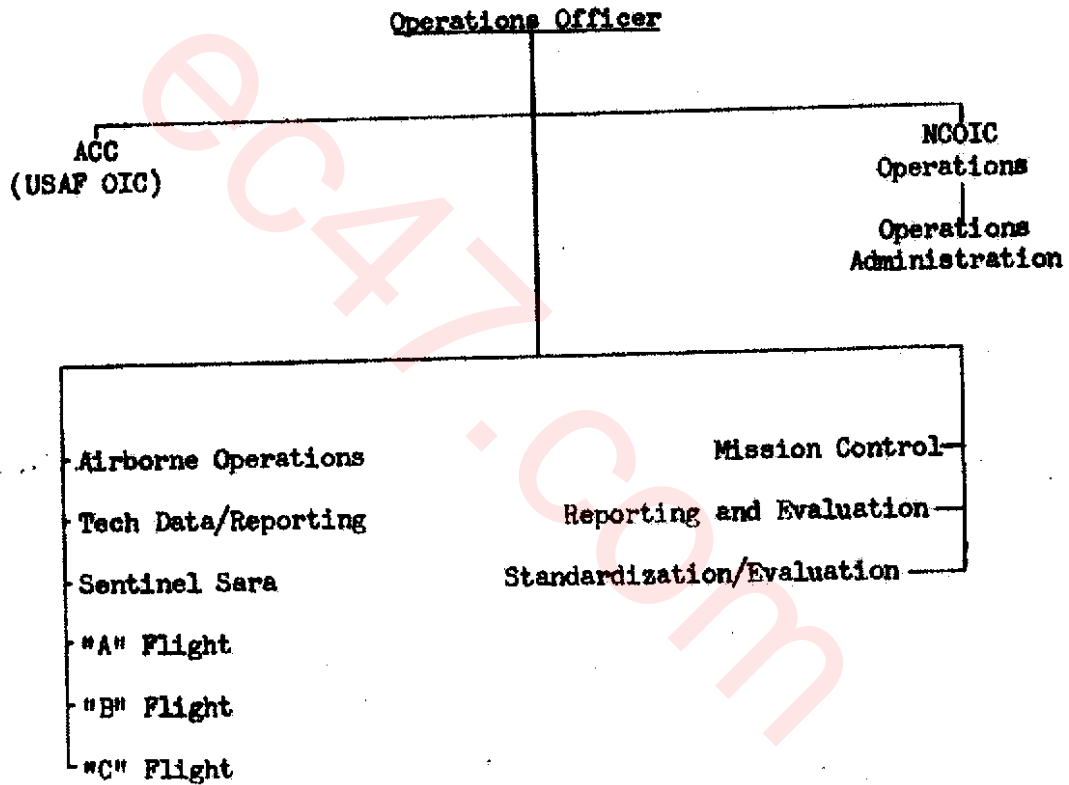
- 1-Operating Location
- 2-6994th Security Squadron
- 3-Detachment 1, 6994th Scty Sqdn
- 4-Detachment 2, 6994th Scty Sqdn
- 5-O/L 1, 6994th Scty Sqdn



6994TH SECURITY SQUADRON

Operations Division

Organizational Chart





[REDACTED]

CHAPTER II - TASKING AND COLLECTION

Tasking

[REDACTED] The Squadron's Combat Cougar resources were tasked with Airbourne Radio Direction Finding (ARDF) and associated Collection of VC and PAVN/NVA transmissions. Sentinel Sara aircraft were tasked with collection of PAVN/NVA communications in the DMZ area.

Collection

Collection Capability

[REDACTED] The squadron's collection capability consisted of airbourne acquisition, monitor, record, ARDF and active ECM of AM radio signals in the 2-16 MHZ frequency range; acquisition, monitor and record AM/FM radio signals in the 10-260 MHZ frequency range.

Collection Facility

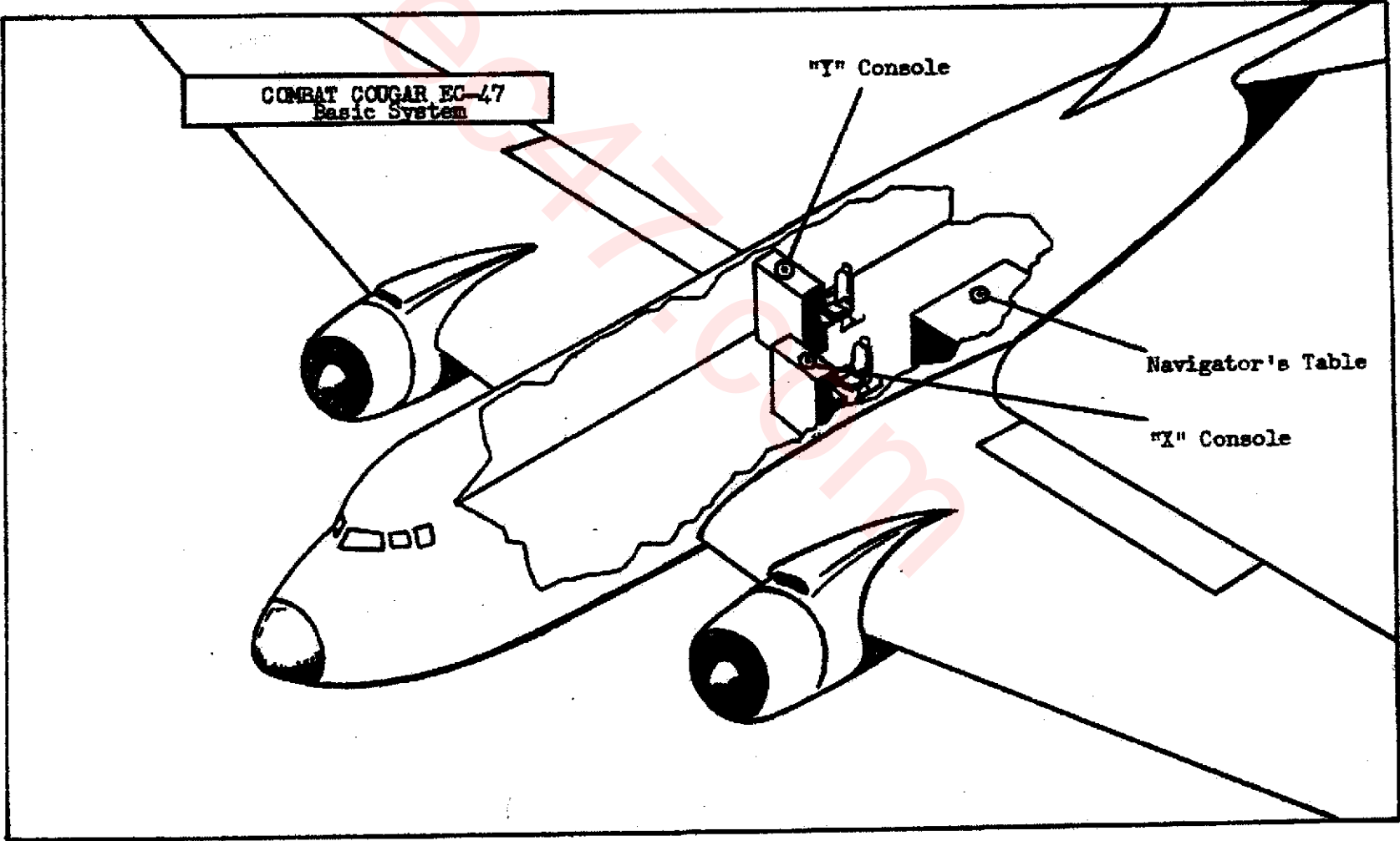
[REDACTED] The squadron's collection facilities were fifty four (54) aircraft. Twenty three (23) of the aircraft were basic ALR-34 system; twenty (20) of the aircraft were Zulu configured; five (5) of the aircraft were "Q" configured; and six (6) were Sentinel Eagle.

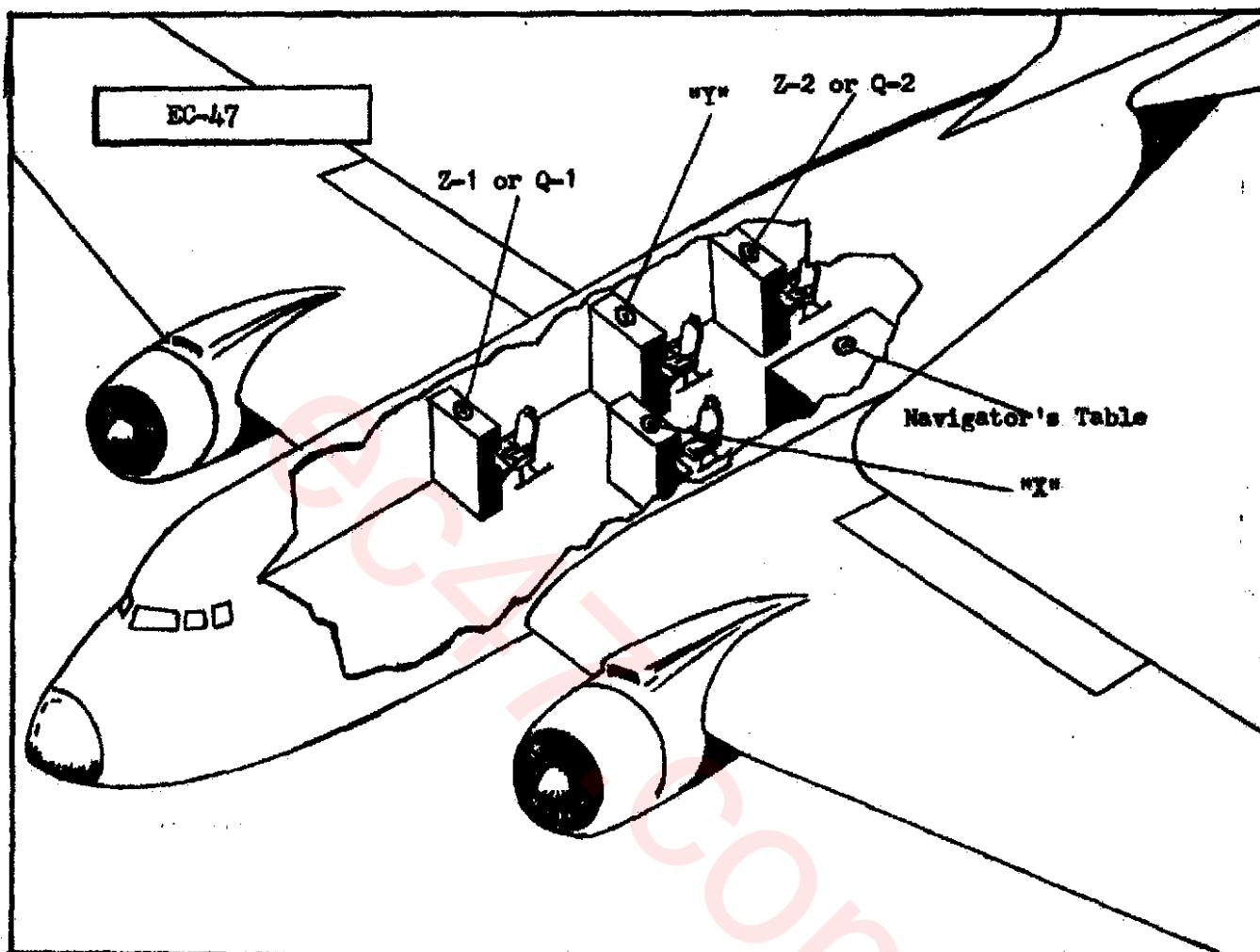
During December 1968 the two assigned Sentinel Sara aircraft were dismantled and shipped to the 6200th Air Base Group, Clark Air Base, Philippines and the 460th Tactical Reconnaissance Wing, Tan Son Nhut Air Base, Vietnam for use by Base Operations.

