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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M) (21 Jan 69) FOR DS DC 27 January 1969

SUBJECT: Senior Officer Debriefing Program: [redacted] September 1967 - October 1968 (U)

SEE DISTRIBUTION

1. Reference: AR 1-26, 4 November 1966, subject, Senior Officer Debriefing Program.

2. Transmitted herewith is the debriefing report of Colonel James W. Sandridge, Jr., former Commanding Officer of the 34th General Support Group (AM&S).

3. The contents of this report and the opinions expressed therein should not be interpreted as reflecting the official opinion or view of the Department of the Army or any Army command, installation or agency.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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Debriefing Report

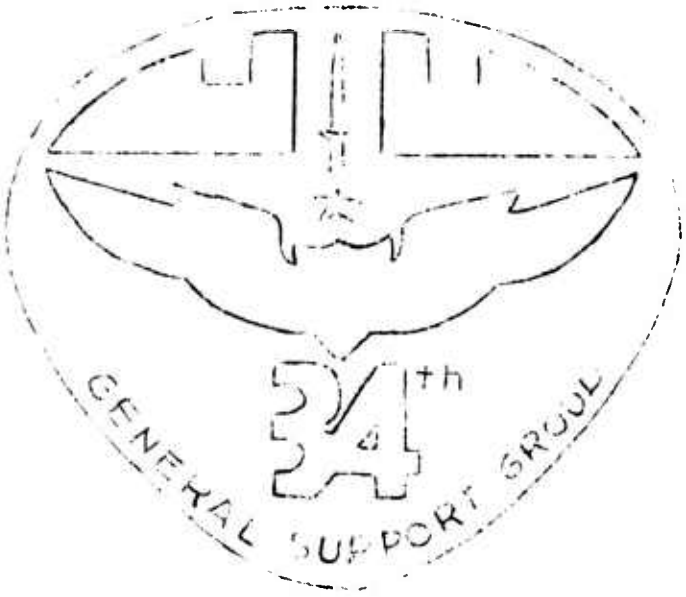
The attached debriefing report is submitted in accordance with paragraph 2, AR 1-26 and paragraph 5a, USARV regulation 1-3.

This report is submitted in two parts. Part I is a series of subjects of current concern to the 34th General Support Group and higher headquarters. Inclusion of these subjects in this debriefing report is not intended as a media for action by higher headquarters. Appropriate action nas been initiated and is in progress for each subject area. Part II is an updated briefing report on the 34th General Support Group and the Aviation Materiel Management Center.

JAMES W. SANDRIDGE JR.
Colonel, TC
Commanding

34th General Support Group

(A M&S)



Colonel James W. Sandridge Jr.

Commanding Officer

Content:

SUBJECT:

SUBJECT: Army Aviation Refresher Training School (AARTS)

1. BACKGROUND: The USARV Army Aviation Refresher Training School (AARTS) was originally established as the Army Aircraft Mobile Technical Assistance Program (AAMTAP) in June 1966. This additional mission, as defined in AR 100-4, was assigned the 34th General Support Group in coordination with the U.S. Army Aviation Material Command (AVCOM). This effort was undertaken without an increase in TOE/TD spaces.

During 1966 and the early part of 1967 the assistance teams were mobile, visiting various aviation units for the purpose of on-site instruction. Due to a recognized requirement of providing the highest possible quality of instruction, and to maintain maximum efficiency, the mobile teams were consolidated, reorganized, and became a fixed base school. The school was located at Vung Tau, Republic of Vietnam, because of its stable atmosphere, which is relatively free from enemy influence. This action permitted use of a greater variety of training aids and established a true school environment for instruction, uninterrupted by unit mission, guard or other administrative requirements that were experienced by the mobile teams while conducting training at the operational unit.

Operational control of the school is delegated to the Commanding Officer, 765th Transportation Battalion (AM&S) who functions as the school commandant. Billeting, mess, supply and administration are provided from the resources of the 765th Transportation Battalion and are in addition to the full maintenance and supply workload carried by that battalion in support of aviation units in III and IV Corps Tactical Zones area of operations. Staff supervision of the school is exercised by the Directorate of Plans and Operations 34th General Support Group, in coordination with Civilian Technical Assistance Branch (CTA), Directorate of Material.

The Directorate of Plans and Operations allocates quotas to USARV Major Subordinate Commands and other Free World Military Assistance Forces. These allocations are based on aircraft density, by type, and needs of units reflected in correspondence and field liaison visits conducted by the 34th General Support Group. Allocations are made by letter to major commands on a quarterly basis. Modification of allocations to conform to the changing needs of units can be made by direct coordination with DPO, 34th General Support Group, by TWX, letter, or telephone.

TAB A - 1

The school was offically designated the Army Aviation Refresher Training School (AARTS) by USARV on 1 September 1968.

2. PURPOSE: The AARTS is not a military occupational speciality producing school but has, as its primary purpose, the mission to update the training of USARV Aviation Maintenance and Supply Personnel. This primarily involves individuals who have not been working in the MOS field for which each specific course is presented or are not familiar with new or different model equipment systems which may have been introduced into the Army inventory subsequent to their completion of a MOS producing school. The secondary mission of the AARTS is to compliment on the job training (OJT) received in the unit to produce a higher skill level individual. The overall command benefit is derived by assisting aviation units in resolving persistent problems by retraining maintenance and supply personnel. The school serves to fill the training gap created by the rapid turn over of personnel. All U.S. and Free World Military Forces units benefit from this institution.

3. SCHOOL and CURRICULUM: The school is staffed with 7 military and 16 civilians of which 5 persons are functioning in an administrative capacity. Civilian instructors are both Department of the Army civilian, and civilian contractor personnel. Each instructor is selected for his technical knowledge and instructional ability. Facilities consist of 11 classrooms, the normal billeting, messing and administrative structures, and sufficient real estate for some limited expansion. A higher degree of professionalism is maintained while up-dating the curriculum with the latest technical changes in equipment. Instructional material is modified periodically to meet field requirements when the need arises.

The AARTS is currently offering the following courses:

AH-16	Airframe	Two week course 15 Students
UH-1B,C	Airframe	Two week course 21 Students
UH-1D	Airframe	Two week course 21 Students
CH-47	Airframe	Four week course 21 Students
OH-6A	Airframe	Two week course 21 Students
T-53-L-9/11	Engine	Two week course 18 Students
T-53-L-13	Engine	Two week course 22 Students

T-55	Engine	Two week course 18 Students
T-63	Engine	One week course 18 Students
Aviation Supply Organizational		Two week course 21 Students

All airframe courses are taught at an organizational level and engine courses are taught at the field maintenance level. Since establishing the school at Vung Tau, the total students graduated to date exceed 4150 (June 1967 thru September 1968).

Future expansion plans include aircraft armament and avionics and the T-55-L-13 courses as additions to the curriculum. The armament courses will be phased-in beginning in November 1968 and fully established by January 1969. The added armament courses will cover the M-5 and XM-21 systems used on the UH-1B and C and the XM-18E1, XM-28 and SM-156 systems used on the AH-1G Cobra. The two systems (UH-1B,C and AH-1G) will be taught separately, as will the armament officer orientation course. Each course is anticipated to cover approximately a one week period. The avionics courses have not been finalized but should begin during the third quarter FY-69. A T-53-L-11 New Equipment Training Team will commence instruction at the AARTS beginning in January 1969. With the addition of the above courses, the AARTS will be expanded to its maximum capacity with the existing facilities and real estate.

Three CH-47 Mobile Instruction Teams, under DA contract to Boeing - Vertol, operate in USARV and are under Group operational control. Two teams circulate among CH-47 units in the field while one team is in residence at the AARTS in Vung Tau. Each quarter the teams are rotated to insure common unit problems are covered in the instruction presented at the AARTS. The field teams are unique in that a specific course can be tailored to fit a specific units needs. Each unit may be taught different subjects depending upon unit requirements. Instruction is presented using unit equipment while training aids are provided by the mobile team. Each CH-47 unit is visited at least once a year or as dictated by unit requirements.

4. CONCLUSIONS: The AARTS, established from 34th General Support Group assets and supported by AVCOM, is providing MOS Refresher Training for Aircraft Maintenance and Supply personnel of all U.S. and Free World Military Forces. This effort has served to increase the command Aircraft Availability through increased knowledge and has also aided in reducing the aircraft accident rate related to maintenance error. The other intangible benefits focus on personnel safety and extending equipment

systems life through excellence in maintenance. The primary objective of aviation support to the field commander is being achieved to a greater degree because of the efforts at the Army Aviation Refresher Training School.

Personnel requirements for the AARTS are provided from 34th Group assets without an increase in TOE/TD authorization. Civilian instructor personnel are principally AVCOM sponsored and are chargeable to the in-country manning ceiling. Military personnel are the chief concern since these personnel are taken from the Group maintenance battalions which are heavily committed.

Facilities are to some degree, limited and substandard because of higher priority construction and the fact that the initial allocation of real estate and facilities did not envision the current expansion rate. Command support and assistance provided by USARV in resolving this problem has contributed greatly to the success of the AARTS.

5. RECOMMENDATIONS: That continued recognition and support be given to the requirement to provide refreshed training in Vietnam for aviation support skills.

SUBJECT: Postal and Banking Privileges for U.S. Civilians

1. DISCUSSION: Presently the orders of all Department of the Army Civilians, Field Service Representatives and Contract Maintenance Personnel authorize military postal and banking privileges. Current in-country directives however, limit these personnel to the following:

a. Department of the Army Civilians - Full postal and banking privileges.

b. Field Service Representatives - No banking privileges, but authorized postal privileges.

c. Contract Maintenance Personnel - No banking privileges, can mail packages, cannot purchase money orders.

2. CONCLUSION: An inequity of postal and banking privileges presently exists between United States civilian maintenance personnel within RVN. A morale problem is created by varying the privileges of these personnel, when all require the same services.

3. RECOMMENDATION:

a. That action be taken to grant privileges as stated in personal orders which emanate from CONUS agencies. If this cannot be granted, personal orders should specifically state privileges authorized.

b. That applicable directives be revised to afford equal privileges to all Department of the Army Civilians, Field Service Representatives and Contract Maintenance Personnel.

TAB B

SUBJECT: Crash Damage Parts for Analysis (CDPA) Program. September 1967 - October 1968

BACKGROUND INFORMATION:

Prior to September 1967 urgent MIR or aircraft accident exhibits originating within the RVN theater of operations were submitted to analysis facilities such as ARADMAC and the FAMF by the operating units with the assistance of the direct maintenance support company. These exhibits were processed and shipped by any and every means possible without the benefit of a central control agency. Some attempts were made to process these components in accordance with AVCOM Supply Letter 47-66, TM 38-750, and AR 95-5. This procedure for processing crash damage parts for analysis (CDPA) items met with limited success and questionable results as no records were maintained to determine the effectiveness of this program. During this time the volume of CDPA of exhibits submitted rarely exceeded six (6) items per month.

By late 1967 requirements for performing proper and complete accident investigations received increased command attention as the USARV aircraft accident rate reached an all time high of 35.7% for FY 67. Helicopter accident losses actually exceeded combat losses, thereby creating a greater need for controlling of CDPA exhibits, reporting materiel failures and placing greater emphasis upon the overall RVN Army accident prevention program.

Beginning September 1967 the 34th General Support Group was directed by USARV Reg 385-51 to become the primary coordinating headquarters for processing crash damage parts for analysis to the appropriate analytical facility from theater aviation units. The management of the Group's responsibility for this task was delegated to the staff aviation safety officer. Exhibits submitted for analysis not only included suspect aircraft accident components but parts resulting from forced landing, precautionary landing, and incident mishaps. This, in effect, nearly supplanted the routine MIR program. By mid-1968 the volume of exhibits submitted reached an unexpected maximum of 41 in June 1968 and this resulted in a backlog of parts at the analysis facilities and created other internal processing and control problems.

DISCUSSION:

The implementation of the CDPA program in September 1967 was affected by many problems and set-backs during the first several months. This

was evidenced by the fact that 74% of the 19 exhibits requested for processing from September through November 1967 were lost. The primary reason for the unsuccessful start could be attributed to the inability of units at every level within the processing circuit to properly comply with USARV Reg 385-51. The regulation itself was also in need of revision or clarification, and there was a total lack of suitable background experience upon which to staff an effective directive. Most of these problems have been resolved recently; however, there remain several areas of concern that would further improve the CDPA program.

TRAINING:

Due to the rapid turnover of US Army personnel in RVN, the USARV maintenance, tech supply and aviation safety personnel are often unfamiliar with the procedures for processing CDPA or EIR exhibits or the analytical service facilities available to support the aircraft accident investigation program.

Recognition of the CDPA processing procedures and problem areas should be given more formal attention to the aircraft maintenance, supply, and aviation safety MOS skills at CONUS training facilities such as Ft. Rucker and Ft. Eustis. This training should include the regulations, procedures and facilities available for processing CDPA exhibits.

The quality of the final analysis reports could be improved by outlining more stringent job requirements for those personnel selected to perform the analytical teardown report. Although a large part of the analysis inspection and reporting is performed by qualified laboratory technicians, the overall sequencing of the cause-failure relationship for major components, such as turbine engines, requires an expert not only thoroughly trained in the theory of operation of the component but also possessing some formal accident investigation and engineering training. Too often, personnel writing analysis reports are expert mechanics but do not grasp the full scope of flight characteristics that have a significant impact upon the true cause of failure. Furthermore, it often takes an extensive engineering background to carry the cause factor to the ultimate end. For example, some final engine failure reports conclude with the main thrust bearing as the part causing the power failure, but fail to explain why the bearing failed. There is always the element of human failure behind every materiel defect; be it a fault of design, manufacturing, operation or maintenance. Only when these basic factors are determined can effective preventive measures be achieved.

CDPA LABELS:

A significant percentage of CDPA exhibits have been lost in the retrograde process due to the inadequate labeling of the container. Several T-53 engines and transmission exhibits were received without labels at the analysis facilities and overhauled before it was discovered that these components were returned for analysis investigation.

This difficulty can be attributed to lack of knowledge on the part of the unit initiating the exhibit concerning the importance of suitable container identification. The use of pre-printed labels has been utilized with some degree of success. However, when labels are distributed to DS units as a stock item they have become lost or discarded, as few tech supply specialists understand their use and can identify the label with the proper CDPA exhibit when the part is submitted for shipment. This problem can largely be resolved by training and educating key personnel in the significance of the labeling procedures.