IRAN Accomplished as Scheduled

[REDACTED] Twelve aircraft completed scheduled IRAN at China Airlines, Taiwan. The average time required for the aircraft to undergo the activity was 45 days (not including the time required for removal and reinstallation of the back-end equipment). [REDACTED]

[REDACTED]





**BASIC CONFIGURATION**

X - ALR-34 (ARDF) 2-16 MHz

Y - HF/HF Receive .5-30 MHz

**"Z" SYSTEM**

X - ALR-34 (ARDF) 2-16 MHz

Y - HF/HF Receive .5-30 MHz

Z1 - HF/HF Receive .5-30 MHz  
or HF/VHF (AM/FM 10-260 MHz)

Z2 - HF/HF Receive .5-30 MHz

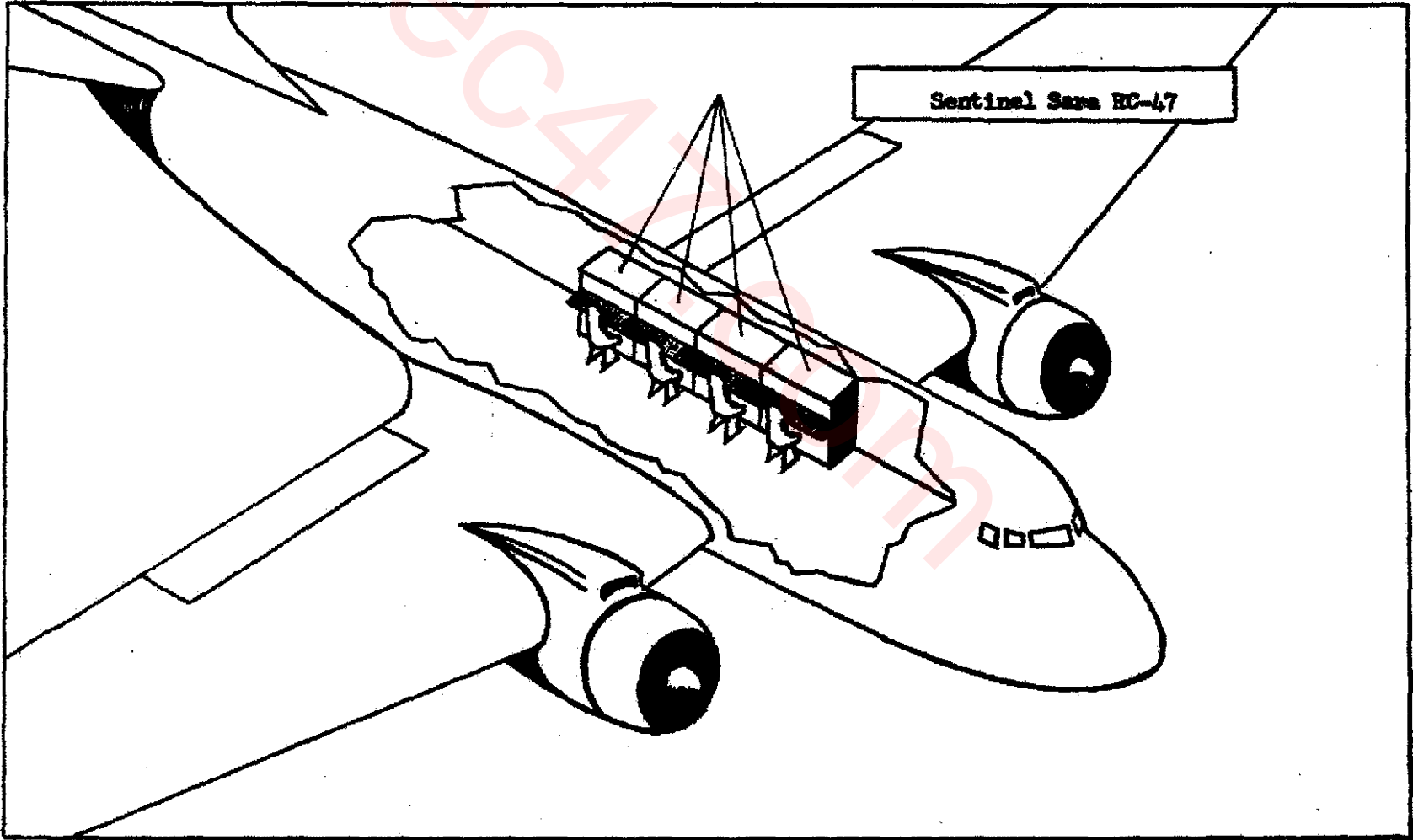
**"Q" SYSTEM**

X - ALR-34 (ARDF) 2-16 MHz

Y - HF/HF Receive .5-30 MHz

Q1 - HF/HF/HF Receive-COMJAM 2-16 MHz  
HF Receive 2-16 MHz

Q2 - HF/HF/HF Receive-COMJAM 2-16 MHz  
HF Receive 2-16 MHz



Sentinel Sentry RC-47

7



[REDACTED]

### FM Transmitter Interference

[REDACTED] FM transmitter interference continued to plague the Combat Cougar aircraft. The problem commenced during mid 1967 when the aircraft were equipped with a secure voice communications system. The system was composed of a KY-8 utilized with an FM-622 transceiver for FM-VHF communications, or an AN/ARC-136 transceiver for AM-UHF communications. When keyed, the FM transceiver produced serious interference on the ALR-34 and acquisition position. The interference, which affected both the visual display and audio level, varied in degree from complete blockage to moderate interference. For all practical purposes it rendered the equipment useless during FM transmissions. Several modifications have been attempted but to no avail. At the present time plans are being made to relocate the VHF Whip Antenna to the tail section of the aircraft in an effort to eliminate or drastically reduce the interference problem. As of this time no action has been taken to test this theory but indications are that one aircraft will be modified and tested during the forthcoming reporting period.

### KY-8 Malfunction

[REDACTED] During the first half of this period, KY-8 malfunctions were still a major problem. In an effort to resolve the problem, procedures were implemented to insure malfunctions were noted properly on the mission debrief form. Further, a detailed check list was devised to

[REDACTED]

insure all Radio Operators properly used the KY-8 system. A survey conducted by this unit indicated malfunctions were caused primarily due to equipment overheating and misuse of subject equipment by Radio Operators. It was further discovered that atmospheric conditions and stand-off distances from a known Direct Support Unit (DSU) played a major roll in lack of contact with the DSUs which previously was tagged as faulty equipment. As a result of information gained from the survey, an accelerated training program was devised and presented to all Radio Operators by the Training Section of each unit. Radio Operators were briefed on the KY-8 Secure Voice System and how the equipment functioned. They were instructed on proper use and handling of the equipment, preventative maintenance that could be preformed while airborne, and entries to be made on mission debrief form pertaining to malfunction when faulty equipment was detected. They were familiarized with the overheating problem and given instructions on how to minimize its recurrence. As a result of action taken by the training section, the KY-8 malfunction problem has almost ceased to exist with the exception of major malfunctions which are not attributed to operator error, but to faulty equipment. In view of the important role secure voice plays during a sortie, all writeups, whether minor or major, are acted upon immediately after recovery. With the expedient action of maintenance and the added knowledge possessed by the radio operators, the secure voice system can now be termed a "DEPENDABLE" tool in accomplishing this units mission.

[REDACTED]

SIGINT Station Designators

[REDACTED] During October of 1968, assets of the 6994th Security Squadron and Detachments were transferred from the Consolidated Intelligence Program to the Consolidated Cryptological Program. SIGINT Station Designators were then assigned to the 6994th Security Squadron and Detachments by DIRNSA on 20 October 1968 as indicated below:

USA-561 - 6994th Security Squadron

USA-562 - Detachment 1, 6994th Security Squadron

USA-563 - Detachment 2, 6994th Security Squadron

Though moved from one program to the other the mission of the 6994th Security Squadron and Detachments remained the same. However, the potential for change is always evident.

Deletion of the Weekly "Z and Q" Position Productivity Report

[REDACTED] The requirement for submission of one Weekly "Z and Q" Productivity Report was discontinued effective 20 October 1968. Information contained in the report consisted of total intercept, total allocated minutes per mission and percentage for Z1/Z2, Q1/Q2 and TAH/TAV (Voice) positions. The report was a duplication of effort in that the information was contained in the Electronic Warfare Daily Unit Resource Management Information Summary (DURMIS).

Reaccomplishment of Squadron Regulations

(U) Squadron Regulations were reviewed and revised as required during this period. All revised regulations were coordinated with the detachments and final approval of the drafts were accomplished

[REDACTED]

[REDACTED]

[REDACTED]

during the Operations Officers Conference. Regulations were published immediately thereafter and distributed to all using agencies.

6994SS Regulation 55-5 was completely rewritten during this period. The regulation depicts all the necessary guidelines for standardization, evaluation, and training. The regulation explicitly depicts a requirement for publication of a monthly Training Plan by each unit.

#### Change to MACV Areas

[REDACTED] A proposal submitted by Major William Wilson, assigned to the 360th Tactical Electronic Warfare Squadron, Tan Son Nhut Air Base, Vietnam, and attached to DOCRS 7th Air Force, resulted in a change of all MACV areas for ARDF coverage. Beginning with the tasking cycle of 05 October 1968 the area system of coverage underwent a complete change. The old system of forty (40) areas was reduced to eleven (11) areas and the concept of operations was completely changed. This unit was tasked to fly two (2) types of missions; Effective and Absolute Coverage.

a. Under the Effective Coverage each aircraft was tasked with flying a complete numbered area. Under this concept each aircraft would provide greater coverage within a larger area which in turn would derive more fixes for Continuity and Development purposes.

b. Under the Absolute Coverage each aircraft was tasked with flying within a thirty seven and one half ( $37\frac{1}{2}$ ) mile radius of a specific frag point. Under this concept all remaining Air Force and Army aircraft would be tasked against specific targets and/or areas.

[REDACTED]



[REDACTED]

Prior to the change, a test was run in the Delta Region where two areas, Area 70A and Area 70B, were made up of MACV Areas 31 through 40. The results of the test were as follows:

PRE TEST (4-13 Sept 68)

6994SS - 55 fixes

146AVNCO - 12 fixes

156AVNCO - 266 fixes

TEST RESULTS (14-23 Sept 68)

6994SS - 185 fixes

146AVNCO - 6 fixes

156AVNCO - 263 fixes

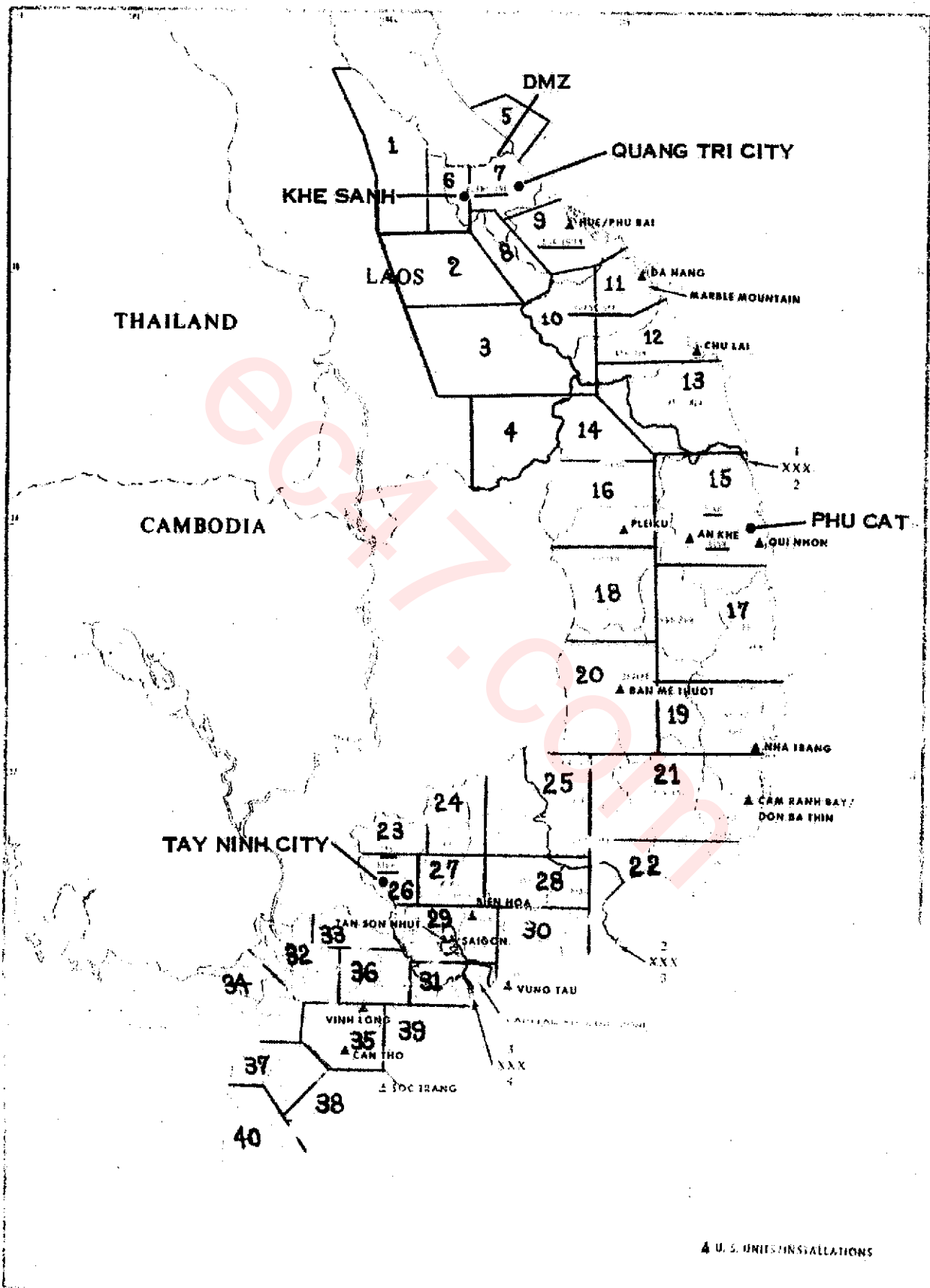
Though we were not tasked to fly in all areas of the Delta Region prior to this test, it was conclusively proven that EC-47 aircraft could provide greater coverage in larger areas and derive more fixes for Continuity and Development purposes.

Twin Coverage Concept

[REDACTED] With the change in MACV Areas, ACC also developed the Twin Coverage concept. Under this plan, if an aircraft was unable to complete its assigned mission due to adverse weather, artillery or air strikes it would contact the nearest COMINT Management Authority (CMA) and request an area change. The CMA, taking into consideration other missions being flown and the coverage desired, and in the case of adverse weather the aircraft commanders recommendations, would submit to ACC the suggested mission change. ACC would inturn coordinate this information with MACV-J2.

The whole process takes an average of 15 to 20 minutes from the time of request until the aircraft is notified of its new mission.

An aircraft flying Absolute Coverage and forced out of an area due to weather or artillery fire will automatically assume Effective



[REDACTED]

Coverage for the area. However, they are still required to notify the CMA for technical data and forwarding of the change to ACC.

COMINT Management Authority Liaison

[REDACTED] Manpower Change Request 67-1, dated 17 April 1967, and subsequently approved by Hqs, USAFSS on 11 May 1967, requested the creation of an ACC Liaison Technical Support function consisting of two analysts at each supporting Data Base. Although the requested action was approved for 1QFY68 manning was deferred pending an increase of manpower ceiling in South Vietnam.

In late September 1968, it had been decided by ACC, CMA's and Aviation units that the CMA would supply the Aviation units with a Cherry Sheet (listing of priority targets with callsigns and last known location). A test had proven the best system would be one sorted on scheduled time order, thereby directing the aircraft to be in a specific area.

With the decision to have the CMA supply the Cherry Sheet it was felt that the ACC Liaison Technical Support function should be filled with personnel from the 6994th Security Squadron so that they would be able to help in preparation of the Cherry Sheets and also run a quality control of the program.

Through discussions with the CMA's it was decided to send two men to USM-626 (6994SS) and USM-808 (Detachment 2, 6994SS) and one man to USM-604 (Detachment 1, 6994SS) for a period of 90 days. It was felt that the analysts going to USM-808 and USM-604 would require

[REDACTED]

a seven to ten day TDY at Detachment 2, 6994th Security Squadron and Detachment 1, 6994th Security Squadron in order to understand their mission and problem areas. On 16 October 1968 two analysts departed this organization for USM-808 by way of Detachment 2 and one analyst departed this organization for USM-604 by way of Detachment 1. On 23 October 1968 two analysts departed this organization for USM-626. The first Cherry Sheet was produced by USM-626 under the new program on 01 November 1968.

#### Change of Radio Arbitrary Designator System

[REDACTED] In July 1968 DIRNSA decided to revise the Radio Arbitrary Designator (RAD) System. Under the RAD system each case notation was assigned a RAD (three or four digit number) with letter suffixes for the Control and Outstations. Under the new system each entity, regardless of case, would be given a Radio Designator (RD) of four numbers preceded by a letter to designate type of function (M-Military, P-Political, etc). This new system was implemented on 01 August 1968.

As a result of this change the ARDF Recovery Reports underwent a change. The RD was not considered a complete identification, therefore, the case notation had to be included in the recovery report.

#### Special Collection Projects

##### Low Level Search Project

[REDACTED] In view of the success achieved by the Sentinel

[REDACTED]  
Sara aircraft in IV Corps, a low level program was initiated by NRV  
[REDACTED] in III Corps, tasking Zulu configured aircraft, beginning in  
August 1968.

Initial efforts were far from promising, due to lack of  
technical data, operator experience, feedback, etc. Consequently,  
the program was discontinued in mid September 1968 with no further  
tasking.

With the advent of the imminent departure of the Sentinel  
Sara aircraft, it was decided to once more attempt low level intercept  
utilizing one of the two Sentinel Sara aircraft plus one experienced  
Sentinel Sara crew, intermingled with operators from the Local  
Operations.

The operations was initially tasked for a ten day period,  
but because of the initial success it was extended until early  
October 1968.

Although the project was considered highly successful, there  
was no way to halt the transfer of the Sentinel Sara aircraft. Con-  
sequently, the low level intercept program was dropped.

Attesting to the success of the Sentinel Sara aircraft and  
crews in the low level intercept, a congratulatory message from  
NSAPAC REP VIETNAM [REDACTED] is quoted in part:

"This office would like to express its  
appreciation to the 6994th Security Squad-  
ron and particularly the efforts of the  
Sentinel Sara crew(s) for the contribu-  
tion made to the cryptologic support to  
[REDACTED]

[REDACTED]

MACV accomplishing the assigned task of conducting an intensive search effort against low frequency communications in III CTZ. The results obtained has proven the value of a dedicated collection aircraft."

Emergency ARDF Support at Udorn

[REDACTED] During December of 1968 the 6994th Security Squadron was notified of a special request for emergency ARDF tasking in Laos. MACTHAI requested that the 6994th Security Squadron perform missions in Laos, 19 degrees north in support of Lima Site 36, which was in danger of being overrun by hostile forces.

MACV inturn requested permission from CINCPAC to fly special missions in Laos. Permission was granted by CINCPAC on 17 Dec 68 and on 18 Dec 68 one Combat Cougar aircraft was deployed to Udorn AB for a period of six days, to perform five special missions.

Assistance for the missions was provided from many sources. 7/13 Air Force arranged base support to include current intelligence briefings prior to each flight. MACV-J2 requested 7th Radio Research Field Station (7RRFS) at Udorn to supply technical data and the 460th Tactical Reconnaissance Wing requested the necessary action to place Combat Cougar aircraft and the front end crew from the 362nd Tactical Electronic Warfare Squadron on TDY to Udorn AB for a period of six days. Detachment 2, 6994th Security Squadron supplied two Radio Operators and one Bravo Maintenance man who would perform back end maintenance if required.

[REDACTED]

Due to the rapid deployment several logistic problems were encountered, but were expeditiously resolved through the efforts and cooperation of all units involved in this project.

Extraction from the summation, submitted by Detachment 2, regarding the project indicated the missions were highly successful. The following portion of the summation is quoted:

"The AFSSO and USM-7 (7RRFS) personnel indicated that the number of fixes obtained were outstanding and by far exceeded the quality and quantity of ARDF data obtained by the U.S. Army program. USM-7 demands were that we obtain as many fixes as possible, and copy of targets was not important. The five missions flown produced a total of fifty four (54) fixes/cuts. This number appeared to be very impressive to the consumers."

As of the end of this reporting period, consumers requested that missions be continued, as directed, by MACV. This information will be covered in the next reporting period.

[REDACTED]

CHAPTER III - PROCESSING AND REPORTING

Processing

[REDACTED] The squadrons processing mission consisted of two phases: Airborne analysis of the traffic externals for target identification, and cursory analysis of messages for selection of exploitable and readable systems for air/ground transmissions, and ground analysis, which consisted of a more detailed analysis of the traffic for further identification and message extraction. The processing effort was on a small scale due to the limited availability of technical support documents. This effort did, however, contribute significantly to the SIGINT mission since the analysts occasionally developed data that significantly supplemented the Army's analysis effort. Forms and records were maintained, as necessary, to accomplish reporting requirements and resource managerial duties.

Airborne Analysts Phase Out

[REDACTED] Airborne Analysts were phased out with the Sentinel Sara collection effort in December 1968. However, due to assigned DEROS, Airborne Analysts continued their normal duties as Airborne Mission Supervisors (AMS) until scheduled rotation date.

Reporting

[REDACTED] The squadron's reporting mission consisted of: (a) Air/Ground Reporting of ARDF fix data, (b) Position Status Reports,



[REDACTED]

(c) Master Program Change Requests, (d) ARDF Recovery Reporting,  
(e) Sentinel Sara Weekly Operational Summary Reporting, and (f)  
Electronic Warfare Daily Unit Resource Mission Information Summary.

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APPENDIX A

COMBAT COUGAR OPERATIONAL SUMMARY

PROJECT CORONA HARVEST  
DO NOT DESTROY

No. 0408052



FOREWORD

This appendix was instituted to provide the reader with a statistical account of Combat Cougar operational activities during the period 1 July 1968 - 31 December 1968.

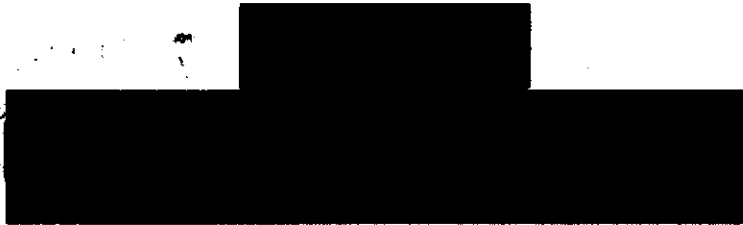
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[REDACTED]  
6994TH SECURITY SQUADRON

COMBAT COUGAR MISSION SUMMARY

<u>PERIOD</u>	<u>MISSIONS SCHEDULED</u>	<u>MISSIONS ACCOMPLISHED</u>
1	78	78
2	78	78
3	78	77
4	78	78
5	78	76
6	78	77
7	78	78
8	78	78
9	78	78
10	73	73
11	73	73
12	73	72
13	73	72
14	73	73
15	76	76
16	78	75
17	79	70
18	71	71
19	71	71
20	72	72
21	71	71
22	71	67
23	66	66
24	75	75
25	80	80
26	78	78

[REDACTED]  
DETACHMENT 1, 6994TH SECURITY SQUADRON

COMBAT COUGAR MISSION SUMMARY

<u>PERIOD</u>	<u>MISSIONS SCHEDULED</u>	<u>MISSIONS ACCOMPLISHED</u>
1	67	67
2	68	68
3	68	68
4	68	68
5	68	67
6	68	68
7	63	63
8	61	67
9	68	68
10	67	79
11	68	68
12	68	68
13	68	68
14	69	69
15	69	69
16	64	62
17	64	46
18	64	62
19	77	75
20	78	77
21	78	69
22	78	64
23	83	82
24	84	84
25	77	77
26	77	75