The label itself can be greatly improved upon. The current labels in use do not adhere well to wooden containers, and with the high humidity and heat experienced during the shipping process the labels tend to peel off of metal containers. A standard Dept of the Army, well designed and functional label or stencil should be constructed, approved, and made available to field units in support of the CDPA program. The labels should be constructed large enough and of contrasting colors to enable the depot's receiving personnel to rapidly distinguish the exhibits from other retrograded repair parts so that the exhibit may be inducted on a priority basis for analysis.

PRICRITY:

Consideration should be given to clarifying current regulations with regard to the designated priority placed upon CDPA exhibits for shipment. The CDPA item should be given special handling and red ball priority over routine repair parts retrograded to depot facilities. These exhibits should receive the same treatment in the retrograde channels as EDP parts being shipped to operators. The analysis facilities should give CDPA exhibits priority over the routine repair and overhaul program at the depot level.

If the FAMF were able to augment existing analytical technicians and facilities and relegate the TARP mission in favor of CDPA, it is

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conceivable that the FAMF could become the prime facility for support of the entire RVN CDPA program.

PROCESSING TIME:

Ideally, CDPA exhibits should be processed within a 30 day period, from the date of the aircraft mishap to receipt of the final report. This would enable the accident investigation board the opportunity to consider the analysis findings in the final accident investigation report.

The 34th Gen Spt Gp has attempted to reduce shipping time from the RVN to the ARADMAC analysis facility by utilizing specially authorized airlift missions for CDPA priority exhibits. This has been accomplished by use of SAAM flights departing from Qui Nhon (Phu Cat) and Saigon (Tan Son Nhut).

Prior to July 1968, the average time to process exhibits from date of mishap to receipt of the final report was excessive. The average time for ARADMAC was 120 days and the FAMF 60 days. As of 1 Oct 68, no final reports have been received from any of the civilian facilities such as Hughes, Allison or Sikorsky. The 34th Group has attempted to reduce this backlog of engine exhibits by augmentation of the 330th Trans Co (GS) with the capability of performing in-country T-53 turbine engine analysis. The T-53 turbine engine represents over 55% of all CDPA exhibits submitted. The 330th GSU has processed several components but is hampered by lack of certain diagnostic equipment and reliance upon the FAMF for all laboratory analysis.

ARADMAC has embarked upon a crash program to augment their facility and has made significant strides in reducing processing time. Benefits from improved ARADMAC interest has also resulted in faster feed-back of CDPA information in the form of reports acknowledging receipt and condition of components, monthly reconciliation reports of CDPA RVN control numbers, and preliminary analytical result reports dispatched by priority TWX.

The FAMF has proven to be a valuable in-country analysis facility due to the close proximity of the facility to the operating units. Although limited in working space and the quantity of trained personnel for analysing missions, their main contribution has been to received all RVN CDPA minor component exhibits such as tail rotor gear boxes, blades, shafts, and hardware.

CONCLUSION:

Aside from the primary objective of supporting the aircraft accident prevention program, the information gleaned from the results of CDPA reports has had other side benefits. In many instances the statistics gathered from CDPA and EIR reports have had a stabilizing effect upon RVN field commanders with regard to the reliability of the aircraft equipment. For examply, recently there were reports of a sudden surge of UH-1 transmission failures which set off a wave of command anxiety concerning the possible trend of defective transmissions. A review of the 20 requests to analyze UH-1 transmissions submitted during the past year indicated only one case of an internal transmission failure.

Conversely, failure patterns resulting from the EIR program have been detected and corrective modification action implemented.

1 Incl
CDPA Statistical Report

CDPA STATISTICAL REPORT - SEP 1967 TO OCT 1968

1. For future planning purposes the inclosed listed statistics are based upon a one-year period during which USARV operated an average of approximately 3500 aircraft and accumulated approximately 230,000 flying hours per month.

2. Other pertinent facts include the following:

a. The impact level of CDPA requests has leveled off to an average of one major exhibit submitted per day (30 per month).

b. Approximately 60% of all exhibits were turbine engines.

c. Only 11 turbine engine reports indicated that the engine did not contribute to the mishap.

d. Over 70% of all exhibit reports received indicated that the exhibit contributed to the mishap.

3. All T-63 turbine engines and components shipped to Allison for analysis are being returned to ARADMAC.

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CDPA STATISTICAL REPORT - SEP 1967 to Oct 1968	SEP, OCT, NOV 1967	DEC 1967	JAN 1968	FEB 1968	MAR 1968	APR 1968	MAY 1968	JUN 1968	JUL 1968	AUG 1968	SEP 1968	TOTAL
(a) Total number of CDPA items requested for processing	19	25	16	15	30	29	32	41	40	32	30	309
(b) Average number of CDPA items per month for Jan thru Sep 68												29
( ) Total number of CDPA final reports received	5	15	12	5	22	20	20	21	19	2	1	142
) Percent of CDPA final reports received	26%	62%	75%	33%	73%	70%	65%	54%	50%	4%	3%	46%
;) Total number of CDPA items lost (Any CDPA item outstanding over 6 months with no positive response from tracer action)	14	9	4	10	6	0	1	0	0	0	0	14
(f) Percent of CDPA's lost	74%	38%	25%	67%	20%	0%	3%	0	0	0	0	14%
(g) Total number of CDPA items of unknown location (Any CDPA item outstanding between 3 and 6 months with no response from tracer action)	0	0	0	0	0	5	5	9	0	0	0	19
(h) Percent of CDPA's unknown	—	—	-	-	-	17%	16%	23%	- -	—	—	7%
(i) Total number of cancellations	0	1	0	0	0	1	1	2	2	0	0	7
(j) Total number of CDPA items due out (Includes unknowns)	0	0	0	0	2	9	5	9	19	30	29	103

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DOWNGRADED AT 3 YRS INTERVALS
DECLASSIFIED AFTER 12 YEARS

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CDPA STATISTICAL REPORT - Sep 1967 to Oct 1968	SEP, OCT, NOV 1967	DEC 1967	JAN 1968	FEB 1968	MAR 1968	APR 1968	MAY 1968	JUN 1968	JUL 1968	AUG 1968	SEP 1968	TOTAL
(k) Percent of CDPA's due out	-	-	-	-	7%	13%	16%	23%	50%	94%	97%	33%
(l) Total number of CDPA items found defective and contributed to accident	5	12	10	4	19	13	13	19	13	2	1	111
(m) Percent that contributed to accident	100%	80%	83%	80%	86%	59%	65%	93%	63%	100%	100%	78%
(n) Total number of CDPA items not contributing to accident	0	2	2	1	2	7	7	2	6	0	0	32
(o) Percent not contributing to accident		20%	17%	20%	14%	41%	35%	7%	37%	-	-	22%
(p) Total number and types of CDPA items submitted												
H-1												
T-53 Turbine engines	9	13	10	8	17	17	15	22	21	14	19	166
Transmissions	3	4	2	2	3	-	-	5	3	4	1	27
M/R Blades	-	-	-	2	3	-	-	-	1	1	-	7
T/R Blades	-	4	1	-	1	-	1	1	1	1	1	11
T/R Gear Box	1	2	2	2	4	1	1	1	3	2	2	21
T/R Drive Shaft	-	-	-	-	-	-	-	-	1	3	1	5
Stabilizer Bar	-	1	-	-	-	-	-	-	-	-	-	1
Rotor Hub	1	-	-	-	1	1	1	-	-	-	-	4
Fuel Control	1	-	-	1	2	1	-	-	1	2	-	8
Hydraulic Servos	3	-	1	-	-	1	1	2	2	2	2	14
Hardware (General)	-	1	-	2	-	2	1	5	3	2	-	16

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Number and types of CDPA items submitted (CONT'D)		SEP, OCT, NOV 1967	DEC 1967	JAN 1968	FEB 1968	MAR 1968	APR 1968	MAY 1968	JUN 1968	JUL 1968	AUG 1968	SEP 1968	TOTAL	
OH-13														
Engines (O-480)		-	2	-	-	-	-	-	-	1	-	-	3	
Instruments		-	-	-	-	-	1	-	-	-	-	-	1	
Tail Rotor		-	2	-	-	-	-	-	-	-	-	-	2	
Engines (C540)		-	-	-	-	-	-	2	2	-	-	1	5	
CH-47														
Engines (T-55)		-	-	1	-	2	-	-	-	-	-	2	5	
M/R Blades		-	1	-	-	-	-	3	1	1	1	1	4	
Transmissions		-	-	-	-	2	-	-	-	-	-	-	2	
Minor		-	-	-	-	-	-	-	-	2	2	1	7	
Miscellaneous Components		1	2	1	1	2	2	1	3	-	7	6	26	
AH-6														
T-63 Engines		-	-	-	-	1	1	1	6	4	1	3	17	
Transmissions		-	-	-	-	-	-	-	1	1	1	3	6	
Recip Engines														
R-1340		-	-	-	-	-	-	-	2	-	-	-	2	
0435		-	-	-	-	-	-	-	1	-	-	-	1	

(q) Total days required to process CDPA items (Calculated from date of accident to receipt of final report)		SEP, OCT, NOV, 1967	DEC 1967	JAN 1968	FEB 1968	MAR 1968	APR 1968	MAY 1968	JUN 1968	JUL 1968	AUG 1968	SEP 1968	TOTAL
CDPA ITEMS TO ARADMAC													
Total number submitted		16	15	14	10	15	19	21	29	25	14	20	198
Total number reports received		5	8	10	4	12	13	14	15	12	1	-	94
Average number of days		199	172	159	112	108	120	96	97	62	46	-	117
CDPA ITEMS TO THE FAMF													
Total number submitted		3	9	2	5	14	10	10	9	11	14	7	94
Total number reports received		0	7	2	1	10	7	6	6	6	1	-	46
Average number of days		-	-	78	35	80	70	56	50	36	19	-	53
CDPA ITEMS TO 330th Trans Co (GS)													
Total number submitted		-	-	-	-	-	-	-	-	1	3	2	6
Total number reports received		-	-	-	-	-	-	-	-	1	1	-	3
Average number of days		-	-	-	-	-	-	-	-	42	-	-	42
CDPA ITEMS TO HUBS													
Total number submitted		-	1	-	-	-	-	-	1	1	1	1	5
Total number report received		-	-	-	-	-	-	-	-	-	-	-	-
Average number of days		-	-	-	-	-	-	-	-	-	-	-	-
CDPA ITEMS TO SIKORSKY													
Total number submitted		-	-	-	-	-	-	-	-	-	-	1	1
Total number reports received		-	-	-	-	-	-	-	-	-	-	-	-
Average number of days		-	-	-	-	-	-	-	-	-	-	-	-

ALLISON - -ALL items shipped to Allison have been transhipped to ARADMAC.

SUBJECT: Shortage of Qualified Aircraft Armament Personnel

1. DISCUSSION:

a. Qualified aircraft armament maintenance personnel are critically short throughout the Command. Strength reports within 34th General Support Group units average approximately 70% of authorization for MOS 45J40 (Aircraft Armament Repair Supevisor) personnel and 50% for MOS 45J20 (Aircraft Armament Repairman). The most serious shortages are within combat aviation units. The end result is reduced operational capability within the combat aviation units and greater workload on already overtaxed support units.

b. Improving armament maintenance capability at the organizational level would greatly improve both the operational and support posture within the Command. A greater number of armament oriented personnel are required in combat aviation units to adequately maintain the increasingly complex armament systems. TOE's are being modified to provide for these personnel; however, it is doubtful the Ordnance Center and School can produce enough graduates to satisfy the demand without a significant expansion of facilities and staff.

c. One critical factor to be considered is the degree of qualification required of an armament technician at the organizational level. Inasmuch as his duties will normally be limited to functional testing, boresighting, weapons maintenance, loading and basic trouble shooting, the necessity for a 26 week course of intensive training is questionable. An individual capable of performing the basic tasks required at the organizational level, under the supervision of a fully qualified aircraft armament technician, could probably be trained in 8 weeks, or less.

d. A requirement will continue to exist for aircraft armament technicians with a higher skill level for use in DS and GS units.

e. Another method to provide relief at the organizational level could be the incorporation of basic aircraft armament maintenance, loading and safety in the course of instruction for aircraft crew chiefs. While the degree of qualification possible would probably not approach that outlined in paragraph C, at least the individual would have a base for further development should he be required to perform the functions of an armament technician.

f. Maintenance and supply problems resulting from the shortage of qualified enlisted personnel are compounded by the fact that no effective program exists for training aviators in aircraft armament maintenance. Each combat aviation unit should have an officer designated who is responsible for insuring the required degree of armament subsystem availability. At unit and battalion level this could be an extra duty. At group and brigade level a full time armament officer may be required. The present method of qualifying armament officers via OJT does not normally result in the attainment of the requisite skills for effective supervision.

2. CONCLUSIONS:

a. That the present aircraft armament MOS structure, and supporting training program, are not satisfying field requirements.

b. That aircraft armament maintenance cannot be efficiently managed unless trained officer personnel are provided.

3. RECOMMENDATIONS:

a. Alter the MOS structure to provide for a lower skill level to satisfy only organizational maintenance requirements.

b. Initiate a course of instruction at the Ordnance Center and School to provide a source of organizational armament personnel.

c. Sustain the current armament training course at the Ordnance Center and School but modify TOE's to insure that graduates of this school are assigned only to DS/GS units, or as supervisors at the organizational level.

d. Initiate a course of instruction, either at the Ordnance Center and School or at the Aviation Center, which would provide aviators with the necessary skills to manage armament maintenance programs.

SUBJECT: Late Receipt of Aircraft Armament Test Equipment.

1. DISCUSSION:

a. The availability of aircraft armament test equipment has continually lagged behind the availability of armament subsystems. The increasing complexity of armament subsystems, coupled with the limited availability of highly skilled technicians, preclude the use of standard test equipment as an interim solution. The need of specialized test equipment will become even more critical with the fielding of the AH-56A.

b. Delays in test equipment availability have impacted not only upon the instant support capability of units in the field, it has also deleteriously affected the training program for aircraft armament technicians. For example, the TAT-102A armament subsystem was introduced into the theater in September 1967; however, subsystem test equipment was not available until May 1968. The XM-28 subsystem was introduced in April 1968; test equipment was not available until August 1968, and then only in limited quantities.

c. The inability to repair major components of armament subsystems within the theater will place increased demands upon the CONUS support base. Maintenance will be limited to major component replacement and evacuation to CONUS. The requirement to maintain a filled pipeline will undoubtedly necessitate greater procurement of expensive components, as well as the utilization of premium transportation to expedite the flow of components.

2. CONCLUSIONS:

a. As a minimum, prototype test equipment must be made available well in advance of armament subsystem deployment to permit the establishment of a CONUS training program.

b. Production test equipment must be available concurrently with the deployment of armament subsystems if adequate field support is to be established.

3. RECOMMENDATION: That concerted efforts be made by Project Managers and Commodity Commands to design, develop and produce needed aircraft armament test equipment in a timely manner.

SUBJECT: Retrograde of Aircraft

1. DISCUSSION: The 34th General Support Group processes all retrograde aircraft from RVN. Aircraft for water shipment are processed at Da Nang, Qui Nhon, and Vung Tau, while aircraft for air shipment are processed at Da Nang, Qui Nhon and Saigon (Tan Son Nhut). Adequate cleaning and preservation at all sites was hampered due to the lack of suitable processing materials and equipment. Various materials were utilized at Tan Son Nhut to develop standard processing procedures utilizing materials that would withstand the RVN environmental conditions. Personnel from all retrograde sites visited Tan Son Nhut and were instructed in standardized processing methods. Materials required were provided to the processing points by 34th Group. Steam cleaners and vacuum cleaners were obtained by 34th Group and issued to the processing sites. Standard procedures, combined with materials that withstand the environmental conditions of RVN, have shortened the processing cycle as well as guaranteed a more exacting state of preservation. The steam cleaners and vacuum cleaners make it possible for the 34th Group to insure that all retrograde aircraft meet or exceed the cleanliness criteria demanded by the U.S. Department of Agriculture. All retrograde aircraft are sprayed with pesticides and have rodenticides placed inside under the Technical Guidance of the Pacific Architects and Engineers.

2. CONCLUSIONS: That sufficient materials to process retrograde aircraft are available in RVN. That continual improvements can be made in the retrograde aircraft effort. Continual standardization of all aircraft retrograde sites has resulted in retrograde aircraft that are cleaner, more adequately fumigated, and preserved to the highest practical degree.

3. RECOMMENDATIONS: That the need for this service be recognized and necessary personnel and equipment be incorporated in future organizational planning that pertains to an overseas theater of operation.

SUBJECT: Southeast Asia Avionics Retrofit/Modification Program (Project ZYR)

1. DISCUSSION: In view of the difficulties encountered in accomplishing the avionics retrofit in Vietnam, it is felt that a project of this magnitude should not be undertaken in a Combat Theater if it can be possibly avoided. Some of the obstacles which delayed completion of the RVN project and which would undoubtedly occur in any similar combat situation are noted below. (See Incl 1 for present avionics retrofit status.)

a. Non-availability of aircraft. The most persistent problem has been lack of sufficient aircraft input at the retrofit program to effectively utilize the contractor personnel. In a competition with combat mission requirements for aircraft, it is the inevitable that non-productive time, and total cost, for the program will be high.

b. Shortage of Shipsets (retrofit kits). Since the beginning of the avionics retrofit program, shortages of various types of shipsets have existed. Under normal conditions this would have been acceptable and could be corrected merely by changing the scheduling. However, the inability to establish a firm schedule because of combat operations necessitates modifying any aircraft which is available. Failure to accept an aircraft for lack of a shipset causes loss of productive time, with possible further loss if the aircraft is not available when a shipset actually becomes available.

c. Contractor Personnel. The quality and skill of personnel available under combat conditions suffers in comparison with a comparable program in CONUS. First, the better qualified personnel who hold good jobs do not volunteer for overseas assignments as readily as do the lesser skilled. After the initial six months contract, of which a good portion is training, a large percentage of the personnel choose to return to CONUS with a resultant rapid turnover of personnel. This is particularly true during periods of increased hostilities such as the TET offensive when many personnel broke their contract and returned to CONUS. Also, loss of some elements of personal support and privileges has caused many of the better qualified personnel to terminate.

d. Loss of Time Due to Hostilities. A significant amount of time is lost as a result of hostile actions, such as rocket and mortar attacks, which require the men to spend time in bunkers. Increased hostilities, at times, also prevent the contractor personnel from

reaching the worksite.

e. Transportation. Valuable time is lost in the movement of personnel and materiel within country. Both must compete with higher priority combat essential movements and are very often delayed for a considerable time.

f. Supply Support. Peculiar supply requirements of a major retrofit program are not readily met by the supply system. When an item is required, it is usually required in larger quantities than can be supported. This rapidly depletes the in-country stockage, hurting the overall maintenance effort, and in many cases causes loss of Contractor time until replenishments arrive.

g. Maintenance of Government Furnished Equipment (GFE). The contractor is dependent upon military units throughout Vietnam for maintenance of GFE. Most of the units have maintenance problems of their own, and their equipment, naturally, receives priority over the contractor's equipment. This lack of support often causes non-productive time for lack of an air compressor, generator, etc.

h. Working Conditions. Working conditions at many sites are extremely primitive, some with no covered work area. Unfavorable working conditions cause poor efficiency, poor quality work, and in some cases bad weather causes complete work stoppage.

2. CONCLUSION: The result of retrofitting aircraft in a combat environment has been an average non-productive time of about thirty (30) percent and two extensions of the contract (the majority of the retrofit non-productive time has been utilized on other Aircraft/Avionics maintenance within the skill classifications of the contractor personnel). Aside from the non-productive time, the overall efficiency and quality of work in a CONUS based program would be higher than can be attained under field conditions.

3. RECOMMENDATIONS: That future major retrofit programs be accomplished in CONUS or in areas other than Combat Zones.

2 Incl
1. Status of Project ZYR
2. Retrofit Status Summary

SUBJECT: Status of Project ZYR

1. ZYR: A D A directed program to standardize the communication systems of United States Army aircraft in RVN with the latest available electronics equipment, plus provide a secure voice capability.

		Aircraft
a.	Accomplished in RVN	2456
b.	Accomplished in CONUS (now O/H RVN)	1083
c.	Total Retrofitted (a + b)	3539
d.	Total A/C now in RVN with ZYR completed (756 of retrofitted aircraft are no longer in RVN)	2783
e.	RVN A/C which still require ZYR	293

2. ZYS: An add-on to the basic ZYR program which incorporates a discrete discriminator in the communication system to eliminate the possibility of compromise while operating in the secure voice mode.

a.	Accomplished in RVN	1327
b.	Accomplished in CONUS (Aircraft now in RVN)	268
c.	Total Retrofitted (a + b)	1595
d.	Total A/C now in RVN with ZYS completed (85 of retrofitted aircraft no longer in RVN)	1510
e.	RVN A/C which still require ZYS	1259

3. Foot Mike Switch (UH-1 A/C only)

a.	Accomplished in RVN	99
b.	Accomplished in CONUS (now O/H RVN)	1
c.	Total Retrofitted (a + b)	100
d.	Total A/C now in RVN with FMS complete	100
e.	RVN A/C which still require FMS (UH-1B, C, D, H)	2031

4. Present Manhour Requirements:

			Manhours
a. ZYR (excluding U-1A's and U-6A's)			58,780
b. ZYS			
(1) Accomplished with ZYR	5,860		
(2) On A/C already ZYR	38,640		44,500
c. Foot Mike Switch			32,496
d. Present Requirement		Total	135,776
e. Present Manhour requirement assuming an average of 30% Non-Productive time			193,957
5. Other Requirements: Manhours required for U-6A (29 ea) and U-1A (22 ea) for which kits will be available in Dec 68.			87,430
6. Total Known Requirements		Man Hours	281,387
7. Manhours Available: (See status summary)			
a. From 27 Sep 68 to 30 Nov 68 (Full strength)			109,080
b. From Dec 68 to 28 Feb 69 (2/3 strength)			105,300
c. From 1 Mar 69 to 30 Jun 69 (1/3 strength)			68,340
d. Total Manhours available assuming reduction in personnel as shown above			282,720
8. Likely Add-On Program:			
a. ZYS AH-1G	12,500		
b. ZYS OV-1	5,310		
c. Total Add-On Requirement			17,810

SUBJECT: Retrofit Status Summary

OBJECTIVES:

1. To complete ZYS, except for those few aircraft still requiring ZYR, and Foot Mike Switch modifications by 1 December 1968.

2. To complete all U-6, U-1 and RRU aircraft by 28 February 1969.

3. To totally complete ZYR, ZYS, and Door Gunners Foot Mike Switch modifications by 30 June 1969.

DISCUSSION: The proposed objectives of the avionics retrofit/ modification program can be accomplished in three (3) phases. The time frame for each phase is given but may be changed by variable factors such as receipt of shipsets and availability of aircraft.

a. Phase one, now in progress, will continue until approximately 31 November 1968. During this period the contractor will be at full authorized strength and primary emphasis will be on completion of the ZYS, plus the RRU program. The success of this phase depends primarily on receipt of ZYS shipsets from USAAVCOM. Shipsets are urgently needed if completion is to be possible. Phase one is characterized by large numbers of small mobile teams working ZYS at each aviation unit location and by the resultant difficulties or coordination and control. For reasons of coordination and control, it is imperative that phase one is completed prior to 20 December 1968 when the nine AVCOM COR's depart RVN.

b. Phase two will tentatively begin 1 December 1968 and extend to 28 February 1969. Contractor strength will be reduced to two thirds of authorized and the number of worksites will be reduced to possibly five (Vung Tau, Nha Trang, Qui Nhon, and either Red Beach, Phu Bai or both). During this phase, primary emphasis will be on completing the "lean" U-6A and U-1A aircraft while still working any ZYR or Foot Mike Switch modifications remaining. The reasons for reducing contractor strength and the number of work sites are twofold: a. After completion of ZYS, aircraft input will not be sufficient to effectively utilize all authorized personnel and b. The reduction will decrease the requirement for coordination and control. The site selections were based on location of aircraft and availability of work space, support, billeting and mess. The heaviest concentration of aircraft remaining to be retrofitted is in the Red Beach-Phu Bai area where all work will be on rotary wing aircraft. All high manhour aircraft (U-6A, U-1A) will be retrofitted at Vung Tau, Nha Trang and Qui Nhon. The recommendation to retain as many as two

thirds of contractor strength is based on the assumption that units do want the U-6 and U-1 aircraft retrofitted (attested to by frequent requests from units) and will maintain at least twelve in work at all times.

c. Phase three will begin about 1 March 1969 and end with completion of the program or upon termination of the contract on 30 June 1969. During this phase contractor strength will be reduced to about one third of authorized strength. Aircraft input will be slow and the emphasis will be on finding and completing the scattered aircraft still requiring ZIR, ZYS and Foot Mike Switch modifications. During this phase other sites will be phased out and strength further reduced as all the aircraft in the area of a work site are completed. In the event of other add-on programs the strength would be maintained at a higher level.

CONCLUSION: The avionics retrofit can be completed by 30 June 1969. However, the successful completion still depends on two factors, availability of shipsets and aircraft input, which are beyond the control of 34th General Support Group (AM&S).

SUBJECT: General Support Avionics Units in Vietnam

1. DISCUSSION:

a. The mission of the 34th General Support Group, Avionics Division, is to provide aviation electronics back-up direct and general support maintenance and supply for US Army aircraft and supporting equipment in the Republic of Vietnam and Free World Military Assistance Forces in Southeast Asia.

b. The requirement for a true general support (GS) aviation electronics capability was recognized by USARV in late 1965. A request for TOE authorization for a general support aviation electronics company was forwarded through command channels. Prior to this time, GS avionics maintenance had been provided by RL teams. The major facility had been established at Tan Son Nhut by combining two (2) RL teams.

c. In January 1966, pending further study, Department of the Army authorized the organization of two (2) provisional aviation electronics support companies. These companies were formed in March 1966, utilizing in-country assets which consisted of the fifteen RL teams assigned to this headquarters and the avionics assets of the transportation aircraft maintenance battalions (DS and GS) organic to the 34th General Support Group.

d. This organization provided 233 avionics personnel and was designed to support 1800 aircraft. The increase in aircraft density (now approaching 4,000 aircraft) and the introduction of new and more sophisticated equipment, has been far greater than the increase in personnel provided to cope with the maintenance requirements (now authorized 327 personnel, assigned to four avionics-electronic type companies).

e. The only immediate solution to the problem of providing the required avionics maintenance support during the rapid increase in equipment density was to obtain civilian contract maintenance support and increase the number of Field Service Representatives (FSR) and Department of Army Civilians (DAC's). The civilian avionics support personnel provided for FY 69 are as follows:

	AUTH	O/H
DAC's	14	14
FSR's	74	39
Contract	332	294

f. The TOE's of the RL teams and the DS and GS companies do not provide the grade structure, MOS, equipment or required non-avionics personnel to establish the avionics-electronic (AVEL) companies. The requirement to maintain the RL teams organizational identity results in the AVEL companies having shortages in some MOS's and equipment while they have excess in others. The administrative work load of maintaining up to seven sets of property books, submitting seven morning reports, etc. per company, requires additional personnel which are not authorized. The necessity for staffing the company headquarters (i.e. 1st Sgt, Platoon Sgt, clerks, drivers, automotive mechanics, etc.) from avionics MOS's further taxes an already over-extended organization.

g. The use of civilian personnel solves some problems in areas such as training, providing a degree of stability, and providing skills not otherwise available. However, their use creates a number of problems. There is a morale problem among the repairman. The military man works ten hours a day, seven days a week, lives in a tent, pulls guard and KP; whereas, the civilian works 8-10 hours a day, 5 or 6 days a week, often lives in comfortable quarters in town, pulls no extra duty and earns a considerably higher salary. The non-uniformity between various contracts requires a great deal of administrative and supervisory effort. The differences in working hours, GS grade equivalencies, definitions of overtime, etc., require that each contract be administered individually. The civilian, by living off post, is not available when most needed (i.e., when there is enemy activity and the military installation is under a high state of alert). During the TET offensive, a number of shops operated without their contract personnel for periods of time up to five days.

h. The avionics personnel and equipment in the TOE of the DSU's are now in the AVEL companies. This requires that all repairables be stocked at the AMMC level and leaves a void in the supply system. Special procedures are required to control the issue of repairables.

i. To overcome the problems outlined in previous paragraphs, numerous attempts have been made to develop an avionics maintenance and supply structure suitable for the efforts in Vietnam. Under the guidance provided by DA, ACSFOR, the latest effort was in the form of developing

a new TOE for avionics maintenance units. Based on the guide lines provided, an AD HOC committee was formed with representation from the 34th Group and HQ, USARV. This committee developed a proposed TOE for an Avionics General Support Company, manned within the constraints of the number of personnel currently authorized to the existing provisional units (total of 327 personnel). A proposal for two companies is currently being staffed through appropriate command channels.

2. CONCLUSIONS:

a. TOE units which have a growth potential commensurate with increases in density of systems to be supported should be developed and established within Vietnam.

b. The proposed formation of two TOE avionics units will adequately provide the required maintenance structure, provided restrictions imposed in military spaces is relieved by civilian augmentation in certain hard skill areas.