[REDACTED]  
DETACHMENT 2, 6994TH SECURITY SQUADRON

COMBAT COUGAR MISSION SUMMARY

<u>PERIOD</u>	<u>MISSIONS SCHEDULED</u>	<u>MISSIONS ACCOMPLISHED</u>
1	66	66
2	68	68
3	68	68
4	69	66
5	68	67
6	68	68
7	69	64
8	78	77
9	68	70
10	69	49
11	70	68
12	65	63
13	65	64
14	70	68
15	70	69
16	69	68
17	50	52
18	77	75
19	67	67
20	65	64
21	61	60
22	61	62
23	71	71
24	77	75
25	71	70
26	72	71

[REDACTED]  
6994TH SECURITY SQUADRON - ARDF SUMMARY

<u>PERIOD</u>	<u>TGT WORKED</u>	<u>TGT FIXED/GUT</u>	<u>TGT ID'D</u>	<u>PRIORITY TGT</u>
1	568	473	136	79
2	517	439	114	56
3	632	536	148	68
4	712	633	150	79
5	598	510	134	78
6	552	509	130	70
7	595	533	124	47
8	534	515	108	59
9	562	537	114	59
10	627	600	108	58
11	568	542	99	60
12	523	512	107	82
13	640	621	97	58
14	700	682	138	101
15	708	702	127	88
16	855	847	194	131
17	898	890	155	119
18	842	836	189	139
19	1020	993	211	142
20	1271	1234	250	169
21	1165	1114	232	165
22	1032	1001	210	151
23	1123	1101	223	157
24	1190	1153	234	161
25	1202	1168	240	164
26	1198	1176	241	161



[REDACTED]

DETACHMENT 1, 6994TH SECURITY SQUADRON - ARDF SUMMARY

<u>PERIOD</u>	<u>TGT WORKED</u>	<u>TGT FIXED/CUT</u>	<u>TGT ID'D</u>	<u>PRIORITY TGT</u>
1	591	541	175	142
2	612	537	172	153
3	581	491	153	141
4	563	471	130	118
5	576	465	144	126
6	532	442	139	133
7	629	488	325	129
8	783	587	149	112
9	577	466	122	102
10	679	582	135	113
11	654	548	132	107
12	731	589	171	143
13	582	481	117	98
14	378	333	96	74
15	327	284	68	59
16	340	275	62	54
17	455	353	99	74
18	504	426	99	74
19	516	428	88	90
20	481	402	87	66
21	321	279	58	52
22	522	470	117	100
23	594	530	113	90
24	569	489	111	87
25	484	419	76	65
26	491	433	82	69

[REDACTED]

DETACHMENT 2, 6994TH SECURITY SQUADRON - ARDF SUMMARY

<u>PERIOD</u>	<u>TGT WORKED</u>	<u>TGT FIXED/CUT</u>	<u>TGT ID'D</u>	<u>PRIORITY TGT</u>
1	433	378	123	70
2	430	362	121	62
3	493	428	143	69
4	470	421	136	63
5	490	430	149	70
6	402	346	145	68
7	482	408	163	82
8	482	415	166	91
9	297	252	95	42
10	379	328	105	44
11	423	405	146	76
12	339	325	102	66
13	431	414	122	64
14	493	478	126	59
15	384	369	93	43
16	392	365	100	52
17	669	637	151	76
18	464	449	118	61
19	450	334	79	33
20	605	475	92	38
21	577	441	110	52
22	693	558	155	62
23	752	718	132	67
24	618	471	91	36
25	677	523	95	44
26	645	567	105	63

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**APPENDIX B**

**HISTORY OF DETACHMENT 1, 6994TH SECURITY SQUADRON**

**PROJECT CORONA HARVEST**  
**DO NOT DESTROY**  
No 0408053

[REDACTED]  
HISTORY OF DETACHMENT 1, 6994TH SECURITY SQUADRON

1 JULY 1968 - 31 DECEMBER 1968

RCS: AU-D5 (USS-1)

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Prepared by:

SSgt Mark C. Boyd  
Unit Historian

MSgt Bobby J. Holloway  
NCOIC Mission Management

Approved:

**SIGNED**

DOUGLAS G. BALAN, Captain, USAF  
Operations Officer

[REDACTED]

[REDACTED]

## FOREWORD

This historical study is a record of Detachment 1, 6994th Security Squadron (Operations), covering the period 1 July 1968 - 31 December 1968. All references to dates are within this period unless otherwise indicated.

The majority of the information contained herein was taken from files and records maintained at this unit. Additional information was gained from personal interviews with members assigned to the unit.

All suggestions and comments should be directed to the Operations Officer who is responsible for preparing this report.



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CHAPTER I - MISSION AND ORGANIZATION

Organization

[REDACTED] Detachment 1, 6994th Security Squadron is located at Nha Trang, Republic of Vietnam. The Operations Section continued to be located at Camp McDermott in the 313th Radio Research Battalion compound area. The flying crews continued to operate from Nha Trang AB proper, in conjunction with the 361st Tactical Electronic Warfare Squadron.

[REDACTED] The Detachment maintained and improved a close working relationship with personnel of First Field Forces Vietnam ((FFV) and the 313th Radio Research Battalion (RRB). This greatly enhanced the operating capabilities of the detachment by providing a ready channel for the exchange of ideas.

Organizational Changes

(U) During this period (1 July - 31 December), many personnel performed and completed various TDY assignments in and out of the Republic of Vietnam. Operations experienced no shortages in any operational personnel. (Further details contained in the Mission Accomplishment portion of this history).

(U) On 15 October 1968, due to an increase in personnel, Operations initiated a two flight concept. In essence, this enabled the NGOIC of Operations to delegate his authority to two Flight Commanders; thereby, providing for a more flexible operation and relieving him of an additional workload.

Personnel

[REDACTED] Detachment 1, continued to supply personnel in support of [REDACTED]

[REDACTED]

Project Sentinel Sara. Six Det 1 personnel (29251's) were sent TDY to Pleiku Air Base during the month of September. The project was terminated in December and all personnel were returned to their original organization. Also, due to the limited amount of voice collection at this unit, eight voice operators (203X1's) were sent TDY to Pleiku Air Base between the months of September and December in hopes of increasing the overall output of voice collection by the 6994th Security Squadron. In December, voice collection remained very low and this unit was directed by the 6994th to send seven voice operators to the 6990th Security Squadron (Kadena AB). At the close of this report, the remaining voice operators were being utilized by Det 1 to accomplish limited voice tasking.



[REDACTED]

CHAPTER II - TASKING AND COLLECTION

SIGINT Collection Policies

[REDACTED] On 20 July 1968 the ARDF Coordination Center (ACC), in an effort to improve ARDF Recovery Reporting, began a daily evaluation of these reports from all aviation units. Det 1 questioned the rationale behind evaluating aviation units on target identifications contained in the recovery reports when the current operational concept was that identification responsibility rested with the various GMA's. The problem was discussed at the 6994th Security Squadron Operations Officers Conference during August 1968. Discussions with the ACC resulted in the discontinuance of target identification evaluations of aviation units.

[REDACTED] On 1 August 1968, DIRNSA implemented the use of the Reference Designator System (RDS). RDS were arbitrarily assigned to all VC/NVA radio terminals in Southeast Asia. The Radio Arbitrary Designator (RAD) was discontinued on 31 July 1968. To prepare for this change over, the analysts had to convert the entire data base. This was accomplished with approximately 500 manhours.

[REDACTED] A new Unit Detail List was received (effective 1 July 1969) which authorized a total of seventeen analysts at Det 1. This new authorization was requested by a Unit Manning Document Change Request submitted by this unit on 6 September 1968. Since then, our Collection Management Authority (USM-604), was given the responsibility for the identification of targets and the preparation of the Technical Data Sheet (Cherry Sheet), thus negating our requirement to maintain extensive data base records for the identification of targets. It is anticipated that a new change will be submitted

[REDACTED]

requesting that a total of eight or nine analysts be authorized in lieu of the seventeen now authorized by the latest Unit Detail List.

[REDACTED] The IFFV Liaison Office advised this unit that communications problems had caused excessive delays in receiving our ARDF recovery reports. This unit now prepares an additional copy of our recovery reports and the Liaison Office picks these copies up on a periodic basis. Additionally, a procedure was established that when this unit obtains a fix within a 30 nautical mile radius of Nha Trang, the analysts encrypts the position on a comus pad and telephones the fix information to the IFFV Liaison Office. This has resulted in a faster reaction time to targets located within the Nha Trang area by IFFV.

[REDACTED] On 1 July 1968, this unit was assigned a total of 15 EC-47 aircraft to accomplish its tasking. This included 11 Combat Cougar (X & Y) configured and 4 Zulu configured aircraft. The Zulu configured aircraft had the X & Y positions plus two "Z" positions to be utilized as straight collection positions. On 3 August 1968, two Zulu configured aircraft were sent TDY to Tan Son Nhut and two X & Y configured aircraft were sent TDY from Tan Son Nhut to replace them. On 15 October 1968, the exchange of two Zulu aircraft for two X & Y aircraft was made permanent. On 1 November 1968, two Combat Cougar (X & Y) configured aircraft were permanently transferred from Pleiku to Nha Trang. At the end of this reporting period, this unit was tasked to man 15 Combat Cougar configured aircraft and two Zulu configured aircraft.

[REDACTED] On 17 September 1968, this unit began using the KYK-3 Keyer for the KY-8 vice the KYK-12. This helped eliminate the problem of secure

[REDACTED]

voice communications between the aircraft and ground stations. KYK-12 keyers were previously utilized with the KY-8 and secure communications was extremely unreliable. Since the conversion, the KY-8 secure voice system has functioned properly, approximately 96.25% of the time. The Hestia pad is utilized as a backup encryption system and is carried on all missions.

[REDACTED] On 1 October 1968, the runway at Nha Trang AB, Vietnam closed to all air traffic between the hours of 0700 - 1800 hours each day. This unit, in coordination with the 361st Tactical Electronic Warfare Squadron, scheduled all missions to depart Nha Trang prior to 0700 hours each day and to return after 1800 hours. Missions taking off that could not go directly to the fraged target were fraged for enroute stops at Cam Rahn Bay, Pleiku, and Tuy Hoa Air Bases. Aircraft refueled and departed these bases at the appropriate time to accomplish their fraged missions. Those returning to Nha Trang prior to 1800 hours were diverted to either Cam Rahn Bay, Tuy Hoa or Pleiku Air Bases to await a take-off time that would allow them to arrive at Nha Trang after 1800 hours. During this period, all tasked missions were flown as scheduled. The runway resurfacing was completed on 9 November 1968.

#### Special Collection Projects

[REDACTED] Working in close coordination with the local Radio Telephone (RT) operators during the month of August, Det 1 suggested ARDF tasking changes in a continuing effort to develop a VHF/HF voice intercept mission. Subsequently, RT operators were flown in MACV areas 14, 16, and 20, however, no intercept was obtained in spite of the ideal tactical situation which would indicate use of voice communication by targets entities.

[REDACTED] On 4 October 1968, Det 1's area of responsibility was re-

[REDACTED]

arranged. The small MACV areas were made larger and renumbered to 03, 04, 05, 06, 07, and 08. In addition, the tasking was changed to two types of coverage; absolute and effective. Effective coverage required mission aircraft to fly entire areas in search of targets for continuity and development. Aircraft flying absolute coverage were assigned a frag point and searched within a circle of 37 KM radius from the frag point. Preliminary evaluation of the new concept by Det 1 indicates that the areas are too large for effective coverage. Productivity totals since the new concept was implemented, reflects a decrease. This is believed to have resulted not only from the change in areas but also from a reduction of targets available. By the end of this reporting period, productivity had increased to approximately the level it was prior to the change in frag areas. The primary area of change for productivity reporting, was in the reporting of "Z" missions. Z1 and Z2 positions were assigned position designators and their effectiveness was to be recorded in the mission line of each "Z" mission flown. In addition, when an aircraft flew a round robin mission with no intermediate stops, the itinerary need not be reported. Also, the change deleted the requirement for reporting "X" copy time.