3. RECOMMENDATION: That favorable consideration be given to the approval of the proposed General Support Avionics Companies.

SUBJECT: Civilianization Program

1. FACTS:

a. It must be pointed out that the 34th General Support Group is not contesting the requirement to civilianize.

b. Our primary concern is the civilianization of TOE military positions within the Aviation Depots which are presently authorized E-3 and E-4 skill levels. These positions, generally designated as relatively low skill military positions are becoming "low skill" civilian positions through the conversion. Therefore, a result of civilianization is an extreme reduction in the qualifications required for the positions.

2. ASSUMPTIONS:

A major contributing factor to the reduction in skill level, is the inability of current civilian personnel yardsticks to equate the Local National grade/skill level required to replace the TOE position.

3. DISCUSSION:

a. As a result of this lowering of qualifications, the hiring of illiterate and semi-literate laborers to fill positions as warehousemen, pack-crating specialists, and supply parts specialists, has become the norm. The Local National replacement is not the equal of the personnel he is replacing. All of the military personnel can read and write English and Arabic numerical characters. They can understand technical directions, and if a difficulty arises, can ask a question which can be understood and readily answered by a military supervisor. In addition, the military person has a basic understanding of the entire operation to which he is contributing. He understands related tasks in his MOS field, giving him a greater appreciation for the importance of the entire unit mission. The soldier can be used to perform related tasks with a minimum of instruction if required, to perform a variety of details (fatigue), may be used in defense of his work area, and is available 24 hours a day. None of the above attributes may be applied to the Local National employee.

b. The Local National is hired completely unskilled in the work he will perform. In replacing a percentage of the military personnel within a section, the Local National must be given O.J.T. with the enlisted men. This in effect makes the E-3 or E-4 a supervisor of the

Local National, a position which the soldier is in most cases ill prepared to assume. The result is poor supervision of the Local Nationals.

c. Proper supervision of the Local National is taking an excessive amount of time the supervisor needs to properly oversee other tasks. In many cases a soldier can complete a specified task in the time needed to get the local national working effectively on the task. At present the conversion yardstick for Local National warehousemen is 1½ Local National personnel to replace 1 military. By observation, in most cases a 2 to 1 conversion would be more appropriate, as productivity of Local Nationals is well below that of military personnel.

d. Some of the positions to be converted may not be filled until long after the military positions are lost. For example, forklift operators positions are not being filled and the Civilian Personnel Office is unable to guarantee fills in the future. There is no trained labor source within the local economy to draw from. The units will have to hire completely untrained personnel and train them. At present the amount of MHE available could not support such a training program, nor is the equipment shortage expected to improve. As MHE presents a continual hazard to other workers in its immediate area of operation, half-trained operators cannot be allowed to operate this equipment.

e. The foregoing discussion should not be construed to mean that Local National employees cannot be effectively used. To perform certain types of clerical tasks they are a desireable employee. These jobs include stock control clerks and clerk typists within the augmentation TD. For clerical positions we are able to hire a high caliber person. CPO places the requirement of high school level education at the head of the qualification list for clerks. The personnel hired all have a fairly decent command of spoken English and are very receptive to training.

4. CONCLUSIONS:

The general lowering of skill level requirements due to Civilianization of certain TOE positions is working to the disadvantage of AMMC and is resulting in a loss of efficiency.

5. RECOMMENDATIONS:

a. That the Civilianization Program be held to its present level of TOE position conversion. Our units cannot sustain Civilianization beyond the limits of the Civilianization "6" Program currently being implemented.

b. That USARV Civilian Personnel Offices develop conversion yardsticks for the civilianization program which will lead to the establishment of grade/skill requirements for Local Nationals; commensurate with those of the military personnel they are replacing.

c. That TOE positions designated for conversion be filled by adequately trained Local National personnel before the military space authorizations are withdrawn.

d. That future endeavors to employ and utilize Local National employees be implemented by increasing augmentation TD's rather than by reducing the effectiveness of TOE units through the withdrawal of positions.

SUBJECT: THEATER AIRCRAFT REPARABLES PROGRAM (TARP)

1. FACTS:

a. The theater has five General Support Companies (TOE55-458G), the Floating Army Maintenance Facility (FAMF) and a civilian contract capability.

b. Parts and components are screened in theater to determine the maintenance and repair parts required to accomplish repairs on the items selected.

c. Experience indicates that an appreciable number of repair parts and components that are removed and tagged as unserviceable can be repaired with relatively few maintenance man-hours.

d. Premium transportation and shipping cost to CONUS are saved on those repair parts and components repaired in theater and the number of components in the transportation pipeline is reduced.

e. Unserviceable repair parts and components repaired in theater can be returned to the serviceable theater stock in minimum time.

2. DISCUSSION:

a. Advantages

(1) The theater is selective in work loading the GS maintenance capability. Only those parts/components that can be expeditiously repaired and returned to stock to alleviate supply shortages are retained for in-country repair. This results in a lower overall cost to return these items to serviceable stocks. Savings in premium transportation costs from and back to Vietnam is a primary consideration.

(2) TARP utilizes the maintenance man-hours available within the shop platoon and allied shops of the GS maintenance activities. It is believed that selective work loading best utilizes the existing capabilities in support of the theater aircraft supply system. These items are critical and/or high dollar-value parts and components. By utilizing these capabilities in-country, the repair parts are returned to the supply system to satisfy shortages in less time and at less cost for labor and transportation. The removal of aircraft from EDP in minimum time is an additional prime consideration.

b. Disadvantages

It has been indicated by some CONUS overhaul/repair activities that repairing the parts and components within the theater causes undesirable competition between the theater and CONUS repair activities for GS (4th echelon maintenance) level repair parts. It seems that once the true demands are placed against the supply system, and the system has time to react, this problem should be eliminated. In addition, if GS level repair parts are in short supply, it would not solve the shortage problem to retrograde all unserviceables to CONUS. The overall shortage proolem would remain, plus the cost of transportation is added. At present the theater selects items requiring lesser maintenance man-hours to repair, items that are in critical short supply, and retrogrades the remaining items to CONUS that require extensive GS level maintenance.

3. RECOMMENDATIONS: Local Action

a. It is recommended that USARV continue to utilize those GS level (4th echelon) maintenance man-hours within the specialized shops (shop platoon & allied shops) that are available to repair parts and components that are in short supply and generally require less maintenance than a complete overhaul.

b. It is recommended that AMMC continue to place demands upon the appropriate CONUS NICP for those GS level repair parts required, so that the NICP can accurately forecast and program repair parts for total world wide requirements.

SUBJECT: Use of SAAM Flights for retrograde of aircraft reparable components

1. PROBLEM:

The lead time requirement for scheduling back-loads aboard Special Assignment Airlift Mission (SAAM) Flights is unrealistic and precludes satisfactory utilization of these flights for the return of aircraft reparable components.

2. DISCUSSION:

a. Approximately forty to fifty SAAM flights arrive in RVN monthly ferrying serviceable Army aircraft. Back-loading of cargo for CONUS is available on these flights with first priority designated for the return of aircraft for overhaul and second priority for the return of aircraft reparables. If there is no cargo projected for return by the 34th General Support Group, the SAAM flights are released to the 1st Logistical Command for movement of other cargo.

b. The AMC Customer Assistance Office, USARV, coordinates with AVCOM on the scheduling of these aircraft. Recent changes in programing of flights requires that 34th General Support Group supply mission requirements by the 15th of each month for the following calendar month. It is impractical to accomplish this programing 15 to 45 days in advance for the return of aircraft reparables. The in-put of reparable components to the 34th General Support Group depots fluctuates to the degree that large back-logs would necessarily be required to meet such long range programming objectives. This would defeat the requirement for expedited return of these critical components to CONUS.

c. Due to the foregoing, the 34th General Support Group has not utilized these SAAM flights since mid-September 1968 for the return of reparables. Excess reparables have instead been offered to the Air Force for Channel Airlift Flights. This method of return is not completely satisfactory since the cargo may be off-loaded at any CONUS aerial port and excessive delays may be incurred in transshipment to overhaul facilities.

3. CONCLUSION:

The 15 to 45 day lead time requirement for the scheduling of back-loads aboard SAAM flights is not responsive to the requirements of the 34th General Support Group.

4. RECOMMENDATIONS:

That coordination be accomplished through AVCOM to reduce the lead time for back-load scheduling of aircraft reparables on SAAM flights to ten days. This lead time would permit utilization of these flights for expedited return of components to overhaul facilities without development of large in-country cargo back-logs.

SUBJECT: STOVEPIPE

1. PROBLEM:

The propriety, effectivity and essentiality of project OFP (STOVEPIPE) has been questioned by DOD.

2. FACTS:

a. Over fifty percent of the AMMC's replenishment requirements are for AVCOM managed materiel.

b. AMMC generates approximately twenty thousand replenishment requisitions a month.

c. AMMC supply performance data accumulated since the implementation of project OFP is as follows:

(1)	Demand Accommodation	82%
(2)	Demand Satisfaction	63%
(3)	Zero Balance (ASL)	16%

3. ASSUMPTIONS: None

4. DISCUSSION:

a. Effective 1 May 1968, all AMMC replenishment requisitions have been generated as A01's with project code OFP in cc 57-59. All of these requisitions are transceived to routing identifier B17 (AVCOM). On receipt at AVCOM, the requisitions are matched against the AVCOM Master Item Data Records, AVCOM lines immediately processed, and the non-AVCOM lines re-addressed on a timely basis to the cognizant ICP's. The system in effect prior to 1 May was a modified STOVEPIPE system. Requisitions for items under the surveillance of the AMMC CH-47, UH-1, AH-1G and CH-54 commodity managers were generated as A01's to B17. They contained project codes unique to each of the aforementioned aircraft. All other replenishment requisitions were generated as A0A's to routing identifier code WRB (2nd Logistics Command, Okinawa). WRB either filled or passed to CONUS. WRB did not establish back orders on the items they could not immediately fill.

b. Allegedly, the STOVEPIPE system has two major failings:

(1) In theater assets (USARVICC and 2nd Log) are not accessed or utilized.

(2) Benefits possible through utilization of the Defense Automatic Addressor System are not accruing to the AMMC.

c. In point of fact, 2nd Log stocks are periodically purged (Twice in the last five months) through the media of AMMC fill or kill requisitions for retention level quantities of all lines in short supply. All substitutes are accessed and partial/full issues effected. Over thirty thousand such requisitions have been submitted during the past five month period. Overall match has only been 30 percent and resultant fills have been primarily low order partials.

d. 1st Log stocks are also utilized in that the USARVICC cyclically purges all depots of Mat Cat "H" materiel (less FSC 1670), shipping items physically located at the 506th Depot to the Saigon Aviation Depot, and shipping items located at the other 1st Log depots to the Qui Nhon Aviation Depot. Items appearing in Aviation - 35P supply manual but obviously non-Aviation peculiar have been deleted from the AMMC TASL. I & S rejection cards (advice code CH-requisition submitted to incorrect source) are maintained on the AMMC file to preclude the re-appearance of these lines.

e. The indicators of AMMC's performance under project OFP (demand accommodation, etc.) disclose performance levels unmatched by any other wholesale supply activity in RVN.

5. CONCLUSIONS:

a. Only sparse stockage of Aviation oriented items exists at 2nd Log. Assets that are there and are needed at AMMC are periodically captured on a mass basis, simultaneously reducing 2nd Log excess and improving AMMC's stockage posture. All this without the built-in order ship time delay of an intermediate requisitioning source.

b. Dual stockage (1st Log and AMMC) common hardware and electronic items have been reduced to an acceptable minimum.

c. Routing of AMMC replenishment requisitions through the Defense Automatic Addressor System would not result in improved accuracy or response time.

d. The project code OFP STOVEPIPE supply system presently in use is proper and effective, and is essential if RVN is to continue to provide the premium supply support currently enjoyed by in-country Aviation units.

6. RECOMMENDATION:

That no revisions or modifications be made to the STOVEPIPE system.

SUBJECT: Push Package Concept.

1. DISCUSSION: The present procedures for providing initial supply stockage, PLL/ASL for aviation units assigned to this theater involves assembling required line items at CONUS depots and shipment as a consolidated pack to the serving RVN aviation Depots. Loss and damage in transit resulted in a significant number of units not attaining a mission ready posture for prolonged periods after arrival in this theater. Examples of this problem were experienced during the arrival in June and July 1968 of aircraft and avionic maintenance detachments deployed to provide support of air cavalry units. Crates, conexes and shop vans were lost in transit and others arrived with obliterated project code markings. As of October 1968 these detachments, with 34th Group assistance, are still attempting to reconcile recognized losses. In addition, theater flexibility in assignment of units and tailoring of specific aircraft assignments is severely inhibited due to consolidation and shipment of parts for specific number of aircraft to a specific location prior to arrival of the designated unit. Frequently, prior to actual arrival of aircraft or units, changed force employment situations requires major commanders to revise existing unit/aircraft distribution plans. A significant problem is then encountered in fitting project packages prepared for a specific unit to a unit with a revised number and types of aircraft.

In June 1968, USARV proposed to DA that effective in August 1968 the assembly of AH-1G "Push-Packages" be discontinued. Packs sufficient to support aircraft scheduled to be deployed through December 1968 were the final packages assembled. The procedure subsequent to August 1968 requires that USAAMMC submit requisitions to AVCOM for bulk amounts of the items contained in the units PLL/ASL listings as furnished by AVCOM. Units will be provided listing of their respective PLL/ASL and will then submit requisitions for the required items through their supporting DSU.

2. CONCLUSION: The push package concept has not afforded the supply support required for newly deployed units/aircraft in RVN.

3. RECOMMENDATION: That the "Push Package" concept as applicable to support of other type aircraft i.e., CH-6A, CH-47C be examined in detail and extensive consideration afforded to expansion of the current AH-1G type support program to include all types of Army aircraft assigned to this theater.

TAB M

SUBJECT: 95 Day RO

1. PROBLEM: Pressure is being exerted by AMC and AVCOM to have AMMC use requisitioning objectives of 95 days for items shipped by air, and 125 days for items shipped by surface.

2. FACTS:

a. Since December 1967, AMMC has used a Requisitioning Objective of 120 days. This RO complies with AR 11-11 and GAO guidance.

b. Over 80% of the AMMC's requirements are shipped by air.

3. ASSUMPTIONS: IPG 1 & 2 requisitions (priority 1 through 8) will continue to qualify for air shipment.

a. Elements of the 120 day RO and the 95 day RO's compare as follows:

(1) The operating levels are 30 days in both cases. This is deemed adequate.

(2) The safety level in the 95 Day RO is only 15 days (compared to 30 days). This is totally inadequate. At the present time 5,000 of the 45,000 AMMC stockage lines have on-hand balances greater than zero, but less than SIP 01 (15 day supply). Under an enforced safety level reduction, this number of lines would go to a zero balance, with a resultant increase in costly red ball requisitions and NORS rates.

(3) The order-ship time in the 95 Day RO is 50 days (from 60 days). This is not quite adequate to cope with the actual order-ship times experienced over the last six months. These have averaged 55 days for priorities 02 and 05. Priority 12 replenishment requisitions CST's are even higher.

b. AVCOM representatives TDY to AMMC in September 1968 analyzed 175 AMMC stockate lines, computed 95 Day RO's for those lines, and compared the RO's thus computed with the existing AMMC 120 Day RO's. The AVCOM RO's were not exponentially smoothed and the program change factors were based on Fiscal Year variances rather than the quarterly variances used by AMMC. Results of the comparisons follow:

(1) Seven lines came out with identical RO quantities.

(2) Seventy-four lines would have increased their RO quantities by coverting to the AVCOM computed 95 Day RO.

(3) Ninety-four lines would have decreased their RO quantities (but not necessarily the AMD quantities).

(4) Overall, the dollar value of the RO would actually increase ($2,501,560 for the AMMC 120 Day RO versus $2,798,799 for the AVCOM computed 95 Day RO).

c. AMMC cannot have two RO's on a line (air and surface) since the mode of shipment is based on the priority of the replenishment request, and the priority is assigned by the computer during the transaction cycle based on the supply posture of the line at the time of replenishment. The supply posture of course, varies from cycle to cycle, and a particular FSN may replenish with priority 02 in one cycle and priority 12 in the next.

d. There are three possible choices:

(1) Use a 95 Day RO and the existing AMMC RO computation techniques. This would result in the conditions discussed in paragraph 4a above.

(2) Use a 95 Day RO and the AVCOM computations. This would result in a greater dollar value of pipeline inventory (the reverse of the avowed purpose of the program) and would divorce the AMMC managers from control of their items.

(3) Continue to use the logical, mathematically precise 120 Day RO computations currently in use.

5. CONCLUSION: The interests of AMMC, AVCOM and the U.S. Army can best be served by not altering existing AMMC RO computational parameters and techniques.

6. RECOMMENDATION: That no change be made to the AMMC RO length (in days) or the method of computation.

SUBJECT: AMMC/NICP DUE-IN/DUE-OUT RECONCILIATION

1. PROBLEM: To reconcile all outstanding AMMC requisitions following initiation of a procedure of direct requisitioning to AVCOM under Project Code OFP.

2. FACTS:

a. Special supply support procedures were established effective 1 May 1968 for AMMC to submit all requisitions direct to AVCOM.

b. AVCOM would fill the requisition or forward it to the appropriate NICP.

c. AVCOM would control the requisition status flow from all CONUS supply sources.

3. ASSUMPTIONS: Periodic reconciliation of requisitions due-in to AMMC is necessary to purify AMMC records.

4. DISCUSSION: Three reels of magnetic type containing those due-in requisitions dated prior to 1May 68 (72, 120 requisitions) were hand carried to AVCOM. These requisitions were processed through the requisition control and history file at AVCOM. Requisitions for items not AVCOM managed were identified and personal visits by AVCOM representatives were made to these ICP's.
The results of the reconciliation and the accumulated status were recorded on tape, and reconciled to the financial management records of HQ, USARPAC. AMMC records were also corrected.

5. CONCLUSION: The result of the reconciliation was a purge of a large quantity of invalid dues-in from the AMMC records, and the corresponding alignment of AVCOM's dues-out records. This purified the AMMC requisitioning base for the first time in its history.

6. RECOMMENDATION: That a follow-on, 100% AMMC due-in reconciliation be accomplished during December 1968 (1 May plus six months) following the same procedures used for the 1 May 1968 reconciliation. Correspondence proposing this action is currently being prepared.

TAB O

45

SUBJECT: Project OASIS

1. PROBLEM: Implementation of project "OASIS" in RVN is tenatively scheduled for 1 January 1969.

2. FACTS: OASIS is already in being in several other areas of the world on a test basis. The test is to be evaluated during the third quarter of FY 69.

3. ASSUMPTIONS: OASIS will involve approximately 95 AMMC lines initially, but is forecast to be extended to include several thousand lines eventually.

4. DISCUSSION:

a. OASIS is the code name for a program irvolving AMC Ownership and Accountability of Super High Dollar Value Selected Secondary Items. In order to implement OASIS at AMMC several 1460 computer programs will have to be revised, several new codes will have to be added, several new procedures will have to be formulated, several new reports will have to be initiated, and several AMMC Logistics Management Office (LMO) personnel will have to be sited and supported. In essence then, it can be stated that:

(1) OASIS cannot be processed by current AMMC 1460 programs.

(2) Programming effort expended toward OASIS will be at the expense of programming needed to support the current AMMC supply system.

(3) Transaction cycle frequency, only minimally satisfactory today, would be further degraded under OASIS (an estimated reduction in cycle frequency from every three days t every four days).

b. AMC and USARPAC personnel visited USARV in August 1968 and were advised that even though OASIS came into being in RVN, certain existing procedures in direct conflict with OASIS would remain in force. These included:

(1) Continued submission of AMMC's Red Ball requisition direct to the LCOP.

(2) AMMC initiated cross leveling of aviation assets between the Saigon and Qui Nhon Aviation Depots.

(3) Automatic return to CONUS by DSU's of unserviceable reparable aviation assets (including OASIS) I/A/W existing AVCOM and USARV procedures.

c. A possible solution which recognizes the desired implementation dates, daily OASIS reporting requirements, and AMMC operational commitments, would be to establish and operate a separate off-line OASIS supply system at AMMC utilizing residual 1005 card processor capability. If such a system were to be implemented, AMC assistance would be required to write, test and de-bug the OASIS programs, to establish the file formats, and to operate the 1005 hardware.

5. CONCLUSION: AMMC is not ready for OASIS, can only get ready at the expense of existing programs, and when ready will have degraded transaction cycle frequency. Further, even after implementation of OASIS, so many modifications will have been incorporated that the program will barely resemble that envisioned by the originators.

6. RECOMMENDATIONS: An interim off-line OASIS supply system be developed and installed on existing AMMC 1005 equipment pending an improved computer capability available and operational at AMMC.

SUBJECT: AMMC Computer Requirements

1. DISCUSSION:

a. The purpose of this report is to:

(1) Describe present AMMC ADP hardware limitations.

(2) Describe present and projected systems limitations.

(3) Describe AMMC's proposed computer configuration.

b. Present Hardware Limitations: The present AMMC ADP equipment is a patch work of cards and magnetic tape oriented equipment. It presently consists of:

(1) 1 - IBM 1460 16K, 6 tapes.

(2) 2 - UNIFAC 1005 Card Systems.

The primary mission of the AMMC DPC is the processing of the AMMC Supply cycle. To process the supply cycle it is mandatory to have multi-file processing capabilities. The IBM 1460 is the only tool available to AMMC with this capability.

The UNIVAC 1005s are basically card systems and as such are no relief for the voluminous processing required to complete the supply cycle. The IBM currently is utilized 80% of available time to process existing systems.

The IBM 1460 is capable of sequential processing only.

The speed of the IBM 1460 and the volume of data to be processed (30,000 documents daily) make it impossible to process the supply cycle in a reasonable amount of time.

Software available for the IBM 1460 is limited. The primary programing tool is Autocoder which, although a capable coding language, does not lend itself to ease of testing which in turn tends to increase implementation time of systems.

c. Present and projected system limitations: Current systems designs are based upon the configuration of the hardware currently

available to AMMC. Systems have had to be downgraded due to memory capacity (16K), sequential processing and speed of this equipment. Due to these factors, heavy off line (PCAM operations) are required in support of some systems. Specific areas affected by hardware limitations are:

(1) Limited due-in, due-out control.

(2) Limited substitution capacity.

(3) Lack of manager inquiry capability.

(4) Limited demand analysis.

(5) Lack of system compatibility and back up.

(6) Limited management reports.

d. Projected systems limitations: For AMMC to effectively accomplish their mission, AMMC must implement various systems such as:

(1) RO Analysis (Extended).

(2) Configuration management and MWO Control.

(3) Aircraft Inventory.

(4) Turbine Engine Inventory.

(5) TARP Program.

(6) TAERS Program.

(7) Utilization of Army Master Data File for complete editing.

(8) Inclusion of DSU stockage factors for RO forecasting.

Due to the present equipment limitations, and the processing time required for the supply cycle, it is impossible to implement these systems. The present equipment will not permit daily processing of the basic supply cycle which is required to maintain proper supply support to depots and DSUs in a combat zone.

e. Proposed computer configuration: To eliminate the current and projected limitations of the existing hardware, it is proposed that a third generation computer be installed at AMMC. It should have as a minimum:

(1) 128 K core memory.

(2) Random access storage of at least 200 million alphanumeric characters.

(3) Tape capabilities.

(4) Multi-processing capabilities.

(5) COBOL, Fortran, Assembler Language and Report Generator capabilities.

(6) Disk operating system.

(7) Teleprocessing capabilities.

(8) Compatibility with AVCOM.

(9) In-country back-up.

This configuration would enabled processing of the AMMC supply cycle on a daily basis, through increased speed, more efficient control, random access techniques and multi-processing (operation performed simultaneously). Third generation hardware would have the capability of being upgraded or downgraded to meet future requirements.

Utilization of a Report Program Generator (RPG) would decrease Data Processing Center's response time on various special requests and furnish supply management with an invaluable tool.

Utilization of COBOL would simplify programming and would lend itself to faster and more efficient indoctrination of new programming materiel.

2. CONCLUSION:

The present hardware will not permit daily processing of the basic supply cycle due to time required to pass voluminous master files and sort time requirements.

Due to time required to process the current cycle, no time is available to process other AMMC requirements.

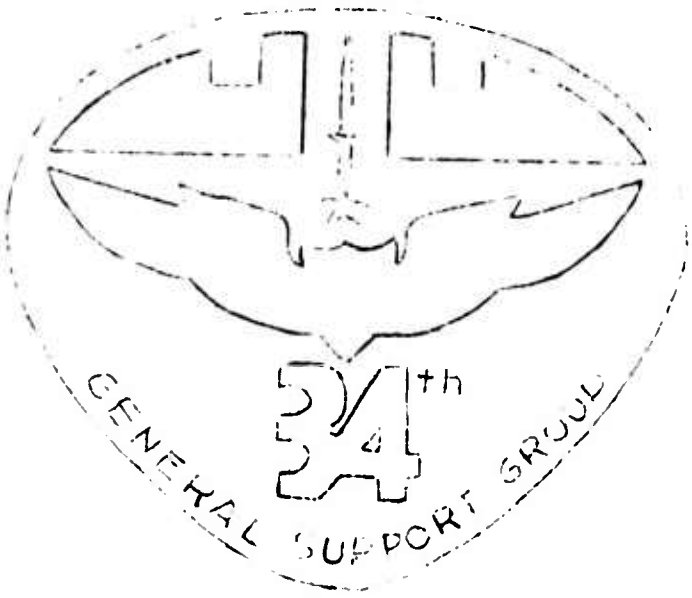
Unless more sophisticated hardware is provided, no additional systems (reference para d) can be implemented and no significant improvements can be made to existing systems.

3. RECOMMENDATIONS:

The need for a third generation computer is definitely necessary. The 72 hours required to process the basic supply cycle is not satisfactory. The need to process on a daily basis is a must if AMMC is to accomplish their required mission. Only processing on a daily basis can maintain proper supply support to the depot and DSU's. Present equipment is not adequate to accomplish this. This can only be accomplished with the installation of a third generation computer. It is strongly recommended that a third generation computer be installed in January 1969 as scheduled.

34th General Support Group

(AM&S)

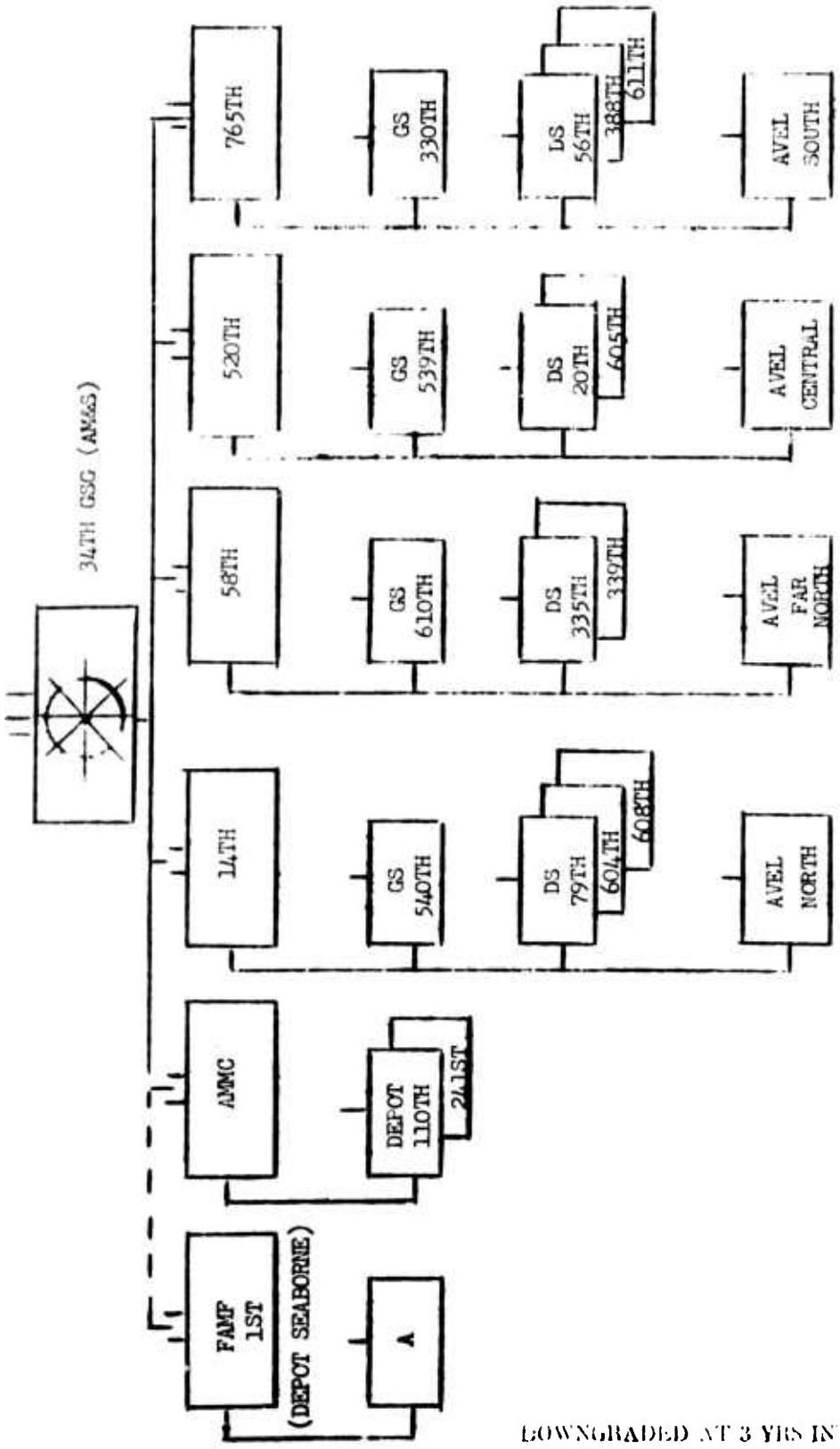


Colonel James W. Sandridge Jr.