#### Mission Accomplishment

[REDACTED] On 15 July 1968, Det 1 fixed the 66th and 24th Regiments in the Darlac province. At that time, Det 1 was not tasked with a "Z" mission in area 20. Anticipating a substantial increase in collection potential in area 20, Det 1 asked that the "Z" aircraft flying area 22 be scheduled into area 20. On 25 July 1968, the change was made as requested. A VHF voice collection effort was assigned to one "Z" position on 27 July 1968. This

[REDACTED]

was initiated in the event that VHF voice communications were used by the NC/NVA. No voice targets were intercepted.

[REDACTED] On 11 July 1968, the 21st VC Regiment was fixed in MACV area 10. This was the first appearance of this unit since March 1968. Between 11 and 29 July 1968, this unit moved into MACV area 12, as did the 22nd NVA Regiment from area 13, to augment the 2nd Division forward element one, the 3rd NVA Regiment and the 1st VC Regiment in engagements with allied forces. Det 1's ARDF missions in area 12 maintained continuity on these units.

[REDACTED] Terminals serving NVA forces located close to Da Nang, Chu Lai and Quang Ngai were fixed repeatedly during the month of August. Hundreds of airstrikes and artillery strikes were made against these fixes. Friendly sweep operations and collateral sources indicate enemy losses from these strikes have reduced their forces by 50 to 75%. Consequently, the enemy no longer poses a threat to these areas and installations. The following communique, prior to the above action, was received from the Commanding General of the Americal Division:

"The events of 21 August 1968 will not be forgotten by the Operational and Command personnel of this unit. The untiring efforts and dedication to duty of personnel of the 138th RR Company (AVN) and Det 1, 6994th SS produced such outstanding results in fixing the enemy's location in our Americal Division area of operations that valuable time was gained for planning and maneuvering of units so that the elements of the 2nd and 3rd NVA divisions will be swiftly beaten back if a general offensive on Chu Lai and other vital targets is their air... This is not

[REDACTED]

not the first instance of these "professionals" performance, and we salute them. If action such as theirs is general throughout Vietnam at this particular critical period, the Radio Research community will owe much to these few men."

[REDACTED] During the first two weeks of September 1968, ARDF fixes reflected a large concentration of NVA forces around the Duc Lap Special Forces Camp. These fixes provided the defenders with enemy locations which was relayed to AC-47 gunships. After attacks by the AC-47 gunships and Duc Lap ground forces, between 600 and 800 NVA bodies were found in the area of reported fixes. Friendly losses were 178 KIA and 300 WIA. Defenders of the Special Forces Camp credited ARDF results with turning the tide of the battle and preventing the over run of the camp by enemy forces.

[REDACTED]

CHAPTER III - HOSTILE ACTIVITIES

[REDACTED] During this reporting period, Nha Trang AB was attacked three times. The first attack occurred on 21 September 1968, when mortar fire was directed at the Air Base. One round damaged the wing of an AC-47 gunship. On 22 September 1968, recoilless rifle fire was received on the base during the afternoon hours. This was the first daytime attack on Nha Trang AB. Minor damage to a BOQ and several vehicles and minor injuries were the results of this attack. During the night of 8 December 1968, Nha Trang received approximately ten rounds of 82mm mortar fire. Damage to the base was limited to U.S. Army aircraft, motor vehicles and minor injuries to Army personnel. No USAFSS personnel were injured and no equipment was damaged during these attacks.

[REDACTED] Aircraft 668, while returning from IRAN made an RON at Pleiku AB, Vietnam on 22 December 1968. While there, an enemy attack was launched and the aircraft received damage to the right aileron and rudder. Aircraft was out of commission for four days and returned to Nha Trang AB on 26 December 1968. ARDF equipment was installed and the aircraft was declared operationally ready on 31 December 1968.

[REDACTED]

[REDACTED]

**PROJECT CORONA HARVEST**  
**DO NOT DESTROY**

No. 0408054

**APPENDIX C**

**HISTORY OF DETACHMENT 2, 6994TH SECURITY SQUADRON**



[REDACTED]

HISTORY OF DETACHMENT 2, 6994TH SECURITY SQUADRON

1 JULY 1968 - 31 DECEMBER 1968

RCS: AU-D5 (USS-1)

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Prepared by:

MSgt Walter E. McCollough  
NCOIC, Mission Management

Approved:

**SIGNED**

JOHN E. STUART, 1st Lt, USAF  
Operations Officer

[REDACTED]

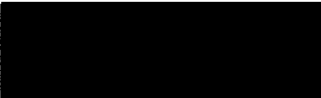
[REDACTED]

  
FORWARD

This historical report is a record of Detachment 2, 6994th Security Squadron (Operations), covering the period 1 July 1968 - 31 December 1968. All references to dates are within this period unless otherwise indicated.

The majority of the information contained herein was submitted by the major staff sections. Additional information was taken from files and records maintained at this unit.

All suggestions and comments should be directed to the Operations Officer who is responsible for preparing this report.



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[REDACTED]

CHAPTER I - MISSION AND ORGANIZATION

Mission

[REDACTED] The mission of Detachment 2, 6994th Security Squadron was to conduct Airborne Radio Direction Finding (ARDF) operations to provide support to the Military Assistance Command, Vietnam (MACV) for the employment of tactical forces against enemy forces in South Vietnam, Laos, and adjacent waters. The organization accomplished its mission through the resources of Projects Combat Cougar, Sentinel Sara, and Sentinel Eagle.

Organization

[REDACTED] Detachment 2, 6994th Security Squadron was located at Pleiku Air Base, Republic of Vietnam and was directly subordinate to the 6994th Security Squadron located at Tan Son Nhut Air Base, Republic of Vietnam. The detachment provided the radio operators, linguists, and analysts for the operational missions; the 362nd Tactical Electronic Warfare Squadron (TEWS) provided the aircraft and flying crews.

Organizational Changes [REDACTED]

[REDACTED] During this period the gradual and continual loss of Security Police without replacement resulted in having only one 811XX assigned at the latter part of October 1968 and none forecast in until late December 1968. In order to maintain the necessary security for the operations area, the Operations Officer assumed control of the SLE function and utilized operations personnel to fulfill their duties.

(U) In September 1968 the Training Section and the Standardisation Evaluation and Flight Examiner (SEFE) Sections were divorced from Operations II (Mission Management) and placed under the supervision of a Senior NCO responsible to the NCOIC Operations. Since the supervisor was also the Unit OJT Monitor, this alignment resulted in an increased awareness of the individuals capabilities within an exacting specialty and their progress in upgrade training, if in that program.

[REDACTED] This period also saw the removal of all but one of the airborne 202XX personnel from the Unit Detail Manning List. This item is covered more fully in Chapter III.

[REDACTED] Detachment 2 assumed operational control of the Sentinel Sara project for the period 15 August 1968 through its termination on 6 December 1968. Manpower support for the project was reflected in the Unit Detail Manning List effective 2QFY69.



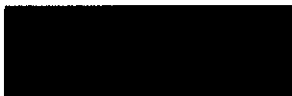
ROSTER OF KEY PERSONNEL

1 July 1968

Operations Officer	Captain William J. Porter
NGOIC Operations	MSgt William T. Warfield
Mission Management	MSgt John D. Mulkey
SEFE	TSgt Cecil T. Cobb
Reporting	MSgt Douglas J. Venne

31 December 1968

Operations Officer	1st Lt John E. Stuart
NGOIC Operations	SMSgt Kenneth J. Seals
Mission Management	MSgt Walter E. McCollough
SEFE	TSgt Lowell A. Farmer
Reporting	TSgt Ronald C. Hain

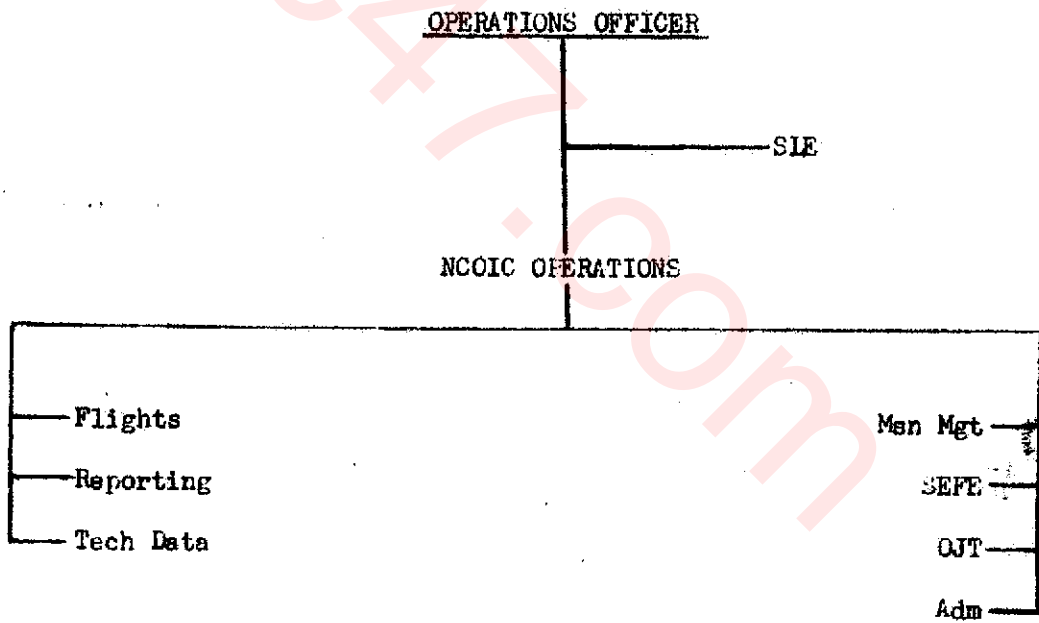




Det 2, 6994th Security Squadron

Operations Division

Organizational Chart



[REDACTED]

CHAPTER III - TASKING AND COLLECTION

Tasking

[REDACTED] The detachment's Combat Cougar resources were tasked with ARDF and associated collection of VC and PAVN/NVA transmissions in the northern portion of South Vietnam, Laos, and the coast of North Vietnam immediately above the Demilitarized Zone (DMZ). The Combat Cougar Zulu resources were tasked with the same assignments plus the collection of HF and VHF voice and exploitable HF manual morse transmissions. The Sentinel Sara resources were tasked with collection in the DMZ area.

Collection

Collection Capability

[REDACTED] The detachment's collection capability consisted of airborne acquisition, monitor, record and ARDF of AM signals in the 2-16 MHz frequency range; acquisition, monitor and record of AM signals in the .5-30 MHz range; and acquisition, monitor and record of AM/FM signals in the 10-260 MHz range.

Collection Facilities

[REDACTED] The detachment's collection facilities at the beginning of the period comprised 17 aircraft; 13 Combat Cougar aircraft (two positions each) and 4 Combat Cougar Zulu aircraft (four positions each) for a total of 42 positions. At the end of the period the detachment had 60 positions available in the following composition: eight Combat Cougar aircraft, five Combat Cougar Zulu Aircraft, and six Sentinel Eagle aircraft (four positions each) for an overall forty percent increase in capability. The two Sentinel Sara aircraft



[REDACTED]  
operating from Pleiku during the majority of this period were assigned to Tan Son Nhut AB.

#### Follow-on Aircraft

[REDACTED] The VHF signal environment in Southeast Asia has continually increased. To satisfy an immediate MACV/PACAF requirement for VHF ARDF, USAF directed AFSC and AFLC to initiate action to procure a minimum VHF ARDF capability (MINI-38) for three Sentinel Eagle aircraft. This minimum capability will provide frequency coverage from 16-50 MHz which will increase the overall ARDF frequency coverage on Sentinel Eagle aircraft from 2-50 MHz. Delivery of the MINI-38 was anticipated in 2QFY69 but failed to materialize. When the AN/ALR-38 program is implemented (tentatively scheduled for 4QFY69), these three aircraft as well as the other seven Sentinel Eagle aircraft will provide ARDF coverage from 1-180 MHz.