Commanding Officer

MISSION

PROVIDE ARMY AIRCRAFT MAINTENANCE AND SUPPLY SUPPORT (AIRCRAFT, AIRCRAFT REPAIR PARTS, AVIONICS, AIRCRAFT ARMAMENT) TO UNITED STATES AND OTHER FREE WORLD MILITARY ASSISTANCE FORCES WITHIN SOUTH EAST ASIA



ORGANIZATION

This chart shows the current organization of the 34th Group. The Group consists of 4 aircraft Maintenance and Supply Battalions, the Aviation Materiel Management Center and the Floating Aircraft Maintenance Facility. The FAMF is an AMC project under the operational control of the 34th Group.

Each of the Battalions has a general support company, except the 765th Battalion which has two. Because of the readily available premimum air transportation between RVN and CONUS the necessity of retaining General support companies in RVN has been questioned.

The Group currently has twelve direct support companies. These companies are assigned to battalions depending on the battalions area of coverage and the density of aircraft in their area. Two companies programmed for the Group have been diverted or deactivated. The 411th Company was deactivated in CONUS and the space allocation was utilized to form cellular maintenance teams for three Air Cavalry Squadrons which had been deployed without them. The 142d Company was diverted to the 101st Airborne Division (Airmobile). In mid 1969 the 34th Group will have a short-fall equivalent of approximately 2.5 direct support companies.

The Avionics Electronic Company (AVEL) in each battalion is a provisional unit. These provisional companies were formed by utilizing the avionics personnel from the GS and DS companies and from cellular avionics teams assigned to the Group. By organizing provisional companies a more efficient utilization of avionics assets was achieved. Because of the increase in the USARV fleet, additional personnel were required to maintain the attendant avionics equipment. Justification for 132 avionics spaces was submitted to USARV and approved by that headquarters for placement on the priority list. Although, the 132 spaces have been on the priority list for two years, they have never been financed.

The FAMF provides limited depot maintenance support to all of RVN. Whether this facility is justifiable economically is debatable at this time. There are those who claim that if provided the equipment and personnel, the GS companies could accomplish the same tasks at a much lower cost.

AMC CUSTOMER UNITS

Incl 2 - 5

AMMC CUSTOMER UNITS

1. We have 11 Aviation Direct Support Companies of the 34th General Support Group.

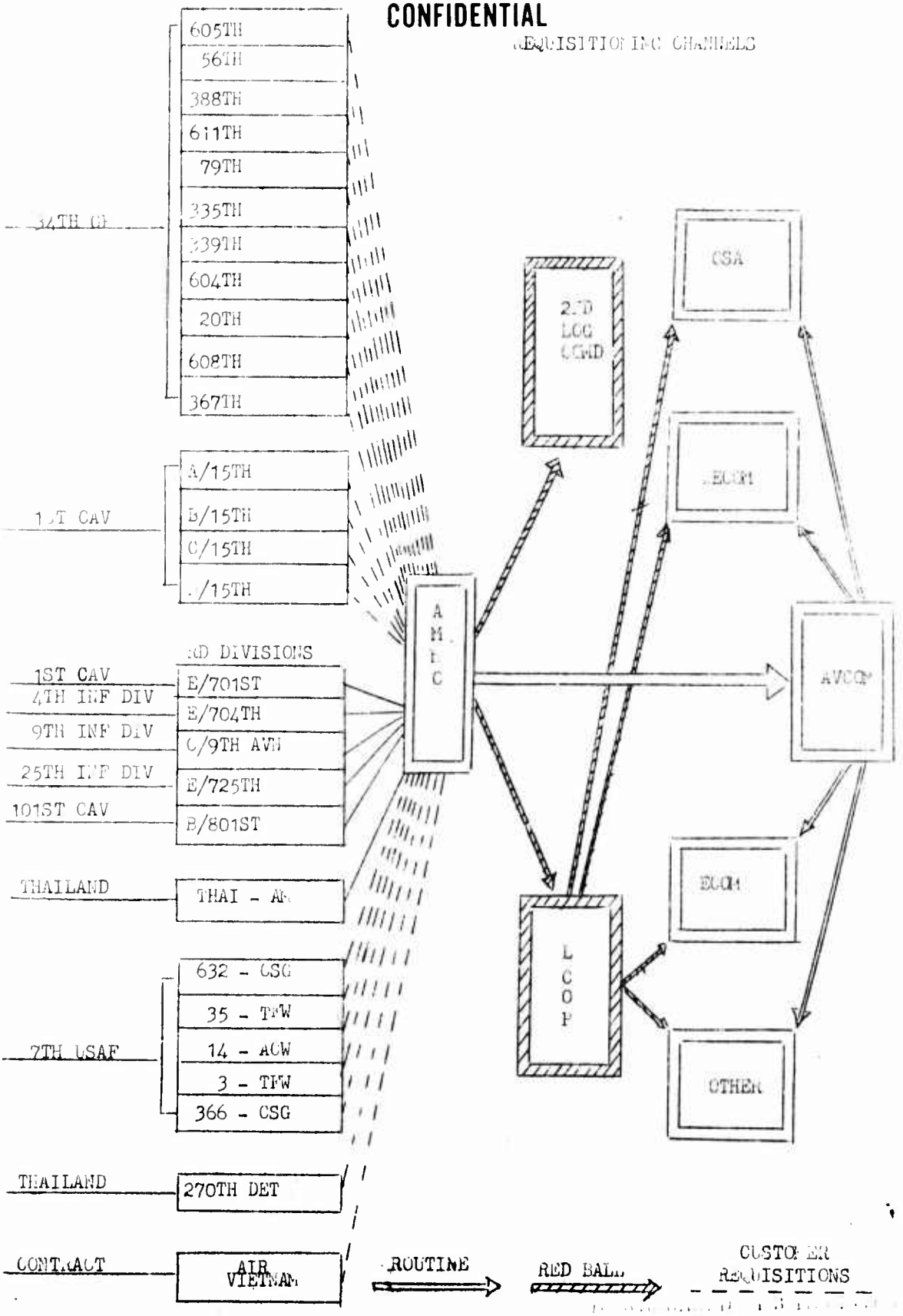
2. The 4 direct support companies of the 15th Transportation Battalion, an organic unit of the 1st Air Cavalry Division.

3. The 3 ROAD division DS companies; "C" Co of the 9th Aviation Bn - a test unit placed under the operator; and the DS company of the 101st Air Cav Div. Because the 101st has transportation (KD) detachments with its aviation companies, it does not have a Transportation Battalion.

4. We have the 5th US Air Force base supply activities which support their O-1 aircraft.

5. And the 270th Transportation Detachment which serves Thailand, our newest customer, Thai-AM, a contract maintenance facility in Bangkok, and Air Vietnam, the contract maintenance facility here at Tan Son Nhut.

CONFIDENTIAL



Incl 2 - 7

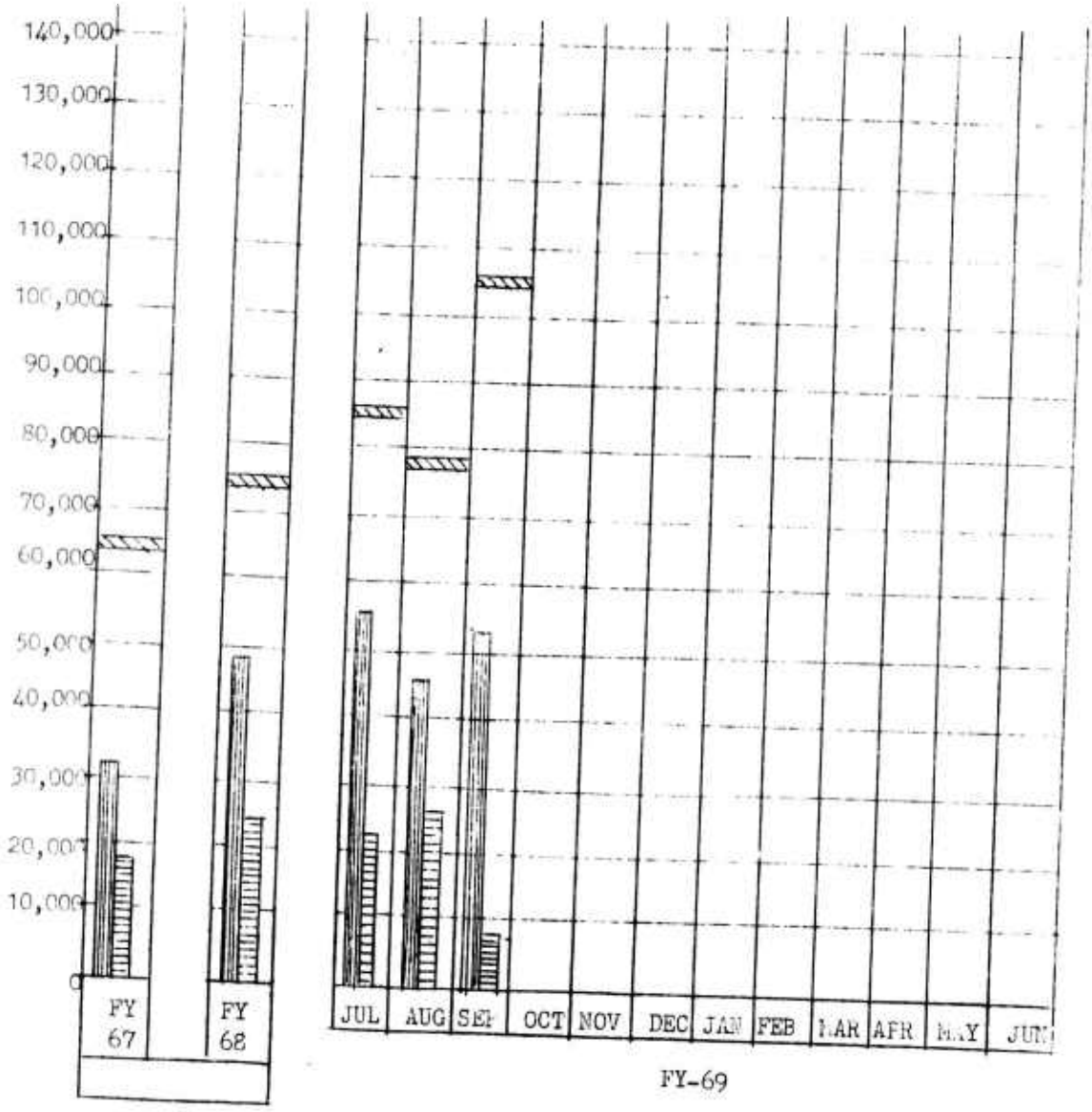
REQUISITIONING CHANNELS

(This chart depicts channels through which our customers order their supplies.)

1. All requisitions are routed directly to the AMMC, the centralized stock control activity. If the item required is on hand, we direct release of the item to the customer from the nearest depot. If the item is on the ASL and not on hand, we place the requisition on backorder (due out) for subsequent release when replenishment stock is received. If the item requested is fringe (not on our ASL), and not on hand, we pass the requisition along with our replenishment requisitions through the "Stovepipe" requisitioning system - via transceiver direct to AVCOM. AVCOM in turn re-directs the requisitions to the appropriate NICP, DSA, or GSA if they are for other than AVCOM managed items. All of these requisitions are project-coded as aviation requirements, and AVCOM monitors the status of these throughout their life in the system.

2. In the case of high priority Equipment Deadlined for Parts (EDP) requisitions, the Red Ball Express system comes into play. These requisitions, either ASL or fringe, that cannot be filled from in-country assets, are transceived directly to the Logistic Control Office, Pacific, at Ft. Mason, Calif. This agency routes the requisitions directly to the responsible agency for action. We also transceive a duplicate requisition to the 2d Logistical Command in Okinawa on a "fill or kill" basis. If Okinawa has the item we normally receive it in about 6 days. They only fill approximately 2% of all our requests, however. We are currently experiencing a 14 day turn-around time for items from CONUS.

SUPPLY ACTIVITY



TOTAL DEMANDS

INITIAL ISSUES

DUE-OUT RELEASES

Incl 2 - 9

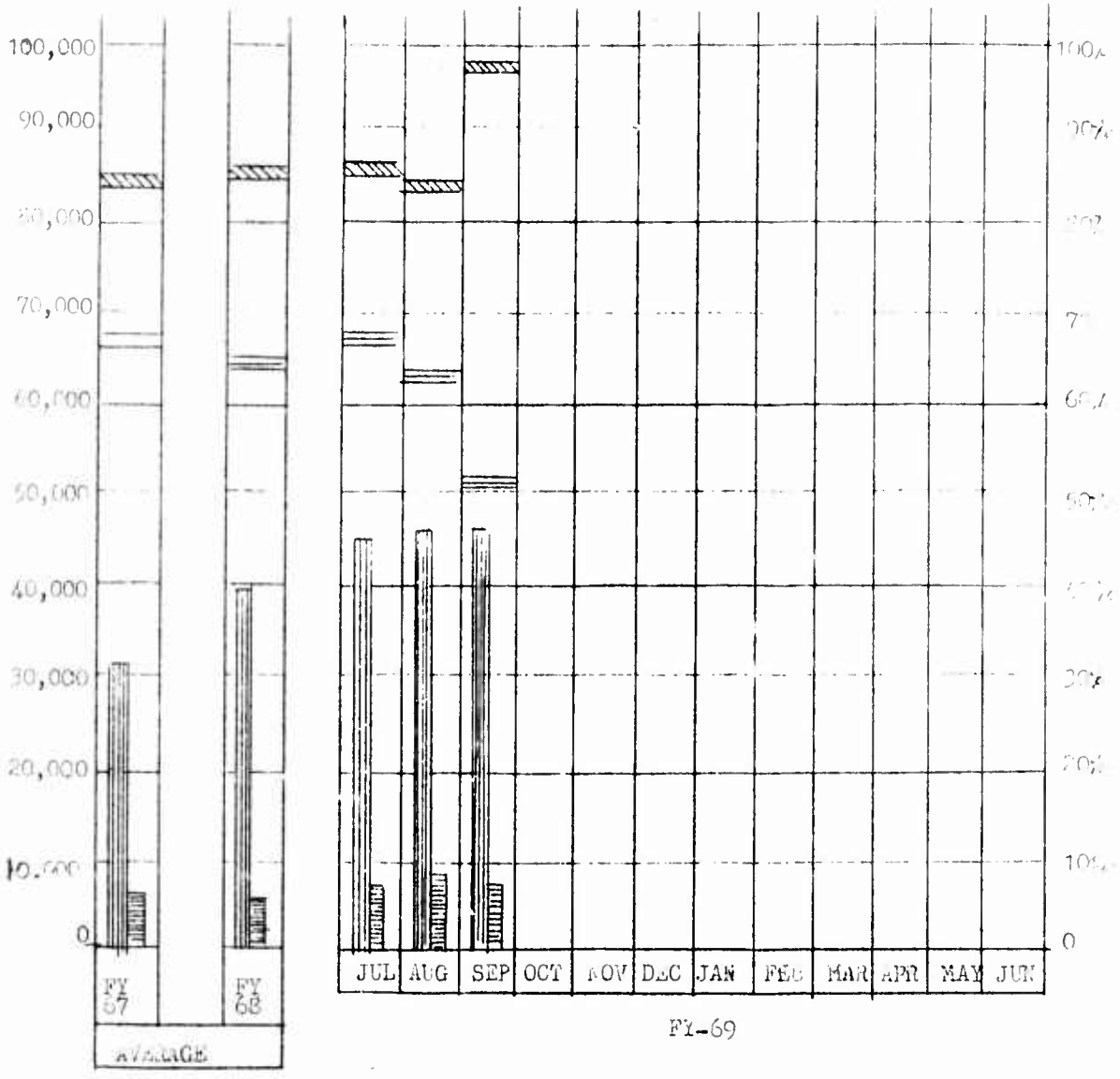
SUPPLY ACTIVITY

(This chart shows the amount of supply activity generated by our customers on a monthly basis).

During the past fiscal year, we received an average of 74,000 requisitions a month, were able to fill 48,000 of these initially - that is, the first pass through our supply cycle - and released 24,000 due outs per month.

In measuring our performance in processing these transactions, we look to our supply performance statistics, which are presented in these next charts.

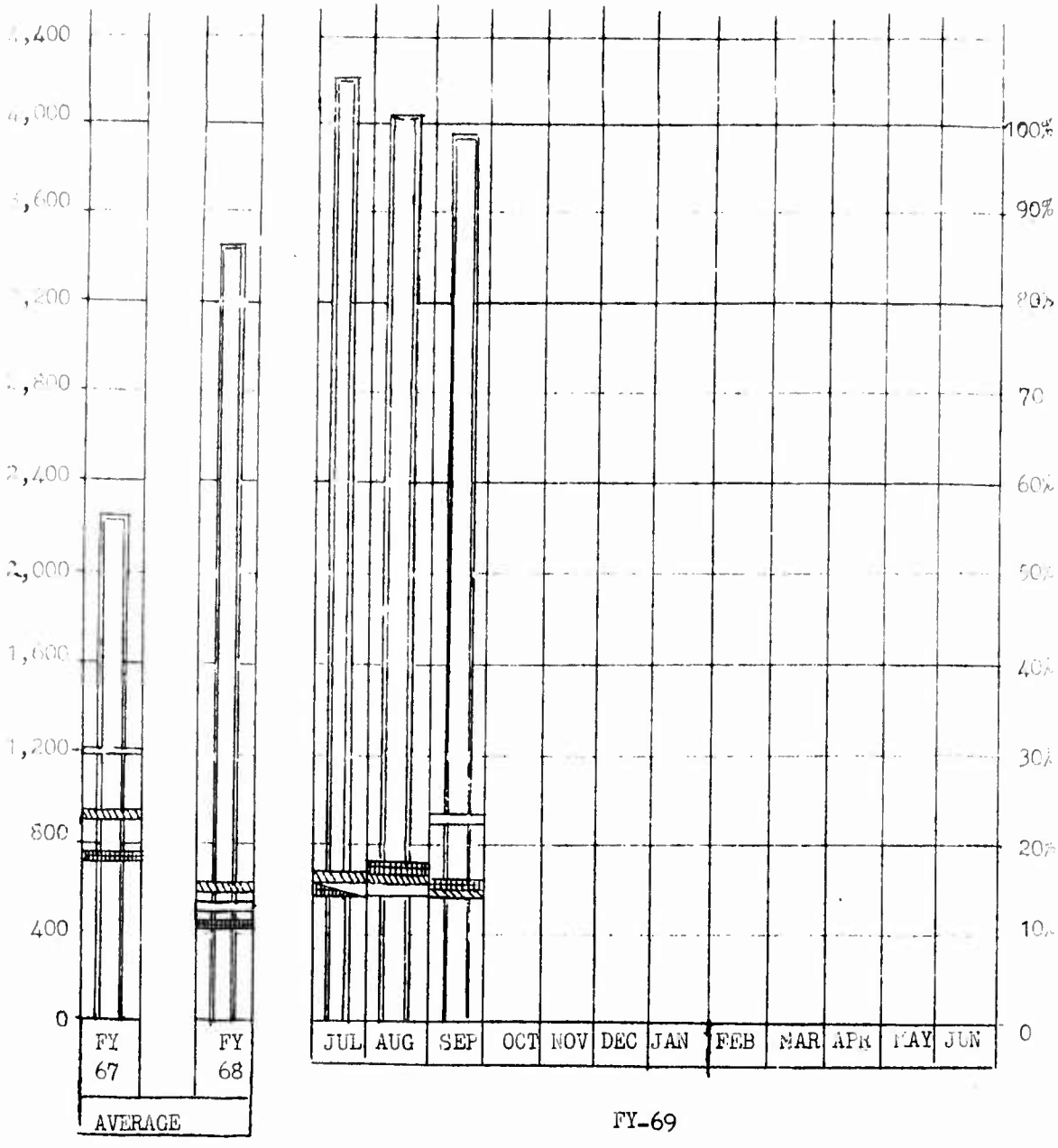
SUPPLY PERFORMANCE



SUPPLY PERFORMANCE

The  line indicates the number of lines on our Authorized Stockage List, and the  line - those that were at zero balance. Demand accomodation, the  line, represents the percentage of all requisitions received which matchod our ASL and domand satisfaction  the percentage of those requisitions which we were able to fill initially. In other words in fiscal year 1968, an average of 85 of every 100 requisitions received matched our ASL, and we were able to fill 66% of these during the first pass through our supply cycle.

AIRCRAFT DENSITY . O BALANCE PERCENTAGE



AIRCRAFT DENSITY - 0 BALANCE PERCENTAGE

(This chart depicts the AMIC zero balance posture, by major commodity, as a percentage of the total ASL.)

As you can see, the fleet has virtually doubled over the past two years, yet we have experienced a continual decline in our zero balance rate. The introduction of new systems, such as the U21, OH6, AH1G Cobra, and their attendant avionics and armament systems, last fall caused the rate to rise during the middle of the fiscal year, but it has steadily declined over the last 4 months, and should stabilize shortly.

AIRCRAFT SUPPLY LINES

AS OF: 30 Sep 68

AIRCRAFT TYPE	ASL	NO. O BAL.	% O BAL.
OH-6	959	182	19.0
OH-23	1033	163	15.8
OH-13	1050	143	13.6
UH-1	4879	811	16.6
CH-47	4491	846	18.8
CH-54	1475	257	17.4
U-1	878	82	20.9
OV-1	1449	165	11.4
U-1	756	59	7.8
U-6	1036	175	11.1
AH-IG	1631	287	17.5
U-8	1308	152	11.6
U-21	1458	149	10.2
COMMON ITEMS	8288	1604	19.4
AVIONICS	12,935	2039	15.8
ARMAMENT	4,017	922	23.0
TOTAL	47,641	7,981	16.7

FRINGE LINES	TOTAL	ACFT.	AVIONICS	ARMT.
	33,801	18 513	14,113	1 175

GRAND TOTAL 81,442

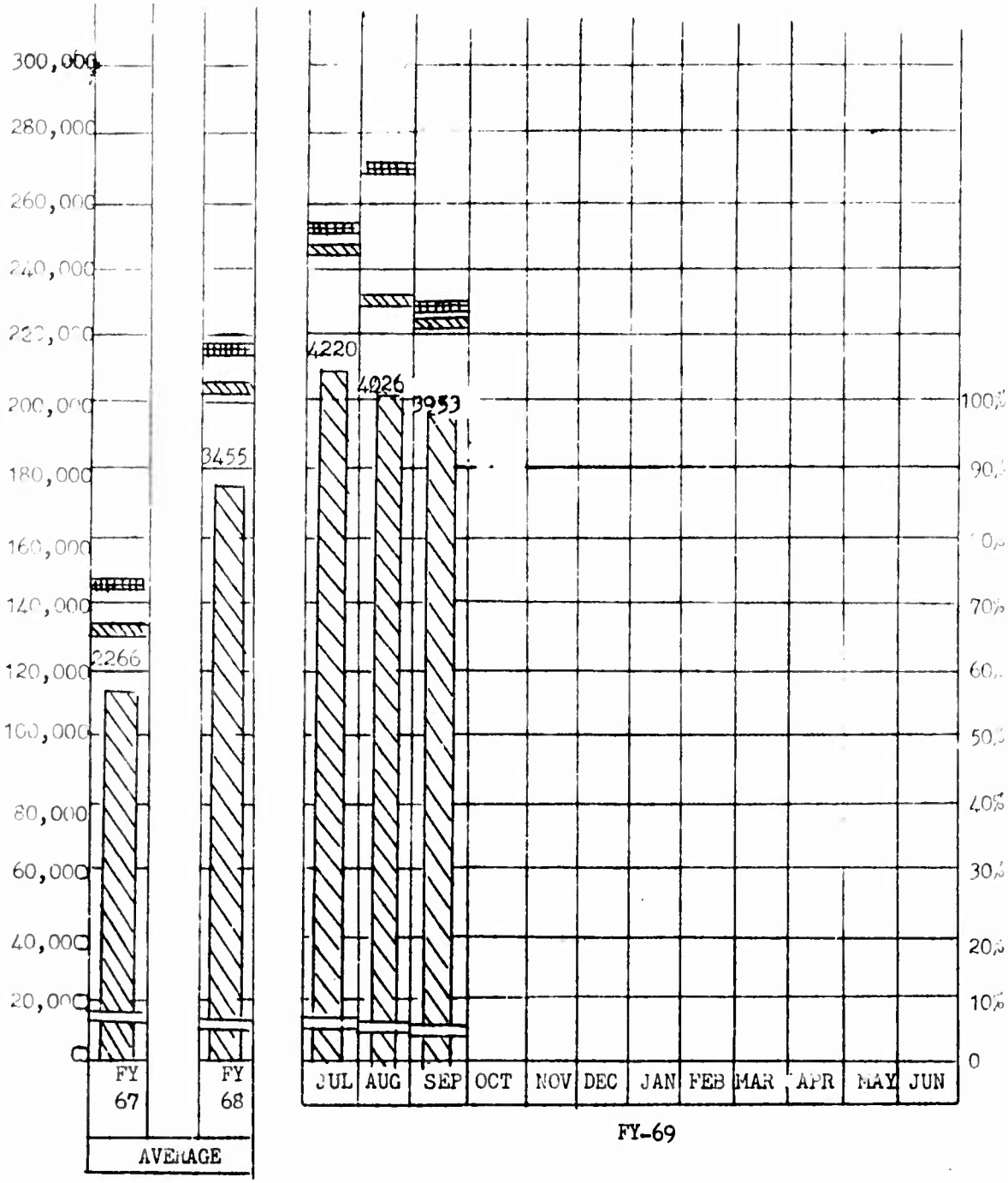
Incl 2 - 15

AIRCRAFT SUPPLY LINES

(This chart breaks out our ASL by type of aircraft.)

The first column indicates the number of items stocked for each system supported. The next column is the number of lines in each account that were at zero balance at the end of the month, and the third column, the percent of the system ASL these zero balance represent. As you can see, our newest systems, the OH6 and AH1G are our prime problems at this time. These were, however, considerably higher 3 months ago, and have been showing continued improvement.

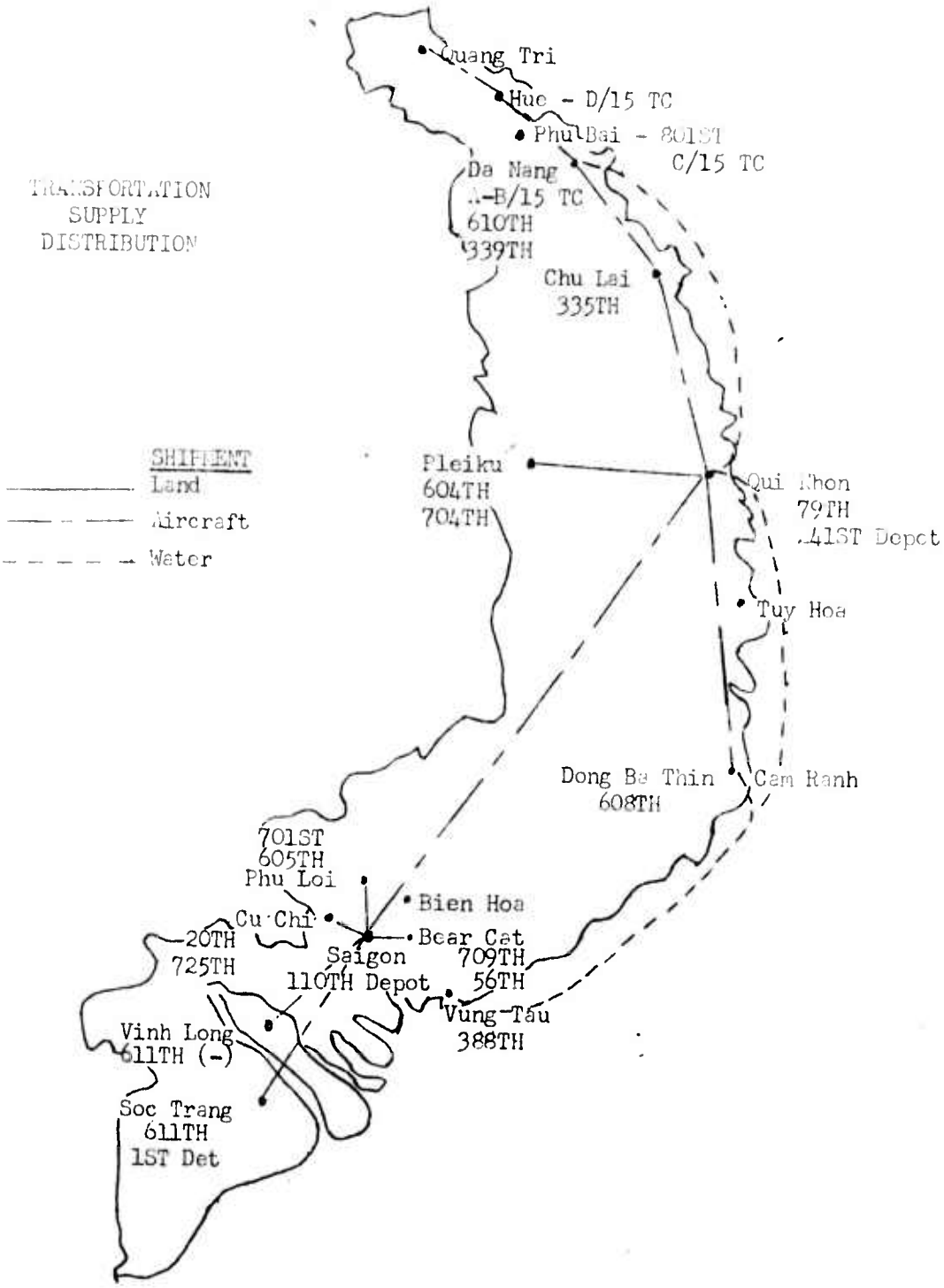
FLYING HOURS PER MONTH . . . . . TCT.