#### Aircraft Damage

[REDACTED] An enemy rocket attack of approximately 39 rounds of 122MM rocket on 23 August resulted in minor damage to aircraft 43-48402 and 45-1102. Both aircraft were operational within 24 hours.

[REDACTED] On 24 August aircraft 43-49547 was hit in the right wing by enemy AAAfire. The aircraft was grounded two days for extensive sheet metal work.

[REDACTED] An enemy 75MM recoilless rifle attack on 20 September wounded two personnel and damaged three aircraft. Damage to aircraft 43-49013 and 43-15947 was repaired within 24 hours but aircraft 43-48871 was non-operational until mid November.

[REDACTED]  
[REDACTED] An enemy attack of approximately 17 122MM rockets on 22 December resulted in minor damage to aircraft 42-00950, 43-48702, and 44-76668. All aircraft were operational within 24 hours.

(U) On 31 December aircraft 43-48702 ran off the runway during take-off. The aircraft sustained complete loss of both engines, both props, both main landing gear, right wing tip, and lower fuselage damage. The cause of the accident was attributed to a leaking fire extinguisher whose fumes temporarily blinded the pilot and copilot. There were no injuries to personnel or damage to the rear and equipment.

#### Special Collection Projects

##### Sentinel Sara

[REDACTED] The two Sentinel Sara collection aircraft continued to operate out of Pleiku after moving here from Hue-Phu Bai during the February 1968 TET offensive. On 15 August operational control of the project passed from the 6994th Security Squadron to Detachment 2. Sentinel Sara aircraft 43-16254 and 43-49680 utilized three manual morse and one voice collection positions to intercept exploitable enemy communications.

[REDACTED] For some time plans had been in progress to replace the two Sentinel Sara aircraft with Combat Cougar Zulu aircraft. On 26 October the 6994th Security Squadron requested that we outline the impact of the departure of the Sentinel Sara aircraft. The following is extracted from our reply.

"Subj: Impact of Departure of Sentinel Sara aircraft.

1. Morse Collection. [REDACTED]

[REDACTED]

A. Since "Y" must work in conjunction with "X" position, Z2 is the only morse collection position on CCZ aircraft. This means that loss of two SS birds will in effect result in the loss of four morse collection positions. To overcome this collection capability loss would be nearly impossible without total reconfiguration, i.e., removing X console and installing a Z console in its place. This, of course, would eliminate the ARDF effort... An acft configured as described above would be considerably more roomy and convenient than the SS acft.

B. Disregarding reconfiguration, the most objectionable feature of CCZ aircraft is G-133F receivers for morse intercept. This receiver was obviously designed as a SSB voice receiver with the CW optional as an accessory, not intended to be used to any great extent and surely not for the weak signals encountered in copying low level targets. G-133F is a fine high quality receiver with good sensitivity but lacks a number of controls needed for best possible reception of difficult to hear signals, e.g., antenna trim, operational BFO in CW mode, band width selector, switch to turn off audio noise limiter (ANL). These receiver shortcomings are the most objectionable features. Others not listed are inconvenient but tolerable.

[REDACTED]

The solution to the receiver problems might be solved by modification to present receivers or replacing them with more suitable ones, possibly the G-133B."

[REDACTED] The Sentinel Sara program phase out started on 26 October with the loss of aircraft 43-26254 which returned to Tan Son Nhut. The last Sentinel Sara mission was flown on 6 December. Upon Termination of the program the following 6922nd Security Wing messages were received by the 460th Tactical Reconnaissance Wing (TRW) and 6994th Security Squadron and Detachments:

"I note the termination of the Sentinel Sara project with considerable pride in the project's achievement and a huge amount of appreciation for your crews and support personnel. These dedicated people have achieved an amazing record of in-commission and on-station time. I fully recognize that the basic mission and objectives of the Sentinel Sara project will be perpetuated in the Combat Cougar Zulu project. However, having closely followed the exemplary record of the Sentinel Sara aircraft, it seems appropriate to express my admiration for the accomplishment of your personnel and the 6994th Security Squadron. The follow-on program has a great challenge despite the improved airframes and systemized equipment."

"Congratulations on the completion of a fine project accomplishment. Request you express my compliments

[REDACTED]

to the operators and maintenance personnel who compiled a terrific record of dedication and achievement in the Sentinel Sara program."

Support to Task Force Alpha

[REDACTED] On 16 August the detachment was tasked with conducting a herability test with Task Force Alpha (TFA) located at Nakhon Phanom, Thailand (NKP). At the onset it was decided to test the reliability of aircraft flying in MACV Area One, Two, and Three, but after extensive testing it was determined that Areas Two and Three would have only sporadic contact even under ideal conditions and therefore testing became limited to Area One.

[REDACTED] The tests were finalized in early October and on 5 October the detachment started passing information to NKP from all missions flying in Area One. All fixes and cuts were reported on a timely basis over UHF cipher voice communications which were established upon entry into the mission area. From all indications the TFA targeting people are utilizing the ARDF information immediately, and on a daily basis.

ARDF Support to Udorn

[REDACTED] In response to ARDF Coordination Center tasking, one Combat Cougar aircraft was deployed to Udorn, Thailand to support MACTHAI requirements. Tasking directed TDY for six days with five ARDF missions scheduled. The five missions flown produced a total of fifty-four fixes and cuts, a number that appeared to be very impressive to the consumers. Both AFSSO Udorn and USM-7 indicated that the results were outstanding.

[REDACTED]

Operational Statistics

[REDACTED] The following statistics reflect the detachment's effectiveness during this historical period.

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTALS</u>
Missions Tasked	315	314	290	325	276	325	1845
Missions Completed	308	306	265	291	273	322	1765
Sorties	433	432	370	404	361	441	2441
Total Hours Flown	2173	1992	1611	2242	1874	2257	12149
Total Targets	2485	2044	1570	2273	2002	3123	13787
Total Fixes	1989	1654	1289	1221	1536	2001	10290
Total Cuts	115	96	142	348	341	426	1468

[REDACTED]

CHAPTER III - PROCESSING AND REPORTING

Processing

[REDACTED] Due to the limited technical support documents furnished the detachment and also the limited number of analysis assigned, the processing effort was small. The primary functions performed from a processing viewpoint were the limited identification of ARDF targets through callsign analysis, and the recognition of possible exploitable traffic.

Reporting

[REDACTED] The process of replacing the A202X0 Airborne Mission Supervisors (AMS) with A292X1 personnel for Combat Cougar Zulu missions began during this period. The process was a gradual phasing out as A202X0 personnel departed PCS. The first A292X1 AMS completed qualifying checks for AMS duties on 20 August and by 31 December a total of 14 A292X1's were performing this function. The training of A292X1's for AMS duty was accelerated by the introduction of the Zulu configured Sentinel Eagle aircraft. By the end of the period only three A202X0 AMS personnel remained in the detachment.

[REDACTED] There were two distinct advantages to be found in the use of A292X1 personnel as AMS's. First, as he acquired experience he could often identify low-level, exploitable targets by transmitting characteristics when other identification traits were not available; A202X0 analysts identified only by callsigns or message traffic. Second, he serves to conduct crew coordination, prevent duplicate copy, identify targets, etc. In addition, since the A292X1 can

[REDACTED]

operate a position, he is available to replace one of the other: only four crewmembers in the event of sickness or for crew rest purposes. This will reduce mission effectiveness slightly since AMS duties, the must still be performed to the detriment of duty at the collection position but is preferable to an air abort.

#### Feedback Program

[REDACTED] The last quarter of calendar year 1968 was a productive period of the OPS-3 (Analysis and Reporting) section. On 30 October the detachment's first formal feedback program was instituted. On the basis of information learned from formal and informal reports from the Americal Division, the 9th Radio Research Field Station (RRFS), SSO MACV, and Headquarters, 7th Air Force, OPS-3 analysts issued formal feedback reports on a weekly basis. These reports were initially divided into four parts.

Part One dealt with letters and messages of a laudatory nature addressed to the detachment. (During the period 1 October through 31 December four such messages were received; one from the 8th RRFS, one from the 198th Light Infantry Brigade, and two from the 6922nd Security Wing).

Part Two concerned the detachment ARDF effort. This was a compilation of all significant military actions and reactions which occurred as a direct result of ARDF fixes obtained by the operators.

Part Three related to the collection of exploitable (readable) traffic.



[REDACTED]

Part Four concerned the close tactical support role of the detachment and special interest items.

#### Interservice Coordination

[REDACTED] During the latter part of November, 1st Lt John E. Stuart and TSgt Ronald C. Hain spent one day at the 330th Radio Research Company (RRC) coordinating matters concerned with both the ARDF and exploitable traffic collection efforts. This visit proved very successful. As a result of the discussions which ensued, low-level tech data and feedback from the 330th RRC increased significantly, and traffic distribution was modified so that the 330th RRC was afforded one copy of all traffic intercepted by the detachment. Also, crew manning was subsequently modified so that all positions on aircraft flown in MACV area 12 were manned by morse operators.

#### Pre-mission Briefings

[REDACTED] On 1 December OPS-3 began formal pre-mission briefings for Combat Cougar and Sentinel Eagle crews. At the same time, a new and expanded briefing area was made available, complete with lounge chairs, and a new and more detailed plotting board. These briefings added substantially to the overall professionalism within the unit, and enabled crewmembers to more thoroughly plan the mission prior to actual launch time.

#### Interservice Briefings

[REDACTED] Through coordination with the 8th RRFSS at Hue-Phe Bai, OPS-2 arranged for formal intelligence briefings to be given periodically to members of the detachment. Army and Air Force analysts stationed at Hue-Phu Bai performed TDY to the detachment and

[REDACTED]

presented two such briefings during October and December. At these briefings all intelligence information concerning the detachment's area of operation and the impact of ARDF on the military posture in Southeast Asia were presented. These briefings gave crewmembers and ground personnel a clear picture of what had taken place and what to expect within the areas of operations, thereby, increasing mission effectiveness. These briefings also created an excellent working relationship with our Army counterparts at Hue-Phu Bai.

APPENDIX D  
HISTORY  
AIRBORNE RADIO DIRECTION FINDING COORDINATION CENTER

[REDACTED]

HISTORY  
OF THE  
AIRBORNE RADIO DIRECTION FINDING  
COORDINATION CENTER  
(ACC)

1 JULY - 31 DECEMBER 1968

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Prepared by:

Sgt Berl K. Clark  
Special Project Section  
ARDF Coordination Center

Approved:

**SIGNED**

JACK D. STEVENS, Major, USAF  
OIC, Airborne Radio Direction Finding  
Coordination Center

[REDACTED]

[REDACTED]

[REDACTED]

CHAPTER I - MISSION AND ORGANIZATION

Mission

[REDACTED] The original MACV concept of operations for the ARDF program in South Vietnam placed certain responsibilities with the Commander, 6994th Security Squadron and the Commanding Officer, 509th Radio Research Group that were to be accomplished as a joint effort. The units subsequently formed a joint operations center to accomplish these responsibilities. The ACC was initially formed on 1 July 1966, but, was not approved by MACV until 1 October of that year. The ACC was originally designated as the Joint Platform Management Group. It was later redesignated as the ARDF Coordination Center (ACC). The mission of the ACC is:

"To provide for the coordinated management of the entire ARDF program in South Vietnam and other areas of SEA as directed by COMUSMACV."

[REDACTED] To accomplish this mission, the ACC issued directives that governed all phases of the ARDF operation that involved both services and were suited for standardization.

Organization

[REDACTED] The ACC is manned by the USAF personnel of the 6994th Security Squadron and US Army personnel of the 509th Radio Research Group. The command duties are shared by an Officer-in-Charge from each of the services (Attachment #1). Each OIC is directly responsible to the operations officer of his respective organization.

(U) The facility is collocated with the 509th Radio Research

[REDACTED]

Group at Whitebirch Station, within the Vietnamese Joint General Staff Compound, adjacent to Tan Son Nhut AB, Vietnam.

Internal Organizational Changes

[REDACTED] On 29 July 1968 the ACC Analysis Branch was established within the Reporting Section. This branch screened all incoming Recovery Reports for misidentified targets and identified targets that aviation units were unable to identify. This function was performed by personnel assigned to the Reporting Section as an additional duty with no change in manning required. In October personnel from the Reporting Section were sent TDY to the CMA's to assist them in establishing procedures for performing target identification. On 1 November the CMA's were tasked with all identification efforts and the Analysis Branch of the ACC was deactivated.

[REDACTED]

CHAPTER II - SUPPORT

Personnel

(U) The authorized strength of the ACC is 44 personnel; 32 Army and 12 Air Force. The assigned strength as of 31 December 1968 is 39 personnel; 26 Army and 13 Air Force.

Communications Facilities

[REDACTED] The activities of the ACC are supported by OPSCOMM circuits to the three CMA's, three Air Force and Three Army aviation units, and one circuit to DODSPECREP (Attachment #2). Also, KY-3 telephone circuits to the 6994th Security Squadron, DODSPECREP, the 224th Aviation Battalion (RR), and a MACV Auto Sevocom circuit.

[REDACTED]

CHAPTER III - SPECIAL PROJECTS

Improper Communications Procedures

[REDACTED] In September the Special Projects Section conducted a study of negative contacts between ARDF aircraft and Direct Support Units (DSU's). Primary aviation unit experiencing negative contact was the 6994th Security Squadron. After querying the DSU's, the ACC found that the major problem was that the aircraft were attempting to contact the DSU in the "cipher" mode while the DSU was still in the "clear" mode. Improper communications procedures were also a contributing factor.

Operation Speedy Express

[REDACTED] The Special Projects Section made arrangements for the 371st Radio Research Company to receive proper HESTIA Pads and other material/information pertinent to ARDF with the 1st Cav Div (AM) re-deployed from I CTZ to III CTZ in late November. The 371st RRC is the DSU in direct support of the 1st Cav Div (AM).

[REDACTED] The ACC conducted an ARDF Conference on 29-30 November at the 509th RR Gp Hqs. This conference was conducted with management level problems as the primary topics. Personnel from the Radio Research Battalions, Collection Management Authorities, 1st Marine Radio Battalion, J2-MACV, 7th Radio Research Field Station, NSA Representative Thailand (C) and NSA Representative Vietnam (C) attended the conference. Agenda items for discussion centered around the requirement for positive management within the ARDF program; methods and techniques of such management; and the need for a valid comprehensive evaluation system within the ARDF program.



[REDACTED]

[REDACTED] The Special Projects Section and the 509th RR Gp Signal Officer revised the HESTIA Pad distribution so as to comply with ACC Working Aid 04-68, stating that each Register 1 holder should have sufficient reserve Registers to supply redeploying units with the proper Pads for each Net(s) under its control.

[REDACTED] Effective 7 November, the Special Projects Section established new DSU responsibility policy based on field command elements' TACR vice MACV areas (Attachment #3).

[REDACTED] Attachment #4 is a chart showing ARDF fix/identification rate for calendar year 1968.

[REDACTED] In addition, during this period numerous changes and updating of the ACC Working Aid series were accomplished. This series, written by the ACC, incorporates all guidance and directives for the ARDF program. The six Working Aids govern the following areas:

1. The ARDF Program - General.
2. The ARDF Mission Tasking Process.
3. ARDF Mission Procedures and Product Reporting System.
4. ARDF Air-to-Ground and Ground-to-Air communications.
5. Secondary Programs and Operations Supported by ARDF.
6. ARDF OPSGOMM and KY-3 Support Systems.

[REDACTED]

CHAPTER IV - REPORTING

[REDACTED] Effective 1 August all Radio Arbitrary Designators were replaced by Reference Designators (RD). All reports subsequent to that date reflect the new designation.

[REDACTED] Game Warden/Market Time data was deleted from inclusion in the ARDF Recovery Report in November. Coordination with J211-4 and COMNAVFORV resulted in implementation of procedures for aviation units to submit this data directly to COMNAVFORV with information copies to the ACC and DODSPECREP.

[REDACTED] In November the Reporting Section was tasked with providing CMA's with information on scheduled B-52 strikes. The ACC was provided this information by J-3 MACV in the form of Arclight Reports. This information was passed to the CMA's in order to prevent the tasking of ARDF missions in areas of B-52 strikes.

[REDACTED] On 18 December the CMA's were tasked with preparation and submission of the Daily Fix Report to DIRNSA, ACC and other selected consumers. This decreased slightly the workload of the OPSCOMM and Reporting Sections of the ACC.

[REDACTED]

CHAPTER V - MISSION CONTROL

[REDACTED] On 30 September new procedures were introduced under the Dual Coverage Concept. This concept was developed by a 460th Tactical Reconnaissance Wing Navigator and is based on the capabilities of Air Force and Army ARDF aircraft. It was found that the EC-47, flying in an area with a radius of 37 kilometers, could fix any target active within that area provided the target remained active long enough to position the aircraft. For the Army aircraft, the area shrank to 22 kilometers. This was dubbed "absolute coverage." It was then shown that, if the Republic of Viet Nam were divided into 11 major areas, instead of the 41 now being used, one EC-47 could cover one area as effectively as had been the case when 41 areas existed, assuming that the more active targets were subject to absolute coverage. Therefore, the mission of the aircraft flying one of the 11 areas, generally, was designated as "effective coverage." No Army aircraft would (or does) fly effective coverage. The advantage of the system is that it makes more efficient use of the aircraft against both high and low activity areas. This system was officially placed into operation with the 5-11 October tasking cycle. Reference messages/authority are: MACV 12994 INTEL, DTG 251106Z Sep 68; and USM-704 I Apr/ACC/8274-2494, DTG 300330Z Sep 68.

[REDACTED] On 15 October the Mission Control Section initiated a new program of assisting MACV J2 each Tuesday with tasking allocation assignment responsibilities. Each week the ACC provides two Mission

[REDACTED]

Control personnel to assist MACV J2, and such assistance has proved to be of immense value in bringing the ACC more into the overall management of ARDF operations in South Vietnam/SEA.

[REDACTED] Instructions were published by the Mission Control Section on 19 October involving procedures to follow when an ARDF aircraft is forced out of its primary operating area due to weather or artillery fire. This procedure is called, "Twin Coverage Concept." Effective coverage aircraft will notify the closest CMA and request an area change. This will be cleared through MACV J2 via Mission Control, ACC. Three alternatives will be considered: (1) Task the aircraft to fly in another effective coverage area, (2) Task the aircraft to a specific frag point to fly absolute coverage in another area, or, (3) Request the aircraft to abort the mission. Aircraft flying absolute coverage and forced to abort their target will automatically assume effective coverage for that area. Again, the aircraft will contact the CMA who in turn will notify the Mission Control Section and ask for a determination of a new frag point/area with the concurrence of MACV J2. In the event of a critical tactical situation in which the diversion of an aircraft is necessary, the CMA will immediately contact Mission Control, which will in turn contact MACV J2 for an appropriate decision.

[REDACTED] On 30 October a policy change was initiated whereby the CMA's were tasked by Mission Control to recommend optimum and alternate TOT's for the various frag points. As a selection aid, Mission Control provides the CMA's with type and configuration of aircraft, number of sorties

[REDACTED]  
scheduled, and type of mission (effective or absolute coverage).

Mission Control utilizes the CMA's recommended TOT's in correlation with the various flying unit limitations and arrives at the best possible TOT's for all concerned. The end results have been more realistic TOT's for accomplishment of mission goals.

[REDACTED] Procedures were instituted on 11 November whereby ARDF missions will fly along the Cambodian border. Four additional MACV areas were initiated. The areas are numbered starting with number 12 at the northernmost point, followed southerly by areas 13, 14, and 15.

[REDACTED] Collection mission "Sentinel Sara" program was terminated on 6 December and both aircraft were returned to predesignated units.

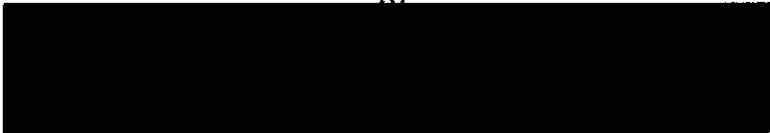
[REDACTED] On 15 December the Mission Control Section commenced construction on new tasking maps. This project will consist of three maps of South Vietnam, Cambodia, Laos, and lower portion of North Vietnam (scale: 1:5000,000) and will contain outlines of the eleven MACV Areas, all Corps zones, Provinces, Base Camp areas, friendly and hostile OB, Friendly Operations, and MTA's. Completion date is scheduled for 31 January 1969.

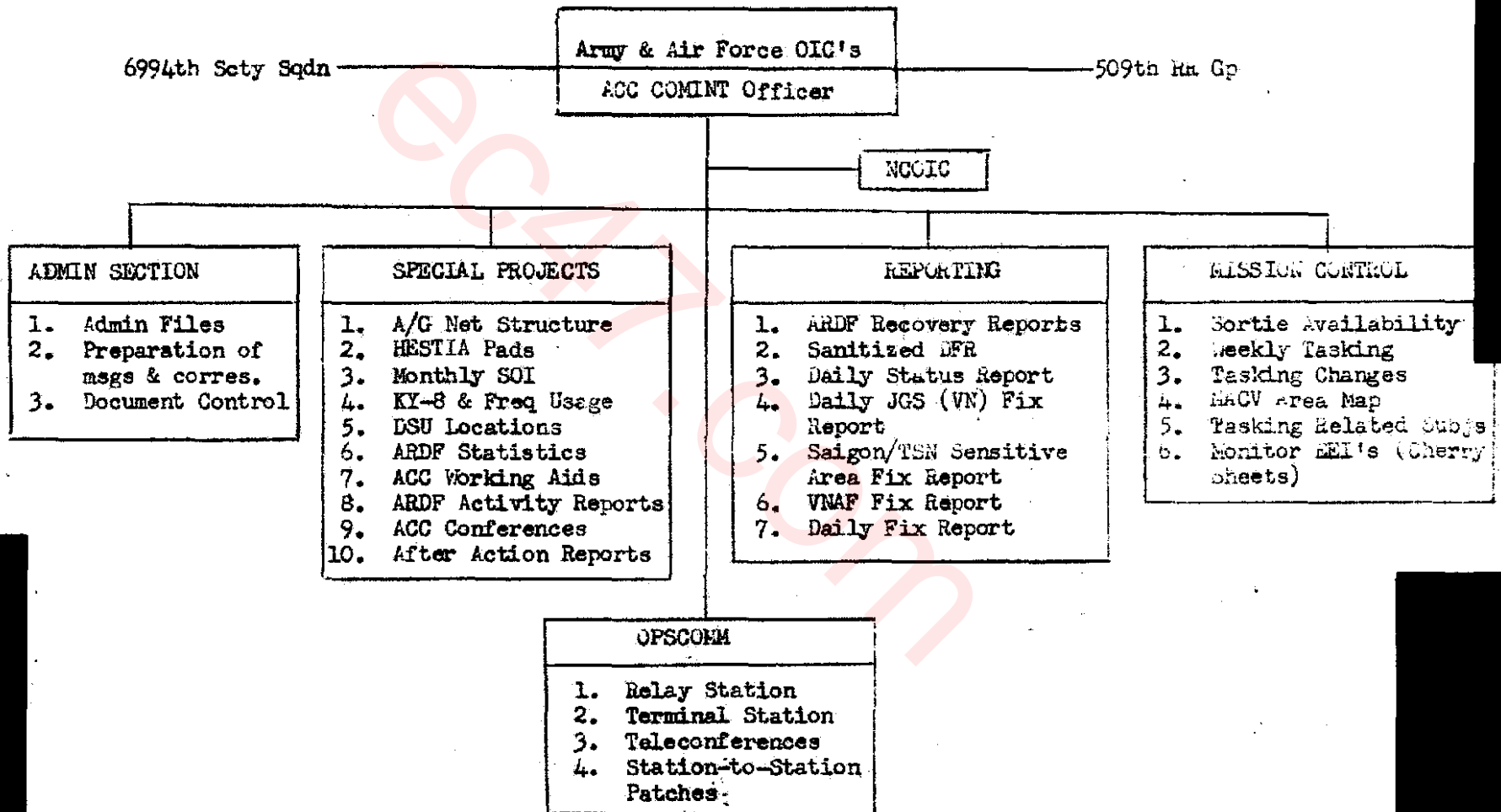
[REDACTED] It has been programmed that two new Army aircraft will commence operations in Vietnam. These aircraft will operate under the covername "Laffing Eagle", which is an RU-21, and will fly primarily collection missions with an ARDF capability. At the present time there are two of these aircraft in-country, located at Phu Bai. Initial planning calls for these two aircraft to cover the area just