FLYING HRS PER MONTH - NORS PERCENTAGE

(This chart relates the USARV flying hour program to the aircraft fleet and the monthly NORS rate (Not Operationally Ready - Supply; the percentage of time that aircraft are down for parts.)

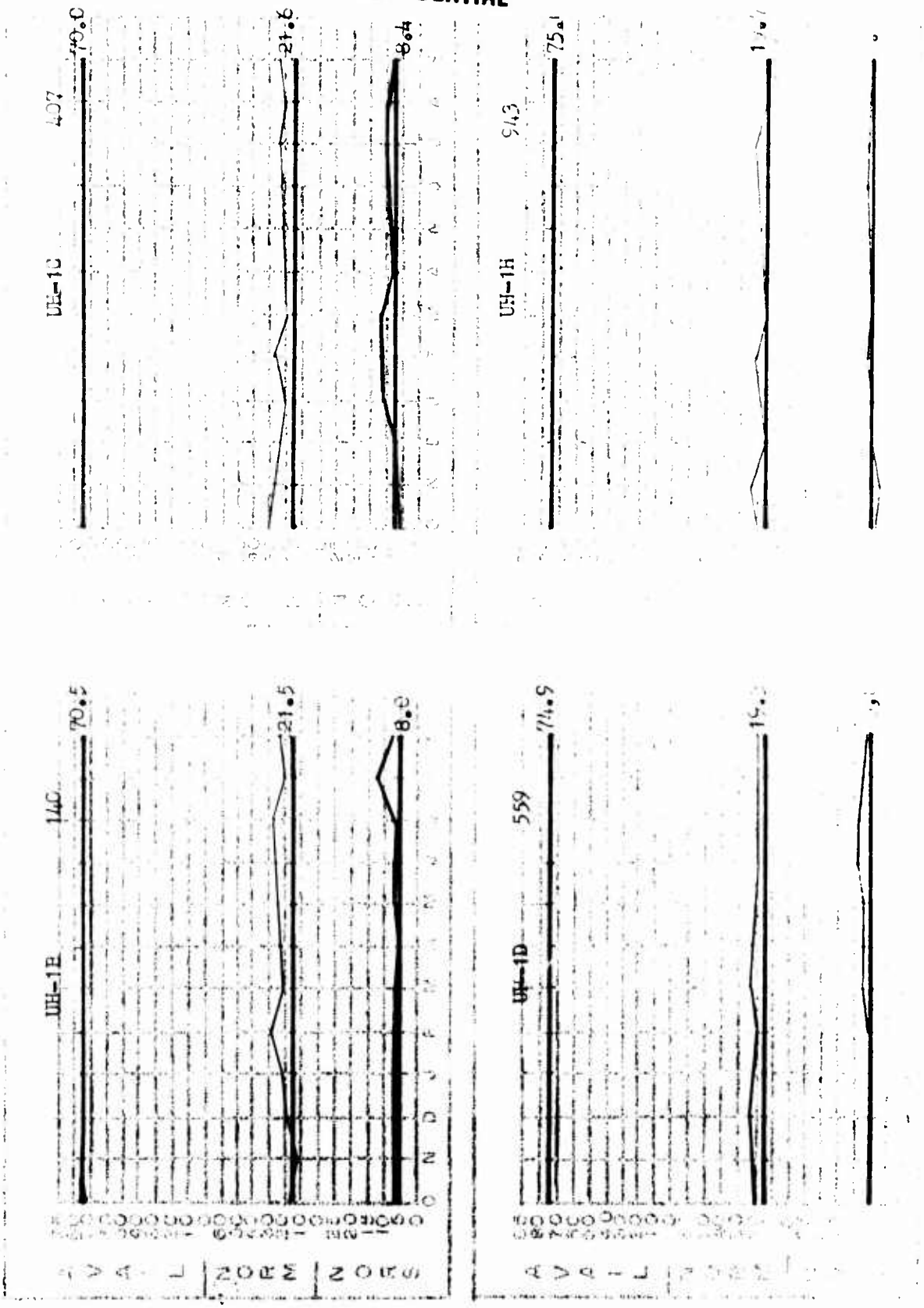
The ▦▦▦▦ line indicated the actual flying hours in each month. Though DA imposes no restrictions whatsoever on our flying hours, the ▨▨▨▨ line is placed here to indicate the number of hours that would be allocated from the worldwide program to a fleet of this size. Despite the fact that the fleet has virtually doubled in size, and is maintaining a flying hour program of nearly a quarter of a million flying hours per month, we have experienced a relatively stable NORS rate.



TRANSPORTATION SUPPLY DISTRIBUTION

(This chart shows the primary modes by which we ship supplies to our customer DSU's.)

From the Saigon Aviation Depot air is the primary mode to the Delta; the units surrounding Saigon use the road net; and to Vung Tau we use both air and RO-RO (Roll on-Roll off) trailers on LCU's. We have inter-depot shipments by water from Saigon to Qui Nhon, and for large bulky shipments to Dong Ba Thin, Qui Nhon and Da Nang we have the Sea Land van capability. From the Qui Nhon Depot, road is the primary mode for DSU's in the Pleiku area, with primarily air shipments to Chu Lai, Da Nang and Dong Ba Thin, and occasional water shipments to Da Nang.



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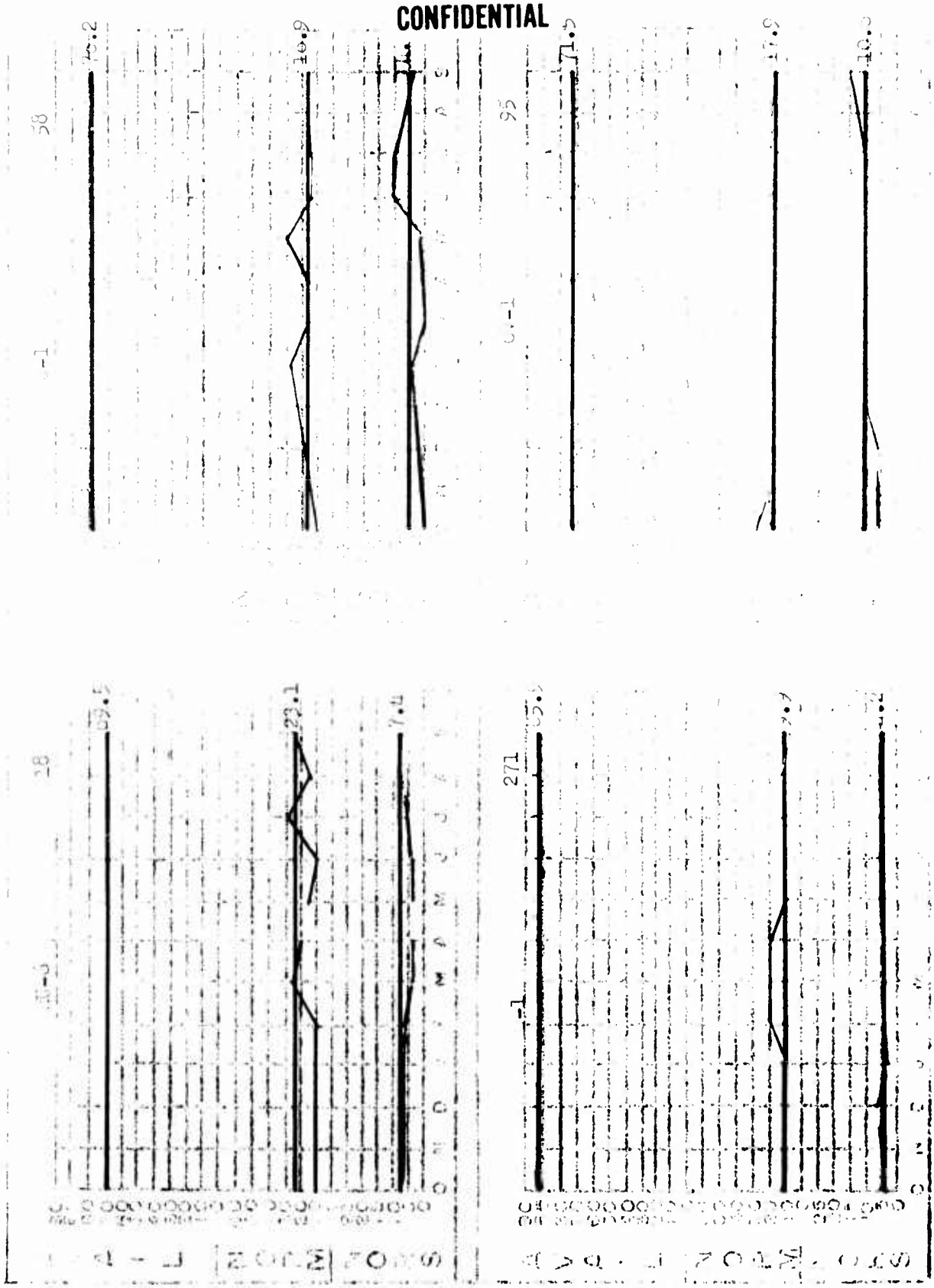

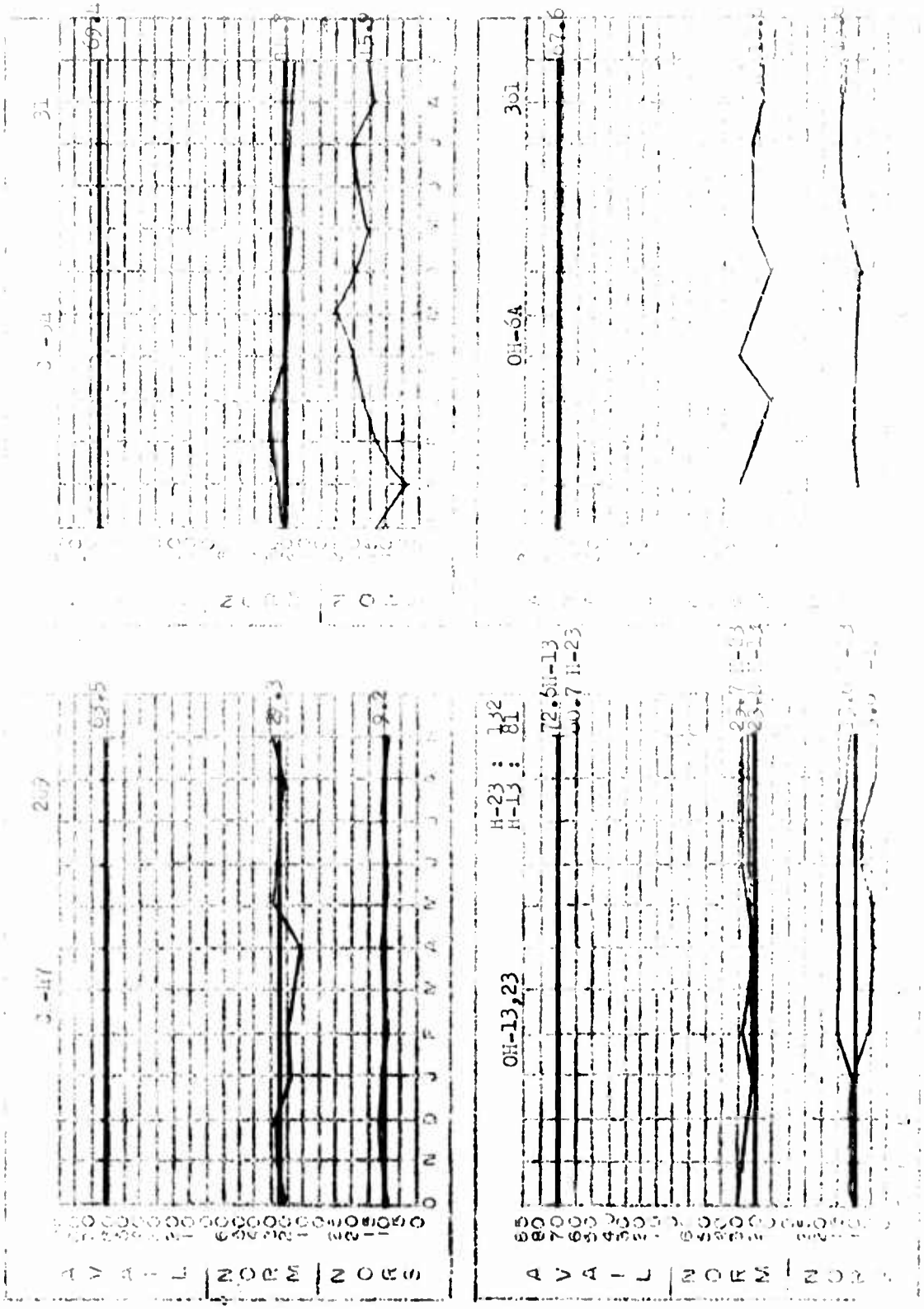

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13. ABSTRACT

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