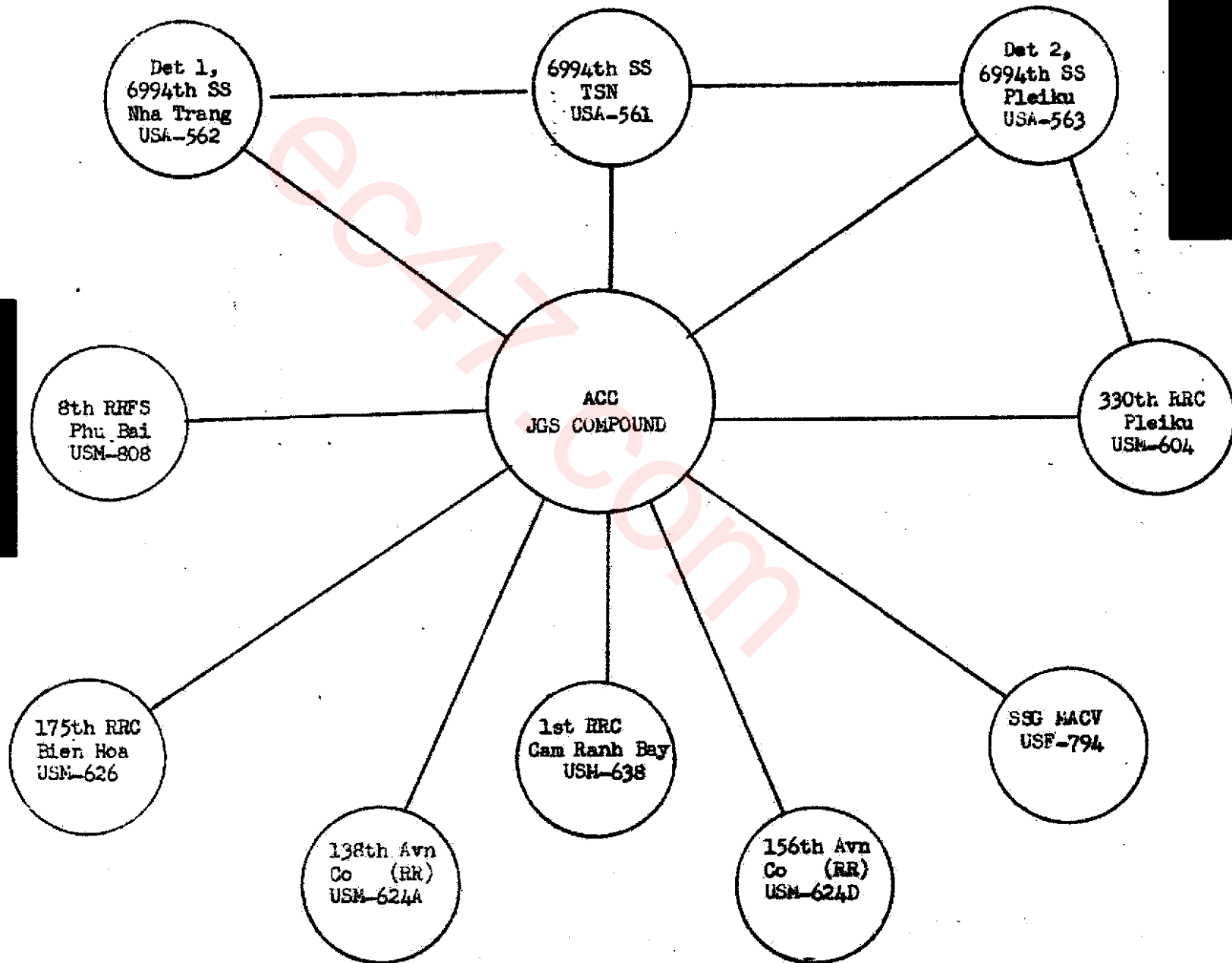


below the DMZ, with overlap into Laos.

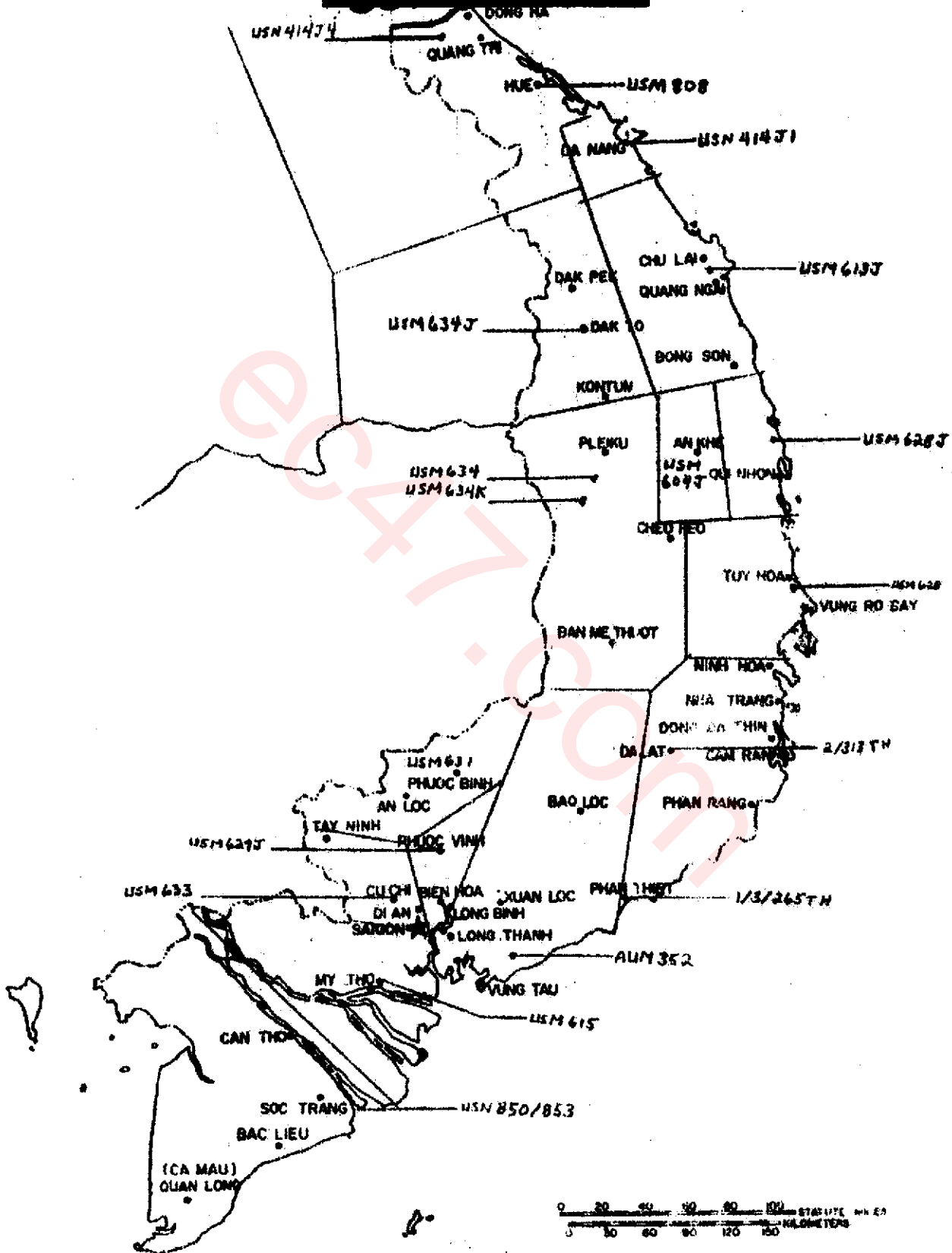
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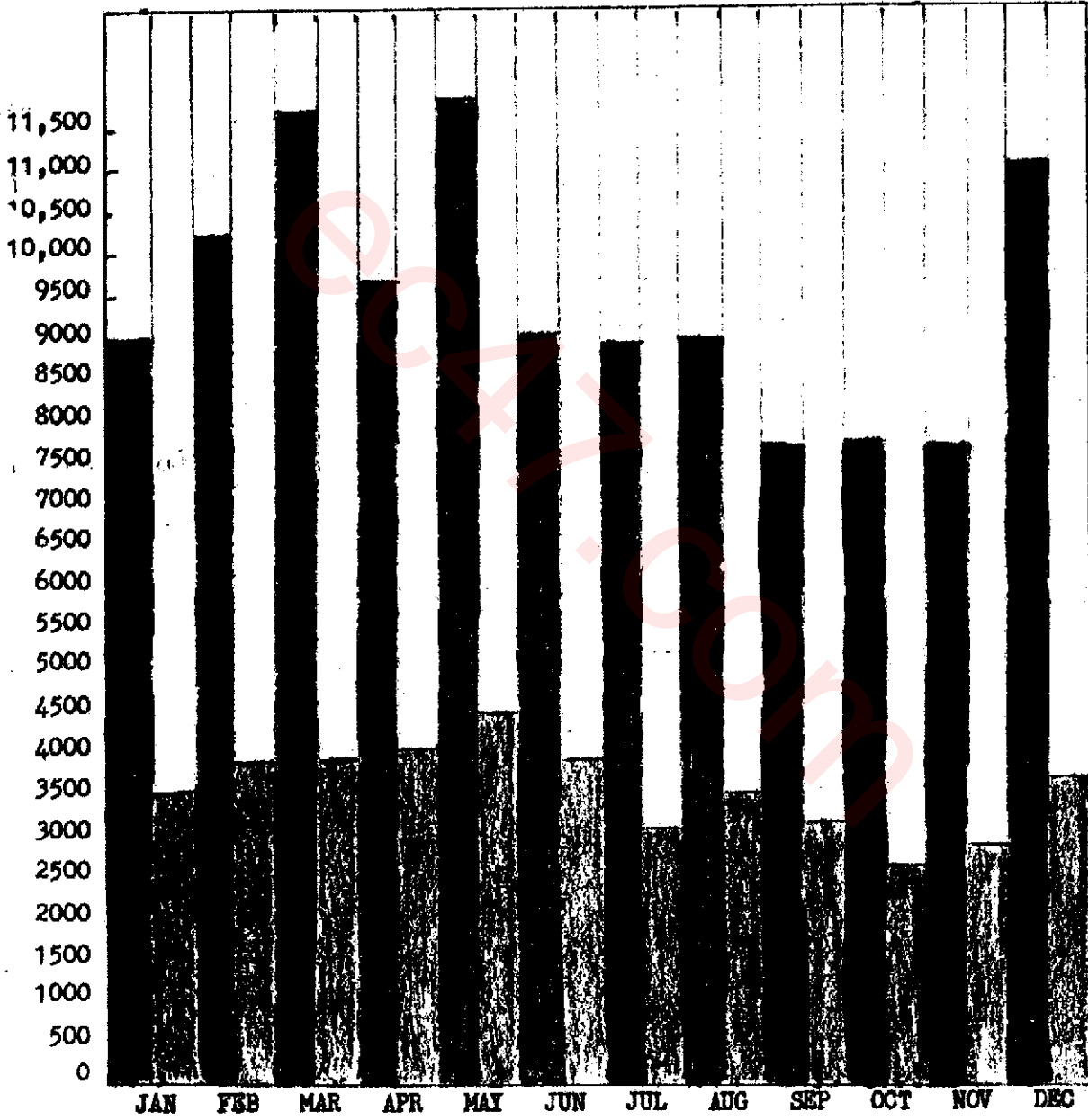






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